

HP SiteScope

for the Windows, Solaris, and Linux operating systems

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Monitor Reference

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Acknowledgements

This product includes software developed by the Apache Software Foundation (**<http://www.apache.org/>**).

This product includes software developed by the JDOM Project (**<http://www.jdom.org/>**).

Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
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Table of Contents

Welcome to This Guide	17
How This Guide Is Organized	18
Who Should Read This Guide	18
How Do I Find the Information That I Need?	19
Additional Online Resources.....	21
Documentation Updates	22

PART I: SITESCOPE MONITORS (A-Z)

Chapter 1: Active Directory Replication Monitor	25
Active Directory Replication Monitor Overview	26
Active Directory Replication Monitor Settings	27
Chapter 2: Amazon Web Services Monitor	29
Amazon Web Services Monitor Overview.....	30
Amazon Web Services Monitor Settings	31
Chapter 3: Apache Server Monitor	33
Apache Server Monitor Overview	34
Apache Server Monitor Settings	35
Chapter 4: BroadVision Application Server Monitor.....	37
BroadVision Application Server Monitor Overview.....	38
BroadVision Application Server Monitor Settings	39
Chapter 5: Browsable Windows Performance Monitor	41
Browsable Windows Performance Counter Monitor Overview.....	42
Browsable Windows Performance Counter Monitor Settings	43
Chapter 6: Check Point Monitor	47
Check Point Monitor Overview	48
Check Point Monitor Settings.....	49
Chapter 7: Cisco Works Monitor.....	51
Cisco Works Monitor Overview	52
Cisco Works Monitor Settings.....	53

Chapter 8: Citrix Monitor	57
Citrix Monitor Overview.....	58
Citrix Monitor Settings	63
Chapter 9: ColdFusion Server Monitor	67
ColdFusion Server Monitor Overview.....	68
ColdFusion Server Monitor Settings	71
Chapter 10: COM+ Server Monitor	75
COM+ Server Monitor Overview.....	76
How to Configure the COM+ Monitoring Environment	78
COM+ Server Monitor Settings	80
Chapter 11: Composite Monitor	83
Composite Monitor Overview	84
Composite Monitor Settings	85
Chapter 12: CPU Monitor	89
CPU Monitor Overview	90
CPU Monitor Settings	93
Chapter 13: Database Counter Monitor	97
Database Counter Monitor Overview	98
Database Counter Monitor Settings.....	102
Chapter 14: Database Query Monitor	107
Database Query Monitor Overview.....	108
How to Configure the Database Query Monitoring Environment...	114
Database Query Monitor Settings	121
Chapter 15: DB2 8.x and 9.x Monitor	127
DB2 8.x and 9.x Monitor Overview	128
DB2 8.x and 9.x Monitor Settings.....	130
Chapter 16: DHCP Monitor	135
DHCP Monitor Overview	136
How to Configure the DHCP Monitoring Environment.....	137
DHCP Monitor Settings.....	138
Chapter 17: Directory Monitor	139
Directory Monitor Overview	140
Directory Monitor Settings.....	141
Chapter 18: Disk Space Monitor	145
Disk Space Monitor Overview	146
Disk Space Monitor Settings.....	149

Chapter 19: DNS Monitor	153
DNS Monitor Overview	154
DNS Monitor Settings.....	156
Chapter 20: e-Business Transaction Monitor.....	159
e-Business Transaction Monitor Overview.....	160
How to Configure the e-Business Transaction Monitoring Environment	163
e-Business Transaction Monitor Settings	165
Chapter 21: F5 Big-IP Monitor	167
F5 Big-IP Monitor Overview	168
F5 Big-IP Monitor Settings.....	169
Chapter 22: File Monitor	173
File Monitor Overview	174
File Monitor Settings	175
Chapter 23: Formula Composite Monitor	179
Formula Composite Monitor Overview	180
Formula Composite Monitor Settings.....	182
Chapter 24: FTP Monitor.....	185
FTP Monitor Overview	186
FTP Monitor Settings.....	188
Chapter 25: HP iLO (Integrated Lights-Out) Monitor.....	193
HP iLO Monitor Overview	194
HP iLO Monitor Settings	197
Chapter 26: HP NonStop Event Log Monitor	199
HP NonStop Event Log Monitor Overview.....	200
HP NonStop Event Log Monitor Settings.....	201
Chapter 27: HP NonStop Resources Monitor	207
HP NonStop Resources Monitor Overview	208
HP NonStop Resources Monitor Settings	210
Chapter 28: IPMI Monitor	213
IPMI Monitor Overview	214
IPMI Monitor Settings	215
Chapter 29: JMX Monitor.....	217
JMX Monitor Overview	218
JMX Monitor Settings.....	223

Chapter 30: LDAP Monitor	225
LDAP Monitor Overview	226
LDAP Monitor Settings.....	227
Chapter 31: Link Check Transaction Monitor	231
Link Check Monitor Overview.....	232
Link Check Monitor Settings	233
Chapter 32: Log File Monitor	237
Log File Monitor Overview	238
Log File Monitor Settings	242
Chapter 33: Mail Monitor	249
Mail Monitor Overview	250
Mail Monitor Settings	251
Chapter 34: MAPI Monitor	257
MAPI Monitor Overview	258
How to Prepare the System for Using the MAPI Monitor.....	260
MAPI Monitor Settings	264
Chapter 35: Memory Monitor	267
Memory Monitor Overview	268
Memory Monitor Settings	272
Chapter 36: Microsoft ASP Server Monitor	275
Microsoft ASP Server Monitor Overview.....	276
Microsoft ASP Server Monitor Settings	278
Chapter 37: Microsoft Exchange 2007/2010 Monitor	281
Microsoft Exchange 2007/2010 Monitor Overview.....	282
How to Configure the Microsoft Exchange 2007/2010 Monitoring Environment.....	285
Microsoft Exchange 2007/2010 Monitor Settings	291
Chapter 38: Microsoft Exchange 2003 Mailbox Monitor	295
Microsoft Exchange 2003 Mailbox Monitor Overview.....	296
Microsoft Exchange 2003 Mailbox Monitor Settings	298
Chapter 39: Microsoft Exchange 5.5 Message Traffic Monitor	301
Microsoft Exchange 5.5 Message Traffic Monitor Overview	302
Microsoft Exchange 5.5 Message Traffic Monitor Settings.....	303

Chapter 40: Microsoft Exchange 2000/2003/2007 Message Traffic Monitor	305
Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Overview	306
Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Settings	307
Chapter 41: Microsoft Exchange 2003 Public Folder Monitor	309
Microsoft Exchange 2003 Public Folder Monitor Overview	310
Microsoft Exchange 2003 Public Folder Monitor Settings	311
Chapter 42: Microsoft Hyper-V Monitor	313
Microsoft Hyper-V Monitor Overview	314
Microsoft Hyper-V Monitor Settings	316
Chapter 43: Microsoft IIS Server Monitor	319
Microsoft IIS Server Monitor Overview	320
Microsoft IIS Server Monitor Settings	324
Chapter 44: Microsoft SQL Server Monitor	327
Microsoft SQL Server Monitor Overview	328
Microsoft SQL Server Monitor Settings	331
Chapter 45: Microsoft Windows Dial-up Monitor	335
Microsoft Windows Dial-up Monitor Overview	336
Microsoft Windows Dial-up Monitor Settings	339
Chapter 46: Microsoft Windows Event Log Monitor	341
Microsoft Windows Event Log Monitor Overview	342
Microsoft Windows Event Log Monitor Settings	345
Chapter 47: Microsoft Windows Media Player Monitor	351
Microsoft Windows Media Player Monitor Overview	352
Microsoft Windows Media Player Monitor Settings	353
Chapter 48: Microsoft Windows Media Server Monitor	357
Microsoft Windows Media Server Monitor Overview	358
Microsoft Windows Media Server Monitor Settings	361
Chapter 49: Microsoft Windows Performance Counter Monitor	365
Microsoft Windows Performance Counter Monitor Overview	366
Microsoft Windows Performance Counter Monitor Settings	367

Chapter 50: Microsoft Windows Resources Monitor	371
Microsoft Windows Resources Monitor Overview.....	372
How to Configure the Microsoft Windows Resources Monitoring Environment.....	376
Microsoft Windows Resources Monitor Settings	380
Chapter 51: Microsoft Windows Services State Monitor	385
Microsoft Windows Services State Monitor Overview.....	386
Microsoft Windows Services State Monitor Settings	388
Chapter 52: Multi Log File Monitor	393
Multi Log File Monitor Overview.....	394
Multi Log Monitor Settings.....	395
Chapter 53: Network Bandwidth Monitor	399
Network Bandwidth Monitor Overview	400
Network Bandwidth Monitor Settings	401
Chapter 54: News Monitor	407
News Monitor Overview	408
News Monitor Settings	410
Chapter 55: Oracle 10g Application Server Monitor.....	413
Oracle 10g Application Server Monitor Overview	414
Oracle 10g Application Server Monitor Settings.....	415
Chapter 56: Oracle 9i Application Server Monitor	417
Oracle 9i Application Server Monitor Overview	418
Oracle 9i Application Server Monitor Settings	419
Chapter 57: Oracle Database Monitor.....	421
Oracle Database Monitor Overview	422
Oracle Database Monitor Settings.....	426
Chapter 58: Ping Monitor	431
Ping Monitor Overview	432
Ping Monitor Settings.....	434
Chapter 59: Port Monitor	437
Port Monitor Overview	438
Port Monitor Settings	440
Chapter 60: Radius Monitor.....	443
Radius Monitor Overview	444
Radius Monitor Settings	446

Chapter 61: Real Media Player Monitor	449
Real Media Player Monitor Overview.....	450
Real Media Player Monitor Settings	451
Chapter 62: Real Media Server Monitor	453
Real Media Server Monitor Overview.....	454
Real Media Server Monitor Settings	457
Chapter 63: SAP CCMS Monitor	461
SAP CCMS Monitor Overview	462
How to Configure the SAP CCMS Monitoring Environment.....	466
SAP CCMS Monitor Settings	469
Chapter 64: SAP CCMS Alerts Monitor.....	473
SAP CCMS Alerts Monitor Overview.....	474
How to Configure the SAP CCMS Alerts Monitoring Environment	476
SAP CCMS Alerts Monitor Settings	480
Chapter 65: SAP Java Web Application Server Monitor	483
SAP Java Web Application Server Monitor Overview	484
How to Configure the SAP Java Web Application Server Monitoring Environment	485
SAP Java Web Application Server Monitor Settings.....	487
Chapter 66: SAP Performance Monitor	489
SAP Performance Monitor Overview.....	490
How to Configure the SAP Performance Monitoring Environment.	492
SAP Performance Monitor Settings	495
Chapter 67: SAP Work Processes Monitor	497
SAP Work Processes Monitor Overview	498
How to Configure the SAP Work Processes Monitoring Environment	502
SAP Work Processes Monitor Settings.....	506
Chapter 68: Script Monitor	509
Script Monitor Overview	510
How to Set a Timeout Value for Script Monitor Instances	516
Script Monitor Settings.....	518
Chapter 69: Service Monitor	525
Service Monitor Overview	526
Service Monitor Settings.....	529
Chapter 70: Siebel Application Server Monitor.....	535
Siebel Application Server Monitor Overview	536
Siebel Application Server Monitor Settings.....	541

Chapter 71: Siebel Log File Monitor	545
Siebel Log File Monitor Overview	546
Siebel Log File Monitor Settings.....	547
Chapter 72: Siebel Web Server Monitor	551
Siebel Web Server Monitor Overview	552
Siebel Web Server Monitor Settings	555
Chapter 73: SNMP Monitor	559
SNMP Monitor Overview	560
SNMP Monitor Settings	562
Chapter 74: SNMP by MIB Monitor	569
SNMP by MIB Monitor Overview.....	570
How to Configure the SNMP by MIB Monitoring Environment	572
SNMP by MIB Monitor Settings	574
Chapter 75: SNMP Trap Monitor	579
SNMP Trap Monitor Overview	580
SNMP Trap Monitor Settings.....	582
Chapter 76: Solaris Zones Monitor	585
Solaris Zones Monitor Overview	586
How to Analyze Solaris Zones Monitor Results – Use-Case Scenario	591
Solaris Zones Monitor Settings.....	593
Chapter 77: SunONE Web Server Monitor	595
SunONE Web Server Monitor Overview	596
SunONE Web Server Monitor Settings.....	597
Chapter 78: Sybase Monitor	601
Sybase Monitor Overview	602
Sybase Monitor Settings	604
Chapter 79: Tuxedo Monitor	607
Tuxedo Monitor Overview	608
Tuxedo Monitor Settings.....	610
Chapter 80: UDDI Monitor	613
UDDI Monitor Overview.....	614
UDDI Monitor Settings	615
Chapter 81: UNIX Resources Monitor	617
UNIX Resources Monitor Overview	618
UNIX Resources Monitor Settings.....	620

Chapter 82: URL Monitor	623
URL Monitor Overview	624
How to Configure the URL Monitoring Environment	629
URL Monitor Settings	631
Chapter 83: URL Content Monitor	641
URL Content Monitor Overview	642
How to Configure the URL Content Monitoring Environment	646
URL Content Monitor Settings	647
Chapter 84: URL List Monitor	659
URL List Monitor Overview	660
How to Configure the URL List Monitoring Environment	664
URL List Monitor Settings	665
Chapter 85: URL Sequence Monitor	671
URL Sequence Monitor Overview	672
How to Create a URL Sequence	686
URL Sequence Monitor User Interface	690
Chapter 86: VMware Performance Monitor	705
VMware Performance Monitor Overview	706
How to Configure the VMware Performance Monitoring Environment	712
VMware Performance Monitor Settings	715
Chapter 87: Web Script Monitor	719
Web Script Monitor Overview	720
How to Configure the Web Script Monitoring Environment	730
Web Script Monitor Settings	732
Chapter 88: Web Server Monitor	739
Web Server Monitor Overview	740
Web Server Monitor Settings	741
Chapter 89: Web Service Monitor	745
Web Service Monitor Overview	746
Web Service Monitor Settings	751
Chapter 90: WebLogic Application Server Monitor	757
WebLogic Application Server Monitor Overview	758
How to Configure the WebLogic Application Server Monitoring Environment	760
WebLogic Application Server Monitor Settings	764

Chapter 91: WebSphere Application Server Monitor	767
WebSphere Application Server Monitor Overview	768
How to Configure the WebSphere 3.5x and 4.x Application Server Monitoring Environment	770
How to Configure the WebSphere 5.x Application Server Monitoring Environment	772
How to Configure the WebSphere 6.0x Application Server Monitoring Environment	774
How to Configure the WebSphere 6.1x Application Server Monitoring Environment	780
How to Configure the WebSphere 7.0x Application Server Monitoring Environment	787
WebSphere Application Server Monitor Settings.....	794
Chapter 92: WebSphere MQ Status Monitor	799
WebSphere MQ Status Monitor Overview	800
How to Configure the WebSphere MQ Status Monitoring Environment	803
Channel Status Codes	805
WebSphere MQ Status Monitor Settings.....	806
Chapter 93: WebSphere Performance Servlet Monitor	809
WebSphere Performance Servlet Monitor Overview	810
WebSphere Performance Servlet Monitor Settings	812
Chapter 94: XML Metrics Monitor	815
XML Metrics Monitor Overview	816
XML Metrics Monitor Settings.....	818

PART II: INTEGRATION MONITORS (A-Z)

Chapter 95: HP OM Event Monitor.....	825
HP OM Event Monitor Overview	826
How to Work with the HP OM Integration Add-on (UNIX Platforms)	828
How to Work with the HP OM Integration Add-on (Windows Platforms)	835
HP OM Event Monitor Settings.....	840
Chapter 96: HP Service Manager Monitor	843
HP Service Manager Monitor Overview	844
How to Work with the HP Service Manager Integration	846
HP Service Manager Monitor Settings.....	850

Chapter 97: NetScout Event Monitor	855
NetScout Event Monitor Overview	856
How to Integrate Data From a NetScout System.....	858
NetScout Event Monitor Settings	859
Chapter 98: Technology Database Integration Monitor.....	863
Technology Database Integration Monitor Overview	864
How to Integrate Database Data into Business Service Management	869
Technology Database Integration Monitor Settings.....	873
Troubleshooting and Limitations	881
Chapter 99: Technology Log File Integration Monitor	883
Technology Log File Integration Monitor Overview	884
How to Integrate Log File Data into Business Service Management	886
Technology Log File Integration Monitor Settings.....	890
Troubleshooting and Limitations	899
Chapter 100: Technology SNMP Trap Integration Monitor	901
Technology SNMP Trap Integration Monitor Overview.....	902
How to Integrate SNMP Trap Data into Business Service Management	904
Technology SNMP Trap Integration Monitor Settings	908
Troubleshooting and Limitations	914
Chapter 101: Technology Web Service Integration Monitor.....	917
Technology Web Service Integration Monitor Overview	918
How to Check Connectivity to the Technology Web Service Integration Monitor.....	921
Technology Web Service Integration Monitor Settings.....	923
Troubleshooting and Limitations	928
Index.....	929

Table of Contents

Welcome to This Guide

This guide describes how to set up the monitoring environment and configure SiteScope and integration monitors to monitor the enterprise IT infrastructure.

This chapter includes:

- How This Guide Is Organized on page 18
- Who Should Read This Guide on page 18
- How Do I Find the Information That I Need? on page 19
- Additional Online Resources on page 21
- Documentation Updates on page 22

How This Guide Is Organized

The guide contains the following parts:

Part I SiteScope Monitors (A-Z)

Describes how to set up the monitoring environment and configure each type of SiteScope monitor. It includes information on supported versions, setup requirements, user permissions, and troubleshooting issues.

Part II Integration Monitors (A-Z)

Describes how to configure each type of integration monitor, including troubleshooting issues relating to monitoring EMS environments with SiteScope.

Note: For details on setting panels in the monitor Properties tab that are common to all monitors, see "Common Monitor Settings" in *Using SiteScope*.

Who Should Read This Guide

This guide is intended for the following users of HP SiteScope and HP Business Service Management (BSM):

- SiteScope/BSM administrators
- SiteScope/BSM application administrators
- SiteScope/BSM data collector administrators
- SiteScope/BSM end users

Readers of this guide should be knowledgeable about enterprise system administration, infrastructure monitoring systems, and SiteScope, and have familiarity with the systems being set up for monitoring. In addition, readers who are integrating with BSM should be familiar with BSM and enterprise monitoring and management concepts.

How Do I Find the Information That I Need?

This guide is part of the HP SiteScope Help. The SiteScope Help provides a single-point of access for all SiteScope documentation.

You can access the SiteScope Help by selecting **Help > SiteScope Help** on the SiteScope server.

Topic Types

Within this guide, each subject area is organized into topics. A topic contains a distinct module of information for a subject. The topics are generally classified according to the type of information they contain.

This structure is designed to create easier access to specific information by dividing the documentation into the different types of information you may need at different times.

Three main topic types are in use: **Concepts**, **Tasks**, and **Reference**. The topic types are differentiated visually using icons.

Topic Type	Description	Usage
Concepts 	Background, descriptive, or conceptual information.	Learn general information about what a feature does.
Tasks 	<p>Instructional Tasks. Step-by-step guidance to help you work with the application and accomplish your goals. Some task steps include examples, using sample data.</p> <p>Task steps can be with or without numbering:</p> <ul style="list-style-type: none"> ▶ Numbered steps. Tasks that are performed by following each step in consecutive order. ▶ Non-numbered steps. A list of self-contained operations that you can perform in any order. 	<ul style="list-style-type: none"> ▶ Learn about the overall workflow of a task. ▶ Follow the steps listed in a numbered task to complete a task. ▶ Perform independent operations by completing steps in a non-numbered task.
	<p>Use-case Scenario Tasks. Examples of how to perform a task for a specific situation.</p>	Learn how a task could be performed in a realistic scenario.

Topic Type	Description	Usage
 Reference	General Reference. Detailed lists and explanations of reference-oriented material.	Look up a specific piece of reference information relevant to a particular context.
	User Interface Reference. Specialized reference topics that describe a particular user interface in detail. Selecting Help on this page from the Help menu in the product generally open the user interface topics.	Look up specific information about what to enter or how to use one or more specific user interface elements, such as a window, dialog box, or wizard.
 Troubleshooting and Limitations	Troubleshooting and Limitations. Specialized reference topics that describe commonly encountered problems and their solutions, and list limitations of a feature or product area.	Increase your awareness of important issues before working with a feature, or if you encounter usability problems in the software.

Additional Online Resources

Troubleshooting & Knowledge Base accesses the Troubleshooting page on the HP Software Support Web site where you can search the Self-solve knowledge base. Choose **Help > Troubleshooting & Knowledge Base**. The URL for this Web site is <http://h20230.www2.hp.com/troubleshooting.jsp>.

HP Software Support accesses the HP Software Support Web site. This site enables you to browse the Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose **Help > HP Software Support**. The URL for this Web site is www.hp.com/go/hpssoftwaresupport.

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Part I

SiteScope Monitors (A-Z)

1

Active Directory Replication Monitor

This chapter includes:

Concepts

- ▶ Active Directory Replication Monitor Overview on page 26

Reference

- ▶ Active Directory Replication Monitor Settings on page 27

Concepts

Active Directory Replication Monitor Overview

Use the Active Directory Replication monitor to monitor the time that it takes a change made on one Domain Controller to replicate to up to as many as ten other Domain Controller. This enables you to verify that replication, a key part of the Active Directory System, is occurring within set thresholds. Create a separate Active Directory Replication monitor for each Domain Controller that is being replicated throughout your system. The error and warning thresholds for the monitor can be set on each of the monitored Domain Controllers. This monitor supports monitoring remote servers running on Windows Server 2000 and Windows Server 2003.

Note:

- ▶ The Active Directory Replication monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ This monitor can only be added by deploying an Active Directory Solution template. For information about using templates to deploy monitors, see "SiteScope Templates" in *Using SiteScope*.

No additional setup is required other than to enable access to a Domain Admin account.

The Active Directory Replication monitor works by making a small change to part of the Directory Service tree of the configured Domain Controller. It then checks each of the configured Replicating Domain Controllers for this small change. As the change is detected the difference between when the change was made and when it was replicated is calculated.

For details on configuring the monitor, see "Active Directory Replication Monitor Settings" on page 27.

Reference

Active Directory Replication Monitor Settings

The Active Directory Replication monitor enables you to monitor the time that it takes replication to occur between up to ten Domain Controllers.

To access	Select the Templates context. In the template tree, expand the Solution Templates container. Right-click the Active Directory solution template that you require, and select Deploy Template . Select the SiteScope group container into which you want to deploy the solution template, and enter the deployment values.
Important information	<ul style="list-style-type: none"> ➤ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ➤ This monitor can only be added by deploying an Active Directory Solution template. For information about using templates to deploy monitors, see "SiteScope Templates" in <i>Using SiteScope</i>. ➤ The LDAP Authentication Tool is available when configuring this monitor to authenticate a user on an LDAP server (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "LDAP Authentication Tool" in <i>Using SiteScope</i>.
See also	<ul style="list-style-type: none"> ➤ "Active Directory Replication Monitor Overview" on page 26

Active Directory Monitor Settings

User interface elements are described below:

UI Element	Description
Domain controller	Domain controller that contains the replicated data.
Replicating domain controllers	Comma separated list of domain controllers that replicate data from the domain controller entered above.
User name	<p>User name or the entire Security Principal of a Domain Admin account.</p> <p>If a user name is given, the default security principal is created from the root context of the Domain Controller.</p> <p>Example: If you enter Administrator for a domain controller in the domain yourcompany.com, then the entire Security Principal would be CN=Administrator,CN=Users,DC=yourcompany,DC=com.</p>
Password	Password for the Domain Admin account.
Maximum replication time (seconds)	<p>Maximum amount of time for replication to occur. The monitor goes into error if any of the Replicating Domain Controllers exceed this replication time.</p> <p>Default value: 600 seconds</p>
Polling interval (seconds)	<p>Amount of time this monitor should wait between queries of the Replicating Domain Controllers. A higher number reduces the number of LDAP queries against the servers.</p> <p>Default value: 10 seconds</p>
Directory path	<p>Path to a directory in the Active Directory that you want to monitor. This is in the form of an LDAP query.</p> <p>Default value: Based on the default Directory for this server. For example, the default for a Domain Controller for sub.yourcompany.com is DC=sub,DC=yourcompany,DC=com.</p>

2

Amazon Web Services Monitor

This chapter includes:

Concepts

- ▶ Amazon Web Services Monitor Overview on page 30

Reference

- ▶ Amazon Web Services Monitor Settings on page 31

Concepts

Amazon Web Services Monitor Overview

The Amazon Web Services monitor enables monitoring of Amazon Web service cloud resources, starting with Amazon Elastic Compute Cloud service (EC2). It provides data on resource utilization, operational performance, and overall network demand patterns. Amazon CloudWatch API provides two methods that can be accessed by Web service or plain HTTP requests. They are `GetMetricStatistics` and `ListMetrics`.

Note: The Amazon CloudWatch Service is required to monitor Amazon Web Services.

For details on configuring the monitor, see "Amazon Web Services Monitor Settings" on page 31.

Reference

Amazon Web Services Monitor Settings

This monitor enables you to monitor Amazon Web Services (AWS) cloud resources.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The Amazon CloudWatch Service is required to monitor Amazon Web Services.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Amazon Web Services Monitor Overview" on page 30

Amazon Web Services Monitor Settings

User interface elements are described below:

UI Element	Description
AWS Access Key ID	An alphanumeric token that uniquely identifies a request sender. This ID is associated with your AWS Secret Access Key.
AWS Secret Key	The key assigned to you by AWS when you sign up for an AWS account. Used for request authentication.

UI Element	Description
Socket timeout (milliseconds)	Amount of time, in milliseconds, to wait for data from a server during a single data request. After the socket timeout period elapses, the monitor logs an error and reports the error status. A value of zero means there is no timeout used. Default value: 120 milliseconds
Counters	Server performance counters to check with this monitor. The list displays the available counters and those currently selected for this monitor.

3

Apache Server Monitor

This chapter includes:

Concepts

- ▶ Apache Server Monitor Overview on page 34

Reference

- ▶ Apache Server Monitor Settings on page 35

Concepts

Apache Server Monitor Overview

Use the Apache Server monitor to monitor the content of server administration pages for Apache 1.3.9, 1.3.12, 2.0 and 2.2 servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate monitor instance for each Apache server you are running.

For details on configuring the monitor, see "Apache Server Monitor Settings" on page 35.

Setup Requirements and User Permissions

Before you can use the Apache Server monitor, you must do the following:

- ▶ Configure the Apache server you want to monitor so that status reports (server-status) are enabled for the server. The steps needed to do this may vary depending on the version of Apache you are using.
- ▶ Enable extended status (ExtendedStatus On) in the configuration file.
- ▶ Know the URL of the server statistics page for the server you want to monitor.
- ▶ Know the user name and password for accessing the counters of the Apache server you want to monitor, if required.
- ▶ If using a proxy server to access the server, get the domain name and port of an HTTP Proxy Server from your network administrator.
- ▶ The SiteScope Apache Server monitor currently supports the server status page available at `http://<server_address>:<port>/server-status?auto`. The port is normally port 80, although this may vary depending on the server set up and your environment. For some Apache server configurations, you may need to use the server name rather than an IP address to access the server statistics page.

Reference

Apache Server Monitor Settings

This monitor enables you to monitor the administrative and performance statistics for an Apache server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 34.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Apache Server Monitor Overview" on page 34

Apache Monitor Settings

User interface elements are described below:

UI Element	Description
Server Settings	
Administration URL	Server URL you want to verify with this monitor. This should be the Apache server statistics URL which usually has the form of <code>http://<servername>:<port>/server-status?auto</code> .
Operating System	Operating system that the Apache server is running on. This is used to correctly read server statistics from Apache based on the operating system platform. Default value: UNIX

UI Element	Description
Counter Settings	
Counters	Server performance counters to check with this monitor. The list displays the available counters and those currently selected for this monitor.
Connection Settings	
Authorization user name	User name if the server you want to monitor requires a name and password for access.
Authorization password	Password if the server you want to monitor requires a name and password for access.
HTTP Proxy	Domain name and port of an HTTP Proxy Server if required by the proxy server is to access the server.
Proxy user name	Proxy server user name if required to access the server. Note: Your proxy server must support Proxy-Authenticate for these options to function.
Proxy password	Proxy server password if required to access the server. Note: your proxy server must support Proxy-Authenticate for these options to function.
Timeout (seconds)	Number of seconds that the monitor should wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status. Default value: 60 seconds

4

BroadVision Application Server Monitor

This chapter includes:

Concepts

- ▶ BroadVision Application Server Monitor Overview on page 38

Reference

- ▶ BroadVision Application Server Monitor Settings on page 39

Concepts

BroadVision Application Server Monitor Overview

Use the BroadVision Application Server monitor to monitor the server performance data for BroadVision 4.1, 5.x, and 6.0 servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate monitor instance for each BroadVision server in your environment. The error and warning thresholds for the monitor can be set on one or more BroadVision server performance statistics.

For details on configuring the monitor, see "BroadVision Application Server Monitor Settings" on page 39.

Setup Requirements

The following are important requirements for using the BroadVision Application Server monitor:

- ▶ You must know the Object Request Broker (ORB) port number for the BroadVision server you are trying to monitor.
- ▶ In a BroadVision Production-style environment where there is one primary root server and other secondary servers (for example, Interaction Manager node) on different machines, you can only define a monitor against the primary root node. Metrics for the other nodes in the configuration are available for selection during root node monitor definition. In other words, monitoring is always accomplished through the primary root node, for all servers.

Reference

BroadVision Application Server Monitor Settings

This monitor enables you to monitor the availability and performance statistics of a BroadVision server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 38. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "BroadVision Application Server Monitor Overview" on page 38

BroadVision Application Server Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
Server	BroadVision root server name of the BroadVision server you want to monitor. For example, 199.123.45.678.
Port	ORB port number to the BroadVision server you want to monitor. Example: 1221
Counter Settings	
Counters	Server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

5

Browsable Windows Performance Monitor

This chapter includes:

Concepts

- ▶ Browsable Windows Performance Counter Monitor Overview on page 42

Reference

- ▶ Browsable Windows Performance Counter Monitor Settings on page 43

Concepts

Browsable Windows Performance Counter Monitor Overview

Use the Browsable Windows Performance Counter monitor to monitor the values of Windows performance statistics. Each time the Browsable Windows Performance Counter monitor runs, it returns readings and a status message and writes them in the monitoring log file. The status is displayed in the group detail table for the monitor which represents the current value returned by this monitor. The status is logged as either OK or warning. A count of the number of counters that could not be read is also kept, and error conditions can be created depending on this count.

Note:

- ▶ The Browsable Windows Performance Counter monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ This monitor can be added only by deploying a Microsoft Exchange Solution Template. For information about using templates to deploy monitors, see "SiteScope Solution Templates" in *Using SiteScope*.

For details on configuring the monitor, see "Browsable Windows Performance Counter Monitor Settings" on page 43.

Reference

Browsable Windows Performance Counter Monitor Settings

The Browsable Windows Performance Counter monitor tracks the values of Windows performance statistics. These are the same statistics that can be viewed using the Performance monitor application under Windows.

To access	Select the Templates context. In the template tree, expand the Solution Templates container. Right-click the required Microsoft Exchange Solution Template, and select Deploy Template . Select the SiteScope group container into which you want to deploy the solution template, and enter the deployment values.
Important information	<ul style="list-style-type: none"> ▶ This monitor is only available on the Windows version of SiteScope. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ This monitor can only be added by deploying a Microsoft Exchange Solution Template. For more information, see "SiteScope Solution Templates" in <i>Using SiteScope</i>. Once the monitor has been created, you can edit the monitor configuration in the same way as other monitors. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
See also	▶ "Browsable Windows Performance Counter Monitor Overview" on page 42

Browsable Windows Performance Counter Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Server where the performance counters you want to monitor are found.</p> <p>Note: After deployment, you can use the drop-down list to select a server from the list of Microsoft Windows remote servers that are available to SiteScope.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p>
Counter file	<p>File that contains a list of counters from which to choose to monitor. Use the drop-down list to select a server from the list of remote servers that are available to SiteScope.</p> <p>The files in this list all reside in the <SiteScope root directory>\templates.perfmon\browsable directory under SiteScope. There are a number of default files in the standard SiteScope distribution.</p>

UI Element	Description
Counters	<p>Server performance counters you want to check with this monitor. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	<p>Opens the Select Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

6

Check Point Monitor

This chapter includes:

Concepts

- ▶ Check Point Monitor Overview on page 48

Reference

- ▶ Check Point Monitor Settings on page 49

Concepts

Check Point Monitor Overview

Use the Check Point monitor to monitor the content of event logs and other data from Check Point Firewall-1 4.1 NG servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate Check Point monitor instance for each Check Point Firewall-1 server in your environment. The error and warning thresholds for the monitor can be set on one or more firewall statistics.

For details on configuring the monitor, see "Check Point Monitor Settings" on page 49.

Reference

Check Point Monitor Settings

This monitor enables you to monitor the statistics of a Check Point Firewall-1 server using SNMP.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Check Point Monitor Overview" on page 48

Check Point Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
Index	Index of the SNMP object you want to check with this monitor. Non-table object IDs have an index of 0 (zero). Default value: 0
Community	Community name of the Check Point Firewall-1 you want to monitor. You may need to consult with your network administrators about what community names are active in your network environment. Default value: public
Host	Host name or IP address of the Check Point Firewall-1 server you want to monitor. If the Check Point Firewall is configured to respond to SNMP on a port number other than the default port (161), enter the port number as part of the server address.

UI Element	Description
Retry delay (seconds)	Number of seconds that the monitor should wait for a response from the server before retrying the request. Default value: 1 second
Timeout (seconds)	Number of seconds that the monitor should wait for a response from the server before timing out. Once this time period passes, the monitor logs an error and reports an error status. Default value: 5 seconds
Counter Settings	
<List of counters>	Displays the available server performance counters and those currently selected for this monitor.

7

Cisco Works Monitor

This chapter includes:

Concepts

- ▶ Cisco Works Monitor Overview on page 52

Reference

- ▶ Cisco Works Monitor Settings on page 53

Concepts

Cisco Works Monitor Overview

Use the Cisco Works monitor to monitor the content of event logs and other data from Cisco Works 2000 servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate Cisco Works monitor instance for each Cisco Works server in your environment. The error and warning thresholds for the monitor can be set on one or more Cisco Works server statistics.

For details on configuring the monitor, see "Cisco Works Monitor Settings" on page 53.

Reference

Cisco Works Monitor Settings

This monitor enables you to monitor the statistics of a Cisco Works Server using SNMP.

Description	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ The SNMP Browser Tool is available when configuring this monitor to verify the connection properties of an SNMP agent and to gain more information about the MIBs which that agent implements (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "SNMP Browser Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Cisco Works Monitor Overview" on page 52

Cisco Works Monitor Settings

User interface elements are described below:

UI Element	Description
SNMP Connection Settings	
Server	Name of the server you want to monitor.

UI Element	Description
SNMP version	Version of SNMP to use when connecting. Supports SNMP version 1, 2, and 3. Selecting V3 enables you to enter V3 settings in the SNMP V3 settings panel. Default value: V1
Community	Community name of the Cisco Works Server you want to monitor (valid only for version 1 or 2 connections). You may need to consult with your network administrators about what community names are active in your network environment. Default value: public
Timeout (seconds)	Amount of time, in seconds, that SiteScope should wait for all SNMP requests (including retries) to complete. Default value: 5
Retries	Number of times each SNMP GET request should be retried before SiteScope considers the request to have failed. Default value: 1
Port	Port to use when requesting data from the SNMP agent. Default value: 161
Starting OID	Use this option when selecting counters for this monitor. When the monitor attempts to retrieve the SNMP agent's tree, it starts with the OID value that is entered here. You should edit this box only when attempting to retrieve values from an application that does not handle OIDs starting with 1. If the default value of 1 did not enable retrieving any counters, then you may have to enter a different value. Default value: 1

UI Element	Description
MIB file	<p>MIB file display option.</p> <ul style="list-style-type: none"> ▶ CISCOWORKS-MIB.my file causes only those objects that are described within that MIB file to be displayed. ▶ All MIBs causes all objects discovered on the given Cisco Works server to be displayed when browsing counters. <p>If no MIB information is available for an object, it is still displayed, but with no textual name or description.</p> <p>Default value: All MIBs</p>
Counter calculation mode	<p>Performs a calculation on objects of type Counter, Counter32, or Counter64. The available calculations are:</p> <ul style="list-style-type: none"> ▶ Calculate delta. Calculates a simple delta of the current value from the previous value. ▶ Calculate rate. Calculates a rate calculation using the delta of current value from previous value, divided by the time elapsed between measurements. ▶ Do not calculate. No calculation is performed. <p>Note: This option only applies to the aforementioned object types. A Cisco Works monitor that monitors Counter objects as well as DisplayString objects only performs this calculation on the Counter objects.</p>
<p>V3 SNMP Settings (This panel is enabled only if V3 is selected in the SNMP version field)</p>	
SNMP V3 authentication type	<p>The type of authentication to use for version 3 connections.</p> <p>Default value: MD5</p>
SNMP V3 user name	<p>User name for version 3 connections.</p>
SNMP V3 authentication password	<p>Authentication password to use for version 3 connections.</p>
SNMP V3 privacy password	<p>Privacy password if DES privacy encryption is desired for version 3 connections. Leave blank if you do not want privacy.</p>

UI Element	Description
SNMP V3 context engine ID	Hexadecimal string representing the Context Engine ID to use for this connection. This is applicable for SNMP V3 only.
SNMP V3 context name	Context Name to use for this connection. This is applicable for SNMP V3 only.
SNMP Counters	
Counters	Server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The counters displayed are those received during the timeout period, and may not include all the counters available on the server. Specifying a longer timeout in the Timeout (seconds) field in the SNMP Connection Settings panel may result in receiving more counters. ▶ The total time for receiving the counters may be longer than the timeout specified, due to additional processing time not part of the request/response period. ▶ Due to third-party counter restrictions, the total number of counters that can be monitored is limited to 32. <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

8

Citrix Monitor

This chapter includes:

Concepts

- ▶ Citrix Monitor Overview on page 58

Reference

- ▶ Citrix Monitor Settings on page 63

Concepts

Citrix Monitor Overview

Use the Citrix monitor to monitor the server performance statistics from Citrix servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate Citrix monitor instance for each Citrix server in your environment. The error and warning thresholds for the monitor can be set on one or more Citrix server performance statistics.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

The Citrix monitor makes use of performance objects and counters to measure application server performance. The Citrix monitor keeps track of the following performance objects:

- ▶ Citrix IMA Networking
- ▶ Citrix Presentation Server (Citrix MetaFrame XP)
- ▶ ICA Session
- ▶ Terminal Services Session

You can find information about the Citrix performance objects and their counters in Appendix C of the Presentation Server 4.0 Administrator's Guide (<http://support.citrix.com/article/CTX106319>), and about the Terminal Services Session Object at <http://technet2.microsoft.com/windowsserver/en/library/9784cf82-9d06-4efa-b6fc-51c803fe78671033.mspx?mfr=true>.

For details on configuring the monitor, see "Citrix Monitor Settings" on page 63.

This section also includes:

- "Supported Versions" on page 59
- "IPv6 Addressing Supported Protocols" on page 60
- "Setup Requirements and User Permissions" on page 61
- "Troubleshooting and Limitations" on page 62

Supported Versions

This monitor supports monitoring remote servers running on:

- Citrix MetaFrame 1.8 Service Pack 3
- Citrix MetaFrame XP(s,a,e) Feature Release 1/Service Pack 1
- Citrix MetaFrame XP(s,a,e) Feature Release 2/Service Pack 2
- Citrix Presentation Server 3.5
- Citrix Presentation Server 4.x
- Citrix XenApp 4.6

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Setup Requirements and User Permissions

The following are important requirements for using the SiteScope Citrix monitor:

- ▶ SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.
- ▶ The Remote Registry service must be running on the machine where the Citrix is running if Citrix is running on a Windows 2000 platform.
- ▶ The Citrix Resource Manager must be available, installed, and running on the Citrix servers you want to monitor.
- ▶ One or more Citrix vusers must have established a connection with the Citrix server to enable viewing of ICA Session object.
- ▶ The Citrix monitor requires the same permissions (trust level between monitoring and monitored machines) in Windows 2003 as Microsoft Windows Resources monitor. For details, see "Configuring the Monitor to Run on Windows 2003 as a Non-Administrator User" in *Using SiteScope*.

Troubleshooting and Limitations

Perform the following steps to troubleshoot the Citrix monitor.

- 1 Open a command line window (DOS prompt).
- 2 Enter the following command, substituting the host name as required:

```
C:\>perfex \\hostname -u username -p password -h | find "ICA"
```

- 3 This should return the following response:

```
(3378) ICA Session  
(3386) ICA Session  
(3379) This object has several counters that can be used to monitor the performance in  
ICA sessions  
(3387) This object has several counters that can be used to monitor the performance in  
ICA sessions"  
ICA Session" 3386 performance in ICA sessions
```

If you do not get a similar response, either the counters are not available on the remote server or you a more descriptive error message is displayed indicating what might be the problem.

Reference

Citrix Monitor Settings

This monitor enables you to monitor the availability of the Citrix Presentation (MetaFrame) server.

Description	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 61. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Citrix Monitor Overview" on page 58

Citrix Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Server where the Citrix server you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed in the server list. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>The server performance counters selected for this monitor. Use the Get Counters button to select counters. For information about the Citrix performance counters, see Appendix C of the MetaFrame Presentation Server 4.0 Administrator's Guide (http://support.citrix.com/article/CTX106319).</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>

UI Element	Description
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.

9

ColdFusion Server Monitor

This chapter includes:

Concepts

- ▶ ColdFusion Server Monitor Overview on page 68

Reference

- ▶ ColdFusion Server Monitor Settings on page 71

Concepts

ColdFusion Server Monitor Overview

Use the ColdFusion Server monitor to monitor the server performance statistics from ColdFusion 4.5.x servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate ColdFusion Server monitor instance for each ColdFusion server in your environment. The error and warning thresholds for the monitor can be set on one or more ColdFusion server performance statistics.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "ColdFusion Server Monitor Settings" on page 71.

This section also includes:

- ▶ "Setup Requirements" on page 69
- ▶ "IPv6 Addressing Supported Protocols" on page 70

Setup Requirements

The following are important requirements for using the ColdFusion Server monitor:

- ▶ The ColdFusion Server monitor makes use of performance counters to measure application server performance. SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.
- ▶ The Remote Registry service must be running on the machine where the ColdFusion server is running if ColdFusion is running on Windows 2000.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

ColdFusion Server Monitor Settings

This monitor enables you to monitor the availability of a ColdFusion server (versions 4.5x) on Windows NT systems.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 69. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "ColdFusion Server Monitor Overview" on page 68

ColdFusion Server Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Server where the ColdFusion Server you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed in the server list. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>Server performance counters selected for this monitor. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

10

COM+ Server Monitor

This chapter includes:

Concepts

- ▶ COM+ Server Monitor Overview on page 76

Tasks

- ▶ How to Configure the COM+ Monitoring Environment on page 78

Reference

- ▶ COM+ Server Monitor Settings on page 80

Concepts

COM+ Server Monitor Overview

Use the COM+ Server monitor to monitor the performance of COM+ software components registered and running on Microsoft Windows Server 2000 and Microsoft Windows Server 2003. When you specify the host and port number of this probe instance, SiteScope retrieves all the functions running on the COM+ server for your monitoring selection. Error and warning thresholds for the monitor can be set on one or more function measurements.

Note: The COM+ Server monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.

For details on configuring the monitor, see "COM+ Server Monitor Settings" on page 80.

Setup Requirements

The following are several key requirements for using the COM+ Server monitor:

- ▶ A COM+ probe component from HP must be installed and running on the target COM+ server you want to monitor. For details on how to perform this task, see "How to Configure the COM+ Monitoring Environment" on page 78.
- ▶ There must be HTTP connectivity between the SiteScope server and the server running the COM+ probe.

- To enable this monitor type in SiteScope, an Option license for the COM+ Server monitor must be obtained and input into SiteScope.

Note: You cannot have multiple SiteScope instances share one probe instance. You can have multiple COM+ Server monitors within a single SiteScope installation access the same probe instance (uniquely identified by the probe host and port). The probe cannot serve data to multiple SiteScope installations.

Tasks

How to Configure the COM+ Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 78
- "Install the COM+ probe" on page 78
- "Start the COM+ probe" on page 79
- "Configure the monitor properties" on page 79

1 Prerequisites

- An Option license for the COM+ Server monitor must be obtained and input into SiteScope.
- There must be HTTP connectivity between the SiteScope server and the server running the COM+ probe.

2 Install the COM+ probe

A COM+ probe component must be installed and running on the target COM+ server you want to monitor.

- a** Go to the HP Software Support site (<http://www.hp.com/go/hpsoftwaresupport>) and in the **Where do I find** section, click **Software patches**.

Note: To access the Patches search page, you must log in with your HP Passport user name and password.

- b** In the **Product** section, select **SiteScope**.

- c** In the optional search box, enter **COM+** and click **Search**.
- d** Download the COM+ probe from the results.
- e** After downloading, follow the instructions for installing the probe on the COM+ server to be monitored.

3 Start the COM+ probe

After successfully installing the probe, you must start it prior to running or defining a COM+ Server monitor, by invoking **mon_cplus_probe.exe** found in the COM+ probe's **bin** directory. By default, the installation creates this file at **C:\Program Files\Mercury Interactive\COMPlusMonitor\bin**.

4 Configure the monitor properties

Create a COM+ Server monitor, and specify the COM+ probe for the target COM+ server. The COM+ probe is queried for a list of available functions to monitor, and a browse tree is displayed. Select the COM+ functions or counters that you want to measure.

Complete the other COM+ Server monitor fields as required.

For user interface details, see "COM+ Server Monitor Settings" on page 80.

Reference

COM+ Server Monitor Settings

The COM+ Server monitor monitors the performance of software components registered and running on Microsoft COM+ servers.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 76. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the COM+ Monitoring Environment" on page 78 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "COM+ Server Monitor Overview" on page 76

COM+ Monitor Settings

User interface elements are described below:

UI Element	Description
COM+ probe host name	Host name of the COM+ probe.
COM+ probe port number	Port number of the COM+ probe. Default value: 8008
Credentials	<p>Option for providing the user name and password authorization to the COM+ probe:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
HTTP proxy	Domain name and port of an HTTP proxy server if a proxy server is used to access the probe.
Proxy server user name	Proxy user name if the proxy server requires a name and password to access the probe. Your proxy server must support Proxy-Authenticate for these options to function.
Proxy server password	Proxy password if the proxy server requires a name and password to access the probe.

UI Element	Description
<p>Timeout (seconds)</p>	<p>Number of seconds that the monitor should wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p> <p>Note: Depending on the activity on the server, the time to build the server monitor statistics Web page may take more than 15 seconds. You should test the monitor with a timeout value of more than 60 seconds to enable the server to build and serve the server monitor statistics Web page before the SiteScope monitor is scheduled to run again.</p>
<p>Counters</p>	<p>Server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
<p>Get Counters</p>	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

11

Composite Monitor

This chapter includes:

Concepts

- ▶ Composite Monitor Overview on page 84

Reference

- ▶ Composite Monitor Settings on page 85

Concepts

Composite Monitor Overview

Each time the Composite monitor runs, it returns a status based on the number and percentage of items in the specified monitors and/or groups currently reporting an error, warning, or OK status. It writes the percentages reported in the monitoring log file.

Use this monitor if you want to create complex monitor alert logic. For example, if you want to trigger an alert when:

- ▶ five or more monitors in a group of eight are in error
- ▶ three or more groups have monitors with errors in them
- ▶ you have two monitors, and exactly one is in error

then you could create a Composite monitor that went into error on these conditions, and then add alerts on the Composite monitor to take the desired actions.

If you need alert logic that is more complex than SiteScope's standard alerts allow, you can use the Composite monitor to create a customized alert behavior.

For details on configuring the monitor, see "Composite Monitor Settings" on page 85.

Reference

Composite Monitor Settings

This monitor enables you to monitor complex network environments by checking the status readings of a set of other SiteScope monitors and/or monitor groups.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When using this monitor to monitor a URL monitor in which at least one of the steps uses a session cookie to send to the server instead of logging in each time, the Composite monitor saves the context including the cookie. This means that the login information does not need to be entered again, as the login credentials are sent in a cookie. ▶ The Composite monitor is not supported in template mode.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Composite Monitor Overview" on page 84

Composite Monitor Settings

User interface elements are described below:

UI Element	Description
Items	<p>Click the Add  button to open the Add Items dialog box, and select the monitors and/or groups that you want in the Composite monitor. For details on the Add Items dialog box, see "Add Items Dialog Box" on page 87.</p> <p>To remove items from the list, select the monitors and/or groups you want to remove (you can select multiple items using the CTRL or SHIFT keys), and click the Delete  button.</p>
Run monitors	<p>The Composite monitor controls the scheduling of the selected monitors, as opposed to just checking their status readings.</p> <p>Monitors that are to be run this way should not also be run separately, so edit the individual monitors, set the Frequency box for that monitor to zero ("0"), and save the changes. Those monitors then run only when scheduled by the Composite monitor. This is useful if you want the monitors to run one after another or run at approximately the same time.</p> <p>Default value: Not selected</p>
Monitor delay (seconds)	<p>Amount of time, in seconds, to wait between running each monitor (if Run monitors is selected).</p> <p>This setting is useful if you need to wait for processing to occur on your systems before running the next monitor.</p> <p>Default value: 0 seconds</p>
Check all monitors in group(s)	<p>All monitors in the selected groups (and their subgroups) are checked and counted.</p> <p>Default value: Not selected (each group is checked and counted as a single item when checking status readings).</p>

Add Items Dialog Box

This dialog box enables you to select the monitors and/or groups that you want in the Composite monitor.

To access	In the monitor view, right-click a group and select New > Monitor . Select the Composite monitor from the New Monitor Page, and click the Add Items  button.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Composite Monitor Overview" on page 84

User interface elements are described below:

UI Element	Description
Add Selected Items	Click to add the selected groups and/or monitors to the Composite monitor.
 SiteScope	Represents the SiteScope root directory.
	Represents a SiteScope monitor group or subgroup (with enabled monitors/with no monitors or no enabled monitors). If a group alert has been set up for the monitor group or subgroup, the alert  symbol is displayed next to the group icon.
	Represents a SiteScope monitor (enabled/disabled). If an alert has been set up for the monitor, the alert  symbol is displayed next to the monitor icon.

12

CPU Monitor

This chapter includes:

Concepts

- ▶ CPU Monitor Overview on page 90

Reference

- ▶ CPU Monitor Settings on page 93

Concepts

CPU Monitor Overview

Use the CPU monitor to monitor the percentage of CPU time that is currently being used on the server. By monitoring CPU usage, you can prevent poor system response times and outages before they occur.

Whether the servers in your infrastructure are running with a single CPU or with multiple CPUs, you only need to create one CPU monitor per remote server. If you have multiple CPUs, SiteScope reports on the average usage for all of them, as well as each individual CPU usage.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "CPU Monitor Settings" on page 93.

This section contains the following topics:

- ▶ "Status" on page 91
- ▶ "IPv6 Addressing Supported Protocols" on page 91
- ▶ "Scheduling the Monitor" on page 92
- ▶ "Troubleshooting and Limitations" on page 92

Status

The Status reading is the current value returned by this monitor; for example, 68% used. SiteScope displays an average for multiple CPU systems. On NT, this is the average CPU usage between runs of the monitor. On UNIX, this is the instantaneous CPU when the monitor runs.

The status is logged as either OK or warning. A warning status is returned if the CPU is in use more than 90% of the time.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)
- ▶ SSH (from SiteScope installed on UNIX platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Scheduling the Monitor

In general, the CPU monitor does not need to be run as often as some of the other monitors. If you do not usually suffer from CPU problems, you can run it less frequently, perhaps every half hour or so. If you are prone to CPU usage problems, you should run it more frequently. All machines have short spikes of CPU usage, but the primary thing that you are looking for is high usage on a regular basis. This indicates that your system is overloaded and that you need to look for a cause.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the CPU monitor.

Problem: Unable to monitor CPU usage on a clean installation of Linux RedHat 4.

Cause: The mpstat command that SiteScope runs on the monitored server as depicted in <SiteScope root directory>\Templates.os folder (/usr/bin/mpstat), is not deployed by default on a Linux machine. Linux installations come with a sysstat package.

Solution: In a terminal window, type `up2date sysstat` to deploy the mpstat package.

Problem: Getting invalid CPU value error message in <SiteScope root directory>\logs\RunMonitor.log file when using perfmon monitors on VMware host servers.

Solution: Use the VMWare Performance monitor to measure CPU on VMWare host servers.

Reference

CPU Monitor Settings

This monitor enables you to monitor the percentage of CPU time that is currently being used on the server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ The Performance Counters Tool is available when configuring this monitor to check performance counters on a specific machine in a Windows NT/2000 network (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Performance Counters Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "CPU Monitor Overview" on page 90

CPU Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Server where the CPU you want to monitor is running. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed here. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When configuring this monitor on SiteScopes running on UNIX versions, only remote servers that have been configured with an SSH connection method are displayed. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>

13

Database Counter Monitor

This chapter includes:

Concepts

- ▶ Database Counter Monitor Overview on page 98

Reference

- ▶ Database Counter Monitor Settings on page 102

Concepts

Database Counter Monitor Overview

Use the Database Counter monitor to make SQL queries for performance metrics from any JDBC-accessible database. This monitor provides optional support for calculating deltas and rates for metrics between monitor runs. You can monitor multiple counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. The error and warning thresholds for the monitor can be set on one or more database server performance statistics.

This monitor supports monitoring on any database with a valid JDBC driver that supports SQL queries.

For details on configuring the monitor, see "Database Counter Monitor Settings" on page 102.

This section also includes:

- ▶ "Setup Requirements and User Permissions" on page 99
- ▶ "IPv6 Addressing Supported Protocols" on page 101

Setup Requirements and User Permissions

The following are several key requirements for using the Database Counter monitor:

- You must have a copy of the applicable JDBC database driver file on the SiteScope server. Copy the downloaded driver file into the `<SiteScope root directory>\WEB-INF\lib` subdirectory. If the file is in zip format, do not unzip the file. Stop and restart the SiteScope service after copying the driver file to the SiteScope machine.
- You must know the syntax for accessing the database driver. Examples of common database driver strings are:
 - **sun.jdbc.odbc.JdbcOdbcDriver.** JDBC-ODBC Bridge Driver from Sun Microsystems.
 - **com.inet.tds.TdsDriver.** TDS driver from i-net Software for Microsoft SQL databases. This driver is deployed with SiteScope.
 - **com.inet.ora.OraDriver.** A driver from Oracle for Oracle databases. This driver is deployed with SiteScope.
 - **com.mercury.jdbc.sqlserver.SQLServerDriver.** DataDirect driver from DataDirect Technologies. It is an alternative to the TDS driver for those Microsoft SQL databases that use Windows NT authentication. This driver is deployed with SiteScope.
 - **oracle.jdbc.driver.OracleDriver.** SiteScope supports the following categories of JDBC driver that are supplied by Oracle:
 - JDBC thin driver for Oracle 7 and 8 databases.
 - JDBC OCI (thick) driver. For details on accessing Oracle databases using OCI driver, see "Access Oracle databases using OCI driver – optional" on page 115.
 - **com.mercury.jdbc.oracle.OracleDriver.** A driver for Oracle databases. This driver is deployed with SiteScope. When using the Oracle mercury driver, the database connection URL has the form of:
`jdbc:mercury:oracle://<server name or IP address>:<database server port>;sid=<sid>`
 - **org.postgresql.Driver.** The database driver for the Postgresql database.

- ▶ You must know the syntax for the Database connection URL. The Database connection URL normally includes the class of driver you are using, some key name relating to the supplier of the driver software, followed by a combination of server, host, and port identifiers.

Examples of common database connection URLs are:

- ▶ **jdbc:odbc:<dsname>**
where <dsname> is the data source name in the system environment or configuration.
- ▶ **jdbc:inetdae:<hostname>:<port>**
where <hostname> is the name of the host where the database is running and <port> is the port on which the database interfaces with the driver.
- ▶ **jdbc:mercury:sqlserver://<hosthost>:1433;DatabaseName=master; AuthenticationMethod=type2**
where <hostname> is the name of the host where the database is running.
- ▶ **jdbc:oracle:thin:@<hostname>:<port>:<dbname>**
where <hostname> is the name of the host where the database is running, <port> is the port on which the database interfaces with the driver, and <dbname> is the SID of the Oracle database instance.
- ▶ **jdbc:postgresql://<hostname>:<port>/<dbname>**
where <hostname> is the name of the host where the database is running, <port> is the port on which the database interfaces with the driver, and <dbname> is the name of the Postgresql database.
- ▶ Generally, you should only have one instance of each type of JDBC driver client installed on the SiteScope machine. If there is more than one instance installed, SiteScope may report an error and be unable to connect to the database. For example, installing two **classes12.zip** files from two different versions of Oracle is unlikely to work.
- ▶ You must have a database user login that SiteScope can use to access the database with CREATE SESSION system privileges. SiteScope is only able to run the SQL queries that this user has permission to run on the database.

Note: When Windows authentication is used to connect to the database, configure SiteScope using the following settings:

- ▶ **Database connection URL:** jdbc:mercury:sqlserver://<server name or IP address>:1433;DatabaseName=<database name>; AuthenticationMethod=type2.
 - ▶ **Database driver:** com.mercury.jdbc.sqlserver.SQLServerDriver.
 - ▶ Leave the **Database User name** and **Database Password** boxes empty, because the Windows user credentials of the account from which the SiteScope service is running are used to establish a connection to the database.
-

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the TCP (JDBC) protocol. Support for IPv6 might also depend on the JDBC driver being used.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Database Counter Monitor Settings

The Database Counter monitor enables you to monitor the availability of any database through a JDBC driver.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 99. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ The Database Connection Tool is available when configuring this monitor to test and verify connectivity between SiteScope and an external ODBC or JDBC compatible database (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Database Connection Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Database Counter Monitor Overview" on page 98

Database Counter Monitor Settings

User interface elements are described below:

UI Element	Description
Database connection URL	<p>Connection URL to the database you want to connect to. The syntax is <code>jdbc:oracle:thin:@<server name or IP address>:<database server port>:<sid></code>.</p> <p>Example: To connect to the ORCL database on a machine using port 1521 use: <code>jdbc:oracle:thin:@206.168.191.19:1521:ORCL</code>. The colon (:) and the (@) symbols must be included as shown.</p> <p>Note for using Windows Authentication: If you want to access the database using Windows authentication, enter <code>jdbc:mercury:sqlserver://<server name or IP address>:1433;DatabaseName=<database name>;AuthenticationMethod=type2</code> as the connection URL, and <code>com.mercury.jdbc.sqlserver.SQLServerDriver</code> as your database driver. Leave the Database user name and Database password boxes empty, because the Windows user credentials of the account from which the SiteScope service is running are used to establish a connection to the database.</p>
Query	<p>SQL query that returns at least two columns of data. The values in the first column of data are interpreted as the labels for the entries in the each row. The values in the first row are treated as labels for each entry in the column.</p>
Database driver	<p>Driver used to connect to the database.</p> <p>Example: <code>org.postgresql.Driver</code></p>
Database machine name	<p>Identifier for the target database server, as it should be reported to HP Business Service Management.</p>
Divisor query	<p>SQL query that returns a single numeric value. The value of each counter is calculated by dividing the counter value as retrieved from the database divided by the Divisor Query value.</p>

UI Element	Description
No cumulative counters	Turns off the default behavior of calculating the value of a counter as the difference between that counter's cumulative values (as retrieved from the database on consecutive monitor runs).
No divide counters	Turns off the default behavior of calculating the value of a counter as the value retrieved from the database (or the delta of two values retrieved from the database over consecutive monitor runs) divided by some number. The divisor is either taken from the Divisor Query, or it is the elapsed time in seconds since the previous monitor run.
Credentials	Option for providing the user name and password to be used to access the database server: <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
Counters	Server performance counters you want to check with this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

Database Connection Settings

The Database Connection Settings enable you to retrieve, share, and reuse database connections for database monitors that use any JDBC-compliant driver. When multiple database monitors use the same database, using a connection pool instead of an open connection for each monitor improves monitor performance and optimizes database server resource utilization.

Connections can be shared regardless of monitor enter. For example, SiteScope database logger, database tools (Database Connection, Database Information), database alerts, and database monitors (Oracle Database, Database Counter, Database Query, DB2 8.x and 9.x, Technology Database Integration, and so forth) can share and reuse database connections in a connection pool.

Important information	You can set additional database options that affect all resources that connect to the database in the JDBC Global Options in the General Preferences container.
See also	"JDBC Global Options" in <i>Using SiteScope</i>

User interface elements are described below:

UI Element	Description
Use connection pool	Enables SQL connection sharing. This means that you use a connection pool rather than open and close a new connection for each monitor query. Default value: Selected
Physically close if idle connection count exceeds	Maximum number of unused SQL connections in the SQL connection pool. When this number is exceeded, unused connections are closed rather than returned to the connection pool. Default value: 10

UI Element	Description
<p>Idle connection timeout</p>	<p>Maximum amount of time, in seconds/minutes/hours/days, that a SQL connection remains unused after it has been returned to the SQL connection pool. When the time is exceeded, the connection is automatically closed.</p> <p>Default value: 5 minutes</p>
<p>Query timeout</p>	<p>Amount of time, in seconds/minutes/hours/days, to wait for execution of a SQL statement. Not all SQL drivers have this function. If your SQL driver does not support this function, this parameter is ignored.</p> <p>Default value: 1 minute</p>

14

Database Query Monitor

This chapter includes:

Concepts

- ▶ Database Query Monitor Overview on page 108

Tasks

- ▶ How to Configure the Database Query Monitoring Environment on page 114

Reference

- ▶ Database Query Monitor Settings on page 121

Concepts

Database Query Monitor Overview

Use the Database Query monitor to monitor the availability and proper functioning of your database application. If your database application is not working properly, the user may not be able to access Web content and forms that depend on the database. Most importantly, the user cannot complete e-commerce transactions that are supported by databases. You can also use the Database Query monitor to isolate performance bottlenecks. If the database interaction time and the associated user URL retrieval times are both increasing at about the same amount, the database is probably the bottleneck.

This monitor supports monitoring on any database with a valid JDBC driver that supports SQL queries.

For task details, see "How to Configure the Database Query Monitoring Environment" on page 114.

For user interface details, see "Database Query Monitor Settings" on page 121.

This section contains the following topics:

- "What to Monitor" on page 109
- "Setup Requirements and User Permissions" on page 109
- "IPv6 Addressing Supported Protocols" on page 112
- "Troubleshooting and Limitations" on page 112

What to Monitor

Usually the most important thing to monitor in databases are the queries used by your most frequently used and most important Web applications. If more than one database is used, you must monitor each of the databases.

Each time the Database Query monitor runs, it returns a status, the time it takes to perform the query, the number of rows in the query result, and the first two fields in the first row of the result and writes them in the monitoring log file.

You can also monitor internal database statistics. The statistics provided by each database are different but may include items such as database free space, transaction log free space, transactions/second, and average transaction duration.

Setup Requirements and User Permissions

The steps for setting up a Database Query monitor vary according to what database software you are trying to monitor. The following is an overview of the requirements for using the Database Query monitor:

- ▶ You must install or copy a compatible JDBC database driver or database access API into the required SiteScope directory location.

Many database driver packages are available as compressed (zipped) archive files or .jar files. Copy the downloaded driver file into the **<SiteScope root directory>\WEB-INF\lib** subdirectory. Do not unzip the file.

- ▶ You must know the syntax for accessing the database driver. Examples of common database driver strings are:
 - ▶ **sun.jdbc.odbc.JdbcOdbcDriver**. JDBC-ODBC Bridge Driver from Sun Microsystems.
 - ▶ **com.inet.tds.TdsDriver**. TDS driver from i-net Software for Microsoft SQL databases. This driver is deployed with SiteScope.
 - ▶ **com.inet.ora.OraDriver**. A driver from Oracle for Oracle databases. This driver is deployed with SiteScope.

- ▶ **com.mercury.jdbc.sqlserver.SQLServerDriver.** Datadirect driver from DataDirect Technologies. It is an alternative to the TDS driver for those Microsoft SQL databases that use Windows NT authentication. This driver is deployed with SiteScope.
- ▶ **oracle.jdbc.driver.OracleDriver.** SiteScope supports the following categories of JDBC driver that are supplied by Oracle:
 - ▶ JDBC thin driver for Oracle 7 and 8 databases.
 - ▶ JDBC OCI (thick) driver. For details on accessing Oracle databases using OCI driver, see "Access Oracle databases using OCI driver – optional" on page 115.
- ▶ **com.mercury.jdbc.oracle.OracleDriver.** A driver for Oracle databases. This driver is deployed with SiteScope. When using the Oracle mercury driver, the database connection URL has the form of:
jdbc:mercury:oracle://<server name or IP address>:<database server port>;sid=<sid>
- ▶ You must know the syntax for the database connection URL. The database connection URL normally includes the class of driver you are using, some key name relating to the supplier of the driver software, followed by a combination of server, host, and port identifiers.

Examples of common database connection URLs are:

- ▶ **jdbc:odbc:<dsname>**
where <dsname> is the data source name in the system environment or configuration.
- ▶ **jdbc:inetdae:<hostname>:<port>**
where <hostname> is the name of the host where the database is running and <port> is the port on which the database interfaces with the driver.

- ▶ **jdbc:mercury:sqlserver://<hostname>:1433;DatabaseName=master;AuthenticationMethod=type2**
where <hostname> is the name of the host where the database is running.
- ▶ **jdbc:oracle:thin:@<hostname>:<port>:<dbname>**
where <hostname> is the name of the host where the database is running, <port> is the port on which the database interfaces with the driver, and <dbname> is the name of the Oracle database instance.
- ▶ The database you want to monitor needs to be running, have a database name defined, and have at least one named table created in the database. In some cases, the database management software needs to be configured to enable connections by using the middleware or database driver.
- ▶ You need a valid user name and password to access and perform a query on the database. In some cases, the machine and user account that SiteScope is running on must be given permissions to access the database.
- ▶ You must know a valid SQL query string for the database instance and database tables in the database you want to monitor. Consult your database administrator to work out required queries to test.

Note: When Windows authentication is used to connect to the database, configure SiteScope using the following settings:

- ▶ **Database connection URL:** jdbc:mercury:sqlserver://<server name or IP address>:1433;DatabaseName=<database name>; AuthenticationMethod=type2.
 - ▶ **Database driver:** com.mercury.jdbc.sqlserver.SQLServerDriver.
 - ▶ Leave the **Database user name** and **Database password** boxes empty, because the Windows user credentials of the account from which the SiteScope service is running are used to establish a connection to the database.
-

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the TCP (JDBC) protocol. Support for IPv6 might also depend on the JDBC driver being used.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the Database Query monitor.

Possible Errors Using the Oracle Thin Driver

- ▶ **error, connect error, No suitable driver:** check for syntax errors in Database connection URL, such as dots instead of colons.
- ▶ **error, connect error, lo exception: The Network Adapter could not establish the connection:** in Database connection URL, check `jdbc:oracle:thin:@206.168.191.19:1521:ORCL`.
- ▶ **error, connect error, lo exception: Invalid connection string format, a valid format is: "host:port:sid":** in Database connection URL check `jdbc:oracle:thin:@206.168.191.19:1521:ORCL`.
- ▶ **error, connect error, Invalid Oracle URL specified: OracleDriver.connect:** in Database connection URL, check for a colon before the "@" `jdbc:oracle:thin:@206.168.191.19:1521:ORCL`.
- ▶ **Refused:OR=(CODE=12505)(EMFI=4)))):** in Database connection URL, check the database SID is probably incorrect (ORCL part). This error can also occur when the tcp address, or tcp port is incorrect. If this is the case, verify the tcp port and check with the your database administrator to verify the proper SID.
- ▶ **String Index out of range: -1:** in Database connection URL, check for the database server address, port, and the database SID.
- ▶ **error, driver connect error, oracle.jdbc.driver.OracleDriver:** check syntax in item Database driver.

- ▶ **error, driver connect error, oracle.jdbc.driver.OracleDriver:** check that driver is loaded in correct place.
- ▶ **error, connect error, No suitable driver:** check driver specified in item Database driver.
- ▶ **error, connect error, No suitable driver:** check for syntax errors in Database connection URL, such as dots instead of colons.

Possible Errors Using the MySQL Driver

If, after setting this up, you get an authorization error in the Database Query monitor, then you may have to grant rights for the SiteScope machine to access the MySQL database. Consult the MySQL Database administrator for setting up privileges for the SiteScope machine to access the MySQL server.

Possible Errors with Sybase Database Monitoring

- ▶ Verify you are using the correct driver for the version of Sybase you are monitoring. Enter `com.sybase.jdbc.SybDriver` for Sybase version 4.x. and `com.sybase.jdbc2.jdbc.SybDriver` for Sybase version 5.x.
- ▶ If you get the error: **error, driver connect error, com/sybase/jdbc/SybDriver**, verify that there are no spaces at the end of the driver name. Save the changes and try the monitor again.
- ▶ If you get the error: **connect error, JZ006: Caught IOException: java.net.UnknownHostException: dbservername**, verify the name of the database server in the **Database connection URL** box is correct.

Tasks

How to Configure the Database Query Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 115
- "Access Oracle databases using OCI driver – optional" on page 115
- "Access Oracle databases without using ODBC - optional" on page 116
- "Enable SiteScope to monitor an Informix database – optional" on page 117
- "Enable SiteScope to monitor a MySQL database – optional" on page 118
- "Enable SiteScope to monitor a Sybase database – optional" on page 118
- "Configure the monitor properties" on page 120

1 Prerequisites

There are several key requirements for using this monitor. For concept details, see "Setup Requirements and User Permissions" on page 109.

2 Access Oracle databases using OCI driver – optional

You can monitor an Oracle database using an OCI driver. If the port or SID are changed, you only need to make the change in the **tnsnames.ora** file (the SiteScope Oracle monitors remain unchanged).

- a** On the SiteScope server, install the version of Oracle client that you are using.
- b** Connect to the Oracle database using the Oracle OCI driver.
 - Set **ORACLE_HOME** environment variable (**ORACLE_HOME** is the folder where the Oracle client or database has been installed).
 - Add **ORACLE_HOME\lib** to System PATH (on Windows platforms), or **LD_LIBRARY_PATH** env variable (on UNIX platforms).
 - Set **CLASSPATH** environment variable to use Oracle JDBC driver from **ORACLE_HOME\jdbc\lib**.
- c** In the **\oracle\oraX\network\admin\tnsnames.ora** file, configure the service name. You can test this using a SQL+ tool or the SiteScope Database Connection tool (see Database Connection Tool in *Using SiteScope* in the SiteScope Help).
- d** Add a database monitor within SiteScope, and configure the following settings in the Monitor Settings panel:
 - **Database connection URL:** jdbc:oracle:oci8:@<service name>
 - **Database driver:** oracle.jdbc.driver.OracleDriver
 - Enter the database user credentials in the **Database user name** and **Database password** boxes

3 Access Oracle databases without using ODBC - optional

If you want to monitor an Oracle database without using ODBC, you can use the Oracle Thin JDBC Drivers.

- a** To set up SiteScope to use the JDBC Thin Drivers, download the Oracle Thin JDBC drivers from the Oracle Web site (may require service/support agreement with Oracle).
- b** Copy the downloaded driver package into the `<SiteScope root directory>\WEB-INF\lib` subdirectory.

Note: Do not extract the files from the archive file.

- c** Stop and restart the SiteScope service.
- d** Add a Database Query monitor within SiteScope, and configure the following settings in the Monitor Settings panel:

- ▶ **Database connection URL.** The format for the Oracle JDBC driver is:

`jdbc:oracle:thin:@<tcp address>:<tcp port>:<database SID>`

For example to connect to the ORCL database on a machine using port 1521 you would use:

`jdbc:oracle:thin:@206.168.191.19:1521:ORCL`

Note: After the word thin is a colon (:) and an at (@) symbol.

- ▶ **Database driver.** Enter the following string:
`oracle.jdbc.driver.OracleDriver.`

For a list of possible errors using the Oracle Thin Driver, see "Possible Errors Using the Oracle Thin Driver" on page 112.

4 Enable SiteScope to monitor an Informix database – optional

Monitoring a Informix database requires the use of a JDBC driver.

- a** Download the Informix JDBC driver from Informix. See the Informix Web site for details.
- b** Uncompress the distribution file.
- c** Open a DOS window and go to the `jdbc140jc2` directory.
- d** Unpack the driver by running the following command:


```
c:\SiteScope\java\bin\java -cp . setup
```
- e** Copy `ifxjdbc.jar` to the `<SiteScope root directory>\WEB-INF\lib` subdirectory.
- f** Stop and restart SiteScope.
- g** Add a Database Query monitor within SiteScope, and configure the following settings in the Monitor Settings panel:

- **Database connection URL.** The format for the Informix JDBC driver is:

```
jdbc:informix-sqli://<database hostname>:<tcp port><database server>:INFORMIXSERVER=<database>
```

- If you require a **Database user name** and **Database password**, the database connection URL format for the Informix JDBC driver is:

```
jdbc:informix-sqli://<database hostname>:<tcp port><database server>:INFORMIXSERVER=<database>;user=myuser;password=myspassword
```

For example, to connect to the Database Server `sysmaster` running on the machine called `pond.thiscompany.com` and the Database called `maindbase`, type:

```
jdbc:informix-sqli://pond.thiscompany.com:1526/sysmaster:INFORMIXSERVER=maindbase;
```

- **Database driver.** Enter the Informix JDBC driver `com.informix.jdbc.IfxDriver`

5 Enable SiteScope to monitor a MySQL database – optional

Monitoring a MySQL database requires the use of a JDBC driver.

- a** Download the MySQL JDBC driver from the MySQL web site (<http://www.mysql.com>).
- b** Uncompress the distribution file.
- c** Copy the .jar file into the <SiteScope root directory>\WEB-INF\lib directory.
- d** Stop and restart SiteScope.
- e** Add a Database Query monitor within SiteScope, and configure the following settings in the Monitor Settings panel:

- ▶ **Database connection URL.** The format for the MySQL JDBC driver is:

```
jdbc:mysql://<database hostname>[:<tcp port>]/<database>
```

For example to connect to the MySQL database "aBigDatabase" on a machine using the standard MySQL port number 3306 you would use:

```
jdbc:mysql://206.168.191.19/aBigDatabase
```

If you are using a different port to connect to the database, include that port number as part of the IP address.

- ▶ **Database driver.** Enter the specification for the MySQL JDBC driver: `org.gjt.mm.mysql.Driver`

6 Enable SiteScope to monitor a Sybase database – optional

To use JDBC drivers with your Sybase SQL server, perform the following steps:

- a** Obtain the driver for the version of Sybase that you are using. For example, for version 5.X databases you need **jconn2.jar**. If you have Jconnect, you should be able to find a driver in the Jconnect directory.
- b** Place the zip file in the <SiteScope root directory>\WEB-INF\lib directory. Do not extract the zip file.
- c** Stop and restart the SiteScope service.

- d** Add a Database Query monitor within SiteScope, and configure the following settings in the Monitor Settings panel:
- ▶ **Database connection URL.** Use the syntax of:
`jdbc:sybase:Tds:hostname:port`
 For example to connect to SQL server named bgsu97 listening on port 2408, you would enter:
`jdbc:sybase:Tds:bgsu97:2408`
 - ▶ You can specify a database by using the syntax:
`jdbc:sybase:Tds:hostname:port#/database`
 For example to connect to SQL server named bgsu97 listening on port 2408 and to the database of quincy, you would enter:
`jdbc:sybase:Tds:bgsu97:2408/quincy`
 - ▶ **Database driver.** Enter `com.sybase.jdbc.SybDriver` (for Sybase version 4.x) or `com.sybase.jdbc2.jdbc.SybDriver` (for Sybase version 5.x).
 - ▶ Enter the **Database user name** and **Database password**.
 - ▶ Enter a query string for a database instance and table in the Sybase database you want to monitor.
 For example, `Sp_help` should work and return something similar to:
 good, 0.06 sec, 27 rows, KIRK1, dbo, user table
 Alternately, the query string `select * from spt_ijdbc_mda` should return something similar to:
 Monitor: good, 0.06 sec, 175 rows, CLASSFORNAME, 1, create table #tmp_class_for_name (xtbinaryoffrow image null),
 sp_ijdbc_class_for_name(?), select * from #tmp_class_for_name, 1, 7, 12000, -1

7 Configure the monitor properties

Complete the Database Query monitor configuration. For user interface details, see "Database Query Monitor Settings" on page 121.

Note: You may want to monitor your most critical and most common queries frequently, every 2-5 minutes. Database statistics that change less frequently can be monitored every 30 or 60 minute.

Reference

Database Query Monitor Settings

Checks that a database is working correctly by connecting to it and performing a query. Optionally, it can check the results of a database query for expected content.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 109. ▶ The Database Connection Tool is available when configuring this monitor to test and verify connectivity between SiteScope and an external ODBC or JDBC compatible database (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Database Connection Tool" in <i>Using SiteScope</i>. <p>Note: When using the Database Connection Tool to apply properties to the monitor, you must enter the credential data manually (if you select a credential profile the credential data is lost).</p>
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the Database Query Monitoring Environment" on page 114 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Database Query Monitor Overview" on page 108

Database Query Monitor Settings

User interface elements are described below:

UI Element	Description
Database connection URL	<p>URL to a database connection (no spaces are allowed in the URL). One way to create a database connection is to use ODBC to create a named connection to a database.</p> <p>Example: First use the ODBC control panel to create a connection called <code>test</code>. Then, enter <code>jdbc:odbc:test</code> as the connection URL.</p> <p>Note for using Windows Authentication: If you want to access the database using Windows authentication, enter <code>jdbc:mercury:sqlserver://<server name or IP address>:1433;DatabaseName=<database name>;AuthenticationMethod=type2</code> as the connection URL, and <code>com.mercury.jdbc.sqlserver.SQLServerDriver</code> as your database driver. Leave the Database user name and Database password boxes empty, because the Windows user credentials of the account from which the SiteScope service is running are used to establish a connection to the database.</p>
Database driver	<p>Java class name of the JDBC database driver.</p> <p>The default driver uses ODBC to make database connections. SiteScope uses the same database driver for both primary and backup database connections.</p> <p>If a custom driver is used, the driver must also be installed in the <code><SiteScope root directory>\WEB-INF\lib</code> directory.</p> <p>Default value: <code>sun.jdbc.odbc.JdbcOdbcDriver</code></p>

UI Element	Description
Database user name	<p>User name used to log in to the database.</p> <p>If you are using Microsoft SQL server and the default driver (Sun Microsystem JDBC-ODBC bridge driver, sun.jdbc.odbc.JdbcOdbcDriver), you can leave this blank and choose NT Authentication when you setup the ODBC connection.</p> <p>With NT Authentication, SiteScope connects using the login account of the SiteScope service.</p> <p>Note: The specified user name must have privileges to run the query specified for the monitor.</p>
Database password	<p>Password used to login to the database.</p> <p>If you are using Microsoft SQL server and the default driver (Sun Microsystem JDBC ODBC bridge driver (sun.jdbc.odbc.JdbcOdbcDriver), you can leave this blank and choose NT Authentication when you create the ODBC connection.</p> <p>With NT Authentication, SiteScope connects using the login account of the SiteScope service.</p>
Query	<p>SQL query to test.</p> <p>Example: select * from sysobjects</p>

UI Element	Description
Match content	<p>Text string to check for in the query result. If the text is not contained in the result, the monitor displays no match on content. This works for XML tags as well.</p> <p>You may also perform a Perl regular expression match by enclosing the string in forward slashes, with an <i>i</i> after the trailing slash indicating case-insensitive matching.</p> <p>Example: <code>/href=Doc\d+\.\html/</code> or <code>/href=doc\d+\.\html/i</code></p> <p>If you want a particular piece of text to be saved and displayed as part of the status, use parentheses in a Perl regular expression.</p> <p>Example: <code>/Temperature: (\d+)/</code> would return the temperature as it appears on the page and this could be used when setting an Error if or Warning if threshold.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The search is case sensitive. ▶ You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.
File path	<p>Name of the file that contains the query you want to run. The file should be in a simple text format.</p> <p>Use this function as an alternative to the Query text box for complex queries or queries that change and are updated by an external application.</p>

UI Element	Description
Column labels	Field labels for the two columns returned by the query, separated by a comma (","). These column labels are used as data labels in SiteScope reports for Database Query Monitors. Note: The field labels should be two of the labels that are returned by the Query string entered above.
Database machine name	Text identifier describing the database server that this monitor is monitoring if you are reporting monitor data to an installation of HP Business Service Management. This text descriptor is used to identify the database server when the monitor data is viewed in an HP Business Service Management report.

Database Connection Settings

The Database Connection Settings enable you to retrieve, share, and reuse database connections for database monitors that use any JDBC-compliant driver. When multiple database monitors use the same database, using a connection pool instead of an open connection for each monitor improves monitor performance and optimizes database server resource utilization.

Connections can be shared regardless of monitor type. For example, SiteScope database logger, database tools (Database Connection, Database Information), database alerts, and database monitors (Oracle Database, Database Counter, Database Query, DB2 8.x and 9.x, Technology Database Integration, and so forth) can share and reuse database connections in a connection pool.

Important information	You can set additional database options that affect all resources that connect to the database in the JDBC Global Options in Preferences > General Preferences .
See also	"JDBC Global Options" in <i>Using SiteScope</i>

User interface elements are described below:

UI Element	Description
Use connection pool	<p>Enables SQL connection sharing. This means that you use a connection pool rather than open and close a new connection for each monitor query.</p> <p>Default value: Selected</p>
Physically close if idle connection count exceeds	<p>The maximum number of unused SQL connections in the SQL connection pool. When this number is exceeded, unused connections are closed rather than returned to the connection pool.</p> <p>Default value: 10</p>
Idle connection timeout	<p>The maximum amount of time, in seconds/minutes/hours/days, that a SQL connection remains unused after it has been returned to the SQL connection pool. When the time is exceeded, the connection is automatically closed.</p> <p>Default value: 5 minutes</p>
Query timeout	<p>The amount of time, in seconds/minutes/hours/days, to wait for execution of a SQL statement. Not all SQL drivers have this function. If your SQL driver does not support this function, this parameter is ignored.</p> <p>Default value: 1 minute</p>

15

DB2 8.x and 9.x Monitor

This chapter includes:

Concepts

- ▶ DB2 8.x and 9.x Monitor Overview on page 128

Reference

- ▶ DB2 8.x and 9.x Monitor Settings on page 130

Concepts

DB2 8.x and 9.x Monitor Overview

Use the DB2 8.x and 9.x monitor to monitor DB2 8.x and 9.x servers for availability and proper functioning. You can monitor multiple parameters or counters with a single monitor instance. This enables you to monitor server loading for performance, availability, and capacity planning. Create a separate DB2 monitor instance for each Database in your IBM DB2 environment. The error and warning thresholds for the monitor can be set on up to ten DB2 server performance statistics.

For details on configuring the monitor, see "DB2 8.x and 9.x Monitor Settings" on page 130.

This section contains the following topics:

- ▶ "Setup Requirements" on page 128
- ▶ "IPv6 Addressing Supported Protocols" on page 129
- ▶ "DB2 8.x and 9.x Topology Settings" on page 129

Setup Requirements

The following are several key requirements for using the DB2 8.x and 9.x monitor:

- ▶ JDBC drivers for connecting to the DB2 Database server. These can be found in your DB2 server installation directories. Copy the **db2jcc.jar** file to the `<SiteScope root directory>\java\lib\ext` folder.
- ▶ This monitor uses the Snapshot mirroring functionality supported by DB2. You must enable the Snapshot Mirror on your DB2 instance to retrieve counters. See the information from the IBM DB2 documentation (<http://www-128.ibm.com/developerworks/db2/library/techarticle/dm-0408hubel/>).

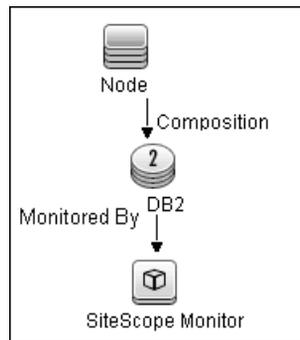
IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the TCP (JDBC) protocol. Support for IPv6 might also depend on the JDBC driver being used.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

DB2 8.x and 9.x Topology Settings

The DB2 8.x and 9.x monitor can identify the topology of the DB2 system being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Reference

DB2 8.x and 9.x Monitor Settings

This monitor enables you to monitor the availability and performance statistics of an IBM DB2 8.x or 9.x database.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ➤ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 128. ➤ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ➤ The Database Connection Tool is available when configuring this monitor to test and verify connectivity between SiteScope and an external ODBC or JDBC compatible database (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Database Connection Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	➤ "DB2 8.x and 9.x Monitor Overview" on page 128

DB2 8.x and 9.x Monitor Settings

User interface elements are described below:

UI Element	Description
DB2 server	Address or name of the server where the DB2 database is running.
Port	Port on which the DB2 database accepts connections. Default value: 50000
Database	DB2 database node name that you want to monitor. Default value: sample Example: DB2 is the default node name created by DB2 installation.
Credentials	Option for providing the user name and password to be used to access the DB2 database server: <ul style="list-style-type: none"> ➤ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box. ➤ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (selected by default). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
Partition	Partition to monitor. -1 is the current partition; -2 is all partitions. Default value: -1
Calculate rate	Calculates rates for counter values rather than the actual values returned from the monitored server. Example: If a counter counts logins and every second an average of two users log in to the database, the counter keeps growing. Selecting this option, the monitor displays the value 2, which means 2 user logins per second.

