

HP Business Availability Center

for the Windows and Solaris operating systems

Software Version: 8.05

Business Process Monitor Administration

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Table of Contents

Welcome to This Guide

This guide provides detailed instructions on how to deploy and administer the HP Business Process Monitor data collector.

This chapter includes:

- ▶ How This Guide Is Organized on page 9
- ▶ Who Should Read This Guide on page 11
- ▶ Getting More Information on page 11

How This Guide Is Organized

The guide contains the following chapters:

Chapter 1 Introducing Business Process Monitor

Introduces Business Process Monitor and the Business Process Monitor Admin tool.

Chapter 2 Deploying Business Process Monitor

Describes how to install Business Process Monitor on a Windows or Solaris platform, and how to perform upgrades.

Chapter 3 Working with Business Process Monitor

Provides information on Business Process Monitor functioning, and describes how to access and navigate in Business Process Monitor Admin.

Chapter 4 Business Process Monitor Host Page

Describes the functionality available from the Business Process Monitor Host page in Business Process Monitor Admin.

Chapter 5 Instance Page

Describes how to administer and monitor the Business Process Monitor instance from the Instance page.

Chapter 6 Profile Page

Describes how to monitor the profiles for each Business Process Monitor instance from the Profile page.

Chapter 7 Task Page

Describes how to monitor the tasks for each Business Process Monitor instance from the Task page.

Chapter 8 Business Process Monitor Configuration Files

Describes configurable file parameters for Business Process Monitor and Business Process Monitor Admin.

Chapter 9 Advanced Configuration Options

Describes configurable options for Business Process Monitor and Business Process Monitor Admin.

Chapter 10 Workspace Directory and Log Files

Describes the logs and files that relate to running Business Process Monitor.

Chapter 11 Planning Business Process Monitor Capacity

Describes factors that influence a Business Process Monitor's load and capacity.

Who Should Read This Guide

This guide is intended for the following users of HP Business Availability Center:

- HP Business Availability Center administrators
- HP Business Availability Center data collector administrators

Readers of this guide should be knowledgeable about enterprise system administration, scripting, and HP Business Availability Center data collectors.

Getting More Information

For a complete list of all online documentation included with HP Business Availability Center, additional online resources, information on acquiring documentation updates, and typographical conventions used in this guide, see the *HP Business Availability Center Deployment Guide* PDF.

The information in this guide is extracted from the HP Business Availability Center Documentation Library. The Documentation Library is an online help system that describes how to deploy, administer, and use HP Business Availability Center.

You can access the Documentation Library by clicking Documentation Library in the HP Business Availability Center help menu.

Welcome to This Guide

1

Introducing Business Process Monitor

This chapter introduces HP Business Process Monitor and Business Process Monitor Admin.

This chapter includes:

- ▶ Business Process Monitor on page 14
- ▶ Business Process Monitor Admin on page 16

Business Process Monitor

Business Process Monitor is one of the HP Business Availability Center data collectors. Business Process Monitor proactively monitors enterprise applications in real time, identifying performance problems before users experience them. It enables you to monitor sites from various locations, emulating the end-user experience, and so assess site performance from different client perspectives.

You install Business Process Monitor on host machines on your local network or on the Internet. Once installed, Business Process Monitor runs independently as a service on the host machine. You generally deploy Business Process Monitors on multiple host machines, but you can also use each Business Process Monitor installed on a host machine as the basis for many logical Business Process Monitor instances. For example, you may want to use each instance on the host machine to run tests for a different division of your organization, or use duplicate instances during the staging period for HP Business Availability Center upgrade to communicate with the different HP Business Availability Center versions.

Each instance can be connected to a different HP Business Availability Center platform, or there may be several instances connected to a single HP Business Availability Center platform (using a unique logical host name for each).

After installing Business Process Monitor on a machine, the machine is added to the list of data collectors in HP Business Availability Center End User Management Administration and Platform Administration. Each additional Business Process Monitor instance that you define is also added to the list of available data collectors. Each Business Process Monitor can then be designated as a host for your business process profiles, which are defined in End User Management Administration. For details on creating profiles, see “Business Process Profile Wizard” in *Using End User Management*. For details on managing profiles, see “Edit Business Process Profiles Page” in *Using End User Management*.

Business Process Monitor monitors applications by executing the tasks specified in the business process profiles. This includes running scripts (transaction monitors) and collecting transaction performance data (application response time and availability), and running WebTrace and collecting server/network performance data. Performance data is collected from various points throughout the infrastructure, as well as from external locations. Business Process Monitor also logs event information and errors during the execution of the tasks. The Business Process Monitor logs are described in Chapter 10, “Workspace Directory and Log Files.”

Business Process Monitor sends the collected data to HP Business Availability Center, where you can use the applications to view and analyze the data, in order to monitor the performance of your business applications and infrastructure.

In general, Business Process Monitors do not require configuration and administration. Where configuration is required, you generally access the Web-based Business Process Monitor Admin tool, described in “Business Process Monitor Admin” on page 16. In addition, certain configuration changes can be made directly in the Business Process Monitor files, as described in Chapter 8, “Business Process Monitor Configuration Files.”

Business Process Monitor can be installed on Windows or Solaris operating systems. For details on system requirements, see “System Requirements” on page 18.

Business Process Monitor Admin

You use the Web-based Business Process Monitor Admin for managing and monitoring all Business Process Monitor instances on the machine, and for customizing Business Process Monitor settings. Business Process Monitor Admin is installed on the host machine during Business Process Monitor installation.

Business Process Monitor Admin manages the run of Business Process Monitor on the host machine. You can configure new instances, and then modify settings and view activity for each Business Process Monitor instance. You can also use Business Process Monitor Admin to view transaction and page component breakdown for Web based scripts, transaction and component breakdown for non-Web based (TCP) scripts, and to view reports for WebTrace requests.

All Business Process Monitor Admin events are reported to a log file.

2

Deploying Business Process Monitor

This chapter describes how to deploy HP Business Process Monitor on a Windows or Solaris platform.

This chapter includes:

- ▶ About Business Process Monitor Deployment on page 18
- ▶ System Requirements on page 18
- ▶ Requirements for Installation on page 21
- ▶ Installing Business Process Monitor on a Windows Platform on page 26
- ▶ Business Process Monitor Configuration Wizard on page 37
- ▶ Installing Business Process Monitor on a Solaris Platform on page 55
- ▶ Running a Silent Installation on page 63
- ▶ Uninstalling Business Process Monitor on page 78
- ▶ Deployment Troubleshooting on page 80

About Business Process Monitor Deployment

You install Business Process Monitor on designated host machines running on Windows or Solaris platforms. The machines can be located on your local network or on the Internet, and must have HTTP or HTTPS access to the HP Business Availability Center Gateway Server. Business Process Monitor includes Business Process Monitor Admin, which is the Business Process Monitor management component.

The number and locations of host machines you use should reflect factors such as the number of transactions you plan to run, the geographic dispersion of typical end-users who access your application, the location of remote servers, the locations of ISPs that provide connectivity to your Web site, and so forth. You can always install Business Process Monitor on additional host machines at a later time.

If you are using secure communication (over SSL) between Business Process Monitor and the Gateway Server, you must configure Business Process Monitor to support HTTPS communication. For details, see “Communication Using SSL” on page 233the *HP Business Availability Center Hardening Guide* PDF.

Note: For details on the compatibility between different Business Process Monitor and Business Availability Center versions, refer to the Business Availability Center readme file.

System Requirements

This section describes the hardware and system requirements for running Business Process Monitor.

This section includes the following topics:

- ▶ “Windows Hardware and Operating System” on page 19
- ▶ “Solaris Hardware and Operating System” on page 20
- ▶ “Other System Requirements” on page 20

Windows Hardware and Operating System

Component	Minimum	Recommended	High Volume Loaded Systems
Processor	3.00 GHz	3.00 GHz or higher	At least Intel(R) Core(TM)2 DUO CPU 2.40 GHz
Memory	1 GB	2 GB	4 GB
Cache Size	N/A	N/A	At least 4 MB L2 cache
Operating System	<ul style="list-style-type: none"> ▶ Windows 2003 32 bit Server standard/enterprise editions (Service Pack 1, Service Pack 2, Service Pack 2–Release 2) ▶ Windows XP Professional 32 bit (Service Pack 2, Service Pack 3) ▶ Windows Vista 32 bit (Service Pack 1) <p>For notes and limitations on running Business Process Monitor 8.05 on Windows Vista, see “Notes and Limitations for Business Process Monitor Installed on Windows Vista” on page 99.</p>		

Note: For additional details on sizing for high volume loaded systems, see “Planning Business Process Monitor Capacity” on page 249.

Solaris Hardware and Operating System

Component	Minimum
Computer/Processor	Sun workstation or server with an UltraSPARC Processor.
Operating System	Sun Solaris 10 or 9 (2.9) In all cases, install entire distribution plus OEM support + latest recommended Patch Cluster (patches can be downloaded from the SunSolve Web site, http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access)

Other System Requirements

Component	Minimum
Free Hard Disk Space	Minimum 2.0 GB (If the application files and workspace directory are stored on different drives, the application files require a minimum of 500 MB and the workspace directory requires a minimum of 1 GB. The required amount of free disk space for the workspace directory varies according to the scale of the implementation. In addition, an extra 500 MB in the temp folder is required for the extraction of the installation files.)
Web Browser	Internet Explorer (IE) 6.0 and later
Support for WebTrace over Modem	All supported platforms

Note: The online documentation is best viewed from a browser with Java support. If you do not have Java support on your browser, then you should download the Sun Java plug-in from the Sun Java Web site: <http://java.com/en/index.jsp>.

Requirements for Installation

The following topics discuss the requirements and limitations for installation:

- “General Installation Information” on page 21
- “Details Required During Installation” on page 23
- “Notes and Limitations” on page 24

General Installation Information

- The Business Process Monitor installation program can be accessed from one of the following locations:
 - The Downloads page in HP Business Availability Center Platform Administration.
 - For versions delivered on DVD, in the Data Collectors and Components directory on the HP Business Availability Center DVD. Run the required setup program directly from the DVD.

For details on the contents of the Data Collectors and Components directory on the HP Business Availability Center DVD, see “Available Components and Setup Files - Windows” in the *HP Business Availability Center Deployment Guide* PDF, part of the HP Business Availability Center Documentation Library.

Note: For the Business Process Monitor (or any other data collector) setup files to be available on the Downloads page, they must first be installed in HP Business Availability Center. The procedure for installing the data collector setup files differs, depending on whether HP Business Availability Center is running on a Windows or Solaris platform.

For details on installing the data collector setup files on a Windows platform, see “Installing Component Setup Files” in the *HP Business Availability Center Deployment Guide* PDF. For details on installing the data collector setup files on a Solaris platform, see “Installing Component Setup Files” in the *HP Business Availability Center Deployment Guide* PDF. For details on installing the data collector setup files, see the *HP Business Availability Center Deployment Guide* PDF, part of the HP Business Availability Center Documentation Library.

- ▶ You can upgrade to Business Process Monitor 8.05 from Business Process Monitor 6.5 or later. To upgrade to Business Process Monitor 8.05 from a version of Business Process Monitor earlier than 6.5, first upgrade to Business Process Monitor 6.5 or later, and then to Business Process Monitor 8.05.
- ▶ Upgrading to Business Process Monitor 8.05 requires you to uninstall the previous version of Business Process Monitor, but provides the option of retaining the existing configuration settings.
- ▶ If you change the HP Business Availability Center machine to which a Business Process Monitor connects (for example, if you use staging during a Business Availability Center upgrade) you must redirect the Business Process Monitor to the new machine. For details, see “Component and Data Upgrade and Limitations” in the *HP Business Availability Center Deployment Guide* PDF.

- ▶ During a new installation (with no saved configuration settings), you specify if you want the data collection mechanism used by Business Process Monitor to run as the system (root) user or as a specific user. Running it as a specific user limits access to resources, settings, and applications located on the local machine. (This may not be true for resources located on remote machines, where a specific user may have different privileges than the local system user.) Note that after installation, you can configure this setting from within Business Process Monitor Admin. For details, see “Running the Whole Business Process Monitor as a Specific User/System User” on page 118.
- ▶ Users with advanced knowledge of HP Business Availability Center can install Business Process Monitor using a silent installation procedure. For details, see “Running a Silent Installation” on page 63.
- ▶ For last-minute technical and troubleshooting information for Business Process Monitor, refer to the readme file available in:
 - ▶ the release download area, for Web delivery versions.
 - ▶ the HP Software Product Manuals site on the HP Software Support Web site (h20230.www2.hp.com/selfsolve/manuals). To enter the site, you must log in with your HP Passport ID.
 - ▶ the root directory on the HP Business Availability Center DVD, for versions delivered on DVD.

Details Required During Installation

You should have the following information ready when installing Business Process Monitor:

Note: If during installation you select to use configuration settings from an earlier Business Process Monitor version, then you are generally not required to supply the following information.

- ▶ If you want to run Business Process Monitor data collection as a specific user, you need the login parameters (user name, password, domain) for the user.

- ▶ For Solaris installations: If you want it to run Business Process Monitor Admin as a specific user, you need the login parameters (user and group) for the user.
- ▶ Logical names to use for the host name and location (for example, Atlanta). These logical names are used by the first Business Process Monitor instance (defined as part of the installation process) to register with HP Business Availability Center. They do not have to match the actual machine's host name and location. (Note that Setup provides the actual machine host name as the default value for the **Host name** parameter.)

Note: You can choose to skip the default instance configuration during installation and can configure an instance in Business Process Monitor Admin at a later stage.

- ▶ The protocol to be used to access HP Business Availability Center (HTTP or HTTPS).
- ▶ The name or IP address of the machine on which you installed the HP Business Availability Center Gateway server, and the port number to be used by Business Process Monitor to access HP Business Availability Center. For a distributed deployment, you need the name of the Gateway Server machine, or the load balancer machine behind which servers are installed.

Notes and Limitations

- ▶ Business Process Monitor cannot run on the same machine as HP Business Availability Center due to a port conflict.
- ▶ It is recommended (but not essential) that you install Business Process Monitor on a separate machine from all other HP Business Availability Center components. This should be a dedicated machine for Business Process Monitor. (For details on installing Business Process Monitor 8.05 on the same machine as SiteScope version 10.10 or later, refer to the HP SiteScope 10.11 Release Notes.)

- ▶ If Business Process Monitor *is* installed on the same machine as any other HP Business Availability Center component, it is highly recommended that you define a host name for Business Process Monitor that is not the actual name of the machine.
- ▶ The logical host name for each Business Process Monitor instance must be unique within an HP Business Availability Center platform. When two Business Process Monitor instances are each connected to a different HP Business Availability Center platform, they can use the same logical host name.
- ▶ Business Process Monitor should not be installed on a network drive.
- ▶ It is recommended that you run Business Process Monitor on Windows and Solaris platforms as a specific user. You select this option during setup. Note that if you set Business Process Monitor to run as a specific user on Windows platforms, the user must have Administrator privileges on the local machine. (You can also set Business Process Monitor to run as a specific user after installation, from Business Process Monitor Admin. For details, see “Running the Whole Business Process Monitor as a Specific User/System User” on page 118.)
- ▶ You can set Business Process Monitor Admin for Solaris platforms to run as a specific user, by selecting the appropriate option during Setup. (You can also set Business Process Monitor Admin to run as a specific user after installation from the nanny file, as described in “Configuring Tomcat on a Solaris Platform” on page 225.)
- ▶ Business Process Monitor can be run on a machine with a different language locale to the HP Business Availability Center system.
- ▶ You cannot install Business Process Monitor to an installation path that contains special characters (for example, # () %). On Solaris platforms, you also cannot install to an installation path that contains spaces.
- ▶ When installing Business Process Monitor from a network drive at a remote location, if the Business Process Monitor user does not have network permissions to all the network, you may not be able to run the installation remotely. To install, copy the installation file to the local machine and install from there (this greatly reduces the download time and enables you to control when Business Process Monitor is down during installation).

- ▶ Business Process Monitor does not support installation via terminal service. Installation must be performed at the destination machine.
- ▶ Business Process Monitor supports basic (HTTP) and NTLM authentication, as well as SSL with client side certification and/or server side certification.

When connecting via proxy, Business Process Monitor supports basic and NTLM proxy authentication.

For required parameter settings when configuring NTLM authentication, see “Parameters in sconn.cfg” on page 206.

- ▶ Installing Citrix Client on a Business Process Monitor machine requires you to reinstall Business Process Monitor on that machine.

Installing Business Process Monitor on a Windows Platform

This procedure describes how to install/upgrade directly on the Business Process Monitor machine.

You must have administrative privileges on the machine on which you are installing Business Process Monitor.

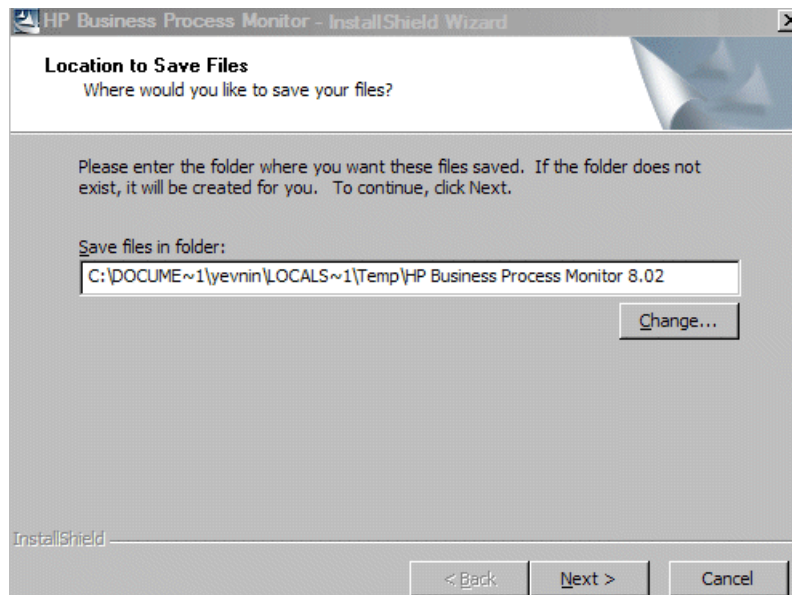
The installation process comprises two main parts—the MSI installation of the application and the Business Process Monitor configuration wizard.

Note: Setup gives you the option of selecting the locations of the installation folder for Business Process Monitor and the workspace directory, although it is recommended that you accept the default options. If you install the application files and the workspace directory on different folders, you require a minimum of 500 MB free disk space for the application files and 1 GB of free disk space for the workspace directory. (The required amount of free disk space for the workspace directory varies according to the scale of the implementation.) In addition, you need an additional 500 MB free disk space in a temporary folder for extracting and temporarily storing the installation files.

For notes and limitations on running Business Process Monitor 8.05 on Windows Vista, see “Notes and Limitations for Business Process Monitor Installed on Windows Vista” on page 99.

To install Business Process Monitor on a Windows platform:

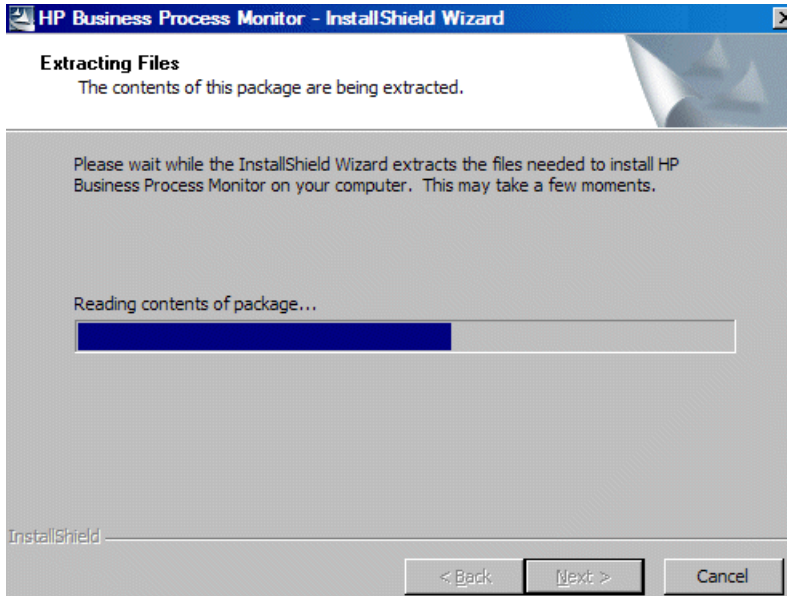
- 1 Download the Business Process Monitor setup file for Windows from the Business Availability Center **Downloads** page (Applications > Platform > Setup and Maintenance > Downloads) and save it on the machine on which you are installing Business Process Monitor. Alternatively, copy the setup file from the Business Availability Center DVD containing data collector installation programs, for versions delivered on DVD. For more details on the location of the Business Process Monitor setup file, see “General Installation Information” on page 21.
- 2 Run the Business Process Monitor setup.exe program. A screen opens requesting a location to which to extract and temporarily store the installation files.



Accept the default, temporary directory to which to extract the required installation files, or click **Change** to select another directory.

Click **Next** to continue.

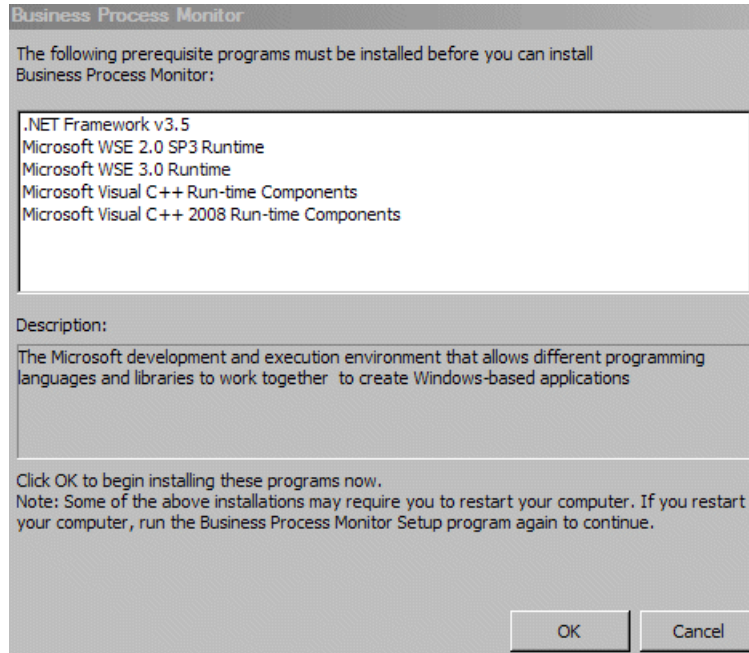
- 3 The file extraction process starts and an extraction progress screen opens.



When all the files have been extracted, click **Next** to continue.

- 4 The setup program checks if the following prerequisite programs for running scripts correctly are installed on the machine and if not, prompts you to install them. (If all the prerequisite programs are installed, setup continues with the next step.)
 - ▶ .NET Framework 3.5
 - ▶ Microsoft Data Access Components (MDAC) 2.8 SP1 (or later)
 - ▶ Microsoft Windows Installer 3.1
 - ▶ Microsoft Core XML Services (MSXML) 6.0
 - ▶ Microsoft Visual C++ 2005 Redistributable Package (x86)
 - ▶ Microsoft Visual C++ 2008 Redistributable Package (x86)
 - ▶ Web Services Enhancements (WSE) 2.0 SP3 for Microsoft .NET Redistributable Runtime MSI

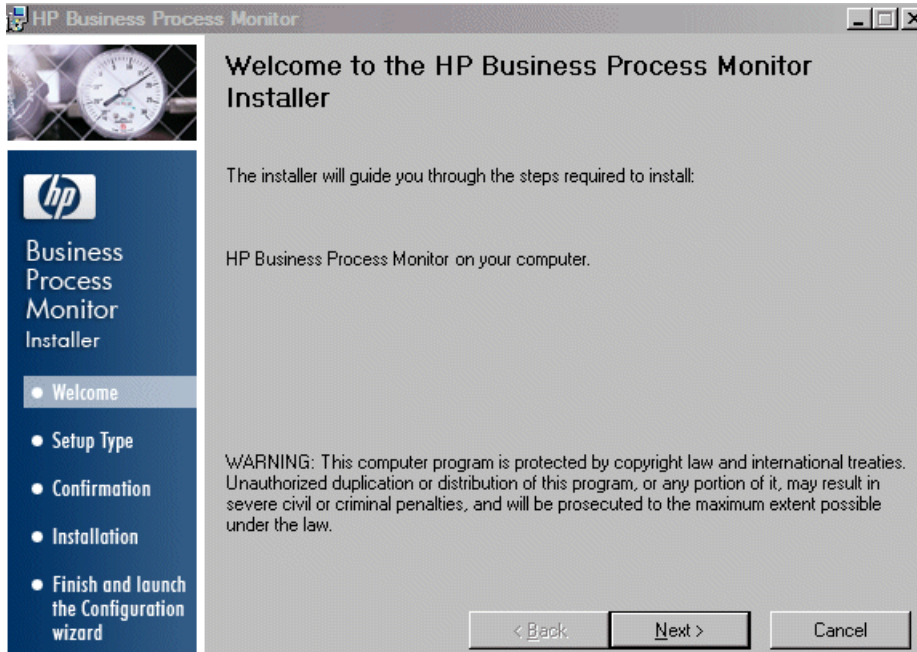
- Web Services Enhancements (WSE) 3.0 for Microsoft .NET Redistributable Runtime MSI



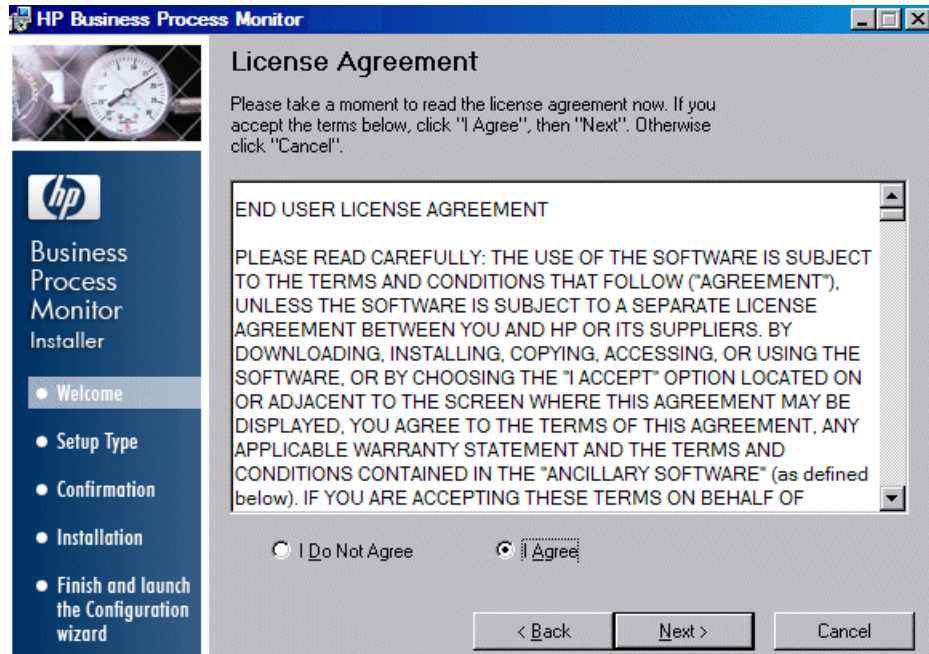
Click **OK** to install the missing programs listed. During the installation, you may be required to restart the computer. In such cases, after restarting the computer, run the Business Process Monitor setup program again until all the prerequisite programs are installed and the setup program continues with the next step.

Note: The installations of the prerequisite programs are self-contained and are embedded in the Business Process Monitor installation.

- 5 If the setup program detects a previous version of Business Process Monitor on the machine, you are prompted to uninstall the previous version and the setup program ends. Uninstall the previous version and then restart the new installation. For details on uninstalling Business Process Monitor, refer to the *Business Process Monitor Administration* PDF relevant for the version of Business Process Monitor you are uninstalling.
- 6 The HP Business Process Monitor Setup Wizard opens.



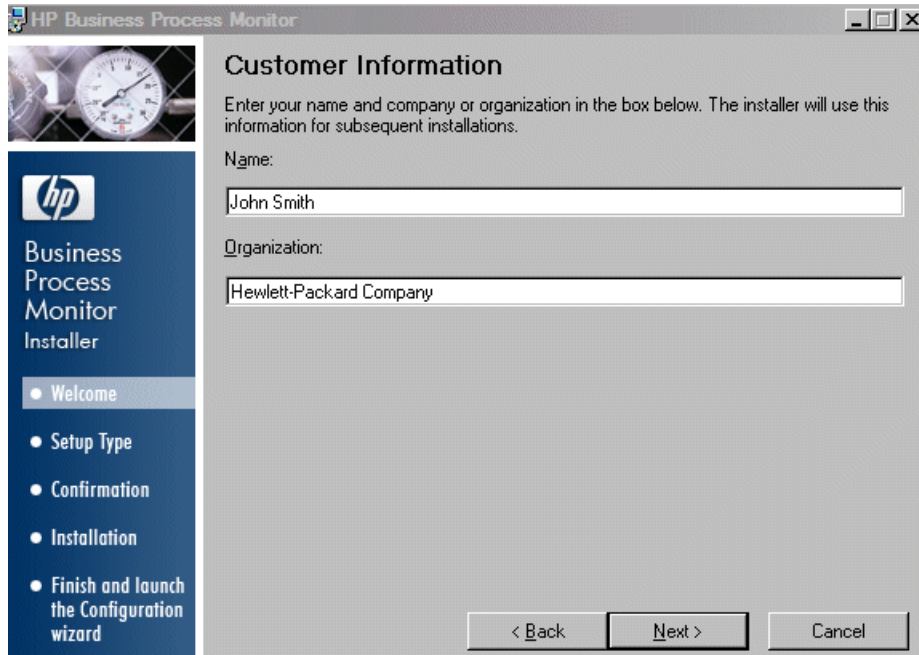
Click **Next** to begin the installation.

7 The license agreement screen opens.

Read the Business Process Monitor License Agreement.

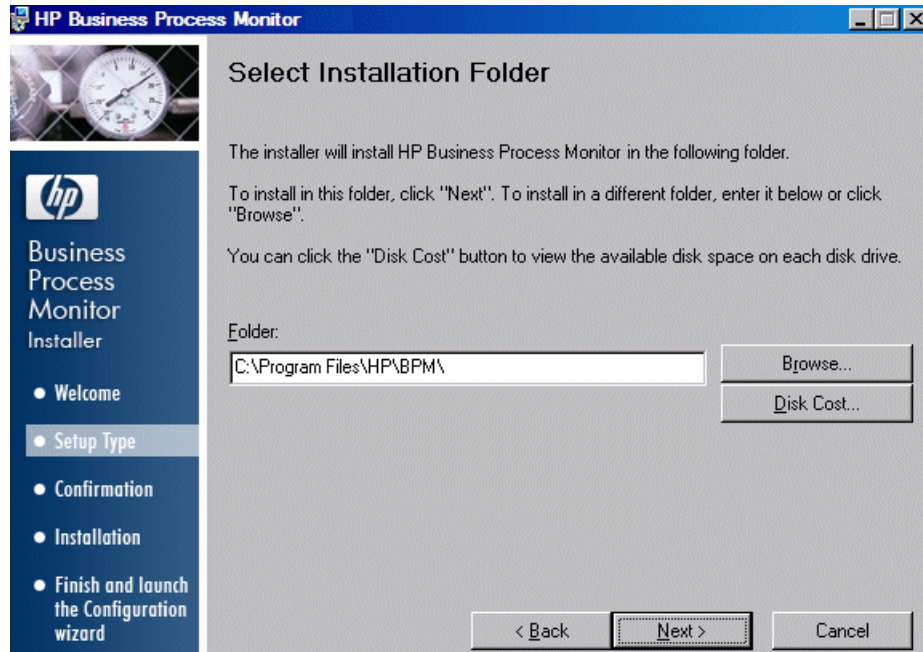
To install Business Process Monitor, you must accept the terms of the license agreement by clicking **I agree** and then click **Next** to continue.

8 The Customer Information screen opens.



Enter your name and organization (or accept the defaults) and click **Next** to continue.

9 The Select Installation Folder screen opens.



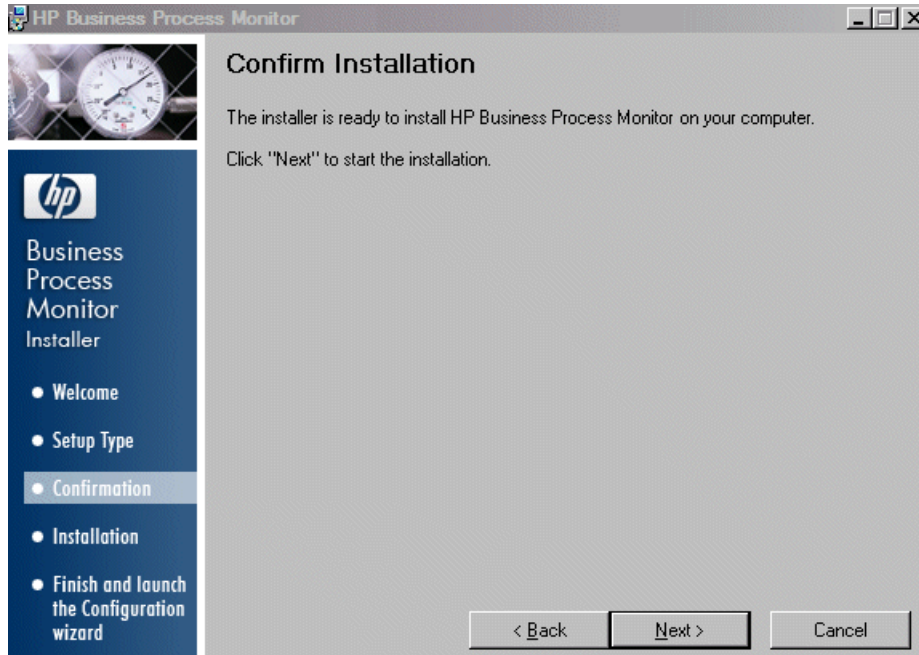
Accept the default directory location for the installation, or click **Browse** to select another directory.

Click **Next** to continue.

Note:

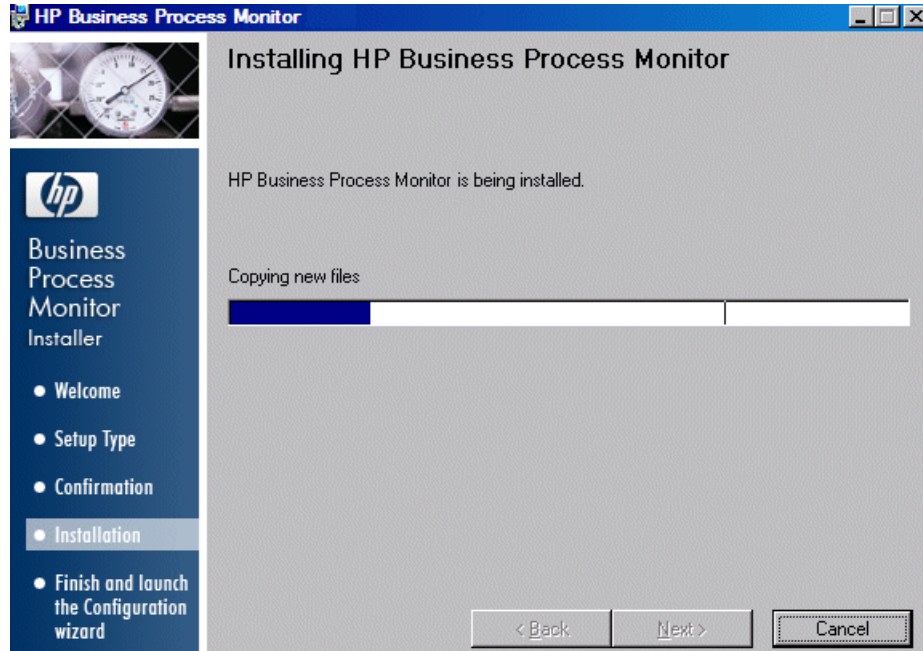
- If you select a directory other than the default directory, you must have administrator privileges for the selected directory.
 - Click **Disk Cost** to display the required and available space on the machine's disk drives in a popup window.
-

10 The Confirm Installation screen opens.

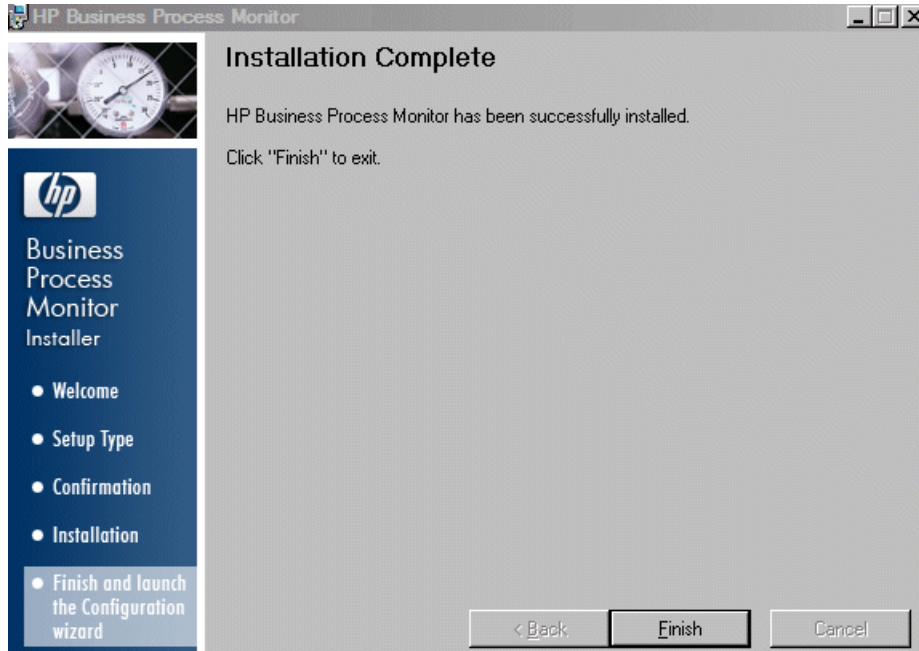


Click **Next** to continue.

- 11 The Business Process Monitor installation process starts and an installation progress screen opens.



- 12 When the installation process is complete, a message about the successful installation opens.



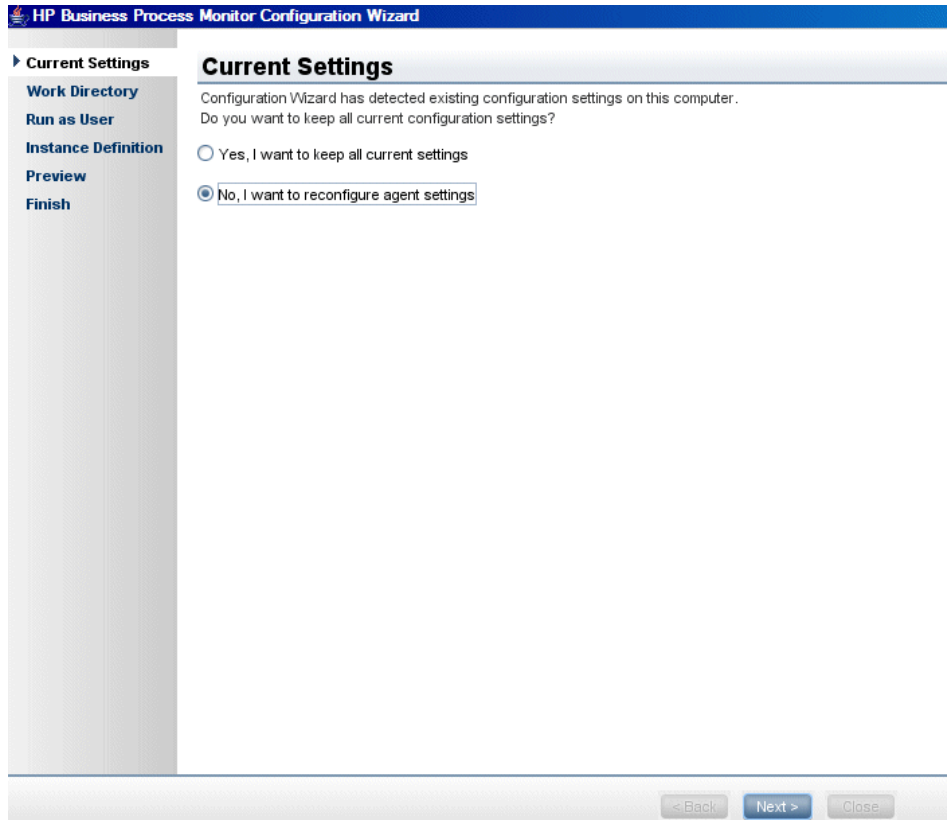
Click **Finish** to end the installation and continue with the HP Business Process Monitor Configuration wizard. For details on the user interface, see “Business Process Monitor Configuration Wizard” on page 37.

 **Business Process Monitor Configuration Wizard**

Description	<p>Enables you to configure the settings for a Business Process Monitor, including the work directory, user mode, and default instance settings.</p> <p>To access: The Business Process Monitor Configuration wizard is automatically launched during a Business Process Monitor installation, after the setup program has installed the Business Process Monitor application.</p>
Wizard Map	<p>The Business Process Monitor Configuration wizard contains:</p> <p>Current Settings Page > Work Directory Page > Run as User Page > Instance Definition Page > Preview Page > Finish Page</p>
Useful Links	<p>“Installing Business Process Monitor on a Windows Platform” on page 26</p> <p>“Installing Business Process Monitor on a Solaris Platform” on page 55</p>

Current Settings Page

The following is an example of the Current Settings page.



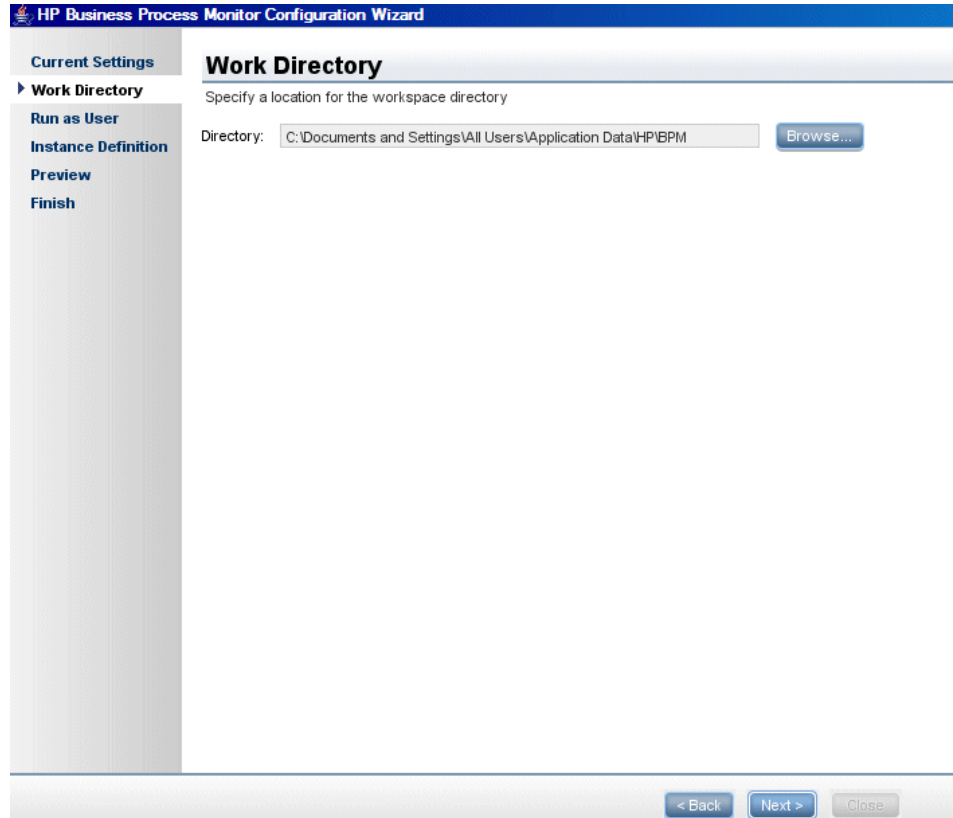
Description	Enables you to select whether you want to apply existing configuration settings from a previous Business Process Monitor installation, or configure new settings.
Important Information	<ul style="list-style-type: none"> ▶ General information about the wizard is available in “Business Process Monitor Configuration Wizard” on page 37. ▶ If no existing configuration settings are detected on the machine on which you are installing Business Process Monitor, this page is not displayed and the wizard continues with the “Work Directory Page” on page 41.
Wizard Map	<p>The Business Process Monitor Configuration Wizard contains:</p> <p>Current Settings Page > Work Directory Page > Run as User Page > Instance Definition Page > Preview Page > Finish Page</p>

The following elements are included (unlabeled GUI elements are shown in angle brackets>):

GUI Element	Description
Yes, I want to keep all current settings	Select this option to apply existing settings to the current installation. Note: <ul style="list-style-type: none">▶ If you select this option, the wizard continues with the “Preview Page” on page 52.▶ If you choose to use configuration settings from a previous installation of Business Process Monitor, the configured instances are registered to the same Business Availability Center Gateway Server as the previous installation. This means that the same jobs are retrieved, although previous persistency queues are not saved.
No, I want to reconfigure agent settings	Select this option to configure new settings.

Work Directory Page

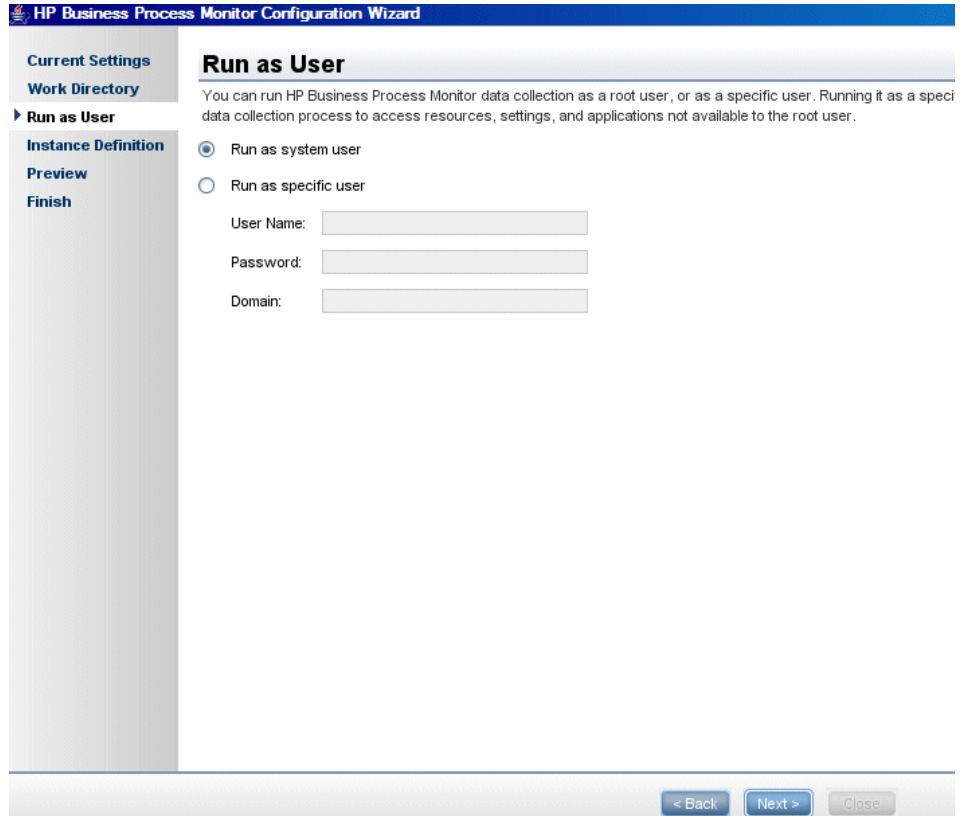
The following is an example of the Work Directory page in a Windows installation.



Description	Enables you to select the location of the Business Process Monitor work directory. Accept the default location, or click Browse to select a different location.
Important Information	<ul style="list-style-type: none"> ▶ General information about the wizard is available in “Business Process Monitor Configuration Wizard” on page 37. ▶ If you select a different directory, make sure that: <ul style="list-style-type: none"> ▶ You have administrative privileges for the folder in Windows. ▶ You have at least 1 GB of free disk space for the folder. (The required amount of free disk space varies according to the scale of the implementation.)
Wizard Map	<p>The Business Process Monitor Configuration Wizard contains:</p> <p>Current Settings Page > Work Directory Page > Run as User Page > Instance Definition Page > Preview Page > Finish Page</p>

 **Run as User Page**

The following is an example of the Run as User page for a Windows installation.



The screenshot shows the 'Run as User' page of the HP Business Process Monitor Configuration Wizard. The window title is 'HP Business Process Monitor Configuration Wizard'. On the left, there is a navigation pane with the following items: 'Current Settings', 'Work Directory', 'Run as User' (selected), 'Instance Definition', 'Preview', and 'Finish'. The main content area is titled 'Run as User' and contains the following text: 'You can run HP Business Process Monitor data collection as a root user, or as a specific user. Running it as a specific user allows you to access resources, settings, and applications not available to the root user.' Below this text are two radio button options: 'Run as system user' (which is selected) and 'Run as specific user'. Under the 'Run as specific user' option, there are three text input fields labeled 'User Name:', 'Password:', and 'Domain:'. At the bottom right of the window, there are three buttons: '< Back', 'Next >', and 'Close'.

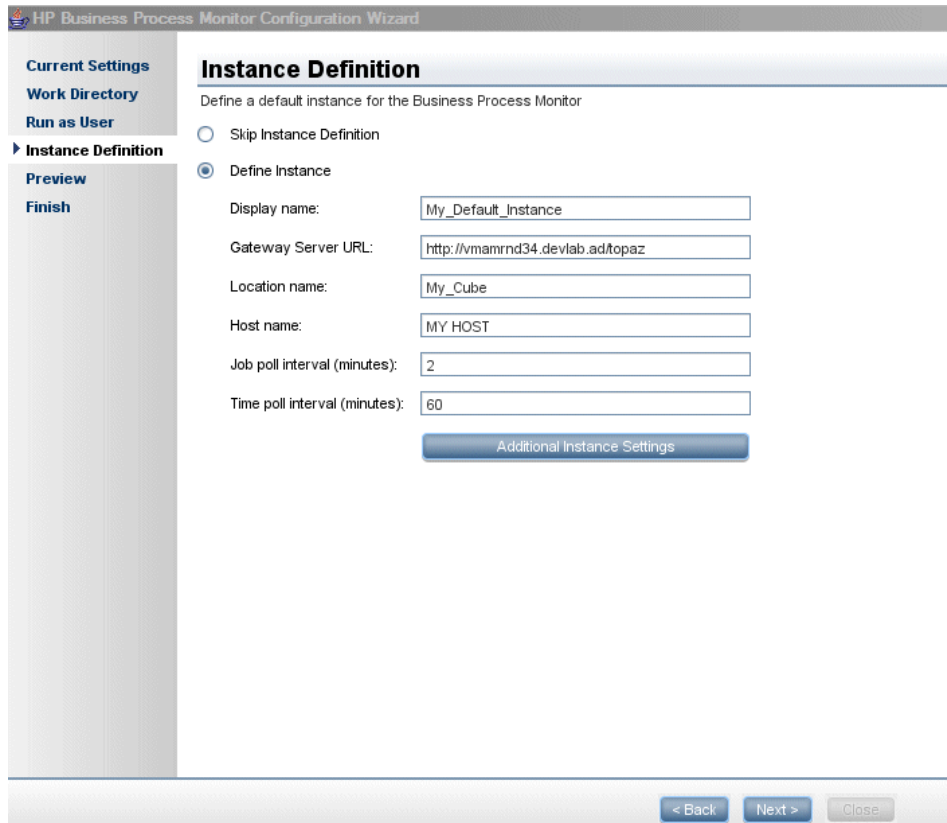
<p>Description</p>	<p>Enables you to configure Business Process Monitor data collection to run as a system user, or as a specific user. Running it as a specific user limits access to resources, settings, and applications located on the local machine. (This may not be true for resources located on remote machines, where a specific user may have different privileges than the local system user.)</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ General information about the wizard is available in “Business Process Monitor Configuration Wizard” on page 37. ▶ You can also set Business Process Monitor to run as a specific user after installation, from Business Process Monitor Admin. For details, see “Running the Whole Business Process Monitor as a Specific User/System User” on page 118.
<p>Wizard Map</p>	<p>The Business Process Monitor Configuration Wizard contains:</p> <p>Current Settings Page > Work Directory Page > Run as User Page > Instance Definition Page > Preview Page > Finish Page</p>

The following elements are included (unlabeled GUI elements are shown in angle brackets>):

GUI Element	Description
Run as system user	Select this option to set Business Process Monitor data collection to run as a system user.
Run as specific user	<p>Select this option to set Business Process Monitor data collection to run as a specific user and configure the following parameters:</p> <ul style="list-style-type: none"> ▶ User name. The specific user name. This is a mandatory field of up to 24 characters. The name cannot include spaces, nor any of the following characters: (; : " < > * + = \ ? ,). ▶ Password. (For Windows only.) The user's password. ▶ Domain. (For Windows only.) The domain for the user. The domain name can be up to 67 characters long and can include the following characters: 0-9, a-z, A-Z, hyphen (-). The domain name cannot start or end with a hyphen (-), nor can it include spaces. ▶ Group. (For Solaris only.) An existing group to which the user belongs.

Instance Definition Page

The following is an example of the Instance Definition page.



The screenshot shows the 'HP Business Process Monitor Configuration Wizard' window. On the left is a navigation pane with 'Instance Definition' selected. The main area is titled 'Instance Definition' and contains the following fields and options:

- Define a default instance for the Business Process Monitor
- Skip Instance Definition
- Define Instance
- Display name:
- Gateway Server URL:
- Location name:
- Host name:
- Job poll interval (minutes):
- Time poll interval (minutes):
-

At the bottom right of the wizard are buttons for '< Back', 'Next >', and 'Close'.

Description	Enables you to define a default instance for the Business Process Monitor.
--------------------	--

Important Information	<ul style="list-style-type: none"> ▶ General information about the wizard is available in “Business Process Monitor Configuration Wizard” on page 37. ▶ You can also define an instance after installation, from Business Process Monitor Admin. For details, see “Configuring Add Instance Parameters” on page 106.
Wizard Map	<p>The Business Process Monitor Configuration Wizard contains:</p> <p>Current Settings Page > Work Directory Page > Run as User Page > Instance Definition Page > Preview Page > Finish Page</p>

The following elements are included (unlabeled GUI elements are shown in angle brackets>):

GUI Element	Description
Skip Instance Definition	Select this option to skip the instance definition.

GUI Element	Description
<p>Define Instance</p>	<p>Select this option to define an instance and configure the following, mandatory parameters:</p> <ul style="list-style-type: none"> ▶ Display name. The display name for the instance in Business Process Monitor Admin. The display name can be up to 50 characters and can include the following characters: 0-9, a-z, A-Z, hyphen (-), underscore (_). The display name cannot start or end with a hyphen (-) or an underscore (_). ▶ Gateway Server URL. The URL of the HP Business Availability Center Gateway Server to which this instance sends collected data. The URL must be in the following format: <code>http (or https)://<Gateway Server name or IP address>:<port number>/topaz</code>. If you do not specify a port number, the default port is used (80 for http and 443 for https). ▶ Location name. The location defined for the instance. The location name can be up to 50 characters and can include the following characters: 0-9, a-z, A-Z, ` ~ ! @ # \$ % ^ & * () _ - + = [] { } / ? . , ; ; (space). ▶ Host name. The host name defined for the instance. The host name can be up to 50 characters and can include the following characters: 0-9, a-z, A-Z, ` ~ ! @ # \$ % ^ & * () _ - + = [] { } / ? . , " ' : ; < > (space). ▶ Job poll interval. The defined frequency (in minutes) with which Business Process Monitor polls the database for assigned tasks and profile changes. This is an integer positive number of up to 4 digits. ▶ Time poll interval. The defined frequency (in minutes) with which Business Process Monitor polls HP Business Availability Center for time synchronization. This is an integer positive number of up to 4 digits.
<p>Additional Instance Settings</p>	<p>Click Additional Instance Settings to open the Additional Instance Settings dialog box, where you configure user, authentication, proxy, and SSL settings for the instance. For detail on the user interface, see “Additional Instance Settings Dialog Box” on page 49.</p>

Additional Instance Settings Dialog Box

The following is an example of the Additional Instance Settings dialog box for a Windows installation.

Additional Instance Settings

Run Instance As User

User name:

Password:

Domain:

Authentication

User name:

Password:

Domain:

Proxy Settings

Proxy user name:

Proxy password:

Proxy domain:

Proxy URL:

SSL Settings

SSL client certificate file:

SSL private key file:

SSL private key password:

SSL authority certificate file:

Description	<p>Enables you to define additional settings for a default instance, such as user, authentication, proxy, and SSL settings.</p> <p>To access: Click Additional Instance Settings on the Instance Definition page.</p>
Important Information	<p>The following rules apply when you configure additional instance settings:</p> <ul style="list-style-type: none"> ▶ User names can be up to 24 characters long. Names cannot include spaces, nor any of the following characters: (; : " < > * + = \ ? ,). ▶ All domain names can be up to 67 characters long and can include the following characters: 0-9, a-z, A-Z, hyphen (-). Domain names cannot start or end with a hyphen (-), nor can they contain spaces.

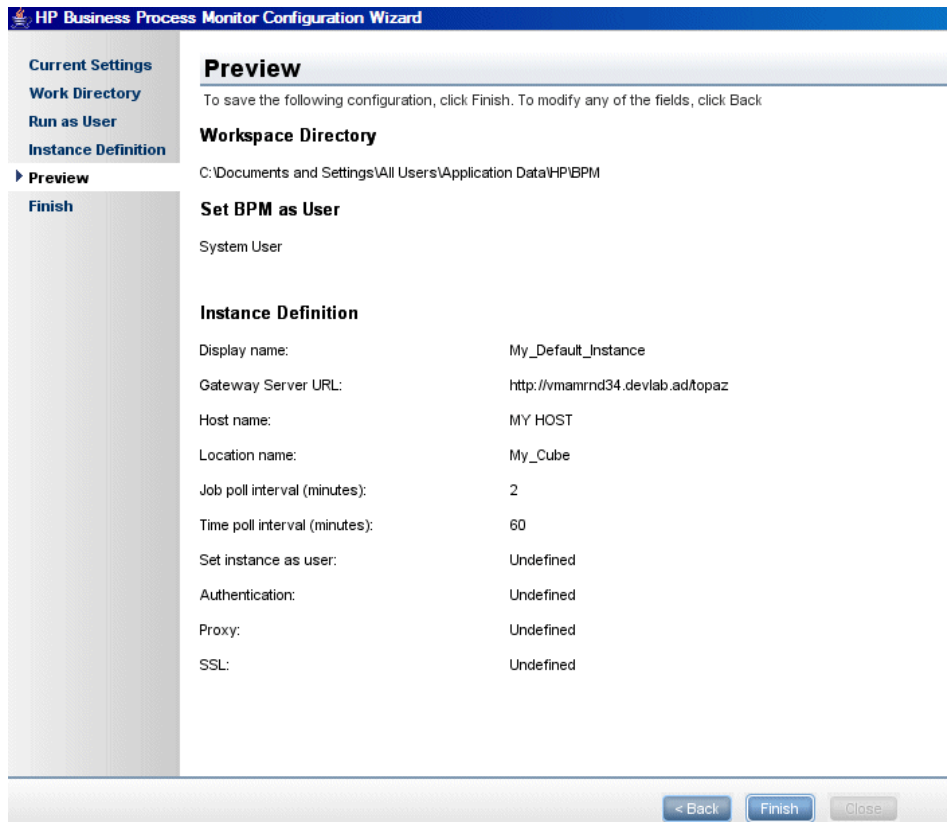
The following elements are included (unlabeled GUI elements are shown in angle brackets>):

GUI Element	Description
Run Instance as User	<p>If you want to configure the instance to run as a specific user, type the user name, password, and domain for Windows, or the user name and group for Solaris.</p>
Authentication	<p>The authentication parameters for the Business Process Monitor instance to support the authentication scheme in use by the server (basic or NTLM authentication). Type the user name, password, and domain name of a user recognized by the HP Business Availability Center Gateway Server.</p>

GUI Element	Description
Proxy Settings	<p>If the Business Process Monitor instance is accessing the HP Business Availability Center Gateway Server through a proxy server, define authentication parameters for proxy requests (basic or NTLM proxy authentication). Type the user name, password, domain name, and URL for the proxy server.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ To configure a user name, you must also configure the proxy server URL. ▶ The proxy URL must be in the following format: http (or https)://<host name or IP address>:<port number>/URI path. ▶ To configure reverse proxy, do not use these proxy settings, but configure the reverse proxy server URL instead of the Gateway Server URL in the “Instance Definition Page” on page 46.
SSL Settings	<p>If the Business Process Monitor instance is communicating with the HP Business Availability Center Gateway Server using SSL, type the required information in the relevant boxes.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Click Browse to search for required locations. ▶ For more information on supporting SSL communication, see “Communication Using SSL” on page 233see “Using SSL in HP Business Availability Center” in the the <i>HP Business Availability Center Hardening Guide</i> PDF.

Preview Page

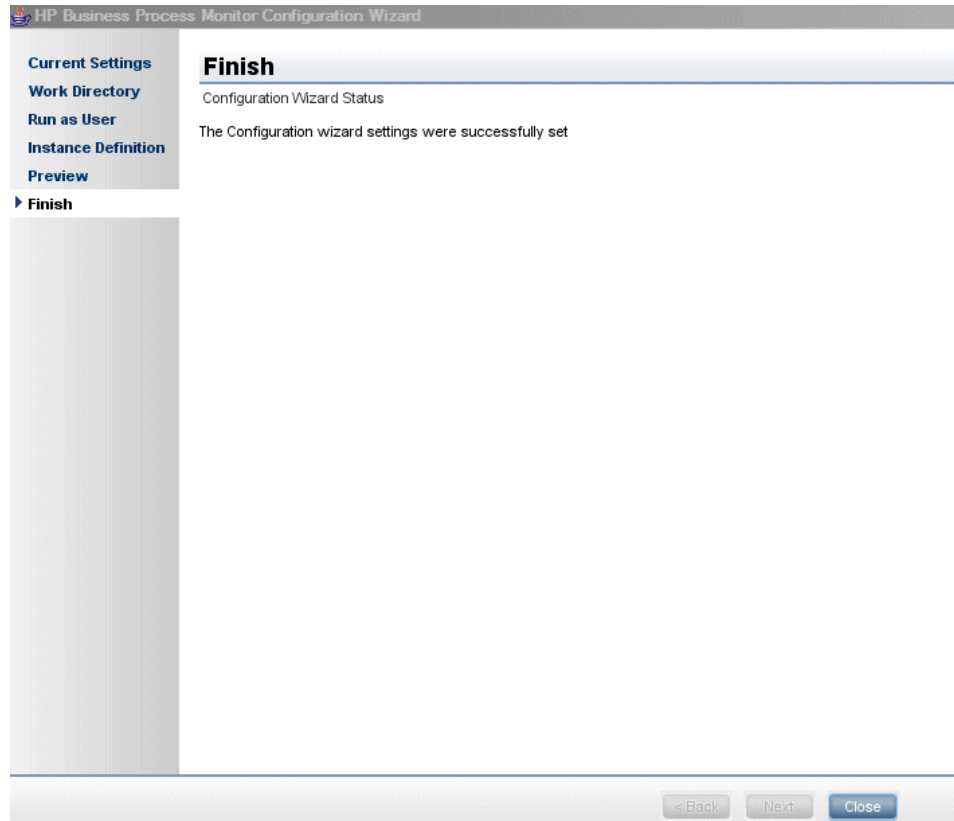
The following is an example of the Preview page in a Windows installation.



<p>Description</p>	<p>Enables you to view a summary of the configured settings before they are saved. Click Finish to save the configuration and continue, or click Back to modify any of the settings.</p>
<p>Wizard Map</p>	<p>The Business Process Monitor Configuration Wizard contains:</p> <p>Current Settings Page > Work Directory Page > Run as User Page > Instance Definition Page > Preview Page > Finish Page</p>

Finish Page

The following is an example of the Finish page.



<p>Description</p>	<p>Displays a message about the success of the installation. Click Close to exit from the configuration wizard.</p>
<p>Wizard Map</p>	<p>The Business Process Monitor Configuration Wizard contains:</p> <p>Current Settings Page > Work Directory Page > Run as User Page > Instance Definition Page > Preview Page > Finish Page</p>
<p>Important Information</p>	<p>Windows:</p> <p>After Setup successfully completes the installation process, HP Business Process Monitor is added as a service and launched on the machine. When Business Process Monitor is launched, the Business Process Monitor icon appears in the system tray. For details on stopping and starting Business Process Monitor manually, see “Running Business Process Monitor on a Windows Platform” on page 92.</p> <p>Solaris:</p> <p>After Setup successfully completes the installation process, HP Business Process Monitor is launched on the machine. For details on stopping and starting Business Process Monitor manually, see “Running Business Process Monitor on a Solaris Platform” on page 94.</p>

Installing Business Process Monitor on a Solaris Platform

This procedure describes how to install/upgrade directly on the Business Process Monitor machine.

The installation process comprises two main parts—the installation of the application and the Business Process Monitor configuration wizard. The application installation runs in console mode (text format) only. The Business Process Monitor configuration wizard can run in either console mode or UI mode. If the DISPLAY environment variable is properly configured on the Business Process Monitor host machine and the machine from which you are installing is running an X-server (for example, a UNIX machine console), the Business Process Monitor configuration wizard runs in UI mode, otherwise it runs in console mode (the recommended mode for installation).

Note the following before installing:

- You must be a root user to install Business Process Monitor.
- When installing on a Solaris platform, if you are installing via Exceed, it is recommended that you use console mode. Installation with Exceed in UI mode may slow the pace of the installation, and may adversely affect the appearance and functionality of the GUI.
- If you are using MS-DOS Telnet or any kind of serial console connection, you must install in console mode.
- The default installation directory for the application is **/opt/HP/HP_BusinessProcessMonitor**. If you want to install the application on another directory, create a symbolic link from **/opt/HP/HP_BusinessProcessMonitor** to the alternative directory. The application files require a minimum of 500 MB free disk space.
- The Business Process Monitor configuration wizard gives you the option of selecting the location of the workspace directory, although it is recommended that you accept the default option. If you install the workspace directory on a different folder, you require a minimum of 1 GB of free disk space. (The required amount of free disk space varies according to the scale of the implementation.)

This section includes the following topics:

- ▶ “Business Process Monitor Application Installation” on page 56
- ▶ “Business Process Monitor Configuration Wizard – Console Mode” on page 59
- ▶ “Business Process Monitor Configuration Wizard – UI Mode” on page 63

Business Process Monitor Application Installation

The first part of the Business Process Monitor installation is installing the Business Process Monitor application.

To install the Business Process Monitor application:

- 1** Download the Business Process Monitor setup file for Solaris from the Business Availability Center **Downloads** page (Applications > Platform > Setup and Maintenance > Downloads) and save it on the machine on which you are installing Business Process Monitor. Alternatively, copy the setup file from the Business Availability Center DVD containing data collector installation programs, for versions delivered on DVD. For more details on the location of the Business Process Monitor setup file, see “General Installation Information” on page 21.
- 2** Unzip the downloaded file (which is a **tar** file saved in **.gz** format) to the location of your choice on the Solaris machine.
- 3** Run **bpm_installer.sh** to launch the setup program.
- 4** If the setup program detects a previous version of Business Process Monitor on the machine, you are prompted to uninstall the previous version and the setup program ends. Uninstall the previous version and then restart the new installation. For details on uninstalling Business Process Monitor, refer to the *Business Process Monitor Administration* PDF relevant for the version of Business Process Monitor you are uninstalling.

5 A welcome screen opens.

```

-----
Welcome to the HP Business Process Monitor Setup Wizard
-----
This wizard will guide you through the steps required to install HP Business Process Monitor on the computer.

WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in several civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.

> To continue, select "Next"
> To abort the setup wizard, select "Cancel"

Select [ Next[n], Cancel[c] ] : █

```

Enter **n** (for Next) to continue.

6 The license agreement screen opens.

```

-----
LICENSE AGREEMENT
-----

Please take a moment to read the License Agreement, located in:
/m/tp24_bpm_setup/nt/1237/Dvd/SunOS/sequencer/resources/EULA/EULA .

>To review the full License Agreement, select "View Agreement"
>To accept the agreement terms, select "Agree"
>To go back to the previous step, select "Back"
>To abort the setup wizard, select "Cancel"

Select: [ View Agreement[v], Agree[a], Back[b], Cancel[c] ] : █

```

Read the Business Process Monitor License Agreement.

To install Business Process Monitor, you must accept the terms of the license agreement by entering **a** (for Agree).

7 The confirmation screen opens.

```
-----  
CONFIRMATION  
-----  
  
The HP Business Process Monitor features you selected for installation are:  
  
+HP_BusinessProcessMonitor  
-BusinessProcessMonitor-8.02.231-SunOS5.8.sparc  
  
Size:  
 223601 KB  
  
HP Business Process Monitor 8.02 will be installed in the following directory:  
/opt/HP/HP_BusinessProcessMonitor.  
  
If you want to install HP Business Process Monitor 8.02 in an alternative directory, you  
to the alternative directory before continuing with this installation.  
  
> To start the HP Business Process Monitor 8.02 installation, select "Install"  
> To go back to the previous step, select "Back"  
> To abort the setup wizard, select "Cancel"  
  
Select [ Install[i], Back[b], Cancel[c] ]: █
```

Enter **i** (for Install) to continue.

8 The Business Process Monitor installation process starts and an installation progress screen opens.

```
-----  
INSTALLATION  
-----  
  
LOG FILE: Native OS Install output log directory:  
"/var/log/30.03.09_15-37-25_HP_BusinessProcessMonitor_8.02.231_iHP_log.txt".  
  
Tail log to track detailed progress.  
  
Installing feature: HP_BusinessProcessMonitor started  
Installing Package: BusinessProcessMonitor-8.02.231-SunOS5.8.sparc start
```

9 When the installation process is complete, a message about the successful installation opens.

Business Process Monitor

Click **f** (for Finish) to end the installation and continue with the HP Business Process Monitor Configuration wizard. For details on the Configuration wizard, see “Business Process Monitor Configuration Wizard – Console Mode” on page 59 and “Business Process Monitor Configuration Wizard – UI Mode” on page 63.

Business Process Monitor Configuration Wizard – Console Mode

The Business Process Monitor Configuration wizard runs automatically after the Business Process Monitor installation finishes. The configuration wizard runs in console mode (which is the recommended mode) unless the DISPLAY environment variable is properly configured on the Business Process Monitor host machine and the machine from which you are installing is running an X-server (for example, a UNIX machine console). In such a case, the configuration wizard runs in UI mode.

Note: You are unable to configure additional instance settings when the Business Process Monitor Configuration wizard runs in console mode.

To configure Business Process Monitor in console mode:

- 1 If the configuration wizard detects configuration settings on the machine from a previous Business Process Monitor installation, you can select whether you want to apply the existing settings to the current installation, or to configure new settings. (If no existing configuration settings are detected, the configuration wizard continues with the next step.)

Enter **y** (for Yes) to apply the existing settings, or **n** (for No) to configure new settings.

Note: If you choose to use configuration settings from a previous installation of Business Process Monitor, the configured instances are registered to the same Business Availability Center Gateway Server as the previous installation. This means that the same jobs are retrieved, although previous persistency queues are not saved.

Enter **1** (for Next) to continue. If you chose to use previous configuration settings, continue with step 5 on page 61.

- 2 Accept the default workspace directory (/var/opt/HP/BPM) or enter another directory.

Enter **1** (for Next) to continue.

- 3 You can configure Business Process Monitor data collection to run as a root user, or as a specific user. Running it as a specific user limits access to resources, settings, and applications located on the local machine. (This may not be true for resources located on remote machines, where a specific user may have different privileges than the local system user.)

Enter **1** for a root user, or **2** for a specific user. If you choose to run Business Process Monitor as a specific user, enter an existing user name and group.

Enter **1** (for Next) to continue.

- 4 Configure the following parameters for the default Business Process Monitor instance:

- ▶ **Protocol.** Select the protocol that Business Process Monitor uses to access the HP Business Availability Center Gateway Server. Enter **1** for HTTP or **2** for HTTPS.
- ▶ **Port number.** Enter the port number that Business Process Monitor uses to access the HP Business Availability Center Gateway Server. The default port number is 80.
- ▶ **Gateway Server machine name.** Enter the name of the HP Business Availability Center Gateway Server to which this instance sends collected data. The name should be a fully qualified domain name (FQDN).
- ▶ **Host name.** The host name defined for the instance. The host name can be up to 50 characters and can include the following characters: **0-9, a-z, A-Z, ` ~ ! @ # \$ % ^ & * () _ - + = [] { } | / ? . , " ' : ; < > (space).**
- ▶ **Host location.** The location defined for the instance. The location name can be up to 50 characters and can include the following characters: **0-9, a-z, A-Z, ` ~ ! @ # \$ % ^ & * () _ - + = [] { } | / ? . , ; (space).**

For details on Business Process Monitor instances, see “Configuring Add Instance Parameters” on page 106.

Enter **1** (for Next) to continue.

5 A summary of the configuration is displayed.

Press **1** (for Finish) to save the configuration and exit the configuration wizard.

6 After the wizard successfully completes the configuration process, HP Business Process Monitor is launched on the machine.

Sample Console Mode Configuration

The following graphic shows the screen displays for the Business Process Monitor Configuration wizard run in console mode.

```

The configuration wizard has detected existing configuration settings on this computer.
Do you want to keep the current configuration settings?
Select [ Yes[y], No[n] ]: n
Press 1 for Next, or 2 for Cancel [1]

Specify a location for the workspace directory
Directory: [/var/opt/HP/BPM]
Press 1 for Next, 2 for Previous, or 3 for Cancel [1]

You can configure HP Business Process Monitor data collection to run under a root user,
collection process to access resources, settings, and applications not available to the

1 - Run Business Process Monitor under root user
2 - Run Business Process Monitor under specific user
To select an item enter its number [1] 2
Enter the user name and group to run HP Business Process Monitor.
User: [root] dfgdfg
The user does not exist
User: [root]
Group: [root] gdfdfgdfg
The group does not exist
Group: [root]
Press 1 for Next, 2 for Previous, or 3 for Cancel [1]

Define a default instance for the Business Process Monitor
Display name: test
Choose the protocol that HP Business Process Monitor uses to access the HP Business Avail
1 - HTTP
2 - HTTPS
To select an item enter its number [1]
Enter the port number that HP Business Process Monitor uses to access the HP Business Av
Enter a value: [80]
Enter the HP Business Availability Center Gateway Server's machine name
Enter a value: acid.devlab.ad
Enter the host name and location
Host Name: [labm2sun15.devlab.ad]
Host Location: location
Press 1 for Next, 2 for Previous, or 3 for Cancel [1]

To save the following configuration, choose Finish. To modify any of the fields, choose

Workspace Directory: /var/opt/HP/BPM

Set BPM As User:

User: root Group: root

Instance Definition:

Display name: test
Gateway Server URL: http://acid.devlab.ad/topaz
Host name: labm2sun15.devlab.ad
Location name: location
Press 1 for Finish, 2 for Previous [1]
m agent daemon ( 24446 ),

```

Business Process Monitor Configuration Wizard – UI Mode

The Business Process Monitor Configuration wizard runs automatically after the Business Process Monitor installation finishes. The configuration wizard automatically runs in UI mode if the DISPLAY environment variable is properly configured on the Business Process Monitor host machine and the machine from which you are installing is running an X-server (for example, a UNIX machine console).

For details on the Business Process Monitor Configuration wizard user interface, see “Business Process Monitor Configuration Wizard” on page 37.

Running a Silent Installation

You can use a silent installation procedure to run the Business Process Monitor Setup. A silent installation is an installation that is performed automatically, without the need for user interaction. Instead, all configuration parameters are allocated predetermined values that are stored in a configuration xml file.

Note: Read “Notes and Limitations” on page 76 before using any of the silent installation methods.

This section includes:

- “Silent Installation Overview” on page 64
- “How a Silent Installation Assigns Values” on page 64
- “Prerequisites” on page 65
- “Silent Installation for Windows” on page 66
- “Silent Installation for Solaris” on page 68
- “Configuring the bpm_install_config.xml File” on page 69
- “Notes and Limitations” on page 76

Silent Installation Overview

There are three different types of silent installation:

- ▶ Using the silent installation default settings (when there is no configuration file or previous settings).
- ▶ Using previous settings.
- ▶ Using an xml configuration file. For this type on silent installation, do the following:
 - ▶ Create a silent installation configuration file with predefined settings for all the hosts you are installing.
 - ▶ Copy the Business Process Monitor setup program and the silent installation xml configuration file to each of the target host machines.
 - ▶ Run the silent installation on each of the target host machines.

Note: From Business Process Monitor version 8.02, the silent installation xml configuration file is different from previous versions.

How a Silent Installation Assigns Values

You can configure predetermined values to be used by a silent installation for a specific Business Process Monitor machine in the **<Business Process Monitor application directory>\bpm_install_config.xml** file located on the machine on which you run the silent installation. The default Business Process Monitor application directory is:

- ▶ **Windows 2003 and Windows XP**—C:\Documents and Settings\All Users\Application Data\HP\BPM
- ▶ **Windows Vista**—C:\ProgramData\HP\BPM
- ▶ **Solaris**—/var/opt/HP/BPM

If the silent installation locates the bpm_install_config.xml file and the file contains values to be used for the specific machine, the silent installation uses these values.

If the silent installation cannot locate the `bpm_install_config.xml` file, or the file does not contain values to be used for the specific machine, the silent installation looks for configuration settings from a previous installation of Business Process Monitor. If such settings are detected, the silent installation uses these settings.

If a silent installation cannot locate the `bpm_install_config.xml` file, or the file does not contain values to be used for the specific machine, and does not detect configuration settings from the previous installation of Business Process Monitor on the machine, it uses default settings. The default settings configure Business Process Monitor to run as a system user (or root user for Solaris) and locate the workspace directory in the default Business Process Monitor application directory. When default settings are used, a default instance is not defined during the installation and you must define the instance manually later. For details on defining an instance, see “Create New Instance” on page 112.

For details on configuring the `bpm_install_config.xml` file, see “Configuring the `bpm_install_config.xml` File” on page 69.

Prerequisites

Before you begin a silent installation of Business Process Monitor, make sure of the following:

- Each machine on which you want to install Business Process Monitor must have the following programs, which are required for running scripts correctly, installed:
 - .NET Framework 3.5
 - Microsoft Data Access Components (MDAC) 2.8 SP1 (or later)
 - Microsoft Windows Installer 3.1
 - Microsoft Core XML Services (MSXML) 6.0
 - Microsoft Visual C++ 2005 Redistributable Package (x86)
 - Microsoft Visual C++ 2008 Redistributable Package (x86)
 - Web Services Enhancements (WSE) 2.0 SP3 for Microsoft .NET Redistributable Runtime MSI

- ▶ Web Services Enhancements (WSE) 3.0 for Microsoft .NET Redistributable Runtime MSI

Note: You can obtain the prerequisite programs from the Internet.

- ▶ You must uninstall any previous versions of Business Process Monitor from each machine on which you are installing Business Process Monitor. For details on uninstalling Business Process Monitor, see “Uninstalling Business Process Monitor” on page 78.
- ▶ You must have administration privileges for each machine on which you are installing Business Process Monitor.
- ▶ If you want to use a silent installation to install Business Process Monitor on multiple machines, or if you want to configure specific settings to be used by a silent installation, edit the **bpm_install_config.xml** file accordingly. Make sure that the file is located in the **<Business Process Monitor application directory>** directory on each machine on which you run the silent installation. For details on configuring the bpm_install_config.xml file, see “Configuring the bpm_install_config.xml File” on page 69.

Silent Installation for Windows

You can run a silent installation on Windows using either the regular setup program, or using MSI. If you run it using MSI, the installation will not use configuration settings from the previous installation of Business Process Monitor on the machine, if they exist.

To run a silent installation with the regular setup program:

- 1 Download the Business Process Monitor setup file for Windows from the Business Service Management **Downloads** page (**Applications > Platform > Setup and Maintenance > Downloads**) and save it on the machine on which you are installing Business Process Monitor. Alternatively, copy the setup file from the Business Service Management DVD containing data collector installation programs, for versions delivered on DVD. For more details on the location of the Business Process Monitor setup file, see “General Installation Information” on page 21.

- 2 Extract the files from the downloaded file to a location of your choice on the machine on which you are installing Business Process Monitor. To extract the installation files, run the Business Process Monitor setup program and use the autoextract feature. Once the files are extracted, terminate the installation process.
- 3 From the extracted files, run the setup program located in the language directory relevant for your system. For example, to run the setup.exe program from the English language directory, use `\en\setup.exe`.

You can use the following installation options with the setup.exe program:

- ▶ `/s`—silent mode, does not require user input.
- ▶ `/forcenoreboot`—does not stop the installation if a system reboot is required.
- ▶ `/qn`—does not display the user interface.
- ▶ `TARGETDIR=="<installation folder name>"`—enables you to specify an installation folder instead of the default folder. For example, `TARGETDIR=="c:\Program Files\HP\MyBPM"`.

To run a silent installation using MSI:

- 1 Download the Business Process Monitor setup file for Windows from the Business Service Management **Downloads** page (**Applications > Platform > Setup and Maintenance > Downloads**) and save it on the machine on which you are installing Business Process Monitor. Alternatively, copy the setup file from the Business Service Management DVD containing data collector installation programs, for versions delivered on DVD. For more details on the location of the Business Process Monitor setup file, see “General Installation Information” on page 21.
- 2 Extract the files from the downloaded file to a location of your choice on the machine on which you are installing Business Process Monitor.
- 3 From the extracted files, run the **HP_BPM.msi** program located in the **MSI** directory using the following command:

```
\MSI\HP_BPM.msi /quiet /norestart /qn
```

where:

- **/quiet**—quiet mode (there is no user interaction).
- **/norestart**—the machine will not be restarted after the installation is complete.
- **/qn**—does not display the user interface.

Silent Installation for Solaris

You run a silent installation on Solaris in two steps. The first step is the package installation that creates the Business Process Monitor installation folder and copies the installation files to the folder. The second step is the package that installs and configures the Business Process Monitor.

To run a silent installation for Solaris:

- 1** Download the Business Process Monitor setup file for Solaris from the Business Service Management **Downloads** page (Applications > Platform > Setup and Maintenance > Downloads) and save it on the machine on which you are installing Business Process Monitor. Alternatively, copy the setup file from the Business Service Management DVD containing data collector installation programs, for versions delivered on DVD. For more details on the location of the Business Process Monitor setup file, see “General Installation Information” on page 21.
- 2** Unzip the downloaded file (which is a **tar** file saved in **.gz** format) to the location of your choice on the Solaris machine.
- 3** Run the following command from the command line:

```
pkgadd -d <path to Business Process Monitor setup
file>/packages/packages_SunOS/BusinessProcessMonitor-<version number in
format n.nn>.<last three digits of the build number>-SunOS5.8.sparc -a <path to
Business Process Monitor setup
file>/sequencer/resources/package_admin_file/admin_file all
```

- 4** If you want the silent installation to use the **bpm_install_config.xml** file (for example, if you have specific configuration settings you want to use), create the default Business Process Monitor application folder (**/var/opt/HP/BPM**) on the machine on which you run the silent installation and copy the **bpm_install_config.xml** that includes your settings to this folder.

5 Run the following command from the command line:

```
./bpm_silent_config.sh
```

Configuring the bpm_install_config.xml File

The `bpm_install_config.xml` file is used by a silent installation to obtain the parameter values required during the installation of a specific Business Process Monitor machine. For details on how the silent installation assigns values, see “How a Silent Installation Assigns Values” on page 64.

The `bpm_install_config.xml` file can contain parameter values for multiple machines, enabling you to create one file which you can copy to all the machines on which you want to run a silent installation. Only the values for the specific machine on which the installation runs are used.

This section includes the following topics:

- “Example of the xml Schema File (.xsd) Structure” on page 70
- “Description of the xml Schema File (.xsd) Structure” on page 71
- “Sample Files” on page 76

Example of the xml Schema File (.xsd) Structure

```

<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XMLSPY v5 rel. 3 U (http://www.xmlspy.com) by HP user -->
<!-- W3C Schema generated by XMLSPY v5 rel. 3 U (http://www.xmlspy.com)-->
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <xsd:element name="hosts">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="host" minOccurs="1" maxOccurs="unbounded">
          <xsd:complexType>
            <xsd:sequence>
              <xsd:element name="workspacePath" type="xsd:string" minOccurs="1" maxOccurs="1"/>
              <xsd:element name="runBpmAsUser" minOccurs="0" maxOccurs="1">
                <xsd:complexType>
                  <xsd:sequence>
                    <xsd:element name="username" type="xsd:string" minOccurs="1" maxOccurs="1"/>
                    <xsd:element name="password" type="xsd:string" minOccurs="0" maxOccurs="1"/>
                    <xsd:element name="domain" type="xsd:string" minOccurs="0" maxOccurs="1"/>
                    <xsd:element name="group" type="xsd:string" minOccurs="0" maxOccurs="1"/>
                  </xsd:sequence>
                </xsd:complexType>
              </xsd:element>
            </xsd:sequence>
          </xsd:complexType>
        </xsd:element>
        <xsd:element name="instance" minOccurs="1" maxOccurs="1">
          <xsd:complexType>
            <xsd:sequence>
              <xsd:element name="displayName" type="xsd:string"/>
              <xsd:element name="serverUrl" type="xsd:string"/>
              <xsd:element name="locationName" type="xsd:string"/>
              <xsd:element name="hostName" type="xsd:string"/>
              <xsd:element name="timeInterval" type="xsd:integer"/>
              <xsd:element name="jobInterval" type="xsd:integer"/>
              <xsd:element name="authentication" minOccurs="0" maxOccurs="1">
                <xsd:complexType>
                  <xsd:sequence>
                    <xsd:element name="username" type="xsd:string" minOccurs="1" maxOccurs="1"/>
                    <xsd:element name="password" type="xsd:string" minOccurs="0" maxOccurs="1"/>
                    <xsd:element name="domain" type="xsd:string" minOccurs="0" maxOccurs="1"/>
                  </xsd:sequence>
                </xsd:complexType>
              </xsd:element>
            </xsd:sequence>
          </xsd:complexType>
        </xsd:element>
        <xsd:element name="ssl" minOccurs="0" maxOccurs="1">
          <xsd:complexType>
            <xsd:sequence>
              <xsd:element name="clientCert" type="xsd:string"/>
              <xsd:element name="privateKey" type="xsd:string"/>
              <xsd:element name="authorityCert" type="xsd:string"/>
              <xsd:element name="privatekeyPassword" type="xsd:string"/>
            </xsd:sequence>
          </xsd:complexType>
        </xsd:element>
        <xsd:element name="proxy" minOccurs="0" maxOccurs="1">
          <xsd:complexType>
            <xsd:sequence>
              <xsd:element name="username" type="xsd:string" minOccurs="1" maxOccurs="1"/>
              <xsd:element name="password" type="xsd:string" minOccurs="0" maxOccurs="1"/>
              <xsd:element name="domain" type="xsd:string" minOccurs="0" maxOccurs="1"/>
              <xsd:element name="url" type="xsd:string" minOccurs="0" maxOccurs="1"/>
            </xsd:sequence>
          </xsd:complexType>
        </xsd:element>
        <xsd:element name="runAsUser" minOccurs="0" maxOccurs="1">
          <xsd:complexType>
            <xsd:sequence>
              <xsd:element name="username" type="xsd:string" minOccurs="1" maxOccurs="1"/>
              <xsd:element name="password" type="xsd:string" minOccurs="0" maxOccurs="1"/>
              <xsd:element name="domain" type="xsd:string" minOccurs="0" maxOccurs="1"/>
            </xsd:sequence>
          </xsd:complexType>
        </xsd:element>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:attribute name="hostName" type="xsd:string" use="required"/>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
</xsd:schema>

```

Description of the xml Schema File (.xsd) Structure

Parent Element	Element	Sub Element
	host.	The name or IP address of the machine for which the parameter values are valid.
	workspacePath.	The path of the workspace directory of the Business Process Monitor installation.
runBpmAsUser. For running the Business Process Monitor as a specific user instead of as a system user:	username.	The specific user name. The name can contain up to 24 characters and cannot include spaces, nor any of the following characters: (; : " < > * + = \ ? ,).
	password.	The specific user's password (for Windows).
	domain.	The domain for the user (for Windows). The domain name can be up to 67 characters long and can include the following characters: 0-9, a-z, A-Z , hyphen (-). The domain name cannot start or end with a hyphen (-), nor can it include spaces.
	group.	The valid group for the user (for Solaris).

Parent Element	Element	Sub Element
<p>instance. Default instance settings. For details on Business Process Monitor instances, see “Instance Page” on page 123.</p>	<p>displayName. The display name for the instance in Business Process Monitor Admin. The display name can be up to 50 characters and can include the following characters: 0-9, a-z, A-Z, hyphen (-), underscore (_). The display name cannot start or end with a hyphen (-) or an underscore (_).</p>	
	<p>serverUrl. The URL of the HP Business Service Management Gateway Server to which this instance sends collected data. The URL must be in the following format: <code>http (or https)://<Gateway Server name or IP address>:<port number>/topaz</code>. If you do not specify a port number, the default port is used (80 for http and 443 for https).</p>	
	<p>locationName. The location defined for the instance. The location name can be up to 50 characters and can include the following characters: 0-9, a-z, A-Z, ` ~ ! @ # \$ % ^ & * () _ - + = [] { } / ? . , ; (space).</p>	
	<p>hostName. The host name defined for the instance. The host name can be up to 50 characters and can include the following characters: 0-9, a-z, A-Z, ` ~ ! @ # \$ % ^ & * () _ - + = [] { } / ? . , " ' ; < > (space).</p>	
	<p>timeInterval. The defined frequency (in minutes) with which Business Process Monitor polls HP Business Availability Center for time synchronization. This is an integer positive number.</p>	
	<p>jobInterval. The defined frequency (in minutes) with which Business Process Monitor polls the database for assigned task, application, and business transaction flow changes. This is an integer positive number of up to 4 digits.</p>	

Parent Element	Element	Sub Element
instance	authentication. Set to yes if authentication is required for the instance and configure the authentication parameters for the Business Process Monitor instance to support the authentication scheme in use by the server (basic or NTLM authentication)	username. The name of the user (recognized by the HP Business Service Management Gateway Server) for authentication.
		password. The password for the user.
		domain. The domain of the user.

Parent Element	Element	Sub Element
<p>instance</p>	<p>ssl. Set to yes if the Business Process Monitor instance is communicating with the HP Business Service Management Gateway Server using SSL.</p> <p>For more information on supporting SSL communication, see “Communication Using SSL” on page 278see “Using SSL in BSM” in the the <i>HP Business Availability Center Hardening Guide</i> PDF.</p>	<p>ClientCert. The path and name of the client certificate file.</p>
		<p>privateKey. The path and name of the private key file.</p>
		<p>authorityCert. The path and name of the authority certificate file.</p>
		<p>privatekeyPassword. The password for the private key file.</p>

Parent Element	Element	Sub Element
instance	proxy. Set to yes if the Business Process Monitor instance is accessing the HP Business Service Management Gateway Server through a proxy server. Note: To configure reverse proxy, do not use these proxy settings, but configure the reverse proxy server URL instead of the Gateway Server URL in the serverUrl element of the instance.	username. The user name for the proxy server. Note: To configure a user name, you must also configure the proxy server URL.
		password. The password for the user.
		domain. The domain of the user.
		url. The URL for the proxy server. Note: The proxy URL must be in the following format: http (or https)://<host name or IP address>:<port number>/URI path.
instance	runAsUser. Set to yes to run the instance as a specific user.	username. The specific user name.
		password. The password for the specific user (for Windows).
		domain. The domain of the specific user (for Windows).
		group. The group for the user (for Solaris).

Note: To configure parameter values for multiple Business Process Monitor machines, create a new `<host></host>` section for each machine.

Sample Files

The following files are located in the `\\<%TEMP%>\HP Business Process Monitor <BPM VERSION>\MSI\ServletContainer\webapps\ROOT\help\BPMWeb` directory when you download and extract the Business Process Monitor setup file:

- ▶ **silent_installation.xsd.** A sample .xsd file.
- ▶ **Example_1.xml.** A sample .xml file that contains a simple configuration for two hosts.
- ▶ **Example_2.xml.** A sample .xml file that contains a more complicated configuration for one host.
- ▶ **Example_3.xml.** A sample .xml file that contains all parameters (remove unwanted sections).

For details on downloading and extracting the Business Process Monitor setup file, see “Silent Installation for Windows” on page 66.

Notes and Limitations

Note the following when using a silent installation method for Business Process Monitor:

- ▶ When running an installation in silent mode, no messages are displayed. Instead, you can view installation information in the log files, including information on whether the installation was successful. For details on the log files, see “Log Files” on page 82.
- ▶ To troubleshoot installation issues on Windows platforms, you can add logging options at the end of the command. For example, to run an MSI silent installation with full logging:

```
HP_BPM.msi /s /forcenoreboot /qn /log <LogFile>
```

Note that this is the only way to view certain errors.

Use Standard MSI command line options to define logging options.

- ▶ When you specify the URL to the HP Business Service Management Gateway Server in the `bpm_install_config.xml` file, it must end with **/topaz**.

Uninstalling Business Process Monitor

Before installing Business Process Monitor 8.05, you must uninstall any previous installation of Business Process Monitor. The uninstall process saves configuration settings on the machine for future installation.

This section includes the following topics:

- “Uninstalling Business Process Monitor on a Windows Platform” on page 78
- “Uninstalling on a Solaris Platform” on page 79

Uninstalling Business Process Monitor on a Windows Platform

The following procedure relates to uninstalling Business Process Monitor version 8.05 on a Windows platform. For details on uninstalling earlier versions on Windows platforms, refer to the relevant version documentation.

Note: You can run a silent uninstall for Business Process Monitor version 8.05 on a Windows platform using MSI. You can use either the Business Process Monitor MSI file (HP_BPM.msi), or the standard MSI file (msiexec.exe) together with the Business Process Monitor product code (located in the MSI.ProdcutCode file). All standard MSI command line options are supported. The Business Process Monitor MSI and product code files are included in the Business Process Monitor setup file for Windows. For details on downloading and extracting files from the Business Process Monitor setup file for Windows, see “Silent Installation for Windows” on page 66.

To uninstall Business Process Monitor on a Windows platform:

- 1** On the host machine, shut down Business Process Monitor Admin and Business Process Monitors (select:
Start > Programs > HP Business Process Monitor > Stop HP Business Process Monitor Service)
- 2** Wait two minutes.

- 3 Run the Business Process Monitor uninstall program from the **Add/Remove Programs** option in the **Control Panel** (select **Start > Settings > Control Panel > Add/Remove Programs > HP Business Process Monitor**, and click **Change/Remove>**).
- 4 Restart the machine if prompted to do so.
- 5 (**Important:** This step should only be performed if you do *not* want to save the configuration settings for use by a future Business Process Monitor installation.)

Delete the Business Process Monitor root installation folder, as well as the folder containing the **config** and **workspace** directories, from the machine.

Uninstalling on a Solaris Platform

The following procedure relates to uninstalling Business Process Monitor version 8.05 on a Solaris platform. For details on uninstalling earlier versions on Solaris platforms, refer to the relevant version documentation.

Note: You can run a silent uninstall for Business Process Monitor version 8.05 on a Solaris platform by running: **pkgrm BusinessProcessMonitor**

To uninstall Business Process Monitor on a Solaris platform:

- 1 Access the installation directory.
- 2 Stop Business Process Monitor using:

```
./scripts/topaz_agent stop
```

or:

```
./scripts/business_process_monitor stop
```

3 Check for remaining processes (such as JRE).

- To view the processes, use:

```
ps -ef
```

- To view a specific process, use:

```
ps -ef | grep <process name>
```

4 Uninstall Business Process Monitor using:

```
./var/opt/HP/iHP/HP_BusinessProcessMonitor/<BPM version and build number>./installer.sh
```

5 (Important: This step should only be performed if you do *not* want to save the configuration settings for use by a future Business Process Monitor installation.)

Delete the directory in which HP Business Process Monitor was installed, as well as the folder containing the **config** and **workspace** directories, from the machine using:

```
rm -Rf <dir name>
```

Deployment Troubleshooting

This section describes common problems that you may encounter when deploying Business Process Monitor, and their solutions, as well as the log files created during the deployment.

This section includes the following topics:

- “Windows Platforms” on page 81
- “Solaris Platforms” on page 81
- “Log Files” on page 82

Windows Platforms

If you (mistakenly) set the whole Business Process Monitor to run as a specific user for a user that does not have write permissions to the **<Business Process Monitor root directory>\config** directory, Business Process Monitor fails to run, and you are unable to switch to a different user using the **Set BPM as User** option in Business Process Monitor Admin. To set a different user, use the following procedure:

To set a different user:

- 1** Stop Business Process Monitor.
- 2** Open the **<Business Process Monitor application directory>\config\topaz_agent_ctrl.cfg** file in a text editor.
The default Business Process Monitor application directory is:
 - Windows 2003 and Windows XP
C:\Documents and Settings\All Users\Application Data\HP\BPM
 - Windows Vista
C:\ProgramData\HP\BPM
- 3** Under the **[general]** section, make sure that the following parameters do not have any values set:
 - UserDomain=""
 - UserPasswd=""
 - UserName=""
- 4** Save the file and restart Business Process Monitor. Business Process Monitor now runs as a system user.
- 5** From Business Process Monitor Admin, set Business Process Monitor to run as a new specific user (with Administrator permissions).

Solaris Platforms

Business Process Monitor may not function after Oracle protocol scripts are scheduled to run on it. To resolve the problem, you need to define certain environment variables for Business Process Monitor. For details on how to do this, see “Running Oracle Protocol Scripts” on page 225.

Log Files

The log files that are created when you deploy Business Process Monitor can help you troubleshoot installation related problems. Log files are created for both the installation and configuration parts of the deployment.

Windows Installation Log Files

The following Windows installation log files are located in the **%temp%** directory:

File Name	Description
ihp_custom_batches.log	The log file for custom batch files, invoked by MSI install/uninstall. This is a common log for all HP based MSI installations, such as Virtual User Generator (VuGen) and QuickTest Professional. This log is useful for ensuring that the custom batches were running and it can provide information to help track errors in the execution of these batches.
bpm_setup.log	The main log file for the MSI installation.
bpm_inst_bat.log	The log file that reflects the command line that launched MSI.
Prereq_Mgr.Business_Process_Monitor.log	The log file that contains the output from setup.exe .
BpmInstall.log	The log file that contains all log messages from the configuration tool.
BpmInstallStdOut.log	The log file that contains the standard output for the configuration tool.

Solaris Installation Log Files

The following Solaris installation log files are located in the `/var/log` directory:

File Name	Description
<code><date>_<time>_HP_BusinessProcessMonitor_<version number>_prerequisites_iHP_log.txt</code> Example: 11.05.09_18-10-41_HP_BusinessProcessMonitor_8.05.236_prerequisites_iHP_log.txt	The log file that contains the output from the installer.
<code><date>_<time>_BusinessProcessMonitor_install_log.txt</code> Example: 11.05.09_18-10-42_BusinessProcessMonitor_install_log.txt	The native Solaris package install log.
<code><date>_<time>_BusinessProcessMonitor_uninstall_log.txt</code> Example: 11.05.09_18-10-42_BusinessProcessMonitor_uninstall_log.txt	The native Solaris package uninstall log.
<code><date>_<time>_HP_BusinessProcessMonitor_<version number>_iHP_log.txt</code> Example: 11.05.09_18-10-42_HP_BusinessProcessMonitor_8.05.236_iHP_log.txt	The Solaris full installer log.

Configuration Wizard Log Files

The following log files are created by the Configuration wizard and are located in the %temp% directory for Windows, and the /var/tmp directory for Solaris:

File Name	Description
BpmInstall.log	The log file that contains all log messages from the Configuration wizard.
BpmInstallStdOut.log	The log file that contains the standard output from the Configuration wizard.

3

Working with Business Process Monitor

This chapter provides information on HP Business Process Monitor functioning, and describes how to access and navigate in Business Process Monitor Admin.

This chapter includes:

- ▶ Business Process Monitor Operation on page 86
- ▶ Supported Recording Tools on page 87
- ▶ Requirements and Limitations for Running Tasks on page 88
- ▶ Running Business Process Monitor on page 92
- ▶ Accessing Business Process Monitor Admin on page 95
- ▶ Changing the Language of the Business Process Monitor User Interface on page 96
- ▶ Moving Around the Business Process Monitor Admin Window on page 97
- ▶ Notes and Limitations for Business Process Monitor Installed on Windows Vista on page 99

Business Process Monitor Operation

The Business Process Monitor service performs the following operations:

- ▶ retrieves business process profile information, including recorded scripts, from the profile databases via the Gateway Server
- ▶ performs the work defined in the profile (including running scripts and running WebTrace)
- ▶ monitors the task and aggregates the collected data, performing all necessary calculations
- ▶ returns the aggregated data to the loaders via the Gateway Server

Note that the scripts are sent over the network (from HP Business Availability Center End User Management Administration to the database and from the database to the Business Process Monitor machine) in zipped format. This improves performance and reduces network load.

Business Process Monitor saves detailed log entries for every executed task, and for general Business Process Monitor operation. For more information on the logs, see Chapter 10, “Workspace Directory and Log Files.”

Business Process Monitor synchronizes time with the HP Business Availability Center Gateway Server once an hour (default **Time Poll Interval** setting). If you change the time on the Business Process Monitor machine, the Business Process Monitor reports may contain incorrect times until HP Business Availability Center is next polled for time synchronization. To avoid this, you can restart Business Process Monitor/the relevant Business Process Monitor instance, or change the **Time Poll Interval** setting for an instance to a value smaller than 60 minutes. (See “Restarting Business Process Monitor” on page 121, or “Modifying an Instance” on page 111.)

Note: Business Process Monitor saves persistency information after registration with HP Business Availability Center, and after each job update, enabling work to continue even if the Gateway Server is temporarily unavailable, or if there is a problem in parsing the new job.

Supported Recording Tools

Business Process Monitor 8.05 supports scripts recorded using the following HP tools. Each tool (with the exception of HP Virtual User Generator) must be installed on the Business Process Monitor machine before Business Process Monitor can run scripts recorded with that tool.

► **QuickTest Professional 10.0** (run on Windows platforms only)

Note that this version can also run scripts from earlier versions, enabling Business Process Monitor to run older QuickTest Professional scripts.

Business Process Monitor supports QuickTest Professional scripts for a number of development environments including:

- QuickTest Professional Java Add-in
 - QuickTest Professional Oracle Add-in (supports both Web-based and Java-based Oracle applications)
 - QuickTest Professional .NET Add-in
 - QuickTest Professional Add-in for SAP Solutions (supports both Windows-based and Web-based SAP solutions)
 - QuickTest Professional Siebel Add-in
 - QuickTest Professional Terminal Emulator Add-in
 - QuickTest Professional Web Services Add-in
 - QuickTest Professional Stingray Add-in
 - QuickTest Professional VisualAge Smalltalk Add-in
 - QuickTest Professional PeopleSoft Add-in
 - QuickTest Professional Power-Builder Add-in
- **Virtual User Generator 9.5 and earlier**

Business Process Monitor supports the same client protocol versions as those supported by its compatible version of VuGen.

Note: You cannot use WinRunner scripts with Business Process Monitor. All WinRunner scripts should be converted to QuickTest Professional scripts.

Requirements and Limitations for Running Tasks

Business Process Monitor has the following requirements and limitations when running scripts and WebTrace.

This section includes the following topics:

- “General” on page 88
- “Virtual User Generator Scripts” on page 90
- “QuickTest Professional Scripts” on page 91
- “WinRunner Scripts” on page 92

General

- It is recommended that you run scripts for all protocols (with the exception of Web protocols) with the Business Process Monitor instance /whole Business Process Monitor set to run as a specific user.
- When running scripts, Business Process Monitor clears the snapshot cache prior to starting a transaction. Thus, if an error occurs and no snapshot is available, no snapshot is displayed in the Error Summary report. (Previously, the snapshot cache was not cleared and as a result, a snapshot that was captured during the script run, but before the start of that transaction, was displayed with the error.)
- When running Business Process Monitor on a Solaris platform, if you add the **sleep** command to functions in scripts, keep in mind that in UNIX environments the parameter passed is treated as seconds (and not milliseconds, as with Windows). This can cause differences in reported response times when running scripts across platforms. It is recommended to use the `lr_think_time` command instead.

- ▶ If there is a problem with a script (for example, due to a missing client installation, a download failure, corruption in the script, and so forth), then the script may fail to initialize. In this case, the profile containing the script also fails to initialize, with the result that none of the profile scripts or WebTraces are run on Business Process Monitor.
- ▶ When a script in a profile is run, but for some reason does not finish successfully (that is, it does not end with a status of **Finished properly** or **Finished (errors occurred)**), samples for transactions that were part of the script, but were not run, are sent to Business Availability Center 6.2 or later for inclusion in the Triage report. For details on the Triage report, see “Triage Report” in *Using End User Management Using End User Management*, part of the HP Business Availability Center Documentation Library.
- ▶ Scripts that include an HTML replay mode cannot download Active-X components.
- ▶ Business Process Monitor is not case sensitive to transaction names, so you should ensure that each transaction has a unique name. Two transactions that have the same name, but with case-sensitive differences, are handled as a single transaction by Business Process Monitor. Business Process Monitor reports both transactions to HP Business Availability Center using a single transaction ID, and the reports show results for only one transaction.
- ▶ Page component breakdown is supported only for certain Virtual User Generator protocols.
- ▶ WebTrace does not support the use of domain names that begin with a digit, for example, www.1800hp.com. An error message is displayed. Instead, use the IP address for the destination.
- ▶ Scripts of stopped profiles are still downloaded to Business Process Monitor, so that if the profile restarts, the Business Process Monitor does not need to download the scripts. To avoid overload problem, unwanted profiles should be deleted rather than just leaving them in HP Business Availability Center in stopped mode.

Virtual User Generator Scripts

- ▶ If you are running scripts recorded with Virtual User Generator that include protocols which require a client to run (for example, Oracle Client or RealPlayer), you must have the protocol's client installed on the Business Process Monitor machine.
- ▶ Citrix recording and playback is supported only on Windows platforms.
- ▶ Business Process Monitor supports Virtual User Generator scripts for all Oracle NCA protocols. If you run an Oracle NCA protocol task, you can view transaction breakdown data for tasks that use HTTP or Servlet connection methods (breakdown data for Socket communication is not supported).
- ▶ To run Oracle protocol scripts on a Solaris platform, you need to define certain environment variables for Business Process Monitor. For details, see “Running Oracle Protocol Scripts” on page 225.
- ▶ If you have added jars or classes to the classpath in VuGen and are running a java based protocol in Business Process Monitor, you must perform one of the following actions to ensure that the script can locate the jars:
 - ▶ Remove the jar names from the **run-time-settings > classpath** list and place the jar files in the script folder (where the **.usr** file is). The script searches for all jars in the script folder and automatically adds them to the classpath.
 - ▶ Specify a full path to the jar in the **run-time-settings > classpath** list. For example:

```
C:\Program Files\HP\BPM\workspace\agent1\
Site1\bpm_4\12\ejb_001_lg\wlclient.jar
```

QuickTest Professional Scripts

Note: For tips and recommendations on recording scripts in QuickTest Professional to run on Business Process Monitor, see “Guidelines for Working with QuickTest Professional” in *Using End User Management Using End User Management*, part of the HP Business Availability Center Documentation Library.

- ▶ The last step (may also be multiple last steps) in a QuickTest Professional script should close the application being tested, as well as any child processes that are running. This cleanup step enables the next run of the script to open the application again.

However, if a script fails before it finishes running, it does not run the last step. From version 6.1, Business Process Monitor supports a special close application mechanism that automatically closes the application being tested, when a QuickTest Professional script fails. This mechanism is intended for fallback purposes only. Although the mechanism closes the application being tested, it does not necessarily release all of the tested application’s resources. Also, any unsaved data is lost.

This mechanism is enabled by default. If required, you can disable it for a specific test, as described in “Disabling the Close Application Mechanism” on page 228.

- ▶ Business Process Monitor does not support QuickTest Professional scripts that require access to external resources (such as shared object repository, function library, external Data Table, external actions, and so forth). Scripts that require external resources may fail to run on Business Process Monitor. (However, if the resource can be found on the network, QuickTest Professional uses it.)
- ▶ Set every Business Process Monitor that is used to run QuickTest Professional scripts, to run as a specific user before assigning the scripts, and log in as that user.

- ▶ Business Process Monitor can run only one QuickTest Professional script at a time. Make sure there are not multiple profiles with QuickTest Professional scripts set to run concurrently, or a profile with more than one QuickTest Professional script set to run in **Concurrent** run mode. (For information on run modes, see “Run Schedule for Profile Tasks” on page 140.)
- ▶ Transaction breakdown is not supported for transaction files recorded with QuickTest Professional.
- ▶ Ensure that QuickTest Professional is closed on the computer before running a QuickTest Professional script in Business Process Monitor.
- ▶ QuickTest Professional cannot run tests on a computer that is logged off, locked, or running QuickTest Professional as a non-interactive service.
- ▶ You cannot use the **ResultDir** QuickTest Professional environment variable when running a script in Business Process Monitor.

WinRunner Scripts

You cannot use WinRunner scripts with Business Process Monitor. All WinRunner scripts should be converted to QuickTest Professional scripts.

Running Business Process Monitor

Once Business Process Monitor is active on a host machine, it can continue running indefinitely. When Business Process Monitor starts, it automatically starts each Business Process Monitor instance.

Running Business Process Monitor on a Windows Platform

When you install Business Process Monitor on a host machine running on a Windows platform, **HP Business Process Monitor Service** is added as a service on the host. HP Business Process Monitor Service automatically starts Business Process Monitor whenever the host machine is started.



When Business Process Monitor starts, the HP Business Process Monitor icon appears in the system tray.

To start Business Process Monitor on a Windows platform:

- ▶ Use one of the following methods to start Business Process Monitor if it is not running:
 - ▶ Select **Start > Programs > HP Business Process Monitor > Start Business Process Monitor Service**.
 - ▶ In the **Services** window (select **Start > Run** and type **services.msc**), start the **HP Business Process Monitor** service.

To shut down Business Process Monitor on a Windows platform:

- ▶ Use one of the following methods to stop Business Process Monitor if it is running:
 - ▶ Select **Start > Programs > HP Business Process Monitor > Stop Business Process Monitor Service**.
 - ▶ In the **Services** window (select **Start > Run** and type **services.msc**), stop the **HP Business Process Monitor** service.

Note: When you start or stop Business Process Monitor on a machine running on Windows Vista with User Account Control (UAC) activated, when prompted, confirm that you trust the program responsible for starting and stopping Business Process Monitor to continue with the start or stop action.

Running Business Process Monitor on a Solaris Platform

The default installation directory for Business Process Monitor on Solaris platforms is `/opt/HP/HP_BusinessProcessMonitor`.

To start Business Process Monitor on a Solaris platform:

- If Business Process Monitor is not running, enter the Scripts directory and execute the command:

```
./business_process_monitor start
```

To shut down Business Process Monitor on a Solaris platform:

- Enter the Scripts directory and execute the command:

```
./business_process_monitor stop
```

Accessing Business Process Monitor Admin

You access Business Process Monitor Admin via a Web browser, from any computer connected to your intranet or to the Internet.

Note: For details on accessing Business Process Monitor Admin securely, see “Configuring SSL Support for Business Process Monitor Admin” on page 233 “Using SSL in HP Business Availability Center” in the the *HP Business Availability Center Hardening Guide* PDF.

To access Business Process Monitor Admin:

You can access Business Process Monitor Admin in one of the following ways:

- ▶ In a browser window, enter the URL **http://<host machine>:2696**, for example, **http://cats:2696**.
- ▶ On the Business Process Monitor host machine, you can select **Start > Programs > HP Business Process Monitor > Business Process Monitor Admin**. Business Process Monitor Admin opens in a browser window.
- ▶ In HP Business Availability Center, you can access the **Admin > Platform > Data Collection > Data Collector Maintenance > Business Process Monitor** page and click the **BPM Admin** link for a Business Process Monitor host to open the Business Process Monitor Admin for that host in a new browser window.

Note: 2696 is the default port for Business Process Monitor Admin. You can configure a new port if required. For details, see “Changing the Default Port” on page 218.

Changing the Language of the Business Process Monitor User Interface

In Business Process Monitor 7.00 and later, the Business Process Monitor user interface can be viewed in the following languages in your Web browser:

Language	Language Preference in Web Browser
Chinese	Chinese (China) [zh-cn]
English	English (United States) [en-us]
French	French (France) [fr]
Japanese	Japanese [ja]
Korean	Korean [ko]

Use the language preference option in your browser to select how to view Business Process Monitor Admin. The language preference chosen affects only the user's local machine and not the Business Process Monitor machine or any other user accessing the same Business Process Monitor. The language is determined when you first open Business Process Monitor Admin; changing the language preference in your browser once you are working in Business Process Monitor Admin has no affect until you close and reopen Business Process Monitor Admin.

To view Business Process Monitor Administration in a specific language using Internet Explorer:

- 1 Select **Tools > Internet Options** and click **Languages**. The Language Preference dialog box opens.
- 2 Highlight the language in which you want to view Business Process Monitor Administration.

If the language you want is not listed in the dialog box, click **Add** to display the list of languages. Select the language you want to add and click **OK**.

- 3 Click **Move Up** to move the selected language to the first row.
- 4 Click **OK** to save the settings.

- 5 Refresh the page: the Business Process Monitor Administration user interface is displayed in the selected language.

Notes and Limitations

- ▶ Starting from Business Process Monitor version 7.0, there is no language pack installation. All translated languages are integrated into Business Process Monitor Multi-lingual User interface (MLU).
- ▶ Data stays in the language it was entered in, even if the language of the Web browser changes. Changing the language of the Web browser on your local machine does not change the language of Business Process Monitor definitions and configurations.
- ▶ If a user selects a language which is not supported by the Business Process Monitor Multi-lingual User interface, the Business Process Monitor Administration user interface appears in English.

Moving Around the Business Process Monitor Admin Window






The Business Process Monitor Admin browser window is divided into three areas:

Left Menu

The left navigation menu of the Business Process Monitor Admin window provides links to the pages for the Business Process Monitor instances, profiles, and profile tasks included on the host machine.



The following icons are used for each page:

Icon	Represents:
	Instance – registration data received (from HP Business Availability Center or from persistency files), and no fatal errors occurred for this instance
	Instance – checking connectivity status
	Instance – problem occurred (for example, connectivity to HP Business Availability Center failed, or failed to create a specific user for that instance)
	Profile
	Task

Top Bar

The top bar contains the Hide/Show Menu arrow, which you click to hide or show the left navigation menu, and the **Help** menu. Place the cursor over the **Help** link to display the menu options:

- **Business Process Monitor Administrator’s Guide.** Opens the guide in a new browser window.
- **What’s New?** Displays information on what’s new for this Business Process Monitor version.
- **About Business Process Monitor.** Displays information on the Business Process Monitor version.

Info Area

When you select a page in the left menu, Business Process Monitor Admin displays the page in the info area. The info area also contains a **Help** button, which opens the *HP Business Process Monitor Administrator's Guide* to the topic that describes the current browser page.

The following chapters describe the pages in Business Process Monitor Admin:

- Business Process Monitor Host Page
- Instance Page
- Profile Page
- Task Page

Notes and Limitations for Business Process Monitor Installed on Windows Vista

This section includes notes and limitations for Business Process Monitor when it is installed on Windows Vista.

Business Process Monitor User Permissions

Users logged in to the Business Process Monitor machine, as well as any users that Business Process Monitor is set to run as (either as a whole, or for a specific instance), must have full control permissions to the `..\<Business Process Monitor application directory>\config` folder.

To set full control permissions to the `..\<Business Process Monitor application directory>\config` folder:

- 1** Browse to the `..\<Business Process Monitor application directory>`. The usual path is `C:\ProgramData\HP\BPM`.
- 2** Right-click the config folder and select **Properties** from the displayed menu.
- 3** In the displayed Properties dialog box, select the **Security** tab.

- 4 In the Security tab, select the user in the **Name** area, then in the **Permissions** area select the **Allow** check box for **Full Control**.
- 5 Click **OK** to save your changes and close the dialog box.

Editing Business Process Monitor Log and Configuration Files

Edit Business Process Monitor log and configuration files using Notepad only.

Enabling User Account Control

To run Business Process Monitor on Windows Vista, **User Account Control (UAC)** must be enabled for users with **User** privileges. For users with **Administrator** privileges, UAC can be enabled or disabled.

4

Business Process Monitor Host Page

This section describes the Business Process Monitor Host page in Business Process Monitor Admin. The Business Process Monitor Host page provides administrative management for Business Process Monitor installation, enabling you to add and remove Business Process Monitor instances, view log and configuration files, and restart Business Process Monitor instances. You can also invoke a page component breakdown for a Web page or run a WebTrace.

This chapter includes:

- ▶ Introducing the Business Process Monitor Host Page on page 102
- ▶ Configuring Business Process Monitor Instances on page 103
- ▶ Working with Business Process Monitor Directories on page 113
- ▶ Running the Whole Business Process Monitor as a Specific User/System User on page 118
- ▶ Restarting Business Process Monitor on page 121
- ▶ Running an On-Demand Page Component Breakdown on page 122
- ▶ Running WebTrace on page 124

Introducing the Business Process Monitor Host Page

The Business Process Monitor Host page **Properties** area displays the logical host name (as defined during Business Process Monitor installation), and the number of Business Process Monitor instances defined on the host machine.

The **Instances** area displays a list of the instances Business Process Monitor instances defined on the host machine, and the communication status (**enabled** or **disabled**) with HP Business Availability Center for each instance. (The status is changed to disabled if you block communication using the **Disable Communication** button in the Instance page, as described in “Administering the Instance” on page 128.) You click an instance name link to display the page for that instance.

From the Instances area, you add instances, delete instances, and edit instance settings.

Tip: Click a column header to organize the Instances list according to that column, in ascending or descending alphanumeric order.

From the Business Process Monitor Host page you can:

- configure Business Process Monitor instances (add/remove instances)
- view Business Process Monitor workspace or configuration file data
- set the whole Business Process Monitor to run as a specific user/system user
- restart the Business Process Monitor
- invoke page component breakdowns
- invoke WebTrace

Configuring Business Process Monitor Instances

Your Business Process Monitor installation can be used as the basis for multiple Business Process Monitor instances on the host machine. For example, you may require additional instances on the host machine to work with different HP Business Availability Center Gateway Servers. Each instance runs its own tasks and reports independently to the relevant server.

The initial installation of Business Process Monitor on the host machine automatically creates the first Business Process Monitor instance in Business Process Monitor Admin. During installation, you specify the name of the Gateway Server machine for this instance. If you create additional instances, you can specify the same Gateway Server, or, if are using multiple Gateway Servers, you can specify a different Gateway Server for communication with each Business Process Monitor instance.

Each instance is assigned a unique host alias, referred to as the host name. This host alias is used when designating hosts to run your business process profiles in HP Business Availability Center End User Management Administration. (Note that the host name does not imply the host machine name.) You also define a location name for each instance, used when defining the business process profiles. The same location name can be used for multiple instances, and does not need to be the location of the Business Process Monitor host machine.

For each instance, you specify server authentication, SSL, and proxy server information, as necessary. Business Process Monitor supports basic and NTLM authentication schemes. (If you receive an error message when the server tries to communicate with the instance, check which authentication scheme is in use, and that the correct authentication and proxy information is defined for the instance). For required parameter settings when configuring NTML authentication, see “Parameters in sconn.cfg” on page 206.

Note when using NTLM authentication: Unlike working with Microsoft Internet Explorer (where NTLM authentication is transparent to users), when Business Process Monitor is working with NTLM authentication, you are required to specify the authentication user name and password parameters when creating or editing the instance.

In addition, you can configure the Business Process Monitor instance to run as a specific user, so that all tasks defined for the instance run as a specific user. Running the Business Process Monitor instance as a specific user may be necessary to solve access permission problems on your network.

Note: You can also set all Business Process Monitor instances on the machine to run as a specific user, as described in “Running the Whole Business Process Monitor as a Specific User/System User” on page 118.

This section contains the following topics:

- “Adding an Instance” on page 105
- “Configuring Add Instance Parameters” on page 106
- “Modifying an Instance” on page 111
- “Removing an Instance” on page 113

Adding an Instance

After creating a Business Process Monitor instance, the host name for the instance is added to the list of available hosts for running profiles in End User Management Administration. For details on specifying hosts for profiles, see “Edit Transaction Monitor Page” in *Using End User Management Using End User Management*, part of the HP Business Availability Center Documentation Library.

To add a Business Process Monitor instance:

- 1** In the Business Process Monitor Host page, click **Add Instance**. The Add Instance page is displayed.
- 2** Enter the required information in each of the categories of the Add Instance page. For information on the instance parameters, see “Configuring Add Instance Parameters” on page 106.
- 3** Click **Add** to add the instance. The new Business Process Monitor instance is displayed in the Instances list and communication is automatically established with the HP Business Availability Center Gateway Server (indicated by the instance icon changing from gray to green).

Configuring Add Instance Parameters

You configure parameters for an instance in the following categories:

General

General	
* Display name:	<input type="text"/>
* Gateway Server URL:	<input type="text"/>
* Location name:	<input type="text"/>
* Host name:	<input type="text"/>
* Job poll interval (minutes):	<input type="text" value="2"/>
* Time poll interval (minutes):	<input type="text" value="60"/>
* These parameters are mandatory.	

Parameter	Description
Display name	Type a display name for this instance. This name is only used within Business Process Monitor Admin. If you do not specify a name, the default name for the instance consists of the Gateway Server URL, the host location, and the host name.
Gateway Server URL (mandatory field)	Type the full URL of the Gateway Server, for example, <code>http://<server_name>/topaz</code> , where <code><server_name></code> is the name of a Gateway Server. Note that the URL is case sensitive.
Location name (mandatory field)	Type a location name. Keep in mind that the location specified is used by HP Business Availability Center to break down and organize reports on application performance. You can use the same location name for as many instances as you want.
Host name (mandatory field)	Type a unique host name for this instance. Keep in mind that the host name is used to identify the Business Process Monitor instance when you create profiles and view reports.

Parameter	Description
Job poll interval (minutes) (mandatory field)	Type a value in minutes to determine the frequency with which Business Process Monitor polls the database for assigned tasks (for example, running scripts or Webtrace) and changes to the profiles. The default value is two minutes.
Time poll interval (minutes) (mandatory field)	Type a value in minutes to determine the frequency with which Business Process Monitor polls the HP Business Availability Center Gateway Server for time synchronization. The default value is 60 minutes.

Important: Note the following when configuring the **General** parameters:

- ▶ The Gateway Server URL must end with **/topaz**.
- ▶ The host name for each Business Process Monitor instance must be unique within each HP Business Availability Center environment.
- ▶ Do not use special characters in the host name or location name for Business Process Monitor instances, if these characters are not supported in HP Business Availability Center. Unsupported characters are blocked by Business Process Monitor Admin.
- ▶ If you use non-English strings for the host name or location name, the Invoke Task option (described in “Viewing Task Reports” on page 148) is not supported.
- ▶ If a time change is made on the HP Business Availability Center Gateway Server, for example, for daylight saving time, then the time poll interval value should be changed to a value smaller than the default of 60 minutes, for each Business Process Monitor instance.

If this is not done, it may take up to an hour for Business Process Monitor to be synchronized with the time change in HP Business Availability Center, and during this period the Business Process Monitor samples are reported with the wrong time stamp.

Authentication

Authentication	
Authentication user name:	<input type="text"/>
Authentication user password:	<input type="password"/>
Authentication domain:	<input type="text"/>

Define authentication parameters for the Business Process Monitor instance to support the authentication scheme in use by the server (basic or NTLM authentication).

Type the user name, password, and domain name of a user recognized by the Gateway Server.

For more information on using basic authentication in HP Business Availability Center, see “Using Basic Authentication in HP Business Availability Center” in the *HP Business Availability Center Hardening Guide* PDF, part of the HP Business Availability Center Documentation Library.

Note:

- ▶ To define basic authentication requirements for accessing Business Process Monitor Admin, see “Enabling User Authentication” on page 222.
 - ▶ For required parameter settings when configuring NTLM authentication, see “Parameters in sconn.cfg” on page 206.
-

SSL

SSL	
SSL client certificate file:	<input type="text"/>
SSL private key file:	<input type="text"/>
SSL private key password:	<input type="text"/>
SSL authority certificate file:	<input type="text"/>

If the Business Process Monitor instance is communicating with the HP Business Availability Center Gateway Server using SSL, type the required information in the relevant boxes. For more information on supporting SSL communication, see “Communication Using SSL” on page 233see “Using SSL in HP Business Availability Center” in the the *HP Business Availability Center Hardening Guide* PDF.

Proxy

Proxy	
Proxy user name:	<input type="text"/>
Proxy password:	<input type="text"/>
Proxy domain:	<input type="text"/>
Proxy URL:	<input type="text"/>

If the Business Process Monitor instance is accessing the Gateway Server through a proxy server, define authentication parameters for proxy requests (basic or NTLM proxy authentication). Type the user name, password, domain name, and URL for the proxy server.

Run as a Specific User

Run as a specific user	
User:	<input type="text"/>
Password:	<input type="text"/>
Domain:	<input type="text"/>

By default, each Business Process Monitor instance runs on the host machine as the system user, unless you configured the whole Business Process Monitor to run as a specific user (as described in “Running the Whole Business Process Monitor as a Specific User/System User” on page 118).

If you want to configure only certain Business Process Monitor instances to run as specific users, and not the whole Business Process Monitor, you type the user name, password (for Windows platforms), and domain in the relevant boxes of the **Run as a specific user** category.

If you are running a Business Process Monitor instance as a specific user without administrator permissions on the local machine, you need to set additional permissions for the user.

To set additional permissions for a specific user without administrator permissions:

- 1** Assign Read & Execute permissions to the Business Process Monitor installation directory.
- 2** Assign Full Control permissions to the relevant directory for the instance. For example, the first instance must have access rights to the `..\Workspace\agent1\site1` directory.
- 3** Assign Write permissions to the `..\Workspace\agent1\data\snapshots` directory.
- 4** Assign Write permissions to the default user temp directory. All MDRV based programs in the system use this directory for certain processes, for example when using a script with parameters. The directory is usually located under:
 - ▶ Windows XP
`C:\Documents and Settings\LocalService\Local Settings\Temp`
 - ▶ Windows 2003
`C:\Documents and Settings\Default User\Local Settings\Temp`
 - ▶ Windows Vista
`C:\Users\<User name>\AppData\Local\Temp`

Note:

- To set the Business Process Monitor instance to run as a system user after previously setting it to run as a specific user, open the instance for editing (as described in “Modifying an Instance” on page 111) and clear all boxes in the **Run as a specific user category**.
- If you want to run QuickTest Professional scripts as a specific user, it is recommended that you set each relevant Business Process Monitor instance to run as a specific user before assigning the QuickTest Professional scripts.

After running QuickTest Professional scripts as the system user, if you then set the Business Process Monitor instance to run as a specific user, the script may fail. In this case, restart the Business Process Monitor machine.

Modifying an Instance

You modify parameters for an instance in the Edit Instance page. When saving your changes, you have the option to save with/without restarting the instance. If you choose not to restart the instance, then most changes are applied only when you next restart Business Process Monitor (using the **Restart BPM** button).

Certain parameters for the instance can be configured in run-time, without need to restart the instance. These parameters are:

- **Display name**
- **Job poll interval**
- **Time poll interval**

Check the information in the Notes and Limitations section (below) before editing an instance.

To edit a Business Process Monitor instance:



- 1 In the Instances list on the Business Process Monitor Host page, click the edit icon for the instance you want to modify. The Edit Instance page opens.

Note: You can also open the Edit Instance page directly from the relevant instance page by clicking **Edit Instance**.

- 2 Modify the settings as required. For information on the instance parameters, see “Configuring Add Instance Parameters” on page 106.
- 3 To apply your changes later, or if you made changes only in the run-time parameters, click **Save Changes**. If you want to apply non-run-time changes immediately (by restarting the Business Process Monitor instance), click **Save Changes and Restart Instance**.

Notes and Limitations

- If you save your changes on the Edit Instance page without restarting the instance or Business Process Monitor, then reopen the Edit Instance page, it displays the previous parameter values from before making the changes (for all non-run-time changes). To still apply your changes, click **Cancel**, then restart Business Process Monitor. To reapply the values now displayed in the Edit Instance page, click **Save Changes** or **Save Changes and Restart Instance**.
- If you change the host name for an instance, HP Business Availability Center assigns a new HostID value to the Business Process Monitor instance. As a result, the Business Process Monitor instance does not run profiles that use the original host name. To enable profiles to run correctly after changing the host name, you must update your profiles in End User Management Administration to use the new instance host name.
- Do not change the location for a Business Process Monitor instance that is designated as the host for a profile, when the database for the profile is down. Doing so removes the mapping from the profile to the instance, with no recovery.
- Restarting an instance causes the loss of any data that has not yet been reported by Business Process Monitor to HP Business Availability Center.

Removing an Instance

When you remove an instance, it is removed from the list of instances in Business Process Monitor Admin when the current iteration ends (this may take several minutes); however, it continues to appear in HP Business Availability Center End User Management Administration and Platform Administration until it is removed from there.

To remove a Business Process Monitor instance:

- 1** In the Instances list on the Business Process Monitor Host page, select the check box for each instance you want to remove.
- 2** Click **Remove Instance**. A confirmation message is displayed.
- 3** Click **OK**. The instances are removed from Business Process Monitor Admin.

Working with Business Process Monitor Directories

From Business Process Monitor Admin, you can view various Business Process Monitor configuration and log files stored on the host machine, and create directory zip files, as described in the following sections:

- ▶ “Viewing Configuration and Log Files” below
- ▶ “Zipping Workspace and Config Files” on page 117

Viewing Configuration and Log Files

Business Process Monitor Admin enables you to view files stored in the following directories:

- ▶ **Config directory** – comprises configuration files that contain the options defined for Business Process Monitor. For information on the contents of the configuration files, see “Business Process Monitor Configuration Files” on page 175.
- ▶ **Workspace directory** – comprises log files and other files that relate to Business Process Monitor operation. The log files document event information and errors for Business Process Monitor and its instances. For information on the contents of the log files, see “Workspace Directory and Log Files” on page 239.

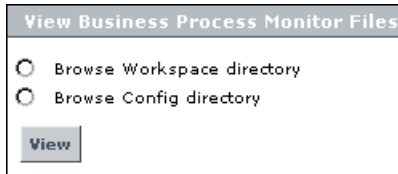
Note:

- ▶ You cannot edit the files from Business Process Monitor Admin, only view the file contents.
- ▶ If your log files contains non-English data, you must open them in a viewer that supports UTF-8 format parsing, for example, Notepad.

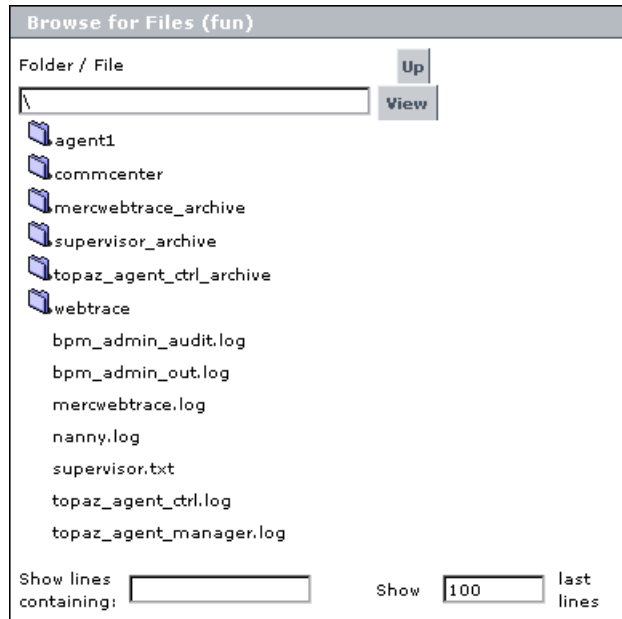
Log files that are saved in the default encoding of the server where Business Process Monitor Admin is installed are shown correctly in the View BPM Files dialog box.

To view Workspace or Config directory files:

- 1** In the Business Process Monitor Host page, click the **View BPM Files** button.
- 2** In the displayed dialog box, select the required directory in the **View Business Process Monitor Files** area.



- 3** Click **View**. Business Process Monitor Admin opens a dialog box displaying the contents of the selected directory in the left pane. The following example shows the directories and files contained in the Workspace directory for machine Fun.

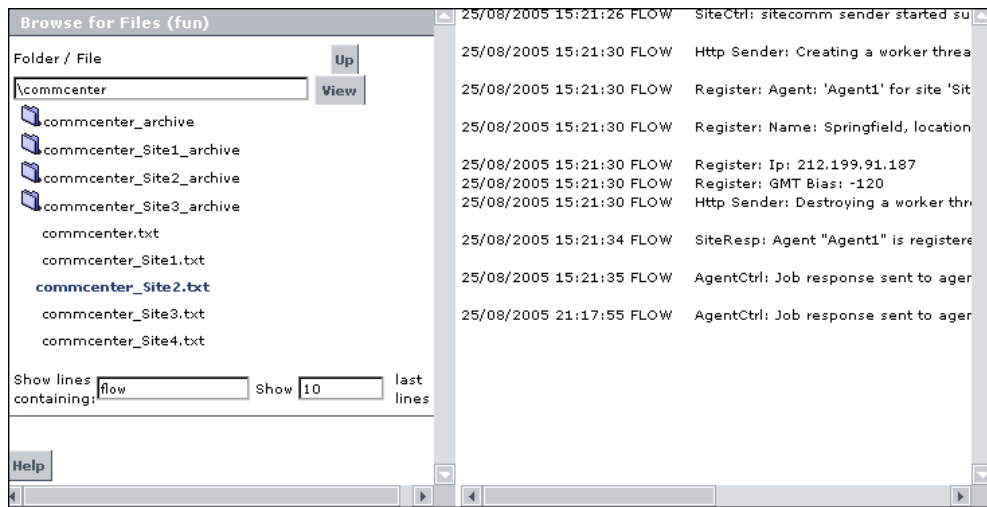


- 4** Browse to the required file, or enter the path in the **Folder/File** box and click **View**.

Tip: Use the **Up** button to return to the parent file level within the directory.

- 5** Select a file name to display the information in the file in the right pane. If the file is empty, the right pane also remains empty.

- 6 You can filter the information displayed in the right pane using one or both of the following options:
- ▶ In the **Show lines containing:** box, enter the required text (for example, ERROR) and click the name of a file. The right pane displays all lines in the file that contain the entered text.
 - ▶ In the **Show <x> last lines** box, enter a number (default value is **100**) and click the name of a file. The right pane displays the last lines of the file up to the number entered, or, if you also defined a text filter, the **x** last lines containing that text. For example, you can define a filter to show the 10 last lines containing "flow".



Note that the filter values stay in effect for each selected file until you delete or change them.

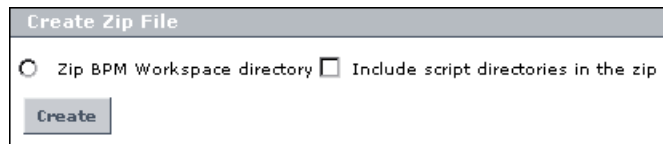
Zippping Workspace and Config Files

From the Business Process Monitor Host page, you can create a zip file of the entire Workspace and Config directories. You can then download the zip file and send it to another location for analysis or support purposes.

The zip file is created by default without the script directories, minimizing the file size and enabling you to keep the script contents confidential. If the script directories are required, you can select to include them in the file, but note that this may considerably increase the size of the zip file.

To create a zip file of Workspace and Config files:

- 1 In the Business Process Monitor Host page, click the **View BPM Files** button.
- 2 In the displayed dialog box, in the **Create Zip File** area, select **Zip BPM Workspace directory** to create a zip file of all Workspace and Config files. If you want to include the script directories in the zip file, also select that option.



The screenshot shows a dialog box titled "Create Zip File". It contains two radio button options: "Zip BPM Workspace directory" (which is selected) and "Include script directories in the zip" (which is not selected). Below these options is a "Create" button.

- 3 Click **Create**.
- 4 In the Zip BPM Working Directory dialog box, click the **Download Workspace directory zip file** link and follow the online instructions to download the zipped file.

Running the Whole Business Process Monitor as a Specific User/System User

From the Business Process Monitor Host page, you can set the data collection mechanism used by Business Process Monitor to run as a specific user (recommended), so that all Business Process Monitor-related processes, as well as all tasks defined for all Business Process Monitor instances, run as that user. Running it as a specific user limits access to resources, settings, and applications located on the local machine. (This may not be true for resources located on remote machines, where a specific user may have different privileges than the local system user.)

You can also set Business Process Monitor to run as a specific user during Business Process Monitor installation, or set an individual Business Process Monitor instance to run as a specific user (as described in “Run as a Specific User” on page 109).

Note: Note that you cannot set the whole Business Process Monitor to run as a specific user if you have any individual Business Process Monitor instances set as specific user. You must first revert all instances to run as system user.

It is recommended that you run scripts for all protocols (with the exception of Web protocols) with the Business Process Monitor instance/whole Business Process Monitor set to run as a specific user.

Note: For troubleshooting problems when setting Business Process Monitor as a specific user, see “Deployment Troubleshooting” on page 80.

This section contains the following topics:

- “Setting Business Process Monitor to Run as a Specific User” on page 119
- “Setting Business Process Monitor to Run as a System User” on page 120

Setting Business Process Monitor to Run as a Specific User

If you set Business Process Monitor to run as a specific user, then you need to set full control permissions for the user under the default Workspace directory and (for Windows platforms only) under the user Temp folder and the Windows installation folder. The procedure for this is described below.

Important: If you set the whole Business Process Monitor to run as a specific user on a Windows platform, whether during installation or from the Business Process Monitor Host page, the user must have administrator permissions on the local machine.

Note: If you want to run QuickTest Professional scripts, it is recommended that you set Business Process Monitor to run as a specific user before assigning the QuickTest Professional scripts.

After running QuickTest Professional scripts as the system user, if you then set Business Process Monitor to run as a specific user, the script may fail. In this case, restart the Business Process Monitor machine.

To run Business Process Monitor as a specific user:

- 1** In the Business Process Monitor Host page, click the **Set BPM as User** button. The Set BPM Specific User page is displayed.
- 2** Enter the required user name, password, and domain in the boxes.
- 3** Click **Set and Restart BPM**.

To set full control permissions on the Temp and Workspace directories:

- 1 (Windows platforms only)** Browse to the user Temp folder of the default user or the user that runs the Business Process Monitor. The usual path of the Temp folder is:
 - Windows 2003 or Windows XP
C:\Documents and Settings\\Local Settings\Temp

- ▶ Windows Vista

C:\Users\\AppData\Local\Temp)

In the Temp directory, perform the following actions:

- ▶ Select **Properties** from the right-click menu for the folder.
 - ▶ In the displayed Temp Properties dialog box, select the **Security** tab.
 - ▶ Select the user in the **Name** area, then in the **Permissions** area select the **Allow** check box for **Full Control**.
 - ▶ Click **OK** to save your changes and close the dialog box.
- 2 (Windows platforms only)** Browse to the Temp directory in the Windows installation folder (usual path **C:\<Windows installation folder>\Temp**) and repeat the actions described in step 1 of this procedure.
- 3 (Windows and Solaris platforms)** Browse to the default workspace directory for Business Process Monitor:
- ▶ For Windows platforms, repeat the actions described in step 1 of this procedure.
 - ▶ For Solaris platforms, grant read, write, and execute permissions.
- 4 (Windows and Solaris platforms)** Browse to the default application directory for Business Process Monitor:
- ▶ For Windows platforms, repeat the actions described in step 1 of this procedure.
 - ▶ For Solaris platforms, grant read, write, and execute permissions.

Note: For details on the default application directory, see “How a Silent Installation Assigns Values” on page 64.

Setting Business Process Monitor to Run as a System User

If you previously set Business Process Monitor to run as a specific user and want to revert to running it as system user (meaning no specific user defined), you must implement the following procedure.

To run Business Process Monitor as a system user:

- 1** In the Business Process Monitor Host page, click the **Set BPM as User** button. The Set BPM Specific User page is displayed.
- 2** Delete the information in all boxes.
- 3** Click **Set and Restart BPM**.

Restarting Business Process Monitor

You restart Business Process Monitor by clicking the **Restart BPM** button on the Business Process Monitor Host page.

After several seconds, Business Process Monitor Admin restarts all Business Process Monitor instances on the host machine. Note that it may take a minute or longer for Business Process Monitor Admin to reconnect to Business Process Monitor.

Note: When multiple profiles are running on a host, Business Process Monitor generates start offset values in order to optimally distribute script runs over time. Restarting Business Process Monitor prompts the recalculation of the start offset values.

If you create or delete business process profiles in End User Management Administration, you can restart Business Process Monitor in order to reset the automatic distribution of script runs. For more information on the automatic distribution feature, see “Profile Start Offset” on page 137.

Running an On-Demand Page Component Breakdown

From the Business Process Monitor Host page, you can run an on-demand page component breakdown (PCBD) request for any Web page. Business Process Monitor measures response time while running the request, and collects breakdown data for each component of the accessed Web page. This information enables you to assess whether the response time was affected by page content.

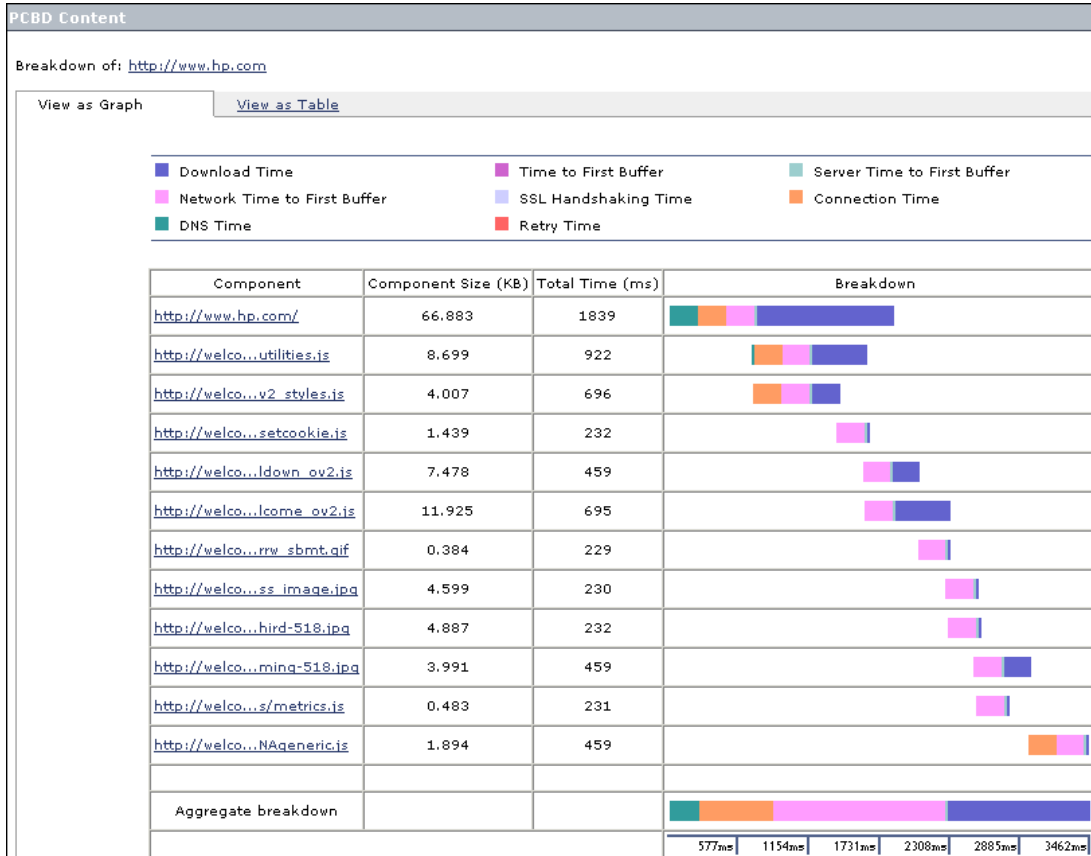
You can view the resulting data report in table or graph format. The data collected is reported only to Business Process Monitor Admin (not to HP Business Availability Center).

If the target Web page can only be accessed using authentication parameters, you enter them as part of the invoke PCBD request.

To view page component breakdown data:

- 1** In the Business Process Monitor Host page, click the **Invoke PCBD** button. The Invoke PCBD dialog box is displayed.
- 2** In the **PCBD address** box, enter an address for the target Web page. This may be:
 - ▶ the name of a server on the local network
 - ▶ a Web address
 - ▶ the full URL for the page, for example:
`http://www.hp.com/`
- 3** If the destination requires authentication, type the user name and password of a recognized user in the **Authentication** boxes (or leave the password box empty if the URL requires a blank password).
- 4** Enter a timeout value in minutes in the **Timeout** box (default value is 15 minutes). This value determines how long Business Process Monitor attempts to retrieve the page component data before timing out.

5 Click **Invoke Now**. After a few moments, the PCBD Content window opens, where you can view the component breakdown report in graph or table format.



For information on using the page component breakdown report, and an explanation of the breakdown categories, see “Understanding Response Time Breakdown Reports” on page 152.

Running WebTrace

From the Business Process Monitor Host page, you can run WebTrace to a destination Web site, and view the resulting report. The WebTrace report provides information on network performance, which helps you analyze application performance issues.

The data collected is reported only to Business Process Monitor Admin (not to HP Business Availability Center).

Note: Business Process Monitor cannot run WebTrace concurrently for more than 40 addresses.

To view WebTrace report data:

- 1** In the Business Process Monitor Host page, click the **Invoke WebTrace** button. The Invoke WebTrace dialog box is displayed.
- 2** Type a destination Web address in the **WebTrace address** box. Do not include the string **http://** or **https://** when typing the server address. For example:
www.hp.com
- 3** If required, modify the default port (80) in the **Port** box. If Business Process Monitor is accessing the Internet through a proxy server, or if the destination address requires access via HTTPS, specify port 443.
- 4** Enter a timeout value in minutes in the **Timeout** box (default value is 15 minutes).
- 5** Click **Invoke Now**. After a few moments, the WebTrace Content window opens.

For an explanation of the WebTrace report data, see “Understanding WebTrace Reports” on page 173.

5

Instance Page

The Business Process Monitor Admin Instance page enables you to administer and monitor the HP Business Process Monitor instance.

This chapter includes:

- ▶ Instance Properties on page 126
- ▶ Instance Profiles on page 127
- ▶ Administering the Instance on page 128
- ▶ Viewing Instance Log Files on page 129

Instance Properties

The **Properties** area displays properties defined for the Business Process Monitor instance, and information on the status of, and tasks for, the instance. The following properties are included:

Property	Description
Name	The display name defined for the instance in Business Process Monitor Admin.
Core Server URL	The URL of the Gateway Server to which this instance sends collected data.
Host name	The host name defined for the instance.
Location name	The location defined for the instance.
Job poll interval (minutes)	The defined frequency (in minutes) with which Business Process Monitor polls the database for assigned tasks and profile changes.
Time poll interval (minutes)	The defined frequency (in minutes) with which Business Process Monitor polls HP Business Availability Center for time synchronization.
Queue size	The number of task reports (for completed runs of scripts, WebTraces, and so forth) waiting to be relayed to the Gateway Server.
Status	The communication status for the instance with HP Business Availability Center, either enabled or disabled . The status is changed using the Disable Communication button, as described on page 128.
Number of profiles	The number of profiles currently associated with this instance.

Instance Profiles

The **Profiles** area lists the profiles running on the Business Process Monitor instance and their current status.

Property	Description
Name	The name of the profile. You click a profile name link to display the page for that profile.
ID	The ID number assigned to the profile.
Last Run Start Time	The start time of the last run of the profile on this instance, according to the local time on the Business Process Monitor machine.
Last Run Duration	The time, in seconds, it took to execute the last run of the profile.
Status	<p>The current status of the profile. Displays one of the following options:</p> <p>Currently running if the profile is currently running tasks.</p> <p>Idle if the profile is running, but has no tasks running at this time.</p> <p>Stopped if the profile is stopped.</p> <p>Not initialized if the profile has not yet started its initial run.</p> <p>Note: If the profile status is Not initialized, the profile is in the process of getting ready to run—creating the schedules, downloading the required scripts. If there is a problem (for example, if the script does not download or if there is an incorrect schedule definition) the profile remains at this status and an error "failed to initialize profile X ..." is written in the agent log and in the agent_SiteX log.</p>

Tip: Click a column header to organize the Profiles list according to that column, in ascending or descending alphanumeric order.

Administering the Instance

You administer the Business Process Monitor instance from the Instance page using the following buttons:

- **Update Queue Size.** Updates the Queue Size value to display the number of task reports (for completed runs of scripts, WebTraces, and so forth) waiting to be relayed to the Gateway Server, and displays the time of the last queue size update. (Note that the Queue Size value does not update automatically while the Instance page is open.)

Note: There are no limitations to the size of the queue except for the amount of free disk space available.

- **Update Jobs.** Updates changes made in HP Business Availability Center End User Management Administration to Business Process Monitor. This button enables you to manually prompt Business Process Monitor to poll the database for changes; Business Process Monitor also automatically polls the database for updates, according to the defined job poll interval (default = 2 minutes).
- **Purge Queue.** Removes all task reports waiting to be relayed to the Gateway Server from the queue.

Note: Once you have clicked the **Purge Queue** button, all waiting data is purged from the Business Process Monitor memory and cannot be retrieved.

- **Disable/Enable Communication.** Stops and restarts communication between the instance and HP Business Availability Center. Note that the status displayed for the instance (**Enabled** or **Disabled**) depends on whether or not communication is blocked by using this button; if you have not disabled communication, the status is Enabled, even if the instance fails to connect to HP Business Availability Center.
- **Edit Instance.** Enables you to edit all parameters for the instance. For details, see “Modifying an Instance” on page 111.

- **View Log Files.** Enables you to view selected log information for this Business Process Monitor instance. For details, see “Viewing Instance Log Files” on page 129.

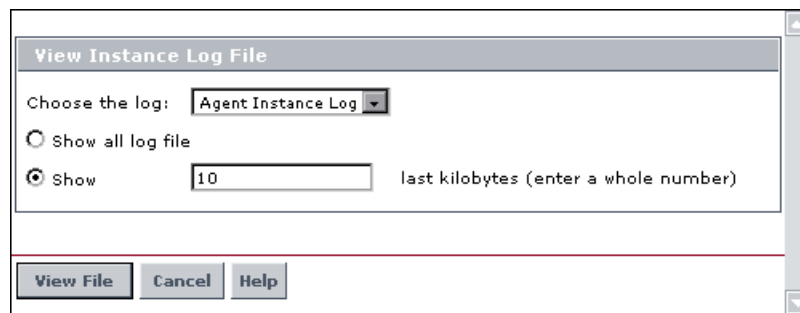
Viewing Instance Log Files

While the Business Process Monitor instance is running, all event messages for it are written to log files, stored on the Business Process Monitor machine. From the Instance page, you can view log entries for the instance as follows:

- **Agent Instance Logs.** These logs are saved by default in an **agent_Site<#>.txt** file for the instance, where the # represents the instance’s alias, as defined in the configuration file example path: **<Business Process Monitor root directory>\Workspace\agent1\agent_Site1.txt**).
- **Reports (Data) Logs.** These logs are saved by default in a **data_depot_Site<#>.txt** file for the instance (example path: **<Business Process Monitor root directory>\Workspace\agent1\data\data_depot_Site1.txt**).
- **Controller Logs.** These logs are saved by default in a **commcenter_Site<#>.txt** file for the instance (example path: **<Business Process Monitor root directory>\Workspace\commcenter\commcenter_Site1.txt**).

To view instance log file data:

- 1 In the Instance page, click **View Log Files**. The View Instance Log File dialog box is displayed.



- 2** Select the required log file from the **Choose the log** list.
- 3** Define how much of the log file you want to view by selecting one of the following:
 - Select the **Show all log file** radio button to view all entries in the file.
 - Select the **Show** radio button to view the last entries in the file. Enter a whole number (in kilobytes) in the box to define how much of the file you want to view (the default is 10 kilobytes).
- 4** Click **View File**. The Log File Contents page displays the log file entries.

6

Profile Page

The Business Process Monitor Admin Profile page enables you to monitor a profile running on an HP Business Process Monitor instance.

This chapter includes:

- Profile Properties on page 131
- Profile Tasks on page 133
- Profile Schedules on page 135
- Profile Start Offset on page 137
- Run Schedule for Profile Tasks on page 140

Profile Properties

Most of the properties for a business process profile are defined in HP Business Availability Center End User Management Administration and Platform Administration.

Note: When you configure profiles in End User Management Administration, profile names, as well as the names of the included transactions and scripts, must be entered in the same language that is set for the operating system of the Business Process Monitor on which they are run. For details on configuring profiles in End User Management Administration, see “Business Process Profile Wizard” in *Using End User Management*.

The Properties area for a profile displays the following properties:

Property	Description
Name	The name of the profile.
ID	The ID number assigned to the profile.
Schedule	<p>The schedule for running the profile on this Business Process Monitor instance. If the profile has multiple schedules, all schedules are shown. (For more information, see “Profile Schedules” on page 135.)</p> <p>Also displays the start offset, which specifies the delay between the profile schedule time and the actual run time. (For information on how the start offset is calculated, see “Profile Start Offset” on page 137.)</p>
Number of tasks	The number of tasks (to run a script or WebTrace) that are currently assigned to the profile.
Status	<p>The current status of the profile. Displays one of the following options:</p> <p>Currently running if the profile is currently running tasks.</p> <p>Idle if the profile is running, but has no tasks running at this time.</p> <p>Stopped if the profile is stopped.</p> <p>Not initialized if the profile has not yet started its initial run.</p> <p>Note: If the profile status is Not initialized, the profile is in the process of getting ready to run—creating the schedules, downloading the required scripts. If there is a problem (for example, if the script does not download or if there is an incorrect schedule definition) the profile remains at this status and an error "failed to initialize profile X ..." is written in the agent log and in the agent_SiteX log.</p>
Last start time	The start time of the last run of the profile on this instance, according to the local time on the Business Process Monitor machine.
Last run duration	The time, in seconds, it took to execute the last run of the profile.

Profile Tasks

A business process profile consists of the scripts and WebTrace schemes that have been defined for the profile in End User Management Administration.

The **Tasks** area of the Profile page lists the tasks (for example, scripts, WebTrace) associated with this profile that are scheduled to be run on this Business Process Monitor instance.

Tasks				
Name ▲	Status	Type	Last Run	Running Dependencies
Springfield_Infra_Support	Idle	Script	Finished properly	After the beginning of the profile's iteration
Springfield_Travel_Services	Idle	Script	Finished properly	At the end of: Springfield_Infra_Support

The **Tasks** area in the Profile page displays the following information:

Property	Description
Name	The names of the scripts or WebTrace schemes that the profile is scheduled to run on this Business Process Monitor instance. You click a task name link to display the page for that task.
Status	The current status of the task for this instance. Displays one of the following options: Not initialized – The task has not yet been initialized. Running – The task is currently running on this Business Process Monitor instance. Idle – The task is not currently running on this instance.
Type	The type of task, Script or WebTrace .

Property	Description
Last Run	<p>The status at the end of the last run for the task. For script tasks, click the Last Run value to display the MDRV log for the task run (if an MDRV log file exists).</p> <p>Displays one of the following options:</p> <p>Finished properly – The task finished running with no errors.</p> <p>Finished (errors occurred) – The task finished running; however, there may be some errors in the task reports (for example, a failed transaction, or the traceroute server may report "progress aborted" for a WebTrace request), or there may be have been an error when trying to compile the script. Check the MDRV log file for further information on the errors encountered.</p> <p>Failed to start – The task failed to start running (for example, when some of the script files are missing).</p> <p>Terminated unexpectedly – The task failed during the run.</p> <p>Error: Aborted – The task was aborted (for example, by calling the <code>lr_abort()</code> function in a script).</p> <p>Aborted (timeout) – The task was timed-out and stopped running.</p> <p>End status is not set – The task has not run yet, therefore no end status is available.</p> <p>n/a – Run status is not applicable for the task, for example, if the profile is stopped.</p>
Running Dependencies	<p>The running schedule for the task, determined according to the run mode defined for the profile. For example, the script may be scheduled to run immediately after the profile starts, or after another, named script has run. In the latter case, you can click on the script name to view the Task page for the preceding script.</p> <p>For more information on run schedules, see “Run Schedule for Profile Tasks” on page 140.</p>

Tip: Click a column header to organize the **Tasks** list according to that column, in ascending or descending alphanumeric order, or for **Running Dependencies**, in ascending or descending running order.

Note that only an approximate order is shown for Running Dependencies as it is sometimes impossible to predict the exact running order.

Profile Schedules

Each business process profile running on a Business Process Monitor instance runs according to a schedule defined in End User Management Administration (for details, see *Using End User Management*, part of the HP Business Availability Center Documentation Library “Business Process Monitor Administration User Interface” in *Using End User Management*). Each profile can also have multiple schedules defined for it, as described in “Multiple Schedules for a Profile” on page 136.

The schedule defines the frequency of iterations of the profile after the first profile run. The actual run time of the profile is determined by the start offset value for the profile, which specifies the delay between the profile schedule time and the run time, as described in “Profile Start Offset” on page 137.

Note that if a profile run overruns the scheduled time for the next run iteration, then Business Process Monitor skips the missed iteration and continues with the next scheduled iteration. For example, if the profile schedule is set to run every 5 minutes, and the profile run actually takes 6 minutes, then Business Process Monitor runs iteration 1, skips iteration 2, and continues with iteration 3 (10 minutes after the first iteration).

Information on skipped runs is logged in the **agent.txt** log for the Business Process Monitor instance.

Multiple Schedules for a Profile

In End User Management Administration, you can define multiple schedules for a business process profile running on a specific Business Process Monitor instance. This enables you to have the profile run on Business Process Monitor using different schedules at different times. For example, you can have the profile run every 15 minutes during the working week and every hour during weekends.

When a profile has multiple schedules defined for it, each schedule (and its start offset value) is shown in the **Schedule** property on the Profile page, as in the following example:

Properties	
Name	Springfield Location
ID	6
Schedule	Every 30 minute(s), Sat - Sun, all day(start offset: 1159 seconds) Every 15 minute(s), Mon - Fri, all day(start offset: 709 seconds)

Note: If the multiple schedules for a business process profile overlap, then Business Process Monitor runs the profile according to both schedules. If a profile run (initiated according to one of the schedules) overruns the scheduled time of a run iteration according to the second schedule, then Business Process Monitor skips the second iteration, and continues with the next scheduled iteration. Information on skipped runs is logged in the **agent.txt** log for the Business Process Monitor instance.

Profile Start Offset

HP Business Availability Center enables you to apply an offset to the start time of each run of a profile. This enables the optimal distribution of script runs over time, and minimizes the parallel running of many scripts (when there are different Business Process Monitor hosts running the same profile). Staggering the runs provides a more even distribution of the workload, avoiding overload on the monitored server and excessive bandwidth demand, and enabling better utilization of machine CPU and memory.

The start offset value, displayed in the **Schedule** property on the Profile page, specifies the delay between the profile schedule time and the actual run time, for each run of the profile. The start offset for each profile can be calculated automatically by Business Process Monitor, or can be user-defined; you determine the method and value when defining the profile schedule. When the start offset is configured manually, you can avoid the possibility that profiles running on more than one Business Process Monitor run at the same time.

After the initial run, Business Process Monitor continues to run the profile according to the original schedule defined for the profile (in End User Management Administration), and reapplies the start offset for every run of the profile.

For example, a profile has a start offset value of 120 seconds, and a schedule of every 15 minutes, every day from 10:00 to 16:00. Each day, the first run of the profile begins after the start offset, at 10:02 AM. The next run is 15 minutes later, at 10:17 AM, and repeats every 15 minutes after that till the end of the day's schedule.

Note:

- ▶ For profile schedules that run all day, all week, the start offset is applied from 00:00 AM, so that for a schedule of 15 minutes and start offset of 120 seconds, the profile runs at 15 minute intervals from 00:02 AM.
 - ▶ If you define multiple schedules to run a profile on a single Business Process Monitor, a different start offset value may be used for each schedule. For more information, see “Multiple Schedules for a Profile” on page 136.
 - ▶ When you configure offsets for running profiles on Business Process Monitors in different locations, you must take into consideration the time zone setting for each location.
-

There are two methods for staggering the run start time:

- ▶ “User-Defined Start Offset” on page 138
- ▶ “Start Offset Determined by Business Process Monitor” on page 139

User-Defined Start Offset

When defining a profile schedule (in End User Management Administration), you have the option to select **User defined** for the start offset, and enter a start offset value. When you manually define the start offset in this way, you can ensure that profiles running on more than one Business Process Monitor do not run at the same time, by entering a different start offset value for each profile schedule.

The start offset value is saved as part of the profile schedule data, and applied by each Business Process Monitor that handles the profile. If a Business Process Monitor is restarted, the same offset value is applied again for the profile.

If you define the start offset value as 0, then no offset is applied for the profile in Business Process Monitor; the profile run starts at the time specified in the profile schedule.

Start Offset Determined by Business Process Monitor

Business Process Monitor is able to generate start offset values for profiles, so enabling staggered run times for the profiles. Start offset values are allocated to all profiles that have **BPM default** defined for the profile schedule start offset in End User Management Administration.

The start offset is calculated when the profile is initialized. The calculation takes into account all existing start offset values for the profiles on the machine; this includes start offset values that were defined in End User Management Administration, and the start offset values of stopped profiles. Business Process Monitor analyses where there is the lowest concentration of offsets over the distribution period, and allocates a start offset value in that area. The start offset value is always smaller than the schedule interval defined for the profile.

Business Process Monitor uses an algorithm to calculate the dispersal rate, and to allocate start offset values to the profiles in a balanced and semi-random manner. The random factor means that when there are two or more Business Process Monitor instances running the same profile with the same schedule, each instance runs the profile at a different time. (If there was no random factor, each Business Process Monitor instance would run the profile at exactly the same time.) The random factor does not change the order that the profiles run, and the interval between each run of the profile on each Business Process Monitor instance remains constant. For example, on Business Process Monitor A the profile may run at 10:05, 10:20, 10:35, and on Business Process Monitor B it may run at 10:10, 10:25, 10:40.

The algorithm calculation includes a distribution period value. This value is set by default to one hour, which is an optimum value if the most common schedule used for your profiles is every 15 minutes (the default schedule option when defining profiles in End User Management Administration), and all schedule intervals are less than an hour.

The default distribution period also functions if you are commonly using other schedule intervals for your profiles; however, if you would like to optimize the dispersion of the start offset values for your profile schedules, or if you experience load problems on the machine, you can change the default distribution value in order gain maximum efficiency. For information on changing the distribution value (`OffsetDistPeriodSec`), see “Parameters in agent1.cfg” on page 185.

Note that if Business Process Monitor is restarted, it calculates new start offset values for the profiles (except for profiles that have user-defined values from the profile schedule).

Run Schedule for Profile Tasks

The **Tasks** area of the Profile page shows the **Running Dependencies** for the scripts in the profile. This identifies the order that Business Process Monitor uses when executing each script in the profile, during each run of the profile on the Business Process Monitor instance.

The order and timing for running the tasks within the profile are determined by the profile run mode, as described in the following section.

Profile Run Mode

The profile run mode determines how Business Process Monitor runs the tasks in a profile when the profile begins an iteration. Some of the run modes run the tasks in a specific order; in this case, the scripts run in the order defined in the profile.

Both the run mode and the script order are defined for the profile in End User Management Administration (see *Using End User Management*, part of the HP Business Availability Center Documentation Library “Business Process Monitor Administration User Interface” in *Using End User Management*).

The following profile run modes are supported:

- ▶ **Classic.** All scripts in the profile run sequentially, according to the order defined in End User Management Administration. All WebTrace schemes run concurrently with the first script, once the profile begins an iteration.
- ▶ **Dialup.** If a profile has two or more scripts, the first script begins running when the profile begins an iteration. When the first script completes its run, all WebTrace schemes and scripts, excluding the first and last scripts, run in Classic mode. When all tasks stop running, the last script runs. If a profile has fewer than two scripts, it runs in Classic mode.

Note: If the first script completes its run, the last script always runs.

- ▶ **Sequential.** All profile tasks run sequentially (with only one task running at a time). The script tasks run according to the order defined in End User Management Administration. WebTrace tasks run after the last script is completed, with an undefined (though consistent) order.
- ▶ **Concurrent.** All tasks begin running simultaneously when the profile begins an iteration. (This run mode is set in End User Management Administration by selecting **Stepped** run mode and setting the **Step** value as 0.)
- ▶ **Stepped.** (Note that this run mode, and the step for it, can only be set in End User Management Administration.) Each task begins running after a defined time period (step) has passed from the time the previous task started. In this case, the **Running Dependencies** column in the Business Process Monitor Admin Profile page displays, for example: **5 seconds after the beginning of the following task: X_transaction**, meaning that the task runs only after a step of 5 seconds has elapsed since X_transaction task started running. The scripts run according to the order defined in End User Management Administration. The WebTrace tasks also run in stepped mode after the last script has started, in an undefined (though consistent) order.

Note: In all of the above cases, the profile cannot be stopped or deleted until the current task runs are completed.

7

Task Page

The Business Process Monitor Admin Task page enables you to view information for a profile task, and to change log settings for the task, or prompt HP Business Process Monitor to run the task immediately.

This chapter includes:

- Task Properties on page 144
- Configuring Log Settings for a Script on page 146
- Viewing Task Reports on page 148
- Understanding Response Time Breakdown Reports on page 152
- Understanding WebTrace Reports on page 173
- Browsing the Script Log Files on page 174

Task Properties

The **Properties** area in the Task page displays the following properties:

Property	Description
Name	The name of the script or the WebTrace destination, that the profile is scheduled to run.
Type	The type of task, Script or WebTrace .
Status	The current status of the task for this instance. Displays one of the following options: Not initialized – The task has not yet been initialized. Running – The task is currently running on this Business Process Monitor instance. Idle – The task is not currently running on this instance.
Last start time	The start time of the last run of the task, according to the local time on the Business Process Monitor machine.
Last run duration	The time, in seconds, it took to execute the last run of the task.
Log level (only displayed for script tasks)	The level of information that is logged when the script runs: Disabled – This is the default setting for all scripts, minimum information is logged. Brief – Creates a standard log of functions and messages sent during script execution. Extended – Creates an extended log, including warnings and other messages.

Property	Description
Last run end status	<p>The status at the end of the last run for the task. Click the status value to display the MDRV log for the task run (if an MDRV log file exists).</p> <p>Displays one of the following options (for an explanation of each option, see “Last Run” on page 134):</p> <p>Finished properly</p> <p>Finished (errors occurred)</p> <p>Failed to start</p> <p>Terminated unexpectedly</p> <p>Error: Aborted</p> <p>Aborted (timeout)</p> <p>End status is not set</p> <p>n/a</p>
Running dependencies	<p>The running schedule for the task, determined according to the run mode defined for the profile. For example, the script may be scheduled to run immediately after the profile starts, or after another, named script has run. In the latter case, you can click the script name to view the Task page for the preceding script.</p> <p>For more information on run schedules, see “Run Schedule for Profile Tasks” on page 140.</p>

Configuring Log Settings for a Script

By default, Business Process Monitor logs certain minimum information for the run of a script, every time the script is executed.

If you want Business Process Monitor to log more extensive information for the script run, you can define log settings using the **Advanced** option on the Task page for the script. For example, you can set a different logging level or request the creation of an additional log file, as described in the following sections:

- ▶ “Setting the Log Level” on page 146
- ▶ “Setting Log File Write” on page 147

Setting the Log Level

Many scripts (for example, HP LoadRunner scripts, HP Virtual User Generator scripts for Web-based protocols) include runtime settings that determine the extent of the information logged to the output when the script is run. There are three settings for logging: **