UI Element	Description
Counters	Server performance counters to check with this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

Database Connection Settings

The Database Connection Settings enable you to retrieve, share, and reuse database connections for database monitors that use any JDBC-compliant driver. When multiple database monitors use the same database, using a connection pool instead of an open connection for each monitor improves monitor performance and optimizes database server resource utilization.

Connections can be shared regardless of monitor type. For example, SiteScope database logger, database tools (Database Connection, Database Information), database alerts, and database monitors (Oracle database, Database Counter, Database Query, DB2 8.x and 9.x, Technology Database Integration, and so forth) can share and reuse database connections in a connection pool.

Important information	You can set additional database options that affect all resources that connect to the database in the JDBC Global Options in the General Preferences container.
See also	"JDBC Global Options" in <i>Using SiteScope</i>

User interface elements are described below:

UI Element	Description
Use connection pool	<p>Enables SQL connection sharing. This means that you use a connection pool rather than open and close a new connection for each monitor query.</p> <p>Default value: Selected</p>
Physically close if idle connection count exceeds	<p>Maximum number of unused SQL connections in the SQL connection pool. When this number is exceeded, unused connections are closed rather than returned to the connection pool.</p> <p>Default value: 10</p>
Idle connection timeout	<p>Maximum amount of time, in seconds/minutes/hours/days, that a SQL connection remains unused after it has been returned to the SQL connection pool. When the time is exceeded, the connection is automatically closed.</p> <p>Default value: 5 minutes</p>
Query timeout	<p>Amount of time, in seconds/minutes/hours/days, to wait for execution of a SQL statement. Not all SQL drivers have this function. If your SQL driver does not support this function, this parameter is ignored.</p> <p>Default value: 1 minute</p>

16

DHCP Monitor

This chapter includes:

Concepts

- ▶ DHCP Monitor Overview on page 136

Tasks

- ▶ How to Configure the DHCP Monitoring Environment on page 137

Reference

- ▶ DHCP Monitor Settings on page 138

Concepts

DHCP Monitor Overview

Use the DHCP monitor to monitor your DHCP servers to verify that they are working properly. If your DHCP server fails, machines relying on DHCP are unable to acquire a network configuration when rebooting. Additionally, as DHCP address leases expire on already-configured machines, those machines drop off the network when the DHCP server fails to renew their address lease.

Most networks have a DHCP server listening for DHCP requests. This monitor finds DHCP servers by broadcasting a request for an IP address and waiting for a DHCP server to respond.

Each time the DHCP monitor runs, it returns a status and writes it in the monitoring log file. It also writes the total time it takes to receive and release an IP address in the log file. Your DHCP server is a critical part of providing functionality to other hosts on your network, so it should be monitored about every 10 minutes.

The SiteScope DHCP monitor requires that a third-party Java DHCP library be installed on the server where SiteScope is running. The DHCP monitor type does not appear in the interface until this library is installed. For details on how to perform this task, see "Install the jDHCP library" on page 137.

For details on the monitor user interface, see "DHCP Monitor Settings" on page 138.

Tasks

How to Configure the DHCP Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Install the jDHCP library" on page 137
- "Configure the monitor properties" on page 137

1 Install the jDHCP library

Install the Java DHCP library on the server where SiteScope is running.

- a** Download the jDHCP library (either in .zip or in .tar.gz format) from <http://www.dhcp.org/javadhcp/>.
- b** Extract the file named **JDHCP.jar** and copy it to the **<SiteScope root directory>\WEB-INF\lib** directory.
- c** After installing the **JDHCP.jar** file, restart the SiteScope service.

2 Configure the monitor properties

Complete the DHCP monitor configuration. For user interface details, see "DHCP Monitor Settings" on page 138.

Reference

DHCP Monitor Settings

This monitor enables you to monitor a DHCP Server by using the network. It verifies that the DHCP server is listening for requests and that it can allocate an IP address in response to a request.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	This monitor requires that a third-party Java DHCP library be installed on the server where SiteScope is running. The DHCP monitor type does not appear in the interface until this library is installed. For more information, see "Install the jDHCP library" on page 137.
Relevant tasks	<ul style="list-style-type: none"> ➤ "How to Configure the DHCP Monitoring Environment" on page 137 ➤ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	➤ "DHCP Monitor Overview" on page 136

DHCP Monitor Settings

User interface elements are described below:

UI Element	Description
Timeout	Amount of time, in seconds, to wait for an IP address. Default value: 10 seconds
Requested client address	IP address to request from the DHCP server.

17

Directory Monitor

This chapter includes:

Concepts

- ▶ Directory Monitor Overview on page 140

Reference

- ▶ Directory Monitor Settings on page 141

Concepts

Directory Monitor Overview

Use the Directory monitor to monitor directories that contain log files or other files that tend to grow and multiply unpredictably. You can instruct SiteScope to notify you if either the number of files or total disk space used gets out of hand. You can also use this to monitor directories in which new files are added and deleted frequently. For example, in the case of an FTP directory, you probably want to watch both the number of files in the directory and the files contained in the directory.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

The Directory monitor supports monitoring remote servers running on HP NonStop operating systems. For details on enabling the HP NonStop operating system monitoring environment, see "Setup Requirements and User Permissions" on page 209.

You can set up thresholds for this monitor based on the time in minutes since the latest time a file in the directory has been modified, as well as the time in minutes since the first time a file in the directory has been modified.

Because the uses for the Directory monitor vary so greatly, there is no one interval that works best. Keep in mind that if you are watching a directory that contains a lot of files and sub directories, this monitor may take longer to run.

For details on configuring the monitor, see "Directory Monitor Settings" on page 141.

Reference

Directory Monitor Settings

The Directory monitor enables you to monitor an entire directory and report on the total number of files in the directory, the total amount of disk space used, and the time (in minutes) since any file in the directory was modified. This information is useful if you have limited disk space, you want to monitor the number of files written to a specific directory, or you want to know the activity level in a certain directory.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor supports monitoring remote servers running on HP NonStop operating systems. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Directory Monitor Overview" on page 140

Directory Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Server where the directory you want to monitor is running. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note: Monitoring log files using SSH on Windows platforms is supported for this monitor only if the remote SSH server supports SSH File Transfer Protocol.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>
<p>Browse Servers</p>	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>

UI Element	Description
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Directory path	<p>Directory that you want to monitor.</p> <ul style="list-style-type: none"> ▶ To monitor directories on a remote Windows NT/2000 server through NetBIOS, the path should contain the name of the shared folder for remote NetBIOS servers. You can also specify an absolute path of the directory on the remote machine without specifying the server name. For example, if you type <code>c:\test</code>, the remote directory is accessed as <code>\\Server\C\$\test</code>. ▶ To monitor a directory on a remote Windows SSH machine, the path must be relative to the home directory of the user account used to log in to the remote machine. ▶ To monitor a directory on remote UNIX machines, the path must be relative to the home directory of the UNIX user account used to log in to the remote machine. You must also select the corresponding remote UNIX server in the Servers box described above. For details on which UNIX user account to use for the applicable remote server, see "Remote Servers Overview" in <i>Using SiteScope</i>. <p>To monitor a directory that is created automatically by some application and the directory path includes date or time information, you can use SiteScope's special data and time substitution variables in the path of the directory. For details, see "SiteScope Date Variables" in <i>Using SiteScope</i>.</p>

UI Element	Description
No subdirectories	Subdirectories are not included in the match count.
File name match	Text or an expression to match against. Only file names which match are counted in the totals.

18

Disk Space Monitor

This chapter includes:

Concepts

- ▶ Disk Space Monitor Overview on page 146

Reference

- ▶ Disk Space Monitor Settings on page 149

Concepts

Disk Space Monitor Overview

Use the Disk Space monitor to monitor the amount of disk space that is currently in use on your server. Having SiteScope verify that your disk space is within acceptable limits can save you from a crashed system and corrupted files.

The disk space monitor does not require many resources, so you can check it as often as every 15 seconds, but every 10 minutes should be sufficient. You may want to have SiteScope run a script (using a Script Alert) that deletes all files in certain directories, such as /tmp, when disk space becomes constrained. For details on using a Script Alert, see "Working with Script Alerts" in *Using SiteScope*.

The Disk Space monitor supports monitoring remote servers running on HP NonStop operating systems. For details on enabling the HP NonStop operating system monitoring environment, see "Setup Requirements and User Permissions" on page 209.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "Disk Space Monitor Settings" on page 149.

This section contains the following topics:

- "Setup Requirements and User Permissions" on page 147
- "IPv6 Addressing Supported Protocols" on page 147
- "Troubleshooting and Limitations" on page 148

Setup Requirements and User Permissions

You must have domain privileges or authenticated access to the remote Windows or UNIX server, and specify valid user credentials. The user specified in the **Credentials** section must have sufficient permissions to connect to and gather information from the remote server disk drives. On UNIX systems, the defined user must have privileges to execute a command to retrieve available mounted disks (for example, on Linux: `/bin/df -k <disk>`).

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)
- ▶ SSH (from SiteScope installed on UNIX platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: `2004:DB8:2a:1005:230:48ff:fe73:982d`
would be: `2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net`

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Troubleshooting and Limitations

Disk performance counters are unavailable by default in standard Windows 2000 installations. To monitor disk drives on servers running Windows 2000, you must enable these disk counters. Use the `diskperf -y` command line on each Windows 2000 machine you want to monitor disk space, and then reboot each server. You should then be able to select the disk drives for those servers in the Disk Space monitor dialog box.

Reference

Disk Space Monitor Settings

The Disk Space monitor tracks how much disk space is currently in use on your server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ This monitor supports: <ul style="list-style-type: none"> ▶ WMI (Windows Management Instrumentation) as a method for gathering statistics. ▶ Monitoring remote servers running on HP NonStop operating systems. ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 147. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ The Performance Counters Tool is available when configuring this monitor to check performance counters on a specific machine in a Windows NT/2000 network (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Performance Counters Tool" in <i>Using SiteScope</i>.

Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Disk Space Monitor Overview" on page 146

Disk Space Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Server where the disk space you want to monitor is running. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ► This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed here. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ► When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Disk/File system	Disk drive to monitor.

19

DNS Monitor

This chapter includes:

Concepts

- ▶ DNS Monitor Overview on page 154

Reference

- ▶ DNS Monitor Settings on page 156

Concepts

DNS Monitor Overview

Use the DNS monitor to monitor your Domain Name Servers (DNS) to verify that they are working properly. If your DNS server is not working properly, you cannot get out on the network, and people trying to reach your server are not able to find it using the server name (they can connect to it using the IP address only).

The DNS monitor checks your DNS server by using the network; verifies that the DNS server is accepting requests; verifies that the address for a specific domain name can be found; and returns a status and writes it in the monitoring log file with each running.

Most companies have both a primary and a secondary DNS server. If your company employs a firewall, these DNS servers may sit outside the firewall with another DNS server located inside the firewall. This internal DNS server provides domain name service for internal machines. It is important to monitor all of these servers to check that each is functioning properly.

If you have both a primary and secondary DNS server outside your firewall and an internal DNS server inside your firewall, you should monitor your internal server and your primary DNS server every 2-5 minutes. You can monitor the secondary DNS server less frequently (about every 10-15 minutes). To use this monitor, the TCP/IP protocol must be installed.

For details on configuring the monitor, see "DNS Monitor Settings" on page 156.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the DNS monitor.

- ▶ If the SiteScope server cannot reach a DNS server that is running (no ping to host), and there are no network connectivity issues, check the TCP/IP client configuration settings on the DNS server. Also verify that the DNS server itself does not have a connectivity issue.
- ▶ If the SiteScope server does not get a response to name resolution requests (even though it can ping the DNS server), ask your network administrator to verify that the DNS Server service is enabled and running on the DNS server.
- ▶ If the DNS server responds to queries for name resolution but with the incorrect information, it might be because the DNS server has incorrect or outdated information in its resource records for the specific zone. This situation can be due to a number of issues, including the following (should be managed by network administrator):
 - ▶ If administrators are manually creating and updating resource records, the incorrect information might have been inserted into the zone database file by the individual updating the resource records. To rectify this issue, you would have to manually verify the validity of each resource record.
 - ▶ If the DNS server is configured for dynamic updates, verify that dynamic updates have indeed occurred. If no dynamic updates have occurred, this would be the reason that the DNS server responded to SiteScope requests with outdated information. If the issue still persists, verify that the DNS server is configured for dynamic updates.
 - ▶ The DNS server might be incorrectly resolving names from a secondary DNS server due to zone transfer not occurring for the specific secondary DNS server. This would result in the secondary zone database file containing the incorrect information. To rectify this issue, manually force a zone transfer to ensure that the secondary DNS zone database file contains updated information.

Reference

DNS Monitor Settings

This monitor enables you to monitor your DNS server to verify that they are working properly.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The DNS Lookup Tool is available when configuring this monitor to look up names from a Domain Name Server and show you the IP address for a domain name (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "DNS Lookup Tool" in <i>Using SiteScope</i> .
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "DNS Monitor Overview" on page 154

DNS Monitor Settings

User interface elements are described below:

UI Element	Description
DNS server address	IP address of the DNS server that you want to monitor. Example: 206.168.191.1
Host to resolve	Host name to lookup. If you only want to verify that your DNS server is operating, the host name you enter here can be any valid host name or domain name. Example: demo.thiscompany.com To verify that a domain name resolves to a specific IP address, enter the IP address that corresponds to the host name you enter in the Expected IP address box.
Expected IP address	IP address or addresses that are mapped to the Host to resolve (domain name) entered above. You can use the DNS monitor to verify that a host name or domain name resolves to the correct IP address or addresses. Note: If you enter more than one IP address, the monitor reports a status of good , even if only one of the IP addresses that you enter is mapped correctly to the Host to resolve . When using this option, the monitor only reports an error if none of the IP addresses entered here are mapped to the given Host to resolve . When entering multiple IP addresses, separate them with a comma (",").

20

e-Business Transaction Monitor

This chapter includes:

Concepts

- ▶ e-Business Transaction Monitor Overview on page 160

Tasks

- ▶ How to Configure the e-Business Transaction Monitoring Environment on page 163

Reference

- ▶ e-Business Transaction Monitor Settings on page 165

Concepts

e-Business Transaction Monitor Overview

Use this monitor to verify that an end-to-end transaction and associated processes complete properly. This includes:

- ▶ Successful navigation through a series of URLs
- ▶ Transmission of an email confirming the sequence.
- ▶ Logging the information into a database file

The e-Business Transaction monitor runs a sequence of other SiteScope monitors, checking that each monitor returns a status of OK. It reports an Error status if any monitor in the sequence fails.

For example, you could use this monitor to verify that the following steps, each of which is a step in a single transaction, run properly:

- ▶ Place an order on a Web site (see "Working with the URL Sequence Monitor" on page 674)
- ▶ Check that the order status was updated (see "Working with the URL Sequence Monitor" on page 674)
- ▶ Check that a confirmation email was received (see "Mail Monitor Overview" on page 250)
- ▶ Check that the order was added to the order database (see "Database Query Monitor Overview" on page 108)
- ▶ Check that the order was transferred to a legacy system (see "Script Monitor Settings" on page 518)

You should monitor any multi-step transaction process that causes other updates or actions in your systems. Monitor each of the actions taken to check that updates were performed properly and that actions were carried out successfully.

Using this example, you would first create the URL Sequence monitor, Mail monitor, Database monitor, and applicable Script monitor needed to verify each step of the chain. Then you would create an e-Business Transaction monitor and select each of these SiteScope monitors as a group in the order they should be run. If any one monitor indicates a failure, the e-Business Transaction monitor reports an error.

Each time the e-Business Transaction monitor runs, it returns a status based on the number and percentage of items in the specified monitors and/or groups currently reporting an error, warning, or OK status. It writes the percentages reported in the monitoring log file.

For task details, see "How to Configure the e-Business Transaction Monitoring Environment" on page 163.

For user interface details, see "e-Business Transaction Monitor Settings" on page 165.

This section contains the following topics:

- ▶ "Editing the Order of the Monitors in the Chain" on page 161
- ▶ "Setting up Monitors for the e-Business Chain" on page 162

Editing the Order of the Monitors in the Chain

By default, the Add e-Business Transaction monitor page lists monitor groups and individual monitors in alphabetical order. To have the e-Business Transaction monitor run the chain of monitors in the proper order, they must appear in the proper order in the **Selected** table on the New e-Business Transaction Monitor page. You can do this by selecting the individual monitors in the order in which they should be run.

Note: To control the order of the monitors in the chain, you should select monitors and not groups. If you select groups to run in the e-Business Transaction monitor, they are run at random and not by group order.

Setting up Monitors for the e-Business Chain

Before you can add an e-Business Transaction monitor, you must define other SiteScope monitors that report on the actions and results of the steps in the sequence chain. Using the example from the usage guidelines above, you can create one or more URL Sequence monitor for verifying the sequence of online actions, a Mail monitor to confirm that an email acknowledgement is sent, and a Database Query monitor to see that information entered online is logged into a database.

For details on setting up a URL sequence chain monitor, see "How to Configure the e-Business Transaction Monitoring Environment" on page 163.

Tasks

How to Configure the e-Business Transaction Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Set up monitors for the e-Business chain" on page 163
- "Add and configure the e-Business Transaction monitor" on page 164

1 Set up monitors for the e-Business chain

Before you can add an e-Business Transaction monitor, you must define other SiteScope monitors that report on the actions and results of the steps in the sequence chain.

- a** Create a new group that contains all the individual monitors to be included in the sequence chain.
- b** Open the new monitor group, and add the first individual monitor type needed for the sequence (for example, "URL Sequence Monitor" on page 671).

Note: Monitors should be added in the order that they are run in the chain. For example, select a URL Sequence monitor which triggers an email event before you select the Mail monitor to check for the email.

To control the order of the monitors in the chain, you should select monitors and not groups. If you select groups to run in the e-Business Transaction monitor, they are run at random and not by group order.

- c If necessary, set up the values to be passed from one monitor to another in the chain.
- d Add the other monitors for this transaction chain in the required order of execution into the group.

Note: The individual monitors run by the e-Business Transaction monitor should generally not be run separately by SiteScope. You should make sure that the **Frequency** setting for each of these monitors is set to zero ("0").

- e Create a new group or open an existing group that contains the e-business transaction chain monitor you are creating.
- f Click **New > Monitor** and select the **e-Business Transaction** monitor.

2 Add and configure the e-Business Transaction monitor

Complete the e-Business Transaction monitor configuration. For user interface details, see "e-Business Transaction Monitor Settings" on page 165.

Reference

e-Business Transaction Monitor Settings

This monitor enables you to verify that the multiple tasks that make up an online transaction are completed properly.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the e-Business Transaction Monitoring Environment" on page 163 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "e-Business Transaction Monitor Overview" on page 160

e-Business Transaction Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
Monitor delay (seconds)	<p>Number of seconds to wait between running each monitor.</p> <p>This setting is useful if you need to wait for processing to occur on your systems before running the next monitor.</p> <p>Default value: 0 seconds</p>

UI Element	Description
When error	<p>Error handling option during the sequence:</p> <ul style="list-style-type: none"> ▶ Continue to run the remainder of the monitors. This runs every monitor no matter what the status of a given monitor is. ▶ Stop and do not run any of the remaining monitors. This stops running the list of monitors immediately, if a monitor returns an error. ▶ Run the last monitor. This runs the last monitor in the list. It is useful if a monitor is used for closing or logging off a session opened in a previous monitor.
Single session	<p>URL monitors use the same network connection and the same set of cookies.</p> <p>This is useful if you are using the e-Business Transaction monitor to group several URL Sequence monitors and do not want to include the login steps as part of each transaction.</p>
Item Settings	
Items	<p>Using the control key or equivalent, double-click the set of monitors that make up the e-Business Transaction monitor to move them to the Selected column.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Monitors are run in the order that they are listed in their group. For details, see "Editing the Order of the Monitors in the Chain" on page 161. ▶ To control the order of the monitors in the chain, select monitors and not groups. If you select groups, they are run at random and not by group order.

21

F5 Big-IP Monitor

This chapter includes:

Concepts

- ▶ F5 Big-IP Monitor Overview on page 168

Reference

- ▶ F5 Big-IP Monitor Settings on page 169

Concepts

F5 Big-IP Monitor Overview

Use the F5 Big-IP monitor to monitor the content of event logs and other data from F5 Big-IP 4.0 load balancing device. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate F5 Big-IP monitor instance for each F5 Big-IP load balancing device in your environment. The error and warning thresholds for the monitor can be set on one or more load balancer statistics.

For details on configuring the monitor, see "F5 Big-IP Monitor Settings" on page 169.

Reference

F5 Big-IP Monitor Settings

This monitor enables you to monitor the statistics of a F5 Big-IP load balancing device using SNMP.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ The SNMP Browser Tool is available when configuring this monitor to verify the connection properties of an SNMP agent and to gain more information about the MIBs which that agent implements (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "SNMP Browser Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "F5 Big-IP Monitor Overview" on page 168

F5 Big-IP Monitor Settings

User interface elements are described below:

UI Element	Description
SNMP Connection Settings	
Server	Name of the server you want to monitor.
SNMP version	Version of SNMP to use when connecting. Supports SNMP version 1, 2, and 3. Selecting V3 enables you to enter V3 settings in the SNMP V3 settings panel. Default value: V1
Community	Community string (valid only for version 1 or 2 connections). Default value: public
Timeout (seconds)	Amount of time, in seconds, that SiteScope should wait for all SNMP requests (including retries) to complete. Default value: 5
Retries	Number of times each SNMP GET request should be retried before SiteScope considers the request to have failed. Default value: 1
Port	Port to use when requesting data from the SNMP agent. Default value: 161
Starting OID	Use this option when selecting counters for this monitor. When the monitor attempts to retrieve the SNMP agent's tree, it starts with the OID value that is entered. You should edit this box only when attempting to retrieve values from an application that does not handle OIDs starting with 1. If the default value of 1 did not enable retrieving any counters, then you may have to enter a different value. Default value: 1

UI Element	Description
MIB file	MIB file option: <ul style="list-style-type: none"> ▶ LOAD-BAL-SYSTEM-MIBS.txt file displays only those objects that are described within that MIB file. ▶ All MIBs displays all objects discovered on the given F5 Big-IP when browsing counters. If no MIB information is available for an object, it is still displayed, but with no textual name or description. Default value: All MIBs
Counter calculation mode	Performs a calculation on objects of type Counter, Counter32, or Counter64. The available calculations are: <ul style="list-style-type: none"> ▶ Calculate delta. Calculates a simple delta of the current value from the previous value. ▶ Calculate rate Calculates a rate calculation using the delta of current value from previous value, divided by the time elapsed between measurements. ▶ Do not calculate. No calculation is performed. Note: This option only applies to the aforementioned object types. An SNMP by MIB monitor that monitors Counter objects as well as DisplayString objects only performs this calculation on the Counter objects.
V3 SNMP Settings (This panel is enabled only if V3 is selected in the SNMP version field)	
SNMP V3 authentication type	The type of authentication to use for version 3 connections. Default value: MD5
SNMP V3 user name	User name for version 3 connections.
SNMP V3 authentication password	Authentication password to use for version 3 connections.
SNMP V3 privacy password	Privacy password if DES privacy encryption is desired for version 3 connections. Leave blank if you do not want privacy.

UI Element	Description
SNMP V3 context engine ID	Hexadecimal string representing the Context Engine ID to use for this connection. This is applicable for SNMP V3 only.
SNMP V3 context name	Context Name to use for this connection. This is applicable for SNMP V3 only.
SNMP Counters	
Counters	Server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The counters displayed are those received during the timeout period, and may not include all the counters available on the server. Specifying a longer timeout in the Timeout (seconds) field in the SNMP Connection Settings panel may result in receiving more counters. The total time for receiving the counters may be longer than the timeout specified, due to additional processing time not part of the request/response period. ▶ Due to third-party counter restrictions, the total number of counters that can be monitored is limited to 32. <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

22

File Monitor

This chapter includes:

Concepts

- ▶ File Monitor Overview on page 174

Reference

- ▶ File Monitor Settings on page 175

Concepts

File Monitor Overview

The File monitor is useful for watching files that can grow too large and use up disk space, such as log files. Other files that you may want to watch are Web pages that have important content that does not change often.

You can set up your File Monitors to monitor file size, age, or content, and set a threshold at which you should be notified. SiteScope can alert you to unauthorized content changes so that you can correct them immediately. You can write scripts for SiteScope to run that automatically roll log files when they reach a certain size.

The File monitor supports monitoring remote servers running on HP NonStop operating systems. For details on enabling the HP NonStop operating system monitoring environment, see "Setup Requirements and User Permissions" on page 209.

For details on configuring the monitor, see "File Monitor Settings" on page 175.

Reading and Status

Each time the File monitor runs, it returns a reading and a status and writes them in the monitoring log file. It also writes the file size and age into the log file. The reading is the current value of the monitor. Possible values are:

- OK
- content match error
- file not found
- contents changed

An error status is returned if the current value of the monitor is anything other than OK.

Reference

File Monitor Settings

This monitor enables you to read a specified file and check the size and age of the file.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	This monitor supports monitoring remote servers running on HP NonStop operating systems.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "File Monitor Overview" on page 174

File Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Server where the file you want to monitor is located. Select a server from the server list (only UNIX remote servers that have been configured in SiteScope and the local SiteScope machine are displayed), or click Add Remote Server to add a new UNIX server.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Add Remote Server	<p>Opens the Add UNIX Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
File name	<p>Path and name to the file you want to monitor. For reading files on remote UNIX machines, the path must be relative to the home directory of the UNIX user account being used to login to the remote machine.</p> <p>Example: It may be necessary to provide the full path to the target file, such as <code>/opt/application/logs/user.log</code>.</p> <p>You must also select the corresponding remote UNIX server in the Server box described above. For details on which UNIX user account to use for the applicable remote server, see "Remote Servers Overview" in <i>Using SiteScope</i>.</p> <p>For reading files on remote Windows NT/2000 servers, you use NetBIOS to specify the server and UNC path to the remote log file.</p> <p>Example: <code>\\remoteserver\sharedfolder\filename.log</code>.</p> <p>You can also monitor files local to the server where SiteScope is running.</p> <p>Example: <code>C:\application\appLogs\access.log</code>.</p> <p>Optionally, you can use regular expressions for special date and time variables to match on log file names that include date and time information.</p> <p>Example: You can use a syntax of <code>s/ex\$shortYear\$\$0month\$\$0day\$.log/</code> to match a current date-coded file. For details on using regular expressions and dates, see "SiteScope Date Variables" in <i>Using SiteScope</i>.</p>

UI Element	Description
File encoding	<p>File content is monitored using an encoding that is different than the encoding used on server where SiteScope is running. This may be necessary if the code page which SiteScope is using does not support the character set used in the target file. This enables SiteScope to match and display the encoded file content correctly.</p> <p>Default value: windows-1252</p>
Match content	<p>Text string to check for in the returned page. If the text is not contained in the page, the monitor displays no match on content. The search is case sensitive. HTML tags are part of a text document, so include them if they are part of the text you are searching for. This works for XML pages as well.</p> <p>Example: Hello World</p> <p>You may also perform a regular expression match by enclosing the string in forward slashes, with an <i>i</i> after the trailing slash indicating case-insensitive matching.</p> <p>Example: /href=Doc\d+\.html/ or /href=doc\d+\.html/i</p> <p>To save and display a particular piece of text as part of the status, use parentheses in a Perl regular expression.</p> <p>Example: /Temperature: (d+). This returns the temperature as it appears on the page and this could be used when setting an Error if or Warning if threshold.</p> <p>For details on regular expressions, see "Using Regular Expressions" in <i>Using SiteScope</i>.</p> <p>You can also use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>

UI Element	Description
Check for content changes	<p>Unless this is set to "no content checking" (the default) SiteScope records a checksum of the document the first time the monitor runs and then does a checksum comparison each subsequent time it runs. If the checksum changes, the monitor has a status of "content changed error" and goes into error. If you want to check for content changes, you should use "compare to saved contents".</p> <p>The options for this setting are:</p> <ul style="list-style-type: none"> ➤ No content checking (default). SiteScope does not check for content changes. ➤ Compare to last contents. The new checksum is recorded as the default after the initial content changed error occurs, so the monitor returns to OK until the checksum changes again. ➤ Compare to saved contents. The checksum is a snapshot of a given page (retrieved either during the initial or a specific run of the monitor). If the contents change, the monitor gets a content changed error and stays in error until the contents return to the original contents, or the snapshot is update by resetting the saved contents. ➤ Reset saved contents. Takes a new snapshot of the page and saves the resulting checksum on the first monitor run after this option is chosen. After taking the snapshot, the monitor reverts to compare to saved contents mode.
No error if file not found	<p>The monitor remains in Good status even if the file is not found. The monitor status is Good regardless of how the monitor's thresholds have been configured.</p>

23

Formula Composite Monitor

This chapter includes:

Concepts

- ▶ Formula Composite Monitor Overview on page 180

Reference

- ▶ Formula Composite Monitor Settings on page 182

Concepts

Formula Composite Monitor Overview

Use this monitor if you have devices or systems in your network that return values that you want to combine in some way to produce a composite value. The following monitor types can be used to build a Formula Composite monitor:

- ▶ Database Query monitor. For more information see "Database Query Monitor Overview" on page 108.
- ▶ Microsoft Windows Performance Counter monitor. For more information see "Microsoft Windows Performance Counter Monitor Overview" on page 366.
- ▶ Script monitor. For more information see "Script Monitor Overview" on page 510.
- ▶ SNMP monitor. For more information see "SNMP Monitor Overview" on page 560.

If you need alert logic that is more complex than SiteScope's standard alerts allow, you can use the Formula Composite monitor to create custom alert behavior. For example, if you have two parallel network devices that record network traffic but the values need to be combined to produce an overall figure of network traffic. This monitor may also be used to combine the results returned by scripts run on two different machines.

Each time the Formula Composite monitor runs, it returns a status based on the measurement results of the two subordinate monitors and the calculation specified for the composite monitor.

For details on configuring the monitor, see "Formula Composite Monitor Settings" on page 182.

This section also includes:

- ▶ "Setup Requirements" on page 181
- ▶ "Notes and Limitations" on page 181

Setup Requirements

- ▶ You must create at least two individual Script, SNMP, Database Query or Microsoft Windows Performance Counter monitor instances before you can set up a Formula Composite monitor for those monitors.
- ▶ The monitors you create for use with a Formula Composite monitor should be configured to return a single value per monitor. This is generally simple with SNMP monitors. Database Query and Script monitors should use queries and scripts that return a single value. For Microsoft Windows Performance Counter monitors, you can use the (Custom Object) option for the **PerfMon Chart File** setting and then specify a single performance **Object**, **Counter**, and **Instance** (if applicable) in the Microsoft Windows Performance Counter Monitor Settings section of the monitor setup. If a subordinate monitor is configured to return more than one numeric measurement, only the first numeric measurement from that monitor instance is used by the Formula Composite monitor.

Notes and Limitations

- ▶ You should only use the Formula Composite monitor for calculations that you consider to be compatible data types. The monitor does not verify that the data returned by the subordinate monitors are compatible.
- ▶ You can select two different types of monitors as subordinate monitors of a Formula Composite monitor. For example, one monitor may be a Script monitor and the other may be a Database Query monitor.
- ▶ Moving any of the monitors being used by the Formula Composite monitor causes the composite monitor to report an error. If it is necessary to move either of the underlying monitors, recreate or edit the Formula Composite monitor to select the monitor from its new location.

Reference

Formula Composite Monitor Settings

This monitor enables you to monitor complex network environments by checking the status readings of two SNMP, Script, Database Query, or Microsoft Windows Performance Counter monitors and performing an arithmetic calculation on their results.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 181.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Formula Composite Monitor Overview" on page 180

Formula Composite Monitor Settings

User interface elements are described below:

UI Element	Description
Monitors	<p>Click the Add  button, and select two SNMP monitors, two Script monitors, two Database monitors, or two Microsoft Windows Performance Counter monitors that the Formula Composite monitor should operate on. Click Add Selected Monitors to display the selected monitors in the Monitors box.</p> <p>To remove monitors from the list, select the monitors and click the Delete  button.</p>

UI Element	Description
Run monitors	<p>The Formula Composite monitor controls the scheduling of the selected monitors, as opposed to just checking their status readings. This is useful if you want the monitors to run one after another or run at approximately the same time.</p> <p>Note: Any monitors that are to be run this way should not also be run separately, so set Frequency in Monitor Run Settings to 0. Those monitors then only run when scheduled by the Formula Composite monitor.</p>
Monitor delay (seconds)	<p>Amount of time, in seconds, to wait between running each monitor (if Run monitors is selected).</p> <p>Default value: 0 seconds</p>
Operation	<p>Arithmetic operation to be performed on the results of the two monitors selected above. You can add the results, multiply the results of the two monitors, subtract the results of the first from the second, divide the second by the first, and so on.</p>
Constant	<p>An operator and a constant to operate on the result of the calculation specified in the Operation item above. For example, if an Operation of Add is selected above, entering the characters *8 in the Constant box multiplies the result of the Add operation by 8. The syntax for this box should be <operator> <number>. Valid operators are + (addition), - (subtraction), * (multiplication), and / (division). Numbers may be integers or decimals.</p>
Result label	<p>Name for the result of the formula calculation.</p>

24

FTP Monitor

This chapter includes:

Concepts

- ▶ FTP Monitor Overview on page 186

Reference

- ▶ FTP Monitor Settings on page 188

Concepts

FTP Monitor Overview

If you provide FTP access to files, it is important to check that your FTP server is working properly. Use the FTP monitor to check FTP servers to insure the accessibility of FTP files.

In addition to retrieving specific files, the FTP monitor can help you verify that the contents of files, either by matching the contents for a piece of text, or by checking to see if the contents of the file ever changes compared to a reserve copy of the file.

While you may have many files available for FTP from your site, it is not necessary to monitor every one. We recommend that you check one small file and one large file.

For details on configuring the monitor, see "FTP Monitor Settings" on page 188.

This section contains the following topics:

- "Setup Requirements" on page 186
- "Status" on page 187
- "Scheduling the Monitor" on page 187

Setup Requirements

To use this monitor, you must:

- Know the relative paths, if any, to the files on the FTP server.
- Know an applicable user name and password to access the files.
- Know the filenames of one or more files available for FTP transfer.

Status

The reading is the current value of the monitor. Possible values are:

- OK
- unknown host name
- unable to reach server
- unable to connect to server
- timed out reading
- content match error
- login failed
- file not found
- contents changed
- The status is logged as either good or error. An error status is returned if the current value of the monitor is anything other than OK.

Scheduling the Monitor

A common strategy is to monitor a small file every 10 minutes or so just to verify that the server is functioning. Then schedule a separate monitor instance to FTP a large file once or twice a day. You can use this to test the ability to transfer a large file without negatively impacting your machine's performance. You can schedule additional monitors that watch files for content and size changes to run every 15 minutes to half hour. Choose an interval that makes you comfortable.

If you have very important files available, you may also want to monitor them occasionally to verify that their contents and size do not change. If the file does change, you can create a SiteScope alert that runs a script to automatically replace the changed file with a back-up file.

Reference

FTP Monitor Settings

This monitor enables you to log in to an FTP server and retrieve a specified file. A successful file retrieval indicates that your FTP server is functioning properly. Use this page to add a monitor or edit the monitor's properties.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 186. ▶ The FTP Tool is available when configuring this monitor to access an FTP server and view the interaction between SiteScope and the FTP server (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "FTP Server Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "FTP Monitor Overview" on page 186

FTP Monitor Settings

User interface elements are described below:

UI Element	Description
Basic FTP Settings	
FTP server	IP address or the name of the FTP server that you want to monitor. Example: 206.168.191.22 or ftp.thiscompany.com (ftp.thiscompany.com:<port number> to specify a different port)
File	File name to retrieve from the FTP server. Example: /pub/docs/mydoc.txt You can use a regular expression to insert date and time variables. For details on using SiteScope's special data and time substitution variables in the file path, see "SiteScope Date Variables" in <i>Using SiteScope</i> . Example: s/C:\\firstdir\\\$shortYear\$\$0month\$\$0day\$/
User name	Name used to log into the FTP server. A common user name for general FTP access is user name anonymous.
Password	Password used to log into the FTP server. If using the anonymous login, the password is also anonymous.
Passive mode	SiteScope uses FTP passive mode. You use this mode to enable FTP to work through firewalls.
Advanced FTP Settings	
Match content	Text string to check for in the returned file. If the text is not contained in the file, the monitor displays no match on content . The search is case sensitive. You may also perform a regular expression match by enclosing the string in forward slashes, with an "i" after the trailing slash indicating case-insensitive matching. Example: "/Size \\d\\d/" or "/size \\d\\d/i"

UI Element	Description
Check for content changes	<p>SiteScope records a checksum of the document the first time the monitor runs and then does a checksum comparison each subsequent time it runs. If the checksum changes, the monitor has a status of content changed error and go into error. If you want to check for content changes, you usually want to use compare to saved contents.</p> <p>The options for this setting are:</p> <ul style="list-style-type: none"> ▶ No content checking (default). SiteScope does not check for content changes. ▶ Compare to last contents. Any changed checksum is recorded as the default after the change is detected initially. Thereafter, the monitor returns to a status of OK until the checksum changes again. ▶ Compare to saved contents. The checksum is a snapshot of a given page (retrieved either during the initial or a specific run of the monitor). If the contents change, the monitor gets a content changed error and stays in error until the contents return to the original contents, or the snapshot is update by resetting the saved contents. ▶ Reset saved contents. Takes a new checksum of the file and saves the resulting checksum on the first monitor run after this option is chosen. After taking the updated checksum, the monitor reverts to compare to saved contents mode.
Timeout (seconds)	<p>Amount of time, in seconds, that the FTP monitor should wait for a file to complete downloading before timing out. Once this time period passes, the FTP monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p>
Connection timeout (seconds)	<p>Amount of time, in seconds, that the FTP monitor should wait to connect to the FTP server before timing out. Once this time period passes, the FTP monitor logs an error and reports an error status.</p> <p>Default value: 30 seconds</p>

UI Element	Description
HTTP Proxy Settings	
FTP proxy	<p>SiteScope runs the FTP through an HTTP proxy. Generally, if you use an HTTP proxy you have it set up in your browser. Enter that same information here. Remember to include the port.</p> <p>Example: proxy.thiscompany.com:8080</p> <p>Note: The FTP monitor does not support an FTP Proxy server.</p>
Proxy user name	<p>Proxy user name if the proxy server requires a name and password to access the file. The proxy server must support Proxy-Authenticate for these options to function.</p>
Proxy password	<p>Proxy password if the proxy server requires a name and password to access the file. The proxy server must support Proxy-Authenticate for these options to function.</p>

25

HP iLO (Integrated Lights-Out) Monitor

This chapter includes:

Concepts

- ▶ HP iLO Monitor Overview on page 194

Reference

- ▶ HP iLO Monitor Settings on page 197

Concepts

HP iLO Monitor Overview

Use the HP iLO (Integrated Lights-Out) monitor that enables monitoring of hardware health on supported HP ProLiant servers. You can monitor multiple parameters or counters with a single monitor instance. This allows you to watch server health status and hardware configuration for stability monitoring and fast response for critical hardware issues. You can create a separate HP iLO Monitor instance for each supported server in your environment.

The HP iLO monitor supports monitoring HP iLO 2 and 3 versions.

For details on configuring the monitor, see "HP iLO Monitor Settings" on page 197.

This section also includes:

- "HP iLO Background" on page 195
- "What to Monitor" on page 195
- "Setup Requirements" on page 196
- "IPv6 Addressing" on page 196

HP iLO Background

HP Integrated Lights-Out, or iLO, is an embedded server management technology exclusive to Hewlett-Packard but similar in functionality to the Lights out management (LOM) technology of other vendors.

iLO makes it possible to perform activities on an HP server from a remote location. iLO is currently available on all new ProLiant 300/500/blade server models and has a separate network connection (and its own IP address).

iLO actively participates in monitoring and maintaining server health, referred to as embedded health. iLO monitors temperatures in the server and sends corrective signals to the fans to maintain proper server cooling. In addition to temperature monitoring, iLO provides fan status monitoring and monitoring of the status of the power supplies, voltage regulators, and the internal hard drives.

System Information displays the health of the monitored system. These features are available without installing and loading the health driver for the installed operating system. The iLO microprocessor monitors these devices when the server is powered on during server boot, operating system initialization, and operation.

What to Monitor

The HP iLO monitor makes use of performance counters to measure application server performance, and can be used to provide the following information:

- ▶ Processors. Displays the available processor slots and a brief status summary of the processor subsystem. If available, installed processor speed in MHz and cache capabilities are displayed.
- ▶ Memory. Displays the available memory slots and the type of memory, if any, installed in the slot.
- ▶ Drives. Displays the presence and condition of installed drive bays.
- ▶ Power Supplies. Displays the presence and condition of installed power supplies.

- ▶ Voltage Regulator Modules (VRMs). Displays VRM status. A VRM is required for each processor in the system. The VRM adjusts the power to meet the power requirements of the processor supported. A failed VRM prevents the processor from being supported and should be replaced.
- ▶ Fans. Displays the state of the replaceable fans in the server chassis. This data includes the area that is cooled by each fan and current fan speeds.
- ▶ Temperatures. Displays the temperature conditions monitored at sensors in various locations in the server chassis, and the processor temperature. The temperature is monitored to maintain the location temperature below the caution threshold. If the temperature exceeds the caution threshold, the fan speed is increased to maximum.
- ▶ Other. Other information about the server, such as firmware version and available slots.

Setup Requirements

The following are important requirements for using the HP iLO monitor:

- ▶ The HP iLO system administrator must configure the service on the ProLiant server to have access to a command line interface over SSH.
- ▶ The configuration should be tested by connecting the server to the SSH client using the configured credentials, and running the following command:

```
show system1 -l 1
```

The result should contain targets and their properties available on the server.

IPv6 Addressing

The HP iLO monitor supports IP version 6 addresses if the network and remote server support this protocol.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

HP iLO Monitor Settings

This monitor enables monitoring of hardware health on supported HP ProLiant servers.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 196. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "HP iLO Monitor Overview" on page 194

HP iLO Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>HP iLO server you want to monitor. Select a server from the server list (only those HP iLO remote servers that have been configured in SiteScope are displayed), or click Add Remote Server to add an HP iLO server.</p> <p>Note: When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p>
Add Remote Server	<p>Opens the Add UNIX Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>The server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note: When working in template mode, the maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

26

HP NonStop Event Log Monitor

This chapter includes:

Concepts

- ▶ HP NonStop Event Log Monitor Overview on page 200

Reference

- ▶ HP NonStop Event Log Monitor Settings on page 201

Concepts

HP NonStop Event Log Monitor Overview

Use the HP NonStop Event Log monitor to monitor the Event Logs for added entries on HP NonStop Operating System servers. The HP NonStop Event Log monitor examines events that occurred after the time that the monitor was created. Each time the monitor runs thereafter, it examines only those entries added since the last time it ran. You can choose to filter out messages that are not important by using the boxes listed under Monitor Settings to specify values that must appear in the event entry for the entry to match.

The minimum officially supported version of the HP NonStop Open System Management (OSM) Event Viewer is T0682 H02 ABU (released May 2009).

For details on configuring the monitor, see "HP NonStop Event Log Monitor Settings" on page 201.

Reference

HP NonStop Event Log Monitor Settings

The HP NonStop Event Log monitor enables you to monitor Event Logs for added entries on a single HP NonStop Operating System server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	When configuring this monitor in template mode, you can use regular expressions to define counters.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "HP NonStop Event Log Monitor Overview" on page 200

HP NonStop Event Log Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
URL	URL of the OSM Event Viewer. Example: https://<nonstopserver>:9991
Match content	Text to look for in the log entries. You can also use a regular expression in this entry to match text patterns. The monitor reports how many times the matched pattern was found. To match text that includes more than one line of text, add an s search modifier to the end of the regular expression. For details, see "Using Regular Expressions" in <i>Using SiteScope</i> . You can also use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i> .
Timeout (seconds)	Amount of time, in seconds, that the monitor should wait for an event before timing-out. Once this time period passes, the monitor logs an error and reports an error status. Default value: 60 seconds
Retries	Number of times that SiteScope should retry the request if a recoverable error was encountered. A timeout of the request for is a recoverable error. Default value: 0
Time zone	Appropriate time zone, according to the location of the HP NonStop server.

UI Element	Description
Filter Settings	
Event sources	Collectors or log file name. You can type more than one collector, separated by comma. Events from multiple collectors are merged by generation time. You can also specify a single event log file. Default value: \$ZLOG
Options	Filter options. You can enter more than one option, using commas as separators. Example: CPU 0, PIN 253
Owner	Enter an owner in this field (up to 8 characters).
Subsystem names	Subsystem name. You can enter more than one subsystem, using commas as separators. Example: PATHWAY, TMF You can use the full subsystem name (for example, PATHWAY), an existing abbreviated subsystem name (for example, PWY), or the subsystem number (for example, 8).
Event IDs	Event number to filter on a specific event number. You can enter a single event number, a set of event numbers separated by commas, a range a..b, or a set of ranges separated by commas. Event numbers may be signed. If you specify any event numbers, you can only have one subsystem.
Filter files	Filter names. You can enter more than one filter by using commas as separators. You can add more than one filter file, using commas as separators.

UI Element	Description
Authentication Settings	
Credentials	<p>User name and password required to access the HP NonStop server. Select the option to use for providing credentials:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.

UI Element	Description
<p>Pre-emptive authorization</p>	<p>Authorization user name and password option if SiteScope requests the target UR:</p> <ul style="list-style-type: none"> ▶ Use global preference. SiteScope uses the authenticate setting as specified in the Pre-emptive authorization section of the General Preferences page. This is the default value. ▶ Authenticate first request. The user name and password are sent on the first request SiteScope makes for the target URL. <ul style="list-style-type: none"> Note: If the URL does not require a user name and password, this option may cause the URL to fail. ▶ Authenticate if requested. The user name and password are sent on the second request if the server requests a user name and password. <ul style="list-style-type: none"> Note: If the URL does not require a user name and password, this option may be used. <p>All options use the Authorization user name and Authorization password entered for this monitor instance. If these are not specified for the individual monitor, the Default authentication user name and Default authentication password specified in the Main section of the General Preferences page are used, if they have been specified.</p> <p>Note: Pre-emptive authorization does not control if the user name and password should be sent, or which user name and password should be sent.</p>
<p>Client side certificate</p>	<p>The certificate file, if using a client side certificate to access the target URL. Normally, this is a .pfx (.p12) type certificate, which usually requires a password. You enter the password for the certificate in the Client side certificate password box.</p> <p>Note: Client side certificate files must be copied into the <SiteScope root directory>\templates.certificates directory.</p>
<p>Client side certificate password</p>	<p>Password if you are using a client side certificate and a password is required.</p>

UI Element	Description
Accept untrusted certificates for HTTPS	<p>Select if you need to use certificates that are untrusted in the certificate chain to access the target URL using Secure HTTP (HTTPS).</p> <p>Default value: Not selected</p>
Accept invalid certificates for HTTPS	<p>Select if you need to accept an invalid certificate to access the XML URL using Secure HTTP (HTTPS). This may happen, for example, if the current date is not in the date ranges specified in the certificate chain.</p> <p>Default value: Not selected</p>
Proxy Settings	
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server can be used to access the URL.
Proxy server user name	<p>Proxy server user name if the proxy server requires a name and password to access the URL.</p> <p>Note: Your proxy server must support Proxy-Authenticate for these options to function.</p>
Proxy server password	<p>Proxy server password if the proxy server requires a name and password to access the URL.</p> <p>Note: Your proxy server must support Proxy-Authentication for these options to function.</p>

27

HP NonStop Resources Monitor

This chapter includes:

Concepts

- ▶ HP NonStop Resources Monitor Overview on page 208

Reference

- ▶ HP NonStop Resources Monitor Settings on page 210

Concepts

HP NonStop Resources Monitor Overview

Use the HP NonStop Resources monitor to monitor the server system statistics on HP NonStop Operating System servers. You can monitor multiple parameters or measurements with a single monitor instance. This enables you to monitor the remote server for loading, performance, and availability at a basic system level. Create a separate HP NonStop Resources monitor instance for each HP NonStop Operating System server in your environment.

The HP NonStop Resources monitor queries the list of HP NonStop Servers currently configured in the UNIX Remote Servers container. To monitor a remote HP NonStop Operating System server, you must define a NonStop Remote connection profile for the server before you can add an HP NonStop Resources monitor for that server. For details on configuring a remote server, see "Remote Servers Overview" in *Using SiteScope*.

You can also use the Directory, Disk Space, File, Log File, and Script monitors to monitor remote servers running on HP NonStop Operating Systems. Monitors that do not depend on a remote operating system, such as FTP, Port, SNMP, SNMP by MIB, and URL family monitors, can also support monitoring on an HP NonStop operating system server.

For details on configuring the monitor, see "HP NonStop Resources Monitor Settings" on page 210.

This section also includes:

- ▶ "Setup Requirements and User Permissions" on page 209
- ▶ "Troubleshooting and Limitations" on page 209

Setup Requirements and User Permissions

To enable monitoring of remote servers running on a HP NonStop Operating System (using either the HP NonStop Resources monitor or the Directory, Disk Space, File, Log File, or Script monitor), you must perform the following on the HP NonStop Operating System server:

- Create a user for SiteScope monitoring.
- In the `/etc/profile` and `.profile` files, perform the following:
 - Comment out the string: `set -o vi`.
 - Set the following parameter: `export PS1='$PWD:`

Troubleshooting and Limitations

When configuring a remote server for monitoring the HP NonStop server, if the remote server gives a choice of TACL shell only, select the remote server in **Remote Servers > UNIX Remote Servers**, and enter the following in the **Main Settings** panel:

- In the **Shell name** field, enter `tacl`.
- In the **Login prompt** field, enter `>`.
- In the **Secondary response** field, enter `OSH`.
- In the **User name** box in the **Credentials** section, enter the user name in the format: `logon <user_name>`.

Reference

HP NonStop Resources Monitor Settings

The HP NonStop Resources monitor enables you to monitor multiple system statistics on a single HP NonStop Operating System server. The error and warning thresholds for the monitor can be set on one or more server system statistics.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 209. ▶ The performance objects and counters available for the HP NonStop Resources monitor vary depending on what operating system options and applications are running on the remote server. ▶ When configuring this monitor in template mode, you can use regular expressions to define counters.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "HP NonStop Resources Monitor Overview" on page 208

HP NonStop Resources Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Server where the resources you want to monitor are located. Select a server from the server list (only UNIX remote servers that have been configured in SiteScope to run on an HP NonStop operating system are displayed), or click Add Remote Server to add a UNIX server.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p>
Add Remote Server	<p>Opens the Add UNIX Remote Server dialog box, enabling you to enter the configuration details (in the Operating System list, you must select NonStopOS). For user interface details, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Available Counters	<p>Displays the available measurements for this monitor. For each measurement, select the Objects, Instances and Counters you want to check with the HP NonStop Resources monitor, and click the Add Selected Counters  button. The selected measurements are moved to the Selected Counters list.</p>
Selected Counters	<p>Displays the measurements currently selected for this monitor, and the total number of selected counters.</p> <p>To remove measurements selected for monitoring, select the required measurements, and click the Remove Selected Counters  button. The measurements are moved to the Available Counters list.</p>

28

IPMI Monitor

This chapter includes:

Concepts

- ▶ IPMI Monitor Overview on page 214

Reference

- ▶ IPMI Monitor Settings on page 215

Concepts

IPMI Monitor Overview

The Intelligent Platform Management Interface (IPMI) provides an interface for reporting on device operations, such as whether fans are turning and voltage flowing within server hardware. You use the IPMI monitor to monitor server and network element platforms to get a more complete view of component health and operation statistics for IPMI enabled devices running version 1.5.

You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch key operational factors that can seriously effect availability and degrade performance. Create a separate monitor instance for each server you are running.

For details on configuring the monitor, see "IPMI Monitor Settings" on page 215.

Setup Requirements

The following are requirements for using the IPMI monitor:

- ▶ The device you want to monitor has to be IPMI-enabled. In most cases, this means that the device must be designed for IPMI sensing and include a separate, dedicated IPMI network adapter. The monitor supports IPMI version 1.5 only.
- ▶ You must know the IP address of the IPMI network adapter for the device you want to monitor. In many cases, this IP address is different than the IP address used for other network communication to and from the device. Use an applicable IPMI utility to query for the IP address or contact the applicable system administrator.

Reference

IPMI Monitor Settings

This monitor enables you to monitor component health and operation statistics for Intelligent Platform Management Interface (IPMI) enabled devices running version 1.5.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 214. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "IPMI Monitor Overview" on page 214

IPMI Monitor Settings

User interface elements are described below:

UI Element	Description
Server name	IPMI server name or IP address of the IPMI network adapter. Note: The IP address is normally not the same as the ordinary ethernet NIC adapter address.
Port number	Port number of the IPMI device. Default value: 623
Credentials	Option for providing the user name and password to be used to access the IPMI server: <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
Counters	Displays the server performance counters to check with this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

29

JMX Monitor

This chapter includes:

Concepts

- ▶ JMX Monitor Overview on page 218

Reference

- ▶ JMX Monitor Settings on page 223

Concepts

JMX Monitor Overview

Use the JMX monitor to monitor performance statistics of Java-based applications that provide access to their statistics by using the standard JMX remoting technology defined by JSR 160 (remote JMX). This monitor supports monitoring on WebLogic 9.x, 10.0-10.3 and 11g, Apache Tomcat 5.0, Oracle 10.1.3g Application Server, and JBoss 4.0.3 servers.

You can monitor multiple parameters or counters with a single monitor instance. The counters available vary from application to application, but normally include both basic JVM performance counters as well as counters specific to the application. You may create one JMX monitor instance for each application you are monitoring, or several monitors for the same application that analyze different counters.

Note: WebLogic 9.x, 10.0-10.3, and 11g servers can be monitored using a JMX monitor only. For details on how to monitor a WebLogic 9.x, 10.0-10.3 or 11g server, see "Creating a JMX Monitor for a WebLogic 9.x, 10.0-10.3, or 11g Server" on page 220.

For details on configuring the monitor, see "JMX Monitor Settings" on page 223.

This section contains the following topics:

- ▶ "Applications Supporting JSR 160" on page 219
- ▶ "Creating a JMX Monitor for a WebLogic 9.x, 10.0-10.3, or 11g Server" on page 220
- ▶ "WebLogic Application Server Topology Settings" on page 221
- ▶ "Troubleshooting and Limitations" on page 222

Applications Supporting JSR 160

Here are some applications that currently support JSR 160 and information about how to monitor them:

- ▶ BEA WebLogic 9.x, 10.0-10.3, and 11g supports JSR 160, which can be enabled on the WebLogic application server by following instructions found on the BEA Web site (<http://e-docs.bea.com/wls/docs90/ConsoleHelp/taskhelp/channels/EnableAndConfigureIIOP.html>).

Once enabled, the JMX URL for monitoring the server follows the following form:

```
service:jmx:iiop:///jndi/iiop://<host>:<port>/weblogic.management.mbeanservers.runtime
```

where <host> is the server name or IP address that is running your WebLogic application.

For instructions to create a JMX monitor for WebLogic 9.x, 10.0-10.3, or 11g servers, see "Creating a JMX Monitor for a WebLogic 9.x, 10.0-10.3, or 11g Server" on page 220.

- ▶ Tomcat 5.x supports JSR 160, by defining the following properties to the JVM on startup:
 - ▶ Dcom.sun.management.jmxremote
 - ▶ Dcom.sun.management.jmxremote.port=9999
 - ▶ Dcom.sun.management.jmxremote.ssl=false
 - ▶ Dcom.sun.management.jmxremote.authenticate=false

The above properties specify the port as 9999. This value can be changed to any available port. Also, it specifies no authentication. If authentication is necessary, see the Java Sun Web site for more details (<http://java.sun.com/j2se/1.5.0/docs/guide/jmx/tutorial/security.html>). If the above properties are defined when starting Tomcat 5.x on <host>, the following would be the JMX URL for monitoring it:

```
service:jmx:rmi:///jndi/rmi://<host>:9999/jmxrmi
```

Note: SiteScope 8.x runs within Tomcat 5.x, and can be monitored as described above.

- Other vendors that have released versions of their software that are JSR 160 compliant, include JBoss, Oracle 10g, and IBM WebSphere.

You can find more information about JSR 160 on the Java Community Process Web site (<http://www.jcp.org/en/jsr/detail?id=160>).

Creating a JMX Monitor for a WebLogic 9.x, 10.0-10.3, or 11g Server

WebLogic 9.x, 10.0-10.3, and 11g servers cannot be monitored using a WebLogic monitor. To monitor a WebLogic 9.x, 10.0-10.3, or 11g server, create a JMX monitor, and enter the following in the **JMX URL** box:

```
service:jmx:iiop:///jndi/iiop://<server_name>:7001/weblogic.management.mbeanservers.runtime.
```

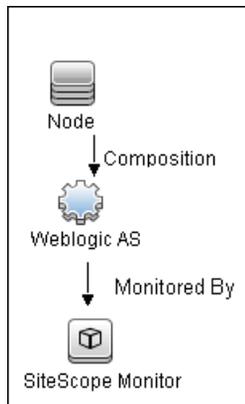
To help you to select the counters that you require, you can open a WebLogic monitor for versions prior to WebLogic 9.x (WebLogic 6.x, 7.x, and 8.x) and see the counters that were defined there. Search for these same counters in the counter tree. You can select additional counters that are available in the JMX monitor and were not available in the WebLogic monitors.

Additionally, to enable monitoring of a WebLogic Application Server 10.3 or 11g, enter the **wlfullclient.jar** in the **Additional Classpath** field in the JMX Monitor Settings. You can specify the timeout for JMX task execution (mbeans retrieval and conversion into xml) by modifying the **_overallJMXCountersRetrievalTimeout** property in the **master.config** file. The default value is 15 minutes. This is not an ORB timeout.

Note: For details on creating the `wfullclient.jar`, refer to the Oracle documentation on Using the WebLogic JarBuilder Tool (http://download.oracle.com/docs/cd/E12840_01/wls/docs103/client/jarbuilder.html).

WebLogic Application Server Topology Settings

The JMX monitor can identify the topology of WebLogic Application Servers. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



Note: The JMX monitor can report topology data to BSM only when monitoring the WebLogic application server, not when monitoring any other environment.

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Troubleshooting and Limitations

When using the JMX monitor to monitor performance statistics on a JBoss server, the **Good** status is displayed in the SiteScope Dashboard even when the JBoss server is unavailable. SiteScope handles the exceptions differently according to the platform.

- ▶ On Windows platforms, each counter is set to **n/a**.
- ▶ On Linux and Solaris platforms, the counters are not reset, but the **no data** value is set, and **No Data Availability**  is displayed in the SiteScope Dashboard.

A workaround when monitoring JBoss is to change the monitor's properties in Threshold Settings, by setting **If unavailable** to **Set monitor status to error**.

Reference

JMX Monitor Settings

This monitor enables you to monitor the performance statistics of those Java-based applications that provide access to their statistics by using the standard JMX remoting technology.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "JMX Monitor Overview" on page 218

JMX Monitor Settings

User interface elements are described below:

UI Element	Description
JMX URL	URL to gather JMX statistics. Typically the URL begins with <code>service:jmx:rmi:///jndi</code> , followed by information specific to the application. Note: When creating a JMX monitor for a WebLogic 9.x, 10.x, or 11g server, enter the following URL: <code>service:jmx:iiop:///jndi/iiop://<host>:<port>/weblogic.management.mbeanservers.runtime</code>
Domain filter	Domain filter to show only those counters existing within a specific domain (optional).
User name	User name for connection to the JMX application (optional).

UI Element	Description
Password	Password for connection to the JMX application (optional).
Additional Classpath	<p>Specify the classpath library that is used to resolve unknown classes retrieved from the JMX server. Multiple libraries can be entered separated by a semicolon.</p> <p>Note: When monitoring a WebLogic Application Server 10.3 or 11g, this field is mandatory, and the wlfullclient.jar must be used. For details on creating the wlfullclient.jar, refer to Using the WebLogic JarBuilder Tool (http://download.oracle.com/docs/cd/E12840_01/wls/docs103/client/jarbuilder.html).</p>
Counters	Server performance counters to check with this monitor. Use the Get Counters button to select counters. When the server being monitored is a WebLogic 9.x, 10.x, or 11g server, see "Creating a JMX Monitor for a WebLogic 9.x, 10.0-10.3, or 11g Server" on page 220 for further details.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

30

LDAP Monitor

This chapter includes:

Concepts

- ▶ LDAP Monitor Overview on page 226

Reference

- ▶ LDAP Monitor Settings on page 227

Concepts

LDAP Monitor Overview

If your LDAP server is not working properly, the user is not able to access and update information in the directory. Most importantly, the user is not able to perform any authentication using the LDAP server. Use the LDAP monitor to monitor the availability and proper functioning of your LDAP server. Another reason to monitor the LDAP server is so that you can find performance bottlenecks. If your end user and LDAP times are both increasing at about the same amount, the LDAP server is probably the bottleneck.

The most important thing to monitor is the authentication of a specific user on the LDAP server. If more than one LDAP server is used, you should monitor each of the servers. You may also want to monitor round trip time of the authentication process.

LDAP traffic is transmitted unsecured by default. You can make LDAP traffic confidential and secure by using Secure Sockets Layer (SSL) and installing a properly formatted certificate.

For details on configuring the monitor, see "LDAP Monitor Settings" on page 227.

Status

Each time the LDAP monitor runs, it returns a status based on the time it takes to perform the connection. An error status or warning status is returned if the current value of the monitor is anything other than good. Errors occur if SiteScope is unable to connect, receives an unknown host name error, or the IP address does not match the host name.

Reference

LDAP Monitor Settings

This monitor enables you to verify that a Lightweight Directory Access Protocol (LDAP) server is working correctly by connecting to it and performing a simple authentication. Optionally, it can check the result for expected content.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The LDAP Authentication Tool is available when configuring this monitor to test an LDAP server can authenticate a user by performing a simple authentication (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "LDAP Authentication Tool" in <i>Using SiteScope</i> .
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "LDAP Monitor Overview" on page 226

LDAP Monitor Settings

User interface elements are described below:

UI Element	Description
Authentication Settings	
LDAP service provider	<p>The constant that holds the name of the environment property for specifying configuration information for the service provider to use. The value of the property should contain a URL string (for example, <code>ldap://somehost:389</code>). This property may be specified in the environment, an applet parameter, a system property, or a resource file. If it is not specified in any of these sources, the default configuration is determined by the service provider.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ By default, LDAP version 2 is used. To use LDAP version 3, type [LDAP-3] before the URL. ▶ To enable LDAP over SSL, type [LDAP-SSL] before the URL.
Security principal	<p>The constant that holds the name of the environment property for specifying the identity of the principal for authenticating the caller to the service. The format of the principal depends on the authentication scheme. If this property is unspecified, the behavior is determined by the service provider. This should be of the form <code>uid=testuser,ou=TEST,o=mydomain.com</code>.</p>

UI Element	Description
Security credential	<p>The constant that holds the name of the environment property for specifying the credentials of the principal for authenticating the caller to the service. The value of the property depends on the authentication scheme. For example, it could be a hashed password, clear-text password, key, certificate, and so on. If this property is unspecified, the behavior is determined by the service provider.</p>
LDAP Settings	
Content match	<p>Text string to check for in the query result. If the text is not contained in the result, the monitor displays no match on content. The search is case sensitive.</p> <p>You may also perform a regular expression match by enclosing the string in forward slashes, with an <i>i</i> after the trailing slash indicating case-insensitive matching.</p> <p>Example: <code>/href=Doc\d+\.html/</code> or <code>/href=doc\d+\.html/i</code></p> <p>If you want a particular piece of text to be saved and displayed as part of the status, use parentheses in a Perl regular expression.</p> <p>Example: <code>/Temperature: (\d+)</code>. This would return the temperature as it appears on the page and this could be used when setting an Error if or Warning if threshold.</p>

UI Element	Description
Object query	<p>An object query to look at a LDAP object other than the default user dn object. For example, enter the mail object to check for an email address associated with the dn object entered above. You must enter a valid object query in this text box if you are using a LDAP filter (see the description below).</p> <p>Note: To use LDAP version 3 for a particular monitor, type [LDAP-3] before the query. If you want to use version 2 and version 3, type [LDAP-ANY].</p>
LDAP filter	<p>Performs an LDAP search using a filter criteria.</p> <p>The LDAP filter syntax is a logical expression in prefix notation meaning that logical operator appears before its arguments. For example, the item sn=Freddie means that the sn attribute must exist with the attribute value equal to Freddie.</p> <p>Multiple items can be included in the filter string by enclosing them in parentheses (such as sn=Freddie) and combined using logical operators such as the & (the ampersand conjunction operator) to create logical expressions.</p> <p>Example: The filter syntax (& (sn=Freddie) (mail=*)) requests LDAP entries that have both a sn attribute of Freddie and a mail attribute.</p> <p>More information about LDAP filter syntax can be found at http://www.ietf.org/rfc/rfc2254.txt and also at http://java.sun.com/products/jndi/tutorial/basics/directory/filter.html.</p>

31

Link Check Transaction Monitor

This chapter includes:

Concepts

- ▶ Link Check Monitor Overview on page 232

Reference

- ▶ Link Check Monitor Settings on page 233

Concepts

Link Check Monitor Overview

Use the Link Check monitor to check the internal and external links on a Web page to insure that they can be reached. Each time the Link Check monitor runs, it returns a status and writes it in a link report log file named `LinkReport_<group name><number>.log` (this should not be confused with the daily logs). It also writes the total number of link errors, the total number of links, the total number of graphics, and the average time for retrieving a page.

You should monitor the Web site for the availability of key content. This includes checking that image files and linked HTML files are accessible as referenced within the Web pages. Starting with your home page, the Link Check monitor branches out and checks every link available on your entire site by default. If you only want it to check a portion of your site, specify the URL that links into the targeted area. You can limit the number of linked hops the monitor follows in the **Maximum hops** box of the Monitor Settings panel.

You probably only need to run the link monitor once a day to check for external links that have been moved or no longer work and internal links that have been changed. You can also run it on demand any time you do a major update of your Web site.

For details on configuring the monitor, see "Link Check Monitor Settings" on page 233.

Reference

Link Check Monitor Settings

This monitor checks the internal and external links on a Web page to insure that they can be reached. SiteScope begins checking links from a URL that you specify, verifies that linked graphics can be found, and follows HREF links to the referenced URLs. The monitor can be configured to check all of the links on your site or to check a limited number of hops from the initial URL.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Link Check Monitor Overview" on page 232

Link Check Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
URL	URL that is the starting point for checking links. The link monitor retrieves the page for this URL and reads the URLs for any links on the page. It continues until it has checked all of the links on the site. Links to other servers are checked but it does not continue and check all the links of those other servers. Example: http://demo.thiscompany.com

UI Element	Description
Search external links	<p>The monitor follows all links on each page and not just links that contain the original base URL.</p> <p>Warning: Using this option may greatly increase the number of links that are tested and the amount of time required for the monitor to run. In some cases this may cause the monitor to run for more than 24 hours without being able to complete all of the link checks. If you select this option, be sure to limit the total number of links to test using the Maximum links setting and limit the depth of the search using the Maximum hops setting.</p> <p>Default value: Not selected</p>
Pause (milliseconds)	<p>Delay, in milliseconds, between each link check. Larger numbers lengthen the total time to check links but decrease the load on the server.</p> <p>Default value: 250 milliseconds</p>
Timeout (seconds)	<p>Amount of time, in seconds, that the URL monitor should wait for a page to begin downloading before timing-out. Once this time period passes, the URL monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p>
Maximum links	<p>Maximum number of links this monitors checks. When the maximum number of links is reached the monitor stops and reports the results of those links that were checked. Increase this number if you have a large site and want to check every link on the site.</p> <p>Default value: 800</p>

UI Element	Description
Maximum hops	<p>Maximum number of internal links that SiteScope should follow from the starting URL. Limiting the number of links reduces the number of URLs that SiteScope follows and shortens the time to complete the report. SiteScope does not follow any links on external pages. Select one of the predefined choices using the Commonly used values list. To enter your own limit, enter a numeric value in the Other values box.</p> <p>Default value: Main page links</p> <p>Example: If you set the number of hops to 3, SiteScope checks all internal pages that can be reached within 3 links from the starting URL.</p>
POST data	<p>Form values required for the first page being checked. This is useful if you need to log in using an HTML form to reach the rest of the site that you are checking. Enter form values in the format <code>key=value</code> (one on each line).</p>
Authorization Settings	
Authorization user name	User name to access the URL if required.
Authorization password	Password to access the URL if required.
Proxy Settings	
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server is used to access the URL.
Proxy server user name	Proxy server user name if the proxy server requires a name to access the URL. Technical note: your proxy server must support Proxy-Authenticate for these options to function.
Proxy server password	Proxy server password if the proxy server requires a name to access the URL. Technical note: your proxy server must support Proxy-Authenticate for these options to function.

32

Log File Monitor

This chapter includes:

Concepts

- ▶ Log File Monitor Overview on page 238

Reference

- ▶ Log File Monitor Settings on page 242

Concepts

Log File Monitor Overview

The Log File monitor watches for specific entries added to a log file by looking for entries containing a text phrase or a regular expression. You can use it to automatically scan log files for error information. With SiteScope doing this for you at set intervals, you can eliminate the need to scan the logs manually. In addition, you can be notified of warning conditions that you may have otherwise been unaware of until something more serious happened.

By default, each time that SiteScope runs this monitor, it starts from the point in the file where it stopped reading last time it ran. This insures that you are notified only of new entries and speeds the rate at which the monitor runs. You change this default behavior using the **Check from beginning** property. For details, see "Check from beginning" on page 245.

The Log File monitor supports monitoring remote servers running on HP NonStop operating systems. For details on enabling the HP NonStop operating system monitoring environment, see "Setup Requirements and User Permissions" on page 209.

Note: Monitoring log files using SSH on Windows platforms is supported from SiteScope version 8.5 and later.

For details on configuring the monitor, see "Log File Monitor Settings" on page 242.

This section contains the following topics:

- "Setup Requirements and User Permissions" on page 239
- "Scheduling the Monitor" on page 239
- "Customizing Log File Content Matches and Monitor Alerts" on page 240
- "Support for IPv6 Addresses" on page 241

Setup Requirements and User Permissions

The following configuration requirements must be performed or verified before the Log File monitor can be used:

- The log file to be monitored must exist, and be accessible under credentials used for connecting to the remote server, or under which SiteScope is running (if monitoring a local file).
- The remote server should be created with credentials that grant read access on the monitored file.

Scheduling the Monitor

You can schedule your Log File Monitors to run as often as every 15 seconds. However, depending on the size of the log file, the total number of monitors you have running, and **Check from beginning** option selected, the monitor may take 15 seconds or longer to check the file for the desired entries. The default update schedule of every 10 minutes is a reasonable frequency in most cases.

Customizing Log File Content Matches and Monitor Alerts

You can create a Log File monitor that triggers customized alerts for content matches according to the threshold status of the monitor.

To configure the Log File monitor with custom matches and alerts:

- 1** In the Log Monitor Settings, configure the following settings:
 - ▶ **Run Alerts:** Select the **For each log entry matched** option.
 - ▶ **Content match:** Enter the text to look for in the log entries. For example, to find text entries `redflag` and `disaster` in the log file, enter `/(redflag|disaster)/`.
 - ▶ **Match value label:** Enter a label name for the matched values found in the target log file. For example, type `matchedValue`.
- 2** In the Threshold Settings, set the error and warning threshold. For example, set `Error if matchedValue == disaster` and set `Warning if matchedValue == redflag`.
- 3** Configure error, warning, and good alerts for the Log File monitor. The alert that is sent depends on the threshold that is met for each entry matched. For example, if the error threshold is met, the error alert is triggered. For details on configuring alerts, see "How to Configure an Alert" in *Using SiteScope*.

Support for IPv6 Addresses

This monitor supports the IPv6 protocol. If you want your environment to resolve host names to IPv6, you can select the **Prefer IP version 6 addresses** option in SiteScope Infrastructure Settings (**Preferences > Infrastructure Preferences > Server Setting**). If this option is selected, whenever a host name is specified for a remote server and the name is resolved to both IPv4 and IPv6, the IPv6 address is used.

When using IPv6, the following protocols are supported:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ SSH (from SiteScope installed on UNIX platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Log File Monitor Settings

The Log File monitor checks for specific entries added to a log file by looking for entries containing a text phrase or a regular expression.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 239. ▶ This monitor supports monitoring remote servers running on HP NonStop operating systems. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Log File Monitor Overview" on page 238

Log File Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
Server	<p>Server where the file you want to monitor is located. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note: If using NetBIOS to connect to other servers in an NT domain, use the UNC format to specify the path to the remote log file.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>

UI Element	Description
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Log file path	<p>Path to the log file you want to monitor.</p> <ul style="list-style-type: none"> ▶ For reading log files on remote UNIX machines, the path must be relative to the home directory of the UNIX user account being used to log in to the remote machine. ▶ For reading log files on remote Windows NT/2000 servers using the NetBIOS method, use UNC to specify the path to the remote log file. Example: \\remoteserver\sharedfolder\filename.log ▶ For reading log files on remote Windows NT/2000 servers using the SSH method, specify the local path of the remote log file on the remote machine. Example: C:\Windows\System32\filename.log <p>You must also select the corresponding remote Windows SSH server in the Servers box. For details on configuring a remote Windows server for SSH, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p> <p>You can also monitor files local to the server where SiteScope is running. Example: C:\application\appLogs\access.log</p> <p>Optionally, you can use special date and time regular expression variables to match log file names that include date and time information. For example, you can use a syntax of s/ex\$shortYear\$\$0month\$\$0day\$.log/ to match a current date-coded log file. For details on using regular expressions, refer to "SiteScope Date Variables" in <i>Using SiteScope</i>.</p>

UI Element	Description
<p>Run alerts</p>	<p>Method for running alerts for this monitor.</p> <ul style="list-style-type: none"> ▶ For each log entry matched. The monitor triggers alerts for every matching entry found. When the Log File monitor is run, the monitor never reports a status of error or warning, regardless of the results of the content match. For details on how to create a Log File monitor that triggers customized alerts for content matches, see "Customizing Log File Content Matches and Monitor Alerts" on page 240. ▶ Once, after all log entries have been checked. The monitor counts up the number of matches and then triggers alerts. <p>Note: The status category is resolved according to the last content that matched the regular expression. If the last matched content does not meet the threshold measurement, an alert is not triggered.</p>
<p>Check from beginning</p>	<p>File checking option for this monitor instance. This setting controls what SiteScope looks for and how much of the target file is checked each time that the monitor is run.</p> <ul style="list-style-type: none"> ▶ Never. Checks newly added records only. ▶ First time only. Checks the whole file once, and then newly added records only. ▶ Always. Always checks the whole file. <p>Default value: Never</p>

UI Element	Description
Content match	<p>Text to look for in the log entries. You can also use a regular expression in this entry to match text patterns. Unlike the content match function of other SiteScope monitors, the Log File monitor content match is run repeatedly against the most recent content of the target log file until all matches are found. This means the monitor not only reports if the match was found but also how many times the matched pattern was found. To match text that includes more than one line of text, add an <code>s</code> search modifier to the end of the regular expression. For details, see "Using Regular Expressions" in <i>Using SiteScope</i>.</p> <p>Note: If you enter more than four values here, when you create a report by clicking the monitor title, the report includes only the first four values.</p>
Open Tool	<p>Opens the Regular Expression Tool, enabling you to test a regular expression for content matching against a sample of the content you want to monitor. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>
Advanced Settings	
Log file encoding	<p>If the log file content to be monitored uses an encoding that is different than the encoding used on the server where SiteScope is running, select the code page or encoding to use. This may be necessary if the code page which SiteScope is using does not support the character sets used in the target log file. This enables SiteScope to match and display the encoded log file content correctly.</p> <p>Default value: windows-1252</p>

UI Element	Description
Rules file path	<p>In rare cases, it may be necessary to create a custom rules file to specify the log entries to match and the alerts to send. An example rules file is located in <SiteScope root directory>\examples\log_monitor\sample.rules. Make a copy of this file and rename. There is no required naming convention. Open the file with the editor of your choice, and using the comments as a guideline, edit the file to meet your needs. When you are finished, enter the full path to your rules file.</p>
Match value labels	<p>Use to enter labels for the matched values found in the target log file. The match value labels are used as variables to access retained values from the Content match expression for use with the monitor threshold settings. Separate multiple labels with a comma (.). The labels are used to represent any retained values from the Content match regular expression in the parameters available for the status threshold settings (Error if, Warning if, and Good if). These labels are also displayed as the text labels in graphs generated for the retained values in management reports for this monitor.</p> <p>Note: If you enter more than four match value labels, when you create a report by clicking the monitor title, the report includes only the first four values.</p>
Multi-line match	<p>Runs a regular expression match on multiple lines of text.</p> <p>Default value: Not selected</p>

UI Element	Description
Server-side processing	<p>Processes log file data on the server-side. Benefits include low memory usage and low CPU utilization on the SiteScope server, and faster monitor run. Server-side processing does however cause high CPU utilization on the remote server when processing the file.</p> <p>Default value: Not selected (we recommend using this option only if SiteScope performance is affected by large amounts of data being appended to the target log file between monitor runs, and the Log File monitor is performing badly in regular mode).</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ Server-side processing is enabled for remote Linux, RedHat Enterprise Linux, and Sun Solaris servers only. Windows SSH is not supported. ➤ “Rule files” are not supported in this mode. ➤ The encoding for the remote server must be Unicode, or match the encoding of the log file (if the remote file is in Unicode charset).
No error if file not found	<p>Monitor remains in Good status if the file is not found. The monitor status remains Good regardless of the monitor threshold configuration.</p> <p>Default value: Not selected</p>

33

Mail Monitor

This chapter includes:

Concepts

- ▶ Mail Monitor Overview on page 250

Reference

- ▶ Mail Monitor Settings on page 251

Concepts

Mail Monitor Overview

The Mail monitor checks that the mail server is accepting requests, and also verifies that a message can be sent and retrieved. It does this by sending a standard mail message using SMTP and then retrieving that same message by using a POP user account. Each message that SiteScope sends includes a unique key that it checks to insure that it does not retrieve the wrong message and return a false OK reading. Each time the Mail monitor runs, it returns a status and writes it in the log file. It also writes the total time it takes to send and receive the mail message in the log file. If SiteScope is unable to complete the entire loop, it generates an error message.

We recommend that you monitor your primary mail server at least every five minutes. The other mail servers can be monitored less frequently. You may find it useful to set up a special mail account to receive the test email messages send by SiteScope.

For details on configuring the monitor, see "Mail Monitor Settings" on page 251.

Reference

Mail Monitor Settings

The Mail monitor checks to see that the mail server is both accepting and delivering messages. Use this monitor to verify that all your mail servers, including internal servers where a firewall is used, are working properly.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The Mail Round Trip Tool is available when configuring this monitor to verify that the mail server is accepting requests and that a message can be sent and retrieved (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Mail Round Trip Tool" in <i>Using SiteScope</i> .
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Mail Monitor Overview" on page 250

Mail Monitor Settings

User interface elements are described below:

UI Element	Description
Action	<p>Action the Mail monitor should take with respect to the mail server:</p> <ul style="list-style-type: none"> ▶ Send and receive. This option enables you to send a test message to an SMTP server and then to receive it back from the POP3 or IMAP4 server. This checks that the mail server is up and running. ▶ Receive only. This option enables you to check the incoming POP3 or IMAP4 mail servers for a message that was sent previously. This check is done by matching the content of the previously sent message. Note: If the this option is selected, the Match content box must have a value to match against. Also, if this option is selected, you should use this monitor for a dedicated mail account that is not being accessed by any other mail client. If another mail client attempts to retrieve mail messages from the account that the Mail monitor is monitoring in Receive only mode, the monitor and the other mail client may lock each other out of the account, and neither is able to retrieve the messages. ▶ Send only. This option checks that the receiving mail server has accepted the message.
Sending email server (SMTP)	<p>Host name of the SMTP mail server to which the test mail message should be sent.</p> <p>Example: mail.thiscompany.com</p>
Send to address	<p>Mail address to which the test message should be sent.</p>
Receiving protocol	<p>Protocol used by the receiving mail server. You use the POP3 option to check the POP3 mail server for a sent message. You use the IMAP4 option to check the IMAP mail server for a sent message.</p>

UI Element	Description
Receiving email server	<p>Host name of the POP3/IMAP4 mail server that should receive the test message. This can be the same mail server to which the test message was sent.</p> <p>Example: mail.thiscompany.com</p>
Receiving email server user name	<p>POP user account name on the receiving mail server. A test email message is sent to this account and the Mail monitor logs in to the account and verifies that the message was received. No other mail in the account is touched; therefore you can use your own personal mail account or another existing account for this purpose.</p> <p>Example: support</p> <p>Note: If you use a mail reader that automatically retrieves and deletes messages from the server, there is a chance that the Mail monitor won't see the mail message and therefore reports an error.</p>
Receiving email server password	<p>Password, if necessary, for the receiving mail account.</p>

UI Element	Description
<p>Receive only content match</p>	<p>Text string to match against the contents of the incoming message. If the text is not contained in the incoming message, the monitor reports an error. This is for the receiving only option. The search is case sensitive.</p> <p>Example: Subject:MySubject</p> <p>HTML tags are part of a text document, so include the HTML tags if they are part of the text you are searching for (for example, < B> Hello< /B> World). This works for XML pages as well.</p> <p>You may also perform a regular expression match by enclosing the string in forward slashes, with an i after the trailing slash indicating case-insensitive matching.</p> <p>Example: /href=Doc\d+\.\html/ or /href=doc\d+\.\html/i</p> <p>If you want a particular piece of text to be saved and displayed as part of the status, use parentheses in a regular expression.</p> <p>Example: /Temperature: (\d+)/</p> <p>This would return the temperature as it appears on the page and this could be used when setting an Error if or Warning if threshold.</p>
<p>Attachment</p>	<p>Full path of a file to add as an attachment to the email message. Use this option to check that your email server can accept and forward messages with attached files. Optionally, you can use a regular expression to insert date and time variables to create a filename or file path.</p> <p>Example: s/C:\firstdir\\${shortYear}\${0month}\${0day\$}/</p>
<p>Attachment encoding</p>	<p>The code page or encoding to use if the attachment file content uses an encoding that is different than the encoding used on server where SiteScope is running. This may be necessary if the code page which SiteScope is using does not support the character sets used in the attachment file.</p> <p>Default value: windows-1252</p>

UI Element	Description
Timeout (seconds)	Amount of time, in seconds, that the Mail monitor should wait for a mail message to be received before timing-out. Once this time period passes, the Mail monitor logs an error and reports an error status. Default value: 300 seconds
POP check delay (seconds)	After SiteScope sends the test message, it immediately logs into the mail account to verify that the message has been received. If the message has not been received, SiteScope automatically waits 10 seconds before it checks again. You can adjust this wait time by indicating an alternate number of seconds to wait in this box. Default value: 10 seconds
SMTP user	User name required for SMTP authentication if the SMTP server requires authentication before sending messages.
SMTP password	Password for the SMTP authentication (if required).
NTLM authentication	NTLM authentication version (1 or 2) if used by the email server. Default value: none

34

MAPI Monitor

This chapter includes:

Concepts

- ▶ MAPI Monitor Overview on page 258

Tasks

- ▶ How to Prepare the System for Using the MAPI Monitor on page 260

Reference

- ▶ MAPI Monitor Settings on page 264

Concepts

MAPI Monitor Overview

The MAPI monitor checks a Messaging Application Program Interface (MAPI) server to confirm that email operations can be run. The monitor is designed to test the operation of a Microsoft Exchange Server 2003/2007, and for Outlook 2007. It verifies that the server is accepting requests, and also verifies that a message can be sent and retrieved. It does this by sending a standard email and deleting the mail if the message is successfully sent and received. If the received part of the monitoring fails (for example, because of a delay in sending the email or due to a short timeout for receiving the mail) the test mail remains in the mailbox. The error and warning thresholds for the monitor are set based on the email delivery time. Create a separate MAPI monitor instance for each Microsoft Exchange server in your environment.

Note: This monitor is supported in SiteScopes that are running on Windows versions only.

For details on the monitor user interface, see "MAPI Monitor Settings" on page 264.

Setup Requirements

There are several important configuration requirements that must be performed or verified before the MAPI monitor can be used. For a description of the steps you use to configure your environment for this monitor, see "How to Prepare the System for Using the MAPI Monitor" on page 260. The following are several definitions that are used in the steps listed below.

- ▶ **Local Administrator.** An account that has administrative privileges on the local machine. An account can have this privilege either implicitly by having Domain Admin privileges or explicitly by adding as a member of the Administrators group on the local machine. Consult your system administrator, if necessary, for help with creating accounts.
- ▶ **MailBox Owner.** This is an "owner" account for which an Exchange mailbox has been set up. To use the MAPI monitor, this account must be a Local Administrator (see definition above) on the SiteScope server.
- ▶ **SiteScope User.** This is the account that is used to run the SiteScope service. This account must also be a Local Administrator (see definition above).

Tasks

How to Prepare the System for Using the MAPI Monitor

This task describes the steps involved in preparing the monitoring environment.

Note: For definitions of the terms Local Administrator, MailBox Owner, and SiteScope User that are used in the steps that follow, see "Setup Requirements" on page 259.

This task includes the following steps:

- "Create mailbox accounts on each Exchange Server to be monitored with the MAPI monitor" on page 261
- "Add each Exchange Mailbox Owner to the Administrators users group on the SiteScope server" on page 261
- "Install Microsoft Outlook or an equivalent MAPI 1.0 Mail Client on the SiteScope server" on page 262
- "Configure Outlook for the MailBox User" on page 262
- "Verify the SiteScope user logon is a member of Administrators group or a domain administrator account" on page 262
- "Add the SiteScope user account to the "Act as part of the operating system" Local Security Policy" on page 263
- "Configure the monitor properties" on page 263

1 Create mailbox accounts on each Exchange Server to be monitored with the MAPI monitor

Exchange mailbox accounts are used by SiteScope to measure the roundtrip time for a message to originate and arrive in a mailbox account. The MAPI Monitor Settings pane supports up to two mailboxes per Exchange Server. If only one mailbox is specified in the MAPI Monitor Settings the same mailbox can be used for the sender and receiver accounts.

Consult your Exchange system administrator for help setting up mailbox accounts for use with the SiteScope MAPI monitor.

2 Add each Exchange Mailbox Owner to the Administrators users group on the SiteScope server

The Mailbox Owner accounts setup in the previous step, which are by definition domain logons, must be added to the Administrators group on the SiteScope server.

- a** Click **Start > Settings > Control Panel > Users and Passwords > Advanced tab** or open the Computer Management utility and expand the **Local Users and Groups** folder in the left pane and click the **Groups** folder.
- b** Double-click the Administrators group icon to open the Administrators Properties window.
- c** Click the **Add** button to add each Mailbox Owner you expect to use with the MAPI monitor.

Note: Make sure that the domain logon description is of the form domain\logon.

3 Install Microsoft Outlook or an equivalent MAPI 1.0 Mail Client on the SiteScope server

The SiteScope server requires a MAPI 1.0 client such as Outlook XP or Outlook 2003 or later. Consult your system administrator, if necessary, for help installing a compliant MAPI client.

4 Configure Outlook for the MailBox User

After logging on to the SiteScope server as the MailBox User created in the first step, the Outlook wizard may start setting up an Outlook profile for the mail box. If an Outlook client is already installed, you can use that Outlook client and click **Tools > E-mail Accounts** to create a profile for the mailbox/logon you intend to use with the MAPI monitor. See your Exchange System administrator for help configuring an Outlook client on your SiteScope server.

Creating an Outlook profile is not necessary, although it may be helpful for the purpose of troubleshooting. After the wizard prompts you to set up a profile you can cancel to exit the wizard.

5 Verify the SiteScope user logon is a member of Administrators group or a domain administrator account

The SiteScope user account must be a Local Administrator or a member of the domain admins group. To change the logon account for the SiteScope user:

- a** Open the **Services** control utility on the SiteScope server.
- b** Right-click the **SiteScope** service entry and click **Properties**. The SiteScope Properties settings page opens.
- c** Click the **Log On** tab.
- d** Verify that the SiteScope user is run as a member of Administrators group or a domain logon account. To change the logon properties, click the **This account** radio button and enter the SiteScope user logon.
- e** Restart the SiteScope server after making changes to the SiteScope service logon account.

6 Add the SiteScope user account to the "Act as part of the operating system" Local Security Policy

To add the SiteScope user account to the "Act as part of the operating system" local security policy.

- a** Click **Start > Programs > Administrative Tools > Local Security Policy**. The Local Security Policy panel opens.
- b** Click the **Local Policies** folder in the left pane and then click the **User Rights Assignments** folder to display the list of policies.
- c** Double-click the **Act as part of the operating system** policy item in the right pane. The Local Security Policy Setting list opens.
- d** If the SiteScope user is not in the list of logons for this security policy setting then it must be added now. Click the **Add** button to bring up the Select Users or Groups window.
- e** Enter the SiteScope user logon using the **domain\logon** format if the SiteScope user is a domain account.
- f** After adding the SiteScope service logon, you must reload the security settings. To do this, right-click the **Security Settings** root folder in the left pane and click **Reload**.
- g** Restart the SiteScope service after making changes to security policy.

7 Configure the monitor properties

Complete the MAPI monitor configuration. For user interface details, see "MAPI Monitor Settings" on page 264.

Reference

MAPI Monitor Settings

This monitor enables you to monitor the availability of Microsoft Exchange 2003 and 2007. The monitor checks for email delivery time. This enables you to verify availability of the MAPI server by sending and receiving a test message in a Microsoft Exchange email account.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 259.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Prepare the System for Using the MAPI Monitor" on page 260 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "MAPI Monitor Overview" on page 258

MAPI Monitor Settings

User interface elements are described below:

UI Element	Description
Receiver server	Host name or address of a Microsoft Exchange Server. The name can be an IP address or other name that can be resolved by the DNS server. We recommend that you copy the server name as it appears in the Properties of the email account you are using with this monitor.
Receiver mailbox	Name (alias) of the mailbox to be used for this monitor. This is often the email account name but it may be a different name. We recommend that you copy the mailbox name as it appears in the E-Mail Account properties for the email account you are using with this monitor.

UI Element	Description
Receiver domain	<p>Domain to which both the owner of the mailbox being used and the Microsoft Exchange server belong.</p> <p>Note: The owner of the mailbox to be used by this monitor must also have administrative account privileges on the machine where SiteScope is running. SiteScope also needs user account access to the domain where the Microsoft Exchange server is running.</p>
Receiver user name	NT account login name for the user associated with the above email account.
Receiver password	NT account login password for the user name above.
Sender server	<p>Sender's Microsoft Exchange server name.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The MAPI sender is ignored if an SMTP sender is specified in the Sender box below. ▶ If any of the SMTP sender values are not specified, the receiver values are used instead.
Sender mailbox	Alias of the sending mailbox.
Sender domain	Domain to which both the sending mailbox owner and the sending Microsoft Exchange server belong.
Sender user name	Login name for the NT account of the sending mailbox owner.
Sender password	NT account login password for the sender account above.
Transaction timeout (seconds)	<p>Amount of time, in seconds, for the monitor to wait for the message to arrive before the monitor should timeout. The monitor reports an error if timeout value is met before the email message is delivered.</p> <p>Default value: 25 seconds</p>
SMTP server	<p>SMTP server through which an outgoing message is sent.</p> <p>Note: If you set any of the SMTP values (SMTP server, Sender or Receiver) they override the MAPI sender options.</p>

UI Element	Description
Sender	Email address of the SMTP sender.
Receiver	Email address of the receiver. This must match the Receiver mailbox alias specified above.
Attachment	Full path of a file to attach to the outgoing SMTP message.

35

Memory Monitor

This chapter includes:

Concepts

- ▶ Memory Monitor Overview on page 268

Reference

- ▶ Memory Monitor Settings on page 272

Concepts

Memory Monitor Overview

Memory is one of the primary factors that can affect your server's performance. Use the Memory monitor to monitor how much virtual memory is currently in use on a server. Use the Pages per Second, Percentage of Virtual Memory Used, and Value of Free Memory measurements to help detect problems in this area. Each time the Memory monitor runs, it collects the measurements and displays the status in the SiteScope Dashboard.

In most environments, the Memory monitor does not put a heavy load on your server. For monitoring remote UNIX servers, SiteScope needs to open the connection, while getting the data from the remote server. While the monitor actions generally do not load the either server, managing a large number of remote connections can results in some performance problems. You can use the error and warning thresholds to have SiteScope notify you if memory on a remote server starts to get low.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "Memory Monitor Settings" on page 272.

This section also includes:

- "IPv6 Addressing Supported Protocols" on page 269
- "Troubleshooting and Limitations" on page 270

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- NetBios (from SiteScope installed on Windows platforms only)
- WMI (from SiteScope installed on Windows platforms only)
- SSH (from SiteScope installed on UNIX platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the Memory monitor.

Pages Per Second is Affecting System Performance

Problem: The number of Pages per second is consistently high (>10 pages/sec) and is affecting system performance. Pages per second measures the number of virtual memory pages that are moved between main memory and disk storage.

Solution 1: Add more memory.

Solution 2: Turn off non-critical services that are using memory, or move these services to a different machine. The SiteScope Service monitor measures the memory usage for each service.

Percentage of Virtual Memory Used Reaches 100%

Problem: The number of Percentage of Virtual Memory Used reaches 100%, and services that are running may fail and new ones are unable to start. Percentage of Virtual Memory Used measures the percentage of memory and paging file space used.

Solution 1: Increase the size of the paging file. This may solve the immediate problem but may decrease performance by increasing paging. A slow increase in Virtual Memory Used is often caused by a memory leak in a service. Use the **Processes Tool** to view the memory used by each service. For details on using the tool, see "Processes Tool" in *Using SiteScope*.

Solution 2: An interim solution is to use the Service monitor to measure the service size and run a SiteScope Script Alert to restart the service when it becomes too large. If restarting the service does not fix the leak, it may be necessary to add a Script Alert to restart the server when memory usage is too high. For details on using a Script Alert, see "Working with Script Alerts" in *Using SiteScope*. For details on using the Service monitor, see "Service Monitor Overview" on page 526.

Solution 3: Install an upgraded version of the service without the leak.

Note: When deploying the Memory monitor on a remote UNIX machine, the monitor displays swap memory usage and not virtual memory usage. To monitor virtual memory usage, deploy the UNIX Resources monitor. For details, see "UNIX Resources Monitor Overview" on page 618.

Reference

Memory Monitor Settings

This monitor enables you to track how much virtual memory is currently in use on a server. Running out of memory can cause server applications to fail and excessive paging can have a drastic effect on performance. Use this page to add a monitor or edit the monitor's properties.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ The Performance Counters Tool is available when configuring this monitor to check performance counters on a specific machine in a Windows network (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Performance Counters Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Memory Monitor Overview" on page 268

Memory Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Server where the memory you want to monitor is running. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed here. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>

36

Microsoft ASP Server Monitor

This chapter includes:

Concepts

- ▶ Microsoft ASP Server Monitor Overview on page 276

Reference

- ▶ Microsoft ASP Server Monitor Settings on page 278

Concepts

Microsoft ASP Server Monitor Overview

Use the Microsoft ASP Server monitor to monitor Active Server Pages (ASP) performance parameters on Microsoft Windows NT Terminal Server 4.0 and Microsoft Windows 2000 Server. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate monitor instance for each ASP Server you are running.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "Microsoft ASP Server Monitor Settings" on page 278.

This section also includes:

- ▶ "Setup Requirements" on page 276
- ▶ "IPv6 Addressing Supported Protocols" on page 277

Setup Requirements

- ▶ The Remote Registry service must be running on the machine where the ASP server is running if the ASP Server is running on Windows 2000.
- ▶ The Microsoft ASP Server monitor makes use of performance counters to measure application server performance. SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login

different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Microsoft ASP Server Monitor Settings

This monitor enables you to monitor the availability of a Microsoft ASP server on Windows NT systems. The error and warning thresholds for the monitor can be set on one or more ASP server performance statistics.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 276. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft ASP Server Monitor Overview" on page 276

Microsoft ASP Server Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Server where the Microsoft ASP Server you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed in the server list. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

37

Microsoft Exchange 2007/2010 Monitor

This chapter includes:

Concepts

- ▶ Microsoft Exchange 2007/2010 Monitor Overview on page 282

Tasks

- ▶ How to Configure the Microsoft Exchange 2007/2010 Monitoring Environment on page 285

Reference

- ▶ Microsoft Exchange 2007/2010 Monitor Settings on page 291

Concepts

Microsoft Exchange 2007/2010 Monitor Overview

Use the Microsoft Exchange 2007/2010 monitor to display important statistics about the messaging system handled by a Microsoft Exchange Server 2007 or 2010. The statistics are gathered through Exchange Management Shell, a command-line interface (built on Microsoft Windows PowerShell technology) that is used for managing and testing Microsoft Exchange servers and objects.

By default, the Microsoft Exchange 2007/2010 monitor can run command-lets (cmdlets) to provide health information about MAPI logons, Mail flow, and Search. You can also retrieve health information for Outlook Web Access and Web Services by configuring a test mailbox in the Exchange Server 2007 or 2010. For details, see "How to Configure the Microsoft Exchange 2007/2010 Monitoring Environment" on page 285.

Create a separate Microsoft Exchange 2007/2010 monitor instance for each Microsoft Exchange server in your environment. The Microsoft Exchange 2007/2010 monitor is supported on Windows versions of SiteScope only.

For task details, see "How to Configure the Microsoft Exchange 2007/2010 Monitoring Environment" on page 285.

For user interface details, see "Microsoft Exchange 2007/2010 Monitor Settings" on page 291.

Setup Requirements

- To configure Microsoft Exchange 2007/2010 monitor, Exchange Management Shell must be installed on SiteScope server. Windows PowerShell 1.0 must be installed on the computer that runs the Exchange Management Shell.
- You must log on to the SiteScope server using a domain account that has the permissions assigned to the Exchange Server Administrators group. The account must also be a member of the local Administrators group on that computer. For details, see "Prepare the System for Using the Microsoft Exchange 2007/2010 Monitor" on page 288.
- For each cmdlet, the account you use must be delegated as follows (according to Microsoft Exchange Server 2007/2010, Permission Considerations section: <http://technet.microsoft.com/en-us/library/aa996881.aspx>):

cmdlet	Description
Test-MAPIConnectivity	<p>To run the Test-MapiConnectivity cmdlet, the account you use must be delegated the Exchange Server Administrators role and local Administrators group for the target server.</p> <p>To run the Test-MapiConnectivity cmdlet on a computer that has the Mailbox server role installed, you must log on by using a domain account that has the permissions assigned to the Exchange Server Administrators group. The account must also be a member of the local Administrators group on that computer.</p>
Test-ExchangeSearch	<p>To run the Test-ExchangeSearch cmdlet, the account you use must be delegated the following:</p> <ul style="list-style-type: none"> ➤ Exchange Recipient Administrator role ➤ Exchange Server Administrators role and local Administrators group for the target server

cmdlet	Description
Test-MailFlow	To run the Test-Mailflow cmdlet, the account you use must be delegated the Exchange Server Administrators role and local Administrators group for the server where the cmdlet is run.
Test-OWAConnectivity	To run the Test-OwaConnectivity cmdlet to test Outlook Web Access connectivity for all Exchange 2007/2010 virtual directories on a Client Access server, the account you use must be delegated the Exchange Server Administrators role and membership in the local Administrators group for the target server.
Test-WebServicesConnectivity	To run the Test-WebServicesConnectivity cmdlet, the account you use must be delegated the Exchange Administrator role and local Administrators group for the target server.

- To run each cmdlet, the server roles that correspond to the cmdlets you want to run must be installed on the Microsoft Exchange Server. When monitoring Microsoft Exchange Server 2007 or 2010, the available counters are determined according to the server roles installed. For example, if the Hub Transport and Mailbox roles are installed, the Test-MailFlow cmdlet runs. The following table shows the server roles required to run the cmdlets.

Server Role	Cmdlet
Mailbox	<ul style="list-style-type: none"> ► Test-MAPIConnectivity ► Test-ExchangeSearch
Hub Transport, Mailbox	Test-MailFlow
Client Access	<ul style="list-style-type: none"> ► Test-OWAConnectivity ► Test-WebServicesConnectivity

Tasks

How to Configure the Microsoft Exchange 2007/2010 Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 286
- "Prepare the system for using the Microsoft Exchange 2007/2010 monitor" on page 286
- "Enter the PowerShell execute command when using the Microsoft Exchange 2007/2010 monitor on a 64-bit version of Windows 2003, 2008, or XP" on page 286
- "Configure additional Microsoft Exchange Server counters - optional" on page 287
- "Configure the monitor properties" on page 287
- "Schedule the monitor - optional" on page 287

1 Prerequisites

There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements" on page 283.

2 Prepare the system for using the Microsoft Exchange 2007/2010 monitor

For information on the steps you use to configure your environment for this monitor, see "Prepare the System for Using the Microsoft Exchange 2007/2010 Monitor" on page 288.

3 Enter the PowerShell execute command when using the Microsoft Exchange 2007/2010 monitor on a 64-bit version of Windows 2003, 2008, or XP

To enable use of the Microsoft Exchange 2007/2010 monitor on 64-bit version of Windows 2003, Windows 2008, or Windows XP (since a 32-bit application cannot access the system32 folder on a computer that is running a 64-bit version of Windows Server 2003, 2008, or of Windows XP), perform the following:

- a Apply the Microsoft hotfix available from <http://support.microsoft.com/?scid=kb;en-us;942589>
- b In the **Power Shell execute command** box in **Preferences > Infrastructure Preferences > General Settings**, enter the PowerShell execute command. For example:
C:\Windows\Sysnative\WindowsPowerShell\v1.0\powershell.exe

Note: Symlink Sysnative is not available by default on Windows 2003 or Windows XP.

4 Configure additional Microsoft Exchange Server counters - optional

You must configure a test mailbox in the Microsoft Exchange Server to retrieve health information for the Outlook Web Access and Web Services cmdlets.

- a To configure a test mailbox in the Microsoft Exchange Server, run the script **New-TestCasConnectivityUser.ps1** in the Exchange Server to create a test mailbox. The script can be found under **<Exchange installation directory>\Scripts**.
- b After running the command, define an initial password for this account, and press ENTER to confirm the process. A new user is created with a name similar to **CAS_<16 digits>**.

You can run the **Get-Mailbox** cmdlet to verify that the test mailbox was created. This cmdlet retrieves a list of mailboxes, which you can use to check for the new test mailbox.

- c Repeat this process for each Exchange Mailbox Server that is to be tested.

5 Configure the monitor properties

Complete the Microsoft Exchange 2007/2010 monitor configuration. For user interface details, see "Microsoft Exchange 2007/2010 Monitor Settings" on page 291.

6 Schedule the monitor - optional

This monitor computes statistics that do not normally change very rapidly and are not critical to system availability, so it should be scheduled to run infrequently, or on demand only. We do not recommend setting monitor run frequency to less than 10 minutes.

Prepare the System for Using the Microsoft Exchange 2007/2010 Monitor

There are several important configuration requirements that must be performed or verified before the Microsoft Exchange 2007/2010 monitor can be used. This section describes the steps you use to configure your environment for this monitor. The following are several definitions that are used in the steps listed below.

- ▶ **Exchange Server Administrators.** An account that has administrative privileges on the Exchange server.
- ▶ **Local Administrator.** An account that has administrative privileges on the local machine. An account can have this privilege either implicitly by having Domain Admin privileges or explicitly by adding as a member of the Administrators group on the local machine. Consult your system administrator, if necessary, for help with creating accounts.
- ▶ **MailBox Owner.** This is an "owner" account for which an Exchange mailbox has been set up. To use the Microsoft Exchange 2007/2010 monitor, this account must be a Local Administrator (see definition above) on the SiteScope server.
- ▶ **SiteScope User.** This is the account that is used to run the SiteScope service. This account must also be a Local Administrator and delegated the Exchange Server Administrators role (see definition above).

This task includes the following steps that should be performed before creating a Microsoft Exchange monitor:

- ▶ "Create mailbox accounts on each Exchange Server to be monitored with the Microsoft Exchange 2007/2010 monitor" on page 289
- ▶ "Add each Exchange Mailbox Owner to the Administrators users group on the SiteScope server" on page 289
- ▶ "Verify that the SiteScope user logon is a member of Administrators group or a domain administrator account and delegated the Exchange Server Administrators role" on page 290

1 Create mailbox accounts on each Exchange Server to be monitored with the Microsoft Exchange 2007/2010 monitor

Exchange mailbox accounts are used by Microsoft Exchange 2007/2010 monitor to measure the performance counters on the Exchange server. Consult your Exchange system administrator if you need help setting up mailbox accounts for use with the SiteScope Microsoft Exchange 2007/2010 monitor.

2 Add each Exchange Mailbox Owner to the Administrators users group on the SiteScope server

The Mailbox Owner accounts setup in step 1, which are by definition domain logons, must be added as to the Administrators group on the SiteScope server.

- a** Click **Start > Settings > Control Panel > Users and Passwords > Advanced tab** or open the Computer Management utility and expand the **Local Users and Groups** folder in the left pane and click the **Groups** folder.
- b** Double-click the **Administrators** group icon to open the Administrators Properties window.
- c** Click the **Add** button to add each Mailbox Owner you expect to use with the Exchange 2007/2010 monitor.

Note: Make sure that the domain logon description is of the form domain\logon.

3 Verify that the SiteScope user logon is a member of Administrators group or a domain administrator account and delegated the Exchange Server Administrators role

For more information about permissions, delegating roles, and the rights that are required for SiteScope user logon to monitor Microsoft Exchange Server 2007/2010, see "Setup Requirements" on page 283.

Caution: The SiteScope user account must be a Local Administrator or a member of the domain admins group and delegated the Exchange Server Administrators role.

To change the logon account for the SiteScope user:

- a** Open the **Services** control utility on the SiteScope server.
- b** Right-click the **SiteScope** service entry and click **Properties**. The SiteScope Properties settings page opens.
- c** Click the **Log On** tab.
- d** Verify that the SiteScope user is run as a member of Administrators group or a domain logon account. To change the logon properties, click the **This account** radio button and enter the SiteScope user logon.
- e** Restart the SiteScope server after making changes to the SiteScope service logon account.

Reference

Microsoft Exchange 2007/2010 Monitor Settings

This monitor enables you to monitor statistics of Microsoft Exchange Server 2007 or 2010 on Windows platforms only.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 283. ▶ You can create or update the Microsoft Exchange 2007/2010 monitor even if you input the incorrect Exchange Domain or Mailbox. This is because these properties are counter specific. As a result, some counter values may not be retrieved. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the Microsoft Exchange 2007/2010 Monitoring Environment" on page 285 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ▶ "Microsoft Exchange 2007/2010 Monitor Overview" on page 282

Microsoft Exchange 2007/2010 Monitor Settings

User interface elements are described below:

UI Element	Description
Exchange server	Name of the server running Microsoft Exchange Server 2007/2010 that you want to monitor.
Exchange domain	Domain name and the mailbox of the server running Microsoft Exchange Server 2007/2010 that you want to monitor.
Mailbox	Name (alias) of the mailbox to be used for this monitor. This is often the email account name but it may be a different name. We recommend that you copy the mailbox name as it appears in the E-Mail Account properties for the email account you are using with this monitor.
Exchange PS console file path	<p>Full path to the Microsoft Exchange Server Management Shell console file.</p> <p>Example:</p> <ul style="list-style-type: none"> ▶ On Microsoft Exchange 2007: C:\Program Files\Microsoft\Exchange Server\Bin\ExShell.psc ▶ On Microsoft Exchange 2010: C:\Program Files\Microsoft\Exchange Server\V14\Bin\ExShell.psc
Timeout (seconds)	<p>Amount of time to wait, in seconds, for getting a response. You can set the timeout to no less than 1 second and no more than 10 minutes.</p> <p>Default value: 120 seconds</p>

UI Element	Description
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p> <p>Each performance counter contains information in the following categories:</p> <ul style="list-style-type: none"> ▶ Unit\ Type. The statistic's units. Some examples of possible types of units include percent, millisecond, or KB. ▶ Component. Components from which the performance counter is collected. ▶ Server Role. Indicates the required server role for running the cmdlet.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

38

Microsoft Exchange 2003 Mailbox Monitor

This chapter includes:

Concepts

- ▶ Microsoft Exchange 2003 Mailbox Monitor Overview on page 296

Reference

- ▶ Microsoft Exchange 2003 Mailbox Monitor Settings on page 298

Concepts

Microsoft Exchange 2003 Mailbox Monitor Overview

Use the Microsoft Exchange 2003 Mailbox monitor to display important statistics about mailboxes handled by a Microsoft Exchange 2003 server, including mailboxes that are over a certain size, and mailboxes that have not been accessed in some number of days.

Note:

- ▶ The Microsoft Exchange 2003 Mailbox monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ This monitor can only be added by deploying a Microsoft Exchange Solution template. For details on using the template, see "Microsoft Exchange Solution Templates" in *Using SiteScope*.
- ▶ This monitor is supported in SiteScopes that are running on Windows versions only.
- ▶ SiteScope must be configured to log on as a user account within the domain when running as a service, and not as Local System account.

This monitor computes statistics that do not normally change very rapidly and are not critical to system availability, so it should be scheduled to run infrequently, or on demand only.

For details on configuring the monitor, see "Microsoft Exchange 2003 Mailbox Monitor Settings" on page 298.

Troubleshooting and Limitations

Problem: You encounter one of the following errors when using the Microsoft Exchange 2003 Mailbox monitor (even though the monitor is in Good status):

- 1- Query failed: Cannot send request. Driver is not ready
- 2- Query failed: Request timed out
- 3- Query failed: Could not connect to the server

Solution 1: Enable WMI requests on the Microsoft Exchange 2003 server by setting the Remote Enable permission in the WMI Control for a namespace. If a user tries to connect to a namespace they are not allowed access to, they receive an error.

- 1** On the target server, select **Control Panel > Administrative Tools-> Computer Management**.
- 2** Expand **Services and Applications**.
- 3** Right-click **WMI Control** and select **Properties**.
- 4** In the **Security** tab, select the namespace and click **Security**.
- 5** Locate the appropriate account and select **Remote Enable** in the **Permissions** list.

Solution 2: Enable WMI requests through Windows firewall.

If the target server is running Windows Firewall (also known as Internet Connection Firewall), enable it to let remote WMI requests through. On the target server, run the following command:

```
netsh firewall set service RemoteAdmin enable
```

For more details, see the Microsoft documentation (<http://msdn.microsoft.com/en-us/library/aa389286.aspx>).

Reference

Microsoft Exchange 2003 Mailbox Monitor Settings

The Microsoft Exchange 2003 Mailbox monitor enables you to monitor mailbox statistics of Microsoft Exchange Server 2003.

To access	Select the Templates context. In the template tree, expand the Solution Templates container. Right-click Microsoft Exchange 2003 , and select Deploy Template . Select the SiteScope group container into which you want to deploy the solution template, and enter the deployment values.
Important information	<ul style="list-style-type: none"> ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ This monitor can only be added by deploying a Microsoft Exchange Solution template. Once the monitor has been created, you can edit the monitor configuration in the same way as other monitors. For information about using templates to deploy monitors, see "SiteScope Templates" in <i>Using SiteScope</i>.
See also	▶ "Microsoft Exchange 2003 Mailbox Monitor Overview" on page 296

Microsoft Exchange 2003 Mailbox Monitor Settings

User interface elements are described below:

UI Element	Description
Server	Server running Microsoft Exchange Server 2003 that you want to monitor.
User name	<p>User name to use when querying the server for mailbox statistics.</p> <p>The statistics are gathered by using WMI (Windows Management Instrumentation). The user name entered here must have permissions to read WMI statistics on the server from WMI namespace root\MicrosoftExchangeV2.</p> <p>Default value: If this box is left blank, the user that SiteScope is running is used.</p>
Password	Password for the user name entered above, or blank if user name is blank.
N largest mailboxes	<p>Number (N) of mailboxes to display when reporting the N largest mailboxes.</p> <p>Default value: 5</p>
Days since access	<p>Number of days (N) to use when reporting the number of mailboxes that have not been accessed in N days.</p> <p>Default value: 30</p>
Reporting directory	<p>Location for SiteScope to save the results of each execution of this monitor.</p> <p>A default location is chosen if this box is left blank.</p>
Timeout (seconds)	<p>Number of seconds that the monitor should wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p>

39

Microsoft Exchange 5.5 Message Traffic Monitor

This chapter includes:

Concepts

- ▶ Microsoft Exchange 5.5 Message Traffic Monitor Overview on page 302

Reference

- ▶ Microsoft Exchange 5.5 Message Traffic Monitor Settings on page 303

Concepts

Microsoft Exchange 5.5 Message Traffic Monitor Overview

Use the Microsoft Exchange 5.5 Message Traffic monitor to display important statistics about messages handled by a Microsoft Exchange 5.5 server, such as a count of messages sent that are larger than a certain size, or sent to a large number of recipients.

Note:

- ▶ The Microsoft Exchange 5.5 Message Traffic monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ This monitor can only be added by deploying a Microsoft Exchange Solution template. For details on using the template, see "Microsoft Exchange Solution Templates" in *Using SiteScope*.

This monitor computes statistics that do not normally change very rapidly and are not critical to system availability, so it should be scheduled to run infrequently, or on demand only.

For details on configuring the monitor, see "Microsoft Exchange 5.5 Message Traffic Monitor Settings" on page 303.

Reference

Microsoft Exchange 5.5 Message Traffic Monitor Settings

The Microsoft Exchange 5.5 Message Traffic monitor enables you to monitor message statistics of Microsoft Exchange Server 5.5.

To access	Select the Templates context. In the template tree, expand the Solution Templates container. Right-click Microsoft Exchange 5.5 , and select Deploy Template . Select the SiteScope group container into which you want to deploy the solution template, and enter the deployment values.
Important information	<ul style="list-style-type: none"> ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ This monitor can only be added by deploying a Microsoft Exchange Solution template. Once the monitor has been created, you can edit the monitor configuration in the same way as other monitors. For information about using templates to deploy monitors, see "SiteScope Templates" in <i>Using SiteScope</i>.
See also	▶ "Microsoft Exchange 5.5 Message Traffic Monitor Overview" on page 302

Microsoft Exchange 5.5 Message Traffic Monitor Settings

User interface elements are described below:

UI Element	Description
Recipient limit	Number (N) of recipients to use when computing the number of messages sent to more than N recipients. Default value: 10
Query interval	Number of minutes to look back for messages when computing statistics. This affects how long it takes to run the monitor as a large interval could result in a large number of messages to be processed. Default value: 1440 minutes (one day)
Message size limit	Number (N) of bytes to use when computing the number of messages sent larger than N bytes. Default value: 2000
Number of domains	Number (N) of domains to use for reporting the top N sending domains. Default value: 5
Number of outgoing users	Number (N) of users to use for reporting the top N outgoing users. Default value: 5
Log directory	UNC path to the directory where message tracking logs are stored for the Exchange 5.5 server. Default value: \\<server name>\tracking.log.
Reporting directory	Location for SiteScope to save the results of each execution of this monitor. Default value: A default location is chosen if this box is left blank.

40

Microsoft Exchange 2000/2003/2007 Message Traffic Monitor

This chapter includes:

Concepts

- ▶ Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Overview
on page 306

Reference

- ▶ Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Settings
on page 307

Concepts

Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Overview

Use the Microsoft Exchange 2000/2003/2007 Message Traffic monitor to display important statistics about messages handled by a Microsoft Exchange 2000/2003/2007 server, such as a count of messages sent that are larger than a certain size, or sent to a large number of recipients.

Note:

- ▶ The Microsoft Exchange 2000/2003/2007 Message Traffic monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ This monitor can only be added by deploying a Microsoft Exchange Solution template. For details on using the template, see "Microsoft Exchange Solution Templates" in *Using SiteScope*.
- ▶ This monitor is supported in SiteScopes that are running on Windows versions only.
- ▶ SiteScope must be configured to log on as a user account within the domain when running as a service, and not as Local System account.

This monitor computes statistics that do not normally change very rapidly and are not critical to system availability, so it should be scheduled to run infrequently, or on demand only.

For details on configuring the monitor, see "Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Settings" on page 307.

Reference

Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Settings

This monitor enables you to monitor message statistics of Microsoft Exchange Server 2000/2003/2007.

To access	Select the Templates context. In the template tree, expand the Solution Templates container. Right-click the Microsoft Exchange solution template version that you require, and select Deploy Template . Select the SiteScope group container into which you want to deploy the solution template, and enter the deployment values.
Important information	<ul style="list-style-type: none"> ▶ SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ This monitor can only be added by deploying an Exchange Solution template. Once the monitor has been created, you can edit the monitor configuration in the same way as other monitors. For information about using templates to deploy monitors, see "SiteScope Templates" in <i>Using SiteScope</i>.
See also	▶ "Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Overview" on page 306

Microsoft Exchange 2000/2003/2007 Message Traffic Monitor Settings

User interface elements are described below:

UI Element	Description
Recipient limit	Number (N) of recipients to use when computing the number of messages sent to more than N recipients. Default value: 10
Query interval	Number of minutes to look back for messages when computing statistics. This affects how long it takes to run the monitor as a large interval could result in a large number of messages to be processed. Default value: 1440 minutes (one day)
Message size limit	Number (N) of bytes to use when computing the number of messages sent larger than N bytes. Default value: 2000
Number of domains	Number (N) of domains to use for reporting the top N sending domains. Default value: 5
Number of outgoing users	Number (N) of users to use for reporting the top N outgoing users. Default value: 5
Log directory	UNC path of the messaging tracking log file directory. Default value: <ul style="list-style-type: none"> ➤ For 2000/2003 versions: \\<server name>\<server name>.log ➤ For 2007 version: \\<server name>\MessageTracking
Reporting directory	Location for SiteScope to save the results of each execution of this monitor. Default value: A default location is chosen if this box is left blank.

41

Microsoft Exchange 2003 Public Folder Monitor

This chapter includes:

Concepts

- ▶ Microsoft Exchange 2003 Public Folder Monitor Overview on page 310

Reference

- ▶ Microsoft Exchange 2003 Public Folder Monitor Settings on page 311

Concepts

Microsoft Exchange 2003 Public Folder Monitor Overview

Use the Microsoft Exchange 2003 Public Folder monitor to display important statistics about public folders handled by a Microsoft Exchange 2000/2003 server, such as access times, empty folders, folder sizes, and folders not accessed within some time period.

Note:

- ▶ The Microsoft Exchange 2003 Public Folder monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ This monitor can only be added by deploying a Microsoft Exchange Solution template. For details on using the template, see "Microsoft Exchange Solution Templates" in *Using SiteScope*.
- ▶ This monitor is supported in SiteScopes that are running on Windows versions only.
- ▶ SiteScope must be configured to log on as a user account within the domain when running as a service, and not as Local System account.

This monitor computes statistics that do not normally change very rapidly and are not critical to system availability, so it should be scheduled to run infrequently, or on demand only.

For details on configuring the monitor, see "Microsoft Exchange 2003 Public Folder Monitor Settings" on page 311.

Reference

Microsoft Exchange 2003 Public Folder Monitor Settings

This monitor enables you to monitor public folder statistics of Microsoft Exchange Server 2003.

To access	Select the Templates context. In the template tree, expand the Solution Templates container. Right-click Microsoft Exchange 2003 , and select Deploy Template . Select the SiteScope group container into which you want to deploy the solution template, and enter the deployment values.
Important information	<ul style="list-style-type: none"> ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ This monitor can only be added by deploying a Microsoft Exchange Solution template. Once the monitor has been created, you can edit the monitor configuration in the same way as other monitors. For information about using templates to deploy monitors, see "SiteScope Templates" in <i>Using SiteScope</i>.
See also	▶ "Microsoft Exchange 2003 Public Folder Monitor Overview" on page 310

Microsoft Exchange 2003 Public Folder Monitor Settings

User interface elements are described below:

UI Element	Description
Server	Name of the server running Microsoft Exchange Server 2003 that you want to monitor.
User name	<p>User name to use when querying the server for mailbox statistics.</p> <p>The statistics are gathered by using WMI (Windows Management Instrumentation), so the user name entered here must have permissions to read WMI statistics on the server from WMI namespace root\MicrosoftExchangeV2.</p> <p>Default value: If this box is left blank, the user that SiteScope is running as is used.</p>
Password	Password for the user name entered above, or blank if user name is blank.
Days since access	<p>Number of days (N) to use when reporting the number of public folders that have not been accessed in N days.</p> <p>Default value: 7</p>
Timeout (seconds)	<p>Number of seconds that the monitor should wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status.</p> <p>Default value: 60</p>
Reporting directory	<p>Location for SiteScope to save the results of each execution of this monitor.</p> <p>Default value: A default location is chosen if this box is left blank.</p>

42

Microsoft Hyper-V Monitor

This chapter includes:

Concepts

- ▶ Microsoft Hyper-V Monitor Overview on page 314

Reference

- ▶ Microsoft Hyper-V Monitor Settings on page 316

Concepts

Microsoft Hyper-V Monitor Overview

Use the Microsoft Hyper-V monitor to monitor vital performance metrics in Hyper-V environments. Microsoft Hyper-V is a server virtualization that runs on Windows 2008 or higher. It is a hypervisor-based virtualization system for x64 Windows operating systems. The Microsoft Hyper-V monitor enables monitoring of Microsoft Hyper-V hosts and virtual machines.

You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate Microsoft Hyper-V monitor instance for each Hyper-V Server in your environment. The error and warning thresholds for the monitor can be set on one or more Microsoft Hyper-V Server performance statistics.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

The Microsoft Hyper-V monitor makes use of performance objects and counters to measure application server performance.

For details on configuring the monitor, see "Microsoft Hyper-V Monitor Settings" on page 316.

This section also includes:

- "Supported Versions" on page 315
- "IPv6 Addressing Supported Protocols" on page 315

Supported Versions

This monitor supports monitoring remote servers running on:

- Microsoft Hyper-V Server 2008 R2 (stand-alone product)
- Microsoft Windows Server 2008 (Hyper-V role enabled)
- Microsoft Windows Server 2008 R2 (Hyper-V role enabled)

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- NetBios (from SiteScope installed on Windows platforms only)
- WMI (from SiteScope installed on Windows platforms only)
- SSH (from SiteScope installed on UNIX platforms only)

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Microsoft Hyper-V Monitor Settings

This monitor enables you to monitor performance statistics of the Microsoft Hyper-V infrastructure for various server applications.

Description	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft Hyper-V Monitor Overview" on page 314

Microsoft Hyper-V Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Name of server that you want to monitor. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed in the server list. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>The server performance counters selected for this monitor. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

43

Microsoft IIS Server Monitor

This chapter includes:

Concepts

- ▶ Microsoft IIS Server Monitor Overview on page 320

Reference

- ▶ Microsoft IIS Server Monitor Settings on page 324

Concepts

Microsoft IIS Server Monitor Overview

Use the Microsoft IIS Server monitor to monitor server performance statistics from IIS servers on Windows systems. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate IIS Server monitor instance for each IIS server in your environment. The error and warning thresholds for the monitor can be set on one or more IIS server performance counters.

The Microsoft IIS Server monitor supports monitoring HTTP/HTTPS services on IIS 4.0, 5.0 and 7.0, and HTTP/HTTPS, FTP, NNTP and MSMQ Queue on IIS 6 and 7.0.

Note:

- ▶ SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of an IIS 6 server. For details, see "Microsoft IIS Solution Template" in *Using SiteScope*.
- ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "Microsoft IIS Server Monitor Settings" on page 324.

This section contains the following topics:

- "Setup Requirements and User Permissions" on page 321
- "IPv6 Addressing Supported Protocols" on page 321
- "Microsoft IIS Server Topology Settings" on page 322
- "Troubleshooting and Limitations" on page 323

Setup Requirements and User Permissions

The following are important requirements for using the Microsoft IIS Server monitor:

- The Microsoft IIS Server monitor makes use of performance counters to measure application server performance. If the servers you want to monitor require a unique login different than the account SiteScope is running under, you must define the connection to these servers in the Microsoft Windows Remote Servers container. Alternatively, you can enter the credentials of a user with administrative permissions on the server in the **Default authentication user name** and **Default authentication password** boxes in **Preferences > General Preferences**, and create the monitor without creating a Microsoft Windows Remote Server.
- The Remote Registry service must be running on the machine where the IIS server is running if IIS is running on Windows 2000.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- NetBios (from SiteScope installed on Windows platforms only)
- WMI (from SiteScope installed on Windows platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

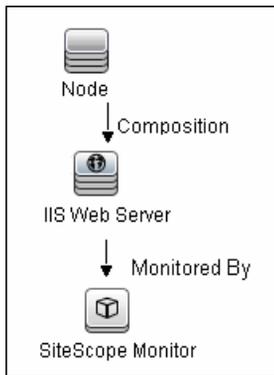
For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Microsoft IIS Server Topology Settings

The Microsoft IIS Server monitor can identify the topology of the Microsoft IIS Server being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the Microsoft IIS Server monitor.

- ▶ Check if the Microsoft IIS server is available and the services that should be monitored are up and running.
- ▶ If SiteScope is unable to get counters, run a test on the target remote server. If counters do not contain the required service (for example, FTP or Web Server), check if the corresponding service is running on the target machine.

Reference

Microsoft IIS Server Monitor Settings

This monitor enables you to monitor the availability and server statistics of a Microsoft IIS server on Windows NT systems.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 321. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft IIS Server Monitor Overview" on page 320

Microsoft IIS Server Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Name of the server where the Microsoft IIS performance statistics you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed here. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

44

Microsoft SQL Server Monitor

This chapter includes:

Concepts

- ▶ Microsoft SQL Server Monitor Overview on page 328

Reference

- ▶ Microsoft SQL Server Monitor Settings on page 331

Concepts

Microsoft SQL Server Monitor Overview

Use the Microsoft SQL Server monitor to monitor the server performance metrics pages for SQL Servers 6.5, 7.1, 2000, 2005, 2008, and 2008 R2 on Windows NT systems. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate monitor instance for each Microsoft SQL Server you are running. The error and warning thresholds for the monitor can be set on one or more SQL Server performance statistics.

Note:

- ▶ SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various aspects of a Microsoft SQL 2005 and 2008 server. For details, see "Microsoft SQL Server Solution Template" in *Using SiteScope*.
- ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "Microsoft SQL Server Monitor Settings" on page 331.

This section contains the following topics:

- ▶ "Setup Requirements and User Permissions" on page 329
- ▶ "IPv6 Addressing Supported Protocols" on page 329
- ▶ "Microsoft SQL Server Topology Settings" on page 330

Setup Requirements and User Permissions

The following are requirements for using the Microsoft SQL Server monitor

- ▶ The Microsoft SQL Server monitor uses performance counters to measure application server performance. SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.
- ▶ The Remote Registry service must be running on the machine where the SQL Server is running if the SQL Server is running on Windows 2000.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

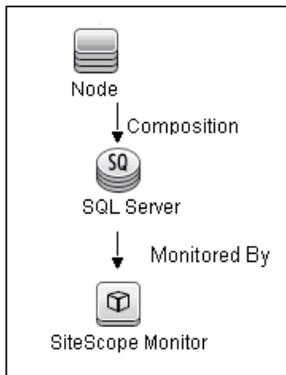
For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Microsoft SQL Server Topology Settings

The Microsoft SQL Server monitor can identify the topology of the Microsoft SQL Servers being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Reference

Microsoft SQL Server Monitor Settings

This monitor enables you to monitor the availability and performance of a Microsoft SQL Server on Windows NT systems.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 329. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft SQL Server Monitor Overview" on page 328

Microsoft SQL Server Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Name of the server where the Microsoft SQL Server you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed here. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
SQL instance name	<p>The Microsoft SQL server instance you want to monitor from the list of SQL instances running on the selected server.</p> <p>Default value: SQLServer (this value is displayed even if SiteScope is unable to get the instance list).</p>

UI Element	Description
Counters	<p>Displays the server performance counters you want to check with this monitor. All non-default instances are dynamically loaded and displayed in the drop-down box. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.

45

Microsoft Windows Dial-up Monitor

This chapter includes:

Concepts

- ▶ Microsoft Windows Dial-up Monitor Overview on page 336

Reference

- ▶ Microsoft Windows Dial-up Monitor Settings on page 339

Concepts

Microsoft Windows Dial-up Monitor Overview

Use the Microsoft Windows Dial-up monitor to measure the availability and performance of your Internet applications from a dial-up user's perspective. The Microsoft Windows Dial-up monitor can also be used to monitor the availability and performance of remote access servers.

Note: This monitor is supported in SiteScopes that are running on Windows versions only.

If you are primarily interested in dial-up availability, then you can just have the Microsoft Windows Dial-up monitor try to connect, and if successful, run one or two low impact monitors to verify that the connection is operating properly. If you are more interested in the perspective of a dial-up user, then running a suite of monitors that represent typical user tasks gives you more complete assessment.

To set up the Remote Access Service on a Windows NT machine, go to the Network Control Panel, and add the service. At that time you also have the option of adding one or more modems as Remote Access modems. At least one of the modems has to have dial out capability for this monitor to work.

For details on configuring the monitor, see "Microsoft Windows Dial-up Monitor Settings" on page 339.

This section contains the following topics:

- ▶ "Status" on page 337
- ▶ "Scheduling the Monitor" on page 337
- ▶ "Troubleshooting and Limitations" on page 338

Status

Each time the Microsoft Windows Dial-up monitor runs, it returns a reading and status message and writes them in the monitoring log file. The reading is the current value returned by the monitor. For example, "5 of 5 monitors OK in 55 sec", or "The line was busy". The status is logged as either OK or warning.

For reports, the Microsoft Windows Dial-up Monitors saves the total time taken (to connect and run the monitors), the connect time (the time for the modem to establish a physical connection), the authorization time (the time after physical connection is established before the connection can actually be used), and the percentage of the monitors run that were OK.

Scheduling the Monitor

The Microsoft Windows Dial-up monitor stops other monitors from running while it is connected, so you should take into account the number and kinds of monitors that are running while the connection is established as well as the number of other monitors that are running. If SiteScope is running only Microsoft Windows Dial-up Monitors, then you can schedule them more frequently (every 5 or 10 minutes). However, if you are monitoring many other items, choose a large interval (hours), so that other monitoring is not disrupted.

Only one Microsoft Windows Dial-up monitor can run at a time, so if you have more than one Microsoft Windows Dial-up monitor, take that into account when scheduling the monitors.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the Microsoft Windows Dial-up monitor.

- ▶ The Microsoft Windows Dial-up monitor should not be used on a machine that is used for accessing resources outside of the local network. This is because the monitor uses Remote Access, which affects the entire machine's network connectivity when it establishes a connection. For example, if you are using a Web browser on the machine where SiteScope is running a Microsoft Windows Dial-up monitor, and the Microsoft Windows Dial-up monitor is connected, all the requests by the browser out to the Internet also use the dial-up connection. This affects the speed of the browser and the reading from the Microsoft Windows Dial-up monitor.
- ▶ The Microsoft Windows Dial-up monitor prevents the other SiteScope monitors (those not being run by this Dial-up monitor) from running while the dial-up connection is established (they are held up until the Microsoft Windows Dial-up monitor is completed).
- ▶ No two Microsoft Windows Dial-up Monitors can be run at the same time.
- ▶ The Microsoft Windows Dial-up monitor uses the dial-up connection only for requests outside of the local network. If you have monitors that access network resources on the local network, their readings are the same as if the Microsoft Windows Dial-up monitor was not used. However, monitors that access network resources outside the local network use the dial-up connection. For example, if you ran two Ping monitors in the Microsoft Windows Dial-up monitor, one of which was `yourserver.com` (on the local network), and the other of which was `externalserver.com` (on an external network), the `yourserver.com` Ping would be very fast, because it would use the LAN, while the `externalserver.com` Ping would take longer, because it would go through the dial-up connection.

Reference

Microsoft Windows Dial-up Monitor Settings

The Windows Dial-up monitor (available only on the Windows NT version of SiteScope) uses the Windows NT Remote Access Service to connect to an Internet Service Provider or Remote Access server and optionally runs a user-defined set of monitors. The monitor confirms that the dial-up connection can be established, and measures the performance of the connection and of the network services using the dial-up connection.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Microsoft Windows Dial-up Monitor Overview" on page 336

Microsoft Windows Dial-up Monitor Settings

User interface elements are described below:

UI Element	Description
Account Settings	
Phone number	Phone number for the dial-up account, adding any extra modem digits or pauses that are required. Example: 9,4432266 includes a "9," for getting an outside line. Insert a comma wherever you need a short pause.
Account user name	Login name for the dial-up account.
Account password	Password for the dial-up account.

UI Element	Description
Advanced Settings	
Timeout (seconds)	<p>Timeout limits the total time that the Microsoft Windows Dial-up monitor takes to connect, authenticate, and run each of its monitors. If the time ever exceeds this time, then the connection is hung up, and the monitor completes with a timeout error.</p> <p>Default value: 60 seconds</p>
Monitor Settings	
Monitor(s) to run	<p>Groups and/or monitors that you want to run while the dial-up connection is established.</p> <p>Monitors that are used by Microsoft Windows Dial-up Monitors should not be scheduled to run by themselves because some of their data would be through the dial-up connection, and some of their data would be through the local connection.</p> <p>Make sure that the Frequency box for these monitors is set to 0. For details, see "Monitor Run Settings" in <i>Using SiteScope</i>.</p>

46

Microsoft Windows Event Log Monitor

This chapter includes:

Concepts

- ▶ Microsoft Windows Event Log Monitor Overview on page 342

Reference

- ▶ Microsoft Windows Event Log Monitor Settings on page 345

Concepts

Microsoft Windows Event Log Monitor Overview

Use the Microsoft Windows Event Log monitor to monitor added entries in one of the Microsoft Windows Event Logs (System, Application, or Security). The Microsoft Windows Event Log monitor examines log entries made only after the time that the monitor is created. Each time the monitor runs thereafter, it examines only those entries added since the last time it ran. You can choose to filter out messages that are not important by using the boxes listed under Monitor Settings to specify values that must appear in the event entry for the entry to match.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "Microsoft Windows Event Log Monitor Settings" on page 345.

This section contains the following topics:

- "Configuring SiteScope Alerts" on page 343
- "Status" on page 343
- "IPv6 Addressing Supported Protocols" on page 344

Configuring SiteScope Alerts

When setting up SiteScope alerts for Microsoft Windows Event Log Monitors that are set to alert **For each event matched**, it is most useful to select the NTEventLog template for the E-mail, Pager, SNMP, or Script alert. This alert template sends the alert with the event entry fields broken out. The type of SiteScope alert triggered depends on the type of the log event entry:

Event Log Entry Type	SiteScope Alert Type
Error	Error
Warning	Warning
Information	OK

Each time the Microsoft Windows Event Log monitor runs, it returns a reading and status message and writes them in the `<SiteScope root directory>\logs\SiteScopeyyyy_mm_dd.log` file.

Status

The status for the Microsoft Windows Event Log monitor includes the number of entries examined, and the number of entries matched. If an interval is specified, the number of events in that interval is also displayed. Matched entries and interval entries can trigger alerts.

IPv6 Addressing Supported Protocols

This monitor supports the NetBIOS protocol when **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**).

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Microsoft Windows Event Log Monitor Settings

The Microsoft Windows Event Log monitor enables you to monitor the Microsoft Windows Event Logs (System, Application, or Security) for added entries.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ The Event Log Tool is available when configuring this monitor to display portions of the Windows Event Log (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Event Log Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft Windows Event Log Monitor Overview" on page 342

Microsoft Windows Event Log Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Name of the server where the event log you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ When configuring this monitor on SiteScopes running on UNIX versions: <ul style="list-style-type: none"> ▶ Only remote servers that have been configured with an SSH connection method and SSH using preinstalled perfex selected are displayed. For details, see "How to Configure Remote Windows Servers for SSH monitoring" on page 569. ▶ If you create a new remote server from the Monitor Settings panel, the SSH using preinstalled perfex setting is automatically selected and cannot be cleared. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Log name	<p>The event log to monitor. Select from the following logs:</p> <ul style="list-style-type: none"> ▶ Application ▶ Directory Service ▶ DNS ▶ File Replication Service ▶ Security ▶ System <p>Note: This is a static list of those logs available when deploying this monitor. These log files do not necessarily exist on the server you are monitoring.</p>

UI Element	Description
Event type	<p>The event types to match. Select from the following event types:</p> <ul style="list-style-type: none"> ➤ Any ➤ Error ➤ Warning ➤ Error or warning ➤ Information
Run alerts	<p>Method for running alerts:</p> <ul style="list-style-type: none"> ➤ For each event matched. The monitor triggers alerts for every matching entry found regardless of the defined threshold settings and the monitor status (good, warning, or error). ➤ Once, after all events have been checked. The monitor counts up the number of matches and triggers alerts based on the warning and error threshold settings.
Source and ID match	<p>The match string identifying the source of the event and the event ID in the form: <Event Source>:<Event ID>.</p> <p>Example: Print:20 matches event source named Print and event ID of 20.</p> <p>To match against all events from a specific source, enter just the event source name.</p> <p>Example: W3SVC</p> <p>To match an exact event ID from an event source, specify both.</p> <p>Example: Service Control Mar:7000</p> <p>Note: You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>

UI Element	Description
<p>Source and ID do not match</p>	<p>The string identifying the source of the event and the event ID to NOT MATCH in the form: <Event Source>:<Event ID>.</p> <p>Example: Print:20 means event source named Print and event ID of 20 must not be in the event in order to have a match.</p> <p>To not match all events from a particular source, specify just the source name.</p> <p>Example: W3SVC</p> <p>To not match an exact event ID from an event source, specify both.</p> <p>Example: Service Control Mar:7000</p> <p>You can also use a regular expression for a more complex NOT MATCH.</p> <p>Example:</p> <ul style="list-style-type: none"> ▶ to not match all Perflib sources from 200 to 299 use: /Perflib:2\d\d/ ▶ to not match all events from the Perflib source, use: Perflib:* <p>Note: You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>
<p>Description match</p>	<p>Text string to match against the description text for the event entry. Thresholds that are defined as value/value 2/value3/value4 refer to the matches found in the event description.</p> <p>The description text is the same as the description that is displayed when viewing the detail of an event log entry in the Windows Event Viewer.</p> <p>Note: You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>

UI Element	Description
<p>Description does not match</p>	<p>Text string description that must not be in the event in order to have a match.</p> <p>The description text can be viewed in the detail view of the event log entry by using the Windows Event Viewer.</p> <p>Note: You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>
<p>Event category</p>	<p>Matches the category number of the event entry. Leaving this blank matches events with any category.</p>
<p>Event machine</p>	<p>Matches against the machine that added the entry to the log file. Leaving this blank matches events with any machine.</p>
<p>Interval (minutes)</p>	<p>Time period for which matching event log entries are totaled. This is useful when the case you are interested in is a quantity of events happening in a given time period.</p> <p>Example: If you wanted to detect a succession of service failures, 3 in the last 5 minutes, you would specify 5 minutes for the interval, and then change the Error If threshold to matches in interval >= 3.</p> <p>Note: This field is not available when For each event matched is selected in the Run alert field.</p>

47

Microsoft Windows Media Player Monitor

This chapter includes:

Concepts

- ▶ Microsoft Windows Media Player Monitor Overview on page 352

Reference

- ▶ Microsoft Windows Media Player Monitor Settings on page 353

Concepts

Microsoft Windows Media Player Monitor Overview

Use the Microsoft Windows Media Player monitor to monitor availability and delivery quality parameters for media files and streaming data compatible with Windows Media Servers. This monitor supports monitoring Windows Media Player 7.x, 9.x, 10.x, and 11.0.

You can monitor multiple parameters or counters with a single monitor instance. This enables you to report on delivery performance. Create a separate monitor instance for files or data streams that are representative of the content available from the site you want to monitor. The error and warning thresholds for the monitor can be set on one or more Windows Media Player performance statistics.

Note:

- ▶ This monitor is supported in SiteScopes that are running on Windows versions only.
- ▶ You should monitor only video streams, not audio streams, with this monitor.

You must have an instance of Windows Media Player installed on the machine where SiteScope is running to use this monitor.

For a list of the Media Player performance parameters or counters you can check with the Microsoft Windows Media Player monitor, see "Performance Counters" on page 354.

For details on configuring the monitor, see "Microsoft Windows Media Player Monitor Settings" on page 353.

Reference

Microsoft Windows Media Player Monitor Settings

The Microsoft Windows Media Player monitor enables you to emulate a user playing media or streaming data from a Windows Media Server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ➤ This monitor does not support the .asx or .mov formats. ➤ The Microsoft Windows Media Player Tool is available when configuring this monitor (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Microsoft Windows Media Player Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	➤ "Microsoft Windows Media Player Monitor Overview" on page 352

Microsoft Windows Media Player Monitor Settings

User interface elements are described below:

UI Element	Description
URL	<p>URL of the media file or streaming source you want to monitor. This should be the URL of the media file.</p> <p>Example: mms://<servername>/sample.asf for a unicast stream or http://<servername>/stationid.nsc for a multicast stream using a Windows Media Server multicast station program.</p> <p>Note: This monitor does not support the .asx or .mov formats.</p>
Duration (milliseconds)	<p>Playback duration that the monitor should use for the media file or streaming source. The duration value does not need to match the duration of the media contained in the file.</p> <p>If the media content of the file or source you are monitoring is less than the duration value selected for the monitor, the monitor plays the entire media content and reports the results, including the time required to play the media content.</p> <p>Default value: 15000 milliseconds</p>
Counters	<p>Media player performance parameters or counters to check with the Microsoft Windows Media Player monitor.</p> <p>For details on the available parameters or counters, see "Performance Counters" on page 354.</p>

Performance Counters

The media player performance parameters or counters you can check with the Microsoft Windows Media Player monitor include:

UI Element	Description
Buffering count	Number of times the Player had to buffer incoming media data due to insufficient media content.

UI Element	Description
Buffering time	Time spent waiting for sufficient media data to continue playing the media clip.
Interrupts	Number of interruptions encountered while playing a media clip. This includes buffering and playback errors.
Packets lost	Number of lost packets not recovered (applicable to network playback).
Packets recovered	Number of lost packets successfully recovered (applicable to network playback).
Packet quality	Percentage ratio of packets received to total packets.
Ratio bandwidth	Ratio (as a percentage) of the actual bandwidth used to the recommended bandwidth. Example: If the recommended bandwidth is 100 bps and the actual bandwidth is 50 bps, the ratio bandwidth is 50%. If the recommended bandwidth is 50 bps and the actual bandwidth is 100 bps, the ratio bandwidth is 200%.
Recommended bandwidth	Recommended bandwidth in bits per second. When a .wmv file is opened in Media Player, the property bitrate is the recommended bandwidth. This bandwidth is embedded in the stream itself.
Recommended duration	Total duration of the media clip in seconds. This value is not effected by what was already played.
Sampling rate	Sampling rate in milliseconds, for collecting statistics.
Stream count	Packet count.
Stream max	Maximum number of packets.
Stream min	Minimum number of packets.
Stream rate	Packet rate indicating the speed at which the clip is played: 1 is the actual speed, 2 is twice the original speed, and so on.
Time quality	Percentage of stream samples received on time (no delays in reception).

48

Microsoft Windows Media Server Monitor

This chapter includes:

Concepts

- ▶ Microsoft Windows Media Server Monitor Overview on page 358

Reference

- ▶ Microsoft Windows Media Server Monitor Settings on page 361

Concepts

Microsoft Windows Media Server Monitor Overview

Use the Microsoft Windows Media Server monitor to monitor the server performance parameters for Microsoft Windows Media Servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning.

Create a separate monitor instance for each Windows Media Server you are running. The error and warning thresholds for the monitor can be set on one or more Windows Media server performance statistics.

Note:

- ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.
- ▶ This monitor supports all versions of Microsoft Windows Media Server via perfmon.
- ▶ By default, SiteScope monitors the Microsoft Windows Media Server default services, **Windows Media Station Service** and **Windows Media Unicast Service**. To monitor other services, add the service names (separated by commas) to the **Microsoft Windows Media Server monitor service names** box in **Preferences > Infrastructure Preferences > Monitor Settings**.

For details on configuring the monitor, see "Microsoft Windows Media Server Monitor Settings" on page 361.

This section also includes:

- "Setup Requirements and User Permissions" on page 359
- "IPv6 Addressing Supported Protocols" on page 359

Setup Requirements and User Permissions

The Microsoft Windows Media Server monitor uses performance counters to measure application server performance. SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- NetBios (from SiteScope installed on Windows platforms only)
- WMI (from SiteScope installed on Windows platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Microsoft Windows Media Server Monitor Settings

The Microsoft Windows Media Server monitor enables you to monitor the availability of a Microsoft Windows Media server on Windows NT systems.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 359. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft Windows Media Server Monitor Overview" on page 358

Microsoft Windows Media Server Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Name of the server where the Windows Media Server you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed here. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

49

Microsoft Windows Performance Counter Monitor

This chapter includes:

Concepts

- ▶ Microsoft Windows Performance Counter Monitor Overview on page 366

Reference

- ▶ Microsoft Windows Performance Counter Monitor Settings on page 367

Concepts

Microsoft Windows Performance Counter Monitor Overview

Use the Microsoft Windows Performance Counter monitor to monitor the values of any Windows performance statistic running on Windows XP Pro, Windows NT Server 4.0, and Windows Server 2000/2003/2008. Each time the Microsoft Windows Performance Counter monitor runs, it returns a reading and a status message and writes them in the monitoring log file. The status is displayed in the group details table for the monitor which represents the current value returned by this monitor. The status is logged as either good, warning, or error. An error occurs if the counter could not be read, or if measurements are within the error threshold range.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For details on configuring the monitor, see "Microsoft Windows Performance Counter Monitor Settings" on page 367.

Reference

Microsoft Windows Performance Counter Monitor Settings

The Microsoft Windows Performance Counter monitor enables you to track the values of any Windows performance statistic. These are the same statistics that can be viewed using the Microsoft Management Console under Windows.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ The Performance Counters Tool is available when configuring this monitor to check performance counters on a specific machine in a Windows network (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Performance Counters Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft Windows Performance Counter Monitor Overview" on page 366

Windows Performance Counter Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Name of the server on which you want to monitor Windows performance statistics. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>When using a settings file from the Microsoft Windows Performance Counter monitor, all counters are measured on the server specified by this entry.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>
<p>Browse Servers</p>	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>

UI Element	Description
Add Remote Server	Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i> .
PerfMon chart file	<p>The Microsoft Windows Performance Counter monitor setting file you want to use for your settings. These files can be saved in the Microsoft Management Console (perfmon) and have either a .pmc or .pmw extension. On Windows 2000 Platform these can be saved using the .htm format. The files in this list all reside in the <SiteScope root directory>\templates.perfmon directory. There are a number of default files in the standard SiteScope distribution.</p> <p>Note: If you make your own settings file, it must be placed in the <SiteScope root directory>\templates.perfmon directory. You can optionally specify the settings directly for a single counter in the Counter box below.</p> <p>If you create your own .pmc file, any server specified in the .pmc file is ignored by SiteScope. The queried server is the one in the Server box (see above). Therefore, do not include identical counters directed at different servers in a single .pmc file. One .pmc file can be used by more than one Microsoft Management Console instance, but any single instance of the Microsoft Management Console only queries one server regardless of the servers assigned in the .pmc.</p> <p>If you have specified the settings directly in the Object box below, this list displays (Custom object).</p>
Object	Name of the high level item that is being measured, such as Processor or Server. It is the same as the Object in the Microsoft Management Console. The object name is case sensitive. If you are using a Performance monitor file for counter settings, leave this item blank.

UI Element	Description
Counter	The specific aspect of the Object that is measured, such as Interrupts/sec. It is the same as the Counter in the Microsoft Windows Performance monitor application. The counter name is case sensitive. If you are using a Microsoft Windows Performance monitor file for counter settings, leave this item blank.
Units	The units to be displayed with the counter's values to make them more readable.
Instance	The instance in the Microsoft Windows Performance monitor application. The instance name is case sensitive. Some counters can have multiple instances, for example, on machines with two CPUs, there are two instances of the Processor object. If you are using a Microsoft Windows Performance monitor file for counter settings, leave this item blank. If you leave this blank and there are multiple instances, the first instance in the list is selected.
Scale	<p>If you want the raw performance counter value scaled to make it more readable, select one of the predefined choices using the Commonly used values list, or enter a numeric value in the Other values box.</p> <p>The raw value of the counter is multiplied by the scale to determine the value of the monitor. The kilobytes option divides the raw value by 1,024 (the number of bytes in 1 K), and the megabytes option divides the raw value by 1,048,576 (the number of bytes in 1 MB). If there are multiple counters specified by using a Microsoft Windows Performance monitor file, this scaling applies to all counters.</p> <p>Default value: 1</p>

50

Microsoft Windows Resources Monitor

This chapter includes:

Concepts

- ▶ Microsoft Windows Resources Monitor Overview on page 372

Tasks

- ▶ How to Configure the Microsoft Windows Resources Monitoring Environment on page 376

Reference

- ▶ Microsoft Windows Resources Monitor Settings on page 380

Concepts

Microsoft Windows Resources Monitor Overview

Use the Microsoft Windows Resources monitor to monitor the server performance statistics from remote Windows servers running on Windows XP Pro, Windows NT Server 4.0, Windows Server 2000, 2003 and 2008, Windows Vista, and Windows 7. This enables you to watch server loading for performance, availability, and capacity planning.

You can monitor multiple parameters or counters on a single, remote server with each monitor instance. Create one or more Microsoft Windows Resources monitor instances for each remote server in your environment. The error and warning thresholds for the monitor can be set on one or more performance statistics.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

For task details, see "How to Configure the Microsoft Windows Resources Monitoring Environment" on page 376. For user interface details, see "Microsoft Windows Resources Monitor Settings" on page 380.

This section contains the following topics:

- "Setup Requirements and User Permissions" on page 373
- "Support for IPv6 Addresses" on page 373
- "Server-Centric Report" on page 374
- "Configuring the Monitor to Run on Windows 2003 as a Non-Administrator User" on page 375
- "Troubleshooting and Limitations" on page 375

Setup Requirements and User Permissions

The following are important requirements for using the Microsoft Windows Resources monitor:

- The Microsoft Windows Resources monitor uses performance counters to measure application server performance. SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.
- When monitoring Windows servers configured using SSH, you must use the **Direct registry queries** option for the **Collection method** in the Monitor Settings panel when you configure the monitor.

Support for IPv6 Addresses

This monitor supports the IPv6 protocol. If you want your environment to resolve host names to IPv6, you can select the **Prefer IP version 6 addresses** option in SiteScope Infrastructure Settings (**Preferences > Infrastructure Preferences > Server Setting**). If this option is selected, whenever a host name is specified for a remote server and the name is resolved to both IPv4 and IPv6, the IPv6 address is used.

When using IPv6, the following protocols are supported:

- WMI (from SiteScope installed on Windows platforms only)
- NetBios (from SiteScope installed on Windows platforms only)

Note:

- ▶ When using the **Direct registry queries** collection method with a NetBios connection, counters are not displayed in the Available Counters table. However, you can still use monitoring process if you modify the counters using the IPv4 protocol, or copy the counters from an already configured monitor (copy the monitor), and then change back to the IPv6 address or host.
- ▶ When using the **Microsoft Windows PDH Library** collection method with a NetBios connection, IPv6 does not work if the name of the monitored server is specified as a literal IPv6 address.
- ▶ When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Server-Centric Report

You can create a Server-Centric Report for the Windows server by clicking the server name in the Target column of the row corresponding to the Microsoft Windows Resources monitor in the SiteScope Dashboard. For details, see "Server-Centric Report" in *Using SiteScope*.

Configuring the Monitor to Run on Windows 2003 as a Non-Administrator User

For the Microsoft Windows Resources monitor to monitor a Windows 2003 machine if the SiteScope user account is not in the Administrators group, you must either:

- use the same domain account on both the SiteScope and the remote monitored system, or
- use local accounts on both systems, provided that the user accounts have the same name and password and are always synchronized on both systems. You cannot use **Local System** or other similar system predefined accounts that do not enable you to specify a password for them.

In addition, you must configure the user account settings on SiteScope and the remote monitored machine to log on using the selected non-administrator user account (domain or local account). You can then use a standard Windows perfmon utility to verify that it works. For details on how to perform this task, see "How to Configure the Microsoft Windows Resources Monitoring Environment" on page 376.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the Microsoft Windows Resources monitor.

- Getting invalid CPU value error message in <SiteScope root directory>\logs\RunMonitor.log file when using perfmon monitors on VMware host servers. **Workaround:** Use the VMWare Performance monitor to measure CPU on VMWare host servers.
- If you encounter "Error: Object Processor not found on host" or "Error: Failed to collect the data" when running the Microsoft Windows Resources monitor, change the collection method to the **Direct registry queries method** option.

Tasks

How to Configure the Microsoft Windows Resources Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 376
- "Configure user account settings on SiteScope" on page 376
- "Configure user account settings on the remote monitored machine:" on page 377
- "Verify that the non-administrator user account works" on page 378
- "Configure the monitor properties" on page 379

1 Prerequisites

Make sure you have the necessary setup requirements and user permissions. For details on this topic, see "Setup Requirements and User Permissions" on page 373.

2 Configure user account settings on SiteScope

The user account settings on SiteScope must be configured to log on using the selected non-administrator user account.

- a** In the **Services** control panel, right-click the **SiteScope** service, and then click **Properties**. The SiteScope Properties dialog box opens.
- b** Click the **Log On** tab, and configure the user account to log on using the selected non-administrator user account (domain or local account).

3 Configure user account settings on the remote monitored machine:

The user account settings on the monitored remote server must be configured to log on using the selected non-administrator user account.

- a Check that you can access the remote machine. Perform a ping test and check DNS resolves the server name with its IP address.

We recommend that you check there are no other network-related problems by using the selected user account to map a network drive of the monitored machine to the drive used on the SiteScope machine.

- b In the **Services** control panel, check that the **RemoteRegistry** service is running and that the selected user account has access to it. You can use the following command from the Windows 2003 Resource Kit (run it under an administrator account):

```
subinacl /service RemoteRegistry /grant=tester=f
```

This command grants Full Access to the RemoteRegistry service for the local user tester.

- c Add the domain or local user account to be used into the **Performance Monitor Users** and **Performance Log Users** local user groups. Make sure that these groups have at least read permissions for the following registry key (and all its subkeys):

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\
CurrentVersion\Perflib]
```

Tip: To check read permissions, select **Start > Run**, and type **Regedt32.exe**. In the Registry Editor, select the registry key, click **Security**, and select **Permissions**. In the Name pane, highlight the user SiteScope uses to access the remote machine, and make sure that the **Allow** check box for **Read** is selected in the **Permissions** pane.

- d Make sure that the domain or local user account to be used has at least read permissions on the following objects:
 - ▶ Registry key:
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurePipeServers\winreg]
 - ▶ Files in %WINDIR%\System32\perf?XXX.dat, where XXX is the basic language ID for the system. For example, 009 is the ID for the English version.

Note: If the required Performance Counter Library Values are missing or are corrupted, follow the instructions in Microsoft knowledge base article KB300956 (<http://support.microsoft.com/kb/300956/en-us>) to manually rebuild them.

4 Verify that the non-administrator user account works

After configuring the user account settings, verify that they work.

- a Launch a standard Windows perfmon utility. You can either:
 - ▶ launch it interactively when logged on to the SiteScope machine with the selected user account by typing perfmon, or
 - ▶ launch it when logged on to the SiteScope machine with some other account through the RunAs command, which enables you to launch commands under different user account. Enter the following command:

```
runas /env /netonly /user:tester "mmc.exe perfmon.msc"
```

Then enter the password (in this example, for the tester account), and the command is run under the tester user account.

- b** After the Performance window opens, right-click in the right graph area and select **Add Counters**. The Add Counters dialog box opens.
- c** Select **Choose counters from computer** and enter the remote monitored machine name or its IP address in the box.

Press the TAB key. If the perfmon utility is able to connect to the remote machine, the Performance object box is filled in with the performance objects that can be monitored from the remote machine.

5 Configure the monitor properties

Complete the Microsoft Windows Resources monitor configuration. For user interface details, see "Microsoft Windows Resources Monitor Settings" on page 380.

Reference

Microsoft Windows Resources Monitor Settings

The Microsoft Windows Resources monitor enables you to monitor system performance data using the Performance Data Helper (PDH) interface on Windows systems.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 373. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ The performance parameters or counters available for the Microsoft Windows Resources monitor vary depending on what operating system options and applications are running on the remote server. ▶ When configuring this monitor in template mode: <ul style="list-style-type: none"> ▶ You can use regular expressions to define counters. ▶ The Add Remote Server button is not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the Microsoft Windows Resources Monitoring Environment" on page 376 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ▶ "Microsoft Windows Resources Monitor Overview" on page 372

Microsoft Windows Resources Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Name of the server that you want to monitor. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed here. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When configuring this monitor on SiteScopes running on UNIX versions, only remote servers that have been configured with an SSH connection method are displayed. For details, see "How to Configure Remote Windows Servers for SSH monitoring" on page 569. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>
<p>Server to get measurements from</p>	<p>(Available in template mode only) Name of any SiteScope remote server from which you want to get counters (it must be accessible in the domain using NETBIOS).</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Available Counters	<p>Displays the available measurements for this monitor. For each measurement, select the Object, Instances and Counters you want to check with the Microsoft Windows Resources monitor, and click the Add Selected Counters  button. The selected measurements are moved to the Selected Counters list.</p>
Selected Counters	<p>Displays the measurements currently selected for this monitor, and the total number of selected counters. To remove measurements selected for monitoring, select the required measurements, and click the Remove Selected Counters  button. The measurements are moved to the Available Counters list.</p>

UI Element	Description
Collection method	<p>Collection method option:</p> <ul style="list-style-type: none"> ▶ Microsoft Windows PDH Library. This is the default and most common option. ▶ Use global setting. Instructs the monitor to use the value configured in the master.config file for the _wrnCollectionMethod property. If this property has not been added to the master.config file, the default option is used. ▶ Direct registry queries. Use this option if Windows PDH library is not accessible or if the monitor is having trouble using the Windows PDH library. You must use this option when monitoring Windows servers configured using SSH. <p>Note: The collection method option is available only when the target remote server uses the NetBIOS protocol (not SSH or WMI).</p>
Enable Server-Centric Report	<p>Enables collecting data specifically for generating the Server-Centric Report. The report displays various measurements for the server being monitored. For details, see "Generating a Server-Centric Report" in <i>Using SiteScope</i>.</p>

51

Microsoft Windows Services State Monitor

This chapter includes:

Concepts

- ▶ Microsoft Windows Services State Monitor Overview on page 386

Reference

- ▶ Microsoft Windows Services State Monitor Settings on page 388

Concepts

Microsoft Windows Services State Monitor Overview

Use the Microsoft Windows Services State monitor to monitor the services installed and running on remote Windows servers running on Windows XP Pro, Windows NT Server 4.0, and Windows Server 2000/2003/2008. By default, the monitor returns a list of all of the services that are set to be run automatically on the remote server. You can filter the list of services returned by the monitor using regular expressions. The monitor displays the number of services running and related statistics along with a summary listing of the services installed on the remote server.

Note:

- ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.
- ▶ The Microsoft Windows Services State monitor only retrieves a list of installed services. It does not query the list of processes that may be running on the remote machine (use the Service monitor for this).

For details on configuring the monitor, see "Microsoft Windows Services State Monitor Settings" on page 388.

Configuring Alerts

To use this monitor to create event alerts, configure alert definitions associated with this monitor to alert **Once, after the condition has occurred exactly 1 times**. This is because the Microsoft Windows Services State monitor only signals a change in state for services relative to the previous run of the monitor. For example, if the monitor is set to signal an error if a service has changed from running to not running, the monitor only signals an error status for one monitor run cycle. The number of services running and not running is reset for each monitor run and this number is used for comparison with the next monitor run.

Reference

Microsoft Windows Services State Monitor Settings

The Microsoft Windows Services State monitor enables you to monitor a list of services running on Windows systems and report changes in the number of services that are running and list the services that changed state.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Microsoft Windows Services State Monitor Overview" on page 386

Microsoft Windows Services State Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>The name of the server you want to monitor. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed in the server list. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When configuring this monitor on SiteScopes running on UNIX versions: <ul style="list-style-type: none"> ▶ Only remote servers that have been configured with an SSH connection method and SSH using preinstalled perfex selected are displayed. For details, see "How to Configure Remote Windows Servers for SSH monitoring" on page 569. ▶ If you create a new remote server from the Monitor Settings panel, the SSH using preinstalled perfex setting is automatically selected and cannot be cleared. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add New Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Services to include	<p>Optional regular expression to filter the list of services returned by the monitor. When you use a regular expression to filter the list of services, the monitor calculates changes in state (that is, running or not running) based only on the services matched by the regular expression.</p> <p>Default value: <code>/(.*)/</code> (All of the services detected on the remote machine)</p> <p>Examples: <code>/.*Network.*/</code> includes all services that contain the word Network.</p>

UI Element	Description
Services to ignore	<p>Optional regular expression to filter the list of services matched by the expression used in the Services to include setting. When you use a Services to ignore regular expression to filter the list of Services to include, the monitor calculates changes in state (that is, running or not running) based only on the services matched by the Services to ignore regular expression.</p> <p>Examples: <code>/.Remote./</code> ignores all services that contain the word Remote (the services that are ignored are listed in the Services Deleted field).</p>
Include driver services	<p>Includes all low-level driver services in the monitor. This generally increases the size of the list. You use the Services to include and Service to ignore options to filter the list of services returned using this option.</p>

52

Multi Log File Monitor

This chapter includes:

Concepts

- ▶ Multi Log File Monitor Overview on page 394

Reference

- ▶ Multi Log Monitor Settings on page 395

Concepts

Multi Log File Monitor Overview

Note: This monitor is available only on a SiteScope System Health installation.

The Multi Log File monitor performs the same functionality as the Log File monitor, but also enables you to run the monitor on all files in a given directory. You specify the directory in the **Log File directory** field in the New Multi Log Monitor dialog box.

For details on configuring the monitor, see "Multi Log Monitor Settings" on page 395.

Reference

Multi Log Monitor Settings

The Multi Log monitor enables you to check for specific entries added to a log file by looking for entries containing a text phrase or a regular expression.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	This monitor is available only when SiteScope is configured with System Health.
Relevant tasks	"How to Deploy a Monitor" on page 343
See also	► "Multi Log File Monitor Overview" on page 394

Multi Log Monitor Settings

User interface elements are described below:

UI Element	Description
Server	Name of the server where the files you want to monitor are located.
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>

UI Element	Description
Log file directory	<p>Path to the log file you want to monitor. The monitor runs on all files in the directory.</p> <ul style="list-style-type: none"> ▶ For reading log files on remote UNIX machines, the path must be relative to the home directory of the UNIX user account being used to log into the remote machine. ▶ For reading log files on remote Windows NT/2000 servers using the NetBIOS method, use UNC to specify the path to the remote log file. Example: \\remoteserver\sharedfolder\filename.log ▶ For reading log files on remote Windows NT/2000 servers using the SSH method, specify the local path of the remote log file on the remote machine. Example: C:\Windows\System32\filename.log <p>You must also select the corresponding remote Windows SSH server in the Servers box. For details on configuring a remote Windows server for SSH, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p> <p>You can also monitor files local to the server where SiteScope is running. Example: C:\application\appLogs\access.log</p> <p>Optionally, you can use special date and time regular expression variables to match log file names that include date and time information. For example, you can use a syntax of <code>s/ex\$shortYear\$\$0month\$\$0day\$.log/</code> to match a current date-coded log file. For details on using regular expressions, refer to "SiteScope Date Variables" in <i>Using SiteScope</i>.</p>

UI Element	Description
Content match	<p>Text to look for in the log entries. You can also use a regular expression in this entry to match text patterns. Unlike the content match function of other SiteScope monitors, the Log File monitor content match is run repeatedly against the most recent content of the target log file until all matches are found. This means the monitor not only reports if the match was found but also how many times the matched pattern was found. To match text that includes more than one line of text, add an <code>s</code> search modifier to the end of the regular expression. For details, see "Using Regular Expressions" in <i>Using SiteScope</i>. You can also use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p> <p>Note: If you enter more than four content match values, when you create a report by clicking the monitor title, the report includes only the first four values.</p>
File name match	<p>File name to look for in the log entries. You can also use a regular expression in this entry to match text patterns.</p>
Search from start	<p>Searches for the specified content from the beginning of the directory.</p> <p>Default value: Cleared</p>
Match value labels	<p>Use to enter labels for the matched values found in the target log file. The match value labels are used as variables to access retained values from the Content match expression for use with the monitor threshold settings. Separate multiple labels with a comma (,). The labels are used to represent any retained values from the Content match regular expression in the parameters available for the status threshold settings (Error if, Warning if, and Good if). These labels are also displayed as the text labels in graphs generated for the retained values in management reports for this monitor.</p> <p>Note: If you enter more than four match values, when you create a report by clicking the monitor title, the report includes only the first four values.</p>

53

Network Bandwidth Monitor

This chapter includes:

Concepts

- ▶ Network Bandwidth Monitor Overview on page 400

Reference

- ▶ Network Bandwidth Monitor Settings on page 401

Concepts

Network Bandwidth Monitor Overview

Use the Network Bandwidth monitor to monitor SNMP-enabled network appliances such as routers and switches. The Network Bandwidth monitor operates like many other browsable monitors to gather information from a source and enable the user to choose which items in the tree it should monitor. It works by connecting to the specified network component and returning a list of interfaces.

The MIB files in <SiteScope root directory>\templates.mib are used to create a browsable tree that contains names and descriptions of the objects found during the traversal. Note that an object may or may not be displayed with a textual name and description, depending on the MIBs available in <SiteScope root directory>\templates.mib. SiteScope does not display objects for user selection when it has no knowledge of how to display those objects. For example, a plain OctetString may contain binary or ascii data, but SiteScope has no way to decode and display this data correctly without more information.

For details on configuring the monitor, see "Network Bandwidth Monitor Settings" on page 401.

Performing Sanity Checks

By default, SiteScope performs a sanity check for every run of the monitor. This checks that the values returned by the monitor are in the valid range. You can also choose to disable these sanity checks.

To disable the sanity checks, clear the **Network Bandwidth monitor sanity check** box in the Infrastructure Settings Preferences page (**Preferences > Infrastructure Settings Preferences > Monitor Settings**).

Reference

Network Bandwidth Monitor Settings

This monitor enables you to monitor SNMP-enabled network appliances such as routers and switches. The error and warning thresholds for the monitor can be set on one or more different objects. This monitor type also provides a Real-time metrics report, available as a link in the More column on the Group Detail Page.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When working in template mode, the monitor's non-default thresholds are not copied properly to a template. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Network Bandwidth Monitor Overview" on page 400

Network Bandwidth Monitor Settings

User interface elements are described below:

UI Element	Description
SNMP Connection Settings	
Server	Name of the server you want to monitor.
SNMP version	Version of SNMP to use when connecting. SiteScope supports SNMP versions 1, 2, and 3. Selecting V3 enables you to enter V3 settings in the SNMP V3 settings panel. Default value: V1
Community	Community string (valid only for version 1 or 2 connections). Default value: public
Timeout (seconds)	Amount of time, in seconds, that SiteScope should wait for all SNMP requests (including retries) to complete. Default value: 5 seconds
Retries	Number of times each SNMP GET request should be retried before SiteScope considers the request to have failed. Default value: 1
Port	Port to use when requesting data from the SNMP agent. Default value: 161
Starting OID	Use when selecting counters for this monitor. When the monitor attempts to retrieve the SNMP agent's tree, it starts with the OID value that is entered here. You should edit this box only when attempting to retrieve values from an application that does not handle OIDs starting with 1. If the default value did not enable retrieving any counters, then you may have to enter a different value. Default value: 1

UI Element	Description
V3 SNMP Settings (This panel is enabled only if V3 is selected in the SNMP version field)	
SNMP V3 authentication type	The type of authentication to use for version 3 connections. Default value: MD5
SNMP V3 user name	User name for version 3 connections.
SNMP V3 authentication password	Authentication password to use for version 3 connections.
SNMP V3 privacy password	Privacy password if DES privacy encryption is desired for version 3 connections. Leave blank if you do not want privacy.
SNMP V3 context engine ID	Hexadecimal string representing the Context Engine ID to use for this connection.
SNMP V3 context name	Context Name to use for this connection.

UI Element	Description
Network Counters	
Counters	Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The counters displayed are those received during the timeout period, and may not include all the counters available on the server. Specifying a longer timeout in the Timeout (seconds) field in the SNMP Connection Settings panel may result in receiving more counters. ▶ The total time for receiving the counters may be longer than the timeout specified, due to additional processing time not part of the request/response period. ▶ Due to third-party counter restrictions, the total number of counters that can be monitored is limited to 32.
Advanced Network Settings	
Device type	<p>Optional device type for device specific monitoring. By specifying a device type, you enable the Network Bandwidth monitor to watch certain device-specific metrics. For information about controlling the metrics associated with these device types and on adding new device types, see the section entitled Device Specific Metrics Config File.</p> <p>Default value: Do not monitor device-specific metrics</p>

UI Element	Description
Duplex or half-duplex	<p>Duplex state (Half-duplex or Full-duplex) to use when calculating percent bandwidth utilized for all selected interfaces on this device.</p> <p>Default value: Full-duplex</p>
Interface index	<p>Metrics for network interfaces on an SNMP-enabled device are presented as a table of management information (the ifTable). Each row corresponds to a different interface. There is no requirement that the mappings from interface-to-row in this table remain constant across device reboots. The Interface Index parameter may help prevent the interfaces SiteScope is monitoring from becoming confused after a device restarts.</p> <p>The three possible options are:</p> <ul style="list-style-type: none"> ▶ Indexed by interface name. The ifDescr field of the ifTable is used to maintain monitoring consistency across device reboots. ▶ Indexed by physical address. The ifPhysAddr field of the ifTable is used to maintain monitoring consistency across device reboots. ▶ Indexed by ifTable row number. SiteScope assumes that the interfaces remain in the same row in the ifTable across device reboots. <p>Note: Some devices (for example, Cisco) may have a configuration option to not jumble the position of interfaces in the ifTable during reboot. This may be the safest option, as not all interfaces may always have a unique ifDescr, and not all interfaces may have an ifPhysAddr (loopback interfaces do not typically have a physical address).</p> <p>Default value: Indexed by ifTable row number.</p>
Show bytes in/out	<p>Displays a graph for bytes in/out along with the percent bandwidth utilized on the Real-Time Metrics page.</p> <p>Default value: Not selected</p>

UI Element	Description
Real-Time data vertical axis	Maximum value on the vertical axis for real-time graphs (leave blank to have this automatically calculated by SiteScope).
Real-Time data time window (hours)	Number of hours for which real-time graph data should be stored. Default value: 24 hours

54

News Monitor

This chapter includes:

Concepts

- ▶ News Monitor Overview on page 408

Reference

- ▶ News Monitor Settings on page 410

Concepts

News Monitor Overview

Use the News monitor to regularly monitor news groups on News servers. This enables you to manage the number of articles that are allowed to queue up, and delete them before they cause disk space problems.

For details on configuring the monitor, see "News Monitor Settings" on page 410.

Status

Each time the News monitor runs, it returns a status message and writes it in the monitoring log file. It also writes the total time it takes to receive a response from the news server, and the number of articles available for each of the specified news groups.

The reading is the current value of the monitor. The possible values for the News monitor are:

- OK.
- unknown host name.
- unable to reach server.
- unable to connect to server.
- timed out reading.
- <news group> not found. The given news group was not found on the news server.
- permission denied for connection. The connection could not be made, probably because the news server was configured to enable connections from a limited range of addresses.

- ▶ login expected. The news server expected a user name and password, but none were provided. In this case, enter a user name and password under the Monitor Settings section of the monitor.
- ▶ login failed, unauthorized. The user name and password were not accepted by the news server.

The status is logged as either **good** or **error**. An error status is returned if the current value of the monitor is anything other than **good**.

Reference

News Monitor Settings

The News monitor verifies that a news server can be connected to, and is responding. It also measures how long it takes to make a connection, and how many articles are currently in the specified news groups.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The News Server Tool is available when configuring this monitor to access a news server and view the NNTP interaction between SiteScope and the news server (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "News Server Tool" in <i>Using SiteScope</i> .
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "News Monitor Overview" on page 408

News Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
News server	IP address or the name of the news server that you want to monitor. Example: 206.168.191.21 or news.thiscompany.com. If the port is not the standard news port, add the port after the server with a colon. Example: news.thiscompany.com:7777

UI Element	Description
News groups	News groups to be checked, separated by commas. Each of these news groups are checked for the current number of articles available in that news group. The reading of the monitor is the sum of articles available for each of the specified news groups.
User name	User name if your News server requires authorization.
Password	Password if your News server requires authorization.
Advanced Settings	
Connect from	Name or IP address of the server that connects to the News monitor.
Timeout (seconds)	Amount of time, in seconds, that the News monitor should wait for all of news transactions to complete before timing-out. Once this time period passes, the News monitor logs an error and reports an error status. Default value: 60 seconds

55

Oracle 10g Application Server Monitor

This chapter includes:

Concepts

- ▶ Oracle 10g Application Server Monitor Overview on page 414

Reference

- ▶ Oracle 10g Application Server Monitor Settings on page 415

Concepts

Oracle 10g Application Server Monitor Overview

Use the Oracle 10g Application Server monitor to monitor the server performance data for Oracle 10g application servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning.

Create a separate monitor instance for each Oracle 10g Application Server in your environment. The error and warning thresholds for the monitor can be set on one or more Oracle 10g server performance statistics.

Note: By default, the Oracle 10g metrics servlet is visible only to the local host. To enable monitoring the Oracle 10g Application Server, the servlet must be accessible from other IP addresses. You must edit the **dms.conf** file in the **<Oracle 10g installation path>infra/Apache/Apache/conf** directory. For details on editing the file and making this change, refer to the Oracle 10g Application Server documentation. Once configured properly, you should be able to see the following URL: **http://<Oracle 10g machine URL>:7201/dmsoc4j/Spy?format=xml**.

For details on configuring the monitor, see "Oracle 10g Application Server Monitor Settings" on page 415.

Reference

Oracle 10g Application Server Monitor Settings

The Oracle 10g Application Server monitor enables you to monitor the availability and performance statistics of an Oracle 10g Application Server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Oracle 10g Application Server Monitor Overview" on page 414

Oracle 10g Application Server Monitor Settings

User interface elements are described below:

UI Element	Description
Authorization user name	User name to access the server if required.
Authorization password	Password to access the server if required.
Proxy server	Domain name and port of an HTTP Proxy Server if a proxy server is used to access the server.
Proxy server user name	Proxy server user name if the proxy server requires a name and password to access the server. Your proxy server must support Proxy-Authenticate for these options to function.

UI Element	Description
Proxy server password	Proxy server password if the proxy server requires a name and password to access the server. Your proxy server must support Proxy-Authenticate for these options to function.
Host name	Server administration URL for the server you want to monitor.
Metric type	The type of metrics to monitor. Options are App Server (OC4J) and Web Server (DMS).
Port	Server port for the server you want to monitor. Default value: 7201 (configured in the dms.conf file)
Secure server	Select to use a secure server.
Timeout (seconds)	Amount of time, in seconds, that the monitor should wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status. Default value: 60 seconds
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

56

Oracle 9i Application Server Monitor

This chapter includes:

Concepts

- ▶ Oracle 9i Application Server Monitor Overview on page 418

Reference

- ▶ Oracle 9i Application Server Monitor Settings on page 419

Concepts

Oracle 9i Application Server Monitor Overview

Use the Oracle 9i Application Server monitor to monitor the server performance data for Oracle 9i servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning.

Create a separate monitor instance for each Oracle 9i Application server in your environment. The error and warning thresholds for the monitor can be set on one or more Oracle 9i server performance statistics.

Note: You must enable Web caching on the Oracle 9i Application Server to use the Oracle 9i Application Server monitor.

For details on configuring the monitor, see "Oracle 9i Application Server Monitor Settings" on page 419.

Reference

Oracle 9i Application Server Monitor Settings

The Oracle 9i Application Server monitor enables you to monitor the availability and performance statistics of a Oracle 9i Application Server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ The URL Tool is available when configuring this monitor to request a URL from a server, print the returned data, and test network routing (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "URL Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Oracle 9i Application Server Monitor Overview" on page 418

Oracle 9i Application Server Monitor Settings

User interface elements are described below:

UI Element	Description
URL	Server administration URL for the server you want to monitor. The URL is usually in the format: http://server:port/webcacheadmin?SCREEN_ID=CGA.Site.Stats&ACTION=Show.
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.
Authorization user name	User name if the server you want to monitor requires a name and password for access.
Authorization password	password if the server you want to monitor requires a name and password for access.
HTTP Proxy	Domain name and port of an HTTP Proxy Server. if a proxy server is used to access the server.
Proxy user name	Proxy server user name if the proxy server requires a name and password to access the server. Technical note: your proxy server must support Proxy-Authenticate for these options to function.
Proxy password	Proxy server password if the proxy server requires a name and password to access the server. Technical note: your proxy server must support Proxy-Authenticate for these options to function.
Timeout (seconds)	Amount of time, in seconds, that the monitor should wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status.

57

Oracle Database Monitor

This chapter includes:

Concepts

- ▶ Oracle Database Monitor Overview on page 422

Reference

- ▶ Oracle Database Monitor Settings on page 426

Concepts

Oracle Database Monitor Overview

Use the Oracle Database monitor to monitor the server performance statistics from Oracle Database 8i, 9i, 10g and 11g servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning.

Create a separate Oracle Database monitor instance for each Oracle database server in your environment. The error and warning thresholds for the monitor can be set on one or more Oracle server performance statistics.

Note: SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various aspects of an Oracle database server. For details, see "Oracle Database Solution Template" in *Using SiteScope*.

For details on configuring the monitor, see "Oracle Database Monitor Settings" on page 426.

This section contains the following topics:

- ▶ "Setup Requirements and User Permissions" on page 423
- ▶ "IPv6 Addressing Supported Protocols" on page 424
- ▶ "Oracle Database Topology Settings" on page 425
- ▶ "Troubleshooting and Limitations" on page 425

Setup Requirements and User Permissions

The following are several key requirements for using the Oracle Database monitor:

- ▶ You must have a copy of the applicable Oracle JDBC database driver file (for example, `classes12.zip`) on the SiteScope server. Copy the downloaded driver file into the `<SiteScope root directory>\WEB-INF\lib` subdirectory. Do not unzip the file. Stop and restart the SiteScope service after copying the driver file to the SiteScope machine.

Note: More than one driver file is available for download. Some drivers support more than one version of Oracle database (for example, the `classes12.zip` Oracle JDBC thin driver) while others only support a particular version. If you are monitoring a recent version of Oracle database, download the latest version of the database driver.

- ▶ You must supply the correct **Database connection URL**, a database user name and password when setting up the monitor. When using the Oracle thin driver, the database connection URL has the form of:
`jdbc:oracle:thin:@<server name or IP address>:<port>:<database sid>`.

For example, to connect to the ORCL database on a machine using port 1521 you would use:
`jdbc:oracle:thin:@206.168.191.19:1521:ORCL`.

Note: The colon (:) and the at (@) symbols must be included as shown.

- ▶ You must know the syntax for accessing the Oracle **Database driver** that was installed on the SiteScope server. Examples of common database driver strings are:
 - ▶ **com.inet.ora.OraDriver**. A driver from Oracle for Oracle databases. This driver is deployed with SiteScope.
 - ▶ **oracle.jdbc.driver.OracleDriver**. SiteScope supports the following categories of JDBC driver that are supplied by Oracle:
 - ▶ JDBC thin driver for Oracle 7 and 8 databases.
 - ▶ JDBC OCI (thick) driver. For details on accessing Oracle databases using OCI driver, see "Access Oracle databases using OCI driver – optional" on page 115.
 - ▶ **com.mercury.jdbc.oracle.OracleDriver**. A driver for Oracle databases. This driver is deployed with SiteScope. When using the Oracle mercury driver, the database connection URL has the form of:
jdbc:mercury:oracle://<server name or IP address>:<database server port>;sid=<sid>
- ▶ You should have only one version of each driver installed on the SiteScope machine. If there is more that version is installed, SiteScope may report an error and be unable to connect to the database.
- ▶ The user specified in the **Credentials** section must be granted the permission to access System tablespace.

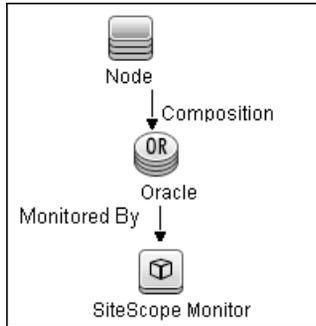
IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the TCP (JDBC) protocol. Support for IPv6 might also depend on the JDBC driver being used.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Oracle Database Topology Settings

The Oracle Database monitor can identify the topology of the Oracle databases being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



To ensure that the topology is reported accurately, you should enter the values for the **Database machine name** and the **SID**. These fields appear in the **HP Integration Settings** under **Topology Settings**.

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Troubleshooting and Limitations

For information about troubleshooting the Oracle Database monitor, refer to the HP Software Self-solve knowledge base (<http://support.openview.hp.com/selfsolve/document/KM189298>). To enter the knowledge base, you must log in with your HP Passport ID.

Reference

Oracle Database Monitor Settings

The Oracle Database monitor enables you to monitor the availability of an Oracle database server (versions 9i plus some earlier versions).

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 423. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ If you are using a third-party database driver and you upgrade SiteScope, you must deploy the driver to SiteScope again, since the driver configuration data is not saved during an upgrade.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Oracle Database Monitor Overview" on page 422

Oracle Database Monitor Settings

User interface elements are described below:

UI Element	Description
Database connection URL	<p>Connection URL to the database you want to connect to. The syntax is <code>jdbc:oracle:thin:@<server name or IP address>:<database server port>;sid=<sid></code>.</p> <p>Example: To connect to the ORCL database on a machine using port 1521, use: <code>jdbc:oracle:thin:@206.168.191.19:1521:ORCL</code>.</p> <p>Note: The colon (:) symbol must be included as shown.</p>
Database driver	<p>Driver used to connect to the database.</p> <p>Example: <code>oracle.jdbc.driver.OracleDriver</code></p>
Credentials	<p>Option for providing the user name and password to be used to access the database server:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
Counters	<p>Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

Database Connection Settings

The Database Connection Settings enable you to retrieve, share, and reuse database connections for database monitors that use any JDBC-compliant driver. When multiple database monitors use the same database, using a connection pool instead of an open connection for each monitor improves monitor performance and optimizes database server resource utilization.

Connections can be shared regardless of monitor type. For example, SiteScope database logger, database tools (Database Connection, Database Information), database alerts, and database monitors (Oracle Database, Database Counter, Database Query, DB2 8 and 9, Technology Database Integration, and so forth) can share and reuse database connections in a connection pool.

Important information	You can set additional database options that affect all resources that connect to the database in the JDBC Global Options in the General Preferences container.
See also	"JDBC Global Options" in <i>Using SiteScope</i>

User interface elements are described below:

UI Element	Description
Use connection pool	Enables SQL connection sharing. This means that you use a connection pool rather than open and close a new connection for each monitor query. Default value: Selected
Physically close if idle connection count exceeds	Maximum number of unused SQL connections in the SQL connection pool. When this number is exceeded, unused connections are closed rather than returned to the connection pool. Default value: 10

UI Element	Description
Idle connection timeout	<p>Maximum amount of time, in seconds/minutes/hours/days, that a SQL connection remains unused after it has been returned to the SQL connection pool. When the time is exceeded, the connection is automatically closed.</p> <p>Default value: 5 minutes</p>
Query timeout	<p>Amount of time, in seconds/minutes/hours/days, to wait for execution of a SQL statement. Not all SQL drivers have this function. If your SQL driver does not support this function, this parameter is ignored.</p> <p>Default value: 1 minute</p>

HP Integration Settings - Topology Settings

Use the HP Integration Settings area to control what data a monitor forwards to the BSM database. The topology settings for the Oracle Database monitor include fields that must be entered to ensure that SiteScope reports the topology to BSM.

Note: The HP Integration Settings panel is displayed only when SiteScope is reporting to BSM.

Important information	<p>The monitor specific settings are described below. For details on the HP Integration Settings common to all monitors, see "Common Monitor Settings" in <i>Using SiteScope</i>.</p>
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User interface elements are described below:

UI Element	Description
Database machine name	Database machine name to enable accurate reporting of CI property information to BSM from the monitored Oracle database. If this field is left empty and the monitor cannot discover the database machine name, the CI data may not be reported accurately.
SID	The SID to enable accurate reporting of CI property information to BSM from the monitored Oracle database. If this field is left empty and the monitor cannot discover the SID, the CI data may not be reported accurately.

58

Ping Monitor

This chapter includes:

Concepts

- ▶ Ping Monitor Overview on page 432

Reference

- ▶ Ping Monitor Settings on page 434

Concepts

Ping Monitor Overview

The Ping monitor obtains two of the most common measurements used to determine if your network connection is congested: Round Trip Time and Loss Percentage. An increase of either of these suggests that you are experiencing problems.

In the case of Loss Percentage, you want to see a 0% reading. A 100% reading indicates your link is completely down. Some loss may happen occasionally, but if it becomes common, either some packets are being lost or the router is exceptionally busy and dropping packets.

Each time the Ping monitor runs, it returns a reading and a status message and writes them in the monitoring log file. It also writes the total time it takes to receive a response from the designated host in the log file.

For details on configuring the monitor, see "Ping Monitor Settings" on page 434.

This section contains the following topics:

- "What to Monitor" on page 432
- "Scheduling the Monitor" on page 433
- "IPv6 Addressing Supported Protocols" on page 433
- "Troubleshooting and Limitations" on page 433

What to Monitor

We recommend that you set up monitors that test your connection to the Internet at several different points. For example, if you have a T1 connection to a network provider who in turn has a connection to the backbone, you would want to set up a Ping monitor to test each of those connections. The first monitor would ping the router on your side of the T1. The second would ping the router on your provider's side of the T1. The third monitor would ping your provider's connection to the backbone.

In addition to these monitors, it is also a good idea to have a couple of other monitors ping other major network providers. These monitors do not really tell you whether the other provider is having a problem, but it does tell you if your network provider is having trouble reaching them.

Scheduling the Monitor

You can monitor your own router as often as every two minutes without compromising system performance. The monitors that watch your provider's connection to your line and to the backbone should only be run every ten minutes or so. This minimizes traffic while still providing you with sufficient coverage.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the ICMP protocol. For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Troubleshooting and Limitations

If you are unable to ping a remote machine, there are several possible causes:

- ▶ If you are trying to ping a host name, make sure the name you are pinging is fully qualified.
- ▶ If pinging the fully qualified host name does not work, try pinging the IP address of the destination machine. If ping fails when you try the name of the site, but works when you try the IP address, it is a problem with DNS.
- ▶ If pinging both the name and the IP address fail, it might be because they are administratively denied by an access control list. Sometimes routers block ping with an access list. Try a traceroute instead, or if it is a Web site, try browsing it.
- ▶ If the traceroute shows multiple hops between you and the destination, try pinging each host in the path. Start pinging the host closest to you, and work your way towards the destination until you find the host that fails to respond to ping. Use a traceroute to get a list of the hosts between you and the destination for this purpose.

Reference

Ping Monitor Settings

The Ping monitor enables you to check the availability of a host by using ICMP (Internet Control Message Protocol). Use this monitor to check network connectivity and response time.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The Ping Tool is available when configuring this monitor to check if the host can be reached, and the round-trip time along the path (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Ping Tool" in <i>Using SiteScope</i> .
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Ping Monitor Overview" on page 432

Ping Monitor Settings

User interface elements are described below:

UI Element	Description
Host name to resolve	IP address or the name of the host that you want to monitor. Example: 206.168.191.21 or demo.thiscompany.com Note: You can monitor only one IP or host name at a time for each monitor instance.
Packet size (bytes)	The size, in bytes (including the IP and ICMP headers), of the ping packets sent. To change the threshold, enter the new value in the text box. Default value: 32 bytes
Time to wait for replies before ping timeouts	Amount of time, in milliseconds, that should pass before the ping times out. To change the threshold, enter the new value in the text box. Default value: 5000 milliseconds

59

Port Monitor

This chapter includes:

Concepts

- ▶ Port Monitor Overview on page 438

Reference

- ▶ Port Monitor Settings on page 440

Concepts

Port Monitor Overview

Use the Port monitor for monitoring network applications that none of the other SiteScope monitors watch such as Gopher and IRC services, some media services, or other custom network applications. You are notified immediately if SiteScope is unable to connect to the monitored port.

For details on configuring the monitor, see "Port Monitor Settings" on page 440.

This section contains the following topics:

- ▶ "Status" on page 438
- ▶ "Scheduling the Monitor" on page 439
- ▶ "IPv6 Addressing Supported Protocols" on page 439

Status

Each time the Port monitor runs, it returns a status message and writes it in the monitoring log file. It also writes the total time it takes to receive a response from the remote service.

The reading is the current value of the monitor. The possible values for the Port monitor are:

- ▶ OK
- ▶ unknown host name
- ▶ unable to reach server
- ▶ unable to connect to server
- ▶ timed out reading
- ▶ match error

The status is logged as either good or error. An error status is returned if the current value of the monitor is anything other than OK.

Scheduling the Monitor

Scheduling Port monitors depends on the application or system you are monitoring. The Port monitor does not use many resources, so you can schedule it to run as often as every 15 seconds if necessary. Monitoring most systems every 10 minutes is normally sufficient.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the TCP and UDP protocols.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Port Monitor Settings

The Port monitor verifies that a connection can be made to a network port and measures the length of time it takes to make the connection.

Optionally, it can look for a string of text to be returned or send a string of text once the connection is made.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The Ping Tool is available when configuring this monitor to check if the host can be reached, and the round-trip time along the path (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Ping Tool" in <i>Using SiteScope</i> .
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Port Monitor Overview" on page 438

Port Monitor Settings

User interface elements are described below:

UI Element	Description
Host name	IP address or the name of the host that you want to monitor. Example: 206.168.191.21 or demo.thiscompany.com
Port number	Port number to connect to from the list of Commonly used ports , or enter a port number in the Other ports text box. Additional entries can be added to the list by editing the <code><SiteScope root directory>\groups\master.config</code> file.
Timeout (seconds)	Amount of time, in seconds, to wait for the connection to the port, and for any sending and receiving to complete. Once this time period passes, the Port monitor logs an error and reports an error status. Default value: 60 seconds
Send string	Customizes the string sent to the host after a connection is made.
Match string	Checks for a string of text after a connection is made. If the text is not received, the monitor displays the message no match on content. Note: <ul style="list-style-type: none"> ▶ The search is case sensitive. ▶ You cannot use regular expressions in this field.

60

Radius Monitor

This chapter includes:

Concepts

- ▶ Radius Monitor Overview on page 444

Reference

- ▶ Radius Monitor Settings on page 446

Concepts

Radius Monitor Overview

Use the Radius monitor to test that the RADIUS server correctly handles authentication requests. If the RADIUS server fails, any users that try to use it are unable to login and access any services. Create a separate monitor instance for each server you are running. You may want to setup multiple monitors per server if you want to test different kinds of login accounts.

For details on configuring the monitor, see "Radius Monitor Settings" on page 446.

This section contains the following topics:

- ▶ "Setup Requirements" on page 444
- ▶ "Status" on page 445

Setup Requirements

- ▶ For SiteScope to monitor your RADIUS server, you must first add the IP address of your SiteScope server to the list of Clients that the RADIUS server is allowed to communicate with. This must be done in order for the Radius Server to take requests from SiteScope. Failure to do this results in Unknown Client errors on the RADIUS server.
- ▶ The Radius monitor currently supports Password Authentication Procedure (PAP) authentication but not the Challenge Handshake Authentication Protocol (CHAP) or Microsoft Challenge Handshake Authentication Protocol (MS-CHAP). Your RADIUS server must be configured to accept PAP requests to use this monitor.

Status

Each time the Radius monitor runs, it returns a status message and writes it in the monitoring log file. It also writes the total time it takes to receive a authentication response. The reading is the current value of the monitor. The possible values for the Radius monitor are:

- OK
- unknown host name
- timed out reading
- match error

The status is logged as either good or error. An error status is returned if the current value of the monitor is anything other than **OK**.

Reference

Radius Monitor Settings

The Radius (Remote Authentication Dial In User Service) monitor checks that a RADIUS server is working correctly by sending an authentication request and checking the result. A RADIUS server is used to authenticate users, often connecting through a remote connection such as a dialup modem or a DSL line. Use this page to add a monitor or edit the monitor's properties.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 444.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Radius Monitor Overview" on page 444

Radius Monitor Settings

User interface elements are described below:

UI Element	Description
Radius server	IP address or the name of the RADIUS server that you want to monitor. Example: 206.168.191.21 or radius.thiscompany.com
Secret phrase	Secret used to encrypt all requests to this RADIUS server.
User name	User name to authenticate.
Password	Password to authenticate.

UI Element	Description
Timeout (seconds)	<p>Amount of time, in seconds, to wait for the connection to the port, and for any sending and receiving to complete.</p> <p>Once this time period passes, the Radius monitor logs an error and reports an error status.</p> <p>Default value: 30 seconds</p>
Port	<p>UDP port used by the RADIUS server.</p> <p>Default value: 1645</p>
Match content	<p>Text string to check for in the response. If the text is not contained in the response, the monitor displays the message no match on content.</p> <p>You may also perform a regular expression match by enclosing the string in forward slashes, with an i after the trailing slash indicating case-insensitive matching.</p> <p>Example: <code>/\d\d/</code> or <code>/size \d\d/i</code></p> <p>Note: The search is case sensitive.</p>

61

Real Media Player Monitor

This chapter includes:

Concepts

- ▶ Real Media Player Monitor Overview on page 450

Reference

- ▶ Real Media Player Monitor Settings on page 451

Concepts

Real Media Player Monitor Overview

Use the Real Media Player monitor to monitor availability and delivery quality parameters for media files and streaming data compatible with RealNetworks Real Media Player versions 7.x, 8.x, 9.x, and 10.x. You can monitor multiple parameters or counters with a single monitor instance. This enables you to report on delivery performance.

Create a separate monitor instance for files or data streams that are representative of the content available from the site you want to monitor. The error and warning thresholds for the monitor can be set on one or more Real Media Player performance statistics.

Note: This monitor is supported in SiteScopes that are running on Windows versions only.

For details on configuring the monitor, see "Real Media Player Monitor Settings" on page 451.

Setup Requirements

Before you can use the Real Media Player monitor, Real Media Player client libraries must be installed on the server where SiteScope is running. Normally, it is sufficient to download and install a Real Media Player client on the server.

Reference

Real Media Player Monitor Settings

The Real Media Player monitor enables you to emulate a user playing media or streaming data from a Real Media Server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 450. ▶ This monitor does not support metadata files such as the .smi format. ▶ The Real Media Player Tool is available when configuring this monitor (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Real Media Player Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Real Media Player Monitor Overview" on page 450

Real Media Player Monitor Settings

User interface elements are described below:

UI Element	Description
URL	<p>URL of the media file or streaming source you want to monitor. This should be the URL of the media file.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Only monitor video, not audio, streams with this monitor. ▶ This monitor does not support metadata files such as the .smi format.
Counters	<p>Select the server performance counters you want to check with this monitor. The list displays the available counters and those currently selected for this monitor.</p>
Duration (milliseconds)	<p>Playback duration that the monitor should use for the media file or source. The duration value does not need to match the duration of the media contained in the file.</p> <p>If the media content of the file or source you are monitoring is less than the duration value selected for the monitor, the monitor plays the entire media content and reports the results, including the time required to play the media content.</p> <p>Default value: 15,000 milliseconds</p>

62

Real Media Server Monitor

This chapter includes:

Concepts

- ▶ Real Media Server Monitor Overview on page 454

Reference

- ▶ Real Media Server Monitor Settings on page 457

Concepts

Real Media Server Monitor Overview

Use the Real Media Server monitor to monitor the server performance parameters for RealNetworks Real Media Servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate monitor instance for each RealSystem Server you are running.

Note:

- ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.
- ▶ By default, SiteScope monitors the Real Media Server default service, **RMServer**. To monitor other services, add the service names (separated by commas) to the **Real Media Server monitor service names** box in **Preferences > Infrastructure Preferences > Monitor Settings**.

For details on configuring the monitor, see "Real Media Server Monitor Settings" on page 457.

This section also includes:

- ▶ "Setup Requirements and User Permissions" on page 455
- ▶ "IPv6 Addressing Supported Protocols" on page 456

Setup Requirements and User Permissions

The following are key requirements for using the Real Media Server monitor:

- ▶ The Real Media Server monitor makes use of Performance Counters to measure application server performance. SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.
- ▶ The Remote Registry service must be running on the machine where the Real Media server is running if the Real Media Server is running on Windows 2000.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d
would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Real Media Server Monitor Settings

The Real Media Server monitor enables you to monitor the availability of a Real Media Server on Windows NT systems. The error and warning thresholds for the monitor can be set on one or more Real Media Server performance statistics. Use this page to add a monitor or edit the monitor's properties.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 455. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Real Media Server Monitor Overview" on page 454

Real Media Server Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Name of the server you want to monitor. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed in the server list. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>. ▶ When working in template mode, you can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.</p> <p>Note when working in template mode: To update counters in template browsable monitors that need a target server, click the Select measurement from button and add the required server and counters. Any server that is accessible in the domain can be used. If a server is not in the domain, you must manually add the server to the remote server tree before adding counters, and then specify the newly created server name in the Server field.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

63

SAP CCMS Monitor

This chapter includes:

Concepts

- ▶ SAP CCMS Monitor Overview on page 462

Tasks

- ▶ How to Configure the SAP CCMS Monitoring Environment on page 466

Reference

- ▶ SAP CCMS Monitor Settings on page 469

Concepts

SAP CCMS Monitor Overview

Use the SAP CCMS monitor to retrieve and report metrics using SAP's centralized monitoring architecture, CCMS (Computer Center Management System). With CCMS, a SAP administrator can monitor all servers, components and resources in the R/3 4.6B, R/3 4.6C, R/3 4.7E, SAP ECC5 and SAP ECC6 landscape from a single centralized server, greatly facilitating not only problem discovery but also problem diagnosis.

Note:

- ▶ The SAP CCMS monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of a SAP CCMS environment. For details, see "SAP Solution Templates" in *Using SiteScope*.

Using the SAP CCMS monitor, you can also enable reporting of the host topology to BSM. If enabled, BSM automatically populates the ODB with CIs based on the monitored hardware in SiteScope.

Using SAP's advanced CCMS interface BC-XAL 1.0, the SiteScope SAP CCMS monitor exposes hundreds of performance and availability metrics. The error and warning thresholds for the monitor can be set for one or more of the nearly 120 SAP server performance statistics available by using the CCMS interface.

For task details, see "How to Configure the SAP CCMS Monitoring Environment" on page 466.

For user interface details, see "SAP CCMS Monitor Settings" on page 469.

This section contains the following topics:

- "Setup Requirements and User Permissions" on page 463
- "SAP CCMS Topology Settings" on page 464
- "Troubleshooting and Limitations" on page 465

Setup Requirements and User Permissions

The following are requirements for using the SAP CCMS monitor

- The SAP Java Connector (SAP JCo 2.0.6 and later) component must be downloaded from the SAP Service Marketplace Software Distribution Center, and installed on the same server where SiteScope is running (or at least be accessible on a shared or remote location).

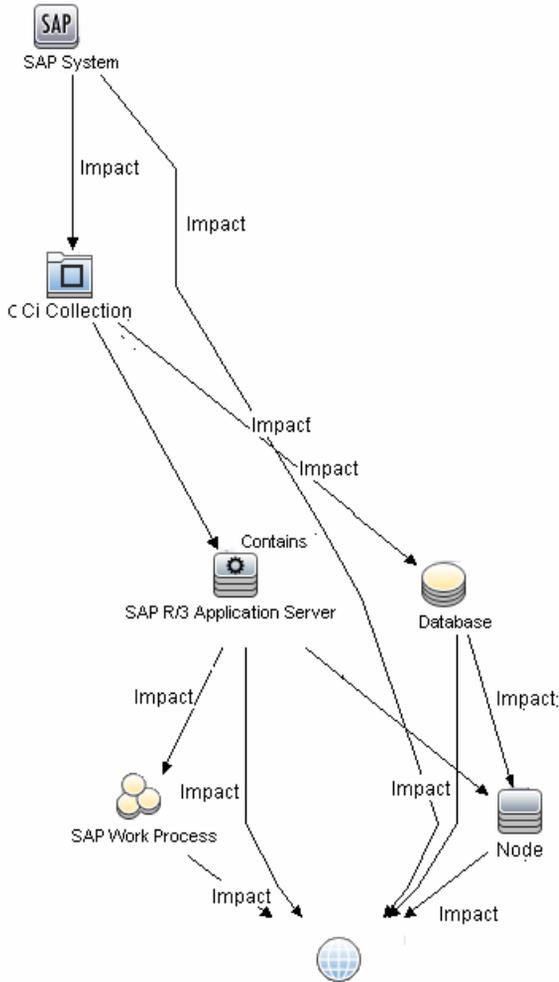
For details on downloading the SAP Java Connector and enabling the monitor, see "How to Configure the SAP CCMS Monitoring Environment" on page 466.

- The BC-XAL 1.0 interface is supported on R/3 systems 4.5B and later only.
- Consult your SAP documentation to determine if your R/3 landscape components may need additional software installed to run or work with CCMS.
- A SAP user requires certain privileges to read CCMS metrics. When defining a SAP CCMS monitor in SiteScope you must specify a user who has XMI authorization to be able to login to the CCMS server and retrieve metrics. The user should have one or more of the profiles listed below assigned to it. Authorizations are collected in SAP profiles, and the following profiles include XMI authorization:
 - S_A.SYSTEM
 - PD_CHICAGO
 - S_WF_RWTEST
 - SAP_ALL

One test to see if a user has such authorization is to try and issue transaction RZ20 in the SAP GUI and see if the CCMS monitor sets can be displayed.

SAP CCMS Topology Settings

The SAP CCMS monitor can identify the topology of the SAP System being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



The CIs are created only for the monitored entities according to the counters that you select. The monitors are represented in the ODB as SiteScope Measurement Groups and SiteScope Measurement CIs.

Note:

- ▶ This direct integration between SiteScope and BSM is available only when the Application Management for SAP license is installed.
 - ▶ When you add a new application server to the SAP System, you must clear the **Report topology** option, save the monitor definition, and then select the option again and save the monitor definition, in order for the monitor to recognize the new application server.
-

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

For information about the SAP topology, see "SAP Systems View" in *Solutions and Integrations* in the HP Business Service Management Documentation Library.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the SAP CCMS monitor.

- ▶ The SAP CCMS monitor only retrieves and displays numeric metrics (Performance attributes). Status, Log and Information attributes are not supported. Also, presentation and management of SAP CCMS Alerts in SiteScope are not supported at this time.
- ▶ Due to the large amount of metrics that are retrieved when displaying the entire SAP metrics browse tree during monitor definition, there could be a delay in opening the Choose Counters page. However, after a browse tree has been successfully retrieved, it is cached to file automatically, so that the next time you retrieve metrics from the same server/user name, the wait time is greatly reduced.

Tasks

How to Configure the SAP CCMS Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Prerequisites" on page 466
- ▶ "Download the SAP Java Connector" on page 466
- ▶ "Enable the SAP CCMS monitor (on a Windows environment)" on page 467
- ▶ "Enable the SAP CCMS monitor (on a UNIX environment)" on page 468
- ▶ "Configure the monitor properties" on page 468

1 Prerequisites

A SAP user requires certain privileges to login to the CCMS server and retrieve metrics. For details on this topic, see "Setup Requirements and User Permissions" on page 463.

2 Download the SAP Java Connector

The SAP Java Connector (SAP JCo version 2.0.6 or later) component must be downloaded and installed on the same server where SiteScope is running (or at least be accessible on a shared or remote location).

- a** To download SAP Java Connector, go to the SAP Software Distribution Web site (<http://www.service.sap.com/connectors>).

Note: You need a valid Service Marketplace login to access the SAP Web site

- b** After you log on, select **SAP NetWeaver > SAP NetWeaver in Detail > Application Platform > Connectivity > Connectors > SAP Java Connector**, and then click **Tools and Services**.

3 Enable the SAP CCMS monitor (on a Windows environment)

The SAP CCMS monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

- a** Download the following .jar file and .dll files from the SAP support Web site (<http://www.service.sap.com/connectors>):
 - **sapjco.jar**
 - **librfc32.dll**
 - **sapjcorfc.dll**
- b** Copy the **sapjco.jar** file into the **<SiteScope root directory>\WEB-INF\lib** directory.
- c** Copy the two .dll files into the **<SiteScope root directory>\bin** directory.

Note: Check if the .dll files already exist in the **<Windows installation directory>/system32** directory. They may have been copied into this directory as part of the SAP client installation. If they do exist in your system, you must overwrite them with the above .dll files before copying into the SiteScope directory.

- d** Restart SiteScope.

4 Enable the SAP CCMS monitor (on a UNIX environment)

The SAP CCMS monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

- a Download the following .jar file and .so files from the SAP support Web site:
 - **sapjco.jar**
 - **librfccm.so**
 - **libsapjcorfc.so**
- b Copy the **sapjco.jar** file into the **<SiteScope root directory>\WEB-INF\lib** directory.
- c Copy the two .so files as follows:
 - For Sun installations, copy into the **<SiteScope root directory>\java\lib\sparc** directory.
 - For Linux installation, copy into the **<SiteScope root directory>\java\lib\i386** directory.
- d Restart SiteScope.

5 Configure the monitor properties

Complete the SAP CCMS monitor configuration. For user interface details, see "SAP CCMS Monitor Settings" on page 469.

Reference

SAP CCMS Monitor Settings

The SAP CCMS monitor enables you to monitor the performance of your SAP R/3 System landscape in a centralized manner using SAP CCMS interface.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 463. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the SAP CCMS Monitoring Environment" on page 466 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "SAP CCMS Monitor Overview" on page 462

SAP CCMS Monitor Settings

User interface elements are described below:

UI Element	Description
Application server	Address of the SAP server you want to monitor.
SAP client	Client to use for connecting to SAP.

UI Element	Description
System number	System number for the SAP server.
SAP router string	<p>Router address string if your connection is being made through a router (otherwise leave it blank).</p> <p>You can find the router address using the SAP Logon tool from the SAP Client software. Open the Logon console, select the server you want to monitor and then select Properties to view the router address.</p>
Credentials	<p>Option for providing the user name and password to access the SAP server:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password to access the SAP server in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
CCMS monitor sets match	Enter a regular expression to match the SAP CCMS monitor sets you want to view (top level nodes of the CCMS tree). Only counters of matched tree sets are requested from SAP and displayed in the counter tree. To change the match, you must reload the counters. If the field is empty, all monitor sets are shown.
Collect all types of counters	<p>Select to enable the monitor to collect all other types of counters in addition to collecting SAP performance counters.</p> <p>Note: If this option is selected, it is recommended to use CCMS monitor sets match to prevent performance capacity problems.</p>

UI Element	Description
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. This tree more or less matches the hierarchy of Monitoring Tree Elements displayed in the Monitoring Tree that is shown in the SAP GUI with transaction RZ20. However, the SiteScope browse tree may show more or less information than RZ20 depending on the authorization level of the user name you specified for this monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

64

SAP CCMS Alerts Monitor

This chapter includes:

Concepts

- ▶ SAP CCMS Alerts Monitor Overview on page 474

Tasks

- ▶ How to Configure the SAP CCMS Alerts Monitoring Environment on page 476

Reference

- ▶ SAP CCMS Alerts Monitor Settings on page 480

Concepts

SAP CCMS Alerts Monitor Overview

Use the SAP CCMS Alerts monitor to retrieve and report alerts from the SAP CCMS monitors using SAP's centralized monitoring architecture, CCMS (Computer Center Management System). The SAP CCMS Alerts monitor retrieves alerts using SAP's advanced CCMS interface BC-XAL 1.0.

The SAP CCMS Alerts monitor enables you to monitor alerts for various components of your SAP R/3 4.6B, R/3 4.6C, R/3 4.7E, and SAP ECC5 and ECC6 landscape.

Note: The SAP CCMS Alerts monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.

For task details, see "How to Configure the SAP CCMS Alerts Monitoring Environment" on page 476.

For user interface details, see "SAP CCMS Alerts Monitor Settings" on page 480.

Setup Requirements and User Permissions

- The SAP CCMS Alerts monitor requires that the SAP Java Connector (SAP JCo 2.0.6 and later) component be downloaded from the SAP Service Marketplace Software Distribution Center, and installed on the same server where SiteScope is running (or at least be accessible on a remote shared location).

For details on downloading the SAP Java Connector and enabling the monitor, see "How to Configure the SAP CCMS Alerts Monitoring Environment" on page 476.

- The BC-XAL 1.0 interface is supported on R/3 systems 4.5B (and later) only.
- Consult your SAP documentation to determine if your R/3 landscape components may need additional software installed to run or work with CCMS.
- A SAP user requires certain privileges to read CCMS metrics. When defining a SAP CCMS Alerts monitor in SiteScope you must specify a user who has XMI authorization to be able to login to the CCMS server and retrieve metrics. The user should have one or more of the profiles listed below assigned to it. Authorizations are collected in SAP profiles, and the following profiles include XMI authorization:
 - S_A.SYSTEM
 - PD_CHICAGO
 - S_WF_RWTEST
 - SAP_ALL

One test to see if a user has such authorization is to try and issue transaction RZ20 in the SAP GUI and see if the CCMS monitor sets can be displayed.

Tasks

How to Configure the SAP CCMS Alerts Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 477
- "Download the SAP Java Connector" on page 477
- "Enable the SAP CCMS Alerts monitor (on a Windows environment)" on page 477
- "Enable the SAP CCMS Alerts monitor (on a UNIX environment)" on page 478
- "Configure the monitor properties" on page 479

1 Prerequisites

A SAP user requires certain privileges to login to the CCMS server and retrieve metrics. For details on this topic, see "Setup Requirements and User Permissions" on page 474.

2 Download the SAP Java Connector

The SAP Java Connector (SAP JCo version 2.0.6 or later) component must be downloaded and installed on the same server where SiteScope is running (or at least be accessible on a shared or remote location).

- a To download SAP Java Connector, go to the SAP Software Distribution Web site (<http://www.service.sap.com/connectors>).

Note: You need a valid Service Marketplace login to access the SAP Web site

- b After you log on, select **SAP NetWeaver > SAP NetWeaver in Detail > Application Platform > Connectivity > Connectors > SAP Java Connector**, and then click **Tools and Services**.

3 Enable the SAP CCMS Alerts monitor (on a Windows environment)

The SAP CCMS monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

- a Download the following .jar file and .dll files from the SAP support Web site (<http://www.service.sap.com/connectors>):
 - **sapjco.jar**
 - **librfc32.dll**
 - **sapjcorfc.dll**
- b Copy the **sapjco.jar** file into the **<SiteScope root directory>\WEB-INF\lib** directory.

- c Copy the two .dll files into the <SiteScope root directory>\bin directory.

Note: Check if the .dll files already exist in the <Windows installation directory>/system32 directory. They may have been copied into this directory as part of the SAP client installation. If they do exist in your system, you must overwrite them with the above .dll files before copying into the SiteScope directory.

- d Restart SiteScope.

4 Enable the SAP CCMS Alerts monitor (on a UNIX environment)

The SAP CCMS monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

- a Download the following .jar file and .so files from the SAP support Web site:
 - **sapjco.jar**
 - **librfccm.so**
 - **libsapjcorfc.so**
- b Copy the **sapjco.jar** file into the <SiteScope root directory>\WEB-INF\lib directory.
- c Copy the two .so files as follows:
 - For Sun installations, copy into the <SiteScope root directory>\java\lib\sparc directory.
 - For Linux installation, copy into the <SiteScope root directory>\java\lib\i386 directory.
- d Restart SiteScope.

5 Configure the monitor properties

Complete the SAP CCMS Alerts monitor configuration. For user interface details, see "SAP CCMS Alerts Monitor Settings" on page 480.

Note: While you can change the run schedule for this monitor to run more or less often using the **Frequency** setting in Monitor Run Settings (the default is every 10 minutes), CCMS metrics are generally only updated once every 5 minutes.

Reference

SAP CCMS Alerts Monitor Settings

The SAP CCMS Alerts monitor enables you to read and complete alerts from the SAP CCMS Alerts monitors.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 474. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the SAP CCMS Alerts Monitoring Environment" on page 476 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "SAP CCMS Alerts Monitor Overview" on page 474

SAP CCMS Alerts Monitor Settings

User interface elements are described below:

UI Element	Description
Application server	Host name/IP address of the SAP server you want to monitor.
SAP client	Client to use for connecting to SAP.

UI Element	Description
System number	System number for the SAP server.
SAP router string	<p>Router address string if your connection is being made through a router (otherwise leave it blank).</p> <p>You can find the router address using the SAP Logon tool from the SAP Client software. Open the Logon console, select the server you want to monitor and then select Properties to view the router address.</p>
Credentials	<p>Option for providing the user name and password to access the SAP CCMS metrics:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password to access the SAP server in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

65

SAP Java Web Application Server Monitor

This chapter includes:

Concepts

- ▶ SAP Java Web Application Server Monitor Overview on page 484

Tasks

- ▶ How to Configure the SAP Java Web Application Server Monitoring Environment on page 485

Reference

- ▶ SAP Java Web Application Server Monitor Settings on page 487

Concepts

SAP Java Web Application Server Monitor Overview

Use the SiteScope SAP Java Web Application Server monitor to monitor the availability and server statistics for SAP Java Web Application Server cluster. A Java cluster consists of one instance of Dispatcher per host, and one or more Servers. The monitor displays a counter tree for each dispatcher and server in the cluster. The SiteScope SAP Java Web Application Server monitor supports Web Application Server 6.40, Web Application Server 7.00, and SAP Enterprise Portal 5.0, 6.0 and 7.0.

Note:

- ▶ The SAP Java Web Application monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of a SAP Java Web Application server. For details on using the template, see "SAP Solution Templates" in *Using SiteScope*.

To enable the SAP Java Web Application Server monitor, you must enable the monitoring environment. For details, see "How to Configure the SAP Java Web Application Server Monitoring Environment" on page 485.

For user interface details, see "SAP Java Web Application Server Monitor Settings" on page 487.

Tasks

How to Configure the SAP Java Web Application Server Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Enable the SAP Java Web Application Server monitoring environment" on page 485
- "Configure the monitor properties" on page 486

1 Enable the SAP Java Web Application Server monitoring environment

The SAP Java Web Application Server monitor uses SAP JMX Connector libraries to connect to SAP J2EE cluster. Depending on your monitored environment, the JMX Connector files are available on the SAP Java Web Application server from

`\usr\sap\<SID>\JC<InstanceNumber>\j2ee\admin\lib` or
`\usr\sap\<SID>\DVEBMGS<InstanceNumber>\j2ee\admin\lib`.

- a** Rename the `logging.jar` file from the SAP Java Web Application server to `sap_logging.jar` so as not to overwrite the SiteScope `logging.jar` file.
- b** Copy the following .jar files from the SAP Java Web Application server installation into the `<SiteScope root directory>\WEB-INF\lib` directory:
 - `admin.jar`
 - `com_sap_pj_jmx.jar`
 - `exception.jar`
 - `sap_logging.jar` (renamed from `logging.jar` in SAP library)
 - `jmx.jar`

- Restart SiteScope.

2 Configure the monitor properties

Complete the SAP Java Web Application monitor configuration. For user interface details, see "SAP Java Web Application Server Monitor Settings" on page 487.

Reference

SAP Java Web Application Server Monitor Settings

The SAP Java Web Application Server monitor enables you to monitor the availability and server statistics for SAP Java Web Application server cluster.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor requires that a third-party Java DHCP library be installed on the server where SiteScope is running. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the SAP Java Web Application Server Monitoring Environment" on page 485 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "SAP Java Web Application Server Monitor Overview" on page 484

SAP Java Web Application Server Monitor Settings

User interface elements are described below:

UI Element	Description
Application server	Address of the SAP Java Web Application Server you want to monitor.
Port	Number of the P4 port for the SAP Java Web Application Server you want to monitor. Default value: 50004

UI Element	Description
Credentials	<p>Option for providing the user name and password to access the SAP server:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password to access the SAP server in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. These counters are received dynamically from the JMX.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

66

SAP Performance Monitor

This chapter includes:

Concepts

- ▶ SAP Performance Monitor Overview on page 490

Tasks

- ▶ How to Configure the SAP Performance Monitoring Environment on page 492

Reference

- ▶ SAP Performance Monitor Settings on page 495

Concepts

SAP Performance Monitor Overview

Use the SAP Performance monitor to monitor the server and database performance data for SAP application servers R/3 4.6B, R/3 4.6C, R/3 4.7E, SAP ECC5 and SAP ECC6. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server and database loading for performance, availability, and capacity planning.

Create a separate monitor instance for each SAP server in your environment. The error and warning thresholds for the monitor can be set on SAP server and database performance statistics.

Note:

- ▶ The SAP Performance monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of a SAP server. For details, see "SAP Solution Templates" in *Using SiteScope*.

To enable the SAP Performance monitor, you must install the SAP Java Connector. For details, see "How to Configure the SAP Performance Monitoring Environment" on page 492.

For details on configuring the monitor, see "SAP Performance Monitor Settings" on page 495.

Setup Requirements and User Permissions

A SAP user should have one or more of the profiles listed below assigned to it. Authorizations are collected in SAP profiles, and the following profiles include XMI authorization:

- S_A.SYSTEM
- PD_CHICAGO
- S_WF_RWTEST
- SAP_ALL

Tasks

How to Configure the SAP Performance Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 492
- "Download the SAP Java Connector" on page 493
- "Enable the SAP Performance monitor (on a Windows environment)" on page 493
- "Enable the SAP Performance monitor (on a UNIX environment)" on page 494
- "Configure the monitor properties" on page 494

1 Prerequisites

A SAP user requires certain privileges to login to the server and retrieve metrics. For details on this topic, see "Setup Requirements and User Permissions" on page 491.

2 Download the SAP Java Connector

The SAP Java Connector (SAP JCo version 2.0.6 or later) component must be downloaded and installed on the same server where SiteScope is running (or at least be accessible on a shared or remote location).

- a To download SAP Java Connector, go to the SAP Software Distribution Web site (<http://www.service.sap.com/connectors>).

Note: You need a valid Service Marketplace login to access the SAP Web site

- b After you log on, select **SAP NetWeaver > SAP NetWeaver in Detail > Application Platform > Connectivity > Connectors > SAP Java Connector**, and then click **Tools and Services**.

3 Enable the SAP Performance monitor (on a Windows environment)

The SAP Performance monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

- a Download the following .jar file and .dll files from the SAP support Web site (<http://www.service.sap.com/connectors>):
 - **sapjco.jar**
 - **librfc32.dll**
 - **sapjcorfc.dll**
- b Copy the **sapjco.jar** file into the **<SiteScope root directory>\WEB-INF\lib** directory.
- c Copy the two .dll files into the **<SiteScope root directory>\bin** directory.

Note: Check if the .dll files already exist in the <Windows installation directory>/system32 directory. They may have been copied into this directory as part of the SAP client installation. If they do exist in your system, you must overwrite them with the above .dll files before copying into the SiteScope directory.

d Restart SiteScope.

4 Enable the SAP Performance monitor (on a UNIX environment)

The SAP Performance monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

a Download the following .jar file and .so files from the SAP support Web site:

- **sapjco.jar**
- **librfccm.so**
- **libsapjcorfc.so**

b Copy the **sapjco.jar** file into the <SiteScope root directory>\WEB-INF\lib directory.

c Copy the two .so files as follows:

- For Sun installations, copy into the <SiteScope root directory>\java\lib\sparc directory.
- For Linux installation, copy into the <SiteScope root directory>\java\lib\i386 directory.

d Restart SiteScope.

5 Configure the monitor properties

Complete the SAP Performance monitor configuration. For user interface details, see "SAP Performance Monitor Settings" on page 495.

Reference

SAP Performance Monitor Settings

The SAP Performance monitor enables you to monitor the availability and performance statistics of a SAP Application Server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 491. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the SAP Performance Monitoring Environment" on page 492 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "SAP Performance Monitor Overview" on page 490

SAP Performance Monitor Settings

User interface elements are described below:

UI Element	Description
Application server	Address of the SAP server you want to monitor.
SAP client	Client to use for connecting to SAP.
System number	System number for the SAP server.

UI Element	Description
SAP router string	<p>Router address string if your connection is being made through a router (otherwise leave it blank).</p> <p>You can find the router address using the SAP Logon tool from the SAP Client software. Open the Logon console, select the server you want to monitor and then select Properties to view the router address.</p>
Credentials	<p>Option for providing the user name and password to access the SAP server:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password to access the SAP server in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

67

SAP Work Processes Monitor

This chapter includes:

Concepts

- ▶ SAP Work Processes Monitor Overview on page 498

Tasks

- ▶ How to Configure the SAP Work Processes Monitoring Environment on page 502

Reference

- ▶ SAP Work Processes Monitor Settings on page 506

Concepts

SAP Work Processes Monitor Overview

Use the SAP Work Processes monitor to monitor the effectiveness of your R/3 4.6B, R/3 4.6C, R/3 4.7E, SAP ECC5 and SAP ECC6 servers. The monitor provides statistical information on work process performance. This information enables you to estimate whether the SAP R/3 Server is efficiently using its resources.

Note: The SAP Work Processes monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.

Using the SAP Work Processes monitor, you can also enable reporting of the host topology to BSM. If enabled, BSM automatically populates the ODB with CIs based on the monitored hardware in SiteScope.

To enable the SAP Work Processes monitor, you must install the SAP Java Connector. For details, see "How to Configure the SAP Work Processes Monitoring Environment" on page 502.

For user interface details, see "SAP Work Processes Monitor Settings" on page 506.

This section contains the following topics:

- ▶ "Understanding the SAP Work Processes Monitor" on page 499
- ▶ "Setup Requirements and User Permissions" on page 499
- ▶ "SAP Work Processes Topology Settings" on page 500

Understanding the SAP Work Processes Monitor

A SAP work process is a program that runs the R/3 application tasks. Each work process acts as a specialized system service. In terms of the operating system, a group of parallel work processes makes up the R/3 runtime system.

Every work process specializes in a particular task type: dialog, batch, update, enqueue, spool, message, or gateway. In client/server terms, a work process is a service, and the computing system running the particular service is known as a server. For example, if the system is providing only dialog services, this is a dialog server, although commonly referred to as an application server.

The dispatcher assigns tasks to the free work processes, making optimal use of system resources and balancing the system load. The dispatcher knows and distributes pending tasks according to the type of the defined processes. The difference among the various work processes affects only those tasks or special services that have been assigned to the work processes through the dispatching strategy.

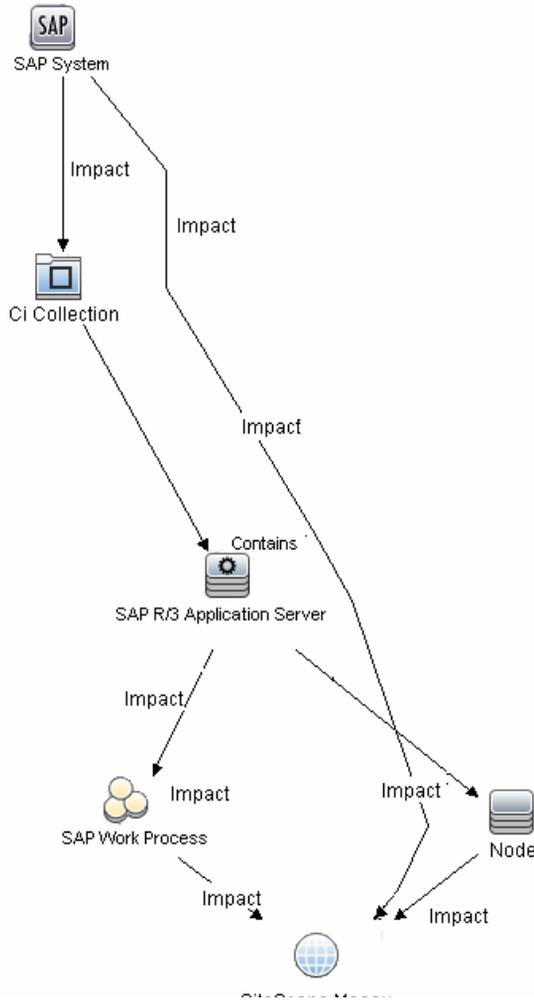
Setup Requirements and User Permissions

A SAP user should have one or more of the profiles listed below assigned to it. Authorizations are collected in SAP profiles, and the following profiles include XMI authorization:

- S_A.SYSTEM
- PD_CHICAGO
- S_WF_RWTEST
- SAP_ALL

SAP Work Processes Topology Settings

The SAP Work Processes monitor can identify the work processes of the server being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



The CIs are created only for the monitored entities according to the counters that you select. The monitors are represented in the ODB as SiteScope Measurement Groups and SiteScope Measurement CIs.

Note: This direct integration between SiteScope and BSM is available only when the Application Management for SAP license is installed.

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

For information about the SAP topology, see "SAP Systems View" in *Solutions and Integrations* in the HP Business Service Management Documentation Library.

Tasks

How to Configure the SAP Work Processes Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 503
- "Download the SAP Java Connector" on page 503
- "Enable the SAP Work Processes monitor (on a Windows environment)" on page 503
- "Enable the SAP Work Processes monitor (on a UNIX environment)" on page 504
- "Configure the monitor properties" on page 505

1 Prerequisites

A SAP user requires certain privileges to login to the server and retrieve metrics. For details on this topic, see "Setup Requirements and User Permissions" on page 499.

2 Download the SAP Java Connector

The SAP Java Connector (SAP JCo version 2.0.6 or later) component must be downloaded and installed on the same server where SiteScope is running (or at least be accessible on a shared or remote location).

- a To download SAP Java Connector, go to the SAP Software Distribution Web site (<http://www.service.sap.com/connectors>).

Note: You need a valid Service Marketplace login to access the SAP Web site

- b After you log on, select **SAP NetWeaver > SAP NetWeaver in Detail > Application Platform > Connectivity > Connectors > SAP Java Connector**, and then click **Tools and Services**.

3 Enable the SAP Work Processes monitor (on a Windows environment)

The SAP Work Processes monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

- a Download the following .jar file and .dll files from the SAP support Web site (<http://www.service.sap.com/connectors>):
 - **sapjco.jar**
 - **librfc32.dll**
 - **sapjcorfc.dll**
- b Copy the **sapjco.jar** file into the **<SiteScope root directory>\WEB-INF\lib** directory.

- c Copy the two .dll files into the <SiteScope root directory>\bin directory.

Note: Check if the .dll files already exist in the <Windows installation directory>/system32 directory. They may have been copied into this directory as part of the SAP client installation. If they do exist in your system, you must overwrite them with the above .dll files before copying into the SiteScope directory.

- d Restart SiteScope.

4 Enable the SAP Work Processes monitor (on a UNIX environment)

The SAP Work Processes monitor uses SAP JCo libraries to connect to the SAP R/3 system. A user must have the required license granted by SAP to receive and use these libraries.

- a Download the following .jar file and .so files from the SAP support Web site:
 - **sapjco.jar**
 - **librfccm.so**
 - **libsapjcorfc.so**
- b Copy the **sapjco.jar** file into the <SiteScope root directory>\WEB-INF\lib directory.
- c Copy the two .so files as follows:
 - For Sun installations, copy into the <SiteScope root directory>\java\lib\sparc directory.
 - For Linux installation, copy into the <SiteScope root directory>\java\lib\i386 directory.
- d Restart SiteScope.

5 Configure the monitor properties

Complete the SAP Work Processes monitor configuration. For user interface details, see "SAP Work Processes Monitor Settings" on page 506.

Reference

SAP Work Processes Monitor Settings

The SAP Work Processes monitor enables you to monitor the effectiveness of your SAP R/3 server configurations. The monitor provides statistical information on work process performance to estimate whether the SAP R/3 Server is efficiently using its resources.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 499. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the SAP Work Processes Monitoring Environment" on page 502 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "SAP Work Processes Monitor Overview" on page 498

SAP Work Processes Monitor Settings

User interface elements are described below:

UI Element	Description
Application server	Address of the SAP server you want to monitor.
SAP client	Client to use for connecting to SAP.
System number	System number for the SAP server.
SAP router string	<p>Router address string if your connection is being made through a router (otherwise leave it blank).</p> <p>You can find the router address using the SAP Logon tool from the SAP Client software. Open the Logon console, select the server you want to monitor and then select Properties to view the router address.</p>
Credentials	<p>Option for providing the user name and password to access the SAP server:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password to access the SAP server in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.

UI Element	Description
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

68

Script Monitor

This chapter includes:

Concepts

- ▶ Script Monitor Overview on page 510

Tasks

- ▶ How to Set a Timeout Value for Script Monitor Instances on page 516

Reference

- ▶ Script Monitor Settings on page 518

Concepts

Script Monitor Overview

The Script monitor can be used to run shell commands or other scripts on the machine where SiteScope is running or it can run a script that is stored on a remote machine.

One of the primary reasons for using the Script monitor is to integrate into SiteScope an existing script that you use to do a particular system management function. For example, if you have a script that runs a diagnostic on an application and returns a 0 reading if everything is working, you could create a Script monitor that runs this script and recognizes any exit value other than 0 as an error. Then you could create an alert which would email or page you in the event that this monitor was in error.

The Script monitor supports monitoring remote servers running on HP NonStop operating systems. For details on enabling the HP NonStop operating system monitoring environment, see "Setup Requirements and User Permissions" on page 209.

Note:

- ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.
 - ▶ Symbolic links are now supported when executing scripts on remote UNIX servers. This support is enabled by setting the property `_scriptMonitorAllowSymbolicLink` to **true** (false by default) in the `master.config` file. When enabled, the symbolic link appears in the list of available scripts when configuring a Script monitor to monitor a UNIX remote.
-

For details on configuring the monitor, see "Script Monitor Settings" on page 518.

This section contains the following topics:

- "Script Options" on page 511
- "Status" on page 513
- "Caching Script Output" on page 514
- "Setting a Timeout Value for Script Execution" on page 514
- "Running Different Types of Scripts" on page 515

Script Options

The following is an overview of the possible script execution options and requirements for the SiteScope Script monitor:

Script Option	Description
Local Script	A file stored and run on the SiteScope machine. The file should be stored in the <SiteScope root directory>\scripts directory.

Script Option	Description
Remote Script	<p>A remote script file (UNIX and Windows-Windows SSH only) in a scripts subdirectory in the home directory of the account SiteScope uses to access the remote server. For example, home/sitescope/scripts.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ On Window platforms, the path to the user home directory depends on the particular SSH server. For example if you install a Cygwin SSH server in C:\Cygwin, the default path to the home directory for the Administrator user will be C:\Cygwin\home\Administrator. For additional information, see the documentation for your SSH server. ▶ Only executable script files are displayed. <p>The remote scripts must include an echo construct to echo script results and exit codes back to SiteScope (see the Return Status Example section below).</p> <p>The monitor may fail if the required exit code is not echoed back to SiteScope.</p> <p>When running a script on a remote Windows server using SSH, you must include an "end script" string at the end of the script to avoid a timeout error. For example:</p> <pre>@echo off time echo end script</pre>
Remote Command	<p>A script file containing a single command stored locally in the <SiteScope root directory>\scripts.remote directory. This script file is used to run a command on a remote server. The command may be used to run a remote script file that performs multiple functions.</p>

Note: For SiteScope on Linux, the script itself must have a shell invocation line as the very first line of the script. This applies to scripts that you are trying to run locally on the SiteScope machine. For example, the first line of the script should include something like `#!/bin/sh` or `#!/usr/local/bin/perl`. If the shell invocation line is not found then the `exec()` call returns with a -1 exit status. This is a limitation of the Java Runtime in JRE prior to release 1.4. This has been fixed in the 1.4 JRE from Sun which is shipped with SiteScope version 7.8 and later.

Scheduling Script monitors is dependent on the script that you want SiteScope to run. You can use the scheduling option to have SiteScope run scripts at different intervals throughout the week.

Status

Each time the Script monitor runs, it returns a status and writes it into the monitoring log file. It also reports a command result, a value, and the time it took to run the command.

The command result is the exit value returned by running the command. This works for local UNIX scripts, but does not work for remote UNIX scripts, or Win NT batch files. Win NT batch file (*.bat) exit codes are not passed out of the command interpreter, and remote UNIX script exit codes are not passed back through the remote connection. See the example below for a way to receive information from the script.

Caching Script Output

The Script monitor includes an optional function that can be used to cache the output of a script execution. The cached output is useful in you want to have multiple script monitors check and alert on different parts of the output of a script, or reduce network traffic and server load by minimizing the number of times a script is run.

You can enable script output caching by entering a time value (in seconds) greater than zero in the **Cache life (seconds)** setting in the Monitor Settings section. To configure multiple Script monitors to use the data in the cache, each monitor instance must be:

- ▶ Configured to use the same remote Server profile.
- ▶ Configured to use the same Script file.
- ▶ Have a **Cache life (seconds)** value greater than zero.

The **Cache life (seconds)** value entered for each monitor should approach, but not exceed, the equivalent of the value selected for the **Frequency** setting for that monitor. For example, if the **Frequency** setting is 10 minutes, the **Cache life (seconds)** value can be set to a value of 590 because 10 minutes is equivalent to 600 seconds and 590 is less than 600. Any monitor that detects the end of its Cache Life runs the script again and refreshes the cache.

Setting a Timeout Value for Script Execution

You can set a timeout value for the Script monitor for SiteScope running on Windows. The timeout value is the total time, in seconds, that SiteScope should wait for a successful run of the script. You can use this option to have SiteScope run the monitor but kill the script execution if a script exit code is not detected within the timeout period.

The requirements and limitations of this option are:

- It is only available with SiteScope for Windows.
- It can only be used with scripts stored and run on the local SiteScope server (that is, where the **Server** setting for the Script monitor is this server or localhost).
- The timeout setting value is expressed in seconds.
- It only applies to Script Monitors.

For details on how to set a timeout value for script execution, see "Script Monitor Settings" on page 518.

Running Different Types of Scripts

You can run non-batch scripts, for example VBScript or Perl scripts, without wrapping them into a batch file (in versions of SiteScope earlier than 9.50, this was not possible).

Note: This is supported only on Windows machines where SiteScope Server is the target of the Script monitor.

- You can see scripts with any extensions by adding the `_scriptMonitorExtensions` property to the **master.config** file. For example, to see **.pl**, **.py**, or **.php** scripts, use the following format:
`_scriptMonitorExtensions=.pl;.py;.php`
- You can run script interpreters with script extensions by specifying the `_scriptInterpreters` property of the **master.config** file as follows:
`_scriptInterpreters=pl=c:/perl/perl.exe;py=c:/python/python.exe;php=c:/php/php.exe`

Tasks

How to Set a Timeout Value for Script Monitor Instances

Two methods exist for applying a timeout setting to Script monitors. One applies the setting as a property to an individual monitor. The second method adds the setting to groups, subgroups, or the entire SiteScope installation.

To set a Timeout Value for individual script monitor instances:

- 1** Stop the SiteScope service.
- 2** Using a text editor, open the SiteScope group file containing the monitor frame for the Script monitor to which you want to apply the timeout setting.
- 3** Inside the Script monitor frame (delimited by the # sign), insert a line and add the timeout setting as `_timeout=time` where `time` is replaced with the time in seconds.
- 4** Save the group file.

Note: Do not add blank lines, leading or trailing spaces to any record in the group file.

- 5** Restart the SiteScope service.

To set a Timeout Value for multiple script monitor instances:

- 1** Stop the SiteScope service.
- 2** Using a text editor, open the SiteScope group file containing one or more Script monitors to which you want to apply the timeout setting. Alternately, you can add the setting to the `SiteScope/groups/master.config` file.

- 3 Inside the group file frame a the top of the file before the first # symbol, insert a line and add the timeout setting as `_scriptMonitorTimeout=time` where time is replaced with the time in seconds.
- 4 Save the group file.

Note: Do not add blank lines, leading or trailing spaces to any record in the group file or **master.config** file.

- 5 Restart the SiteScope service.

Reference

Script Monitor Settings

This monitor enables you to integrate existing system management scripts into the SiteScope environment by running external commands and reporting the command result. It also enables you to parse and report a specific value from the command output.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor supports monitoring remote servers running on HP NonStop operating systems. ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ When deploying a Script monitor from a template, the case of the remote script name must match that of the script in the scripts subdirectory. Otherwise, the selected script is shown as 'none'.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Set a Timeout Value for Script Monitor Instances" on page 516 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ▶ "Script Monitor Overview" on page 510

Script Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Name of the server where the script you want to run is stored. Select a server from the server list (only those Windows and UNIX remote servers configured in SiteScope via SSH are displayed).</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>

UI Element	Description
Script	<p>The script to run. SiteScope gets scripts from a scripts subdirectory in the home directory of the account SiteScope uses to access the remote server. For example, home/sitescope/scripts. On Windows, SiteScope gets scripts from the C:\Documents and Settings\Administrator\Scripts directory on the remote machine.</p> <p>When monitoring the SiteScope Server, scripts placed into the <SiteScope root directory>\scripts directory may be used. In that directory, there are several examples scripts with comments describing each one.</p> <p>If you choose USE COMMAND, you must also specify a USE COMMAND script file name in the Remote script command file field below. SiteScope sends the command or commands found in the USE COMMAND script file to be run as a command line on the remote UNIX Machine. Script files for the USE COMMAND option must be created in the <SiteScope root directory>\scripts.remote directory.</p> <p>Example: Create a file named test.sh and save it in the <SiteScope root directory>\scripts.remote directory. Edit test.sh to include the command syntax ps -ef;echo "all done" as the content of the file. Then create a Script monitor with the USE COMMAND option selected, select a remote UNIX machine, and select test.sh as the USE COMMAND script to run.</p> <p>Note: The diskSpace.bat script accepts only two required parameters: host name and physical drive name. Because the connection to the remote host is made using the current SiteScope account, you can only use this script if SiteScope can access this account. If the specified account does not have the privileges to access the remote host, we recommend that you use the Disk Space monitor instead.</p>

UI Element	Description
Parameters	<p>Specifies any additional parameters to pass to the script. You can use a regular expression or use the attributes found in SiteScope alert templates to insert variables into the parameters box. For details, see "SiteScope Alert Template and Event Properties Directory".</p> <p>Example: <code>s/\$month\$ \$day\$ \$year\$/</code> passes the current month, day and year to the script.</p> <p>Syntax exceptions: SiteScope cannot pass the following characters to scripts: ` ; & </p>
Output encoding	<p>The encoding used on the server where SiteScope is running if the command output uses an encoding that is different than. This enables SiteScope to match and display the encoded file content correctly.</p> <p>Default value: windows-1252</p>
Match value labels	<p>Labels for the matched values found in the script output. The matched value labels are used as variables to access retained values from the match expression for use with the monitor threshold settings. These labels are also displayed as the text labels in graphs generated for the retained values in management reports for this monitor.</p> <p>Example: Enter <code>Copyright_start</code>, <code>Copyright_end</code> to represent the copyright date range used in the Match expression field. After the monitor runs, these labels are displayed in the Condition list in Threshold Settings, enabling you to set status threshold settings (Error if, Warning if, and Good if) for the matched value.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ Separate multiple labels with a comma (,). ➤ You can set up to 10 labels.

UI Element	Description
Match expression	<p>Regular expression used to retrieve values from the script output. For example, the expression: <code>/(\d+)/</code> matches one or more digits returned by the script. Use parentheses to allow the monitor to retrieve these values as counters.</p> <p>By using the labels in Match value labels, these counters can be automatically assigned with a customized name and you can define thresholds for them. The retrieved value can be used to set the error or warning status of the monitor and to trigger alerts. SiteScope checks up to four values returned.</p> <p>Example: <code>/([UDTCP]{3,4})s*(\w\d\W]{5,35}\:\d+)s*(\w\d\W]{5,35}\:\d+)\s*([A-Z]{5,35})/s</code> could be used to match and retain values from the four columns of the following command output:</p> <pre>TCP planetcom:2664 COMSRVF01:2412 ESTABLISHED</pre> <p>Note:</p> <ul style="list-style-type: none"> ▶ If this item is left blank, no value is retrieved from the script. ▶ You can use up to 10 sets of parentheses to retain multiple values from the script output.
Open Tool	<p>Opens the Regular Expression Tool, enabling you to test a regular expression for content matching against a sample of the content you want to monitor. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>

UI Element	Description
Remote script command file	<p>The script file that contains the commands that SiteScope should send to the remote machine if you USE COMMAND is selected as the Script option and a remote machine as the Server. You can save one or more commands in the text script file and save the file in the <SiteScope root directory>\scripts.remote directory. SiteScope opens this file and runs the command at the command line of the remote server chosen in the Choose Server option above. You can then use the Match Expression option to parse the output of the command and display valuable information.</p> <p>The USE COMMAND script can make use of positional parameters such as \$1, \$2 (or alternatively %1, %2), and so on, inside the script. Enter the parameters you want SiteScope to pass to the script in the Parameters box provided above.</p> <p>You can use one or more commands per USE COMMAND script file.</p> <p>Default value: none</p> <p>Syntax exception: Do not include any carriage returns or any command that would normally discontinue script processing (for example, do not use the exit command).</p>
Cache life (seconds)	<p>Uses multiple Script monitor instances to check or match on content returned by a single run of a script.</p> <ul style="list-style-type: none"> ▶ Enter a time value (in seconds) greater than zero to have SiteScope cache the output of the script execution. Each time the monitor is run, SiteScope checks if the cache life has expired. If it has not, then the monitor uses the cached script output data, otherwise the script is run again to update the cache and the monitor. ▶ Enter a value of 0 (zero) to disable the cache function. This causes the monitor to run the script each time that it runs. <p>Default value: 0</p>

UI Element	Description
Measurement maximum (milliseconds)	<p>Maximum value, in milliseconds, for creating the gauge display.</p> <p>Example: If the runtime of the script is 4 seconds, and this value is set to 8 seconds (8000 milliseconds), the gauge shows at 50%.</p> <p>Default value: 0</p>

69

Service Monitor

This chapter includes:

Concepts

- ▶ Service Monitor Overview on page 526

Reference

- ▶ Service Monitor Settings on page 529

Concepts

Service Monitor Overview

The Service monitor verifies that specific services or processes are listed as running, and optionally, it can also check to see how much CPU and memory (Page File Bytes) a service or process is using. If a service or process that should be running does not show up or if it is using too much memory, SiteScope can either alert you to the problem so that you can address it yourself, or it can run a script to automatically restart the service or process to help minimize the effect on other operations and downtime.

Note: This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in *Using SiteScope*.

You should create a Service monitor for any service or process that should be running on a consistent basis. You can also create a Script Alert that restarts the service automatically if the service monitor in SiteScope cannot find it. The **restartService.bat** script, located in the `<SiteScope root directory>\scripts` directory, is a template that you can customize to create a script for SiteScope to run in the event your monitor fails. For details on using a Script Alert, see "Working with Script Alerts" in *Using SiteScope*.

For details on configuring the monitor, see "Service Monitor Settings" on page 529.

This section contains the following topics:

- "Setup Requirements and User Permissions" on page 527
- "Status" on page 527
- "Scheduling the Monitor" on page 528
- "IPv6 Addressing Supported Protocols" on page 528

Setup Requirements and User Permissions

SiteScopes running on Windows platforms need to be running under an account that has the necessary administrative security privileges to access performance counter data from remote servers. If the servers you want to monitor are in a different domain, are governed under a different policy, or require a unique login different than the account SiteScope is running under, then you must define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view. For SiteScopes installed on UNIX platforms, you only need to define the connection to these servers under the Microsoft Windows Remote Servers option in the remote server view.

Status

Each time the Service monitor runs, it returns a reading and a status message and writes them in the monitoring log file.

The reading is the current value of the monitor. For this monitor, the possible readings are:

- running
- not found

The status is logged as either good or error. An error status is returned if the service is not found.

Scheduling the Monitor

The Service monitor does not put a heavy load on your server. For monitoring remote UNIX servers, SiteScope usually needs to open a telnet or SSH connection to the remote server. While the monitor actions generally do not load either server, managing a large number of remote connections can result in some performance problems. You probably want to monitor critical services and services that have a history of problems every five minutes or so. Less critical services and processes should be monitored less frequently.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the following protocols:

- ▶ NetBios (from SiteScope installed on Windows platforms only)
- ▶ WMI (from SiteScope installed on Windows platforms only)
- ▶ SSH (from SiteScope installed on UNIX platforms only)

Note: When specifying a literal IPv6 address as the name for the monitored remote server when using the NetBIOS connection method, the IPv6 address must be customized by:

1. Replacing any colon (":") characters with a dash ("-") character.
2. Appending the text ".ipv6-literal.net" to the IP address.

For example, the IPv6 address: 2004:DB8:2a:1005:230:48ff:fe73:982d

would be: 2004-DB8-2a-1005-230-48ff-fe73-982d.ipv6-literal.net

Alternatively, you can switch to the WMI connection method, and avoid having to make changes to the IPv6 address.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Reference

Service Monitor Settings

The Service monitor checks to see if a service (Windows environment) or a specific process (UNIX and Windows) is running. There are many services or processes that play an important role in the proper functioning of your server, including Web server, Mail, FTP, News, Gopher, and Telnet. Web environments which support e-commerce transactions may have other important processes that support data exchange.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is also supported in SiteScopes that are running on UNIX versions if the remote server being monitored has been configured for SSH. For details, see "SiteScope Monitoring Using Secure Shell (SSH)" in <i>Using SiteScope</i>. ▶ In Threshold Settings, the CPU and memory (Page File Bytes) measurements are relevant only for processes and not for system services. If the selected service is a process name, CPU and memory (Page File Bytes) measurements are in the drop-down list. If the selected service is a system service, such as Event Log, CPU and memory (Page File Bytes) measurements are not listed. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed. ▶ The Services Tool is available when configuring this monitor to view services running on the server where SiteScope is installed (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Services Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Service Monitor Overview" on page 526

Service Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Server</p>	<p>Name of the server where the service or process you want to monitor is running. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note: This monitor supports WMI (Windows Management Instrumentation) as a method for gathering statistics. Remote servers that have been configured with the WMI method are also displayed in the server list. For details, see "Configure the WMI Service for Remote Monitoring" in <i>Using SiteScope</i>.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Service	<p>The service (or process in UNIX) that you want to monitor from the services list.</p> <p>To monitor an NT process, select (Using Process Name) in the drop-down list and enter the name in the Process name box.</p> <p>Note: The CPU and memory (Page File Bytes) counters are relevant for processes and not for services, and it is displayed only if the selected service is by process name.</p>

UI Element	Description
Other service	<p>Name of the service you want to monitor (if it is not listed in the services list).</p> <p>Note: This field is available only when Unknown is selected in the Service box.</p>
Process name	<p>(For Windows only) Name of the process if you want to get information about the percentage of CPU and memory (Page File Bytes) being used by a specific process and/or the number of a specific type of process running. Use a string or a regular expression.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The name of the process must be as it appears in NT Task Manager. ▶ This field is available only when (using Process name) is selected in the Service box. <p>Example: explorer.exe</p>
Measure process memory use	<p>(For UNIX only) SiteScope reports the amount of virtual memory being used by a specific process.</p>

70

Siebel Application Server Monitor

This chapter includes:

Concepts

- ▶ Siebel Application Server Monitor Overview on page 536

Reference

- ▶ Siebel Application Server Monitor Settings on page 541

Concepts

Siebel Application Server Monitor Overview

The Siebel Application Server monitor (previously known as the Siebel Server Manager monitor) uses the Siebel Server Manager client to monitor Object Manager components and task information on Siebel 7.03, 7.04, 7.5.3, 7.7, and 8.0 application servers.

Note:

- ▶ The Siebel Application Server monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of a Siebel application server. For details, see "Siebel Solution Templates" in *Using SiteScope*.

For details on configuring the monitor, see "Siebel Application Server Monitor Settings" on page 541.

This section contains the following topics:

- ▶ "Setup Requirements and User Permissions" on page 537
- ▶ "Siebel Application Server Topology Settings" on page 539

Setup Requirements and User Permissions

The following are requirements for using the Siebel Application Server monitor:

- ▶ The Siebel Server Manager client must be installed only on the machine where SiteScope is running or that is accessible to the SiteScope. There are several options for how you can do this:
 - ▶ Copy the necessary client libraries from the Siebel server and install them on the machine where SiteScope is running (recommended option).
 - ▶ Enable the client on the Siebel server itself and create a remote server profile in SiteScope to access that server and the Siebel client on that server.
 - ▶ Install and enable the client on a third remote server and create a remote server profile in SiteScope to access that server and the Siebel client on that server. This option is applicable only for UNIX remotes.
 - ▶ For Windows networks, map the network drive where the Siebel client is installed to the SiteScope machine and use this in the Script Path.
- ▶ You must know the install path for the Server Manager client to be able to setup Siebel Server Manager monitors in SiteScope. If the client is installed on the machine where SiteScope is running, this is the path on that machine. If the client is installed on a remote machine, you must know the fully qualified path to the client executable relative to that machine (usually called **svrvmgr** or **svrvmgr.exe**).
- ▶ You must know the name or address of the Siebel Gateway server used by the Siebel applications you want to monitor. Ask your Siebel system administrator or consult the Siebel documentation for more information about the Gateway server name.
- ▶ You must know the name or address of the Siebel Enterprise server used by the Siebel applications you want to monitor. Ask your Siebel system administrator or consult the Siebel documentation for more information.
- ▶ You must know the user and password that Server Manager uses for logging into the Siebel server. This user must be granted Siebel Administrator responsibility on the Siebel server.

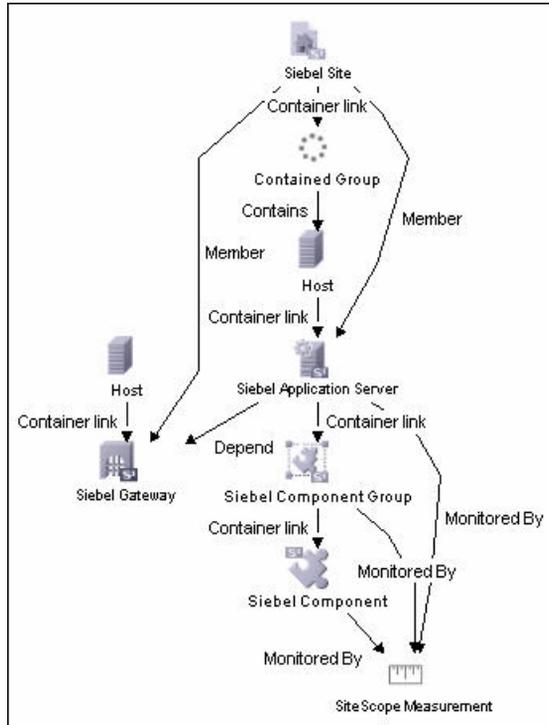
- ▶ For monitoring Siebel processes, SiteScope needs credentials/authorization to access the target Siebel machine. You may need to define a Remote host in SiteScope for the target Siebel machine, unless the SiteScope server is already implicitly authenticated by the Siebel machine.

Note: Process monitoring remote Siebel machines incurs a noticeable delay (to get process metrics) hence the monitor runs slower than if the target Siebel machine is in close proximity to the SiteScope server. If your process counters are returning with no values during a run, it may be that the process metrics read operation is taking too long and SiteScope is timing out. In this case you may want to specify a required timeout value for perfex in the Infrastructure Settings Preferences page; for example, change the **Perfix timeout** value to 120 seconds. To access this setting, open the **Preferences** context, select **Infrastructure Settings Preferences**, and expand the **General Settings** section.

- ▶ **For SiteScope on Solaris/Linux.** You must make sure that the Siebel Server Manager Client's libraries are available to the Client. Set the `LD_LIBRARY_PATH` on that machine by using the Initialize Shell Environment field for the remote server configuration created in SiteScope. An example shell initialization command is `LD_LIBRARY_PATH=/var/siebel/client/lib;export LD_LIBRARY_PATH.`

Siebel Application Server Topology Settings

The Siebel Application Server monitor can identify the topology of the Siebel Application Servers being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



The CIs are created only for the monitored entities according to the counters that you select. The monitors are represented in the ODB as SiteScope Measurement Groups and SiteScope Measurement CIs.

Note: This direct integration between SiteScope and BSM is available only when SiteScope is connected to versions of BSM earlier than 9.00, and the Application Management for Siebel license is installed.

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

For information about the Siebel topology, see "Siebel Views" in *Solutions and Integrations* in the HP Business Service Management Documentation Library.

Reference

Siebel Application Server Monitor Settings

The Siebel Application Server monitor uses the Siebel Server Manager client to monitor Object Manager components and task information on Siebel application servers.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 537. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers, Add Remote Server, and Add Credentials buttons are not displayed. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Siebel Application Server Monitor Overview" on page 536

Siebel Application Server Monitor Settings

User interface elements are described below:

UI Element	Description
Siebel host name	<p>Siebel host name is required if you are doing either of the following:</p> <ul style="list-style-type: none"> ▶ Doing process monitoring. In this case you must define a Remote Definition to the target Siebel machine whose Siebel processes are to be monitored. Enter the Host Server Name of the Siebel Remote definition (not the Title). This is the NT Server Address box for NT remote servers or Server Address box for UNIX remote servers. ▶ Reporting monitor data to an installation of HP Business Service Management. In this case the value entered is used as a text identifier describing the target Siebel server that this monitor is monitoring. This text descriptor is used to identify the Siebel server when the monitor data is viewed in a BSM report. The box is optional only if the Script Server box is already specified to be the target Siebel server.
Application server	Siebel server name or address.
Gateway server	Gateway server name or address.
Enterprise server	Enterprise server name or address.
Credentials	<p>Siebel Server Manager client requires a user name and password. Option to use for providing credentials:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (selected by default). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.

UI Element	Description
Script server	<p>The remote Windows or UNIX machine where the Server Manager (srvmgr) script is installed. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>The method of connection is either SSH or Telnet (but not Microsoft NetBios). For NetBios, choose this server and map the drive.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>

UI Element	Description
Script path	<p>Full path to the Siebel Server Manager executable directory relative to the machine chosen above.</p> <p>Example: E:\sea704\client\BIN</p>
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>
Siebel tasks time window (minutes)	<p>A time window in which tasks are monitored on the Siebel application server. This setting applies only to the "No. of Tasks in XXX" counters. This value tells SiteScope to count tasks that have started within the last N minutes only. It can be used, for instance, to make SiteScope monitor only newly occurring tasks.</p> <p>Example: If the task start time is within the time window (for example, 20 minutes), the task is monitored. The time window is calculated according to the formula: time window = (current time – property value).</p> <p>Enter 0 to monitor every task on the Siebel application server, regardless of its start time.</p> <p>Default value: 60 minutes</p>

71

Siebel Log File Monitor

This chapter includes:

Concepts

- ▶ Siebel Log File Monitor Overview on page 546

Reference

- ▶ Siebel Log File Monitor Settings on page 547

Concepts

Siebel Log File Monitor Overview

Use the Siebel Log File monitor to automatically scan multiple log files for detailed data and error information. By having SiteScope scan the log files at set intervals, you can eliminate the need to scan the logs manually. In addition, you can be notified of warning conditions that you may have otherwise been unaware of until something more serious happened.

This monitor supports monitoring remote servers running on Siebel Application Server 7.03, 7.04, 7.5.3, 7.7, and 8.0.

Note: The Siebel Log File monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.

Each time that SiteScope runs this monitor, it starts from the point in the file where it stopped reading last time it ran. This insures that you are only notified of new entries and speeds the rate at which the monitor runs. While this behavior can be overridden, we do not recommend it, and this should be done for troubleshooting purposes only.

You can schedule your Siebel Log File Monitors to run as often as every 15 seconds. However, depending on the size of the log files, the total number of monitors you have running, and whether the **Search from start** option is selected, the monitor may take a considerable amount of time to run.

For details on configuring the monitor, see "Siebel Log File Monitor Settings" on page 547.

Reference

Siebel Log File Monitor Settings

The Siebel Log File monitor checks for log file entries added to a group of log files by looking for entries containing a specific event type or subtype.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Siebel Log File Monitor Overview" on page 546

Siebel Log Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>The Siebel server where the log files you want to monitor are running. Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note: To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.</p>

UI Element	Description
Add Remote Server	<p>Opens the Add Remote Server dialog box, enabling you to select the type of remote you want to add (Windows or UNIX), and enter the configuration details.</p> <p>For details on the Microsoft Windows Remote Servers user interface, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>For details on the UNIX Remote Servers user interface, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Log file directory	<p>Path to the log directory you want to monitor.</p> <p>To monitor log files on a remote Windows NT/2000 server through NetBIOS, specify a UNC path to the remote directory.</p> <p>Example: \\remoteserver\logFileDirectory</p> <p>If you are using SSH as a connection method to the remote NT server, you must select the java library and ssh1 options for that remote.</p>
File name (regular expr.)	<p>Log files that you want to monitor. You must use a regular expression to specify multiple files, and the regular expression string must be enclosed in forward slashes (for example, /<my reg exp>/). The search is not recursive and only matches files listed within the log file directory.</p> <p>Note: Selecting too many log files to monitor can significantly degrade SiteScope performance.</p>
Severity	<p>Severity level of entries to consider for matching. Entries that have the correct event type/subtype and have an equal or greater severity are matched. Those entries with lesser severity are ignored.</p> <p>Default value: Fatal</p>
Event type	<p>Matching event type or subtype. The monitor reports how many log entries were found of the specified type.</p> <p>Default value: GenericLog</p>

UI Element	Description
Log-entry content match	<p>(Optional) Additional text string or regular expression to further narrow down the matched log entries. This match expression is run against the content returned from the initial Severity and Event type match.</p> <p>You use this option to find only those log entries with the selected severity an event type that meet this additional match criteria.</p>
Search from start	<p>Always checks the contents of the whole file. If this option is not selected, SiteScope checks only newly-added records, starting at the time that the monitor was created (not when the file was created).</p> <p>Note: Monitoring large numbers of log files with this option enabled may use large amounts of memory and CPU time. This can degrade SiteScope server performance.</p> <p>Default value: Not selected</p>

72

Siebel Web Server Monitor

This chapter includes:

Concepts

- ▶ Siebel Web Server Monitor Overview on page 552

Reference

- ▶ Siebel Web Server Monitor Settings on page 555

Concepts

Siebel Web Server Monitor Overview

Use the Siebel Web Server monitor to monitor statistical and operational information about a Siebel server by way of the Siebel Web server plug-in. You can use this monitor to watch Siebel server login session statistics and gauge the performance of the Siebel server Object Managers and database.

This monitor supports monitoring remote servers running on Siebel Application Server 7.03, 7.04, 7.5.3, 7.7, and 8.0.

Note:

- ▶ The Siebel Web Server monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of a Siebel Web server. For details, see "Siebel Solution Templates" in *Using SiteScope*.

For details on configuring the monitor, see "Siebel Web Server Monitor Settings" on page 555.

This section contains the following topics:

- ▶ "Setup Requirements" on page 553
- ▶ "Siebel Web Server Topology Settings" on page 553

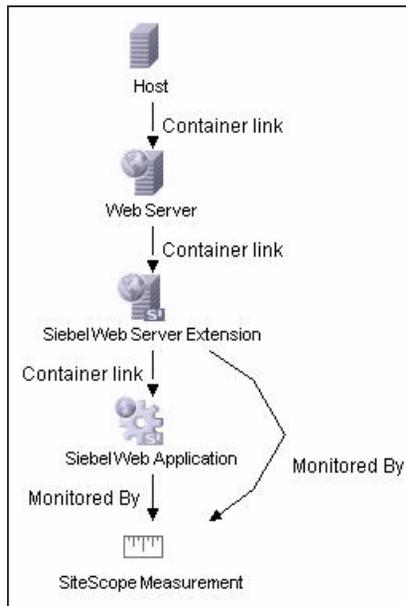
Setup Requirements

The following are several key requirements for using the Siebel Web Server monitor:

- The Siebel Web server plug-in must be installed.
- The Siebel Web server plug-in should be configured to enable the display of the statistics you want to monitor. This may require that stats page sections be enabled by editing the **eapps.cfg** file for the Siebel server. Consult the Siebel documentation for more information.

Siebel Web Server Topology Settings

The Siebel Web Server monitor can identify the topology of the Siebel Web Server being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



The CIs are created only for the monitored entities according to the counters that you select. The monitors are represented in the ODB as SiteScope Measurement Groups and SiteScope Measurement CIs.

Note: This direct integration between SiteScope and BSM is available only when SiteScope is connected to versions of BSM earlier than 9.00, and the Application Management for Siebel license is installed.

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Reference

Siebel Web Server Monitor Settings

The Siebel Web Server monitor enables you to use SiteScope to monitor statistical and operational information about a Siebel server by way of the Siebel Web server plug-in. You can use this monitor to watch Siebel server login session statistics and gauge the performance of the Siebel server Object Managers and database.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 553. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Siebel Web Server Monitor Overview" on page 552

Siebel Web Server Monitor Settings

User interface elements are described below:

UI Element	Description
Basic Settings	
Application URL	<p>URL of the Web plug-in server stats page for the application you want to monitor.</p> <p>Example: <code>http://siebelsrv/service/_stats.swe</code></p> <p>If the Siebel Web server is configured to support verbose mode, you can also use <code>http://siebelsrv/service/_stats.swe?verbose=high</code> to include information on Locks and Current Operations Processing for the Siebel server.</p>
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>
Connecton Settings (These settings are optional, unless the server requires authentication)	
Authorization user name	User name to access the Web server stats page.
Authorization password	Password for accessing the Web server stats page.
HTTP proxy	<p>Proxy server and port to use if you are using a proxy to access the Siebel server.</p> <p>Example: <code>proxy.SiteScope.com:8080</code></p>

UI Element	Description
Proxy server user name	Proxy user name if the proxy server requires authorization.
Proxy server password	<p>Proxy password if the proxy server requires authorization.</p> <p>If access to the Siebel Web Server site is controlled by a centralized authorization and authentication access control system, the following fields are used to submit information to a HTML/CGI enabled authentication system.</p> <p>You can determine if authentication is required by trying to access the Web plug-in server stats page using a Web browser outside of SiteScope. If an HTML-based authentication form opens before you see the Siebel service statistics page, you must use the following fields to access the Siebel Web server plug-in.</p>
<p>HTML Form-Based Authentication (These settings are optional, unless the server requires authentication)</p>	
HTML form-based authentication required	SiteScope submits HTML form-based authentication when accessing the Siebel Web server plug-in.
Authorization form name	<p>Authentication form identifier within the Web page when using HTML Form-based Authentication. The identifier is a number representing the place or order of the forms on an HTML page.</p> <p>Example: [1] is the first HTML <FORM> set, [2] is the second, and so on. The default is [1] because it assumes that the authentication information is entered into the first HTML <FORM> tag set on the page.</p>
Authorization user name form field	User name that should be submitted to the access control system when using HTML Form-based Authentication. This must be the user name that would be entered in the authentication form the same as if you were accessing the Siebel Web server plug-in manually using a Web browser.

UI Element	Description
<p>Authorization password form field</p>	<p>Password that should be submitted to the access control system. This must be the password that would be entered in the authentication form when accessing the Siebel Web server plug-in manually using a Web browser.</p>
<p>Authorization form button</p>	<p>Identifier of the Submit button on the authentication form when using HTML Form-based Authentication.</p> <p>The identifier is a number representing the place or order of the buttons on an HTML page.</p> <p>Example: [1] is the first HTML <INPUT TYPE=SUBMIT> button, [2] is the second, and so on.</p> <p>Default value: [1]</p>

73

SNMP Monitor

This chapter includes:

Concepts

- ▶ SNMP Monitor Overview on page 560

Reference

- ▶ SNMP Monitor Settings on page 562

Concepts

SNMP Monitor Overview

Many network devices support the SNMP protocol as a way of monitoring them. Use the SNMP monitor to monitor devices that communicate with the SNMP protocol, such as firewalls, routers, and UPS's. Several operating systems suppliers also provide SNMP agents and Management Information Bases (MIBs) for accessing workstation or server performance metrics, interface statistics, and process tables by using SNMP. The monitor supports monitoring agents of SNMP versions 1.0, 2.0, and 3.0 MD5.

You can use the SNMP monitor to watch any values known by the SNMP agent running on a device, provided that you can supply an Object ID that maps to that value. The Object ID's may be available in the product documentation or in the form of a MIB file. If your router supports SNMP, for example, you could have SiteScope monitor for packet errors, bandwidth, or device status.

Note: To have SiteScope listen for SNMP traps from multiple devices, use the SNMP Trap monitor.

For details on configuring the monitor, see "SNMP Monitor Settings" on page 562.

Setup Requirements and User Permissions

Requirements for using the SNMP monitor include:

- SNMP agents must be deployed and running on the servers and devices that you want to monitor.
- The SNMP agents must be supplied with the necessary Management Information Bases (MIBs) and configured to read those MIBs.
- If SNMP version 3 is used, a valid user name and password might be required to access the SNMP device.
- You must know the Object ID's (OIDs) of the parameters you want to monitor. In some cases, an equipment manufacturer may supply a list of OIDs that are available. Otherwise, you may need to locate a MIB browser utility to parse a MIB and extract the values of interest to you. If you want the monitor to get you the next OID of the OID you entered, you can enter the OID with a plus sign (+) at the end of the OID (for example, 1.3.6.1.2.1.4.3+). For each monitor run, the monitor retrieves the next OID value and not the OID that you entered. This may be helpful if you want to reach one of the SNMP table columns.

For information about monitoring SNMP systems, refer to the HP Software Self-solve knowledge base (<http://h20230.www2.hp.com/selfsolve/documents>). To enter the knowledge base, you must log in with your HP Passport ID.

Reference

SNMP Monitor Settings

This monitor enables you to monitor devices that communicate with the SNMP protocol, such as firewalls, routers, and UPS's. You can also use this monitor to have SiteScope listen for SNMP traps from multiple devices.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ➤ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 561. ➤ The SNMP Tool is available when configuring this monitor to query a SNMP Management Information Base (MIB) and retrieve a set of OIDs (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "SNMP Tool" on page 258.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	➤ "SNMP Monitor Overview" on page 560

SNMP Monitor Settings

User interface elements are described below:

UI Element	Description
Basic SNMP Settings	
Host name	Host name or IP address of the SNMP device that you want to monitor (for example, demo.thiscompany.com). If your SNMP device is using a different port, add it to the host name using :port . Example: demo.SiteScope.com:170 (to use port 170)

UI Element	Description
Object ID	<p>Object ID setting:</p> <ul style="list-style-type: none"> ▶ Commonly used values. Select the Object ID mnemonic from the drop-down list. (This is the default option with system.sysDescr set as the default value.) ▶ Other values. Enter the Object Identifier (OID) for the SNMP value you want to retrieve. The OID specifies which value should be retrieved from the device. <p>Example: 1.3.6.1.2.1.4.3</p> <p>Tip: To troubleshooting basic connectivity to the device and to confirm that the SNMP agent is active, select the system.sysDescr object from the drop-down list if other objects cannot be found.</p> <p>Note: SiteScope version 7.1 and later supports SNMP version 1 and version 2. To send a trap using snmpv2, you must select the version number in the SNMP Connection Settings.</p> <p>If you receive the error message error - noSuchName, it means SiteScope was able to contact the device but the OID given is not know by the device. You must provide an OID that is valid to the device to obtain a value.</p> <p>If you have a MIB file for the device you want to monitor, you can copy the *.mib (or *.my) file into the <SiteScope root directory>\templates.mib subdirectory and use the MIB Help utility to compile the MIB and browse the OIDs for the device. To use the MIB Helper tool, select Tools > MIB Browser and enter the connection details. After copying a new MIB file to SiteScope, SiteScope must be restarted. Select the MIB file to browse using the drop-down list. Click the browse button to show the OIDs from the selected MIB file. A tree is displayed that represents the chosen MIB on the specified server. You can browse that tree to find the OID that you want to monitor.</p> <p>Note: It is not necessary to browse a MIB file with the SiteScope Mib Helper to monitor a device. The MIB Helper is provided simply as a tool to help you discover OIDs available on a device, but it is not the only tool available. You can find other alternative tools on the Web (for example, MG-SOFT or iReasoning).</p>

UI Element	Description
Index	<p>Index of the SNMP object. Values for an OID come as either scalar or indexed (array or table) values.</p> <ul style="list-style-type: none"> ➤ For a scalar OID, the index value must be set to 0. ➤ For an indexed or table value, you must provide the index (a positive integer) to the element that contains the value you want. For example, OID 1.3.6.1.2.1.2.2.1.17 is an indexed value that contains four elements. To access this second element of this OID, enter an index of 2 in the Index text box. To access the fourth element, enter an Index value of 4. <p>In some vendor specific MIB's, the indexed entries (often referred to in tables) can have compound index values. For example, the OID for the process entry table in a Sun Microsystems server MIB may be: .1.3.6.1.4.1.42.3.12.1.1. This indexed or table object may have up to eleven nodes with OIDs ranging from .1.3.6.1.4.1.42.3.12.1.1.1 to .1.3.6.1.4.1.42.3.12.1.1.11. Each of these nodes contains an indexed list of entries with index values that range from 0 to over 27300 where the Index value represents the process ID number used by the operating system (view examples using the ps -ef command in UNIX). In this example, the index values may not be consecutive from 0 to 27300.</p> <p>Default value: 0</p>
Community	<p>Community string for the SNMP device.</p> <p>The Community string provides a level of security for a SNMP device. Most devices use public as a community string. However, the device you are going to monitor may require a different Community string to access it.</p> <p>If you try to monitor an SNMP agent through specific community, you must make sure that the SNMP agent is familiar with that community. For example, if you try to monitor a Windows 2003 server through public community, you must make sure that the SNMP agent has this community configured. Otherwise, the monitor cannot connect to the agent.</p> <p>Default value: public</p> <p>Note: The field is valid only for version 1 or 2 connections.</p>

UI Element	Description
SNMP Connection Settings	
Timeout (seconds)	Amount of time, in seconds, that SiteScope should wait for all SNMP requests (including retries) to complete. Default value: 5 seconds
Retry delay (seconds)	Amount of time, in seconds, that SiteScope should wait before retrying the request. It continues to retry at the interval specified here until the Timeout threshold is met. Default value: 1 second
SNMP version	SNMP version used by the SNMP host you want to monitor. SiteScope supports SNMP version 1, version 2, and version 3. Default value: V1
SNMP V3 user name	User name to be used for authentication if you are using SNMP version 3. Note: SiteScope only supports MD5 authentication for SNMP V3.
SNMP V3 password	Password to be used for authentication if you are using SNMP version 3.
SNMP Data Manipulation Settings	
Scaling	If you choose a scaling option from the Commonly used values list, SiteScope divides the returned value by this factor before displaying it. Alternatively, you can specify a factor by which the value should be divided in the Other values box. Default value: No scaling
Match content	Use to match against an SNMP value, using a string or a regular expression or XML names. Note: You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i> .

UI Element	Description
Units	Optional units string to append when displaying the value of this counter.
Measurement label	Optional text string to describe the measurement being made by the monitor.
Measure as delta	Reports the measurement as the difference between the current value and the previous value.
Measure as rate per second	Divides the measurement by the number of seconds since the last measurement.
Percentage base	<p>Value to use for calculating the percentage base from the Commonly used values list or by typing a number or SNMP object ID in the Other values box. If entered, the measurement is divided by this value to calculate a percentage. If an object ID is entered, the Index value from the SNMP Monitor Settings pane is used.</p> <p>Default value: No percentage base</p>
Measure base As Delta	Calculates the Percentage Base as the difference between the current base and the previous base. Use this option when an SNMP object ID is used for Percentage Base and the object is not a fixed value.
Gauge maximum	Maximum value for the Object ID. The maximum is calculated to create the gauge display (Optional).

UI Element	Description
<p>Secondary SNMP Settings (To enable secondary object changes, you must add the property <code>_enableSecondSNMP=true</code> to the <code>master.config</code> file.)</p>	
<p>Secondary object ID</p>	<p>Object ID of the secondary SNMP object to be queried from the Commonly used values drop-down list, or enter the Object Identifier (OID) for the SNMP value you want to query in the Other values box.</p>
<p>Secondary match content</p>	<p>Sets up a secondary SNMP index. Match this item against the main SNMP value using a string, regular expression (see "Using Regular Expressions" in <i>Using SiteScope</i>), or XML names (see "Monitoring XML Documents" in <i>Using SiteScope</i>).</p> <p>Example: <code>/(\d)/</code> gets the first digit and uses it in the secondary index.</p>

74

SNMP by MIB Monitor

This chapter includes:

Concepts

- ▶ SNMP by MIB Monitor Overview on page 570

Tasks

- ▶ How to Configure the SNMP by MIB Monitoring Environment on page 572

Reference

- ▶ SNMP by MIB Monitor Settings on page 574

Concepts

SNMP by MIB Monitor Overview

The SNMP by MIB monitor gathers information from a source, organizes it into a browsable tree structure, and enables you to choose which items in the tree it should monitor. It works by connecting to the specified SNMP agent and performing a full traversal of the MIBs implemented by the agent. Thus, you do not need to know which objects are present on the agent in advance. The monitor supports agents of SNMP version 1, 2, and 3 MD5.

The MIB files in `<SiteScope root directory>\templates.mib` are then used to create a browsable tree that contains names and descriptions of the objects found during the traversal. An object may or may not be displayed with a textual name and description, depending on the MIBs available in `templates.mib`. SiteScope does not display objects for user selection when it has no knowledge of how to display those objects. For example, a plain OctetString may contain binary or ascii data, but SiteScope has no way to decode and display this data correctly without more information.

The error and warning thresholds for the monitor can be set on one or more different objects.

For task details, see "How to Configure the SNMP by MIB Monitoring Environment" on page 572.

For user interface details, see "SNMP by MIB Monitor Settings" on page 574.

Troubleshooting MIB Compilation

If MIBs are not listed in the **MIB file** drop-down box after adding MIB files to the **templates.mib** directory, perform the following MIB Compilation troubleshooting steps:

- 1** Open `<SiteScope root directory>\logs\RunMonitor.log` and look for MIB compilation error messages close to the time of your most recent restart. The error messages in the file contain descriptions of compilation errors encountered in each file, together with the line number that helps you identify the source of the errors.
- 2** Correct the errors found in **RunMonitor.log**. Usually, these errors can be fixed by one of the following:
 - Adding a MIB to **templates.mib** on which some of the new MIBs depend.
 - Removing a MIB from **templates.mib** which is duplicated or upgraded in the new MIBs.
 - Fixing broken comments in the new MIBs. Note that a comment is defined as follows: "ASN.1 comments commence with a pair of adjacent hyphens and end with the next pair of adjacent hyphens or at the end of the line, whichever occurs first." This means that a line containing only the string "----" is a syntax error, whereas the a line containing only the string "----" is a valid comment. Beware of lines containing only hyphens, as adding or subtracting a single hyphen from such lines may break compilation for that MIB.
 - Fixing missing **IMPORT** statements. Some MIBs may neglect to import objects that they reference which are defined in other MIBs. You can also search in Web sites for the error that you get in **RunMonitor.log**. There is a lot of information about these errors on the Web.
- 3** After correcting the errors described in **RunMonitor.log**, restart SiteScope.
- 4** Follow the procedures in "Add MIBs to the templates.mib directory" on page 572 to verify that the new MIB files compiled correctly.

Tasks

How to Configure the SNMP by MIB Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Add MIBs to the templates.mib directory" on page 572
- ▶ "Configure the monitor properties" on page 573

1 Add MIBs to the templates.mib directory

You can add to the MIBs of which SiteScope is aware by putting new MIB files in the **templates.mib** directory.

Note: Since MIB files may depend on other MIB files, and because ASN.1 syntax is not always obeyed completely by vendors, you may encounter compilation errors with some MIBs.

- a** To check compilation of the new MIB, you can use the command line tool located in **<SiteScope root directory>\tools\SNMPMIBCompilation**. This tool enables you to check the new MIB compilation without having to restart SiteScope for every change you make in the MIB file. If the MIB is compiled using another tool (for example, MG-SOFT or iReasoning), you are not notified that the MIB file is compiled in SiteScope.
- b** Add new MIB files to the **templates.mib** directory. SiteScope only compiles MIBs in ASN.1 format which abide by the SMIV1 or SMIV2 standards.

- c** Restart SiteScope.
- d** Proceed to add a new SNMP by MIB monitor. Before adding the monitor, check that your new MIB files are listed in the **MIB file** drop-down box. If they are, then they were successfully compiled and you can use the SNMP by MIB monitor and the SNMP by MIB tool to browse devices that implement these MIBs.

If your newly added MIBs are not listed in the MIB File drop-down box, see "Troubleshooting MIB Compilation" on page 571.

2 Configure the monitor properties

Complete the SNMP by MIB monitor configuration. For user interface details, see "SNMP by MIB Monitor Settings" on page 574.

Reference

SNMP by MIB Monitor Settings

The SNMP by MIB monitor enables you to monitor objects on any SNMP agent.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ The SNMP Browser Tool is available when configuring this monitor to verify the connection properties of an SNMP agent and to gain more information about the MIBs which that agent implements (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "SNMP Browser Tool" in <i>Using SiteScope</i>.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the SNMP by MIB Monitoring Environment" on page 572 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ▶ "SNMP by MIB Monitor Overview" on page 570

SNMP by MIB Monitor Settings

User interface elements are described below:

UI Element	Description
SNMP Connection Settings	
Server	Name of the server you want to monitor.
SNMP version	Version of SNMP to use when connecting. SiteScope supports SNMP version 1, version 2, and version 3. Selecting V3 enables you to enter V3 settings in the SNMP V3 settings panel. Default value: V1
Community	Community string. If you try to monitor SNMP agent through a specific community, you must make sure that the SNMP agent is familiar with that community. If you try to monitor Windows 2003 server through public community, you must make sure that the SNMP agent has this community configured. Otherwise, the monitor cannot connect to the agent. Note: This is valid only for version 1 or 2 connections. Default value: public
Timeout (seconds)	Amount of time, in seconds, to wait for all SNMP requests (including retries) to complete. Default value: 5 seconds
Retries	Number of times each SNMP GET request should be retried before SiteScope considers the request to have failed. Default value: 1
Port	Port to use when requesting data from the SNMP agent. Default value: 161

UI Element	Description
<p>Starting OID</p>	<p>Use when selecting counters for this monitor. When the monitor attempts to retrieve the SNMP agent's tree, it starts with the OID value that is entered here.</p> <p>Default value: 1</p> <p>Note: You should edit this box only when attempting to retrieve values from an application that does not handle OIDs starting with 1. If the default value of 1 did not enable retrieving any counters, then you may have to enter a different value.</p>
<p>MIB File</p>	<p>MIB file that contains the objects you want to monitor.</p> <p>If you select a specific MIB file, then only the objects described in that MIB file are displayed.</p> <p>If you select All MIBs, then all objects retrieved from the agent during the MIB traversal are displayed.</p> <p>If no MIB information is available for an object, it is still displayed but with no textual name or description.</p> <p>To make this monitor aware of new or additional MIBs, place new MIB files in the <SiteScope root directory>\templates.mib directory and restart SiteScope.</p> <p>Default value: All MIBs</p>
<p>Counter calculation mode</p>	<p>Performs a calculation on objects of type Counter, Counter32, or Counter64. The available calculations are:</p> <ul style="list-style-type: none"> ▶ Calculate delta. Calculates a simple delta of the current value from the previous value. ▶ Calculate rate Calculates a rate calculation using the delta of current value from previous value, divided by the time elapsed between measurements. ▶ Do not calculate. No calculation is performed. <p>Note: This option only applies to the aforementioned object types. An SNMP by MIB monitor that monitors Counter objects as well as DisplayString objects only performs this calculation on the Counter objects.</p> <p>Default value: Do not calculate</p>

UI Element	Description
V3 SNMP Settings (This panel is enabled only if V3 is selected in the SNMP version field)	
SNMP V3 authentication type	Type of authentication to use for version 3 connections. Default value: MD5
SNMP V3 user name	User name for version 3 connections.
SNMP V3 authentication password	Authentication password to use for version 3 connections.
SNMP V3 privacy password	Privacy password if DES privacy encryption is desired for version 3 connections. Leave blank if you do not want privacy.
SNMP V3 context engine ID	Hexadecimal string representing the Context Engine ID to use for this connection. This is applicable for SNMP V3 only.
SNMP V3 context name	Context Name to use for this connection. This is applicable for SNMP V3 only.

UI Element	Description
SNMP Counters	
Counters	<p>Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.</p> <p>Note: Not all OIDs from the MIB file are displayed—only the available OIDs which the device can return.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The counters displayed are those received during the timeout period, and may not include all the counters available on the server. Specifying a longer timeout in the Timeout (seconds) field in the SNMP Connection Settings panel may result in receiving more counters. ▶ The total time for receiving the counters may be longer than the timeout specified, due to additional processing time not part of the request/response period. ▶ Due to third-party counter restrictions, the total number of counters that can be monitored is limited to 32. <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

75

SNMP Trap Monitor

This chapter includes:

Concepts

- ▶ SNMP Trap Monitor Overview on page 580

Reference

- ▶ SNMP Trap Monitor Settings on page 582

Concepts

SNMP Trap Monitor Overview

Note: To have SiteScope query a specific device for a specific value, use the SNMP monitor.

Use the SNMP Trap monitor for automatically collecting SNMP Traps from other devices. With SiteScope doing this for you at set intervals, you can eliminate the need to check for the SNMP Traps manually. In addition, you can be notified of warning conditions that you may have otherwise been unaware of until something more serious happened. Each time that it runs this monitor, SiteScope checks traps that have been received since the last time it ran. The monitor supports monitoring traps of SNMP versions 1 and 2.

Note: The SNMP Trap monitor uses port 162 for receiving traps. If another application or process on the machine where SiteScope is running has bound this port, the monitor reports an **Address in use** error.

For details on configuring the monitor, see "SNMP Trap Monitor Settings" on page 582.

Setup Requirements

You must configure the network devices to send SNMP Traps to SiteScope. On Windows 2000 systems, this can be configured by using the **Administrative Tools > Services > SNMP Service > Properties > Traps** page. SNMP agents on UNIX platforms usually require that you edit the configuration files associated with the agent. For an example of working with other devices, see the instructions on the Cisco Web site for SNMP Traps and Cisco Devices.

Reference

SNMP Trap Monitor Settings

The SNMP Trap monitor checks for SNMP Traps received by SiteScope from other devices. The agents for the SNMP enabled devices must be configured to send traps to the SiteScope server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 581. ▶ To have SiteScope query a specific device for a specific value, use the SNMP monitor, "SNMP Monitor Overview" on page 560. ▶ The SNMP Trap Tool is available when configuring this monitor to view SNMP Traps received by SiteScope's SNMP listener (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "SNMP Trap Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "SNMP Trap Monitor Overview" on page 580

SNMP Trap Monitor Settings

User interface elements are described below:

UI Element	Description
<p>Content match</p>	<p>Text to look for in SNMP Traps. Regular expressions may also be used for pattern matching. By default, all SNMP traps received are matched.</p> <p>All SNMP Traps received by SiteScope are logged to <SiteScope root directory>\logs\SNMPTrap.log file.</p> <p>Example: The following shows two traps received from one router and another trap received from a second router:</p> <pre>09:08:35 09/10/2001 from=router1/10.0.0.133 oid=.1.3.6.1.4.1.11.2.17.1 trap=link down specific=0 traptime=1000134506 community=public agent=router1/10.0.0.133 var1=The interface Serial1 is down</pre> <pre>09:08:45 09/10/2001 from=router1/10.0.0.133 oid=.1.3.6.1.4.1.11.2.17.1 trap=link up specific=0 traptime=1000134520 community=public agent=router1/10.0.0.133 var1=The interface Serial1 is up</pre> <pre>09:10:55 09/10/2001 from=router2/10.0.0.134 oid=.1.3.6.1.4.1.11.2.17.1 trap=enterprise specific specific=1000 traptime=1000134652 community=public agent=router2/10.0.0.134 var1=CPU usage is above 90%</pre> <p>The examples shown here may wrap across multiple lines to fit on this page. The actual traps are in a single extended line for each trap.</p>

UI Element	Description
Match value labels	<p>Labels for the matched values found in the trap. The match value labels are used as variables to access retained values from the Content Match expression for use with the monitor threshold settings.</p> <p>You can set up to four labels. The labels are used to represent any retained values from the Content Match regular expression in the parameters available for the status threshold settings (Error if, Warning if, and Good if). These labels are also displayed as the text labels in graphs generated for the retained values in management reports for this monitor.</p> <p>Note: Separate multiple labels with a comma (,).</p>
Run alerts	<p>Method for running alerts:</p> <ul style="list-style-type: none"> ▶ For each SNMP Trap matched. The monitor triggers alerts for every matching entry found. When the SNMP Trap monitor is run for each SNMP Trap received, the monitor never reports a status of error or warning, regardless of the results of the content match or even if the target SNMP Trap is not found. ▶ Once, after all SNMP Traps have been checked. The monitor counts up the number of matches and triggers alerts based on the Error if and Warning if thresholds defined for the monitor in the Threshold Settings section. <p>Default value: For each SNMP Trap matched</p>

76

Solaris Zones Monitor

This chapter includes:

Concepts

- ▶ Solaris Zones Monitor Overview on page 586

Tasks

- ▶ How to Analyze Solaris Zones Monitor Results – Use-Case Scenario on page 591

Reference

- ▶ Solaris Zones Monitor Settings on page 593

Concepts

Solaris Zones Monitor Overview

Use the Solaris Zones monitor to show statistics on the physical host, its zones, and their resource pools on Solaris servers. This monitor can help you recognize problems in the Solaris system, and isolate them in the zone or resource pool level. The Solaris Zones monitor supports monitoring machines that are running on Solaris 10 update 7 (5/09) operating systems.

The Solaris Zones monitor queries the list of UNIX servers currently configured in the UNIX Remote Servers container. To monitor a remote Solaris Zones server, you must define a UNIX Remote connection profile for the server before you can add a Solaris Zones monitor for that server. For details, see "Remote Servers Overview" in *Using SiteScope*.

For details on how to analyze Solaris zones monitor results, see "How to Analyze Solaris Zones Monitor Results – Use-Case Scenario" on page 591. For user interface details, see "Solaris Zones Monitor Settings" on page 593.

This section contains the following topics:

- ▶ "Virtualization Support" on page 586
- ▶ "Solaris Zones Topology Settings" on page 587
- ▶ "Notes and Limitations" on page 588

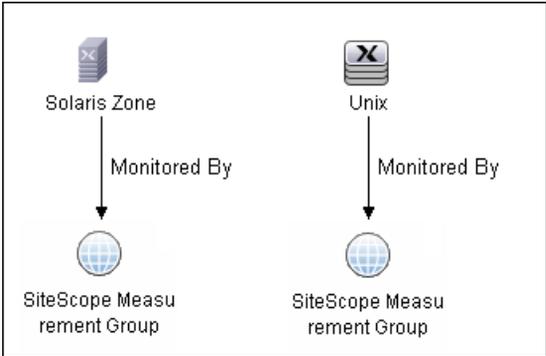
Virtualization Support

A Solaris zone is a virtualized operating system environment created within a single instance of the Solaris Operating System. It provides the required isolation and security to run multiple applications of the same operating system on the same server.

Note: Branded zones that are not of Solaris type are not supported.

Solaris Zones Topology Settings

The Solaris Zones monitor can identify the topology of the Solaris system being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



The CIs are created only for the monitored entities according to the counters that you select. The monitors are represented in the ODB as SiteScope Measurement Groups CIs and the counters in it as SiteScope Measurement CIs. SiteScope Measurement CIs that refer to the physical host or global zone are linked to a UNIX host CI that represents the machine. SiteScope Measurement CIs that refer to a non-global zone are linked to a UNIX host CI that represents the zone. SiteScope can also report other measurements that are not connected to the host CIs. These can include pool measurements and counters in error.

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Notes and Limitations

- ▶ The monitor collects measurements for counters of running zones only. If a zone that was running is stopped or deleted, when the monitor next runs, the counters of this zone that were selected show `n/a` and the state string indicates that the zone is not running.
- ▶ When defining a Solaris remote server (by selecting Sun Solaris as the operating system), it does not necessarily mean that you can run special zone commands. To verify that zones are supported, run the `zoneadm` command, and check the output list contains the word **global** (this is the default zone that exists in any machine that supports zones). If it does not, the operating system does not support zones.
- ▶ A Solaris Zones monitor should be defined on a Solaris machine that supports Solaris Zones. The remote server should be defined on the machine itself (the global zone), and not on one of the machine's non-global zones. If the monitor is defined on a remote server that does not support zones, SiteScope identifies it by the output of the `zoneadm list` command. The output on operating systems that support zones always includes the global zone. If the global zone is not part of the command output (where the command is not supported), SiteScope displays the following error message: "The operating system does not support Solaris Zones".

Note: If the server goes down while running the `zoneadm` command, all the zones go down with it, and the server might be identified as a version that does not support zones.

- Some of the commands use **zlogin** to resolve the zone's data. Since this command can be used only by the global administrator operating in the global zone, you need to define your remote server with the global administrator user when selecting the zone's counters.
- While pool counters show all pools displayed by the **poolstat** command (including temporary pools), the **%usageOfPoolCpu** counter refers only to the pool defined for the zone in the **zonecfg** command, and does not include temporary dynamic pools. Where temporary pools are used, for example, by defining a **dedicated-cpu** resource for the zone, this counter does not reflect the real state.
- The **%usageOfPoolCpu** counter also takes account of the size of the pools, and assumes that pool size does not change during the monitor run.
- All counters that refer to pools, including all counters under the **Resource Pool** category and the **%usageOfPoolCpu** counter, show *n/a* if the pool facility is not active.
- Processes in the global zone can be bound to a pool used by another zone through a project. In this situation, the **%usageOfPoolCpu** counter (which takes into account only the pool configured to the zone in **zonecfg**), does not reflect the CPU usage out of all CPU power allocated to this zone's processes, since the potential CPU power available for the zone comes not only from its pool, but also from the other pools that its processes use.
- The **mbSize** zone counter has the same value in the **SIZE** and **SWAP** columns in the **prstat -Z** command output. In some versions of Solaris 10, the column is called **SIZE** and refers to the total address space size of all processes. In some later versions, the column is called **SWAP** and refers to the total swap (virtual memory) reserved by the zone's processes.

- ▶ If you create a Solaris Zones monitor and click **Save** (instead of **Verify & Save**), only a partial topology is reported to BSM. This topology includes the CIs of the measurements and measurement groups and the host CI of the machine itself (if some of its measurements were selected). The topology does not include the host CIs that represent the zones, since when saving only, no connection is made to the remote server to collect data that it has not already been collected (such as the zone's names in the network). These missing CIs are reported either:
 - ▶ If you make a change to the monitor, and click **Verify & Save**.
 - ▶ According to the **Topology resolving frequency (minutes)** value that is defined in **Preferences > Infrastructure Preferences > General Settings**. This is the amount of time, in minutes, to wait between checking the topology of the server being monitored (the default time is 120 minutes). If this time is exceeded during a monitor run, the monitor connects to the server to collect topology data (the zone's names in the network). If the data has changed or has not yet been reported, the monitor is put in the queue for reporting data. Since the queue is checked every hour, the monitor reports the topology again after a maximum of three hours since the time that the topology changed.

Tasks

How to Analyze Solaris Zones Monitor Results – Use-Case Scenario

This use-case scenario describes how the Solaris Zones monitor can be used to diagnose problems on the physical host, and in the zone and resource pool level.

This scenario includes the following steps:

- "Background" on page 591
- "High CPU load in zone1" on page 591
- "High CPU load and memory consumption" on page 592
- "High CPU load in a resource pool" on page 592

Background

Bob, the SiteScope administrator for ABC Company, configures the Solaris Zones monitor to monitor the company's Solaris system that comprises of four zones, two CPUs, and 4GB RAM.

High CPU load in zone1

Bob notices that the physical host counters show CPU consumption of 51%, of which, according to zone1 counters, zone1 uses 50% of the machine's total CPU (no resource pools are used, so both CPUs can be used by each zone).

Now that Bob knows that the problem is with zone1, he can further investigate this zone.

High CPU load and memory consumption

The Solaris Zones monitor's physical host counters show that there is high CPU and memory consumption and excessive paging. After examining the counters results for each of the four zones, Bob discovers that zone2 consumes 2 GB of virtual memory.

Now that Bob knows that the problem is with zone2, he can further investigate this zone.

High CPU load in a resource pool

In this scenario, zone1 and zone2 use ResourcePool1 that contains one CPU, while all the other zones use the default pool that has the other CPU. Bob is alerted by the Solaris Zones monitor to the following:

- ▶ High CPU usage (100%) in ResourcePool1.
- ▶ The physical host counters in the Solaris Zones show CPU consumption of 51%.
- ▶ zone1 consumes 49-50% of the total machine CPU, while zone2 consumes only 0.4% (both of these zones use ResourcePool1).

Bob realizes that there is a problem with the existing resource allocation. Possible actions include:

- ▶ Assigning more CPU to zone1.
- ▶ Associating zone2 to the default pool to reduce the effect of poor performance from zone1.
- ▶ Stopping zone1 until the reason for the high CPU usage is found.

Reference

Solaris Zones Monitor Settings

The Solaris Zones monitor enables you to monitor the physical host, its zones, and their resource pools on Solaris servers.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ The monitor collects measurements for the zones that are in Running state only. ▶ When configuring this monitor in template mode, you can use regular expressions to define counters. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Analyze Solaris Zones Monitor Results – Use-Case Scenario" on page 591 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Solaris Zones Monitor Overview" on page 586

Solaris Zones Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Name of server that you want to monitor. Select a server from the server list (only the UNIX remote servers that have been configured in SiteScope are displayed), or use the Add Remote Servers button to add a Solaris server.</p> <p>Note when working in template mode:</p> <ul style="list-style-type: none"> ▶ You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box. ▶ There is a Server to get measurements from box with the list of UNIX servers from which you can select the server from which to get measurements.
Add Remote Server	<p>Opens the Add UNIX Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Counters	<p>Displays the server performance counters you want to check with this monitor. You can select counters on the physical host, its zones, and the resource pools used by the host. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p>

77

SunONE Web Server Monitor

This chapter includes:

Concepts

- ▶ SunONE Web Server Monitor Overview on page 596

Reference

- ▶ SunONE Web Server Monitor Settings on page 597

Concepts

SunONE Web Server Monitor Overview

Use the SunONE Web Server monitor to monitor performance metrics reported in the stats-xml file of SunONE 6.x servers. By providing the URL of this stats-xml file, SiteScope can parse and display all metrics reported in this file and enable you to choose those metrics you need to be monitored as counters. In addition, several derived counters are provided for your selection which measure percent utilization of certain system resources.

You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate monitor instance for each SunONE server you are running. Error and warning thresholds for the monitor can be set on one or more SunONE server performance statistics or HTTP response codes.

For details on configuring the monitor, see "SunONE Web Server Monitor Settings" on page 597.

Setup Requirements

Before you can use the SunONE Web Server monitor, the **stats-xml** service option must be enabled on each Web server you want to monitor. This normally requires that you manually edit the **obj.conf** configuration file for each server instance. For iPlanet 6.0 servers, the entry has the following syntax:

```
<Object name="stats-xml">  
  ObjectType fn="force-type" type="text/xml"  
  Service fn="stats-xml"  
</Object>
```

Each server instance must be restarted for the changes to take effect.

Reference

SunONE Web Server Monitor Settings

This monitor enables you to monitor the availability of SunONE or iPlanet 6.x servers using the stats-xml performance metrics file (iwsstats.xml or nesstats.xml) facility.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 596. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "SunONE Web Server Monitor Overview" on page 596

SunONE Web Server Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
Stats-XML URL	URL to the stats-xml file on the SunONE server you want to monitor. This is usually in the form <code>http://server_id:port/stats-xml/<stats-xml-file></code> where <code><stats-xml-file></code> is <code>nesstats.xml</code> or <code>iwsstats.xml</code> .
Authorization user name	User name of the SunONE server you want to monitor.
Authorization password	Password of the SunONE server you want to monitor.
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server is used to access the server.
Proxy server user name	Proxy server user name if the proxy server requires a name and password to access the server. Note: Your proxy server must support Proxy-Authenticate for these options to function.
Proxy server password	Proxy server password if the proxy server requires a name and password to access the server.

UI Element	Description
Timeout (seconds)	<p>Amount of time, in seconds, to wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p> <p>Note: Depending on the activity on the server, the time to build the server monitor statistics Web page may take more than 15 seconds. You should test the monitor with a timeout value of more than 60 seconds to enable the server time to build and serve the server monitor statistics Web page before the SiteScope monitor is scheduled to run again.</p>
Counter Settings	
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

78

Sybase Monitor

This chapter includes:

Concepts

- ▶ Sybase Monitor Overview on page 602

Reference

- ▶ Sybase Monitor Settings on page 604

Concepts

Sybase Monitor Overview

Use the Sybase monitor to monitor the server performance data for Sybase 11.0, 11.5, 11.92, and 12.x database servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning.

Create a separate monitor instance for each Sybase server in your environment. The error and warning thresholds for the monitor can be set on one or more Sybase server performance statistics.

Note: This monitor is supported in SiteScopes that are running on Windows versions only.

For details on configuring the monitor, see "Sybase Monitor Settings" on page 604.

Setup Requirements

- ▶ Before you can use the Sybase monitor, you have to configure the Sybase server environment. The Sybase monitor connects to the Sybase ASE server by using the Adaptive Server Enterprise Monitor Server and retrieves metrics from the server using Sybase-provided libraries. When connecting to the monitored server, you connect to the Adaptive Server Enterprise Monitor Server, not the Sybase server. The Adaptive Server Enterprise Monitor Server is an application that runs on the same machine as Sybase server and retrieves performance information from the Sybase server. The Adaptive Server Enterprise Monitor Server usually has the same server name as the Sybase server, but with the suffix `_ms`. For example, if the name of the Sybase database application server is `back-enddb`, the name of the Adaptive Server Enterprise Monitor Server for that server would be `back-enddb_ms`.

- ▶ You also have to install the Sybase Central client on the machine where SiteScope is running to connect to the Adaptive Server Enterprise Monitor Server. The version of the client software that you install must be at least as recent or more recent than the version of the server you are trying to monitor. For example, if you have Sybase version 11.0 servers, you must use the Sybase Central client version 11.0 or later. Copy the content of the **sql.ini** file located in **<System Root>\SYBASE\INI** on the Sybase server into the **sql.ini** file on the SiteScope server. You can use the **dsedit** tool in the Sybase client console to test connectivity with the Adaptive Server Enterprise Monitor Server.

Reference

Sybase Monitor Settings

The Sybase monitor enables you to monitor the availability and performance statistics of a Sybase Server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 602. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Sybase Monitor Overview" on page 602

Sybase Monitor Settings

User interface elements are described below:

UI Element	Description
Server	Name of the server you want to monitor. Usually it is the name of the server followed by <code>_MS</code> .
User name	User name to access the Sybase database.
Password	Password of the user name to access the Sybase database.

UI Element	Description
Counters	Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

79

Tuxedo Monitor

This chapter includes:

Concepts

- ▶ Tuxedo Monitor Overview on page 608

Reference

- ▶ Tuxedo Monitor Settings on page 610

Concepts

Tuxedo Monitor Overview

Use the Tuxedo monitor to monitor the server performance data for BEA Tuxedo 6.5, 7.1, 8.0, 8.1, 9.0, and 9.1 servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning.

Create a separate monitor instance for each Tuxedo server in your environment. The error and warning thresholds for the monitor can be set on one or more Tuxedo monitor performance statistics.

Note: This monitor is supported in SiteScopes that are running on Windows versions only. However, this monitor can monitor remote servers running on any platform/operating system.

For details on configuring the monitor, see "Tuxedo Monitor Settings" on page 610.

Setup Requirements

The following are several key configuration requirements for using the Tuxedo monitor:

- ▶ If SiteScope is running as a machine in the same domain as the Tuxedo server then SiteScope can connect to the Tuxedo server as a native client. If SiteScope is outside the domain of the Tuxedo server, you must install, configure, and enable the Tuxedo Workstation component to enable SiteScope to make requests of the Tuxedo server.
- ▶ The client and server side workstation component software versions should be the same. Some versions of the client software can work with multiple versions of Tuxedo servers but support information is limited.

- If Tuxedo 7.1 or later is installed on both the server you want to monitor and the SiteScope server, more than one Tuxedo server can be monitored at a time. If Tuxedo 6.5 or earlier is used, only one Tuxedo server can be monitored at a time.
- If SiteScope is outside the domain of the Tuxedo server, the Tuxedo Workstation client software needs to be installed on the server where SiteScope is running. This is usually in a DLL called **libwsc.dll**. The address to the application server needs to be specified in the **WSNADDR** environment variable.
- On the server where the Tuxedo application server is running, set the **TUXDIR** variable to be the Tuxedo installation directory and add the **TUXEDO** bin directory to the **PATH** variable.

The following environment variables must be added to the SiteScope environment:

- **%TUXDIR%** should be set on the monitoring machine to the **<Tuxedo_root_folder>**
- **<Tuxedo_root_folder>\bin** should be added to **%PATH%** variable

Note: Any environment variables (for example, **TUXDIR**) should be defined as system variables, not user variables.

Reference

Tuxedo Monitor Settings

The Tuxedo monitor enables you to monitor the availability of an BEA Tuxedo server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 608. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "Tuxedo Monitor Overview" on page 608

Tuxedo Monitor Settings

User interface elements are described below:

UI Element	Description
Basic Tuxedo Settings	
Server	Name or IP address of the server. The address should match that dedicated to the Tuxedo Workstation component (the WSL process). On UNIX servers, enter the full path of the applicable server.
Port	Port number for the Tuxedo server. The port number should match the port dedicated to the Tuxedo Workstation component (the WSL process).

UI Element	Description
User name	User name if required to access the Tuxedo server.
Password	Password if required to access the Tuxedo server.
Advanced Tuxedo Settings	
Client name	Optional client name for the Tuxedo server.
Connection data	Any extra or optional connection data to be used for connecting to the Tuxedo server. In some cases, this may be a hexadecimal number.
Tuxedo Counters	
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

80

UDDI Monitor

This chapter includes:

Concepts

- ▶ UDDI Monitor Overview on page 614

Reference

- ▶ UDDI Monitor Settings on page 615

Concepts

UDDI Monitor Overview

Use the UDDI monitor to check the availability and round-trip response time of the UDDI 2.0 server. Each time that the monitor is run, SiteScope checks if the UDDI Server can find a business entity. The administrator of the UDDI server can limit or disable this monitor.

For details on configuring the monitor, see "UDDI Monitor Settings" on page 615.

Reference

UDDI Monitor Settings

The UDDI monitor checks the availability and round-trip response time of the UDDI server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "UDDI Monitor Overview" on page 614

UDDI Monitor Settings

User interface elements are described below:

UI Element	Description
Inquiry URL	UDDI server inquiry URL. Example: http://uddi.company.com/inquiry/
Business name	Business entity to search for in the UDDI server.
Maximum number of businesses	Maximum allowed business entities to receive from the UDDI server (1–200). Default value: 10

81

UNIX Resources Monitor

This chapter includes:

Concepts

- ▶ UNIX Resources Monitor Overview on page 618

Reference

- ▶ UNIX Resources Monitor Settings on page 620

Concepts

UNIX Resources Monitor Overview

Use the UNIX Resources monitor to monitor the server system statistics on UNIX servers. You can monitor multiple parameters or measurements with a single monitor instance. This enables you to monitor the remote server for loading, performance, and availability at a basic system level. Create a separate UNIX Resources monitor instance for each UNIX server in your environment. The error and warning thresholds for the monitor can be set on one or more server system statistics.

The UNIX Resources monitor queries the list of UNIX servers currently configured in the UNIX Remote Servers container. To monitor a remote UNIX server, you must define a UNIX Remote connection profile for the server before you can add a UNIX Resources monitor for that server. For details, see "Remote Servers Overview" in *Using SiteScope*.

For details on configuring the monitor, see "UNIX Resources Monitor Settings" on page 620.

This section contains the following topics:

- "Supported Versions" on page 619
- "IPv6 Addressing Supported Protocols" on page 619
- "Server-Centric Report" on page 619

Supported Versions

This monitor supports monitoring UNIX remote servers running on:

- ▶ Solaris 2.7, 2.8, 2.9, 5.10, 7, 8, 9, 10
- ▶ RedHat Linux 7.x, 8.x, 9.x, and Redhat Linux AS/ES Linux 3.x
- ▶ HP-UX 11iv1 (B.11.11) on HP 9000 series:
 - ▶ HP-UX B.11.11 U 9000/800 4030070275 unlimited-user license
 - ▶ HP-UX B.11.31 U ia64 4005705783 unlimited-user license
- ▶ AIX 5.2, 5.3

Note: The UNIX Resources monitor does not support monitoring remote servers running on HP NonStop operating systems. You should use the NonStop Resources Monitor instead.

IPv6 Addressing Supported Protocols

When **Prefer IP version 6 addresses** is enabled in SiteScope (**Preferences > Infrastructure Preferences > Server Settings**), this monitor supports the SSH protocol only.

Note: SSH is supported only when SiteScope is installed on UNIX machines.

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Server-Centric Report

You can create a Server-Centric report for the UNIX Server by clicking the server name in the Target column of the row corresponding to the UNIX Resources monitor in the SiteScope Dashboard. For details, see "Server-Centric Report" in *Using SiteScope*.

Reference

UNIX Resources Monitor Settings

The UNIX Resources monitor enables you to monitor multiple system statistics on a single UNIX system.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When configuring this monitor in template mode, you can use regular expressions to define counters. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "UNIX Resources Monitor Overview" on page 618

UNIX Resources Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Name of the server that you want to monitor. Select a server from the server list (only those UNIX remote servers that have been configured in SiteScope are displayed), or click the Add Remote Servers button to add a UNIX server.</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p>
Server to get measurements from	<p>(Available in template mode only) Name of any SiteScope remote server from which you want to get counters.</p>
Add Remote Server	<p>Opens the Add UNIX Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit UNIX Remote Servers Dialog Box" in <i>Using SiteScope</i>.</p>
Available Counters	<p>Displays the available measurements for this monitor. For each measurement, select the Object, Instances and Counters you want to check with the UNIX Resources monitor, and click the Add Selected Counters  button. The selected measurements are moved to the Selected Counters list.</p> <p>Note: The Disk Stat counter is available only when monitoring remote servers running on Linux version 2.4. This is because the <code>/proc/stat/</code> command, which retrieves relevant disk stat information, is available for this version only.</p>

UI Element	Description
Selected Counters	<p>Displays the measurements currently selected for this monitor, and the total number of selected counters.</p> <p>To remove measurements selected for monitoring, select the required measurements, and click the Remove Selected Counters  button. The measurements are moved to the Available Counters list.</p>
Enable Server-Centric Report	<p>Select to enable collecting data specifically for generating the Server-Centric report. The report displays various measurements for the server being monitored. For details, see "Generating a Server-Centric Report" in <i>Using SiteScope</i>.</p>

82

URL Monitor

This chapter includes:

Concepts

- ▶ URL Monitor Overview on page 624

Tasks

- ▶ How to Configure the URL Monitoring Environment on page 629

Reference

- ▶ URL Monitor Settings on page 631

Concepts

URL Monitor Overview

The URL monitor is used to monitor a specified Web page to verify that it can be retrieved. The URL monitor supports monitoring HTTP versions 1.0 and 1.1. You can also use the URL monitor to do the following:

- ▶ Check secure pages using SSL, 128 bit SSL, and client certificates
- ▶ Check for specific content on the retrieved Web page
- ▶ Check the Web page for change
- ▶ Check for specific error messages
- ▶ Check the Web page for a value
- ▶ Retrieve detailed download information
- ▶ Check XML

When the URL monitor retrieves a Web page, it retrieves the page's contents. A successful page retrieval is an indication that your Web server is functioning properly. The URL monitor does not automatically retrieve any objects linked from the page, such as images or frames. You can, however, instruct SiteScope to retrieve the images on the page by selecting **Retrieve images** or **Retrieve frames** in the HTTP Settings pane.

In addition to retrieving specific Web pages, the URL monitor can verify that CGI scripts and back-end databases are functioning properly. You must input the complete URL used to retrieve data from your database or trigger one of your CGI scripts. The URL monitor verifies that the script generates a page and returns it to the user. For example, you can verify that your visitors are receiving a thank you page when they purchase something from your site. The URL monitor's string matching capability enables you to verify that the contents of the page are correct.

For task details, see "How to Configure the URL Monitoring Environment" on page 629. For user interface details, see "URL Monitor Settings" on page 631.

This section contains the following topics:

- "What to Monitor" on page 625
- "Status" on page 625
- "Scheduling the Monitor" on page 626
- "Setup Requirements and User Permissions" on page 627
- "Support for IPv6 Addresses" on page 627
- "SSL Connectivity" on page 628
- "Troubleshooting and Limitations" on page 628

What to Monitor

You can create URL monitors to watch pages that are critical to your Web site (such as your home page), pages that are generated dynamically, and pages that depend on other applications to work correctly (such as pages that utilize a back-end database). The goal is to monitor a sampling of every type of page you serve to check that things are working. There is no need to verify that every page of a particular type is working correctly.

When you choose which pages to monitor, select pages with the lowest overhead. For example, if you have several pages that are generated by another application, monitor the shortest one with the fewest graphics. This puts less load on your server while still providing you with the information you need about system availability.

Status

Each time the URL monitor runs, it returns a reading and a status and writes it in the monitoring log file. It also writes in the log file the total time it takes to receive the designated document. This status value is also displayed in the SiteScope Monitor tables and is included as part of alert messages sent by using e-mail.

The status reading shows the most recent result for the monitor. This status value is displayed in the URL Group table within SiteScope. It is also recorded in the SiteScope log files, email alert messages, and can be transmitted as a pager alert. The possible status values are:

- OK
- unknown host name
- unable to reach server
- unable to connect to server
- timed out reading
- content match error
- document moved
- unauthorized
- forbidden
- not found
- proxy authentication required
- server error
- not implemented
- server busy

The status is logged as either good, warning, or error in the SiteScope Dashboard. A warning status or error status is returned if the current value of the monitor is a condition that you have defined as other than good.

Scheduling the Monitor

Each URL monitor puts no more load on your server than someone accessing your site and retrieving a page, so in most cases you can schedule them as closely together as you want. Keep in mind that the length of time between each run of a monitor is equal to the amount of time that can elapse before you are notified of a possible problem.

A common strategy is to schedule monitors for very critical pages to run every 1 to 2 minutes, and then schedule monitors for less critical pages to run only every 10 minutes or so. Using this strategy, you are notified immediately if a critical page goes down or if the entire Web site goes down, but you do not have an excessive number of monitors running simultaneously.

Setup Requirements and User Permissions

The user name and password specified in the **Credentials** section must have sufficient permissions to complete the HTTP request that the monitor is configured to perform.

Support for IPv6 Addresses

This monitor supports the IPv6 protocol. If you want your environment to resolve host names to IPv6, you can select the **Prefer IP version 6 addresses** option in SiteScope Infrastructure Settings (**Preferences > Infrastructure Preferences > Server Setting**). If this option is selected, whenever a host name is specified for a remote server and the name is resolved to both IPv4 and IPv6, the IPv6 address is used.

When using IPv6, this monitor supports the HTTP protocol.

If specifying a literal IPv6 address as the name for the monitored remote server when IPv6 addressing is enabled, the IP address must be enclosed in square brackets ("[" , "]"). For example:

```
http://[2004:DB8:2a:1005:230:48ff:fe73:982d]:8080
```

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

SSL Connectivity

Web servers are generally configured to use SSL encryption for administrative connections. This can be determined by the prefix of the Web service URL. The `http://` prefix means that the server uses a non-encrypted connection. The `https://` prefix means that it is a secure, encrypted connection. Monitoring a Web server which uses an encrypted connection, requires either:

- ▶ Selecting the **Accept untrusted certificates for HTTPS** option in the Authentication Settings section of the Monitor Settings panel. For details, see "URL Monitor Settings" on page 631.
- ▶ Importing the server certificate. For details on how to perform this task, see "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 629.

Troubleshooting and Limitations

You can use the URL Sequence Tool to get on the spot data for the URL and to view the HTML received from the HTTP request.

Tasks

How to Configure the URL Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Prerequisites" on page 629
- "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 629
- "Configure the monitor properties" on page 629

1 Prerequisites

There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements and User Permissions" on page 627.

2 Import the server certificates (if the Web Server is configured to use SSL encryption)

If the Web server has an `https://` prefix, it is a secure, encrypted connection, and you need to import the server certificate. Use one of the following methods for importing server certificates:

- Import the server certificates using SiteScope Certificate Management. For details, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope* in the SiteScope Help.
- Import the server certificates manually. For details, see "Import Server Certificates Manually" on page 630.

3 Configure the monitor properties

Complete the URL monitor configuration. For user interface details, see "URL Monitor Settings" on page 631.

Import Server Certificates Manually

Instead of using Certificate Management, you can import certificates manually using the keytool method, if preferred. Certificates imported this way can still be managed using Certificate Management. For details on Certificate Management, see "Certificate Management" in *Using SiteScope*.

To import server certificates manually:

- 1 Check the certificates already in the keystore, from the `<SiteScope root directory>\java\lib\security` directory, by entering:

```
../bin/keytool -list -keystore cacerts
```
- 2 Import the certificate, into `<SiteScope root directory>\java\lib\security`, by entering:

```
../bin/keytool -import -file myCert.cer -alias myalias -keystore cacerts
```

where `myCert.cer` is the certificate file name and `myalias` is the certificate alias.

Make sure that you specify a unique alias for every certificate you add. If you do not, the keytool uses an automatic alias and once you attempt to add more than one custom certificate, the new certificate overwrites the old and keeps the default alias.

The word `changeit` is the default password for the `cacerts` file.

Note: The default `cacerts` file is overwritten every time SiteScope is upgraded or re-installed. Therefore, you should create a copy of the `cacerts` file with a different name before SiteScope is upgraded or re-installed so that the file is not overwritten when new certificates are imported.

- 3 In SiteScope, select **Preferences > Certificate Management**, and click the **Reload Certificate List** button to reload the keystore certificates from the `cacerts` file. This enables you to manually reload keystore changes without having to restart SiteScope.

Reference

URL Monitor Settings

This monitor provides you with end-to-end verification that your Web server is running, serving pages correctly, and doing so in a timely manner. It tests end-to-end, so it is also able to determine whether back-end databases are available, verify the content of dynamically generated pages, check for changed content, and look for specific values from a page.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 627. ▶ While the round trip time performance counter is measured in milliseconds in the Threshold Settings, it is displayed in seconds in the SiteScope Dashboard. ▶ The Get URL Tool is available when configuring this monitor to request a URL from a server, print the returned data, and test network routing (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "URL Tool" in <i>Using SiteScope</i>. ▶ When SiteScope is connected to BSM, not all monitor metrics are reported to BSM. If a URL monitor gets its status from a metric that is not reported to BSM and a metric that is reported to BSM (for example, roundtrip time) does not have any threshold set in SiteScope, then no monitor status is reported to BSM.

Relevant tasks	<ul style="list-style-type: none"> ➤ "How to Configure the URL Monitoring Environment" on page 629 ➤ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	➤ "URL Monitor Overview" on page 624

URL Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
URL	<p>URL that you want to monitor.</p> <p>Example: http://demo.thiscompany.com</p> <p>For HTTPS monitoring (secure HTTP), if the URL starts with HTTPS, then a secure connection is made using SSL. SiteScope uses Java SSL libraries for HTTPS monitoring.</p> <p>Example: https://www.thiscompany.com</p>
Match content	<p>Text string to match in the returned page or frameset.</p> <p>If the text is not contained in the page, the monitor displays the message content match error.</p> <p>HTML tags are part of a text document, so include the HTML tags if they are part of the text you are searching for. This works for XML pages as well.</p> <p>Example: < B> Hello< /B> World</p> <p>You can also perform a regular expression match by enclosing the string in forward slashes, with a letter i after the trailing slash indicating case-insensitive matching.</p> <p>Example: /href=Doc\d+\.html/ or /href=doc\d+\.html/i</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ The search is case sensitive. ➤ You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.

UI Element	Description
Match content for error	<p>Text string to check for in the returned page or frameset. If the text is contained in the page, the monitor indicates an error condition.</p> <p>HTML tags are part of a text document, so include them if they are part of the text for which you are searching.</p> <p>Example: < B> Error < /B> Message</p> <p>You may also perform a regular expression match by enclosing the string in forward slashes, with an <i>i</i> after the trailing slash indicating case-insensitive matching.</p> <p>Example: /href=Doc\d+\.html/ or /href=doc\d+\.html/i</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ The search is case sensitive. ➤ You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.
Show detailed measurement	<p>Records a detailed breakdown of the process times involved in retrieving the requested URL.</p> <p>These measurements include the following:</p> <ul style="list-style-type: none"> ➤ DNS lookup time. The time it takes to send a name resolution request to your DNS server until you get a reply. ➤ Connection time. The time it takes to establish a TCP/IP/Socket connection to the Web server. ➤ Server response time. The time after the request is sent until the first byte (rather first buffer full) of the page comes back. ➤ Download time. The time it takes to download the entire page.

UI Element	Description
Timeout (seconds)	<p>Amount of time, in seconds, to wait for a page to complete downloading before timing-out. Once this time period passes, the URL monitor logs an error and reports an error status.</p> <p>If you have selected the Retrieve images or Retrieve frames option, SiteScope waits for these items to be retrieved before considering the page to be fully downloaded.</p> <p>Default value: 60 seconds</p>
Retries	<p>Number of times (between 0-10) that SiteScope should retry the request if a recoverable error was encountered. A timeout of the request is a recoverable error.</p> <p>Default value: 0</p>
HTTP Settings	
Request headers	<p>Header request lines sent by the HTTP client to the server. Headers should be linebreak separated. The standard list of HTTP1.1 request headers can be found in http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.</p> <p>Note: Although this field is optional, some Web pages behave unexpectedly when the request header is missing (such as performing endless redirects, providing wrong content, and so forth).</p>
URL content encoding	<p>SiteScope retrieves the correct encoding from the server response. The default value appearing here should not be edited.</p> <p>Default value: Retrieve encoding from server response</p>

UI Element	Description
POST data	<p>If the URL is for a POST request, enter the post variables, one per line as name=value pairs.</p> <p>This option is used to verify that a form is working correctly by performing the same request that occurs when a user submits a form. See also the Match content item for a way to verify that the correct form response was received.</p> <p>If this item is blank, a GET request is performed.</p> <p>The POST data can be used to send cookie data. To send cookies with the request, use the format Set-cookie: cookieName=cookieValue.</p> <p>To change the content type of a post, use the format Content-Type: application/my-format.</p> <p>To hide values in the POST data, add a line to the master.config file, such as:</p> <pre>_private=_name=mysecret _value=rosebud _private=_name=mypassword _privateValue=sesame</pre> <p>and then use the following form in the POST data:</p> <pre>s username=\$private-mysecret\$ s password=\$private-mypassword\$ </pre> <p>and SiteScope substitutes the values from the master.config into the POST data.</p>
POST data encoding	<p>Determines if the POST data is encoded. Select from the following options:</p> <ul style="list-style-type: none"> ➤ Use content type. Decide to encode the POST data by the content type header. If the header equals urlencoded then encode, otherwise do not encode. ➤ Force URL encoding. Always encode the post data. ➤ Do not force URL encoding. Do not encode the POST data.

UI Element	Description
<p>Check for content changes</p>	<p>SiteScope records a checksum of the document the first time the monitor runs and then does a checksum comparison each subsequent time it runs.</p> <p>If the checksum changes, the monitor has a status of content changed error and goes into error. If you want to check for content changes, you usually want to use Compare to saved contents.</p> <p>The options for this setting are:</p> <ul style="list-style-type: none"> ➤ No content checking (default). SiteScope does not check for content changes. ➤ Compare to last contents. The new checksum is recorded as the default after the initial error content changed error occurs, so the monitor returns to OK until the checksum changes again. ➤ Compare to saved contents. The checksum is a snapshot of a given page (retrieved either during the initial or a specific run of the monitor). If the contents change, the monitor gets a content changed error and stays in error until the contents return to the original contents, or the snapshot is update by resetting the saved contents. ➤ Reset saved contents. Takes a new snapshot of the page and saves the resulting checksum on the first monitor run after this option is chosen. After taking the snapshot, the monitor reverts to Compare to saved contents mode. <p>Default value: No content checking</p>
<p>HTTP version</p>	<p>HTTP version for SiteScope to use for style request headers (HTTP version 1.1 or 1.0).</p> <p>Default value: 1.1</p>

UI Element	Description
Retrieve images	<p>The status and response time statistics include the retrieval times for all of the embedded images in the page. Embedded images include those referenced by IMG, BODY (from the background property), and INPUT TYPE=IMAGE HTML tags.</p> <p>Images that appear more than once in a page are retrieved only once.</p> <p>Note: If this option is checked, each image referenced by the target URL contributes to the download time. However, if a image times out during the download process or has a problem during the download, that time is not added to the total download time.</p> <p>Default value: Not selected</p>
Retrieve frames	<p>Retrieves the frames references in a frameset and counts their retrieval time in the total time to download this page. Frames include those referenced by FRAME and IFRAME tags.</p> <p>If Retrieve images is also checked, SiteScope attempts to retrieve all images in all frames.</p> <p>Note: If this option is checked, each frame referenced by the target URL contributes to the download time. However, if a frame times out during the download process or has a problem during the download, that time is not added to the total download time.</p> <p>Default value: Not selected</p>
Error if redirected	<p>Generates an error (and notifies you) if a URL is redirected.</p> <p>Default value: Not selected</p>

UI Element	Description
Use WinInet	<p>WinInet is used as an alternative HTTP client for this monitor.</p> <p>Select this option to use WinInet instead of Apache when:</p> <ul style="list-style-type: none"> ▶ The Apache HTTP client does not support a specific technology required to access the server you are monitoring. For example, Kerberos authentication is not supported by the Apache library, and is supported by WinInet. WinInet also supports trusted client-side certificates while Apache does not. ▶ You tried running this monitor and the Apache server returned errors. Using WinInet may solve these errors. <p>Default value: Not selected</p>
Authentication Settings	
Credentials	<p>Option to use for authorizing credentials if the URL specified requires a name and password for access:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password to access the URL in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password for the URL (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.

UI Element	Description
<p>Pre-emptive authorization</p>	<p>Option for sending authorization credentials if SiteScope requests the target URL:</p> <ul style="list-style-type: none"> ▶ Use global preference. Select to have SiteScope use the setting specified in the Pre-emptive authorization section of the General Preferences page. ▶ Authenticate first request. Select to send the user name and password on the first request SiteScope makes for the target URL. <ul style="list-style-type: none"> Note: If the URL does not require a user name and password, this option may cause the URL to fail. ▶ Authenticate if requested. Select to send the user name and password on the second request if the server requests a user name and password. <ul style="list-style-type: none"> Note: If the URL does not require a user name and password, this option may be used. <p>All options use the User name and Password entered for this monitor instance. If these are not specified for the individual monitor, the Default authentication user name and Default authentication password specified in the Main section of the General Preferences page are used, if they have been specified.</p> <p>Note: Pre-emptive authorization does not control if the user name and password should be sent, or which user name and password should be sent.</p>
<p>Accept untrusted certificates for HTTPS</p>	<p>If you are accessing a target URL using Secure HTTP (HTTPS) and SiteScope does not have the required server certificates, you can either select this option or import the related certificates. For details on importing server certificates, see SSL Connectivity in "URL Monitor Overview" in <i>Using SiteScope</i>.</p>
<p>Accept invalid certificates for HTTPS</p>	<p>Select this option if you are accessing a target URL using Secure HTTP (HTTPS) and SiteScope has invalid server certificates. This may happen, for example, if the current date is not in the date ranges specified in the certificate chain.</p>

UI Element	Description
Client side certificate	<p>The certificate file, if you need to use a client side certificate to access the target URL. Normally, this is a .pfx (.p12) type certificate, which usually requires a password. You enter the password for the certificate in the Client side certificate password box.</p> <p>Note: Client side certificate files must be copied into the <SiteScope root directory>\templates.certificates directory.</p>
Client side certificate password	Password if you are using a client side certificate and that certificate requires a password.
Authorization NTLM domain	Domain for NT LAN Manager (NTLM) authorization if required to access the URL.
NTLM V2	Select if the URL you are accessing requires authentication using NTLM version 2.
Proxy Settings	
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server is used to access the URL.
Proxy server user name	<p>Proxy server user name if the proxy server requires a user name to access the URL.</p> <p>Note: Your proxy server must support Proxy-Authenticate for these options to function.</p>
Proxy server password	<p>Proxy server password if the proxy server requires a user name to access the URL.</p> <p>Note: Your proxy server must support Proxy-Authenticate for these options to function.</p>
Proxy NTLM V2	Select if the proxy requires authentication using NTLM version 2.

83

URL Content Monitor

This chapter includes:

Concepts

- ▶ URL Content Monitor Overview on page 642

Tasks

- ▶ How to Configure the URL Content Monitoring Environment on page 646

Reference

- ▶ URL Content Monitor Settings on page 647

Concepts

URL Content Monitor Overview

The URL Content monitor is primarily used to monitor Web pages that are generated dynamically and display statistics about custom applications. By monitoring these pages, these statistics can be retrieved and integrated into the rest of your SiteScope system. The URL Content monitor supports monitoring HTTP versions 1.0 and 1.1.

You should use the URL Content monitor if you need to verify multiple values (up to 10 variables) from the content of a single URL. Otherwise, the standard URL monitor is normally used. One use for this monitor is to integrate SiteScope with other applications that export numeric data through a Web page. The content values are matched using regular expressions. The monitor includes the matched values as part of the monitor status which are written to the log. If the matched values are numeric data, the results can be plotted in a report.

For task details, see "How to Configure the URL Content Monitoring Environment" on page 646.

For user interface details, see "URL Content Monitor Settings" on page 647.

This section contains the following topics:

- "Status" on page 643
- "Scheduling the Monitor" on page 643
- "Setup Requirements and User Permissions" on page 644
- "Support for IPv6 Addresses" on page 644
- "SSL Connectivity" on page 644
- "Troubleshooting and Limitations" on page 645

Status

Each time the URL Content monitor runs, it returns a status and several match values and writes them in the monitoring log file. It also writes the total time it takes to receive the designated document in the log file.

The reading is the current value of the monitor. Possible values are:

- OK
- unknown host name
- unable to reach server
- unable to connect to server
- timed out reading
- content match error
- document moved
- unauthorized
- forbidden
- not found
- proxy authentication required
- server error
- not implemented
- server busy

The status is displayed as **good**, **warning**, or **error** in the SiteScope Dashboard dependent on the results of the retrieval, content match, and the error or warning status criteria that you select.

Scheduling the Monitor

The frequency depends on the statistics being monitored. For most statistics, every several minutes is often sufficient.

Setup Requirements and User Permissions

The user name and password specified in the **Credentials** section must have sufficient permissions to complete the HTTP request that the monitor is configured to perform.

Support for IPv6 Addresses

This monitor supports the IPv6 protocol. If you want your environment to resolve host names to IPv6, you can select the **Prefer IP version 6 addresses** option in SiteScope Infrastructure Settings (**Preferences > Infrastructure Preferences > Server Setting**). If this option is selected, whenever a host name is specified for a remote server and the name is resolved to both IPv4 and IPv6, the IPv6 address is used.

When using IPv6, this monitor supports the HTTP protocol.

If specifying a literal IPv6 address as the name for the monitored remote server when IPv6 addressing is enabled, the IP address must be enclosed in square brackets ("[" , "]"). For example:

```
http://[2004:DB8:2a:1005:230:48ff:fe73:982d]:8080
```

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

SSL Connectivity

Web servers are generally configured to use SSL encryption for administrative connections. This can be determined by the prefix of the Web service URL. The `http://` prefix means that the server uses a non-encrypted connection. The `https://` prefix means that it is a secure, encrypted connection. Monitoring a Web server which uses an encrypted connection, requires either:

- ▶ Selecting the **Accept untrusted certificates for HTTPS** option in the Authentication Settings section of the Monitor Settings panel as described in "URL Content Monitor Settings" on page 647.

- ▶ Importing the server certificate. For details on how to perform this task, see "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 646.

Troubleshooting and Limitations

You can use the URL Sequence Tool to get on the spot data for the URL and to view the HTML received from the HTTP request.

Tasks

How to Configure the URL Content Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Prerequisites" on page 646
- ▶ "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 646
- ▶ "Configure the monitor properties" on page 646

1 Prerequisites

There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements and User Permissions" on page 644.

2 Import the server certificates (if the Web Server is configured to use SSL encryption)

If the Web server has an `https://` prefix, it is a secure, encrypted connection, and you need to import the server certificate. Use one of the following methods for importing server certificates:

- ▶ Import the server certificates using SiteScope Certificate Management. For details, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope* in the SiteScope Help.
- ▶ Import the server certificates manually. For details, see "Import Server Certificates Manually" on page 630.

3 Configure the monitor properties

Complete the URL Content monitor configuration. For user interface details, see "URL Content Monitor Settings" on page 647.

Reference

URL Content Monitor Settings

The URL Content monitor is a specialized variation of the URL Monitor that can match up to ten different values from the content of a specified URL. The matched values are displayed with the status of the monitor in the monitor group table and written to the monitor log.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ➤ Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 644. ➤ The URL Tool is available when configuring this monitor to request a URL from a server, print the returned data, and test network routing (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "URL Tool" in <i>Using SiteScope</i>.
Relevant tasks	<ul style="list-style-type: none"> ➤ "How to Configure the URL Content Monitoring Environment" on page 646 ➤ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ➤ "URL Content Monitor Overview" on page 642

URL Content Monitor Settings

User interface elements are described below:

UI Element	Description
Main Setting	
URL	URL that you want to monitor. Example: http://demo.thiscompany.com If you are monitoring a secure URL, the URL must reflect the correct transfer protocol. The URL starts with https:// and the connection is made using SSL. Example: https://demo.thiscompany.com

UI Element	Description
Match content	<p>Expression describing the values to match in the returned page. If the expression is not contained in the page, the monitor displays the message no match on content. A regular expression is used to define the values to match.</p> <p>Use parentheses to allow the monitor to retrieve these values as counters. By using the labels, these counters can be automatically assigned with a customized name and you can define thresholds for them. You can use up to 10 sets of parentheses.</p> <p>Example: The expression <code>/Copyright (\d*)-(\d*)/</code> would match two values, 1996 and 1998, from a page that contained the string Copyright 1996-1998. The returned values (1996 and 1998) could be used when setting Error if or Warning if thresholds.</p> <p>Note: You can click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p>

UI Element	Description
Match content labels	<p>Labels for the matched values found in the content. The matched value labels are used as variables to access retained values from the content match expression for use with the monitor threshold settings. These labels are also displayed as the text labels in graphs generated for the retained values in management reports for this monitor.</p> <p>Example: Type Copyright_start, Copyright_end to represent the copyright date range used in the Match content field. After the monitor runs, these labels are displayed in the Condition list in Threshold Settings, enabling you to set status threshold settings (Error if, Warning if, and Good if) for the matched value. SiteScope also sends the label name of content matches to Generic Data integrations, Diagnostics integrations, and OM metrics integrations.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ Separate multiple labels with a comma (,). ➤ You can set up to 10 labels.
Match content for error	<p>Text string to check for in the returned page. If the text is contained in the page, the monitor displays content error found. HTML tags are part of a text document, so include them if they are part of the text for which you are searching.</p> <p>Example: < B> Error < /B> Message</p> <p>You can also perform a regular expression match by enclosing the string in forward slashes, with an <i>i</i> after the trailing slash, to indicate that there is no case sensitive matching. Click the Open Tool button to use the Regular Expression Test tool to check your regular expressions. For details, see "Regular Expression Tool" in <i>Using SiteScope</i>.</p> <p>Example: /href=Doc\d+\.html/ or /href=doc\d+\.html/<i>i</i></p> <p>Note: The search is case sensitive.</p>

UI Element	Description
Show detailed measurement	<p>SiteScope records a detailed breakdown of the process times involved in retrieving the requested URL. These times include the following:</p> <ul style="list-style-type: none"> ▶ DNS lookup time. The time it takes to send a name resolution request to your DNS server until you get a reply. ▶ Connection time. The time it takes to establish a TCP/IP/Socket connection to the Web server. ▶ Server response time. The time after the request is sent until the first byte (rather first buffer full) of the page comes back. ▶ Download time. The time it takes to download the entire page.
Timeout (seconds)	<p>Amount of time, in seconds, to wait for a page to begin downloading before timing-out. Once this time period passes, the URL monitor logs an error and reports an error status.</p> <p>If you have selected the Retrieve frames or Retrieve images option, SiteScope waits for these items to be retrieved before considering the page to be fully downloaded.</p> <p>Default value: 60 seconds</p>
Retries	<p>Number of times that SiteScope should retry the request if a recoverable error was encountered. A timeout of the request for is a recoverable error.</p> <p>Default value: 0</p>

UI Element	Description
HTTP Settings	
Request headers	<p>Header request lines sent by the HTTP client to the server. Headers should be separated by a linebreak. The standard list of HTTP1.1 request headers can be found in http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.</p> <p>Note: Although this field is optional, some Web pages behave unexpectedly when the request header is missing (such as performing endless redirects, providing wrong content, and so forth).</p>
URL content encoding	<p>SiteScope retrieves the correct encoding from the server response. The default value appearing here should not be edited.</p> <p>Default value: Retrieve encoding from server response</p>
POST data	<p>If the URL is for a POST request, enter the post variables, one per line as <code>name=value</code> pairs. This option is used to verify that a form is working correctly by performing the same request that occurs when a user submits a form.</p> <p>See also the Match Content box for a way to verify that the correct form response was received.</p> <p>If this item is blank, a GET request is performed.</p> <p>Note: This item can also be used to pass cookies with the request.</p> <p>Example: "Set-cookie:<cookieName>=<cookieValue>"</p>
POST data encoding	<p>Determines if the POST data is to be encoded. Select from the following options:</p> <ul style="list-style-type: none"> ➤ Use content type. Decide to encode the post data by the content type header. If the header equals urlencoded then encode, otherwise do not encode. ➤ Force URL encoding. Always encode the POST data. ➤ Do not force URL encoding. Do not encode the POST data. <p>Default value: Use content type</p>

UI Element	Description
<p>Check for content changes</p>	<p>SiteScope records a checksum of the document the first time the monitor runs and then does a checksum comparison each subsequent time it runs.</p> <p>If the checksum changes, the monitor has a status of content changed error and go into error. If you want to check for content changes, you usually want to use compare to saved contents.</p> <p>The options for this setting are:</p> <ul style="list-style-type: none"> ▶ No content checking (default). SiteScope does not check for content changes. ▶ Compare to last contents. The new checksum is recorded as the default after the initial error content changed error occurs, so the monitor returns to OK until the checksum changes again. ▶ Compare to saved contents. The checksum is a snapshot of a given page (retrieved either during the initial or a specific run of the monitor). If the contents change, the monitor gets a content changed error and stays in error until the contents return to the original contents, or the snapshot is update by resetting the saved contents. ▶ Reset saved contents. Takes a new snapshot of the page and saves the resulting checksum on the first monitor run after this option is chosen. After taking the snapshot, the monitor reverts to Compare to saved contents mode. <p>Default value: No content checking</p>
<p>HTTP version</p>	<p>HTTP version for SiteScope to use for style request headers (HTTP version 1.0 or 1.1).</p> <p>Default value: 1.1</p>

UI Element	Description
Retrieve images	<p>The status and response time statistics include the retrieval times for all of the embedded images in the page. Embedded images include those referenced by IMG, BODY (from the background property), and INPUT TYPE=IMAGE HTML tags. Images that appear more than once in a page are only retrieved once.</p> <p>Note: If the Retrieve Images option is checked, each image referenced by the target URL contributes to the download time. However, if an image times out during the download process or has a problem during the download, that time is not added to the total download time.</p>
Retrieve frames	<p>Retrieves the frames references in a frameset and counts their retrieval time in the total time to download this page. Frames include those referenced by FRAME and IFRAME tags.</p> <p>If Retrieve images is also checked, SiteScope attempts to retrieve all images in all frames.</p> <p>Note: If the Retrieve frames option is checked, each frame referenced by the target URL contributes to the download time. However, if a frame times out during the download process or has a problem during the download, that time is not added to the total download time.</p>
Error if redirected	SiteScope notifies you if a URL is redirected.

UI Element	Description
Use WinInet	<p>WinInet is used as an alternative HTTP client for this monitor.</p> <p>Select this option to use WinInet instead of Apache when:</p> <ul style="list-style-type: none"> ▶ The Apache HTTP client does not support a specific technology required to access the server you are monitoring. For example, Kerberos authentication is not supported by the Apache library, and is supported by WinInet. WinInet also supports trusted client-side certificates while Apache does not. ▶ You tried running this monitor and the Apache server returned errors. Using WinInet may solve these errors. <p>Note: This field is available on Windows versions of SiteScope only.</p>
Authentication Settings	
Credentials	<p>Option to use for authorizing credentials if the URL specified requires a name and password for access:</p> <ul style="list-style-type: none"> ▶ Use use name and password. Select this option to manually enter user credentials. Enter the user name and password to access the URL in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password for the URL. Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.

UI Element	Description
<p>Pre-emptive authorization</p>	<p>Option for sending authorization credentials if SiteScope requests the target URL:</p> <ul style="list-style-type: none"> ▶ Use global preference. Select to have SiteScope use the When to Authenticate setting as specified in the Pre-emptive Authorization section of the General Preferences page. ▶ Authenticate first request. Select to send the user name and password on the first request SiteScope makes for the target URL. <ul style="list-style-type: none"> Note: If the URL does not require a user name and password, this option may cause the URL to fail. ▶ Authenticate if requested. Select to send the user name and password on the second request if the server requests a user name and password. <ul style="list-style-type: none"> Note: If the URL does not require a user name and password, this option may be used. <p>All options use the User name and Password entered for this monitor instance. If these are not specified for the individual monitor, the Default authentication user name and Default authentication password specified in the Main section of the General Preferences page are used, if they have been specified.</p> <p>Note: Pre-emptive authorization does not control if the user name and password should be sent, or which user name and password should be sent.</p>
<p>Accept untrusted certificates for HTTPS</p>	<p>If you are accessing a target URL using Secure HTTP (HTTPS) and SiteScope does not have the required server certificates, you can either select this option or import the related certificates. For details on importing server certificates, see SSL Connectivity in "URL Content Monitor Overview" on page 642.</p>
<p>Accept invalid certificates for HTTPS</p>	<p>Select this option if you are accessing a target URL using Secure HTTP (HTTPS) and SiteScope has invalid server certificates. This may happen, for example, if the current date is not in the date ranges specified in the certificate chain.</p>

UI Element	Description
Client side certificates	Certificate file if you need to use a client side certificate to access the target URL. Normally, this is a .pfx (.p12) type certificate, which usually requires a password. You type the password for the certificate in the Client side cert password box. Note: Client side certificate files must be copied into the <SiteScope root directory>\templates.certificates directory.
Client side certificates password	Password for a client side certificate if required.
Authorization NTLM domain	Domain for NT LAN Manager (NTLM) authorization if required to access the URL.
NTLM V2	Select if the URL you are accessing requires authentication using NTLM version 2.
Proxy Settings	
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server is used to access the URL.
Proxy server user name	Proxy server user name if required to access the URL. Note: Your proxy server must support Proxy-Authenticate for these options to function.
Proxy server password	Proxy server password if required to access the URL. Note: Your proxy server must support Proxy-Authenticate for these options to function.
Proxy NTLM V2	Proxy requires authentication using NTLM version 2.

84

URL List Monitor

This chapter includes:

Concepts

- ▶ URL List Monitor Overview on page 660

Tasks

- ▶ How to Configure the URL List Monitoring Environment on page 664

Reference

- ▶ URL List Monitor Settings on page 665

Concepts

URL List Monitor Overview

You can use the URL List monitor to check the availability of a list of URLs without having to create a separate URL monitor for each one. For example, this is useful if you host several Web sites and simply want to see that they are each serving pages as expected. The URL List monitor is not used to confirm links between pages (see the "Link Check Monitor Overview" on page 232) or other Web transaction processes (see "URL Sequence Monitor Overview" on page 672). The URL List monitor supports monitoring HTTP versions 1.0 and 1.1.

A URL List is specified by giving a filename containing the list of URLs to check. The URLs that you want to monitor are saved in a plain text file. There is virtually no limit to the number that you can list though the run interval selected for the monitor may require that the number of URLs be limited. For each URL included in the URL list file, the monitor retrieves the contents of the URL or the server response to the request.

For task details, see "How to Configure the URL List Monitoring Environment" on page 664.

For user interface details, see "URL List Monitor Settings" on page 665.

This section contains the following topics:

- "Scheduling the Monitor" on page 661
- "Setup Requirements and User Permissions" on page 662
- "Support for IPv6 Addresses" on page 662
- "SSL Connectivity" on page 663
- "Troubleshooting and Limitations" on page 663

Scheduling the Monitor

This is strictly dependent on how often you want to check to see if the URLs are working. Once an hour is common, but you can schedule it to run more often.

There are a few factors that affect how long it takes the URL List monitor to complete a run:

- ▶ number of URLs in the list
- ▶ URL retrieval time
- ▶ the number of threads used

In some cases this may lead to the monitor not running as expected. As an example, assume you have a list of 200 URLs that you want to monitor every 10 minutes, but, due to Internet traffic, SiteScope is not able to complete checking all of the 200 URLs in that amount of time. The next time the monitor was scheduled to run, SiteScope would see that it did not complete the previous run and would wait for another 10 minutes before trying again.

The error log marks this as a "skip". If this happens 10 times, SiteScope restarts itself, and SiteScope Health shows an error status. There are several things you can do to try to resolve this issue:

- ▶ Schedule the monitor to run less frequently. If this conflicts with some other objective, use the other options.
- ▶ Split the URLs that you want to check into more than one list, and add additional monitors to monitor each list.
- ▶ Increase the number of threads that SiteScope can use when checking the URLs. The more threads, the quicker SiteScope can check them. Increasing the number of threads can adversely affect SiteScope's performance.

Ideally, you want SiteScope to have just completed checking the URLs in the list when it is time to start checking again. This would indicate that the load was evenly balanced.

Each time the URL List monitor runs, it returns the number of errors, if any, and writes it into the monitoring log file. It also writes the total number of URLs checked and the average time, in milliseconds, to retrieve each URL.

Setup Requirements and User Permissions

The user name and password specified in the **Credentials** section must have sufficient permissions to complete the HTTP request that the monitor is configured to perform.

Support for IPv6 Addresses

This monitor supports the IPv6 protocol. If you want your environment to resolve host names to IPv6, you can select the **Prefer IP version 6 addresses** option in SiteScope Infrastructure Settings (**Preferences > Infrastructure Preferences > Server Setting**). If this option is selected, whenever a host name is specified for a remote server and the name is resolved to both IPv4 and IPv6, the IPv6 address is used.

When using IPv6, this monitor supports the HTTP protocol.

If specifying a literal IPv6 address as the name for the monitored remote server when IPv6 addressing is enabled, the IP address must be enclosed in square brackets ("[" , "]"). For example:

```
http://[2004:DB8:2a:1005:230:48ff:fe73:982d]:8080
```

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

SSL Connectivity

Web servers are generally configured to use SSL encryption for administrative connections. This can be determined by the prefix of the Web service URL. The `http://` prefix means that the server uses a non-encrypted connection. The `https://` prefix means that it is a secure, encrypted connection. Monitoring a Web server which uses an encrypted connection, requires either:

- ▶ Selecting the **Accept untrusted certificates for HTTPS** option in the Authentication Settings section of the Monitor Settings panel as described in "URL List Monitor Settings" on page 665.
- ▶ Importing the server certificate. For details on how to perform this task, see "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 664.

Troubleshooting and Limitations

You can use the URL Sequence Tool to get on the spot data for the URL and to view the HTML received from the HTTP request.

Tasks

How to Configure the URL List Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Prerequisites" on page 664
- ▶ "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 664
- ▶ "Configure the monitor properties" on page 664

1 Prerequisites

There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements and User Permissions" on page 662.

2 Import the server certificates (if the Web Server is configured to use SSL encryption)

If the Web server has an `https://` prefix, it is a secure, encrypted connection, and you need to import the server certificate. Use one of the following methods for importing server certificates:

- ▶ Import the server certificates using SiteScope Certificate Management. For details, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope* in the SiteScope Help.
- ▶ Import the server certificates manually. For details, see "Import Server Certificates Manually" on page 630.

3 Configure the monitor properties

Complete the URL List monitor configuration. For user interface details, see "URL List Monitor Settings" on page 665.

Reference

URL List Monitor Settings

The URL List monitor is used to check a large list of URLs. This monitor is commonly used by Web hosting providers to measure the availability and performance of their customer's Web sites.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 662.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the URL List Monitoring Environment" on page 664 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "URL List Monitor Overview" on page 660

URL List Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
URL list file	<p>Path for the file containing the list of URLs to be monitored. This file should be a plain text file and contain only one URL per line. If the URLs are stored in a map format, each URL must be in the format: ;<URL ID>;<host>;<port>;<secure> or <nonsecure>;<page></p> <p>Examples:</p> <p>http://www.website.com/index.html http://www.website.com/main/customer/order.html http://www.website.net/default.htm http://www.Webpages.com/tech/support/ws/intro.html</p>
Log file	<p>Path for the log file for this monitor. For each URL checked, an entry is added to this log file.</p> <p>If this item is blank, a log is not created.</p>
Error log file	<p>Path for the error log file for this monitor. For each error retrieving a URL, an entry is added to this log file.</p> <p>If this item is blank, a log is not created.</p>
Specific server	<p>Server name of URLs to check in the URL list. If the URLs are stored in a map format (see URL list file box for details), this item is used to check a subset of the URLs from the list.</p> <p>Default value: All URLs that are in the list are checked.</p> <p>Note: If you modify the value in the this box, you must also change the value in the URL list file box for SiteScope to implement the change.</p>
Pause (milliseconds)	<p>The pause, in milliseconds, between each URL check. Decreasing this number shortens the total time required to check all of the URLs but also increases the load on the server.</p> <p>Default value: 1000 milliseconds</p>

UI Element	Description
Threads	<p>Number of threads to retrieve URLs. This is the number of simultaneous checks to perform. Increasing this number shortens the time for all of the URLs to be checked but also increases the load on the server.</p> <p>Default value: 4</p>
Timeout (seconds)	<p>Number of seconds that the URL monitor should wait for a page to complete downloading before timing-out. Once this time period passes, the URL monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p>
Retries	<p>Number of times you want SiteScope to try to reach URLs that are returning an error.</p> <p>Default value: 0</p>
HTTP Settings	
Request headers	<p>Header request lines sent by the HTTP client to the server. Headers should be separated by a linebreak. The standard list of HTTP1.1 request headers can be found in http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.</p> <p>Note: Although this field is optional, some Web pages behave unexpectedly when the request header is missing (such as performing endless redirects, providing wrong content, and so forth).</p>

UI Element	Description
Use WinInet	<p>WinInet is used as an alternative HTTP client for this monitor.</p> <p>Select this option to use WinInet instead of Apache when:</p> <ul style="list-style-type: none"> ▶ The Apache HTTP client does not support a specific technology required to access the server you are monitoring. For example, Kerberos authentication is not supported by the Apache library, and is supported by WinInet. WinInet also supports trusted client-side certificates while Apache does not. ▶ You tried running this monitor and the Apache server returned errors. Using WinInet may solve these errors. <p>Default value: Not selected</p>
Proxy Settings	
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server is used to access the URLs in the list.
Proxy server user name	Proxy server user name if the required to access the URL. Note: Your proxy server must support Proxy-Authenticate for these options to function.
Proxy server password	Proxy server password if the required to access the URL. Note: Your proxy server must support Proxy-Authenticate for these options to function.

UI Element	Description
Authentication Settings	
Credentials	<p>Option to use for authorizing credentials if the URLs in the list require a user name and password for access:</p> <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password to access the URLs in the User name and Password box. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password for the URLs (default option). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.

85

URL Sequence Monitor

This chapter includes:

Concepts

- ▶ URL Sequence Monitor Overview on page 672

Tasks

- ▶ How to Create a URL Sequence on page 686

Reference

- ▶ URL Sequence Monitor User Interface on page 690

Concepts

URL Sequence Monitor Overview

You use URL Sequence Monitors to verify that multiple-page Web transactions are working properly. This is an important part of monitoring key business processes and services. For example, you can have SiteScope retrieve a login page, type an account name by using a secure Web form, check an account status for the page that is returned, and then follow a sequence of links through several more pages. URL Sequence Monitors are also useful for checking pages that include dynamically generated information, such as session IDs, that are embedded in the Web pages by using dynamic links or hidden input items. The URL Sequence monitor supports monitoring HTTP versions 1.0 and 1.1.

The core of the URL Sequence monitor is the sequence of URL and associated action requests that are performed by the monitor. A URL Sequence begins with a URL acting as the starting point or Step 1 for the sequence. This can then be followed by additional URLs that are accessed manually, or more commonly, by links or form buttons that a user would select to navigate or complete a specific transaction.

By default, you can define up to twenty sequence steps. For each step you may specify a content match to search for, enter a user name and password if required, define custom POST data, as well as other optional criteria for that step.

You can edit the steps in a URL sequence after they have been added. Making changes to a sequence step requires that you update both the individual step and update the monitor as a whole. Editing any step of a URL sequence may affect subsequent steps in the sequence and cause the sequence to fail. It may be necessary to change all of the steps that occur after the step that is changed.

You can delete steps from a URL sequence but they can only be deleted starting from the last step in the sequence. This is to prevent inadvertently breaking a sequence because, in most cases, one step is dependent on data returned by the previous step. When you update or delete steps, SiteScope attempts to run the changes to the step. The results of the monitor run are displayed in the SiteScope Dashboard.

For task details, see "How to Create a URL Sequence" on page 686.

For user interface details, see "URL Sequence Monitor Settings" on page 690.

This section contains the following topics:

- "What to Monitor" on page 673
- "Working with the URL Sequence Monitor" on page 674
- "Setup Requirements and User Permissions" on page 675
- "Support for IPv6 Addresses" on page 676
- "Defining Sequence Steps" on page 676
- "SSL Connectivity" on page 678
- "URL Sequences and Dynamic Content" on page 679
- "Retaining and Passing Values Between Sequence Steps" on page 683
- "Sharing Cookies Between Monitor Runs and Configured Monitors" on page 684
- "Troubleshooting and Limitations" on page 685

What to Monitor

You should monitor any multi-step Web page sequence that you have made available to general users to verify that they are available and function correctly. Web site visitors often assume that any problems they encounter are due to user error rather than system error, especially if they're not familiar with your application. By using this monitor to perform sequence testing, you can verify that users are able to successfully complete transactions.

Working with the URL Sequence Monitor

The URL Sequence monitor is more complex than most other SiteScope monitor types and the steps for working with the monitor are different than for other monitors. The following is an overview of key concepts and actions you use when working with the URL Sequence monitor:

- ▶ The URL Sequence monitor can be configured with between one to forty steps. Each step is defined individually in a sequence of numbered entries in the interface. The steps must be initially configured in the intended sequence as the request for one step provides the content used in the following step.
- ▶ When you first configure a URL Sequence monitor, be sure to configure the steps you want to include in the sequence before you create the monitor.
- ▶ You can set thresholds for individual steps or for the whole monitor.
- ▶ You configure the URL Sequence monitor in text mode. The navigation links and form actions are displayed as text parsed from the HTML that is used to construct a page in Web browsers. In some cases, portions of HTML code may also be included. You must be familiar with HTML when working with this monitor.
- ▶ Many Web-based systems use session data to identify clients and track the state of a user's interaction with the server application. This session data is often sent back and forth to the client in the HTTP header or Post Data. You should be familiar with the session tracking methods used by the systems you want to monitor to effectively configure this monitor.
- ▶ Web-based sequences or transactions can be difficult to navigate when dealing with many Web pages. For example, Web pages that use many graphic images for navigation hyperlinks can present special challenges when configuring URL Sequence monitors. You must be familiar with HTML hyperlink syntax when working with this monitor.

- ▶ When you first configure the URL Sequence monitor, the HTML text content returned from the request made in one step can be displayed in the following step by clicking the **Show Source** button. This can be very useful for finding content on which you want to perform a match. You may also use this to correlate links and forms in the respective selection menus with their relative location on the page. For example, if there is a search entry form near the top of a Web page and another, different search form further down in the page, you can view the raw HTML to help determine the syntax associated with the form that you want to test.
- ▶ SiteScope does not parse or interpret embedded scripts or other client-side program code such as Javascript (ECMAScript). Web page content that is generated or controlled by client-side code does not usually appear in the URL Sequence monitor. For information about dealing with Web page scripts, see "URL Sequence Monitor Settings" on page 690 and Client-side Programs help page.
- ▶ You should consider using the VuGen script rather than the URL Sequence monitor in the following circumstances:
 - ▶ Where Javascripts are embedded in the HTML being monitored (if they play an important role in the HTML). This is because Javascripts are not supported by the URL monitor.
 - ▶ If you experience problems when monitoring HTMLs over the SSL protocol, and these problems persist after you have verified that all monitor settings are correct.

Setup Requirements and User Permissions

The user name and password specified in the URL Sequence Step dialog box must have sufficient permissions to complete the HTTP request that the monitor is configured to perform.

Support for IPv6 Addresses

This monitor supports the IPv6 protocol. If you want your environment to resolve host names to IPv6, you can select the **Prefer IP version 6 addresses** option in SiteScope Infrastructure Settings (**Preferences > Infrastructure Preferences > Server Setting**). If this option is selected, whenever a host name is specified for a remote server and the name is resolved to both IPv4 and IPv6, the IPv6 address is used.

When using IPv6, this monitor supports the HTTP protocol.

If specifying a literal IPv6 address as the name for the monitored remote server when IPv6 addressing is enabled, the IP address must be enclosed in square brackets ("[" , "]"). For example:

```
http://[2004:DB8:2a:1005:230:48ff:fe73:982d]:8080
```

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Defining Sequence Steps

The URL sequence must begin with an initial URL. SiteScope makes a request for the URL, and the data returned by this initial request is used for subsequent steps. The HTTP response header and the content of the URL are available in the HTML Source section at the bottom of the subsequent step dialog box.

When you have entered the first step, you can add more steps. You repeat this process depending on the number of Web pages and actions that need to be taken to complete the sequence. The step screens provide access to the available elements on the Web page requested by the previous step. This includes form buttons, hyperlinks, form input elements, and other data. You use these elements to create each subsequent sequence step separately. Most sequence steps involve one of the following elements:

Reference Type	Description
Go to URL Manually	Where the sequence uses the Common Gateway Interface (CGI) for data transmission between the client and the server, it may be useful to specify a particular URL and name-value pairs. You can enter the URL you want to request along with any name-value pairs needed to get to the next sequence step even if those values are available through some other page element (such as a form). This option also enables you to copy URL and CGI strings directly from the location or address bar of another browser client that you may be using to step through the sequence you are building.
Following a Hyperlink	SiteScope parses the content of the URL returned by the previous step and creates a list of hyperlinks that are found on the page. This includes links that are part of an image map that may be virtual "buttons" on a navigation menu. Any links found on this page of the sequence can be viewed and selected using the drop-down list box to the right of the Link radio button. Use the following steps to add a link step to the sequence.
Selecting a Form button	SiteScope parses the content of the URL in the current step and creates a list of form elements of the type "Submit". If SiteScope finds any HTML forms on the current page of the sequence, they are displayed in a drop-down list. The listings are in the following format: {[formNumber]FormName}ButtonName Example: The Search button on a company's search page might be listed as: {[1]http://www.CompanyName.com/bin/search}search

Reference Type	Description
Selecting a Frame within a frameset	If the URL for a step in the sequence contains an HTML FRAMESET and you need to access a hyperlink, form, or form button that is a page displayed in a frame, you must drill down into the Frameset to the actual page that contains the links or forms that you want before you can proceed with other steps in the sequence.
Following a META REFRESH redirection	If the page for this step of the sequence is controlled by a <META HTTP-EQUIV="Refresh" CONTENT="timedelay; URL=filename.htm"> tag, you can instruct SiteScope to retrieve the specified file as the next step. This sort of construct is sometimes used for intro pages, splash screens, or pages redirecting visitors from an obsolete URL to the active URL.

Note: SiteScope does not parse or interpret embedded scripts or other client-side program code such as Javascript (ECMAScript). Web page content that is generated or controlled by client-side code usually does not appear in the URL Sequence monitor.

SSL Connectivity

Web servers are generally configured to use SSL encryption for administrative connections. This can be determined by the prefix of the Web service URL. The `http://` prefix means that the server uses a non-encrypted connection. The `https://` prefix means that it is a secure, encrypted connection. Monitoring a Web server which uses an encrypted connection, requires either:

- ▶ Selecting the **Accept untrusted certificates for HTTPS** option in the Authentication Settings section of the URL Sequence Monitor Settings panel as described in "URL Sequence Monitor Settings" on page 690.
- ▶ Importing the server certificate. For details on how to perform this task, see "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 686.

URL Sequences and Dynamic Content

Web pages which include client-side programming or dynamically generated content can present problems in constructing SiteScope URL Sequence monitors. Client-side programs might include Java applets, ActiveX controls, Javascript, or VBScript. Web pages which are generated by server-side programming (Perl/CGI, ASP, CFM, SSI, JSP, and so forth) can also present a problem if link references or form attributes are changed frequently.

SiteScope does not interpret Javascript, VBScript, Java applets, or Active X Controls embedded in HTML files. This may not be a problem when the functionality of the client-side program is isolated to visual effects on the page where it is embedded. Problems can arise when the client-side program code controls links to other URL's or modifies data submitted to a server-side program. Because SiteScope does not interpret client-side programs, actions or event handlers made available by scripts or applets are not displayed in the URL Sequence Step dialog box.

Some Web sites use dynamically generated link references on pages generated by server-side programming. While these Web pages do not contain client-side programs, frequently changing link references or cookie data can make it difficult to set up and maintain a URL Sequence monitor.

Dynamic Content Workarounds

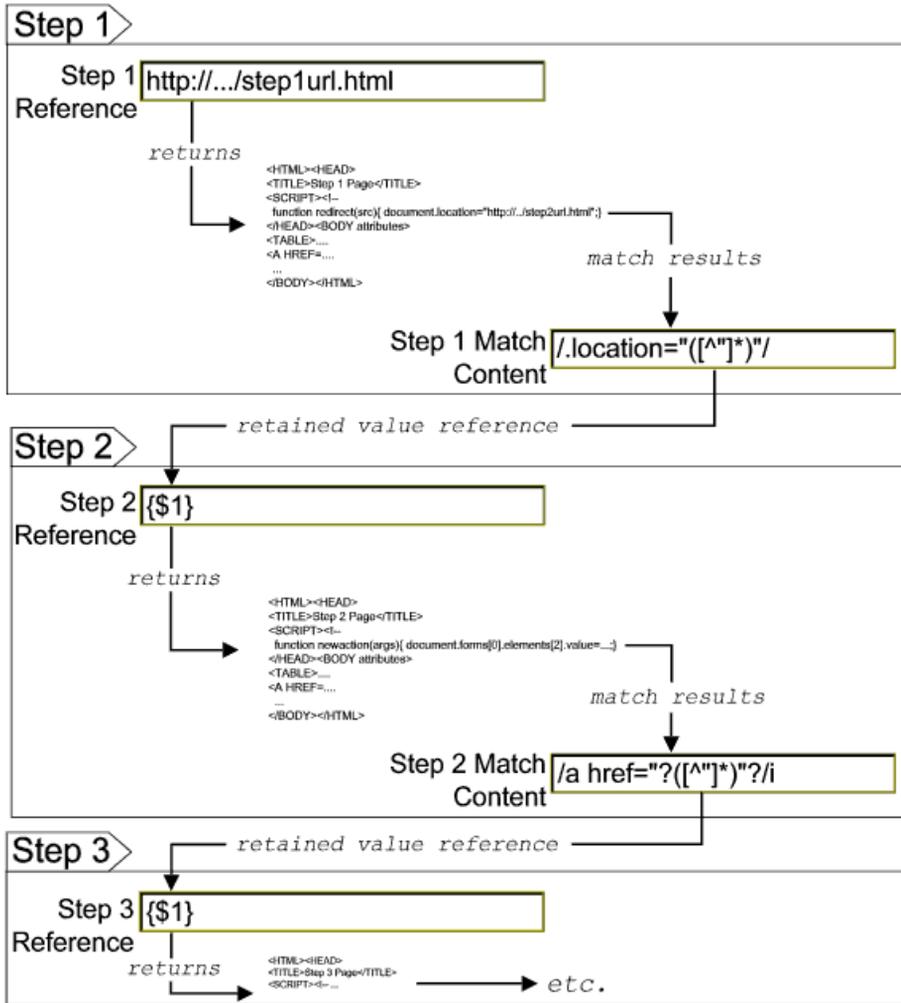
There are several ways to make a SiteScope URL Sequence monitor perform actions controlled by client-side programs and other dynamic content. Several of these workarounds are presented below. The workarounds generally require knowledge of the principles of Web page construction, CGI programming, Perl-style regular expressions, and the programming used to support the Web site being monitored.

Dynamic Content	SiteScope Workaround
<p>A Web page contains a script which controls a link to another URL.</p> <p>Example: <code>onClick = "document.location='http://..."</code></p>	<p>Use a match content regular expression in the sequence step for the subject page to retain the filename.ext value from the <code>.location="filename.ext"</code> match pattern. The retained value can then be passed as a URL in the URL box of the next step of the sequence.</p>
<p>A client-side program reformats, edits, or adds data to a POST or GET data set collected by HTML form inputs.</p>	<p>Manually edit the script changes into the NAME=VALUE pairs displayed for the subject sequence step. This is done in the POST data box in the HTTP Settings section of the URL Sequence Step dialog box. This requires familiarity with the script function and CGI request headers.</p>
<p>A client-side program generates HTML content which, after interpretation by a Web browser, includes HTML <code></code> links.</p>	<p>Use a match content regular expression to return the filename.ext value from the <code>HREF="filename.ext"</code> pattern and pass it to the URL box of the next sequence step.</p>

Dynamic Content	SiteScope Workaround
A client-side program generates HTML content which, after interpretation by a Web browser, includes forms submitted to a CGI program.	Manually enter the NAME=VALUE pairs for the subject sequence step. This is done in the POST data box in the HTTP Settings section of the URL Sequence Step dialog box. This requires familiarity with the script, the form structure, and CGI request headers.
A script dynamically sets the ACTION attribute of an HTML <FORM> tag.	Manually enter the ACTION URL for the next sequence step. This is done in the URL box in the Reference Settings section of the URL Sequence Step dialog box. This requires familiarity with the script.
A script dynamically sets the METHOD attribute of an HTML <FORM> tag.	Manually enter the POST or GET data for the next sequence step. For POST methods, enter the data in the POST data box in the HTTP Settings section of the URL Sequence Step dialog box. For GET methods, enter the ACTION URL plus the &NAME=VALUE pairs in the URL box in the Reference Settings section of the URL Sequence Step dialog box. This requires familiarity with the script, the form structure, and CGI request headers.

The figure below illustrates several of the principles of constructing a URL Sequence monitor using regular expressions. The regular expression shown in the figure can be used to extract URLs from Javascript or other Web page content. As indicated, content matches for a given step are performed on the content returned for that step. The parentheses used in the regular expressions cause the value matched by the expression inside the parentheses to be remembered or retained. This retained value can be passed on to the next step of the sequence by using the {\$n} variable. Because the regular expression can contain more than one set of parentheses, the \$n represents the match value from the \$nth set of parentheses.

The example in the figure uses only one set of parentheses and thus references the retained value as `{\$1}`.



Web pages containing code that perform the following present additional challenges:

- A script parses a cookie or other dynamic content to be added to a CGI GET request.

- Link information is contained in an external script file accessed by using a HTML `<SCRIPT HREF="http://... >` tag.

Web pages with dynamically generated link and form content may not be parsed correctly by the SiteScope URL Sequence monitor.

Retaining and Passing Values Between Sequence Steps

One important function of the match content capability in URL Sequence monitor is the ability to match, retain, and then reference values from one URL sequence step for use as input in a subsequent step. Using one or more sets of parentheses as part of a match content regular expression instructs SiteScope to remember the values matched by the pattern inside the parentheses. These values can then be referenced using the syntax described in the following example.

Example

Suppose you create a URL Sequence monitor and include a match content expression for the first step to capture some session information. The Step 1 match content expression could be in the form of

```
/[\w\s]*?(pattern1)[\/\-\=]*?(pattern2)/
```

The two sets of parentheses in this expression instruct SiteScope to retain the two values matched by `pattern1` and `pattern2`. To use these values as input to the **next** step in the URL sequence, use the syntax `{$valuenum}`. In this example, the string `{$1}` references the value matched by `pattern1` and `{$2}` references the value matched by `pattern2`. Use the above syntax for passing the referenced values to the URL sequence step immediately following the step in which the content match was made (step 1 to step 2 in our example).

You can retain and pass matched values from one step to any other subsequent step by using a compound syntax of `$$$stepnum.valuenum`. If, in our example, you want to use the value matched by `pattern1` in step 1 as input in a FORM or URL request in step 4 of the URL sequence, you would include the syntax `$$$1.1` in step 4. To reference the value matched by `pattern2`, use the `$$$1.2` syntax.

Sharing Cookies Between Monitor Runs and Configured Monitors

The URL Sequence monitor also supports sharing cookies between monitor runs and between configured monitors. This is done by maintaining a persistency of both session cookies and permanent cookies that can be queried, updated and shared among other URL Sequence monitors.

Suppose you have a number of different URL Sequence monitors that are currently configured on a SiteScope server. Assume that all the monitors simulate a URL transaction in which at least one of the steps uses a session cookie to send to the server instead of logging in each time. Using cookie persistency, you can configure one monitor to save the cookies it receives and configure all the other monitors to load the cookies. This can save system costs if there is a charge for each request to the login server from the monitoring tool. The monitor can 'log in' once and reuse the credentials from the login by other monitor runs and monitor instances. Thus, only one monitor needs to contain a login step. All the others can skip this step and send the login credentials in a cookie instead.

Note:

- ▶ Configure the monitor designated to save cookies to run at a frequency that is not less than the time frame of the session to make sure that cookies remain valid throughout the time frame of a session. A monitor that loads cookies from the persistency file does not check to see whether the cookie it is loading and sending is still valid.
 - ▶ Configure the monitor designated to save cookies before you configure the loading monitors. This is to make sure that the persistency file exists when you configure monitors to load from the file. Configuring the saving monitor to run at a higher frequency than loading monitors does not assure that the monitor saving cookies runs first.
-

Troubleshooting and Limitations

You can run all the steps defined in the URL sequence by clicking the **Test Steps** button in the Step Settings panel. This displays the data collected from each step, and embeds a copy of the HTML page returned. For details, see "Step Settings" on page 691.

Tasks

How to Create a URL Sequence

This task describes the steps and settings you use to create a URL sequence.

This task includes the following steps:

- "Prerequisites" on page 686
- "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 686
- "Add a URL Sequence monitor" on page 687
- "Start a new URL sequence" on page 687
- "Define additional sequence steps" on page 688
- "Enter an encrypted or unencrypted password (if required)" on page 689
- "Configure other settings for the monitor" on page 689

1 Prerequisites

There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements and User Permissions" on page 675.

2 Import the server certificates (if the Web Server is configured to use SSL encryption)

If the Web server has an `https://` prefix, it is a secure, encrypted connection, and you need to import the server certificate. Use one of the following methods for importing server certificates:

- Import the server certificates using SiteScope Certificate Management. For details, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope* in the SiteScope Help.
- Import the server certificates manually. For details, see "Import Server Certificates Manually" on page 630.

3 Add a URL Sequence monitor

Add the URL Sequence monitor to a monitor group container and enter a name for the monitor instance in the General Settings panel.

For details on the General Settings panel, see "General Settings" (Common Monitor Settings) in *Using SiteScope*.

4 Start a new URL sequence

Configure the first URL in the sequence in the URL Sequence Step dialog box. The URL sequence must begin with an initial URL.

- a** In the Step Settings panel of the New URL Sequence Monitor dialog box, click the **New Step** button.
- b** In the URL Sequence Step dialog box, enter the initial URL address in the Reference Settings section. This URL should be the initial Web page that the user is expected to see or the access point for the web-based system you are going to monitor.
- c** Complete the other sequence step settings as necessary and click **OK**. Generally, the URL is sufficient for the first step of most URL sequences.
- d** In the Step Settings panel, click the **Test Steps** button to run all the defined steps in the URL Sequence and display the results of data collected. For details on the URL Sequence test, see "URL Sequence Steps Results Dialog Box" on page 703.

For details on the URL Sequence Step dialog box, see "URL Sequence Step Dialog Box" on page 697.

5 Define additional sequence steps

Configure the individual steps for the URL sequence in the URL Sequence Step dialog box.

- a** In the URL Sequence Step Settings panel of the New URL Sequence Monitor dialog box, click the **New Step** button.
- b** Use the options in the Reference Settings section to select how SiteScope progresses from one step of a URL sequence to the next. The options are:
 - **URL.** To go to a URL manually.
 - **Link.** To follow a hyperlink.
 - **Form.** To select a form button.
 - **Frame.** To select a frame within a frameset.
 - **Refresh.** To follow a meta refresh redirection.

For details on the reference types, see "Defining Sequence Steps" on page 676.

- c** Complete the other sequence step settings as necessary and click **OK**. For user interface details, see "URL Sequence Step Dialog Box" on page 697.

6 Enter an encrypted or unencrypted password (if required)

You can give an encrypted or unencrypted password to the URL monitor in the URL Sequence Step dialog box.

- ▶ To give an unencrypted password, enter the password in the **password=** line in the **POST data** text box. The password you enter is displayed in the text box.
- ▶ To give an encrypted password to the URL monitor form, type the string **password** in the **Post data password key** text box. Enter the password itself in the **Post data password value** text box. The password is encrypted.

Example - Unencrypted Password:

POST data:	<pre> [[2]signInForm)email= [[2]signInForm)newCustomer=registeredCusto mer [[2]signInForm)password=mypassword </pre>
Post Data Password Key:	<input type="text"/>
Post Data Password Value:	<input type="text"/>

Example - Encrypted Password:

POST data:	<pre> [[2]signInForm)email= [[2]signInForm)newCustomer=registeredCusto mer [[2]signInForm)password= </pre>
Post Data Password Key:	<input type="text" value="password"/>
Post Data Password Value:	<input type="text" value="*****"/>

7 Configure other settings for the monitor

Edit the monitor configuration settings as required.

For details on the URL Sequence Monitor Settings, see "URL Sequence Monitor Settings" on page 690.

Reference

URL Sequence Monitor User Interface

This section includes:

- URL Sequence Monitor Settings on page 690
- URL Sequence Step Dialog Box on page 697
- URL Sequence Steps Results Dialog Box on page 703

URL Sequence Monitor Settings

The URL Sequence monitor simulates a user's actions across a series of Web pages and URLs. This is particularly useful for monitoring and testing multi-page e-commerce transactions and other interactive online applications.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	Before configuring the monitor, make sure you have the necessary "Setup Requirements and User Permissions" on page 675.
Relevant tasks	<ul style="list-style-type: none"> ➤ "How to Create a URL Sequence" on page 686 ➤ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	➤ "URL Sequence Monitor Overview" on page 672

Step Settings

User interface elements are described below:

UI Element	Description
	New Step. Opens the URL Sequence Step dialog box enabling you to define the URL sequence steps. For user interface details, see "URL Sequence Step Dialog Box" on page 697.
	Edit Step. Opens the URL Sequence Step dialog box enabling you to edit the properties of an existing URL sequence step. For user interface details, see "URL Sequence Step Dialog Box" on page 697.
	Delete Last Step. Deletes the last step in the URL sequence.
	Select All. Selects all listed URL sequence steps.
	Clear Selection. Clears the selection.
	Test Steps. Runs the defined steps in the URL Sequence, and display the results of data collected. The response embeds a copy of the HTML received from the HTTP request. For details, see "URL Sequence Steps Results Dialog Box" on page 703.
Step	The step number in the URL sequence.
Reference Type	URL of the sequence step.
Title	Name of this step within the sequence monitor.

URL Sequence Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
Timeout (seconds)	<p>Amount of time, in seconds, to wait for the entire sequence to complete before timing-out. Once this time period passes, the URL Sequence monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p>
Timeout for each step	<p>Uses the value entered for the Timeout above as the timeout for each step of the sequence rather than for the entire transaction. If the step takes more than this time to complete, the URL Sequence monitor logs an error and reports an error status.</p> <p>Default value: Not selected</p>
Retries	<p>Number of times that SiteScope should retry the request if a recoverable error was encountered. A timeout of the request for is a recoverable error.</p> <p>Default value: 0</p>
If error, resume at step	<p>Specifies a URL sequence step to run in the case that a URL Sequence results in an error. This is useful when a URL sequence involves a user or customer login which would result in problems if the sequence ended without logging out.</p> <p>Use the drop-down list to select a URL sequence step to jump to in the case that any step in the sequence returns an error.</p>
Run resume step and remaining steps	<p>If the If error, resume at step option is selected and run, selection of this option causes SiteScope to run that step and continue running the other, subsequent steps until it reaches the end of the sequence.</p> <p>Default value: Not selected</p>

UI Element	Description
Show detailed measurements	<p>SiteScope records a detailed breakdown of the process times involved in retrieving the requested URL. These include the following:</p> <ul style="list-style-type: none"> ▶ DNS lookup time. The time it takes to send a name resolution request to your DNS server until you get a reply. ▶ Connection time. The time it takes to establish a TCP/IP/Socket connection to the Web server. ▶ Server response time. The time after the request is sent until the first byte (rather first buffer full) of the page comes back. ▶ Download time. The time it takes to download the entire page. <p>Default value: Not selected</p>
HTTP Settings	
Request headers	<p>Header request lines sent by the HTTP client to the server. Headers should be separated by a linebreak. The standard list of HTTP1.1 request headers can be found in http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.</p> <p>Note: Although this field is optional, some Web pages behave unexpectedly when the request header is missing (such as performing endless redirects, providing wrong content, and so forth).</p>
HTTP version	<p>HTTP version for SiteScope to use. Some systems may not be designed to accept HTTP 1.1 requests headers. If this is the case, select HTTP 1.0.</p> <p>Default value: HTTP version 1.1</p>

UI Element	Description
Retrieve images	<p>Status and response time statistics include the retrieval times for all of the embedded images in the page. Embedded images include those referenced by IMG, BODY (from the background property), and INPUT TYPE=IMAGE HTML tags.</p> <p>Images that appear more than once in a page are only retrieved once.</p> <p>Note: If this option is checked, each image referenced by the target URL contributes to the download time. However, if an image times out during the download process or has a problem during the download, that time is not added to the total download time.</p> <p>Default value: Not selected</p>
Retrieve frames	<p>SiteScope retrieves the frames references in a frameset and counts their retrieval time in the total time to download this page. Frames include those referenced by FRAME and IFRAME tags. If Retrieve Images is also checked, SiteScope attempts to retrieve all images in all frames.</p> <p>Note: If this option is checked, each frame referenced by the target URL contributes to the download time. However, if a frame times out during the download process or has a problem during the download, that time is not added to the total download time.</p> <p>Default value: Not selected</p>

UI Element	Description
Use WinInet	<p>WinInet is used as an alternative HTTP client for this monitor.</p> <p>Select this option to use WinInet instead of Apache when:</p> <ul style="list-style-type: none"> ▶ The Apache HTTP client does not support a specific technology required to access the server you are monitoring. For example, Kerberos authentication is not supported by the Apache library, and is supported by WinInet. WinInet also supports trusted client-side certificates while Apache does not. ▶ You tried running this monitor and the Apache server returned errors. Using WinInet may solve these errors. <p>Default value: Not selected (Apache is used)</p>
Proxy Settings	
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server is used to access the URLs in the sequence.
Proxy server user name	<p>Proxy server user name if required to access the URLs in the sequence.</p> <p>Note: Your proxy server must support Proxy-Authenticate for these options to function.</p>
Proxy server password	<p>Proxy server password if required to access the URLs in the sequence.</p> <p>Note: Your proxy server must support Proxy-Authenticate for these options to function.</p>
Proxy NTLM V2	Select if the proxy server requires authentication using NTLM version 2.
Authentication Settings	
NTLM V2	<p>Select if the URL you are accessing requires authentication using NTLM version 2.</p> <p>Default value: Not selected</p>

UI Element	Description
Accept untrusted certificates for HTTPS	<p>If you are accessing a target URL using Secure HTTP (HTTPS) and SiteScope does not have the required server certificates, you can either select this option or import the related certificates. For details on importing server certificates, see SSL Connectivity in "URL Sequence Monitor Overview" on page 672.</p> <p>Default value: Not selected</p>
Accept invalid certificates for HTTPS	<p>Select this option if you are accessing a target URL using Secure HTTP (HTTPS) and SiteScope has invalid server certificates. This may happen, for example, if the current date is not in the date ranges specified in the certificate chain.</p> <p>Default value: Not selected</p>
Use cookie persistency	<p>Shares cookies between monitor runs and between configured monitors. For details, see "Sharing Cookies Between Monitor Runs and Configured Monitors" on page 684.</p> <p>Default value: Not selected</p>
Load cookies from persistency	<p>Loads all relevant cookies from the persistency file and adds them to the list of cookies to be sent to the server. Cookies are loaded at the beginning of the monitor run.</p> <p>Default value: Not selected</p>
Save cookies to persistency	<p>Saves all cookies received from the server for the current monitor run to the persistency file. Where a cookie has the same name, and its domain and path attribute string values exactly match those of an existing cookie in the persistency file, the cookie replaces the existing cookie. Cookies are saved at the end of every monitor run and the persistency file is updated.</p> <p>Default value: Not selected</p>
Cookie persistency file path	<p>Path and name of the cookie persistency file.</p>

URL Sequence Step Dialog Box

This dialog box displays the settings used for each individual sequence step in the URL Sequence Step Settings panel of the New URL Sequence Monitor dialog box. The scope of each of these settings is limited to the request action for the step. For example, the **User name** and **Password** settings are only sent as part of the request being made in the step that they are defined.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the URL Sequence monitor. In the Step Settings panel, click the New Step  or Edit Step  button.
Relevant tasks	"How to Create a URL Sequence" on page 686
See also	<ul style="list-style-type: none"> ➤ "URL Sequence Monitor Overview" on page 672 ➤ "URL Sequence Monitor Settings" on page 690 ➤ "URL Sequence Steps Results Dialog Box" on page 703

User interface elements are described below:

UI Element	Description
Reference Settings	
<Reference type>	<p>Use these options to select how SiteScope progresses from one step of a URL sequence to the next. For details, see "Defining Sequence Steps" on page 676.</p> <ul style="list-style-type: none"> ▶ URL. Go to a particular URL directly. Enter the URL you want SiteScope to go to in the URL box. ▶ Link. Follow a hyperlink on the page received from the previous step. Click to display all available links on the current page. Click the label or HTML text corresponding to the hyperlink that you want SiteScope to follow. If you know a link is available on the subject page but it does not appear in the drop-down list, it may be that the page uses a client-side program. In this case, you may have to specify the URL manually. ▶ Form. Enter data into a form received from the previous step and submit the form data to an application. Click to display the list of available form buttons. Click the name or HTML text corresponding to the form button that you want SiteScope to use. If you know a form is available on the subject page but it does not appear in the drop-down list, see "URL Sequences and Dynamic Content" on page 679. ▶ Frame. Request the content of a specific frame if the previous step returned an HTML frameset. Click the arrow on the right of the box to display all available filenames displayed in the current FRAMESET and then click the file that you want SiteScope to retrieve. ▶ Refresh. Follow an automated redirection defined by a META HTTP-EQUIV="Refresh" tag. Click the arrow on the right of the box to display all available Refresh filenames, and select the file that you want SiteScope to retrieve. Normally there is only one filename.

UI Element	Description
Main Settings	
Step title	Enter the text for the title of this step within the sequence monitor. The title is only displayed in the URL Sequence Steps Settings panel.
Match content	<p>Enter a string of text to check for in the returned page or frameset. If the text is not contained in the page, the monitor displays the message content match error.</p> <p>HTML tags are part of a text document, so include them if they are part of the text for which you are searching. This works for XML pages as well. Example: < B> Hello< /B> World</p> <p>You can also perform a regular expression match by enclosing the string in forward slashes, with a letter i after the trailing slash indicating case-insensitive matching. Example: /href=Doc\d+\.html/ or /href=doc\d+\.html/i</p> <p>If you want a particular piece of text to be saved and displayed as part of the status, use parentheses in a Perl regular expression. Example: /Temperature: (\d+). This returns the temperature as it appears on the page and this could be used when setting an Error if or Warning if threshold.</p> <p>Note: The search is case sensitive.</p>
Match content for error	Enter a string of text to check for in the returned page for this step. If the text is contained in the page, the monitor display the message content error found for this step's URL. The search is the same as for the Match content box described above.
Delay (seconds)	Enter how long SiteScope should wait before executing the next step of the sequence. Default value: 0 seconds

UI Element	Description
Authentication Settings	
User name	If the URL specified for this step requires a name and password for access, enter the user name. Alternately, you can leave this entry blank and enter the user name in the Default Authentication Credentials section on the General Preferences page. You use this alternate method to define common authentication credentials for use with multiple Web Service monitor.
Password	If the URL specified for this step requires a name and password for access, enter the password. Alternately, you can leave this entry blank and enter the password in the Default Authentication Credentials section on the General Preferences page. You use this alternate method to define common authentication credentials for use with multiple Web Service monitor.
Pre-emptive authorization	<p>Select when the authorization credentials should be sent if SiteScope requests the target URL.</p> <ul style="list-style-type: none"> ▶ Use global preference (default value). Select to have SiteScope use the settings specified in the Pre-emptive authorization field in the Main Panel of the General Preferences page. ▶ Authenticate first request. Select to send the user name and password on the first request SiteScope makes for the target URL. Note: If the URL does not require a user name and password, this option may cause the URL to fail. ▶ Authenticate if requested. Select to send the user name and password on the second request if the server requests a user name and password. Note: If the URL does not require a user name and password, this option may be used. <p>All options use the authorization User name and Password entered for this monitor instance. If these are not specified for the individual monitor, the Default authentication user name and Default authentication password specified in the Main Panel of the General Preferences page are used, if they have been specified.</p> <p>Note: Pre-emptive authorization does not control if the user name and password should be sent, or which user name and password should be sent.</p>

UI Element	Description
Client side certificate	<p>If you need to use a client side certificate to access the target URL, select the certificate file using the drop down menu. Client side certificate files must be copied into the SiteScope\templates.certificates directory. Normally, this is a .pfx (.p12) type certificate, which usually requires a password. You enter the password for the certificate in the Client side certificate password box.</p> <p>Default value: none</p>
Client side certificate password	<p>If you are using a client side certificate and that certificate requires a password, enter the password.</p>
Authorization NTLM domain	<p>Enter the domain for NT LAN Manager (NTLM) authorization if it is required to access the URL in this step.</p>
HTTP Settings	
URL content encoding	<p>SiteScope retrieves the correct encoding from the server response. The default value appearing here should not be edited.</p> <p>Default value: Retrieve encoding from server response</p>
POST data (for Form)	<p>If the URL at this step issues a POST request for a form and the user has used the Form reference type (indicating that the user wants to send the form), enter the post variables, one per line as name=value pairs. This option is used to verify that a form is working correctly by performing the same request that occurs when a user manually submits a form. When the form is submitted, SiteScope fills in any items that are not specified with data here with the same defaults as a browser would have chosen.</p> <p>A single name=value pair may be used to hide any data that is passed to the form, such as a password. The values entered in the POST data text box are not encrypted and are visible to anyone. If you want to secure the value by encrypting it, use the Post data password key and Post data password value boxes to secure the monitor as described below.</p> <p>Note: There may be more than one form on the page.</p>

UI Element	Description
Post data password key	Enter the name of the box that was supplied by the URL in the POST data box. It is the name component of the name=value pair.
Post data password value	<p>Enter the value that is required when accessing the form. This is the value component of the name=value pair. The value is encrypted using the TDES algorithm.</p> <p>For example, you want to define an encrypted password to the form that the URL monitor, gmail.com sends. The site gmail.com automatically supplies information in the POST data text box of the URL Sequence dialog box. The Post Data Password Key may vary from site to site. The Post Data Password Key provided by gmail.com is Passwd. The Post Data Password Value is the password that you provide.</p> <p>For details on how to enter an encrypted or unencrypted password, see "Enter an encrypted or unencrypted password (if required)" on page 689.</p>
POST Data encoding	<p>Determines if the Post Data is encoded. Select from the following options:</p> <ul style="list-style-type: none"> ▶ Use content-type. Decide to encode the post data by the content type header. If the header equals urlencoded then encode, otherwise do not encode. ▶ Force URL encoding. Always encode the post data. ▶ Do not force URL encoding. Do not encode the post data.
Show Source	Click to open a new browser window that displays the source code of the URL returned by the previous request. You can use this window to copy data, such as a session ID or form data, from the Web page for use in the current step. The HTML Source folding panel at the bottom of the step page can also be used to view the source of the Web page. However, some browsers do not support copying data from this panel.
Show HTML	Click to open a new browser window that displays the URL in a regular browser view. You can use this window to match the Link and Form data displayed in the URL Sequence Monitor step dialog form with the elements as displayed on the Web page.

URL Sequence Steps Results Dialog Box

This dialog box displays the data collected from running all the URL steps defined in the Step Settings panel. This includes the status and time taken for each step in the sequence. A copy of the HTML page returned at each step of the sequence is also displayed, so that a more graphical view of the sequence can be viewed.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the URL Sequence monitor. In the Step Settings panel, configure the individual steps for the URL sequence, and then click the Test Steps  button to view the test results.
Relevant tasks	"How to Create a URL Sequence" on page 686
See also	<ul style="list-style-type: none"> ➤ "URL Sequence Monitor Overview" on page 672 ➤ "URL Sequence Step Dialog Box" on page 697 ➤ "URL Sequence Steps Results Dialog Box" on page 703

86

VMware Performance Monitor

This chapter includes:

Concepts

- ▶ VMware Performance Monitor Overview on page 706

Tasks

- ▶ How to Configure the VMware Performance Monitoring Environment on page 712

Reference

- ▶ VMware Performance Monitor Settings on page 715

Concepts

VMware Performance Monitor Overview

Use the VMware Performance monitor to monitor VMware-based servers. VMware supplies much of the virtualization software available for x86-compatible computers. The VMware Performance monitor supports monitoring:

- ▶ Single VMware ESX server installations.
- ▶ ESX server clusters managed by VMware Virtual Center.
- ▶ VMotion of virtual machines.

During initial monitor creation, the new monitor uses the connection URL configured to access the software and dynamically discover the object hierarchy and available performance counters. You can select from these performance counters to determine which measurements SiteScope should retrieve for reporting server status.

For details describing all the available counters, refer to the VMware documentation available at <http://www.vmware.com/pdf/ProgrammingGuide201.pdf>

For task details, see "How to Configure the VMware Performance Monitoring Environment" on page 712.

For user interface details, see "VMware Performance Monitor Settings" on page 715.

For details on managing server certificates, see "Certificate Management" in *Using SiteScope* in the SiteScope Help.

This section contains the following topics:

- "Supported Versions" on page 707
- "Setup Requirements" on page 707
- "SSL Connectivity" on page 708
- "VMotion Support" on page 708
- "VMware Performance Topology Settings" on page 709
- "Troubleshooting and Limitations" on page 710

Supported Versions

This monitor supports monitoring remote servers running on:

- VMware VirtualCenter 2.x
- VMware ESX 3.x, 4.0
- VMware ESXi 3.5
- VMware ESX 2.5 via VirtualCenter 2.x
- VMware ESX 3.x via VirtualCenter 3.x
- VMware vCenter Server 4.0

Setup Requirements

The following are the requirements for monitoring VMware-based servers:

- The monitored VI server or ESX server cluster must be directly accessible by the SiteScope server (no proxy involved).
- The VI server or ESX server cluster provides connection either by http or by https (depending on the VI server configuration). If https is used, server certificate must be imported to the SiteScope.

SSL Connectivity

VMware servers are generally configured to use SSL encryption for administrative connections. This can be determined by the prefix of the Web service URL. The `https://` prefix means that it is a secure, encrypted connection. Monitoring a VMware server which uses an encrypted connection, requires importing the server certificate. For details on how to perform this task, see "How to Import the VMware Server Certificates" on page 713.

VMotion Support

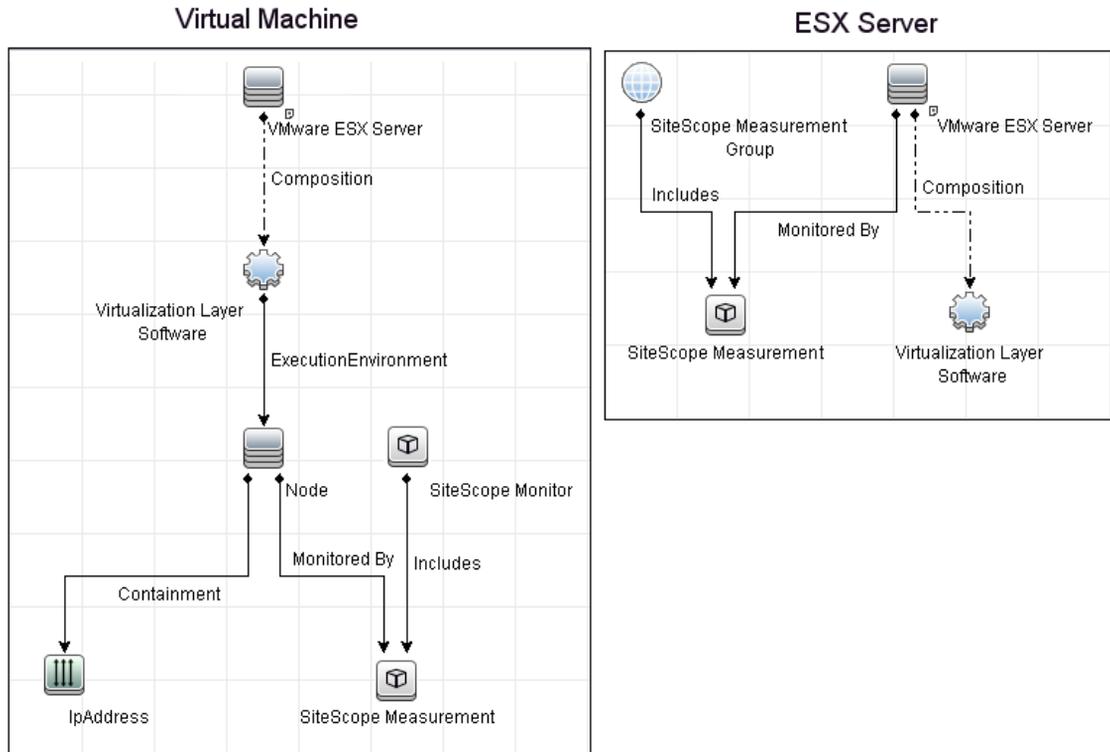
VMware's VMotion technology enables transparent migration of running virtual machines between physical hosts in a virtual infrastructure cluster. It enables you to move an entire running virtual machine instantaneously from one server to another with continuous service availability and zero downtime. This process can be done both manually and automatically as part of cluster load balancing.

The VMware Performance monitor is browseable, and the counters tree is designed so that virtual machine nodes are not children of physical host nodes. This means that the structure of the tree does not change during migration and if counters from a virtual machine are selected for this monitor, they do not change as a result of VMotion. This is regardless of where the virtual machine belonged at any particular moment.

You can set the interval for checking topology changes on the server in **HP Integration Settings > BSM Integration Data and Topology Settings**. Each time the monitor is run or updated, if the specified time since the last such server check has passed, the monitor checks the target server to see if migration of the monitored VMs has occurred.

VMware Performance Topology Settings

The VMware Performance monitor can identify the topology of the VMware servers being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



The VMware Performance monitor reports the Node CI for the virtual machine (VM) and the VMware ESX Server CI (ESX), and reports the connection between the VM and ESX. If there is counter defined on the VM, the related ESX is also reported.

Note: When deleting a monitor or making configuration changes, links between previously reported VMs and ESXs are not deleted. This means that if a monitor was deleted and relevant VMs were subsequently migrated, the newly-created monitor contains the old link to the previous ESX Server and a link to the current ESX Server (reported on monitor creation).

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Troubleshooting and Limitations

Counter Errors After SiteScope Upgrade

If you encounter errors retrieving the counters after upgrading from an earlier version of SiteScope, you should re-install the server certificate as follows:

- 1** Create a backup of the **cacerts** file in a directory outside of the SiteScope directory. The **cacerts** file is located in the **<SiteScope root directory>java\lib\security** folder.
- 2** Remove the **cacerts** file from the SiteScope folder.
- 3** Restart the SiteScope server.
- 4** Create a new **cacerts** file with the new certificate.

Inaccurate Performance Analysis Using Perfmon to Monitor CPU on VMware

Problem: SiteScope uses Perfmon to connect to the operating system of the VMware virtual machine and query it for CPU usage of the virtual host. When used over a period of time to monitor CPU on VMware, Perfmon provides inaccurate performance analysis.

Solution: VMware resolved this issue by integrating virtual machine performance counters such as CPU and memory into Perfmon for Microsoft Windows guest operating systems when VMware Tools is installed.

- ▶ For vSphere v4.0, install the latest version of VMware Tools from vSphere v4.0. When running the Windows perfmon utility, use the new counter groups, VM Processor and VM Memory, to see real CPU utilization.
- ▶ For VMs running on ESX/ESXi v3.5, contact VMware alliances for a standalone version of this Perfmon integration tool.

Use the Microsoft Windows Resources monitor to monitor the new counter groups to get accurate CPU utilization and memory data.

Tasks

How to Configure the VMware Performance Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Prerequisites" on page 712
- ▶ "Import the server certificates (if the Web Server is configured to use SSL encryption)" on page 712
- ▶ "Configure the monitor properties" on page 713

1 Prerequisites

There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements" on page 707.

2 Import the server certificates (if the Web Server is configured to use SSL encryption)

If the Web server has an `https://` prefix, it is a secure, encrypted connection, and you need to import the server certificate. Use one of the following methods for importing server certificates:

- ▶ Import the server certificates using SiteScope Certificate Management. For details, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope* in the SiteScope Help.
- ▶ Import the server certificates manually. For details, see "How to Import the VMware Server Certificates" on page 713.

3 Configure the monitor properties

Complete the VMware Performance monitor configuration. For user interface details, see "VMware Performance Monitor Settings" on page 715.



How to Import the VMware Server Certificates

If the VMware server has an `https://` prefix, it is a secure, encrypted connection, and you need to import the server certificate. You can import the certificates manually using the `keytool` method.

Tip: Alternatively, you can import the server certificates without having to restart SiteScope by using Certificate Management. For details, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope* in the SiteScope Help.

To import server certificates manually:

- 1 Export the certificate by going to the VMware administration URL and performing the export procedure described in the document.
- 2 Import the certificate, from the `<SiteScope root directory>java\lib\security`, by entering:

```
../../bin/keytool -import -file myCert.cer -alias myalias -keystore cacerts
```

Make sure to specify a unique alias for every certificate you add. If you do not, the `keytool` uses an automatic alias and once you attempt to add more than one custom certificate, the new certificate overwrites the old one and keeps only the default alias.

The word `changeit` is the default password for the `cacerts` file.

Note: The default **cacerts** file is overwritten every time SiteScope is upgraded or re-installed. Therefore, you should create a copy of the **cacerts** file with a different name before SiteScope is upgraded or re-installed so that the file is not overwritten when new certificates are imported.

- 3** In SiteScope, select **Preferences > Certificate Management**, and click the **Reload Certificate List** button to reload the keystore certificates from the **cacerts** file. This enables you to manually reload keystore changes without having to restart SiteScope.

Reference

VMware Performance Monitor Settings

This monitor enables you to monitor performance statistics of the VMware infrastructure for various server applications.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 707. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the VMware Performance Monitoring Environment" on page 712 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "VMware Performance Monitor Overview" on page 706

VMware Performance Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
URL	<p>URL of the VMware infrastructure for the server you want to monitor.</p> <p>The format of the URL is: <protocol>://<server_name>/sdk where <protocol> is either http or https, and <server_name> is the name of the ESX server.</p> <p>Note: If you get 'Error Code: 31008. Error getting counters' when SSL is used, navigate to Preferences > Infrastructure Preferences > General Settings, and select Accept untrusted SSL certificates.</p>
User name	User name of the VMware Web service's administrator.
Password	Password of the VMware Web service's administrator.
Socket timeout (milliseconds)	<p>Amount of time, in milliseconds, to wait for data from a server during a single data request. After the socket timeout period elapses, the monitor logs an error and reports the error status.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ The socket timeout value must be larger than 0. ➤ The value of zero is interpreted as an infinite timeout. <p>Default value: 600000</p>

UI Element	Description
Counter Settings	
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

HP Integration Settings

The setting below is specific to the VMware Performance monitor. For HP Integration Settings common to all monitors, see "HP Integration Settings" on page 392.

UI Element	Description
BSM Integration Data and Topology Settings	
Interval to check server for topology changes (minutes)	Each time the monitor is run or updated, if the specified time since the last such server check has passed, the monitor checks the target server to see if migration of the monitored VMs has occurred. If it has, it updates the relationship of monitored VMs to the ESX servers on which they are running. Default value: 60 minutes

87

Web Script Monitor

This chapter includes:

Concepts

- ▶ Web Script Monitor Overview on page 720

Tasks

- ▶ How to Configure the Web Script Monitoring Environment on page 730

Reference

- ▶ Web Script Monitor Settings on page 732

Concepts

Web Script Monitor Overview

The Web Script monitor proactively monitors Web sites in real time, identifying performance problems before users experience them. It enables you to monitor sites from various location where SiteScope is installed, emulating the end-user experience. You can assess site performance from different client perspectives.

Note:

- ▶ The Web Script monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.
- ▶ This monitor is supported in SiteScopes that are running on Windows versions only.

The Web Script monitor runs the scripts created in the *HP Virtual User Generator* (VuGen). You use VuGen to create a script that emulates end-user actions. You can create the script with the steps that you want monitored on target Web sites. For information on working with VuGen, see "Working with VuGen" on page 725.

Note to BSM users: The Web Script monitor is not available when working in BSM. The monitor's data cannot be reported to BSM.

For task details, see "How to Configure the Web Script Monitoring Environment" on page 730.

For user interface details, see "Web Script Monitor Settings" on page 732.

This section contains the following topics:

- "What to Monitor" on page 721
- "Counter Measurements and Transaction Breakdown Data" on page 721
- "Setting up the Web Script Monitor" on page 722
- "Selecting Counters" on page 722
- "Advanced Information" on page 723
- "Troubleshooting and Limitations" on page 723

What to Monitor

You can create transactions to monitor pages that are critical to your Web applications, pages that are generated dynamically, and pages that depend on other applications to work correctly (such as pages that utilize a back-end database).

Counter Measurements and Transaction Breakdown Data

Each time the Web Script monitor runs the VuGen script, it returns the transaction breakdown and performance data. The VuGen script also includes content match functionality, enabling you to check images, texts, links, and other areas of the Web site.

In addition, the monitor's reported data can include the following measurements:

- The amount of time needed to establish an initial connection with the Web server performing the transaction.
- The amount of time taken to establish an SSL connection for HTTPS connections.
- The time in milliseconds for the transaction to be run.
- Whether the transaction passed or failed to connect and perform its required steps.
- Number of pages accessed when running the transaction.
- Number of errors that occurred during the transaction run.

The monitor can provide early indicators of the following performance issues:

- ▶ Excessive connection or retry times.
- ▶ Slow DNS resolution or other problems with the DNS server.
- ▶ Problems along the network or whether the server is responsive to requests.
- ▶ Delays or failures in secured or authorized connections.
- ▶ Overall network quality.
- ▶ Web server delays.

Each of the measurements is available as a parameter for assigning thresholds. This means that thresholds can be set for specific transactions and measurements, providing status indicators per transaction.

For details on selecting measurement counters, see "Selecting Counters" on page 722.

Setting up the Web Script Monitor

Prior to configuring the Web Script monitor in SiteScope, you must create the script in VuGen. The monitor runs only those scripts created in VuGen. For information on working with VuGen, see "Working with VuGen" on page 725.

For an overview of the steps necessary to set up the Web Script monitor, see "How to Configure the Web Script Monitoring Environment" on page 730.

Selecting Counters

The Web Script monitor makes use of performance counters to measure Web sites performance. Select the counter metrics you want to monitor with the Web Script monitor. For details on adding performance counter metrics, see "Web Script Monitor Settings" on page 732. For details on the counter metrics available for the monitor, see "Web Script Performance Counters" on page 735.

Advanced Information

The Web Script monitor uses an internal engine to run the VuGen scripts you create. This section includes some advanced issues.

SiteScope makes a copy of the script created in VuGen and stores it in a location within the SiteScope directory. SiteScope makes the necessary modifications for the script to be run properly by the Web Script monitor. These modifications are automatic and cannot be manually duplicated. They include:

- ▶ Disabling the **Download Snapshots** operation.
- ▶ Disabling the **Think Time** operation.
- ▶ Disabling the **Iterations** operation.

Therefore:

- ▶ If there is any change made to the script in VuGen, including the name of the script, and you want the Web Script monitor to run the revised version of the script, you must edit the monitor in SiteScope and select the edited script in its saved location.
- ▶ Each script must have a unique name even if the different zip files for the scripts reside in different directories.
- ▶ The name of the zip file selected for the monitor must be the same as the name of the script created in VuGen.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the Web Script monitor.

- ▶ Each time the monitor is run, a log is created. You can view the log to troubleshoot the monitor if you see there is a problem running the scripts. The logs are stored in **<SiteScope root directory>\cache\temp\WebScript\<name of script>\log**. You can search for the required log based on the name of the script run by the monitor and the time the log was created.

This directory is cleaned out every time SiteScope is restarted.

- ▶ If the log files do not give you the necessary information to determine why the script is not running properly, run the script in VuGen. For details, refer to "Running Vuser Scripts in Standalone Mode" in the *HP Virtual User Generator* guide.
- ▶ If all the transaction breakdown counters for the monitor are reporting a status of -1 and there is a reported time for the Duration counter (the total running time of the transaction), it could be because the transaction breakdown times exceed the total running time. This can occur in rare cases because of the way the transaction breakdown times are calculated and because the Duration is an actual measurement of the total transaction time from start to finish, with no additional calculations. If the problem persists for a specific transaction, we recommend that you adjust the counters selected for the transaction.
- ▶ If you get the message "Error: Fail to get performance data timeout (error)" during the monitor run, add `LogFileWrite=1` to the **default.cfg** file of the specific script file to get more details about the error. If the script log shows that some of the resources are taking more time than the monitor timeout, increase the **Web script timeout (sec)** value in the monitor settings.
- ▶ The Web Script monitor supports script names with English characters only.

Working with VuGen

VuGen can be used to automatically create a transaction script by recording the actual business processes and actions performed by users interacting with a Web application. VuGen captures all end-user activity between the client and the server, thereby capturing the exact tasks and functions users perform.

Note: The Web Script monitor supports scripts created in *HP Virtual User Generator* version 9.51 and earlier.

This section also includes:

- "Getting Started" on page 725
- "Supported VuGen Protocols" on page 726
- "Inserting Transactions and Creating Checkpoints" on page 728
- "Saving and Storing the Script" on page 728

Getting Started

The VuGen help is accessible from the VuGen product once it is downloaded. It can be accessed in the following ways:

- Press F1 for context-sensitive help when working with a specific function.
- Select **Help** > **Contents and Index** > **Contents** tab > **Books Online** > **VuGen** to view the entire online guide. Use this option when searching for a specific topic referred to in the description of this monitor.
- Select **Help** > **Books Online** > *HP Virtual User Generator* **User's Guide** to access the guide in PDF format.

The VuGen interface includes a detailed workflow that takes the user through the step-by-step process of creating a script. For information about the workflow, refer to "Working with VuGen" > "Viewing the VuGen Workflow" in the *HP Virtual User Generator* guide.

For more detailed information on creating scripts, refer to "Working with VuGen" > "Recording with VuGen" > "Creating New Virtual User Scripts" in the *HP Virtual User Generator* guide.

Supported VuGen Protocols

The following are the protocols supported for the Web Script monitor.

- ▶ "Web (Click and Script) Protocol" on page 726
- ▶ "Web (HTTP/HTML) Protocol" on page 727

Web (Click and Script) Protocol

This is the recommended protocol to use to record scripts to be run by the Web Script monitor.

Web (Click and Script) is a new approach to Web scripting. It introduces a GUI-level scripting API, and a quicker way to create scripts.

- ▶ Easy-to-use scripting.
- ▶ Intuitive API functions describe user actions on Web objects (for example, button and text link).
- ▶ In tree view, the steps are grouped according to their pages.
- ▶ In snapshot viewer, the object corresponding to the active step is highlighted.

For details on using this protocol, refer to the "Creating Web Vuser Scripts" and "Working with Web (Click and Script) Vuser Scripts" sections under "E-Business Protocols" in the *HP Virtual User Generator* guide.

Web (Click and Script) Limitations

- Records and emulates on Internet Explorer version 6 only.
- Does not support recording on Microsoft Windows 2003.
- Does not support VBScript and applets.
- Does not support user actions on ActiveX objects and Macromedia Flash.
- Supports only English language applications.

Note: If any of these limitations affect your ability to record a script, use VuGen's Web (HTTP/HTML) Protocol instead. For details, see below. For information about choosing a protocol, refer to "E-Business Protocols" > "Choosing a Web Vuser Type" in the *HP Virtual User Generator* guide.

Web (HTTP/HTML) Protocol

This is the standard VuGen protocol for recording Web applications.

When recording a Web (HTTP/HTML) script, VuGen records the HTTP traffic and server response over the Internet. The scripts contain detailed information about your actions in the browser.

The Web (HTTP/HTML) Vuser provides two recording levels: HTML-based script and URL-based script. These levels let you specify what information to record and which functions to use when generating a Vuser script.

For details on using this protocol, refer to the "E-Business Protocols" > "Creating Web Vuser Scripts" in the *HP Virtual User Generator* guide.

Inserting Transactions and Creating Checkpoints

- ▶ While creating your VuGen script, you must insert transactions into the script. These transactions provide the breakdown performance data reported by the monitor.

For details on transactions, refer to "Working with VuGen" > "Enhancing Vuser Scripts" > "Inserting Transactions into a Vuser Script" in the *HP Virtual User Generator* guide.

- ▶ VuGen's Content Check mechanism enables you to check the contents of a page for a specific string. This is useful for detecting non-standard errors. We recommend that you include content check checkpoints in your script.

For details on checkpoints, refer to the "Checking Web Page Content" and "Verifying Web Pages under Load" sections under "E-Business Protocols" in the *HP Virtual User Generator* guide.

Saving and Storing the Script

The script you create in VuGen must be saved as a zip file. We recommend saving only the runtime files. For details, refer to the "Recording with VuGen" and "Using Zip Files" sections of the *HP Virtual User Generator* guide.

When saving the zip file:

- ▶ make sure that the zip file has the same name as the script
- ▶ make sure that each script used for a Web Script monitor has a unique name

You can save the script into:

- ▶ The configured default location for VuGen scripts within the SiteScope root directory is **<SiteScope root directory>\templates.webscripts**. This directory is automatically created.

By default, all the scripts in this directory appear in the drop-down list of available scripts when configuring the monitor.

- ▶ A different location for VuGen scripts that you configure in SiteScope's General Preferences.

You can change the default location of VuGen scripts by entering a value in the **VuGen scripts path route** box in General Preferences (**Preferences > General Preferences > Main Panel**). The scripts stored in the location you enter appear in the drop-down list of available scripts when configuring the monitor.

- ▶ Any other location accessible to the SiteScope machine.

When configuring the monitor, you can also enter the full directory path and name of the script. The Web Script monitor can access the script if the machine on which SiteScope is running has file system access to the path location.

Tasks

How to Configure the Web Script Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Create a script using Virtual User Generator (VuGen)" on page 730
- ▶ "Create the Web Script monitor in SiteScope" on page 731

1 Create a script using Virtual User Generator (VuGen)

Prior to configuring the Web Script monitor in SiteScope, you must create the script in VuGen.

- a** Download *HP Virtual User Generator (VuGen)*.

Go to the HP Software Support site (<http://www.hp.com/go/hpsoftwaresupport>) and in the **Where do I find** section, click **Software patches**. In the **Product** section, select **SiteScope** and type **VuGen** in the optional search box. Download the required version of VuGen from the results. You must log in with your HP user name and password to access the Software Patches page.

To enable monitoring, you must also download the latest *HP Virtual User Generator* Feature Pack.

- b** Familiarize yourself with how to create scripts.

The script you create in VuGen is run by the Web Script monitor and must contain transactions. The VuGen interface contains different access points for getting help. For details, see "Getting Started" on page 725.

- c** Use the supported protocols in *HP Virtual User Generator* to create your script.

Tip: We recommend that you use the Web (Click and Script) protocol to create your script for use in SiteScope. For a list of all the supported protocols and for details on the Web (Click and Script) protocol, see "Supported VuGen Protocols" on page 726.

- d** Include transactions and content match checkpoints in your script.

The VuGen script must contain transactions to be run by the Web Script monitor in SiteScope. These transactions provide the breakdown performance data reported by the monitor. For details on transactions, refer to "Working with VuGen" > "Enhancing Vuser Scripts" > "Inserting Transactions into a Vuser Script" in the *HP Virtual User Generator* guide.

Checkpoints are recommended for checking contents of a page for a specific string while running the VuGen script. This is useful for detecting non-standard errors. For details on checkpoints, refer to the "Checking Web Page Content" and "Verifying Web Pages under Load" sections under "E-Business Protocols" in the *HP Virtual User Generator* guide.

- e** Save the script's runtime files into a zip file and save the zip file into the required directory.

For details, see "Saving and Storing the Script" on page 728.

- f** Make sure that the script runs properly in VuGen before continuing.

For details, refer to "Working with VuGen" > "Running Vuser Scripts in Standalone Mode" in the *HP Virtual User Generator* guide.

2 Create the Web Script monitor in SiteScope

Add the monitor, and complete the monitor configuration. For user interface details, see "Web Script Monitor Settings" on page 732.

Reference

Web Script Monitor Settings

The Web Script monitor provides a flexible solution for virtual end-user monitoring of all your Web-based Applications. It can monitor dynamic content, test various authentication methods, and capture each step in a transaction between virtual user and Web site. This can help identify performance and availability issues before they affect end users.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ➤ The Web Script monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information. ➤ Note to BSM and OM users: The Web Script monitor is not available when working in BSM and cannot be configured in System Availability Management. The monitor's data cannot be reported to BSM or OM.
Relevant tasks	<ul style="list-style-type: none"> ➤ "How to Configure the Web Script Monitoring Environment" on page 730 ➤ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ➤ "Web Script Monitor Overview" on page 720 ➤ "Web Script Performance Counters" on page 735

Web Script Monitor Settings

User interface elements are described below:

UI Element	Description
Web script URL	<p>Select from the following options:</p> <ul style="list-style-type: none"> ▶ Web script files list. Select from the list of available scripts in the directory storing your VuGen scripts. This could be the default directory <code><SiteScope root directory>\templates.webscripts</code> or a directory you name in VuGen scripts path root in General Preferences. For details, see "General Preferences Page" in <i>Using SiteScope</i>. ▶ Full path Web script name. Enter the full path for the VuGen script. The script must be a .zip file and the path must be a location to which the machine running SiteScope has file system access. <p>When the script is selected, it is copied into a SiteScope directory and the monitor no longer accesses the original location or the original script files.</p> <ul style="list-style-type: none"> ▶ If the script is changed in VuGen and you want the monitor to run the newer version of the script, you must edit the monitor and select the script again. ▶ Each script used for a Web Script monitor must have a unique name.
Web script timeout (seconds)	<p>Amount of time, in seconds, after which you want SiteScope to stop running the script if it has not successfully completed its run.</p> <p>This value must be less than the value you entered for the Frequency setting.</p> <p>Default value: 60 seconds</p>

UI Element	Description
Counters	Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. For the list of counters available for the monitor, see "Web Script Performance Counters" on page 735.</p> <p>The first list of counters applies to all the transactions in the script and is called Total. The Status counter is the only counter that is in the Total list and the only counter that can be applied to all the transactions within the script. The subsequent lists are by transaction. Each transaction list includes all the available counters, enabling you to make specific selections of counters for the different transactions in the script.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ Not all counters return values for all transactions. ➤ When working in template mode, the maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

Web Script Performance Counters

The following table lists all the counter metrics available for the monitor. Not all the counters report on all the transactions.

Name	Description
Retry Time	<p>Displays the overall amount of time that passes from the moment an HTTP request is started until the moment an HTTP or TCP error message is returned.</p> <p>Retry time only relates to HTTP or TCP errors that execute a retry after the error.</p>
DNS Time	<p>Displays the average amount of time needed to resolve the DNS name to an IP address, using the closest DNS server.</p> <p>The DNS Lookup measurement is a good indicator of slow DNS resolution or other problems with the DNS server.</p>
Connection Time	<p>Displays the amount of time needed to establish an initial connection with the Web server performing the transaction.</p> <p>The connection measurement is a good indicator of problems along the network or whether the server is responsive to requests.</p>
SSL Handshaking Time	<p>Displays the amount of time taken to establish an SSL connection (includes the client hello, server hello, client public key transfer, server certificate transfer, and other optional stages). After this point, all the communication between the client and server is encrypted.</p> <p>The SSL handshaking measurement is only applicable for HTTPS communications.</p>

Name	Description
Network Time to First Buffer	<p>Displays the amount of time that passes from the moment the first HTTP request is sent until receipt of ACK.</p> <p>The network measurement is a good indicator of network quality (look at the time/size ratio to calculate download rate).</p>
Server Time to First Buffer	<p>Displays the amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server. The server time to first buffer measurement is a good indicator of Web server delay.</p> <p>Note: Because server time to first buffer is being measured from the client, network time may influence this measurement if there is a change in network performance from the time the initial HTTP request is sent until the time the first buffer is sent.</p>
Download Time	<p>Displays the time from the receipt of the first buffer until the last byte arrives.</p> <p>Download time is a combination of server and network time, because each server (as specified by the URLs in the script) sends data over two or four connections, and therefore is usually working while data is being transmitted over the network.</p> <p>As a Web page is retrieved, its various components (images, applets, and so on) travel in data packets from server to client across the connections, so that some data packets may be traveling over the network through one of the connections, while others are being processed by the server through another connection.</p>
Client Time	<p>Displays the time during the script run when the client is not sending or receiving data from the server.</p>
Duration	<p>The time in milliseconds for the transaction to be run.</p>

Name	Description
Status	Displays whether the transaction passed or failed. A value of 0 is passed, a value of 1 is failed. A failed transaction could be caused by a content matching error, as set up in the VuGen script, or an http error from the server.
Size	The size in bytes received from the Web sites being monitored by the transaction.
Number of Errors	Number of errors that occurred during the transaction run.
Number of Pages	Number of pages accessed when running the transaction.

88

Web Server Monitor

This chapter includes:

Concepts

- ▶ Web Server Monitor Overview on page 740

Reference

- ▶ Web Server Monitor Settings on page 741

Concepts

Web Server Monitor Overview

The Web Server monitor gathers information about a Web Server by reading the server log files. Using this information, you can see how busy your Web site is, and plan hardware upgrades and configuration changes to improve performance.

It is most effective if you create a separate Web Server monitor for each Web server you are running. If you are running multiple Web servers, each one should have its own log file so that SiteScope can report on them separately. For information about what data is recorded, see "SiteScope Log File Columns" in *Using SiteScope*.

For details on configuring the monitor, see "Web Server Monitor Settings" on page 741.

Reference

Web Server Monitor Settings

The Web Server monitor reports information about a Web server by reading the server log files. Each time the Web Server monitor runs, it writes the current hits per minute and bytes per minute in the monitor status string and in the SiteScope logs.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	When configuring this monitor in template mode, some fields that contain drop-down lists may be displayed as text boxes, and the Browse Servers and Add Remote Server buttons are not displayed.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Web Server Monitor Overview" on page 740

Web Server Monitor Settings

User interface elements are described below:

UI Element	Description
Server	<p>Name of the server where the Web server instance you want to monitor is running. Select a server from the server list (only those Windows remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server.</p> <p>Note: If SiteScope is installed on a Windows platform, this monitor can monitor a target Windows server that has a Web Server installed on it. If SiteScope is installed on a UNIX platform, this monitor can monitor local log files only (monitoring a Web Server on UNIX platforms is no longer supported).</p> <p>Note when working in template mode: You can use the template remote server (if one was created) without having to enter its name, by selecting the Use already configured template remote under current template check box.</p> <p>Default value: SiteScope Server (the server on which SiteScope is installed)</p>

UI Element	Description
Browse Servers	<p>Opens the Select Server dialog box, enabling you to select the server to be monitored:</p> <ul style="list-style-type: none"> ▶ Browse servers. Select a server from the drop-down list of Windows servers visible in the local domain. ▶ Enter server name. If the server you want to monitor does not appear in the Servers list because it has not been identified in the network or has not been configured in Remote Servers, enter the IP address or name of the server to monitor. <p>Note:</p> <ul style="list-style-type: none"> ▶ This button is available for SiteScope running on Windows platforms only. ▶ To monitor a remote Windows server, you must have domain privileges or authenticated access to the remote server. For details on how to configure a remote Windows server, see "How to Configure SiteScope to Monitor a Remote Microsoft Windows Server" in <i>Using SiteScope</i>.
Add Remote Server	<p>Opens the Add Microsoft Windows Remote Server dialog box, enabling you to enter the configuration details. For user interface details, see "New/Edit Microsoft Windows Remote Server Dialog Box" in <i>Using SiteScope</i>.</p> <p>Note: This button is available for SiteScope running on Windows platforms only.</p>
Web server	<p>Web server type for the selected Web server.</p> <p>Default value: Microsoft IIS</p> <p>Note: This field is available for SiteScope running on Windows platforms only.</p>

UI Element	Description
Log file path	<p>For SiteScope running on Windows platforms: Select the Web Server from the list. If your Web server does not appear in the list, enter the full path to the Web server log file.</p> <p>For SiteScope running on UNIX platforms: Enter the full path of the Web server log file.</p> <p>Example: c:/ns-home/httpd-test/logs/access</p> <p>For servers that dynamically create the filename for log files, you can include regular expression as part of the log file path definition. The SiteScope can then retrieve data from a range of filenames based on evaluation of the regular expressions.</p>
Request size column	<p>Enter the column number which contains the Request Size if your Web server saves information in a custom format.</p> <p>If this item is blank, the common log file format is assumed.</p>

89

Web Service Monitor

This chapter includes:

Concepts

- ▶ Web Service Monitor Overview on page 746

Reference

- ▶ Web Service Monitor Settings on page 751

Concepts

Web Service Monitor Overview

Use the Web Service monitor to check the availability of a Web service accepting Simple Object Access Protocol (SOAP) requests. The Web Service monitor checks that the service can send a response to the client in certain amount of time and to verify that the SOAP response is correct based on your selected match specifications.

The Simple Object Access Protocol is a way for a program running under one operating system to communicate with another program running under the same or different operating system (such as a Windows 2000 program talking to a Linux based program) The Simple Object Access Protocol uses the Hypertext Transfer Protocol (HTTP) and Extensible Markup Language (XML) for information exchange with services in a distributed environment.

This monitor uses a Web Services Description Language (WSDL) file to extract technical interface details about a Web service and uses information returned to create an actual SOAP request to that Web service. That is this monitor emulates a real Web service client making a request. The SOAP request can be used to confirm that the Web service is serving the expected response data and in a timely manner. The status of the Web Service monitor is set based on the results of the SOAP request.

For information about SOAP, refer to the W3C Web site (<http://www.w3.org/TR/SOAP/>).

For information about WSDL, refer to the Microsoft site (<http://msdn2.microsoft.com/en-us/library/ms996486.aspx>).

For details on configuring the monitor, see "Web Service Monitor Settings" on page 751.

This section contains the following topics:

- "Supported Technologies" on page 747
- "Support for IPv6 Addresses" on page 748
- "Status" on page 748
- "Integration with Business Service Management for SOA" on page 749
- "Web Service Topology Settings" on page 749

Supported Technologies

The following specification features are currently supported:

- WSDL 1.2
- SOAP 1.1 only (SOAP 1.2 is not supported)
- Simple and Complex Types based on XML Schema 2001
- SOAP binding with the HTTP(S) protocol only
- SOAP with Attachments is not supported
- Nested WSDL
- WSDL with multi-ports and multi-services

Note: SOAP and WSDL technologies are evolving. As a result, some WSDL documents may not parse accurately and some SOAP requests may not interact with all Web service providers. When SiteScope is unable to generate the correct skeleton code, for example, if the WSDL file has errors or the complexType element uses schema syntax that is not supported, you can modify the XML argument as necessary. For example, if an argument is displayed like this:

```
parameters[COMPLEX] =<pPatientSSN xsi:type="xs:string">***</pPatientSSN>
```

you can modify it by deleting the **xs:** and **xsi:** as follows:

```
parameters[COMPLEX] =<pPatientSSN type="string">***</pPatientSSN>
```

Support for IPv6 Addresses

This monitor supports the IPv6 protocol. If you want your environment to resolve host names to IPv6, you can select the **Prefer IP version 6 addresses** option in SiteScope Infrastructure Settings (**Preferences > Infrastructure Preferences > Server Setting**). If this option is selected, whenever a host name is specified for a remote server and the name is resolved to both IPv4 and IPv6, the IPv6 address is used.

When using IPv6, this monitor supports the HTTP protocol.

If specifying a literal IPv6 address as the name for the monitored remote server when IPv6 addressing is enabled, the IP address must be enclosed in square brackets ("[" , "]"). For example:

```
http://[2004:DB8:2a:1005:230:48ff:fe73:982d]:8080
```

For details on using IPv6, see "Support for IP Version 6" in *Using SiteScope* in the SiteScope Help.

Status

The status reading shows the most recent result for the monitor. It is also recorded in the SiteScope log files, email alert messages, and can be transmitted as a pager alert. The possible status values are:

- OK
- unknown host name
- unable to reach server
- unable to connect to server
- timed out reading
- content match error
- document moved
- unauthorized
- forbidden
- not found

- proxy authentication required
- server error
- not implemented
- server busy

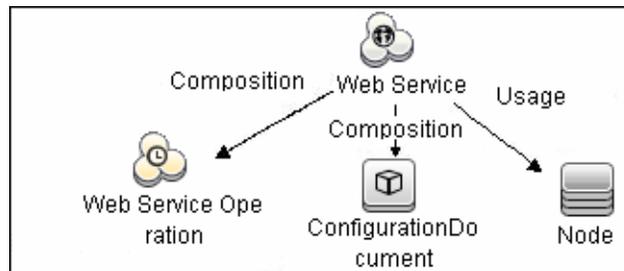
The final status result is either OK, error, or warning based on the threshold established for these conditions.

Integration with Business Service Management for SOA

If SiteScope is reporting to BSM, the monitor sends SOA samples, in addition to the regular samples it sends, for use in BSM for SOA. If the logging setting in **HP Integration Settings** is set to **Disable reporting to BSM**, the monitor does not send any samples to BSM.

Web Service Topology Settings

The Web Service monitor can identify the topology of the Web Service being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



The CIs are created only for the monitored entities according to the counters that you select.

Note: The SiteScope Web Service Monitor CI replaces the legacy SiteScope Monitor CI for the Web Service monitor instances when upgrading from previous versions of SiteScope to SiteScope 9.50. The SiteScope Monitor CI is removed from ODB, which causes it to be removed from views that included it or from SLAs to which it was attached.

For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

For information about the SOA topology, see "SOA Views and Their Components" in *Solutions and Integrations* in the HP Business Service Management Documentation Library.

Reference

Web Service Monitor Settings

The Web Service monitor enables you to check Simple Object Access Protocol (SOAP) enabled Web services for availability and stability. The Web Service monitor sends a SOAP based request to the server and checks the response to verify that the service is responding.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The Web Service Tool is available when configuring this monitor to test the availability of SOAP enabled Web Services (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Web Service Tool" in <i>Using SiteScope</i> .
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	► "Web Service Monitor Overview" on page 746

Web Service Monitor Settings

User interface elements are described below:

UI Element	Description
WSDL Settings	
WSDL location	<p>Select one of the following options:</p> <ul style="list-style-type: none"> ▶ File. Select the WSDL file to be used for this monitor. This list reflects the files found by searching on <SiteScope root directory>\templates.wSDL/*.wSDL. ▶ URL. Enter the URL of the WSDL file to be used for this monitor. <p>Your WSDL files must have the extension .wSDL.</p>
Get Data	Retrieves the specified WSDL file and analyzes it for method arguments. The ensuing page displays the measurements available for monitoring.
Service name	Name of the service to be invoked. During initial setup, this is extracted from the WSDL file.
Port name	Name of the port to be invoked. During initial setup, this is extracted from the WSDL file.
Method name	Name of the method to be invoked. During initial setup, this is extracted from the WSDL file.
Method name space	XML name space for the method in the SOAP request. During initial setup, this value is extracted from the WSDL file.
Schema name space	XML name space for the schema in the SOAP request. During initial setup, this value is extracted from the WSDL file.
SOAP action	SOAP action URL in the header of the SOAP request to the Web Service. During initial setup, this is extracted from the WSDL file.

UI Element	Description
<p>Name of arguments</p>	<p>Displays the name and type/structure of the arguments to the method specified above. SiteScope supports both simple (primitive) and complex (user-defined using XML schema) types.</p> <p>Simple type arguments appear in the form: <code>parm-name(parm-type) =</code> where you need to enter the parameter value to be used in invoking the Web service after the equal sign. Strings with embedded spaces should be enclosed in double quotes. Each parameter must be in a separate line, that is, do not remove the carriage return at the end of each parameter.</p> <p>A complex type parameter is displayed as one long string, with needed input fields marked with asterisks (**). An example of a complex type parameter is shown below:</p> <pre>stocksymbol[COMPLEX] =<stocksymbol xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:fw100="urn:ws-stock" xsi:type="fw100:getQuote"> <ticker xsi:type="xsd:string">***</ticker></stocksymbol></pre> <p>You must replace these occurrences of asterisks with meaningful values of the required type (in the example above, <code>xsd:string</code>), otherwise the Web service request may fail. Do not add any carriage returns within a complex type parameter.</p> <p>If the Web service method does not take any parameters, the text box must be empty.</p> <p>Note: SiteScope cannot set the order of arguments. If the order is important, enter arguments in the same order in which they appear in the WSDL file.</p>
<p>Use user-defined SOAP XML</p>	<p>Uses the XML in the User SOAP XML box. This enables you to use XML that has been manually defined.</p>

UI Element	Description
User SOAP XML	Displays the SOAP XML for the selected Web service extracted from the WSDL file. You can make changes to the default XML, and use the manually defined XML in this box by selecting the Use user-defined SOAP XML check box.
Main Settings	
Request's schema	The request schema. Currently SiteScope only supports SOAP.
Timeout (seconds)	Amount of time, in seconds, that SiteScope should wait for the Web service request to complete. Default value: 30 seconds
Use .NET SOAP	Select if the Web service is based on Microsoft .NET.

UI Element	Description
Content match	<p>Text string to check for in the returned page or frameset. If the text is not contained in the page, the monitor displays the message no match on content.</p> <p>HTML tags are part of a text document, so include the HTML tags if they are part of the text you are searching for. This works for XML pages as well.</p> <p>Example: "< B> Hello< /B> World"</p> <p>You may also perform a regular expression match by enclosing the string in forward slashes, with an <i>i</i> after the trailing slash to indicate that the search is not case sensitive.</p> <p>Example: <code>/href=Doc\d+\.html/</code> or <code>/href=doc\d+\.html/i</code></p> <p>If you want a particular piece of text to be saved and displayed as part of the status, use parentheses in a Perl regular expression.</p> <p>Example: <code>/Temperature: (d+)</code></p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The search is case sensitive. ▶ Content match behavior was changed for the Web Service monitor in SiteScope 10.12. To enable Web Service monitors defined prior to SiteScope 10.12 to match the correct value, the Web Service Monitor use common content match setting must be selected in Preferences > Infrastructure Preferences > Monitor Settings.
HTTP Settings	
Web service server URL	Displays the URL of the Web service server to be monitored.
HTTP user agent	HTTP user agent for the SOAP request.
HTTP content type	Content type of the HTTP request.
Proxy Settings	
HTTP proxy	Domain name and port of an HTTP Proxy Server if a proxy server can be used to access the URL.

UI Element	Description
Proxy server user name	Proxy server user name if required to access the URL. Note: Your proxy server must support Proxy-Authenticate for these options to function.
Proxy server password	Proxy server password if required to access the URL. Note: Your proxy server must support Proxy-Authentication for these options to function.
Login Settings	
NTLM domain	If the Web service requires NTLM / Challenge Response authentication, a domain name is required as part of your credentials (as well as a user name and password below).
Authorization user name	Authorization user name if the web service requires a user name and password for access (Basic, Digest, or NTLM authentication). Alternately, you can leave this entry blank and enter the user name in the Default Authentication Credentials section on the General Preferences page. You use this alternate method to define common authentication credentials for use with multiple Web Service monitor.
Authorization password	Authorization password if the web service requires a user name and password for access (Basic, Digest, or NTLM authentication). Alternately, you can leave this entry blank and enter the password in the Default Authentication Credentials section on the General Preferences page. You use this alternate method to define common authentication credentials for use with multiple Web Service monitor.

90

WebLogic Application Server Monitor

This chapter includes:

Concepts

- ▶ WebLogic Application Server Monitor Overview on page 758

Tasks

- ▶ How to Configure the WebLogic Application Server Monitoring Environment on page 760

Reference

- ▶ WebLogic Application Server Monitor Settings on page 764

Concepts

WebLogic Application Server Monitor Overview

Use the WebLogic Application Server monitor to monitor performance statistics data from WebLogic 6.x, 7.x, and 8.x servers. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. Create a separate WebLogic Application Server monitor instance for each WebLogic server in your environment.

Note: WebLogic Application Server Monitors cannot be used to monitor WebLogic 9.x, 10.0-10.3, or 11g servers. To monitor these servers, use a JMX monitor as described in "JMX Monitor Overview" on page 218. For further details, see "Creating a JMX Monitor for a WebLogic 9.x, 10.0-10.3, or 11g Server" on page 220.

SiteScope can discover the topology of WebLogic application servers using the JMX monitor. You cannot use the WebLogic Application Server monitor to discover topology data for reporting to BSM. For details, see "WebLogic Application Server Topology Settings" on page 221.

If you are using a WebLogic 9.x, 10.0-10.3, or 11g server, the rest of this chapter is not relevant.

The BEA WebLogic Application Server monitor uses the Java JMX interface to access Runtime MBeans on the WebLogic server. An MBean is a container that holds the performance data. You must set certain permissions on the WebLogic server for SiteScope to be able to monitor MBeans.

Note: SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of a WebLogic application server. For details, see "WebLogic Solution Template" in *Using SiteScope*.

For task details, see "How to Configure the WebLogic Application Server Monitoring Environment" on page 760.

For user interface details, see "WebLogic Application Server Monitor Settings" on page 764.

Tasks

How to Configure the WebLogic Application Server Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Set permissions for monitoring WebLogic 6.x servers" on page 761
- ▶ "Set permissions for monitoring WebLogic 7.x or 8.x servers" on page 761
- ▶ "Configure SiteScope to use T3 over SSL against a WebLogic 7.x or 8.x server - optional" on page 761
- ▶ "Configure the monitor properties" on page 763

Set permissions for monitoring WebLogic 6.x servers

To set permissions for monitoring WebLogic 6.x servers, create a new ACL on the WebLogic server with the name **weblogic.admin.mbean**. Set the permission type to **access** and set the Users and Groups to be the user or group account that SiteScope uses to monitor the WebLogic server.

Set permissions for monitoring WebLogic 7.x or 8.x servers

WebLogic 7.x and later servers use Security Policies instead of ACL's to control access to the server resources. To monitor WebLogic 7.x and later servers with SiteScope, the WebLogic administrator needs to add the user account that is running SiteScope to a WebLogic user group. The WebLogic group containing the SiteScope user must then be associated with a role statement that grants the necessary security role for accessing the desired WebLogic resources. The same security role must also be associated with the applicable policy statement that grants SiteScope access to the WebLogic resources. Refer to the WebLogic server documentation for more information.

Configure SiteScope to use T3 over SSL against a WebLogic 7.x or 8.x server - optional

Perform the following steps to configure a WebLogic monitor with the **Secure Server** option to monitor a WebLogic 7.x or 8.x server.

- 1** Obtain and install a JRE version 1.4.1 on the machine where SiteScope is running. Make a note of the full path to this JRE installation, as you must enter this information in the WebLogic monitor setup.
- 2** Import the WebLogic Server's certificate, signed by a certificate authority, into the `<jre_path>\lib\security\cacerts` file for the JRE 1.4.1 installation on the SiteScope machine. If it is not, then you have to import the signer's certificate into the cacerts file using the keytool program. For instance, using the default WebLogic cert setup, you must import the **CertGenCA.der** certificate using the following command (this must all be entered on a single command line):

```
C:\j2sdk1.4.1\jre\bin>keytool.exe -import -alias weblogic81CA -keystore
..\lib\security\cacerts -trustcacerts -file
C:\BEA\weblogic81\server\lib\CertGenCA.der
```

- 3 Obtain a valid BEA license file and put it somewhere on the SiteScope machine. This is the file named **license.bea** in the BEA installation directory.
- 4 Obtain the **weblogic.jar** file from the WebLogic server or from a WebLogic server of the same version that you are monitoring. For WebLogic version 8.x, you must also obtain a copy of the **wlcipher.jar** file. Copy this or these files to the SiteScope server.

Note: Do not install the **weblogic.jar** file in the SiteScope directory tree. In other words, do not install it in the **<SiteScope root directory>\java\lib\ext** directory as this causes the Weblogic monitor to fail. You must install it in a separate directory on the server where SiteScope is running.

- 5 Open SiteScope and add a WebLogic Application Server monitor.
- 6 Configure the WebLogic Application Server Monitor Settings as follows:
 - ▶ In the Authentication Settings area, select the **Secure server** option.
 - ▶ In the Advanced Settings area:
 - ▶ Enter the full path to the **wlcipher.jar** and **weblogic.jar** files in the **WLCipher jar file** and the **WebLogic jar file** boxes, respectively.
 - ▶ Enter the full path to the BEA license file in the **WebLogic license file** box.
 - ▶ Enter the full path to the **javaw.exe** (for Windows platforms) or the **java** (Solaris/Linux) executable for the JRE version 1.4.1 installation in the **JVM** box.
- 7 Click the **Get Counters** button to browse the counters on the WebLogic server over SSL.

Configure the monitor properties

Complete the WebLogic Application Server monitor configuration. For user interface details, see "WebLogic Application Server Monitor Settings" on page 764.

Reference

WebLogic Application Server Monitor Settings

The WebLogic Application Server monitor enables you to monitor the statistics of a WebLogic version 6 through 8 servers.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ WebLogic Application Server Monitors cannot be used to monitor WebLogic 9.x, 10.0-10.3, or 11g servers. To monitor these servers, use a JMX monitor. For further details, see "Creating a JMX Monitor for a WebLogic 9.x, 10.0-10.3, or 11g Server" on page 220. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the WebLogic Application Server Monitoring Environment" on page 760 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "WebLogic Application Server Monitor Overview" on page 758

WebLogic Application Server Monitor Settings

User interface elements are described below:

UI Element	Description
Authentication Settings	
Target	Name of the server where WebLogic is running.
Server	Address of the server where WebLogic is running.

UI Element	Description
Port number	Port number that the WebLogic server is responding on. Default value: 7001
User name	User name required to log in to the WebLogic server.
Password	Password required to log in to the WebLogic server.
Secure server	Select if using a secure server connection option. If you select this option, you must enter the applicable port number used by the WebLogic server for secure connections. Default value: 7002
Advanced Settings	
WLCipher jar file	For some versions of WebLogic Server, you must install a copy of the wlcipher.jar file from the WebLogic server onto the SiteScope server to enable monitoring over SSL. Enter the absolute path to the file on the SiteScope machine. Example: C:\bea\weblogic81\server\lib\wlcipher.jar Note: This option is for use only with the Secure Server (SSL) option.
WebLogic license file	Enables the Secure Server (SSL) option. Enter the absolute path to the BEA license file that was copied to the SiteScope machine. Example: C:\bea\license.bea
JVM	Full path to the Java Virtual Machine (JVM) in which the WebLogic monitoring process should be run. For monitors that do not use the Secure Server option, this is not required. For monitors which do use the Secure Server option, a separate JVM must be installed on the server where SiteScope is running. This other JVM must be version 1.4.1 or earlier. This is not the same JVM version used by SiteScope. Example: C:\j2sdk1.4.1\jre\bin\javaw.exe

UI Element	Description
WebLogic jar file	<p>Absolute path to the weblogic.jar file on the SiteScope machine. This file must be installed on the SiteScope server and can be downloaded from the WebLogic server.</p> <p>Example: c:\bea\weblogic7\ebcc\lib\ext\weblogic.jar</p> <p>This file is not strictly required for monitoring some earlier versions of WebLogic 6. In this case, leaving this box blank normally causes any necessary classes to be downloaded directly from the WebLogic server. Note that this is not as efficient as loading the classes from the *.jar file on the server where SiteScope is running.</p>
Classpath	<p>Additional classpath variables that are to be used by the WebLogic JVM running on the SiteScope machine. File path elements should be separated by a colon (":") on UNIX systems, and by a semicolon (";") on Microsoft Windows systems.</p>
Timeout (seconds)	<p>Amount of time, in seconds, to wait for a response from the server before timing-out. Once this time period passes, the monitor logs an error and reports an error status.</p> <p>Default value: 180 (using a value other than the default timeout value may adversely affect performance)</p>
Counter Settings	
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

91

WebSphere Application Server Monitor

This chapter includes:

Concepts

- ▶ WebSphere Application Server Monitor Overview on page 768

Tasks

- ▶ How to Configure the WebSphere 3.5x and 4.x Application Server Monitoring Environment on page 770
- ▶ How to Configure the WebSphere 5.x Application Server Monitoring Environment on page 772
- ▶ How to Configure the WebSphere 6.0x Application Server Monitoring Environment on page 774
- ▶ How to Configure the WebSphere 6.1x Application Server Monitoring Environment on page 780
- ▶ How to Configure the WebSphere 7.0x Application Server Monitoring Environment on page 787

Reference

- ▶ WebSphere Application Server Monitor Settings on page 794

Concepts

WebSphere Application Server Monitor Overview

Use the WebSphere Application Server monitor to monitor the server performance statistics from IBM WebSphere 3.5.x, 4.x, 5.x, 6.0x, 6.1x, and 7.0x servers using the performance monitoring interfaces provided with WebSphere. You can monitor multiple parameters or counters with a single monitor instance. This enables you to watch server loading for performance, availability, and capacity planning. The error and warning thresholds for the monitor can be set on one or more WebSphere Application Server performance statistics.

Create a separate WebSphere Application Server monitor instance for each WebSphere 3.5.x, 4.x, 5.x, and 7.0x Application Server in your environment. For WebSphere 6.0 and 6.1 Application Servers, you can monitor different instances of WebSphere 6.0 and 6.1 Application Servers simultaneously within one SiteScope process. Previously, you could monitor only one WebSphere 6.0 or 6.1 version at one time.

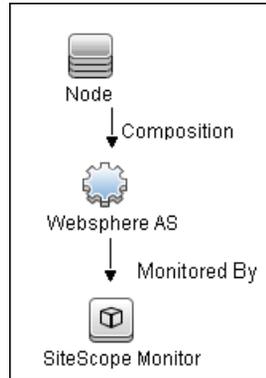
Note: SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various aspects of a WebSphere Application server. For details, see "WebSphere Solution Template" in *Using SiteScope*.

Before you can use the WebSphere Application Server monitor, there are a number of configuration requirements involving the server environment.

For user interface details, see "WebSphere Application Server Monitor Settings" on page 794.

WebSphere Application Server Topology Settings

The WebSphere Application Server monitor can identify the topology of the WebSphere Application Servers being monitored. If **Report topology** is selected in **HP Integration Settings** (the default setting), the monitor creates the following topology in BSM's ODB.



For information about retrieving topologies and reporting them to BSM, see "Reporting Discovered Topologies to BSM" in *Using SiteScope*.

Tasks

How to Configure the WebSphere 3.5x and 4.x Application Server Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Configure the WebSphere 3.5.x and 4.x server environment" on page 770
- "Configure the monitor properties" on page 771

1 Configure the WebSphere 3.5.x and 4.x server environment

Perform the following to prepare the WebSphere environment for SiteScope monitoring of WebSphere versions 3.5.x and 4.x:

- a** Install the IBM WebSphere Administrator's Console on the SiteScope server if you are monitoring WebSphere versions 3.5.x or 4.x.

If installing the Administrator's Console:

- Select **Custom Installation** option during installation.
 - Select **Administrator's Console** and **IBM JDK 1.2.2.** in the **Choose Application Server Components** dialog box.
 - Specify the machine you want to monitor during the installation.
- b** Enable the WebSphere servers to be monitored.
 - For WebSphere 3.5.x, enable EPM Counters on the WebSphere server. You can also use the WebSphere Administrator's Console to set the EPM Specification to `epm=high:epm.beanMethodData=none`.
 - For WebSphere 4.x, enable PMI Counters or enable the Performance Monitoring Service on the WebSphere server. You can enable the counters for the application you want to monitor by using the WebSphere Administrator's Console.

- For WebSphere 4.x, select **Resources** and then select the **Performance** option. In the dialog box that opens, expand the **Performance Modules** tree. To manage different levels of performance data, select the performance modules, choose a performance level, and then click the **Set** button.
- If security has been enabled on the WebSphere server, the server security ring must be copied to the admin client.

2 Configure the monitor properties

Complete the WebSphere Application Server monitor configuration. For user interface details, see "WebSphere Application Server Monitor Settings" on page 794.

How to Configure the WebSphere 5.x Application Server Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Configure the WebSphere 5.x server environment" on page 772
- "Configure the monitor properties" on page 773

1 Configure the WebSphere 5.x server environment

To monitor WebSphere version 5.x, the necessary WebSphere libraries must be available on the SiteScope server. Generally, this means that a WebSphere 5.x client install must exist on the SiteScope server.

- a** Install the **Administration (or admin console) Performance Analysis** option from the custom options menu in the WebSphere 5.x install.

Caution: Certain trial versions of IBM WebSphere do not include the Performance Analysis option required by the SiteScope WebSphere Application Server monitor. The SiteScope monitor can only work when a complete WebSphere production installation is available.

- b** Copy all of the files from the **lib** folder of a WebSphere 5.x Application Server installation to the **lib** folder on the client install from step 1.
- c** The WebSphere 5.x server and client settings have to match. This means that the SiteScope WebSphere Application Server monitor is not able to monitor a WebSphere 5.1 application server if the client libraries are from a WebSphere 5.0 and vice versa. Client libraries should be installed in separate folders with clearly distinct directory names (for example, Websphere50 and Websphere51) to avoid confusion and SiteScope setup errors.

Note: For WebSphere 5.x SiteScope uses the WebSphere JMX interface so the port number used to communicate with the application server is the SOAP port number. The default SOAP port number is 8880.

- d** Enable PMI Counters or the Performance Monitoring Service on the WebSphere server. You can enable the counters for the application you want to monitor by using the WebSphere Administrator's Console.
 - ▶ Click **Servers > Application Servers**.
 - ▶ Select the server to be monitored from the Application Server list.
 - ▶ From the Configuration tab, click the Performance Monitoring Service in the Additional Properties list.
 - ▶ Select the **Start Up** check box and select the **Initial specification** level as Standard or Custom.
 - ▶ Click **Apply**.
- e** If security has been enabled on the WebSphere server, the server security ring must be copied to the admin client.

Note: If security has been enabled on the WebSphere 5.x server, you must copy the security keyring from the WebSphere server to SiteScope. A keyring is a certification used by the server to identify the client.

2 Configure the monitor properties

Complete the WebSphere Application Server monitor configuration. For user interface details, see "WebSphere Application Server Monitor Settings" on page 794.

How to Configure the WebSphere 6.0x Application Server Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Configure the WebSphere 6.0x server environment" on page 774
- "Configure the monitor properties" on page 774
- "Monitor different instances simultaneously" on page 775

1 Configure the WebSphere 6.0x server environment

Configure the WebSphere version 6.0x monitoring environment according to whether you are using internal or external Java.

- For details on configuring the WebSphere 6.0x monitoring environment using internal Java, see "Configure the WebSphere 6.0x Server Environment Using Internal Java" on page 776.
- For details on configuring the WebSphere 6.0x monitoring environment using external Java, see "Configure the WebSphere 6.0x Server Environment Using External Java" on page 777.

2 Configure the monitor properties

Create the WebSphere Application Server monitor, and enter the following information in the Monitor Settings panel:

- **WebSphere directory:** %WAS_ENV%
- **Trust store:** %WAS_ENV%\DummyClientTrustFile.jks
- **Trust store password:** WebAS
- **Key store:** %WAS_ENV%\DummyClientKeyFile.jks
- **Key store password:** WebAS

Note:

- ▶ If you configured the WebSphere environment to use internal JVMs, make sure that the **Launch an external JVM** check box is not selected. By default, the WebSphere monitor uses internal JVMs for new monitors. When upgrading from previous versions of SiteScope, this check box is selected automatically during the upgrade for existing monitors.
 - ▶ You can use certificates added using Certificate Management only if **Launch an external JVM** is not selected.
 - ▶ When using SSL, you also need to define the **User name** and **Password** to access the WebSphere Application Server.
-

For user interface details, see "WebSphere Application Server Monitor Settings" on page 794.

3 Monitor different instances simultaneously

After configuring settings for the WebSphere Application Server monitor version 6.0x, select **6.1x** from the **Version** drop-down list. The monitor runs simultaneously with the monitor that you just created for WebSphere version 6.0x.

Note: To monitor a WebSphere version 6.1x simultaneously, you must have configured the WebSphere version 6.1x monitoring environment. For details, see "How to Configure the WebSphere 6.1x Application Server Monitoring Environment" on page 780.

Configure the WebSphere 6.0x Server Environment Using Internal Java

To enable monitoring WebSphere version 6.0x, you must configure the server environment.

To configure the WebSphere 6.0x server environment using internal Java:

- 1** On the SiteScope machine, create a directory and give it a name, for example, C:\WAS_6. This directory is referred to as %WAS_ENV%, and the SiteScope root folder is referred to as %SIS_HOME% (you should replace all appearances of %WAS_ENV% and %SIS_HOME% with the actual value).
- 2** Copy the following contents from WebSphere Application Server to the SiteScope machine:

From WebSphere Application Server:	To SiteScope machine:
Copy the entire folder: <WAS_SERVER>\ WebSphere\AppServer\lib	%WAS_ENV%\lib
<WAS_SERVER>\WebSphere\AppServer\ java\jre\lib\ibmcertpathprovider.jar	%WAS_ENV%\ ibmcertpathprovider.jar
<WAS_SERVER>\WebSphere\AppServer\ java\jre\lib\ext\ibmjceprovider.jar	%WAS_ENV%\ibmjceprovide r.jar
<WAS_SERVER>\WebSphere\AppServer\ profiles\<ServerName>\etc\ DummyClientTrustFile.jks	%WAS_ENV%\
<WAS_SERVER>\WebSphere\AppServer\ profiles\<ServerName>\etc\ DummyClientKeyFile.jks	%WAS_ENV%\

- 3 (SSL only) Import the SSL server certificates. You can use Certificate Management to import the certificates, or you can import the certificates manually.
 - For details on importing certificates using Certificate Management, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope*.
 - For details on importing certificates manually, see "Import Server Certificates Manually for WebSphere 6.0x" on page 779.
- 4 After importing the server certificates, restart the SiteScope server.
- 5 Continue with step 2 on page 774.

Configure the WebSphere 6.0x Server Environment Using External Java

To enable monitoring WebSphere version 6.0x, you must configure the server environment.

To configure the WebSphere 6.0x server environment using external Java:

- 1 You must have the following directories copied onto the SiteScope machine:
 - AppServer/Java
 - AppServer/lib

These directories must be copied into any directory on the SiteScope machine but must be stored exactly as they appear under the **AppServer** directory.

You can use one of the following options:

- Create a directory on the machine running SiteScope called **AppServer** and copy the two directories, **Java** and **lib**, directly into the newly created **AppServer** directory. We recommend this option because it occupies the least amount of disk space on your SiteScope machine.
- Copy the entire WebSphere AppServer directory from the machine being monitored onto the machine running SiteScope.

- ▶ Copy all the WebSphere application server files onto the machine running SiteScope. We do not recommend this option because of the size of the application server files.

Once you have the **AppServer/Java** and **Appserver/lib** files on the SiteScope machine, you can prepare the WebSphere environment for monitoring WebSphere 6.x.

- 2** On the WebSphere server, select **Servers > Application Servers > <server name> > Performance Monitoring Infrastructure (PMI)** and make sure that the counters are set to **Extended**.
- 3** From the SiteScope machine, make sure that you can access the SOAP from a browser. For example, open a browser and enter the following sample address: `http://jberantlab:8880`. If an XML page is returned, the monitor is ready to be added to SiteScope and configured.

Note: For WebSphere 6.x and later, SiteScope uses the WebSphere JMX interface so the port number used to communicate with the application server is the SOAP port number. The default SOAP port number is 8880.

- 4** Continue with step 2 on page 774.

Import Server Certificates Manually for WebSphere 6.0x

Instead of using Certificate Management, you can import certificates manually using the `keytool` method, if preferred. Certificates imported this way can still be managed using Certificate Management. For details on Certificate Management, see "Certificate Management" in *Using SiteScope*.

To import server certificates manually:

- 1 Using Internet Explorer 6 or 7, export the SSL certificate to `%WAS_ENV%\was_certificate.cert` (in base-64 format).
 - a Download the server certificate by double-clicking the key lock icon in Internet Explorer when there is an SSL connection. The icon is located in the status bar for Internet Explorer 6, and to the right of the URL field for Internet Explorer 7 (the field is marked red when self-signed certified is used by the server).
 - b In the Certificate dialog box, select the **Details** tab, and click **Copy to File**.
 - c In the Certificate Export Wizard, export the server certificate as **Base-64 encoded X.509 (.CER)** certificate.
- 2 Import the certificate to the `cacerts` file in the SiteScope java folder as follows:

```
%SIS_HOME%\java\bin\keytool -import -v -file %WAS_ENV%\was_certificate.cert -
alias was_cert -keystore %SIS_HOME%\java\lib\security\cacerts
```

When prompted for the password, type `changeit` (default password for JRE).

When asked if you trust the imported certificate, type `yes`.

- 3 Continue with step 4 on page 777.

How to Configure the WebSphere 6.1x Application Server Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Configure the WebSphere 6.1x Server Environment Using Internal Java" on page 782
- "Configure the monitor properties" on page 780
- "Monitor different instances simultaneously" on page 781

1 Configure the WebSphere 6.1x server environment

Configure the WebSphere version 6.1x monitoring environment according to whether you are using internal or external Java.

- For details on configuring the WebSphere 6.1x monitoring environment using internal Java, see "Configure the WebSphere 6.1x Server Environment Using Internal Java" on page 782.
- For details on configuring the WebSphere 6.1x monitoring environment using external Java, see "Configure the WebSphere 6.1x Server Environment Using External Java" on page 784.

2 Configure the monitor properties

Create the WebSphere Application Server monitor, and enter the following information in the Monitor Settings panel:

- **WebSphere directory:** %WAS_ENV%
- **Trust store:** %WAS_ENV%\DummyClientTrustFile.jks
- **Trust store password:** WebAS
- **Key store:** %WAS_ENV%\DummyClientKeyFile.jks
- **Key store password:** WebAS

Note:

- ▶ If you configured the WebSphere environment to use internal JVMs, make sure that the **Launch an external JVM** check box is not selected. By default, the WebSphere monitor uses internal JVMs for new monitors. When upgrading from previous versions of SiteScope, this check box is selected automatically during the upgrade for existing monitors.
 - ▶ You can use certificates added using Certificate Management only if **Launch an external JVM** is not selected.
 - ▶ When using SSL, you also need to define the **User name** and **Password** to access the WebSphere Application Server.
-

For user interface details, see "WebSphere Application Server Monitor Settings" on page 794.

3 Monitor different instances simultaneously

To monitor a WebSphere version 6.0x simultaneously, choose **6.0x** from the **Version** drop-down list. The monitor runs simultaneously with the monitor that you just created for WebSphere version 6.1x.

Configure the WebSphere 6.1x Server Environment Using Internal Java

To enable monitoring WebSphere version 6.1x, you must configure the server environment.

To enable monitoring WebSphere version 6.1x using internal Java:

- 1 On the SiteScope machine, create a directory and give it a name, for example, C:\WAS_6_1. This directory is referred to as %WAS_ENV%, and the SiteScope root folder is referred to as %SIS_HOME% (you should replace all appearances of %WAS_ENV% and %SIS_HOME% with the actual value).
- 2 Copy the following contents from WebSphere Application Server to the SiteScope machine:

From WebSphere Application Server:	To SiteScope machine:
<WAS_SERVER>\WebSphere\AppServer\plugins\com.ibm.ws.security.crypto_6.1.0.jar	%SIS_HOME%\java\lib\ext\com.ibm.ws.security.crypto_6.1.0.jar
<WAS_SERVER>\WebSphere\AppServer\runtimes\com.ibm.ws.admin.client_6.1.0.jar	%WAS_ENV%\com.ibm.ws.admin.client_6.1.0.jar
<WAS_SERVER>\plugins\com.ibm.ws.runtime_6.1.0.jar	%WAS_ENV%\com.ibm.ws.runtime_6.1.0.jar
<WAS_SERVER>\WebSphere\AppServer\profiles\<ServerName>\etc\DummyClientTrustFile.jks	%WAS_ENV%
<WAS_SERVER>\WebSphere\AppServer\profiles\<ServerName>\etc\DummyClientKeyFile.jks	%WAS_ENV%

- 3** (SSL only) Import the SSL server certificates. You can use Certificate Management to import the certificates, or you can import the certificates manually.
 - ▶ For details on importing certificates using Certificate Management, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope*.
 - ▶ For details on importing certificates manually, see "Import Server Certificates Manually for WebSphere 6.1x" on page 786.
- 4** After importing the server certificates, modify the `%SIS_HOME%\java\lib\security\java.security` file so that it reads as follows:

```
# Default JSSE socket factories
ssl.SocketFactory.provider=com.sun.net.ssl.internal.ssl.SSLSocketFactoryImpl
ssl.ServerSocketFactory.provider=com.sun.net.ssl.internal.ssl.SSLServerSocket
FactoryImpl
```

- 5** Restart the SiteScope server.
- 6** Continue with step 2 on page 780.

Configure the WebSphere 6.1x Server Environment Using External Java

To enable monitoring WebSphere version 6.1x, you must configure the server environment.

To configure the WebSphere 6.1x server environment using external Java:

- 1** On the SiteScope machine, create a directory and give it a name, for example, C:\WAS_6_1. This directory is referred to as %WAS_ENV% (you should replace all appearances of %WAS_ENV% with the actual value).
- 2** Copy the following contents from WebSphere Application Server to the SiteScope machine:

From WebSphere Application Server:	To SiteScope machine:
<WAS_SERVER>\java***.*	%WAS_ENV%\java***.*
<WAS_SERVER>\runtimes\ com.ibm.ws.admin.client_6.1.0.jar	%WAS_ENV%\com.ibm.ws.admin. client_6.1.0.jar
<WAS_SERVER>\plugins\ com.ibm.ws.runtime_6.1.0.jar	%WAS_ENV%\com.ibm.ws. runtime_6.1.0.jar
<WAS_SERVER>\WebSphere\ AppServer\profiles\<<ServerName>\ etc\DummyClientTrustFile.jks	%WAS_ENV%\
<WAS_SERVER>\WebSphere\ AppServer\profiles\<<ServerName>\ etc\DummyClientKeyFile.jks	%WAS_ENV%\

- 3** (SSL only) Using Internet Explorer 6 or 7, export the SSL certificate to %WAS_ENV%\was_certificate.cert (in base-64 format).
 - a** Download the server certificate by double-clicking the key lock icon in Internet Explorer when there is an SSL connection. The icon is located in the status bar for Internet Explorer 6, and to the right of the URL field for Internet Explorer 7 (the field is marked red when self-signed certified is used by the server).
 - b** In the Certificate dialog box, select the **Details** tab, and click **Copy to File**.

- c In the Certificate Export Wizard, export the server certificate as **Base-64 encoded X.509 (.CER)** certificate.
- 4 (SSL only) Import the certificate to the **cacerts** file in the above java folder as follows:

```
%WAS_ENV%\java\bin\keytool -import -v -file %WAS_ENV%\was_certificate.
cert -alias was_cert -keystore %WAS_ENV%\java\jre\lib\security\cacerts
```

When prompted for the password, type **changeit** (default password for JRE).

When asked if you trust the imported certificate, type **yes**.

- 5 Modify the **%WAS_ENV%\java\jre\lib\security\java.security** file so that it reads as follows:

```
== FROM ==
# Default JSSE socket factories
#ssl.SocketFactory.provider=com.ibm.jsse2.SSLSocketFactoryImpl
#ssl.ServerSocketFactory.provider=com.ibm.jsse2.SSLServerSocketFactoryImpl
# WebSphere socket factories (in cryptosf.jar)
ssl.SocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLSocketFactory
ssl.ServerSocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLServerSocketFactory

== TO ==
# Default JSSE socket factories
ssl.SocketFactory.provider=com.ibm.jsse2.SSLSocketFactoryImpl
ssl.ServerSocketFactory.provider=com.ibm.jsse2.SSLServerSocketFactoryImpl
# WebSphere socket factories (in cryptosf.jar)
#ssl.SocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLSocketFactory
#ssl.ServerSocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLServerSocketFactory
```

- 6 Restart the SiteScope machine.
- 7 Continue with step 2 on page 780.

Import Server Certificates Manually for WebSphere

6.1x

Instead of using Certificate Management, you can import certificates manually using the keytool method, if preferred. Certificates imported this way can still be managed using Certificate Management. For details on Certificate Management, see "Certificate Management" in *Using SiteScope*.

To import server certificates manually:

- 1** Using Internet Explorer 6 or 7, export the SSL certificate to `%WAS_ENV%\was_certificate.cert` (in base-64 format).
 - a** Download the server certificate by double-clicking the key lock icon in Internet Explorer when there is an SSL connection. The icon is located in the status bar for Internet Explorer 6, and to the right of the URL field for Internet Explorer 7 (the field is marked red when self-signed certified is used by the server).
 - b** In the Certificate dialog box, select the **Details** tab, and click **Copy to File**.
 - c** In the Certificate Export Wizard, export the server certificate as **Base-64 encoded X.509 (.CER)** certificate.
- 2** Import the certificate to the `cacerts` file in the SiteScope java folder as follows:

```
%SIS_HOME%\java\bin\keytool -import -v -file %WAS_ENV%\was_certificate.cert -
alias was_cert -keystore %SIS_HOME%\java\lib\security\cacerts
```

When prompted for the password, type `changeit` (default password for JRE).

When asked if you trust the imported certificate, type `yes`.

- 3** Continue with step 4 on page 783.

How to Configure the WebSphere 7.0x Application Server Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- "Configure the WebSphere 7.0x server environment" on page 787
- "Configure the monitor properties" on page 787

1 Configure the WebSphere 7.0x server environment

Configure the WebSphere version 7.0x monitoring environment according to whether you are using internal or external Java.

- For details on configuring the WebSphere 7.0x monitoring environment using internal Java, see "Configure the WebSphere 7.0x Server Environment Using Internal Java" on page 789.
- For details on configuring the WebSphere 7.0x monitoring environment using external Java, see "Configure the WebSphere 7.0x Server Environment Using External Java" on page 791.

2 Configure the monitor properties

Create the WebSphere Application Server monitor, and enter the following information in the Monitor Settings panel:

- **WebSphere directory:** %WAS_ENV%
- **Trust store:** %WAS_ENV%\DummyClientTrustFile.jks
- **Trust store password:** WebAS
- **Key store:** %WAS_ENV%\DummyClientKeyFile.jks
- **Key store password:** WebAS

Note:

- ▶ If you configured the WebSphere environment to use internal JVMs, make sure that the **Launch an external JVM** check box is not selected. By default, the WebSphere monitor uses internal JVMs for new monitors. When upgrading from previous versions of SiteScope, this check box is selected automatically during the upgrade for existing monitors.
 - ▶ You can use certificates added using Certificate Management only if **Launch an external JVM** is not selected.
 - ▶ When using SSL, you also need to define the **User name** and **Password** to access the WebSphere Application Server.
-

For user interface details, see "WebSphere Application Server Monitor Settings" on page 794.

Configure the WebSphere 7.0x Server Environment Using Internal Java

To enable monitoring WebSphere version 7.0x, you must configure the server environment.

To enable monitoring WebSphere version 7.0x using internal Java:

- 1 On the SiteScope machine, create a directory and give it a name, for example, C:\WAS_7. This directory is referred to as %WAS_ENV%, and the SiteScope root folder is referred to as %SIS_HOME% (you should replace all appearances of %WAS_ENV% and %SIS_HOME% with the actual value).
- 2 Copy the following contents from WebSphere Application Server to the SiteScope machine:

From WebSphere Application Server:	To SiteScope machine:
<WAS_SERVER>\ WebSphere\ AppServer \plugins\ com.ibm.ws.security.crypto.jar	%SIS_HOME% \java\lib\ext\ com.ibm.ws.security.crypto.jar
<WAS_SERVER>\WebSphere\ AppServer\runtimes\ com.ibm.ws.admin.client.jar	%WAS_ENV%\ com.ibm.ws.admin.client.jar
<WAS_SERVER>\WebSphere\ AppServer\plugins\ com.ibm.ws.runtime.jar	%WAS_ENV%\ com.ibm.ws.runtime.jar
<WAS_SERVER>\WebSphere\ AppServer\profiles\<<ServerName>\etc \DummyClientTrustFile.jks	%WAS_ENV%\
<WAS_SERVER>\WebSphere\ AppServer\profiles\<<ServerName>\etc \DummyClientKeyFile.jks	%WAS_ENV%\

- 3** (SSL only) Import the SSL server certificates. You can use Certificate Management to import the certificates, or you can import the certificates manually.
 - ▶ For details on importing certificates using Certificate Management, see "How to Import Server Certificates Using Certificate Management" in *Using SiteScope*.
 - ▶ For details on importing certificates manually, see "Import Server Certificates Manually for WebSphere 7.0x" on page 793.
- 4** After importing the server certificates, modify the `%SIS_HOME%\java\lib\security\java.security` file so that it reads as follows:

```
# Default JSSE socket factories
ssl.SocketFactory.provider=com.sun.net.ssl.internal.ssl.SSLSocketFactoryImpl
ssl.ServerSocketFactory.provider=com.sun.net.ssl.internal.ssl.SSLServerSocket
FactoryImpl
```

- 5** Restart the SiteScope server.
- 6** Continue with step 2 on page 787.

Configure the WebSphere 7.0x Server Environment Using External Java

To enable monitoring WebSphere version 7.0x, you must configure the server environment.

To configure the WebSphere 7.0x server environment using external Java:

- 1** On the SiteScope machine, create a directory and give it a name, for example, C:\WAS_7. This directory is referred to as %WAS_ENV% (you should replace all appearances of %WAS_ENV% with the actual value).
- 2** Copy the following contents from WebSphere Application Server to the SiteScope machine:

From WebSphere Application Server:	To SiteScope machine:
<WAS_SERVER>\java***.*	%WAS_ENV%\java***.*
<WAS_SERVER>\runtimes\ com.ibm.ws.admin.client_7.0.0.jar	%WAS_ENV%\com.ibm.ws.admin. client_7.0.0.jar
<WAS_SERVER>\plugins\ com.ibm.ws.runtime.jar	%WAS_ENV%\com.ibm.ws.runtime .jar
<WAS_SERVER>\WebSphere\ AppServer\profiles\<<ServerName>\ etc\DummyClientTrustFile.jks	%WAS_ENV%\
<WAS_SERVER>\WebSphere\ AppServer\profiles\<<ServerName>\ etc\DummyClientKeyFile.jks	%WAS_ENV%\

- 3** (SSL only) Using Internet Explorer 6 or 7, export the SSL certificate to %WAS_ENV%\was_certificate.cert (in base-64 format).
 - a** Download the server certificate by double-clicking the key lock icon in Internet Explorer when there is an SSL connection. The icon is located in the status bar for Internet Explorer 6, and to the right of the URL field for Internet Explorer 7 (the field is marked red when self-signed certified is used by the server).
 - b** In the Certificate dialog box, select the **Details** tab, and click **Copy to File**.

- c In the Certificate Export Wizard, export the server certificate as **Base-64 encoded X.509 (.CER)** certificate.
- 4 (SSL only) Import the certificate to the **cacerts** file in the above java folder as follows:

```
%WAS_ENV%\java\bin\keytool -import -v -file %WAS_ENV%\was_certificate.
cert -alias was_cert -keystore %WAS_ENV%\java\jre\lib\security\cacerts
```

When prompted for the password, type **changeit** (default password for JRE).

When asked if you trust the imported certificate, type **yes**.

- 5 Modify the **%WAS_ENV%\java\jre\lib\security\java.security** file so that it reads as follows:

```
== FROM==
# Default JSSE socket factories
#ssl.SocketFactory.provider=com.ibm.jsse2.SSLSocketFactoryImpl
#ssl.ServerSocketFactory.provider=com.ibm.jsse2.SSLServerSocketFactoryImpl
# WebSphere socket factories (in cryptosf.jar)
ssl.SocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLSocketFactory
ssl.ServerSocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLServer
SocketFactory

==TO==
# Default JSSE socket factories
ssl.SocketFactory.provider=com.ibm.jsse2.SSLSocketFactoryImpl
ssl.ServerSocketFactory.provider=com.ibm.jsse2.SSLServerSocketFactoryImpl
# WebSphere socket factories (in cryptosf.jar)
#ssl.SocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLSocketFactory
#ssl.ServerSocketFactory.provider=com.ibm.websphere.ssl.protocol.SSLServer
SocketFactory
```

- 6 Restart the SiteScope machine.
- 7 Continue with step 2 on page 787.

Import Server Certificates Manually for WebSphere 7.0x

Instead of using Certificate Management, you can import certificates manually using the `keytool` method, if preferred. Certificates imported this way can still be managed using Certificate Management. For details on Certificate Management, see "Certificate Management" in *Using SiteScope*.

To import server certificates manually:

- 1** Using Internet Explorer 6 or 7, export the SSL certificate to `%WAS_ENV%\was_certificate.cert` (in base-64 format).
 - a** Download the server certificate by double-clicking the key lock icon in Internet Explorer when there is an SSL connection. The icon is located in the status bar for Internet Explorer 6, and to the right of the URL field for Internet Explorer 7 (the field is marked red when self-signed certified is used by the server).
 - b** In the Certificate dialog box, select the **Details** tab, and click **Copy to File**.
 - c** In the Certificate Export Wizard, export the server certificate as **Base-64 encoded X.509 (.CER)** certificate.
- 2** Import the certificate to the `cacerts` file in the SiteScope java folder as follows:

```
%SIS_HOME%\java\bin\keytool -import -v -file %WAS_ENV%\was_certificate.cert -
alias was_cert -keystore %SIS_HOME%\java\lib\security\cacerts
```

When prompted for the password, type `changeit` (default password for JRE).

When asked if you trust the imported certificate, type `yes`.

- 3** Continue with step 4 on page 790.

Reference

WebSphere Application Server Monitor Settings

The WebSphere Application Server monitor enables you to monitor the availability and server statistics of an IBM WebSphere Application Server 3.5.x, 4.x, 5.x, 6.0x, 6.1x, and 7.0x.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the WebSphere 3.5x and 4.x Application Server Monitoring Environment" on page 770 ▶ "How to Configure the WebSphere 5.x Application Server Monitoring Environment" on page 772 ▶ "How to Configure the WebSphere 6.0x Application Server Monitoring Environment" on page 774 ▶ "How to Configure the WebSphere 6.1x Application Server Monitoring Environment" on page 780 ▶ "How to Configure the WebSphere 7.0x Application Server Monitoring Environment" on page 787 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ▶ "WebSphere Application Server Monitor Overview" on page 768

WebSphere Monitor Settings

User interface elements are described below:

UI Element	Description
Target	Logical name of the server you want to monitor. If this box is left empty, the host name entered above is used.
Server	Name of the server where the WebSphere Application Server you want to monitor is running. Note: Do not include backslashes in the name.
Launch an external JVM	External JVMs are used for monitoring. By default, the WebSphere monitor uses internal JVMs. External JVMs consume greater resources, take longer to start up, and have bad error handling. Note: You cannot use certificates added using Certificate Management if this setting is selected. Default value: Not selected (if upgrading from previous versions of SiteScope, this check box is selected automatically during the upgrade for existing monitors).
Port number	Port number for the SOAP. Default value: 8880
Credentials	User name and password required to access the WebSphere Application Server. Select the option to use for providing credentials: <ul style="list-style-type: none"> ▶ Use user name and password. Select this option to manually enter user credentials. Enter the user name and password in the User name and Password box if one has been configured. ▶ Select predefined credentials. Select this option to have SiteScope automatically supply a predefined user name and password (selected by default). Select the credential profile to use from the Credential profile drop-down list, or click Add Credentials and create a new credential profile. For details on how to perform this task, see "How to Configure Credential Preferences" in <i>Using SiteScope</i>.

UI Element	Description
Security realm	(For WebSphere 3.5 users) The security realm of the WebSphere application server.
Version	Version of the WebSphere application you are monitoring (3.5x, 4.x, 5.x, 6.0x, 6.1x, 7.0x). Default value: 3.5x
WebSphere directory	<ul style="list-style-type: none"> ▶ For 3.x: Path to a WebSphere 3.5x Directory. The directory you enter here should contain at least a valid Admin Client installation. ▶ For 6.x: Path to the AppServer directory. Default value: C:\WebSphere\AppServer
Client properties file	Name of the custom client properties file. Default value: soap.client.props (use the default for version 6.x)
Classpath	Additional classpath variables that are to be used by the WebSphere JVM running on the SiteScope machine.
Timeout (seconds)	Amount of time, in seconds, that the monitor should wait for a response from the server. If a response is not received within the interval of the timeout, the monitor reports a timeout error. Default value: 60 seconds
Trust store	Full directory path of file DummyClientTrustFile.jks . The trust file is typically used to store signer certificates, which specify whether the signer of the server's certificate is trusted. This file is in the client monitor directory on the SiteScope machine. Default value: C:\WebSphere\AppServer\profiles\default\etc\DummyClientTrustFile.jks
Trust store password	Password for the SSL trust store file. Default value: WebAS

UI Element	Description
Key store	<p>Full directory path of file DummyClientKeyFile.jks. This file is typically used to store personal certificates, including private keys. This file is in the client monitor directory on the SiteScope machine.</p> <p>Default value: C:\WebSphere\AppServer\profiles\default\etc\DummyClientTrustFile.jks</p>
Key store password	<p>Password for the SSL key store file.</p> <p>Default value: WebAS</p> <p>The values for Trust Store, Trust Store Password, Key Store, and Key Store Password are automatically configured and can be found in the following directories:</p> <ul style="list-style-type: none"> ➤ On Windows platform, in <drive>:\WebSphere\AppServer\etc\ ➤ On Solaris platform, in /opt/WebSphere/AppServer/etc/ ➤ On Linux platform, in /opt/IBMWebAS/etc/ <p>For more information about Key Store passwords, refer to the IBM Information Center (http://publib.boulder.ibm.com/infocenter/wasinfo/v4r0/index.jsp?topic=/com.ibm.websphere.v4.doc/wasa_content/050703.html) and search for SSL configuration.</p>
Counters	<p>Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.</p>
Get Counters	<p>Opens the Get Counters dialog box, enabling you to select the counters you want to monitor.</p> <p>Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.</p>

92

WebSphere MQ Status Monitor

This chapter includes:

Concepts

- ▶ WebSphere MQ Status Monitor Overview on page 800

Tasks

- ▶ How to Configure the WebSphere MQ Status Monitoring Environment on page 803

Reference

- ▶ Channel Status Codes on page 805
- ▶ WebSphere MQ Status Monitor Settings on page 806

Concepts

WebSphere MQ Status Monitor Overview

Use the WebSphere MQ Status monitor to monitor the performance attributes of MQ Objects: channels and queues, on MQ (formerly known as MQSeries) Servers 5.2, 5.3, 5.3.1, 6.0, and 7.0. You can monitor both performance attributes and events for channels and queues.

Note: The WebSphere MQ Status monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP sales representative for more information.

You can set the error and warning thresholds for the WebSphere MQ Status monitor on as many as fifteen function measurements.

For task details, see "How to Configure the WebSphere MQ Status Monitoring Environment" on page 803.

For user interface details, see "WebSphere MQ Status Monitor Settings" on page 806.

This section contains the following topics:

- "Setup Requirements" on page 801
- "Monitoring MQ Events" on page 801
- "Authentication" on page 802

Setup Requirements

This monitor requires two IBM MQ SupportPacs to be downloaded from the IBM Web site and installed on the machine where the SiteScope server is running. For details on how to perform this task, see "How to Configure the WebSphere MQ Status Monitoring Environment" on page 803.

Monitoring MQ Events

For events, two system queues are regularly polled for the presence of relevant events:

- SYSTEM.ADMIN.PERFM.EVENT - for queue performance events
- SYSTEM.ADMIN.CHANNEL.EVENT - for channel events

On each scheduled run of the MQ monitor (which contain event counters), one or both of these system queues are queried for the presence of events that match the chosen event type, the source queue or channel that generated the event, and its queue manager. Events found are only browsed and not removed from the queue, so such events can continue to be consumed by other applications, if necessary. On each run the MQ monitor reports the number of event occurrences found since the last run of the monitor.

The monitor strives not to report the same event occurrence more than once. This is accomplished by recording the timestamp of the most recent event browsed, so that in the next monitor run any events encountered that were generated prior to this recorded timestamp are ignored.

Enabling Queue Events on the MQ Server

By default, queue performance events are unavailable in the MQ server. For SiteScope to monitor these events, enable the MQ server to create these events. A MQSC command must be issued on each queue and for each event to be enabled. In addition, required threshold values must be set on each queue and for each event that specify the conditions for generating the event. Consult the IBM MQ MQSC Command Reference for more information. Channel events are always enabled and require no further action for them to operate.

Specifying Alternate Queue Managers

It is possible to set up an MQSeries environment such that events from remote queue managers are routed to a central queue manager for monitoring. If the event configured for monitoring by the user is from a remote queue manager (a queue manager other than the one identified in **Queue manager** of the MQ Status Monitor Settings panel), it must be specified in the **Alternate queue manager** text box.

Authentication

Your MQ server may require SiteScope to authenticate itself when connecting to retrieve metrics. A function has been built into this monitor to run a user-developed, client-side security exit written in Java.

To use this function, specify the fully-qualified class name of the security exit component in file **<SiteScope root directory>\groups\master.config**. For example,

```
_mqMonitorSecurityExit=com.mycompany.mq.MyExit
```

where the security exit class is called com.mycompany.mq.MyExit.

Make sure this class is in the classpath of the running SiteScope JVM by copying your security exit class into **<SiteScope root directory>\java\lib\ext**. You can only deploy one security exit class for a SiteScope instance, and every MQ monitor running on that instance runs that security exit.

In the case of a Windows-based SiteScope instance monitoring a Windows-based MQ server, the default authentication scheme requires that SiteScope be running under a user account that is recognized by the target server's Windows security group. Specifically, the SiteScope user must be added to the server's mqm group.

For information about MQ security exits and other authentication schemes, consult the IBM WebSphere MQ documentation.

Tasks

How to Configure the WebSphere MQ Status Monitoring Environment

This task describes the steps involved in configuring the monitoring environment.

This task includes the following steps:

- ▶ "Download and install the IBM MQ SupportPacs" on page 803
- ▶ "Deploy a security exit class (if MQ server requires SiteScope authentication)" on page 804
- ▶ "Configure the monitor properties" on page 804

1 Download and install the IBM MQ SupportPacs

- a Download the following IBM MQ SupportPacs from the IBM Web site and install them on the machine where the SiteScope server is running:
 - ▶ **MA88.** MQSeries classes for Java, version 5.2.2 (5648-C60) or later. Go to the IBM Web site for this support package. In some cases, this component may already be bundled with the IBM MQ Server installation. Check your IBM MQ install documentation for details.
 - ▶ **MS0B.** WebSphere MQ Java classes for PCF. Go to the IBM Web site for this support package.

Follow the instructions for installing both support packs.

- b Copy the following files from these installations to the `<SiteScope root directory>\java\lib\ext` directory:
 - ▶ **com.ibm.mq.jar**
 - ▶ **connector.jar**
 - ▶ For PCF: **com.ibm.mq.pcf.jar** (for WebSphere MQ versions earlier than 6.x); **pcf.jar** (for WebSphere MQ 6.x and later)

- c After installing the required libraries, stop and restart SiteScope.

2 Deploy a security exit class (if MQ server requires SiteScope authentication)

If the MQ server requires SiteScope to authenticate itself when connecting to retrieve metrics, specify the fully-qualified class name of the security exit component in file `<SiteScope root directory>\groups\master.config`. For example,

```
_mqMonitorSecurityExit=com.mycompany.mq.MyExit
```

where the security exit class is called `com.mycompany.mq.MyExit`.

Make sure this class is in the classpath of the running SiteScope JVM by copying your security exit class into

`<SiteScope root directory>\java\lib\ext`. You can deploy only one security exit class for a SiteScope instance, and every MQ monitor running on that instance runs that security exit.

Note: For a Windows-based SiteScope instance monitoring a Windows-based MQ server, the default authentication scheme requires that SiteScope be running under a user account that is recognized by the target server's Windows security group. Specifically, the SiteScope user must be added to the server's `mqm` group.

For information about MQ security exits and other authentication schemes, consult the IBM WebSphere MQ documentation.

3 Configure the monitor properties

Complete the WebSphere MQ Status monitor configuration. For user interface details, see "WebSphere MQ Status Monitor Settings" on page 806.

Reference

Channel Status Codes

You can choose from two different reporting schemes for Channel status code values:

- **IBM MQ coding scheme.** Report the actual or original channel status codes as documented in the IBM MQ literature.
- **HP coding scheme.** Report channel status codes in ascending values that are directly proportional to the health of the channel. That is, SiteScope reports a channel status value from 0 (least healthy) to 6 (healthiest). This scheme is consistent with how other HP products report MQ channel status codes. However this scheme provides less gradients than the IBM scheme, as shown in the table below:

MQ Channel Status	MQ Coding Scheme	HP Coding Scheme
Stopped	6	0
Paused	8	0
Inactive	-1	0
Initializing	4	1
Stopping	13	1
Starting	2	2
Retrying	5	3
Requesting	7	4
Binding	1	5
Running	3	6
Stopped	6	0

You can select the required coding scheme in the **Channel status code scheme** box under WebSphere MQ Status Monitor Settings.

WebSphere MQ Status Monitor Settings

The WebSphere MQ Status monitor enables you to monitor the performance attributes of MQ Objects (channels and queues) on MQ Servers. Both performance attributes and events for channels and queues can be monitored.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 801. ▶ This monitor is an optional SiteScope function. Additional licensing is required to enable this monitor type in the SiteScope interface. Contact your HP Sales representative for more information.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Configure the WebSphere MQ Status Monitoring Environment" on page 803 ▶ "How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "WebSphere MQ Status Monitor Overview" on page 800

WebSphere MQ Status Monitor Settings

User interface elements are described below:

UI Element	Description
MQ server name	Host name of the MQ Server you want to monitor. Enter the network name of the server or the IP address of the server. Example: mqmachinename
MQ server port	Port number of the target MQ Server. Default value: 1414
Server connection channel	Name of the server connection channel of the target MQ server. Check with the MQ Server administrator for the name syntax of the server connection channel.

UI Element	Description
Queue manager	Name of the queue manager whose queues or channels are to be monitored.
User name	User name for the MQ Server you want to monitor. To connect to the server using the SiteScope user, leave this field and the Password empty.
Password	Password for the MQ Server you want to monitor. To connect to the server using the SiteScope user, leave this field and the User name empty.
Alternate queue manager	(Optional) An alternate queue manager name that has been set up to forward its events to the primary queue manager specified above if you are also interested in monitoring those events.
Channel status code scheme	<p>Select a reporting schemes for Channel Status Code values, and click Apply.</p> <ul style="list-style-type: none"> ▶ Use HP coding scheme. Report the actual or original channel status codes as documented in the IBM MQ literature. ▶ Use IBM MQ coding scheme. Report channel status codes in ascending values that are directly proportional to the health of the channel. SiteScope reports a channel status value from 0 (least healthy) to 6 (healthiest). For details, see "Channel Status Codes" on page 805.

UI Element	Description
<p>Available Measurements</p>	<p>Displays available MQ queue instances and channel instances, and counters to choose from.</p> <p>In the Objects drop-down list, select either Queue or Channel Objects to work with. After an object is selected, a connection to the MQ server is made. A list of available queues or channels is displayed, both system and user instances, depending on the object type selected. Select the instances and counters you want to monitor, and click the Add Selected Measurements  button. The selected measurements are moved to the Selected Measurements list.</p>
<p>Selected Measurements</p>	<p>Displays the measurements currently selected for this monitor, and the total number of selected counters.</p> <p>To remove measurements selected for monitoring, select those measurements, and click the Remove Selected Measurements  button. The measurements are moved to the Available Measurements list.</p>

93

WebSphere Performance Servlet Monitor

This chapter includes:

Concepts

- ▶ WebSphere Performance Servlet Monitor Overview on page 810

Reference

- ▶ WebSphere Performance Servlet Monitor Settings on page 812

Concepts

WebSphere Performance Servlet Monitor Overview

Use the WebSphere Performance Servlet Monitor to monitor the server performance statistics for IBM WebSphere 3.0x, 3.5, 3.5.x, 4.0, 5.0, 5.1, 5.1.1, 6.0, 6.0.1, 6.0.2, 6.1, and 7.0 servers. You can monitor multiple parameters or counters with a single monitor instance. This allows you to watch server loading for performance, availability, and capacity planning.

Create a separate WebSphere Performance Servlet Monitor instance for each WebSphere Application Server in your environment. The error and warning thresholds for the monitor can be set on one or more performance statistics.

For details on configuring the monitor, see "WebSphere Performance Servlet Monitor Settings" on page 812.

Setup Requirements

The following are several key requirements for using the WebSphere Performance Servlet Monitor:

- ▶ The WebSphere Performance Servlet is an optional component for WebSphere 3.0x and 3.5x versions. The performance servlet must be installed on WebSphere servers to use this monitor. A patch needs to be applied according to which WebSphere 3.x version you are monitoring.
- ▶ The WebSphere Performance Servlet must be installed on each WebSphere 3.x server you want to monitor. The files should be copied to the **hosts\default_host\default_app\servlets** subdirectory on each WebSphere server machine. The files needed per version are as follows:

Version	Files
3.02	xml4j.jar performance.dtd perf.jar
3.5	perf35.jar
3.5.2, 3.5.3	perf35x.jar

- ▶ The WebSphere Performance Servlet included as part of WebSphere 4.0 must be deployed. If you are running WebSphere 4.0 servers, only one instance of the servlet needs to be deployed to monitor one or more WebSphere 4.0 servers.
- ▶ Verify that the servlet is running properly and that the performance data is generated. One way to do this is to try to display it through an XML enabled browser. The servlet URL should be in the following format:

`http://<server:port>/<dir_alias>/com.ibm.ivb.epm.servlet.PerformanceServlet`

For example,

`http://wbs.company.com:81/servlet/com.ibm.ivb.epm.servlet.PerformanceServlet`

Reference

WebSphere Performance Servlet Monitor Settings

This monitor enables you monitor the server statistics of IBM WebSphere Server by using a WebSphere Performance Servlet.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ Before configuring the monitor, make sure you have the necessary "Setup Requirements" on page 811. ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "WebSphere Performance Servlet Monitor Overview" on page 810

WebSphere Performance Servlet Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
Server	Name of the server you want to monitor. On UNIX servers, enter the full path of the server.
Secure server	Select if the server being monitored is secure. Default value: Not selected

UI Element	Description
Target	<p>Logical name of the server that is the target of this monitor instance. Depending on the deployment of the WebSphere application in your infrastructure, this may be the same as the Server selected above.</p> <p>Default value: Empty (the host name is used)</p>
Port	<p>Port number to the WebSphere server you want to monitor.</p>
Servlet URL	<p>URL of the performance servlet.</p> <p>For WebSphere versions 3.x.x, the URL can be viewed by using the Servlet Properties page in the WebSphere Admin Console.</p> <p>For WebSphere 4.0, the default URL is <code>/wasPerfTool/servlet/perfservlet</code>. In earlier versions, the URL is chosen during the installation of the servlet.</p> <p>For WebSphere 6.0 and later, use the URL: <code>/wasPerfTool/servlet/perfservlet?version=5</code>. In either case, the URL can be found in the Servlet properties page of the Admin Console.</p>
User name	<p>User name if the URL requires authorization.</p>
Password	<p>Password if the URL requires authorization.</p>
Advanced Settings	
Timeout (seconds)	<p>Amount of time, in seconds, that the monitor should wait for a response from the Performance Servlet. If a response is not received within the interval of the timeout, the monitor reports a timeout error.</p> <p>Default value: 60 seconds</p>
Refresh frequency	<p>Time interval at which the WebSphere server should update the metrics that are requested by this monitor.</p> <p>This value should be equal to or less than the Frequency time interval for the monitor in Monitor Run Settings.</p> <p>Default value: 10 minutes</p>

UI Element	Description
Proxy Settings	
HTTP proxy	Name of the proxy server if required.
Proxy user name	Proxy server user name if required to access the server. Note: Your proxy server must support Proxy-Authenticate for these options to function.
Proxy password	Proxy server password if required to access the server.
WebSphere Performance Counters	
Counters	Displays the server performance counters selected for this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

94

XML Metrics Monitor

This chapter includes:

Concepts

- ▶ XML Metrics Monitor Overview on page 816

Reference

- ▶ XML Metrics Monitor Settings on page 818

Concepts

XML Metrics Monitor Overview

Use the XML Metrics monitor to monitor metrics for systems that make performance data available in the form of an XML file or page. The XML Metrics monitor gathers information from a source, organizes it into a browsable tree structure, and enables you to choose which items in the tree should be monitored. It works by requesting an XML file that is accessible by an URL. When the monitor runs, the XML metrics file is parsed to extract values for each of the counters selected during setup.

The XML metrics must be in a format where each metric is a separate, unique entity in the tree/leaf format. An optional XSL facility can help with formatting.

The error and warning thresholds for the monitor can be set on one or more different objects.

For details on configuring the monitor, see "XML Metrics Monitor Settings" on page 818.

XML Requirements

A monitor instance must be defined and run against the same XML metrics file format. That is, when running this monitor, SiteScope expects the XML file it is monitoring to have the same format that was used when defining that monitor.

SiteScope parses the input XML content according to the following assumptions:

- ▶ The XML content has only one root node. This means that all of the XML content is encapsulated within a single parent element and not multiple instances of a repeating root element.
- ▶ A leaf node, an element containing only character data and no child elements, is considered a counter and must be of the form:

```
<node_tag>node_value</node_tag>
```

where `<node_tag>` becomes the counter name, and `<node_value>` is reported as the counter value.

- ▶ Each leaf node (and therefore each counter) must have a unique path within the hierarchy of the XML content.
- ▶ The XML metric file should contain at least one leaf node.

If your XML metric file does not conform to these rules, you can specify an XSLT (eXtensible Stylesheet Language: Transformations) file that transforms your XML file into a file that does conform. Such a file usually has a file extension of `.xsl`.

If you need to develop a XSLT file to transform the XML content for this monitor, SiteScope includes a Tools page you can use to verify the transformation output. For more information, see the section "XSL Transformation Tool" in *Using SiteScope*.

Reference

XML Metrics Monitor Settings

The XML Metrics monitor enables you to monitor metrics for systems that make performance data available in the form of an XML file or page.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ When deploying this monitor using a template, an error message is displayed if you clear the Verify monitor properties with remote server check box in the Deployment Values dialog box. ▶ The XSL Transformation Tool is available when configuring this monitor to test a user defined XSL file that can be used to transform an XML file or output (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "XSL Transformation Tool" in <i>Using SiteScope</i>.
Relevant tasks	"How to Deploy a Monitor" in <i>Using SiteScope</i>
See also	▶ "XML Metrics Monitor Overview" on page 816

XML Metrics Monitor Settings

User interface elements are described below:

UI Element	Description
Main Settings	
XML URL	URL of the XML page or file that contains the metrics that you want to monitor.

UI Element	Description
XSL file	Convert the XML metrics file into a format that SiteScope can use.
Authorization NTLM domain	Domain for NT LAN Manager (NTLM) authorization if it is required to access the URL.
Pre-emptive authorization	<p>Option for sending Authorization user name and Authorization password if SiteScope requests the target URL:</p> <ul style="list-style-type: none"> ▶ Use global preference. SiteScope uses the authenticate setting as specified in the Pre-emptive authorization section of the General Preferences page. This is the default value. ▶ Authenticate first request. Sends the user name and password on the first request SiteScope makes for the target URL. Note: If the URL does not require a user name and password, this option may cause the URL to fail. ▶ Authenticate if requested. Sends the user name and password on the second request if the server requests a user name and password. Note: If the URL does not require a user name and password, this option may be used. <p>All options use the Authorization user name and Authorization password entered for this monitor instance. If these are not specified for the individual monitor, the Default authentication user name and Default authentication password specified in the Main section of the General Preferences page are used, if they have been specified.</p> <p>Note: Pre-emptive authorization does not control if the user name and password should be sent, or which user name and password should be sent.</p>
Timeout (seconds)	<p>Amount of time, in seconds, to wait for the XML page to complete downloading before timing-out. Once this time period passes, the monitor logs an error and reports an error status.</p> <p>Default value: 60 seconds</p>

UI Element	Description
Authentication Settings	
Authorization user name	Authorization user name to access the URL with the XML content, if required.
Authorization password	Authorization password to access the URL with the XML content, if required.
Proxy server	Host or domain name and port of the proxy server if using a proxy server to access the XML URL.
Proxy server user name	Proxy server user name if you using a proxy server and the proxy requires a name and password to access the target URL. Note: The proxy server must support Proxy-Authenticate for these options to function.
Proxy server password	Proxy server password if you using a proxy server and the proxy requires a name and password to access the target URL. Note: The proxy server must support Proxy-Authenticate for these options to function.
Accept untrusted certificates for HTTPS	Select if you need to use certificates that are untrusted in the cert chain to access the target XML URL using Secure HTTP (HTTPS). Default value: Not selected
Accept invalid certificates for HTTPS	Select if you need to accept an invalid certificate to access the target XML URL using Secure HTTP (HTTPS). This may happen, for example, if the current date is not in the date ranges specified in the certificate chain. Default value: Not selected

UI Element	Description
Counter Settings	
Counters	Displays the server performance counters you want to check with this monitor. Use the Get Counters button to select counters.
Get Counters	Opens the Get Counters dialog box, enabling you to select the counters you want to monitor. Note when working in template mode: The maximum number of counters that you can select is 100. If you import a template monitor from an earlier version of SiteScope, or perform a copy to template action, the number of counters is not limited.

Part II

Integration Monitors (A-Z)

95

HP OM Event Monitor

This chapter includes:

Concepts

- ▶ HP OM Event Monitor Overview on page 826

Tasks

- ▶ How to Work with the HP OM Integration Add-on (UNIX Platforms) on page 828
- ▶ How to Work with the HP OM Integration Add-on (Windows Platforms) on page 835

Reference

- ▶ HP OM Event Monitor Settings on page 840

Concepts

HP OM Event Monitor Overview

The HP OM Event Monitor allows you to integrate an existing HP Operations Manager (OM) Server with BSM by transferring HP OM events from an HP OM Server to a BSM server.

Note:

- ▶ The HP OM Event monitor is not available when SiteScope is connected to BSM version 9.00 or later (unless the monitor was created in an earlier version of SiteScope that was upgraded to SiteScope 11.00). OM events can be forwarded to BSM 9.00 from the HP OM Server, provided you have an Event Management Foundation license and an integration is configured per the instructions in the *HP Business Service Management Deployment Guide* PDF in the HP Business Service Management Documentation Library.
- ▶ This monitor supports English only. It does not support I18N mode.

The HP OM Event monitor depends on an HP OM Integration Add-on module to collect events from the HP OM Server. The Add-on, when installed on the HP OM Server, listens to events received by the HP OM system and sends them to the HP OM Event Monitor. The HP OM Event Monitor transfers the events to an BSM server. The HP OM Integration Add-on and the HP OM Event Monitor communicate using TCP/IP networking (with a customizable TCP port).

The HP OM Event monitor uses a predefined configuration file, `<SiteScope root directory>\conf\ems\hp\event.config`, to define the processing of incoming data and to define the output sample forwarded to BSM. Do not modify this configuration file.

For task details, see "How to Work with the HP OM Integration Add-on (UNIX Platforms)" on page 828. For user interface details, see "HP OM Event Monitor Settings" on page 840.

This section also includes:

- "Supported Versions" on page 827
- "Status" on page 827

Supported Versions

This monitor supports:

- HP OM versions 8.24 or later, when installed on Solaris 5.7 and later or when installed on HP UX 11.11 or HP UX 11.23.
- HP OM versions 9.0 or later when installed on Red Hat Linux.
- HP OM versions 7.5 or later when installed on Windows.

Status

The status returned by the monitor is the current value of the monitor, such as:

```
Status: GOOD
Status Summary: 10 events received, connected Add-ons: 1
```

The status is logged as either good, warning, or error. A warning status is returned if no Add-on is connected to the monitor.

The status can be configured further using advanced options in the HP OM Alert Monitor Configuration Form.

For information about Integration Monitor logging and troubleshooting, see "Integration Monitor Logs" and "Troubleshooting and Limitations" (Working with SiteScope Integration Monitors) in *Using SiteScope*.

Tasks

How to Work with the HP OM Integration Add-on (UNIX Platforms)

The purpose of the HP OM Integration Add-on is to connect to the HP OM message infrastructure, to receive events from the HP OM, and to forward these events to the SiteScope machine.

Note: The HP OM Integration Add-on module is platform specific. Modules are provided for all platforms supported by OM/UNIX version 8.24.

This task includes the following steps:

- "Install the HP OM integration add-on" on page 829
- "Configure the HP OM integration add-on" on page 830
- "Tune the HP OM integration add-on" on page 831
- "Start and stop the HP OM integration add-on" on page 833
- "Uninstall the HP OM integration add-on files from the HP OM server" on page 833
- "Support in HP OM cluster installation" on page 834
- "View log file messages" on page 834

1 Install the HP OM integration add-on

Installation packages for the various platforms used below is in `<SiteScope root directory>\conf\ems\hp\addon\OVO-BAC.zip` file.

On HP-UX 11.11 platforms:

- Log in as superuser to the HP OM Server. Alternatively, use the `su` command to gain superuser permissions.
- Copy `HPOvOBac-01.00.000-HPUX11.0-release.depot` installation package to `\tmp`.
- Perform the following command:

```
swinstall -s /tmp/HPOvOBac-01.00.000-HPUX11.0-release.depot \*
```

On HP-UX 11.23 platforms:

- Log in as superuser to the HP OM Server. Alternatively, use the `su` command to gain superuser permissions.
- Copy `HPOvOBac-01.00.000-HPUX11.22_IPF32-release.depot` installation package to `\tmp`.
- Perform the following command:

```
swinstall -s /tmp/HPOvOBac-01.00.000-HPUX11.22_IPF32-release.depot \*
```

On Solaris 5.7 or later platforms:

- Log in as user `root` to the HP OM Server. Alternatively, use the `su` command to gain super-user permissions.
- Copy `HPOvOBac-01.00.000-SunOS5.7-release.sparc` installation package to `\tmp`.
- Perform the following command:

```
pkgadd -d /tmp/HPOvOBac-01.00.000-SunOS5.7-release.sparc HPOvOBac
```

2 Configure the HP OM integration add-on

Once installed, the HP OM Integration Add-on must be configured on the HP OM Server before it can be used.

- ▶ To configure the HP OM Integration Add-on on the HP OM Server, configure the host name or IP address of the SiteScope machine on which the HP OM Event Monitor is installed:
`ovconfchg -ns opc.bac -set TargetHost <host name>`
-

Note:

- ▶ Configure the port if you are using a port other than the default (9000):
`ovconfchg -ns opc.bac -set TargetHost <host name> -set TargetPort <port>`
 - ▶ If you change this setting, make sure to update the HP OM Event Monitor.
-

HP OM Integration Add-on for UNIX provides a function that improves performance of internal message processing. Enabling this function improves the performance of the HP OM Integration Add-on (and other OM components, such as the OM Java GUI). This function is disabled by default.

- ▶ To enable improved HP-OM Add-on performance on UNIX feature, on the HP OM Server, perform the following commands:
 - a** `opcsv -stop`
 - b** `ovconfchg -ovrg server -ns opc -set OPCMSGM_USE_GUI_THREAD NO_RPC`
 - c** `opcsv -start`

3 Tune the HP OM integration add-on

You can tune the HP OM Integration Add-on by running utilities from the command line on the HP OM Server.

To check the current settings, perform the following command:
`ovconfget opc.bac`

To change a parameter, perform the following command:

`ovconfchg -ns opc.bac -set <variable name> <value>`

where <variable name> and <value> are in the following table:

Variable Name	Default Value	Description
TargetHost	<empty>	Host name of the SiteScope receiver. No connection is attempted if this is empty.
TargetPort	9000	Port number of the SiteScope receiver. No connection is attempted if this is 0.
CacheMax	1000	Maximum number of messages stored in cache memory to avoid database lookups.
CacheKeep	500	If cache size reaches CacheMax, only the most-recently-used messages in CacheKeep are kept in the cache. All others are removed from the cache.
Connection Timeout	300	If no new messages or message changes are transmitted to the SiteScope receiver, the connection is closed after this number of seconds.
MinWaitTime	15	If the connecting to the SiteScope receiver failed, the HP OM Integration Add-on waits this many seconds the first time after connection failure before retrying to connect. The wait time is doubled after each retry, up to MaxWaitTime.

Variable Name	Default Value	Description
MaxWaitTime	120	Maximum number of seconds to wait after connection failures before retry. When doubling the wait time after connection failures exceeds MaxWaitTime, the wait time is no longer doubled and MaxWaitTime is used instead.
MaxQueueLen	1000	If the connection to the SiteScope receiver has been lost and new messages or message changes come in, these messages and message changes are buffered in a memory queue. If the number of entries in that queue reaches MaxQueueLen, the oldest entries are removed from the queue.
NodeKeepTime	900	The HP OM Integration Add-on looks up IP addresses from host names. In addition, OM/Windows host names also need to be looked up from the OM database. These IP addresses (and host names on OM/Windows) are stored in a memory cache. Because host names and IP addresses of systems can be changed, entries in that cache are invalidated (and afterwards looked up again) after NodeKeepTime seconds.

Changing any of these variables automatically updates the HP OM Integration Add-on. There is no need to stop and restart the HP OM Integration Add-on process.

4 Start and stop the HP OM integration add-on

The HP OM Integration Add-on must be started after it is installed.

On UNIX platforms, the HP OM Integration Add-on is controlled by OpenView Control Daemon (ovcd). Using the command line tool **ovc** on the HP OM Server, perform the command:

```
ovc -stop <or start> opc2bac
```

If the HP OM Integration Add-on disconnects from SiteScope during operation, it tries to reconnect to the SiteScope at regular intervals. In the meantime, events are stored within the HP OM Integration Add-on.

If the HP OM Integration Add-on terminates from SiteScope during operation, the events not yet sent to SiteScope are lost.

Note: Because the Integration Add-on is linked with HP OM API libraries, it may be necessary to stop the Integration Add-on before installing HP OM patches, and start it after the patch installation.

5 Uninstall the HP OM integration add-on files from the HP OM server

If you must uninstall the HP OM Integration Add-on files from the HP OM Server, perform the following procedure:

On HP-UX platforms:

- Log in as superuser.
- Perform the command: `swremove HPOvOInt.HPOVOBAC`

On Solaris platforms:

- Log in as superuser.
- Perform the command: `pkgrm HPOvOBac`

6 Support in HP OM cluster installation

The HP OM Integration Add-on is supported in an HP OM cluster environment. You can do the following tasks:

- Install HP OM Integration Add-on on each cluster node separately.
- Configure HP OM Integration Add-on on each cluster node separately. All configuration settings on all cluster nodes must be identical.
- Uninstall HP OM Integration Add-on on each cluster node separately.

7 View log file messages

The HP OM Integration Add-on writes log messages into the log file `/var/opt/OV/logSystem.txt`.

Log file entries use the process name **opc2bac** for messages logged by the HP OM Integration Add-on.

How to Work with the HP OM Integration Add-on (Windows Platforms)

The purpose of the HP OM Integration Add-on is to connect to the HP OM message infrastructure, to receive events from the HP OM, and to forward these events to the SiteScope machine.

Note: The HP OM Integration Add-on module is platform specific. Modules are provided for all platforms supported by OM/Windows version 7.5.

This task includes the following steps:

- "Install the HP OM integration add-on" on page 829
- "Configure the HP OM integration add-on" on page 830
- "Tune the HP OM integration add-on" on page 831
- "Start and stop the HP OM integration add-on" on page 833
- "Uninstall the HP OM integration add-on files from the HP OM server" on page 833
- "Support in HP OM cluster installation" on page 834
- "View log file messages" on page 834

1 Install the HP OM integration add-on

Installation packages for the various platforms used below is in `<SiteScope root directory>\conf\ems\hp\addon\OVO-BAC.zip` file.

- a** Log in as user administrator to the HP OM Server.
- b** Copy `HPOvXpl-03.10.040-WinNT4.0-release.msi` and `HPOvOBac-01.00.000-WinNT4.0-release.msi` installation packages to `C:\tmp`. Perform the following commands:
 - `msiexec /I C:\tmp\HPOvXpl-03.10.040-WinNT4.0-release.msi /qn`
 - `msiexec /I C:\tmp\HPOvOBac-01.00.000-WinNT4.0-release.msi /qn`

2 Configure the HP OM integration add-on

Once installed, the HP OM Integration Add-on must be configured on the HP OM Server before it can be used. To configure the HP OM Integration Add-on on the HP OM Server, configure the host name or IP address of the SiteScope machine on which the HP OM Event Monitor is installed:
`ovconfchg -ns opc.bac -set TargetHost <host name>`

Note:

- ▶ Configure the port if you are using a port other than the default (9000):
`ovconfchg -ns opc.bac -set TargetHost <host name> -set TargetPort <port>`
 - ▶ If you change this setting, make sure to update the HP OM Event Monitor.
-

3 Tune the HP OM integration add-on

You can tune the HP OM Integration Add-on by running utilities from the command line on the HP OM Server.

To check the current settings, perform the following command:

```
ovconfget opc.bac
```

To change a parameter, perform the following command:

```
ovconfchg -ns opc.bac -set <variable name> <value>
```

where <variable name> and <value> are in the following table:

Variable Name	Default Value	Description
TargetHost	<empty>	Host name of the SiteScope receiver. No connection is attempted if this is empty.
TargetPort	9000	Port number of the SiteScope receiver. No connection is attempted if this is 0.

Variable Name	Default Value	Description
CacheMax	1000	Maximum number of messages stored in cache memory to avoid database lookups.
CacheKeep	500	If cache size reaches CacheMax, only the most-recently-used messages in CacheKeep are kept in the cache. All others are removed from the cache.
Connection Timeout	300	If no new messages or message changes are transmitted to the SiteScope receiver, the connection is closed after this number of seconds.
MinWaitTime	15	If the connecting to the SiteScope receiver failed, the HP OM Integration Add-on waits this many seconds the first time after connection failure before retrying to connect. The wait time is doubled after each retry, up to MaxWaitTime.
MaxWaitTime	120	Maximum number of seconds to wait after connection failures before retry. When doubling the wait time after connection failures exceeds MaxWaitTime, the wait time is no longer doubled and MaxWaitTime is used instead.

Variable Name	Default Value	Description
MaxQueueLen	1000	If the connection to the SiteScope receiver has been lost and new messages or message changes come in, these messages and message changes are buffered in a memory queue. If the number of entries in that queue reaches MaxQueueLen, the oldest entries are removed from the queue.
NodeKeepTime	900	The HP OM Integration Add-on looks up IP addresses from host names. In addition, OM/Windows host names also need to be looked up from the OM database. These IP addresses (and host names on OM/Windows) are stored in a memory cache. Because host names and IP addresses of systems can be changed, entries in that cache are invalidated (and afterwards looked up again) after NodeKeepTime seconds.

Changing any of these variables automatically updates the HP OM Integration Add-on. There is no need to stop and restart the HP OM Integration Add-on process.

4 Start and stop the HP OM integration add-on

The HP OM Integration Add-on runs as a Windows service and must be started after it is installed. To start or stop the HP OM Integration Add-on on Windows platforms:

- a** On the HP OM Server, click **Start > Settings > Control Panel > Administrative Tools > Services**.
- b** Select the service **HP OpenView Operations Message Forwarder to BAC**.
- c** Click **Start** or **Stop**.

5 Uninstall the HP OM integration add-on files from the HP OM server

If you must uninstall the HP OM Integration Add-on files from the HP OM Server, perform the following procedure:

- a On the HP OM Server, click **Start > Settings > Control Panel > Administrative Tools > Services**.
- b Remove the following installed programs:
 - HP OpenView Operations, BAC Integration
 - HP OpenView Cross Platform Components (unless used by other installed programs). If this program is in use, you receive an error message and the removal fails.

6 Support in HP OM cluster installation

The HP OM Integration Add-on is supported in an HP OM cluster environment. You can do the following tasks:

- Install HP OM Integration Add-on on each cluster node separately.
- Configure HP OM Integration Add-on on each cluster node separately. All configuration settings on all cluster nodes must be identical.
- Uninstall HP OM Integration Add-on on each cluster node separately.

7 View log file messages

The HP OM Integration Add-on writes log messages into the **System.txt** log file in the <DataDir>\log directory, where <DataDir> is the data directory chosen during OM/Windows installation (for example, C:\Program Files\HP OpenView\Data).

Log file entries use the process name **opc2bac** for messages logged by the HP OM Integration Add-on.

Reference

HP OM Event Monitor Settings

The HP OM Event Monitor allows you to integrate an existing HP OpenView installation with BSM by transferring HP OM messages from HP OM Server to an BSM server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<ul style="list-style-type: none"> ▶ The HP OM Event monitor is not available when SiteScope is connected to BSM version 9.00 or later (unless the monitor was created in an earlier version of SiteScope that was upgraded to SiteScope 11.00). OM events can be forwarded to BSM 9.00 from the HPOM server, provided you have an Event Management Foundation license and an integration is configured per the instructions in the <i>HP Business Service Management Deployment Guide</i> PDF in the HP Business Service Management Documentation Library. ▶ For script alerts to be sent to Operations Manager when using an OM script, the Template setting in Action Type Settings must be changed to Default (by default it is set to Typical).
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Work with the HP OM Integration Add-on (UNIX Platforms)" on page 828 ▶ "How to Deploy Integration Monitors" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ▶ "HP OM Event Monitor" on page 825

HP OM Event Monitor Settings

User interface elements are described below:

UI Element	Description
HP OM Add-on TCP port	TCP port number as configured in the HP OM Integration Add-on. Default value: 9000

Field Mapping

User interface elements are described below:

UI Element	Description
Field mapping	<p>The out-of-the-box integration script that enables the monitor to correctly map the data it collects from the OM installation to a format recognizable by the monitor and BSM.</p> <p>The field mappings are not editable while configuring the monitor and we recommend that you use the out-of-the-box integration mappings. If you must customize the field mapping, locate the file in the following location and edit it in your preferred text editor: <SiteScope root directory>\conf\ems\hp\event.config. To enable any changes, you must edit the monitor to reload the edited script.</p> <p>For details on the field mapping script template, see "Integration Monitor Field Mapping" in <i>Using SiteScope</i>.</p>

Topology Settings

User interface elements are described below:

UI Element	Description
Script	<p>The out-of-the-box integration script that creates a topology in BSM that is based on the data collected from the OM installation. The script is based on the Jython scripting language (Python enabled by Java) and enables the integration between the data the monitor collects from the OM system and BSM's applications.</p> <p>We recommend that you use the topology settings as is and it is not editable while creating the monitor. If you must customize the field mapping, locate the following file: <SiteScope root directory>\discovery\scripts\ems_hpovo.py and edit it in your preferred text editor. To enable any changes, you must edit the monitor to reload the edited script.</p> <p>For more details on editing the script, see "Topology Settings for Technology Integration Monitors" and expand Editing the Topology Script in <i>Using SiteScope</i>.</p>

96

HP Service Manager Monitor

This chapter includes:

Concepts

- ▶ HP Service Manager Monitor Overview on page 844

Tasks

- ▶ How to Work with the HP Service Manager Integration on page 846

Reference

- ▶ HP Service Manager Monitor Settings on page 850

Concepts

HP Service Manager Monitor Overview

The HP Service Manager Monitor enables you to integrate Incident Management data from an HP ServiceCenter or HP Service Manager installation with HP Business Service Management. In general, this chapter uses the name Service Manager when referring to both ServiceCenter and Service Manager. If there are specific differences, they are noted.

Note: SiteScope also provides a solution template that includes a set of predefined monitors to create a monitoring solution for various services and aspects of a Service Manager environment. For details, see “HP Service Manager Solution Template” in *Using SiteScope*.

Incident Management automates reporting and tracking an incident, or groups of incidents, associated with a business enterprise. Incident Management enables you to identify types of incidents, such as software, equipment, facilities, network, and so on, and track the resolution process of these incidents.

The HP Service Manager monitor forwards business service-related incidents to BSM to create configuration items (CIs) based on those incidents. By default, CIs are created only for those incidents that are considered business service incidents in HP Service Manager. If necessary for your environment, you can configure the integration scripts to map other incidents as well.

The integration maps the incidents to the business service CIs created and creates a monitored by relationship between the HP Service Manager monitor CI and the business service CI. The monitor integrates the incident data into samples which are forwarded to BSM applications, such as Service Health and Service Level Management.

For more details on the capabilities of the integration, see "How to Integrate HP Service Manager with Business Service Management Components" in *Solutions and Integrations* in the HP Business Service Management Documentation Library.

For more detailed information on the CIs and related KPIs, see "Integration with HP Service Manager" in *Using Service Level Management* in the HP Business Service Management Documentation Library.

For task details, see "How to Work with the HP Service Manager Integration" on page 846.

For user interface details, see "HP Service Manager Monitor Settings" on page 850.

Supported Versions

This monitor supports:

- ServiceCenter 6.2.6
- Service Manager 7.01, 7.02, 7.1 and 7.2

Check the readme file for updates to the support matrix.

Tasks

How to Work with the HP Service Manager Integration

The following are the steps necessary to configure the integration:

- "Edit clocks and Incident Management configuration files" on page 846
- "Add or create the JAR file (if required)" on page 847
- "Configure an HP Service Manager monitor in SiteScope" on page 847

1 Edit clocks and Incident Management configuration files

If any changes were made to the clocks table and/or the incident management tables in HP Service Manager, then the same changes must be made to the corresponding configuration files in SiteScope. The configuration files included with the integration are configured with the same parameters as the default tables in HP Service Manager. However, if these tables were changed in any way, they must be edited on the SiteScope side as follows:

- a** Access the files from the following location:
 - **<SiteScope root directory>\conf\ems\peregrine\incidentAttributesMapping.config**
 - **<SiteScope root directory>\conf\ems\peregrine\clockAttributesMapping.config**
- b** Edit the files using a text editor. Follow the mapping directions as documented in the files.

2 Add or create the JAR file (if required)

You can add or create the JAR file for this monitor as follows:

- For integrations with ServiceCenter 6.2.6 and HP Service Manager 7.0.x using default settings, no additional JAR configurations are required.
- For integrations with HP Service Manager 7.1 or 7.2 using default settings, you must copy the JAR file to the **WEB-INF\lib** directory and edit the configuration file. For details, see "Copy the JAR File" on page 848.
- For any integration with ServiceCenter or HP Service Manager that does not use the default configuration, you must create the JAR file. For details, see "Create the JAR File" on page 848.

Note: SiteScope cannot monitor HP Service Manager 7.1 and earlier versions of HP Service Manager at the same time, since they require different JARs and configurations.

3 Configure an HP Service Manager monitor in SiteScope

You can create this monitor:

- Using the EMS Integrations Administration portal in BSM.
- Directly in SiteScope.

For user interface details, see "HP Service Manager Monitor Settings" on page 850.

Copy the JAR File

- 1 To enable SiteScope to integrate with HP Service Manager 7.1 or 7.2 using default settings, copy the JAR file from `<SiteScope root directory>\conf\ems\peregrine\lib\7.1x` or `7.2x` to `<SiteScope root directory>WEB-INF\lib`.
- 2 Open the `incidentAttributesMapping.config` file located in `<SiteScope root directory>conf\ems\peregrine`, and change the line `target_name=configurationItem` to `target_name=affectedItem`.

Note: The `peregrine.jar` located in `<SiteScope root directory>conf\ems\peregrine\lib\6x-7.0x` can be used as backup for the out-of-the-box JAR.

Create the JAR File

This batch file creates and compiles the files needed for the HP Service Manager monitor. The result of this batch is the file `peregrine.jar` that is automatically copied to the `WEB-INF\lib` directory. You should also create a backup of the `.jar` file. To create the `.jar` file:

- 1 Stop the SiteScope service on the SiteScope machine.
- 2 Ensure that JDK version 1.5 is installed (1.5.0_08 recommended -- can be downloaded from Sun archives, <http://java.sun.com/products/archive/>).
- 3 Set `JAVA_HOME` system variable to the JDK directory (for example `C:\j2sdk1.5.0_08`). You must recompile the `peregrine.jar` file if you made changes to the monitor tables.

- 4 Update the **<SiteScope root directory>\conf\ems\peregrine\build.properties** file with the wsdl locations.
 - ▶ When integrating with HP ServiceCenter 6.2.6, use the following syntax:
clocks.wsdl.url=http://<SM host>:<SM port>/sc61server/PW/Clocks?wsdl
prob.wsdl.url=http://<SM host>:<SM port>/sc61server/PW/IncidentManagement?wsdl
 - ▶ When integrating with Service Manager 7.x, use the following syntax:
clocks.wsdl.url=http://<SM host>:<SM port>/sc62server/PWS/Clocks?wsdl
prob.wsdl.url=http://<SM host>:<SM port>/sc62server/PWS/IncidentManagement?wsdl
- 5 Run the batch file:
 - ▶ **Windows:** Double-click the **<SiteScope root directory>\conf\ems\peregrine\create-peregrine-jar.bat** file to run the batch.
 - ▶ **UNIX:** You must run the **<SiteScope root directory>\conf\ems\peregrine\create-peregrine-jar.sh** file from the full path in a terminal window.
- 6 Restart the SiteScope service on the SiteScope machine.

Reference

HP Service Manager Monitor Settings

This monitor enables you to integrate HP Service Manager incidents with BSM. The incidents in Service Manager are forwarded to BSM as samples by this SiteScope monitor. The samples are used in reporting data to the BSM applications, such as Service Level Management and Service Health.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	Monitors must be created in a group in the monitor tree. We recommend that you create a special group for the Service Manager integration.
Relevant tasks	<ul style="list-style-type: none"> ➤ "How to Work with the HP Service Manager Integration" on page 846 ➤ "How to Deploy Integration Monitors" in <i>Using SiteScope</i>
See also	➤ "HP Service Manager Monitor" on page 843

HP Service Manager Monitor Settings

User interface elements are described below:

UI Element	Description
HP Service Manager Web Service Endpoint	<p>URL for the HP Service Manager Web Service. Use the following format: <code><protocol>://<host_name>:<port>/</code> where host_name is the name of the Service Manager server and port is the port number of the Service Manager server.</p> <p>The URL syntax when integrating with Service Manager 7.01 and 7.02 is: <code><protocol>://<SM host>:<SM port>/sc62server/PWS/</code></p> <p>The URL syntax when integrating with Service Manager 6.2.6 is: <code><protocol>://<SM host>:<SM port>/sc61server/PWS/</code></p>
Username	<p>Designated user name created in HP Service Manager for the purpose of this integration monitor.</p>
Password	<p>Password of the designated user created in HP Service Manager for the purpose of this integration monitor.</p>
Field Mapping	<p>The out-of-the-box integration script that enables the monitor to correctly map the data it collects from the Service Manager installation to a format recognizable by the monitor and BSM.</p> <p>The field mappings are not editable while configuring the monitor and we recommend that you use the out-of-the-box integration mappings. If you must customize the field mapping, locate the following file: <code><SiteScope root directory>\conf\ems\peregrine\ticket.config</code> and edit it in your preferred text editor. To enable any changes, you must edit the monitor to reload the edited script.</p> <p>For details on the field mapping script template, see "Integration Monitor Field Mapping" in <i>Using SiteScope</i>.</p>

UI Element	Description
Test Script	<p>Tests the field mapping script. We recommend that you test the script before running the monitor. This test gives you the results of what events are forwarded to BSM.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>
Synch Flag	<p>Enables the monitor to query Service Manager to retrieve all Incidents Changes from the time specified in the Synch Time setting.</p> <p>Default value: Cleared</p> <p>Note: This flag is reset to cleared after each time the monitor retrieves the data from Service Manager.</p>
Synch Time	<p>Time from which the monitor retrieves incidents. Enter a value only when Synch Flag is selected.</p>
Incident Management (probsummary table) query	<p>Text to add to the query that the monitor sends to Service Manager. You can add to the query to determine which Incidents the monitor retrieves.</p> <p>Default value: type="bizservice". The query is set to retrieve only those incidents opened on CIs of type bizservice.</p> <p>Note: The syntax for the query must be specified by the Service Manager application. We recommend that you consult the Service Manager help to create the text to add to the query and to test the query using the advanced search found in the Service Manager application.</p>
Incident Open State	<p>Indicates the initial state as defined in Service Manager for the incident lifecycle.</p> <p>Default value: Open</p>

Topology Settings

User interface elements are described below:

UI Element	Description
<p>Script</p>	<p>The out-of-the-box integration script that creates a topology in BSM that is based on the data collected from the Service Manager installation. The script is based on the Jython scripting language (Python enabled by Java) and enables the integration between the data the monitor collects from the Service Manager system and BSM's applications.</p> <p>We recommend that you use the topology settings as is and it is not editable while creating the monitor. If you must customize the field mapping, locate the following file: <SiteScope root directory>\discovery\scripts\EMS_peregrine.py and edit it in your preferred text editor. To enable any changes, you must edit the monitor for SiteScope to reload the edited script.</p> <p>For more details on editing the script, see "Topology Settings for Technology Integration Monitors" and expand Editing the Topology Script in <i>Using SiteScope</i>.</p>
<p>Test Script</p>	<p>Tests the topology script. This test gives you the results of what events are forwarded to BSM and what topology is mapped.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

97

NetScout Event Monitor

This chapter includes:

Concepts

- ▶ NetScout Event Monitor Overview on page 856

Tasks

- ▶ How to Integrate Data From a NetScout System on page 858

Reference

- ▶ NetScout Event Monitor Settings on page 859

Concepts

NetScout Event Monitor Overview

The NetScout Event Monitor is designed to collect SNMP Trap data from NetScout nGenius servers. Each time that the monitor is run, SiteScope checks traps that have been received since the last time the monitor ran and reports the results to BSM. This provides a way to centralize data collection, display, and alerting for the conditions for which you may otherwise be unaware until something more serious happens.

The NetScout Event Monitor forwards alerting instances to BSM to create configuration items (CIs) based on application or host alarms in NetScout.

The integration maps the alarms to the NetScout CIs created and creates a monitored by relationship between the NetScout Event monitor CI and the relevant host, interface, or application CI. The monitor integrates the incident data into samples that are forwarded to BSM applications, such as Service Health and Service Level Management.

Note: For information about Integration Monitor logging and troubleshooting, see "Integration Monitor Logs" and "Troubleshooting and Limitations" (Working with SiteScope Integration Monitors) in *Using SiteScope*.

For task details, see "How to Integrate Data From a NetScout System" on page 858.

For user interface details, see "NetScout Event Monitor Settings" on page 859.

Setup Requirements

The following are important guidelines and requirements for using the NetScout Event Monitor to forward alerts to BSM.

- The NetScout nGenius server must be configured to send traps to the SiteScope server.

Note: The NetScout Event Monitor uses port 162 for receiving traps. If another application or process on the machine where SiteScope is running has bound this port, the monitor reports an **Address in use** error and the monitor type is unavailable.

- SiteScope must be registered with an BSM installation. The SiteScope must have a profile defined in the BSM installation prior to enabling the registration in the SiteScope interface. To verify registration or to re-register SiteScope with BSM, see the Integration Preferences page in the Preferences container.
- The NetScout Event Monitor must be set to synchronize integration monitor data with BSM. You can use the configuration file for the NetScout Event Monitor to control the data that is sent from SiteScope to BSM. For details on the file structure and syntax, see "Integration Monitor Field Mapping" in *Using SiteScope*.

Tasks

How to Integrate Data From a NetScout System

The following are the tasks necessary to integrate data from a NetScout system and view the NetScout data in a way that is customized to your needs.

This task includes the following steps:

- "Prerequisites" on page 858
- "Configure a NetScout Event monitor in SiteScope" on page 858
- "Activate NetScout EMS integration in BSM" on page 858

1 Prerequisites

There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements" on page 857.

2 Configure a NetScout Event monitor in SiteScope

You can create this monitor:

- Directly in SiteScope.
- Using the System Availability Management Administration portal in BSM.

For details on the monitor's settings, see "NetScout Event Monitor Settings" on page 859.

3 Activate NetScout EMS integration in BSM

Activate the assignment rules in BSM. For details on how to perform this task, see "NetScout nGenius Integration" in *Solutions and Integrations* in the HP Business Service Management Documentation Library.

Reference

NetScout Event Monitor Settings

The NetScout Event Monitor monitors alerts received from the NetScout nGenius server and forwards them to BSM.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Relevant tasks	<ul style="list-style-type: none">▶ "How to Integrate Data From a NetScout System" on page 858▶ "How to Deploy Integration Monitors" in <i>Using SiteScope</i>
See also	▶ "NetScout Event Monitor" on page 855

NetScout Event Monitor Settings

User interface elements are described below:

UI Element	Description
Run Alerts	<p>Method for running alerts:</p> <ul style="list-style-type: none"> ▶ For each event received from NetScout system. The monitor triggers alerts for every matching entry found. <p>Note: If For each event received from NetScout system is selected as the alert method, when the NetScout Monitor is run, the monitor never reports a status of error or warning, regardless of the results of the content match or even if the target SNMP Trap is not found.</p> ▶ Once, after all events from NetScout system were received. The monitor counts up the number of matches and triggers alerts based on the Error if and Warning if thresholds defined for the monitor in the Threshold Setting section.
EMS Time Difference	<p>Value that accounts for any time differences greater than one minute between the system clock time on the monitored EMS machine and the server where SiteScope is running. This is only needed when the monitored data includes time data and the data shows a difference between the EMS machine and the SiteScope server. If the time difference is too great, the data may be discarded.</p> <p>Note: The time difference value only needs to be entered if the difference is greater than one minute. There is no need to synchronize differences of seconds less than one minute.</p>

Field Mapping

User interface elements are described below:

UI Element	Description
Field Mapping	<p>The out-of-the-box integration script that enables the monitor to correctly map the data it collects from the NetScout installation to a format recognizable by the monitor and BSM.</p> <p>This script is not editable.</p>

Topology Settings

User interface elements are described below:

UI Element	Description
Script	<p>The out-of-the-box integration script that creates a topology in BSM. The topology is based on the data collected from the NetScout installation. The script is based on the Jython scripting language (Python enabled by Java) and enables the integration between the data the monitor collects from the NetScout system and BSM's applications.</p> <p>We recommend that you use the topology settings as is and it is not editable while creating the monitor. If you must customize the topology, locate the following file: <SiteScope root directory>\discovery\scripts\ems\ems_netscout.py and edit it in your preferred text editor. To enable any changes, you must edit the monitor to reload the edited script.</p> <p>For more details on editing the script, see "Topology Settings for Technology Integration Monitors" and expand Editing the Topology Script in <i>Using SiteScope</i>.</p>

98

Technology Database Integration Monitor

This chapter includes:

Concepts

- ▶ Technology Database Integration Monitor Overview on page 864

Tasks

- ▶ How to Integrate Database Data into Business Service Management on page 869

Reference

- ▶ Technology Database Integration Monitor Settings on page 873

Troubleshooting and Limitations on page 881

Concepts

Technology Database Integration Monitor Overview

The Technology Database Integration Monitor allows you to collect event and time series data from database tables used by Enterprise Management Systems (EMS) by performing a query through a JDBC connection. The data retrieved is then processed and sent to BSM as samples (one sample for each row that was returned by a SQL query).

Use the Technology Database Integration Monitor to integrate database records into BSM. The following are examples of data that can be integrated into BSM using the Technology Database Integration Monitor:

- ▶ Events from monitoring applications event tables or views.
- ▶ Open tickets from ticketing systems applications.
- ▶ Time series from monitoring applications measurement tables.

Each time the Technology Database Integration Monitor runs, it returns the monitors status, the time it took to perform the query, the number of rows in the query result set, and the first two fields in the first row of the result and writes them in the monitoring log file.

For task details, see "How to Integrate Database Data into Business Service Management" on page 869.

For user interface details, see "Technology Database Integration Monitor Settings" on page 873.

This section also includes:

- ▶ "What Data Is Forwarded" on page 865
- ▶ "Setup Requirements" on page 866
- ▶ "Notes and Limitations" on page 867

What Data Is Forwarded

The Technology Database Integration Monitor uses a user-defined query and enumerating field name, field type, and initial value. While the query provided by the user is used to define a search criterion on the database, the enumerating field is used so that events are forwarded only once. Using an initial value allows you to specify an initial threshold value for the events that should be forwarded.

For example, if **Enumerating Field Type** uses DATE and **Start from value** uses 2003-20-03 12:00:00, only events that happened after the specified date are forwarded in the first run of the monitor. In subsequent monitor runs, the highest value for the DATE field found is used to verify that only new events are forwarded.

You use the field mapping script selected for the Technology Database Integration Monitor to control the data that is sent from SiteScope to BSM. For more details on the file structure and syntax, see "Integration Monitor Field Mapping" in *Using SiteScope*.

Data can also be mapped to a topology to forward data to the correct CI hierarchy in BSM. You can configure topology settings for the monitor by selecting a topology template, which loads the applicable scripts, and editing them in a separate text editor during monitor creation. For more details on editing the script, see "Topology Settings for Technology Integration Monitors" in *Using SiteScope*.

Before setting up the Technology Database Integration Monitor, you should be clear about the purpose and usage of the data in BSM (for presentation in Service Health, Service Level Management, and/or reports).

Setup Requirements

The steps for setting up a Technology Database Integration Monitor vary according to what database software you are trying to query. The following is an overview of the requirements for using the Technology Database Integration Monitor:

- ▶ You must use one of the database drivers supplied by default, or install or copy a compatible database driver or database access API into the required SiteScope directory location. The supplied drivers include:
 - ▶ **com.inet.tds.TdsDriver.** TDS driver is from i-net Software for Microsoft SQL databases. This driver is deployed with SiteScope.
 - ▶ **com.mercury.jdbc.sqlserver.SQLServerDriver.** DataDirect driver is from DataDirect Technologies. It is an alternative to the TDS driver for those Microsoft SQL databases that use Windows NT authentication. This driver is deployed with SiteScope.
 - ▶ **com.inet.ora.OraDriver.** OraDriver driver is from Oracle for Oracle databases. This driver is deployed with SiteScope.

Other database driver packages are available as compressed (zipped) archive files or .jar files. Database drivers in this form must not be extracted. Rather, put them into the **<SiteScope root directory>\java\lib\ext** subdirectory.

- ▶ You must know the syntax for the Database Connection URL. The Database Connection URL normally includes the class of driver you are using, some key name relating to the supplier of the driver software, followed by a combination of server, host, and port identifiers.

Database Connection URLs for this monitor are:

- ▶ **jdbc:inetdae:<hostname>:<port>**
where <hostname> is the name of the host where the database is running and <port> is the port on which the database interfaces with the driver.
- ▶ **jdbc:mercury:sqlserver://<hosthost>:1433;DatabaseName=master;AuthenticationMethod=type2**
where <hostname> is the name of the host where the database is running.

- ▶ **jdbc:oracle:thin:@<hostname>:<port>:<dbname>**
where <hostname> is the name of the host where the database is running, <port> is the port on which the database interfaces with the driver, and <dbname> is the name of the Oracle database instance.
- ▶ The database you want to query must be running, have a database name defined, and have at least one named table created in the database. In some cases, the database management software needs to be configured to enable connections by using the middleware or database driver.
- ▶ You need a valid user name and password to access and perform a query on the database. In some cases, the machine and user account that SiteScope is running on must be given permissions to access the database.
- ▶ You must know a valid SQL query string for the database instance and database tables in the database you want to query. Consult your database administrator to work out required queries to use.
- ▶ When adding the monitor to SiteScope, in the Field Mapping panel, you must select a field mapping script and load the script for the monitor. Copy the contents of the script into your preferred text editor, and edit the script to define the event handlers for this monitor instance. For details on the file structure and syntax, see "Integration Monitor Field Mapping" in *Using SiteScope*.

Notes and Limitations

- ▶ When Windows authentication is used to connect to the database, configure SiteScope using the following settings:
 - ▶ JDBC Connection string: **jdbc:mercury:sqlserver://<hosthost>:1433; DatabaseName=master;AuthenticationMethod=type2**
 - ▶ JDBC driver: **com.mercury.jdbc.sqlserver.SQLServerDriver**.
 - ▶ Leave the **Database User name** and **Database Password** fields empty, because the Windows user credentials of the account from which the SiteScope service is running are used to establish a connection to the database.

- ▶ When referring to data arriving from the Technology Database Integration Monitor in the config file, use the column name prefixed by the dollar sign (\$).

For example, for the following database query:

```
SELECT height,width FROM some_table WHERE width > 0
```

You can refer to the columns returned using the labels \$height and \$width. The names of the columns are case sensitive.

Tasks

How to Integrate Database Data into Business Service Management

This section provides the workflow for setting up the Technology Database Integration Monitor to work with BSM. If you need more information on performing any of the steps, see the sections on "Setup Requirements" on page 866, and "Technology Database Integration Monitor Settings" on page 873.

This task includes the following steps:

- "Prerequisites" on page 870
- "Use the SiteScope Database Connection tool" on page 870
- "Create a Technology Database Integration monitor" on page 871
- "Edit the monitor's field mappings" on page 871
- "Edit the monitor's topology settings - optional" on page 872
- "View data from the monitor in HP Business Service Management" on page 872

1 Prerequisites

- a** There are several key requirements for using this monitor. For details on this topic, see "Setup Requirements" on page 866.
- a** Use a database client to connect to the relevant software database. Identify which tables contain the required events/metrics (the software schema documentation may help you with this).
- b** A JDBC database driver is a prerequisite for setting up the monitor. We recommend that you use the following JDBC drivers:

- For SQL Server:

Database Connection URL=
jdbc:inetdae:<DatabaseHostName>:<Port>?database=<Database Name>

Database Driver=com.inet.tds.TdsDriver

- For Oracle:

Database Connection URL=
jdbc:inetora:<DatabaseHostName>:<Port>:<Database Instance Name>

Database Driver=com.inet.ora.OraDriver

2 Use the SiteScope Database Connection tool

Run the SiteScope Database Connection tool and follow these steps:

- a** Verify the driver can be loaded and that it successfully connects.
- b** Add a user name and password to verify that a connection can be established to the database.
- c** Add a native query. Refine the query until you get all the required events/metrics required for BSM.

3 Create a Technology Database Integration monitor

Add a Technology Database Integration Monitor to SiteScope. For user interface details, see "Technology Database Integration Monitor Settings" on page 873.

- When adding the new monitor to a group, it is recommended that you use a dedicated group for integration monitors only.
- If you do not see the **Integration Monitors** category, make sure you have an EMS Option License for your SiteScope.
- **Name.** It is recommended that the monitor name include the name of the integrated software.
- Enter all connection parameters for connecting to the database in the **Connection parameters** area.
- **SELECT/FROM/WHERE query clauses.** **SELECT** and **FROM** are mandatory. When specifying the **SELECT** clause, the value given for **Enumerating field** must appear in the clause.
- **Frequency.** Define how often the monitor should query the database. The maximum number of rows that the monitor can retrieve on each cycle is 5000; this is to prevent an out-of-memory exception. The frequency should therefore be set so that the monitor retrieves a maximum of 5000 rows per cycle.

You can edit the maximum number of rows in the **Query Settings** section for the monitor.

- **Enumerating field parameters.** Enter details for the enumerating field.

4 Edit the monitor's field mappings

In the New Technology Database Integration Monitor dialog box, expand the Field Mapping area. Select a field mapping type and click **Load File**.

- A template script is displayed in the **Field mapping** box. Edit the script to enable SiteScope to retrieve the data from the monitored application that you want to forward to BSM.
- If you select **Custom**, create your own script to map the fields for retrieving data from the monitored application.

For details on working with the field mapping script, see "Integration Monitor Field Mapping" in *Using SiteScope*.

For user interface details, see "Field Mapping" on page 878.

5 Edit the monitor's topology settings - optional

In the New Technology Database Integration Monitor dialog box in the Topology Settings area, you can create a Jython script that creates a topology of configuration items in BSM's ODB to match your EMS system. You copy the script into the Script field in the Topology Settings.

For details on this topic, see "Topology Settings for Technology Integration Monitors" in *Using SiteScope*.

For user interface details, see "Topology Settings" on page 879.

6 View data from the monitor in HP Business Service Management

View the data in BSM:

- ▶ **Events integration.** If you chose and edited the Events script in the Field Mapping area, you can view events in Service Health, System Availability Management Event Log reports, or Analytics. You can also use events when building SLAs.
- ▶ **Metrics integration.** If you chose and edited the Metrics script in the Field Mapping area, you can view the data in any application that supports SiteScope data, including SiteScope Over Time reports.
- ▶ If you want to watch the incoming samples (to view the original data before it is passed to the applications), use the sprinter utility available under **<BSM root directory>\bin**.

To troubleshoot problems with data arriving to BSM, see "Troubleshooting and Limitations" on page 881.

Reference

Technology Database Integration Monitor Settings

The Technology Database Integration Monitor allows you to collect event and time series data from database tables used by Enterprise Management Systems (EMS) by performing a query through a JDBC connection. The data retrieved is then processed and sent to HP Business Service Management as samples (one sample for each row that was returned by a SQL query).

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	<p>The Database Connection Tool is available when configuring this monitor to test and verify connectivity between SiteScope and an external ODBC or JDBC compatible database (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "Database Connection Tool" in <i>Using SiteScope</i>.</p> <p>Note: When using the Database Connection Tool to apply properties to the monitor, you must enter the credential data manually (if you select a credential profile the credential data is lost).</p>
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Integrate Database Data into Business Service Management" on page 869 ▶ "How to Deploy Integration Monitors" in <i>Using SiteScope</i>
See also	<ul style="list-style-type: none"> ▶ "Technology Database Integration Monitor" on page 863

Technology Database Integration Monitor Settings

User interface elements are described below:

UI Element	Description
Basic Settings	
Database connection URL	<p>URL to a database connection (sometimes referred to as an Authentication string).</p> <p>One way to create a database connection is to use ODBC to create a named connection to a database. For example, first use the ODBC control panel to create a Data Source Name (DSN) called <code>test</code> under the system DSN tab. Then, enter <code>jdbc:odbc:test</code> as the connection URL. Alternatively, use the supplied Microsoft SQL or Oracle driver to connect to the Database.</p>
Database driver	Driver used to connect to the database. Use the Fully Qualified Class Name of the JDBC driver you are using.
Database user name	User name used to login to the database.
Database password	Password used to login to the database.
OS integrated security	<p>Uses the user name and password from Windows' user authentication to access the database. Entries in the Database Username and Database Password are ignored.</p> <p>If this parameter is checked, you must use the DataDirect driver as your database driver.</p>
EMS server name	<p>Text identifier describing the database server that this monitor is monitoring if you are reporting monitor data to an installation of HP Business Service Management. This text descriptor is used to identify the database server when the monitor data is viewed in an HP Business Service Management report.</p> <p>Syntax exceptions: Use only alphanumeric characters for this entry. You can enter the name of the monitored server or a description of the database to be used to identify the host.</p>

UI Element	Description
EMS time difference	<p>Value to account for any time differences greater than one minute between the system clock time on the monitored EMS machine and the server where SiteScope is running. This is only needed when the monitored data includes time data and the data shows a difference between the EMS machine and the SiteScope server. If the time difference is too great, the data may be discarded.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The time difference value only needs to be entered if the difference is greater than one minute. There is no need to synchronize differences of seconds less than one minute.</p>
Query Settings	
SELECT	<p>SELECT clause to be used in the SQL query. Enter * for all fields or a comma separated list of column names to be retrieved from the database.</p> <p>When specifying the SELECT clause, the column used as the enumerating field must appear in the clause.</p>
FROM	<p>FROM clause to be used in the SQL query. Enter a table name or a comma separated list of tables from which the selected columns should be extracted.</p>
WHERE	<p>WHERE clause to be used in the SQL query. This is an optional field which allows you to define the select criteria.</p> <p>Leaving it empty results in retrieving all the rows from the table defined in the FROM option.</p>
Enumerating field	<p>Name for a database field that can be used to order the events that are returned from the database query.</p> <p>Note: The column used as enumerating field must be included in the SELECT clause.</p>

UI Element	Description																				
<p>Enumerating field type</p>	<p>The type of field used to order the result set. This can be a DATE field, an INTEGER field, a DOUBLE floating point numeral field, or a LONG field.</p> <p>The following table maps SQL types to the required enumerating field type.</p> <table border="1"> <thead> <tr> <th>SQL Type</th> <th>Enumerating Field Type</th> </tr> </thead> <tbody> <tr> <td>SMALLINT</td> <td>INTEGER</td> </tr> <tr> <td>INTEGER</td> <td>INTEGER / LONG</td> </tr> <tr> <td>BIGINT</td> <td>LONG</td> </tr> <tr> <td>NUMERIC</td> <td>LONG</td> </tr> <tr> <td>DOUBLE</td> <td>DOUBLE</td> </tr> <tr> <td>DECIMAL</td> <td>DOUBLE</td> </tr> <tr> <td>FLOAT</td> <td>DOUBLE</td> </tr> <tr> <td>TIMESTAMP</td> <td>TIMESTAMP</td> </tr> <tr> <td>DATE</td> <td>TIMESTAMP</td> </tr> </tbody> </table>	SQL Type	Enumerating Field Type	SMALLINT	INTEGER	INTEGER	INTEGER / LONG	BIGINT	LONG	NUMERIC	LONG	DOUBLE	DOUBLE	DECIMAL	DOUBLE	FLOAT	DOUBLE	TIMESTAMP	TIMESTAMP	DATE	TIMESTAMP
SQL Type	Enumerating Field Type																				
SMALLINT	INTEGER																				
INTEGER	INTEGER / LONG																				
BIGINT	LONG																				
NUMERIC	LONG																				
DOUBLE	DOUBLE																				
DECIMAL	DOUBLE																				
FLOAT	DOUBLE																				
TIMESTAMP	TIMESTAMP																				
DATE	TIMESTAMP																				

UI Element	Description
Initial enumerating value	<p>Initial value to be used as a condition for the initial run of this monitor instance. For example, if you specify the Enumerating Field Type as a field type DATE and you enter a value of 2000-01-31 12:00:00 in the Start from value field, only records that were added to the database after the specified date are forwarded.</p> <p>Note: The value of this field cannot be edited.</p>
Max rows	<p>Maximum number of rows the monitor retrieves from the database for each monitor cycle.</p> <p>Default value: 5000 rows</p> <p>If the number of result rows exceeds the set maximum, the monitor retrieves the remaining rows (those that exceeded the maximum) on future cycles, until all result rows are retrieved.</p> <p>The value should be sufficient to keep up with database table growth, yet small enough to avoid <code>java.lang.OutOfMemoryException</code> errors. Further, monitor run frequency should also be considered. Make sure that the rate at which data is collected by the monitor—which is dependent on both monitor run frequency and network/system speed—is greater than, or equal to, the rate of data insertion on the monitored system.</p>

Field Mapping

User interface elements are described below:

UI Element	Description
Sample type	<p>Select from the following sample types for this integration:</p> <ul style="list-style-type: none"> ▶ Events. For details, see "Configuring Field Mapping for Event Samples" in <i>Using SiteScope</i>. ▶ Measurements. For details, see "Configuring Field Mapping for Measurement Samples" in <i>Using SiteScope</i>. ▶ Tickets. For details, see "Configuring Field Mapping for Ticket Samples" in <i>Using SiteScope</i>.
Load File	<p>Loads the script that is applicable to the sample type selected above.</p>
Field mapping	<p>The monitor uses the field mapping script to correctly map the data it collects from the monitored application to a format recognizable by BSM. To enable the integration, you must configure these mappings as required by the environment you are monitoring.</p> <p>The mapping is editable in this box using the script editor provided (you can make the script field read only by right-clicking the script and selecting Configure > Read Only). You can also copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>For details on the field mapping script template, see "Integration Monitor Field Mapping" in <i>Using SiteScope</i>.</p>
Test Script	<p>Tests the field mapping script. We recommend that you test the script before running the monitor. This test gives you the results in a separate window of what events or measurements are forwarded to BSM.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Topology Settings

User interface elements are described below:

UI Element	Description
Topology template	<p>Jython script to create the topology in BSM for the samples retrieved from the monitored application. The monitor propagates its status to the CIs mapped in this topology. Select from:</p> <ul style="list-style-type: none"> ▶ Custom. You create your own topology if you want the retrieved data to be forwarded to specific CIs and not the standard host or EMS element CIs. ▶ Hosts. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ Hosts-Software Element. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ SiteScope Topology. Sends SiteScope topology (monitors). If selected, the script area is not available. Available for measurement samples only. ▶ No Topology. No topology is sent (although data and configuration samples are still be sent). If selected, the script area is not available. Available for measurement samples only. ▶ Tickets. Creates a business service CI with an EMS monitor CI as a leaf node. Available for ticket samples only. <p>Note: You must be familiar with the Jython language if you select Custom, since you must write the Jython topology script yourself. Depending on the sample type you select, we recommend that you begin with and edit one of the existing scripts. When editing the topology, you must make sure that an EMS Monitor CI is created as the leaf node to any CI that receives samples from the integration. For more details, see "Topology Settings for Technology Integration Monitors" in <i>Using SiteScope</i>.</p>

UI Element	Description
Load Script	Loads the required Jython script for the topology you selected in the Topology template option. If you selected Custom , there is no script to load.
Script	<p>The contents of the script are visible in this box. You can edit the script contents in this field using the script editor provided by SiteScope, or you can copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>Note: The Jython script is very sensitive to spaces and tabs.</p> <p>For more details on editing the script, see "Topology Settings for Technology Integration Monitors" and expand Editing the Topology Script in <i>Using SiteScope</i>.</p>
Test Script	<p>Tests the topology script. We recommend that you test the script before running the monitor. This test gives you the results of what events or measurements are forwarded to BSM and what topology is created. The test relies on an open socket connection for several minutes and then displays what data was captured for the test period.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Troubleshooting and Limitations

This section describes troubleshooting and limitations when working with the Technology Database Integration monitor.

- ▶ Check for errors in **<SiteScope root directory>\logs\RunMonitor.log** and in **<SiteScope root directory>\logs\error.log**.
- ▶ Change the log level to DEBUG in **<SiteScope root directory>\conf\core\Tools\log4j\PlanJava\log4j.properties**, to watch outgoing samples.

Change the line:

```
log4j.category.EmsEventPrinter=${emsloglevel}, ems.appender
```

to:

```
log4j.category.EmsEventPrinter= DEBUG, ems.appender.
```

The log file to look at is:

<SiteScope root directory>\logs\RunMonitor.log

- ▶ If samples are created and sent from SiteScope, but the data is not seen in **Service Health/Event Log/SiteScope reports**, look in **<BSM root directory>\log\mercury_wde\wdeIgnoredSamples.log** to make sure the samples were not dropped due to missing fields or values.
- ▶ Change the logging level for Service Health to verify that Service Health received the samples. Open the following file on the Gateway Server machine:

<BSM root directory>\conf\core\tools\log4j\mercury_wde\wde.properties

Change the log level parameter to DEBUG in the following lines:

- ▶ `log4j.category.com.mercury.am.platform.wde.decode.IgnoredSamplesLogger=${loglevel}, IgnoredSamples.appender`
- ▶ `log4j.category.com.mercury.am.platform.wde.publish_SamplePublisherSamples=${loglevel}, PublishedSamples.appender`

Look at the corresponding log files:

- ▶ **<BSM root directory>\logs\mercury_wde\wdeIgnoredSamples.log**
- ▶ **<BSM root directory>\logs\mercury_wde\wdePublishedSamples.log**

99

Technology Log File Integration Monitor

This chapter includes:

Concepts

- ▶ Technology Log File Integration Monitor Overview on page 884

Tasks

- ▶ How to Integrate Log File Data into Business Service Management on page 886

Reference

- ▶ Technology Log File Integration Monitor Settings on page 890

Troubleshooting and Limitations on page 899

Concepts

Technology Log File Integration Monitor Overview

The Technology Log File Integration Monitor watches for specific entries added to a log file of an Enterprise Management System (EMS) application by trying to match against a regular expression. From each matched entry, one sample is created and sent to BSM.

Each time that SiteScope runs this monitor, the monitor starts from the point in the log file where it stopped reading the last time the monitor ran. This insures that you are notified only of new entries and speeds the rate at which the monitor runs.

When using a regular expression to match against a specific line in the log, it is possible to use regular expression back references to select the data to be forwarded to BSM. For details on using back references, see "Retaining Content Match Values" in *Using SiteScope*.

For task details, see "How to Integrate Log File Data into Business Service Management" on page 886.

For user interface details, see "Technology Log File Integration Monitor Settings" on page 890.

What Data Is Collected

The Technology Log File Integration monitor sends to BSM data that is extracted from any row that matched against the **Content match** regular expression.

Before setting up the Technology Log File Integration Monitor, you should be clear about the purpose and usage of the data in BSM (for presentation in Service Health, Service Level Management, and reports).

The specific data that is forwarded to BSM is controlled by the field mapping script. You use this script to specify the preferred value fields that you want forwarded. For more details on selecting the script and the file structure and syntax, see "Integration Monitor Field Mapping" in *Using SiteScope*.

Data can also be mapped to a topology to forward data to the correct CI hierarchy in BSM. You can configure topology settings for the monitor by selecting a topology template, which loads the applicable scripts, and editing them in a separate text editor during monitor creation. For more details on editing the script, see "Topology Settings for Technology Integration Monitors" in *Using SiteScope*.

Tasks

How to Integrate Log File Data into Business Service Management

This section provides the overall flow for setting up the Technology Log File Integration Monitor to work with BSM. If you need more information on performing any of the steps, "Technology Log File Integration Monitor Settings" on page 890.

This task includes the following steps:

- "Analyze the log file to be monitored" on page 886
- "Create a Technology Log File Integration monitor" on page 887
- "Edit the monitor's field mapping" on page 887
- "Edit the monitor's topology settings - optional" on page 888
- "Check the regular expression - optional" on page 889
- "View data from the monitor in BSM" on page 889

1 Analyze the log file to be monitored

Open the relevant software log file, and identify which lines describe events or measurements. Build your regular expression with the SiteScope Regular Expression tool. Use the tool to:

- Match against the line you wish to monitor.
- Make sure that values are extracted correctly from the line.

For user interface details, see "Regular Expression Tool" in *Using SiteScope*.

2 Create a Technology Log File Integration monitor

Add a Technology Log File Integration Monitor to SiteScope. For user interface details, see "Technology Log File Integration Monitor Settings" on page 890.

- When adding the new monitor to a group, it is recommended that you use a dedicated group for integration monitors only.
- If you do not see the **Integration Monitors** category, make sure you have an EMS Option License for your SiteScope.
- **Name.** It is recommended that the monitor name include the name of the integrated software.
- **Log file path name** and **Server:**
 - The file name can include a variable name (for example: `s/c:\temp\EV-$year$-$0month$-$0day$.tab/`).
 - When reading a file on a remote UNIX machine, define a remote UNIX connection; you can then select the UNIX machine from the **Server** list.
 - When reading a file on a remote Windows machine, enter the UNC path in the **Log file path name** field (SiteScope should run under a privileged user for the machine that holds the file), and leave the **Server** box empty.
- **Content match (regular expression).** Surround values you wish to extract with parenthesis. It is recommended that you build your content match with the SiteScope Regular Expression tool before defining the monitor.

3 Edit the monitor's field mapping

In the New Technology Log File Integration Monitor dialog box, expand the Field Mapping area. Select a field mapping type and click **Load File**.

- If you select **Events**, **Tickets**, or **Measurements**, a template script is displayed in the **Field mapping** box. Edit the script to enable SiteScope to retrieve the data from the monitored application that you want to forward to BSM.

- If you select **Custom**, create your own script to map the fields for retrieving data from the monitored application.

Note: When referring to data arriving from the Technology Log File Integration monitor in the configuration file, use the number corresponding to the back reference returned prefixed by the label `$group`.

For example, for the **Content Match** expression:

```
/([0-9]{2})\s([A-Z]*) ([a-z]*) /
```

and the corresponding Log file text that contains:

```
21 HELLO world
```

You can refer in the config file to three retained values (back references) as follows, where the number appended to the end of the `$groupn` label corresponds to the order of the parentheses in the expression:

```
$group0 = (21)  
$group1 = (HELLO)  
$group2 = (world)
```

For details on working with the field mapping script, see "Integration Monitor Field Mapping" in *Using SiteScope*.

For user interface details, see "Field Mapping" on page 895.

4 Edit the monitor's topology settings - optional

In the New Technology Log File Integration Monitor dialog box in the Topology Settings area, you can create a Jython script that creates a topology of configuration items in BSM's ODB to match your EMS system. You copy the script into the Script field in the Topology Settings.

For details on this topic, see "Topology Settings for Technology Integration Monitors" in *Using SiteScope*.

For user interface details, see "Topology Settings" on page 897.

5 Check the regular expression - optional

After entering the settings for the Technology Log File Integration Monitor, it is recommended that you perform optimization of the regular expression (for example, to check for problems with use of quantifiers such as `.*`). Use the SiteScope Regular Expression tool to perform the optimization. Update the monitor with any corrections.

For user interface details, see "Regular Expression Tool" in *Using SiteScope*.

6 View data from the monitor in BSM

View the data in BSM:

- ▶ **Events integration.** If you chose and edited the Events script in the Field Mapping area, you can view events in Service Health, System Availability Management Event Log reports, or Analytics. You can also use events when building SLAs.
- ▶ **Tickets integration.** If you chose and edited the tickets script in the Field Mapping area, you can view events in any application that supports SiteScope data, including SiteScope Over Time reports.
- ▶ **Measurements integration.** If you chose and edited the measurements script in the Field Mapping area, you can view the data in any application that supports SiteScope data, including SiteScope Over Time reports.
- ▶ If you want to watch the incoming samples (to view the original data before it is passed to the applications), use the sprinter utility available under `<BSM root directory>\bin`.

To troubleshoot problems with data arriving to BSM, see "Troubleshooting and Limitations" on page 899.

Reference

Technology Log File Integration Monitor Settings

Technology Log File Integration Monitor watches for specific entries added to a log file of a Enterprise Management System (EMS) application by trying to match against a regular expression. From each matched entry, one sample is created and sent to HP Business Service Management. Each time the monitor runs, it examines log entries added since the last time it ran.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	You must have the format and syntax of the log file that you want to monitor. You must construct a Content match regular expression to match on the entries in the log file that contain the data you want to monitor and forward to BSM. For examples of regular expressions, see "Examples for Log File Monitoring" in <i>Using SiteScope</i> .
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Integrate Log File Data into Business Service Management" on page 886 ▶ "How to Deploy Integration Monitors" in <i>Using SiteScope</i>
See also	▶ "Technology Log File Integration Monitor" on page 883

Log File Integration Monitor Settings

User interface elements are described below:

UI Element	Description
Server	Select a server from the server list (only those remote servers that have been configured in SiteScope are displayed). Alternatively, click the Browse Servers button to select a server from the local domain, or Add Remote Server to add a new server. Default value: SiteScope Server (the server on which SiteScope is installed)

UI Element	Description
Log file path name	<p>Path to the log file from which you want to extract data.</p> <ul style="list-style-type: none"> ▶ Remote UNIX. For reading log files on remote UNIX machines, the path must be relative to the home directory of UNIX user account being used to login to the remote machine. Select Preferences > UNIX Servers for information about which UNIX user account is being used. ▶ Remote Windows NT/2000 through NetBIOS. You can also monitor log files by including the UNC path to the remote log file. For example, <code>\\remoteserver\sharedfolder\filename.log</code>. This requires that the user account under which SiteScope is running has permission to access the remote directory using the UNC path. If a direct connection using the operating system is unsuccessful, SiteScope tries to match the <code>\\remoteserver</code> with servers currently defined as remote NT connection profiles (displayed in the Microsoft Windows remote server list). If an exact match is found for <code>\\remoteserver</code> in the remote NT connection profiles, SiteScope tries to use this connection profile to access the remote log file. If no matching server name is found, the monitor reports that the remote log file can not be found. ▶ Remote NT through SSH. You must select the remote server using the Server selection above. It is not necessary to select a remote Windows server if you are using NetBIOS to connect to remote Windows servers. <p>Optionally, you can use a regular expression to insert date and time variables. For example, you can use a syntax of <code>s/ex\$shortYear\$\$0month\$\$0day\$.log/</code> to match date-coded IIS log file names.</p>

UI Element	Description
Content match	<p>Text to look for in the log entries. You can also use a regular expression in this entry to match text patterns.</p> <p>Unlike the content match function of other SiteScope monitors, the Log File Monitor content match is run repeatedly against the most recent content of the target log file until all matches are found. This means the monitor not only reports if the match was found, but also how many times the matched pattern was found.</p> <p>To match text that includes more than one line of text, add an s search modifier to the end of the regular expression.</p>
No error if file not found	Keeps the monitor in good status if the file is not found.
Log file encoding	<p>Log file encoding that is used if you are reading a log file whose encoding is different than the SiteScope machine's default encoding.</p> <p>Default value: windows-1252</p>

UI Element	Description
Run alerts	<p>Method for running alerts for this monitor:</p> <ul style="list-style-type: none"> ▶ For each log entry matched. Triggers alerts for each matching entry found regardless of the defined threshold settings and the monitor status (good, warning, or error). <ul style="list-style-type: none"> Note: When the Technology Log File Integration Monitor is run with this alert method selected, the monitor never displays an error or warning status in the SiteScope interface, regardless of the results of the content match or if the target log file is not found. The monitor triggers alerts if one or more matching entries are found and the Error if or Warning if thresholds are defined accordingly (for example, setting Error if to the default of matchCount > 0). ▶ Once, after all log entries have been checked. Counts the number of matches and trigger alerts one time. The alert is based on the Error if and Warning if thresholds defined for the monitor. <ul style="list-style-type: none"> Note: By default, selecting this option causes SiteScope to send one alert message if one or more matches are found, but the alert does not include any details of the matching entries. To have SiteScope include the matching entries, you must associate the monitor with an alert definition that has the property <matchDetails> in the alert template. This special template property is used to populate the alert with the details of all the matching entries. You use this for email alerts or other alert types that work with template properties. <p>Email alert templates are stored in the <SiteScope root directory>\templates.mail directory.</p>

UI Element	Description
EMS time difference	<p>Value that accounts for any time differences greater than one minute between the system clock time on the monitored EMS machine and the server where SiteScope is running. This is only needed when the monitored data includes time data and the data shows a difference between the EMS machine and the SiteScope server. If the time difference is too great, the data may be discarded.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The time difference value only needs to be entered if the difference is greater than one minute. There is no need to synchronize differences of seconds less than one minute.</p>

Field Mapping

User interface elements are described below:

UI Element	Description
Sample Type	<p>Select from the following sample types for this integration:</p> <ul style="list-style-type: none"> ▶ Events. For details, see "Configuring Field Mapping for Event Samples" in <i>Using SiteScope</i>. ▶ Measurements. For details, see "Configuring Field Mapping for Measurement Samples" in <i>Using SiteScope</i>. ▶ Tickets. For details, see "Configuring Field Mapping for Ticket Samples" in <i>Using SiteScope</i>.
Load File	<p>Loads the script that is applicable to the sample type selected above.</p>

UI Element	Description
<p>Field Mapping</p>	<p>The monitor uses the field mapping script to correctly map the data it collects from the monitored application to a format recognizable by BSM. To enable the integration, you must configure these mappings as required by the environment you are monitoring.</p> <p>The mapping is editable in this box using the script editor provided (you can make the script field read only by right-clicking the script and selecting Configure > Read Only). You can also copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>For details on the field mapping script template, see "Integration Monitor Field Mapping" in <i>Using SiteScope</i>.</p>
<p>Test Script</p>	<p>Tests the field mapping script. We recommend that you test the script before running the monitor. This test gives you the results of what events or measurements are forwarded to BSM. The test relies on an open socket connection for several minutes and then displays what data was captured for the test period.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Topology Settings

User interface elements are described below:

UI Element	Description
Topology template	<p>Jython script to create the topology in BSM for the samples retrieved from the monitored application. The monitor propagates its status to the CIs mapped in this topology. Select from:</p> <ul style="list-style-type: none"> ▶ Custom. You create your own topology if you want the retrieved data to be forwarded to specific CIs and not the standard host or EMS monitor CIs. ▶ Hosts. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ Hosts-Software Element. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ SiteScope Topology. Sends SiteScope topology (monitors). If selected, the script area is not available. Available for measurement samples only. ▶ No Topology. No topology is sent (although data and configuration samples are still be sent). If selected, the script area is not available. Available for measurement samples only. ▶ Tickets. Creates a business service CI with an EMS monitor CI as a leaf node. Available for ticket samples only. <p>Note: You must be familiar with the Jython language if you select Custom, since you must write the Jython topology script yourself. Depending on the sample type you select, we recommend that you begin with and edit one of the existing scripts.</p> <p>For more details, see "Topology Settings for Technology Integration Monitors" in <i>Using SiteScope</i>.</p>

UI Element	Description
Load Script	Loads the required Jython script for the topology you selected in the Topology template option. If you selected Custom , there is no script to load.
Script	<p>The contents of the script are visible in this box. You can edit the script contents in this field using the script editor provided by SiteScope, or you can copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>Note: The Jython script is very sensitive to spaces and tabs.</p> <p>For more details on editing the script, see "Topology Settings for Technology Integration Monitors" and expand Editing the Topology Script in <i>Using SiteScope</i>.</p>
Test Script	<p>Tests the topology script. It is recommended that you test the script before running the monitor. This test gives you the results of what events or measurements are forwarded to BSM and what topology is mapped. The test relies on an open socket connection for several minutes and then displays what data was captured for the test period.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Troubleshooting and Limitations

This section describes troubleshooting and limitations when working with the Technology Log File Integration monitor.

- ▶ Check for errors in **<SiteScope root directory>\logs\RunMonitor.log** and in **<SiteScope root directory>\logs\error.log**.
- ▶ Change the log level to DEBUG in **<SiteScope root directory>\conf\core\Tools\log4j\PlainJava\log4j.properties**, to watch outgoing samples.

Change the line:

```
log4j.category.EmsEventPrinter=${emsloglevel}, ems.appender
```

to:

```
log4j.category.EmsEventPrinter= DEBUG, ems.appender.
```

The log file to look at is:

```
<SiteScope root directory>\logs\RunMonitor.log
```

- ▶ If samples are created and sent from SiteScope, but the data is not seen in **Service Health/Event Log/SiteScope reports**, look in **<BSM root directory>\log\mercury_wde\wdeIgnoredSamples.log** to make sure the samples were not dropped due to missing fields or values.
- ▶ Change the logging level for Service Health to verify that Service Health received the samples. Open the following file on the Gateway Server machine:

```
<BSM root directory>\conf\core\tools\log4j\mercury_wde\wde.properties
```

Change the log level parameter to DEBUG in the following lines:

- ▶ `log4j.category.com.mercury.am.platform.wde.decode.IgnoredSamplesLogger=${loglevel}, IgnoredSamples.appender`
- ▶ `log4j.category.com.mercury.am.platform.wde.publish_SamplePublisherSamples=${loglevel}, PublishedSamples.appender`

Look at the corresponding log files:

- ▶ **<BSM root directory>\logs\mercury_wde\wdeIgnoredSamples.log**
- ▶ **<BSM root directory>\logs\mercury_wde\wdePublishedSamples.log**

100

Technology SNMP Trap Integration Monitor

This chapter includes:

Concepts

- ▶ Technology SNMP Trap Integration Monitor Overview on page 902

Tasks

- ▶ How to Integrate SNMP Trap Data into Business Service Management on page 904

Reference

- ▶ Technology SNMP Trap Integration Monitor Settings on page 908

Troubleshooting and Limitations on page 914

Concepts

Technology SNMP Trap Integration Monitor Overview

The Technology SNMP Trap Integration Monitor watches for SNMP traps received by SiteScope from third-party Enterprise Management Systems (EMS). For each SNMP trap that SiteScope receives, a sample is forwarded to BSM containing the SNMP trap values.

The third-party EMS systems must be configured to send traps to the SiteScope server.

The Technology SNMP Trap Integration Monitor is useful for integrating traps that your external devices create into the BSM framework. For example, you can use this monitor to forward information from Hewlett Packard Network Node Manager to BSM. For more information, see "Integration with HP Network Node Manager" in *Using SiteScope*.

For task details, see "How to Integrate SNMP Trap Data into Business Service Management" on page 904.

For user interface details, see "Technology SNMP Trap Integration Monitor Settings" on page 908.

What Data Is Collected

The Technology SNMP Trap Integration Monitor collects data that is extracted from any SNMP trap (version 1 and 2) received by SiteScope and sends notifications to BSM containing preferred values from the original SNMP trap.

Before setting up the Technology SNMP Trap Integration Monitor, you should be clear about the purpose and usage of the data in BSM (for presentation in Service Health, Service Level Management, and/or reports).

The specific data that is forwarded to BSM is controlled by the field mapping script. You use this script to specify the preferred value fields that you want forwarded. For more details on selecting the script and the file structure and syntax, see "Integration Monitor Field Mapping" in *Using SiteScope*.

Data can also be mapped to a topology to forward data to the correct CI hierarchy in BSM. You can configure topology settings for the monitor by selecting a topology template, which loads the applicable scripts, and editing them in a separate text editor during monitor creation. For more details on editing the script, see "Topology Settings for Technology Integration Monitors" in *Using SiteScope*.

Tasks

How to Integrate SNMP Trap Data into Business Service Management

This section provides the overall flow for setting up the Technology SNMP Trap Integration Monitor to work with BSM. If you need more information on performing any of the steps, see the section on "Technology SNMP Trap Integration Monitor Settings" on page 908.

This task includes the following steps:

- "Prerequisites" on page 905
- "Configure the relevant software to send SNMP traps to the SiteScope machine" on page 905
- "Use SiteScope SNMP Trap tool to watch if the traps are received" on page 905
- "Create a Technology SNMP Trap Integration monitor" on page 906
- "Edit the monitor's field mappings" on page 906
- "Edit the monitor's topology settings - optional" on page 907
- "View data from the monitor in HP Business Service Management" on page 907

1 Prerequisites

Your SiteScope has to be integrated with BSM and enabled to forward data.

For details on how to perform this task, see "How to Collect Data on the Performance of an IT Resource" in *Using SiteScope*.

2 Configure the relevant software to send SNMP traps to the SiteScope machine

The SNMP agents you want to monitor must be configured to send SNMP traps to the SiteScope host. Consult with the system administrator or applicable product documentation for more about SNMP configuration.

3 Use SiteScope SNMP Trap tool to watch if the traps are received

If you do not see any traps, make sure that the SNMP trap port is available for the SiteScope. The Technology SNMP Trap Integration Monitor uses port 162 for receiving traps.

- a** Stop the SiteScope service.
- b** Verify that the SNMP trap port (162) is available—`netstat -na | find "162"` shows no output.
- c** If the port is busy, locate the process or program that uses it (for example the Microsoft SNMP Trap Service) and terminate it.

Note: To see which process uses this port, you can download `tcpview` from www.sysinternals.com.

- d** Restart SiteScope.

4 Create a Technology SNMP Trap Integration monitor

Add a Technology SNMP Trap Integration Monitor to SiteScope. For user interface details, see "Technology SNMP Trap Integration Monitor Settings" on page 908.

- ▶ When adding the new monitor to a group, it is recommended that you use a dedicated group for integration monitors only.
- ▶ If you do not see the **Integration Monitors** category, make sure you have an EMS Option License for your SiteScope.
- ▶ **Name.** It is recommended that the monitor name include the name of the integrated software.

5 Edit the monitor's field mappings

In the New Technology SNMP Trap Integration Monitor dialog box, expand the Field Mapping area. Select a field mapping type and click **Load File**.

- ▶ A template script is displayed in the **Field mapping** box. Edit the script to enable SiteScope to retrieve the data from the monitored application that you want to forward to BSM.
- ▶ If you select **Custom**, create your own script to map the fields for retrieving data from the monitored application.

Note: All the received traps are saved to **snmptrap.log** in **<SiteScope root directory>\logs**. When referring to data arriving from the Technology SNMP Trap Integration Monitor, use the names from the **snmptrap.log** file, prefixed with the dollar sign (\$).

For example:

Use the **\$oid** to refer to the oid value of the trap, **\$var1** to refer to the variable bound as the first variable in trap, and **\$var2** for variable bound as second variable in trap.

For details on working with the field mapping script, see "Integration Monitor Field Mapping" in *Using SiteScope*.

For user interface details, see "Field Mapping" on page 910.

6 Edit the monitor's topology settings - optional

Optionally, in the New Technology SNMP Trap Integration Monitor dialog box in the Topology Settings area, you can create a Jython script that creates a topology of configuration items in BSM's ODB to match your EMS system. You copy the script into the Script field in the Topology Settings.

For details on this topic, see "Topology Settings for Technology Integration Monitors" in *Using SiteScope*.

For user interface details, see "Topology Settings" on page 912.

7 View data from the monitor in HP Business Service Management

View the data in BSM:

- You can view SNMP traps in the **Tools** link or in **<SiteScope root directory>\logs\snmptrap.log**. (For a better understanding of what SNMP traps are, refer to: www.snmpink.org.)
- **Events integration.** If you chose and edited the Events script in the Field Mapping area, you can view events in Service Health, System Availability Management Event Log reports, or Analytics. You can also use events when building SLAs.
- **Metrics integration.** If you chose and edited the Metrics script in the Field Mapping area, you can view the data in any application that supports SiteScope data, including SiteScope Over Time reports.
- If you want to watch the incoming samples (to view the original data before it is passed to the applications), use the sprinter utility available under **<BSM root directory>\bin**.

To troubleshoot problems with data arriving to BSM, see "Troubleshooting and Limitations" on page 914.

Reference

Technology SNMP Trap Integration Monitor Settings

The Technology SNMP Trap Integration Monitor watches for SNMP traps received by SiteScope from third-party Enterprise Management Systems (EMS). For each SNMP trap that SiteScope receives, a sample is forwarded to BSM containing the SNMP trap values. The third-party EMS systems must be configured to send traps to the SiteScope server.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Important information	The SNMP Trap Tool is available when configuring this monitor to view SNMP Traps received by SiteScope's SNMP listener (provided you are an administrator in SiteScope, or a user granted Use monitor tools permissions). To use the tool when configuring or editing a monitor, click the Use Tool button. For details on the tool, see "SNMP Trap Tool" in <i>Using SiteScope</i> .
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Integrate SNMP Trap Data into Business Service Management" on page 904 ▶ "How to Deploy Integration Monitors" in <i>Using SiteScope</i>
See also	▶ "Technology SNMP Trap Integration Monitor" on page 901

Technology SNMP Trap Monitor Settings

User interface elements are described below:

UI Element	Description
Run alerts	<p>Method for running alerts:</p> <ul style="list-style-type: none"> ▶ For each SNMP Trap received from EMS system. The monitor triggers alerts for every matching entry found. When the Technology SNMP Trap Integration Monitor is run in the for each SNMP Trap received from EMS system alert method, the monitor never reports a status of error or warning, regardless of the results of the content match or even if the target SNMP Trap is not found. ▶ Once, after all SNMP Traps from EMS system were received. The monitor counts up the number of matches and triggers alerts based on the Error If and Warning If thresholds defined for the monitor in the Advanced Settings section.
EMS time difference	<p>Value that accounts for any time differences greater than one minute between the system clock time on the monitored EMS machine and the server where SiteScope is running. This is only needed when the monitored data includes time data and the data shows a difference between the EMS machine and the SiteScope server. If the time difference is too great, the data may be discarded.</p> <p>Note: The time difference value only needs to be entered if the difference is greater than one minute. There is no need to synchronize differences of seconds less than one minute.</p>

Field Mapping

User interface elements are described below:

UI Element	Description
Sample Type	Select from the following sample types for this integration: <ul style="list-style-type: none"> ▶ Events. For details, see "Configuring Field Mapping for Event Samples" in <i>Using SiteScope</i>. ▶ Measurements. For details, see "Configuring Field Mapping for Measurement Samples" in <i>Using SiteScope</i>. ▶ Tickets. For details, see "Configuring Field Mapping for Ticket Samples" in <i>Using SiteScope</i>.
Load File	Loads the script that is applicable to the sample type selected above.
Field mapping	<p>The monitor uses the field mapping script to correctly map the data it collects from the monitored application to a format recognizable by BSM. To enable the integration, you must configure these mappings as required by the environment you are monitoring.</p> <p>The mapping is editable in this box using the script editor provided (you can make the script field read only by right-clicking the script and selecting Configure > Read Only). You can also copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>For details on the field mapping script template, see "Integration Monitor Field Mapping" in <i>Using SiteScope</i>.</p>

UI Element	Description
Test Script	<p>Tests the field mapping script. We recommend that you test the script before running the monitor. This test gives you the results of what events or measurements are forwarded to BSM. The test relies on an open socket connection for several minutes and then displays what data was captured for the test period.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Topology Settings

User interface elements are described below:

UI Element	Description
Topology template	<p>Jython script to create the topology in BSM for the samples retrieved from the monitored application. The monitor propagates its status to the CIs mapped in this topology.</p> <p>Select from:</p> <ul style="list-style-type: none"> ▶ Custom. You create your own topology if you want the retrieved data to be forwarded to specific CIs and not the standard host or EMS monitor CIs. ▶ Hosts. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ Hosts-Software Element. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ SiteScope Topology. Sends SiteScope topology (monitors). If selected, the script area is not available. Available for measurement samples only. ▶ No Topology. No topology is sent (although data and configuration samples are still be sent). If selected, the script area is not available. Available for measurement samples only. ▶ Tickets. Creates a business service CI with an EMS monitor CI as a leaf node. Available for ticket samples only. <p>Note: You must be familiar with the Jython language if you select Custom, since you must write the Jython topology script yourself. Depending on the sample type you select, we recommend that you begin with and edit one of the existing scripts.</p> <p>For more details, see "Topology Settings for Technology Integration Monitors" in <i>Using SiteScope</i>.</p>

UI Element	Description
Load Script	Loads the required Jython script for the topology you selected in the Topology template option. If you selected Custom , there is no script to load.
Script	<p>The contents of the script are visible in this box. You can edit the script contents in this field using the script editor provided by SiteScope, or you can also copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>Note: The Jython script is very sensitive to spaces and tabs.</p> <p>For more details on editing the script, see "Topology Settings for Technology Integration Monitors" and expand Editing the Topology Script in <i>Using SiteScope</i>.</p>
Test Script	<p>Tests the topology script. We recommend that you test the script before running the monitor. This test gives you the results of what events or measurements are forwarded to BSM and what topology is mapped. The test relies on an open socket connection for several minutes and then displays what data was captured for the test period.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Troubleshooting and Limitations

This section describes troubleshooting and limitations when working with the Technology SNMP Trap Integration monitor.

Basic Troubleshooting Guidelines

- ▶ Check for errors in `<SiteScope root directory>\logs\RunMonitor.log` and in `<SiteScope root directory>\logs\error.log`.
- ▶ Change the log level to DEBUG in `<SiteScope root directory>\conf\core\Tools\log4j\PlainJava\log4j.properties`, to watch outgoing samples.

Change the line:

```
log4j.category.EmsEventPrinter=${emsloglevel}, ems.appender
```

to:

```
log4j.category.EmsEventPrinter= DEBUG, ems.appender.
```

The log file to look at is: `<SiteScope root directory>\logs\RunMonitor.log`

- ▶ Change the logging level for Service Health to verify that Service Health received the samples. Open the following file on the Gateway Server machine:

```
<BSM root directory>\conf\core\tools\log4j\mercury_wde\wde.properties
```

Change the log level parameter to DEBUG in the following lines:

- ▶ `log4j.category.com.mercury.am.platform.wde.decode.IgnoredSamplesLogger=${loglevel}, IgnoredSamples.appender`
- ▶ `log4j.category.com.mercury.am.platform.wde.publish_SamplePublisherSamples=${loglevel}, PublishedSamples.appender`

Refer to the following log files:

- ▶ `<BSM root directory>\logs\mercury_wde\wdeIgnoredSamples.log`
- ▶ `<BSM root directory>\logs\mercury_wde\wdePublishedSamples.log`

Verify SNMP Trap Reception to SiteScope

You can verify that SiteScope is receiving SNMP traps from other management systems using the SiteScope SNMP Trap Monitor. Use the following steps to verify that SiteScope is receiving traps.

- 1** Configure the intended SNMP Trap sending entity to send traps to the SiteScope machine. The steps to configure the SNMP host depends on system. Usually, it involves lowering system thresholds to cause normal situations to create traps. On some systems there is a test mode that you can use to create traps on demand. The other way is to use one of the freely available SNMP trap generators, and to send copies of the trap to SiteScope.
- 2** Inspect the SNMP Trap Monitor log file in SiteScope for sent traps. Every SNMP Trap received by the SiteScope is written into the SNMP Trap Monitor's log file, located in `<SiteScope root directory>\logs\snmptrap.log`.

Common Problems and Solutions

The following table summarizes common problems and suggested solutions:

Problem Symptom	Possible Cause	Solution
The monitor does not appear in the monitor list.	Option License for Integration Monitors had not been provided.	Provide the Option License for Integration Monitors.
The monitor reports an Address in use error and the monitor type is unavailable.	Another application or process on the machine where SiteScope is running has bound the port 162, the port used to receive SNMP traps.	You must stop the SiteScope service, terminate the process or service that is using the port, and restart SiteScope.

Problem Symptom	Possible Cause	Solution
<p>The SNMP traps are not forwarded to BSM applications.</p>	<p>The SNMP Agent does not emit SNMP traps.</p>	<p>Verify that the SNMP Agent is configured to emit SNMP traps. Use the <SiteScope>\logs\snmptrap.log file to verify that traps are received by SiteScope. For details, see "Verify SNMP Trap Reception to SiteScope" on page 915.</p>
	<p>The EMS configuration file contains errors.</p>	<p>Click the Test Script button in the Field Mapping area to verify the field mapping.</p>
	<p>The SNMP trap port is busy.</p>	<p>Make sure that no other SNMP trap service is listening to SNMP traps on the SiteScope machine. Microsoft SNMP Trap Service is common cause on computers running Windows NT or Windows 2000 operating system.</p>
	<p>The monitor is not configured to report to these applications.</p>	<p>Make sure that the monitor is configured to report to these applications.</p>
<p>Samples are created and sent from SiteScope, but the data is not seen in Service Health/Event Log/SiteScope reports.</p>	<p>Samples were dropped due to missing fields or values.</p>	<p>Check in <BSM root directory>\log\mercury_wde\wdeIgnoredSamples.log.</p>

101

Technology Web Service Integration Monitor

This chapter includes:

Concepts

- ▶ **Technology Web Service Integration Monitor Overview** on page 918

Tasks

- ▶ **How to Check Connectivity to the Technology Web Service Integration Monitor** on page 921

Reference

- ▶ **Technology Web Service Integration Monitor Settings** on page 923

Troubleshooting and Limitations on page 928

Concepts

Technology Web Service Integration Monitor Overview

The Technology Web Service Integration Monitor enables a Web service entry point to SiteScope. The monitor can be used to report data from third-party Enterprise Management Systems (EMS) to SiteScope through Web service. Both event and metrics entry points into BSM are published for external systems to use. For each event and/or metric that SiteScope receives, a sample is forwarded to BSM containing the event and/or metrics values.

SiteScope supplies a WSDL file which the user can use to create a client code. The client code reports the event and/or metrics data to SiteScope. The client has several ways to report data to BSM:

- report one event
- report an array of events
- report one metric
- report an array of metrics

For task details, see "How to Check Connectivity to the Technology Web Service Integration Monitor" on page 921.

For user interface details, see "Technology Web Service Integration Monitor Settings" on page 923.

This section also includes:

- "What Data Is Collected" on page 919
- "Setup Requirements" on page 919
- "Limitations" on page 920

What Data Is Collected

The Technology Web Service Integration Monitor collects data that is extracted from any message received by SiteScope report data Web service and sends notifications to BSM containing preferred values from the original message.

Before setting up the Technology Web Service Integration Monitor, you should understand and map out the purpose and usage of the data that is forwarded to BSM. You should determine if the data is for presentation in the Service Health, Service Level Management, and/or reports.

The specific data that is forwarded to BSM is controlled by the field mapping script. You use this script to specify the preferred value fields that you want forwarded. For more details on selecting the script and the file structure and syntax, see "Integration Monitor Field Mapping" in *Using SiteScope*.

Data can also be mapped to a topology to forward data to the correct CI hierarchy in BSM. You can configure topology settings for the monitor by selecting a topology template, which loads the applicable scripts, and editing them in a separate text editor during monitor creation. For more details on editing the script, see "Topology Settings for Technology Integration Monitors" in *Using SiteScope*.

Setup Requirements

The following are requirements for using the Technology Web Service Integration Monitor to forward data to BSM:

- ▶ When adding the monitor to SiteScope, in the Field Mapping panel, you must select a field mapping script and load the script for the monitor. Copy the contents of the script into your preferred text editor and edit the script to define the event handlers for the monitor instance. For details on the file structure and syntax, see "Integration Monitor Field Mapping" in *Using SiteScope*.
- ▶ To enable the connection to SiteScope reportMonitorData Web service, you must create a client code (in any language) that makes the connection and handles the reporting of the data to SiteScope through the Web service. For details on enabling the connection, see below.

To enable the connection to SiteScope reportMonitorData Web service:

1 Open Explorer and go to SiteScope (<http://<SiteScope host>:8080/SiteScope/services>). Take the WSDL file of the service **reportMonitorData**. The WSDL is an interface file which represents the API of the reportMonitorData Web service in SiteScope. The reportMonitorData service is the service that listens to incoming messages and forwards them to BSM. This file is used to create the client stubs that connect to the service and report the data.

2 Generate the stubs using the WSDL file. The generation of the stubs can be to any language. The way to create the files depends on the language that you want to use.

For example, if you want to use Java as the client code, you must use the WSDL2JAVA task in AXIS package that can be downloaded from their Web site. Run **Java org.apache.axis.wsdl.WSDL2Java <name of saved WSDL file>**. After running this, you get two packages. One package is **com**, which holds the needed objects for sending the data, and the second is **localhost**, which holds the stubs that makes the connection to SiteScope Web service.

3 Write the actual client code which uses the generated classes to send the data to SiteScope. In the code, call the **setreportMonitorDataEndpointAddress(<SiteScope targetHost>)**, which is found in **MonitorDataAcceptorServiceLocator** (one of the generated stubs) to set the SiteScope address to where you want the data reported.

4 Run your code and check if you get data in the SiteScope Technology Web Service Integration monitor.

Limitations

If you are working with Business Availability Center version 5.1 and earlier, you cannot define new Technology Web Service Integration monitors or edit existing ones from within BSM. If you need to define a new Technology Web Service Integration monitor or edit an existing monitor, detach SiteScope from BSM, define the monitor in SiteScope's new user interface, and then attach the SiteScope to BSM again.

Tasks

How to Check Connectivity to the Technology Web Service Integration Monitor

After creating a Technology Web Service Integration monitor in SiteScope, you can check connectivity to the Web service by using the **test_client** which is located in the `<SiteScope root directory>\conf\ems\webservice\test_client` directory. This tool sends constant messages to SiteScope reportMonitorData Web service. The messages can be either metrics messages or event messages.

To use the client tool to check connectivity:

1 In the `<SiteScope root directory>\conf\ems\webservice\test_client` directory, run the **test_event_client.bat** for events or **test_metrics_client.bat** for metrics, using the following parameters:

- ▶ **Target Host.** The address of the SiteScope host which receives the messages.
- ▶ **Number of messages to send.** Number of messages to send to SiteScope.
- ▶ **System Id.** System Id of the monitor that receives the messages.
- ▶ **Severity/Quality.** Severity of the event when forwarding events (default is to send 1 to 5). Quality of the metric when forwarding metrics data (default is 0-3).

2 If you are forwarding other values to BSM, you must edit the field mapping accordingly.

The tool can also be run with no parameters. In this case, the tool tries to send one message to the local host. The message has the system id: **Test Event System Id**. The severity is 5 (for events) or the quality is 3 (for metrics).

If you use this option, you must activate it on the SiteScope machine and add a Technology SNMP Trap Integration monitor with the system id: **Test Event System Id**.

- 3** After running the tool, go to the required SiteScope monitor and see if the number of messages received equals the number that you sent. In addition, you can go to one of the applications (Service Health, Service Level Management) and see if the data that you sent is displayed.

Reference

Technology Web Service Integration Monitor Settings

The Technology Web Service Integration Monitor enables a Web service entry point to SiteScope. The monitor can be used to report data from third-party Enterprise Management Systems (EMS) to SiteScope through Web service. Both event and metrics entry points into BSM are published for external systems to use. For each event and/or metric that SiteScope receives, a sample is forwarded to BSM containing the event and/or metrics values.

To access	Select the Monitors context. In the monitor tree, right-click a group, select New > Monitor , and select the monitor from the New Monitor Page.
Relevant tasks	<ul style="list-style-type: none"> ▶ "How to Check Connectivity to the Technology Web Service Integration Monitor" on page 921 ▶ "How to Deploy Integration Monitors" in <i>Using SiteScope</i>
See also	▶ "Technology Web Service Integration Monitor" on page 917

Technology Web Service Integration Monitor Settings

User interface elements are described below:

UI Element	Description
System ID	<p>Text system ID for the Technology Web Service Integration Monitor instance.</p> <p>Each received message from the EMS system holds a system id. Each monitor receives messages only with a system id that matches the system id defined in the monitor. The system id is unique for all monitors. Enter the system id that represents the messages that you want this monitor to receive.</p>

Field Mapping

User interface elements are described below:

UI Element	Description
Sample Type	<p>Select from the following sample types for this integration:</p> <ul style="list-style-type: none"> ▶ Events. For details, see "Configuring Field Mapping for Event Samples" in <i>Using SiteScope</i>. ▶ Measurements. For details, see "Configuring Field Mapping for Measurement Samples" in <i>Using SiteScope</i>. ▶ Tickets. For details, see "Configuring Field Mapping for Ticket Samples" in <i>Using SiteScope</i>.
Load File	<p>Loads the script that is applicable to the sample type selected above.</p>
Field Mapping	<p>The monitor uses the field mapping script to correctly map the data it collects from the monitored application to a format recognizable by BSM. To enable the integration, you must configure these mappings as required by the environment you are monitoring.</p> <p>The mapping is editable in this box using the script editor provided (you can make the script field read only by right-clicking the script and selecting Configure > Read Only). You can also copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>For details on the field mapping script template, see "Integration Monitor Field Mapping" in <i>Using SiteScope</i>.</p> <p>Note: All parameters in the field mapping should be in the format <code>logical_group</code> and not <code>logicalGroup</code>. Therefore, the target name parameter should be filled as follows:</p> <pre>target_name=resolveHostName(\$target_name)</pre>

UI Element	Description
Test Script	<p>Tests the field mapping script. We recommend that you test the script before running the monitor. This test gives you the results of what events or measurements are forwarded to BSM. The test relies on an open socket connection for several minutes and then displays what data was captured for the test period.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Topology Settings

User interface elements are described below:

UI Element	Description
Topology template	<p>Jython script to create the topology in BSM for the samples retrieved from the monitored application. The monitor propagates its status to the CIs mapped in this topology.</p> <p>Select from:</p> <ul style="list-style-type: none"> ▶ Custom. You create your own topology if you want the retrieved data to be forwarded to specific CIs and not the standard host or EMS monitor CIs. ▶ Hosts. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ Hosts-Software Element. Creates a topology with a host CI as the parent CI and a software element CI under it, and an EMS monitor CI under the software element CI. Available for event samples only. ▶ SiteScope Topology. Sends SiteScope topology (monitors). If selected, the script area is not available. Available for measurement samples only. ▶ No Topology. No topology is sent (although data and configuration samples are still be sent). If selected, the script area is not available. Available for measurement samples only. ▶ Tickets. Creates a business service CI with an EMS monitor CI as a leaf node. Available for ticket samples only. <p>Note: You must be familiar with the Jython language if you select Custom, since you must write the Jython topology script yourself. Depending on the sample type you select, we recommend that you begin with and edit one of the existing scripts.</p> <p>For more details, see "Topology Settings for Technology Integration Monitors" in <i>Using SiteScope</i>.</p>

UI Element	Description
Load Script	Loads the required Jython script for the topology you selected in the Topology template option. If you selected Custom , there is no script to load.
Script	<p>The contents of the script are visible in this box. You can edit the script contents in this field using the script editor provided by SiteScope, or you can copy it into your preferred text editor, edit it, and then copy it back into this box.</p> <p>Note: The Jython script is very sensitive to spaces and tabs.</p> <p>For more details on editing the script, see "Topology Settings for Technology Integration Monitors" and expand Editing the Topology Script in <i>Using SiteScope</i>.</p>
Test Script	<p>Tests the topology script. We recommend that you test the script before running the monitor. This test gives you the results of what events or measurements are forwarded to BSM and what topology is mapped. The test relies on an open socket connection for several minutes and then displays what data was captured for the test period.</p> <p>You can also view the results of the test in the following log file: <SiteScope root directory>\logs\bac_integration.log.</p> <p>Note: The test does not forward samples to BSM; it tests that the configuration is correct and that data is forwarded accurately when the monitor does run.</p>

Troubleshooting and Limitations

This section describes troubleshooting and limitations when working with the Technology Web Service Integration monitor.

- ▶ Check for errors in **<SiteScope root directory>\logs\RunMonitor.log** and in **<SiteScope root directory>\logs\error.log**.
- ▶ Change the log level to DEBUG in **<SiteScope root directory>\conf\core\Tools\log4j\PlainJava\log4j.properties**, to watch outgoing samples.

Change the line:

```
log4j.category.EmsEventPrinter=${emsloglevel}, ems.appender
```

to:

```
log4j.category.EmsEventPrinter= DEBUG, ems.appender.
```

The log file to look at is:

<SiteScope root directory>\logs\RunMonitor.log

- ▶ If samples are created and sent from SiteScope, but the data is not seen in **Service Health/Event Log/SiteScope reports**, look in **<BSM root directory>\log\mercury_wde\wdeIgnoredSamples.log** to make sure the samples were not dropped due to missing fields or values.
- ▶ Change the logging level for Service Health to verify that Service Health received the samples. Open the following file on the Gateway Server machine:

<BSM root directory>\conf\core\tools\log4j\mercury_wde\wde.properties

Change the log level parameter to DEBUG in the following lines:

- ▶ `log4j.category.com.mercury.am.platform.wde.decode.IgnoredSamples Logger=${loglevel}, IgnoredSamples.appender`
- ▶ `log4j.category.com.mercury.am.platform.wde.publish_SamplePublisher Samples=${loglevel}, PublishedSamples.appender`

Look at the corresponding log files:

- ▶ **<BSM root directory>\logs\mercury_wde\wdeIgnoredSamples.log**
- ▶ **<BSM root directory>\logs\mercury_wde\wdePublishedSamples.log**

Index

A

Active Directory monitor 25
Add Items dialog box 87
Amazon Web Services monitor 29
Apache Server monitor 33

B

BroadVision Application Server monitor 37
Browsable Windows Performance Counter
monitor 41

C

Check Point monitor 47
Cisco Works monitor 51
Citrix monitor 57
ColdFusion Server
monitor 67
COM+ Server
monitor 75
Composite monitor 83
CPU monitor 89

D

Database Counter monitor 97
Database Query monitor 107
DB2 8.x and 9.x monitor 127
DHCP Monitor 135
Directory monitor 139
Disk Space monitor 145
DNS Monitor 153

E

e-Business Transaction monitor 159

F

F5 Big-IP monitor 167
File monitor 173
Formula Composite Monitor 179
FTP Monitor 185

H

HP iLo (Integrated Lights-Out) monitor 193
HP NonStop Event Log monitor 199
HP NonStop Resources monitor 207
HP OM Event Monitor 825
configuration files 826
configuring Integration Add-on 830,
836
installing Integration Add-on 829,
835
log files for Integration Add-on 834,
839
overview 826
starting and stopping Integration
Add-on 833, 838
support in HP OM cluster 834, 839
tuning Integration Add-on 831, 836
uninstalling Integration Add-on 833,
839
versions supported 827
HP Service Manager Monitor 843
HP Software Support Web site 21
HP Software Web site 22

I

IPMI monitor 213

Index

J

JavaScript in URL sequences 678
JMX monitor 217

K

Knowledge Base 21

L

LDAP monitor 225
Link Check monitor 231
Log File monitor 237

M

Mail Monitor 249
MAPI Monitor 257
Memory monitor 267
Microsoft ASP Server monitor 275
Microsoft Exchange 2000/2003/2007
 Message Traffic monitor 305
Microsoft Exchange 2003 Mailbox monitor
 295
Microsoft Exchange 2003 Public Folder
 monitor 309
Microsoft Exchange 2007/2010 monitor 281
Microsoft Exchange 5.5 Message Traffic
 monitor 301
Microsoft Hyper-V monitor 313
Microsoft IIS Server monitor 319
Microsoft SQL Server monitor 327
Microsoft Windows Dial-up Monitor 335
Microsoft Windows Event Log monitor 341
Microsoft Windows Media Player monitor
 351
Microsoft Windows Media Server monitor
 357
Microsoft Windows Performance Counter
 monitor 365
Microsoft Windows Resources monitor 371
Microsoft Windows Services State monitor
 385
monitoring
 Active Directory 25
 Amazon Web Services 29

Apache Server 33
BroadVision Application Server 37
Browsable Windows Performance
 Counter 41
Check Point firewall server 47
Cisco Works 51
Citrix 57
ColdFusion Server 67
COM+ Server 75
Composite 83
CPU 89
Database Counter 97
Database Query 107
DB2 8.x and 9.x 127
DHCP 135
Directory 139
Disk Space 145
DNS 153
e-Business Transaction 159
F5 Big-IP 167
File 173
Formula Composite 179
FTP 185
HP iLo (Integrated Lights-Out) 193
HP NonStop Event Log 199
HP NonStop Resources 207
IPMI 213
JMX 217
LDAP 225
Link Check 231
Log File 237
Mail 249
MAPI 257
Memory 267
Microsoft ASP Server Traffic 275
Microsoft Exchange 2000/2003/2007
 Message Traffic 305
Microsoft Exchange 2003 Mailbox
 295
Microsoft Exchange 2003 Public
 Folder 309
Microsoft Exchange 2007/2010 281
Microsoft Exchange 5.5 Message
 Traffic 301
Microsoft Hyper-V 313
Microsoft IIS Server 319

- Microsoft SQL Server 327
 - Microsoft Windows Dial-up 335
 - Microsoft Windows Event Log 341
 - Microsoft Windows Media Player 351
 - Microsoft Windows Media Server 357
 - Microsoft Windows Performance
 - Counter 365
 - Microsoft Windows Resources 371
 - Microsoft Windows Services State 385
 - Multi Log 393
 - Network Bandwidth 399
 - News groups 407
 - Oracle 10g Application Server 413
 - Oracle 9i Application Server 417
 - Oracle Database 421
 - Ping 431
 - Port 437
 - Radius server 443
 - Real Media Player 449
 - Real Media Server 453
 - SAP CCMS 461
 - SAP CCMS Alerts 473
 - SAP Java Web Application Server 483
 - SAP Performance 489
 - SAP Work Processes 497
 - Script 509
 - Services 525
 - Siebel Application Server 535
 - Siebel Log File 545
 - Siebel Web Server 551
 - SNMP 559
 - SNMP by MIB 569
 - SNMP Trap 579
 - Solaris Zone 585
 - SunONE Web Server 595
 - Sybase 601
 - Tuxedo 607
 - UDDI 613
 - UNIX Resources 617
 - URL 623
 - URL Content 641
 - URL List 659
 - URL Sequence 671
 - VMware Performance 705
 - Web Script Sequence 719
 - Web Server 739
 - Web Service 745
 - WebLogic Application Server 757
 - WebSphere Application Server 767
 - WebSphere MQ Status 799
 - WebSphere Performance 809
 - XML Metrics 815
 - Multi Log monitor 393
- N**
- NetScout Event Monitor 855
 - system requirements 857
 - Network Bandwidth Monitor 399
 - News monitor 407
- O**
- OM Event Monitor
 - See HP OM Event Monitor 825
 - online resources 21
 - Oracle 10g Application Server monitor 413
 - Oracle 9i Application Server monitor 417
 - Oracle Database monitor 421
- P**
- Ping Monitor 431
 - Port Monitor 437
- R**
- Radius monitor 443
 - Real Media Player monitor 449
 - Real Media Server monitor 453
- S**
- SAP CCMS Alerts Monitor
 - user authorization settings 463
 - SAP CCMS Alerts monitor 473
 - SAP CCMS monitor 461
 - Topology Settings 644
 - troubleshooting and limitations 465
 - SAP Java Web Application Server monitor 483
 - SAP Performance monitor 489

SAP Work Processes monitor 497
Topology Settings 500

Script monitor 509
setting a timeout value for script
execution 514

Service Manager Event Monitor
See HP Service Manager Monitor 843

Service monitor 525

Show HTML button 702

Show Source button 702

Siebel Application Server Monitor
setup requirements 537

Siebel Application Server monitor 535
Topology Settings 539

Siebel Log File monitor 545

Siebel Web Server monitor 551
Topology Settings 553

SNMP by MIB Monitor 569

SNMP Monitor 559

SNMP Trap Monitor 579

Solaris Zones monitor 585
Topology Settings 587
use-case scenarios 591

SunONE Web Server monitor 595

Sybase monitor 601

T

Technology Database Integration Monitor
863, 917

setup requirements 866, 919
step-by-step integration guide 869
troubleshooting 881, 921

Technology Log File Integration Monitor
883

step-by-step integration guide 886
troubleshooting 899

Technology SNMP Trap Integration Monitor
901

about 902
configuring 904
step-by-step integration guide 904
troubleshooting 914
verify SNMP trap reception 915

Technology Web Service Integration
Monitor

troubleshooting 928

Troubleshooting and Knowledge Base 21

Tuxedo monitor 607

U

UDDI monitor 613

UNIX Resources monitor 617

URL Content Monitor
SSL connectivity 644

URL Content monitor 641

URL List monitor 659

URL Monitor
SSL connectivity 627, 663

URL monitor 623

URL Sequence monitor 671
beginning a new 686
copying HTML source in steps 702
defining the next step 688
dynamic content 679
limitations on embedded scripts 678
SSL connectivity 678
viewing steps in a browser 702

URL Sequence step test 703

URL Sequence Steps dialog box 697

V

VMware Performance monitor 705

W

Web Script counter metrics 735

Web Script monitor 719
counters 722
measurements 722
setting up 722, 730
transaction breakdowns 722
VuGen scripting 722, 730
workflow 722, 730

Web Server monitor 739

Web Service monitor 745
Topology Settings 749

WebLogic Application Server monitor 757

WebSphere Application Server monitor 767

WebSphere MQ Status monitor 799
 authentication 802
WebSphere Performance monitor 809

X

XML Metrics monitor 815

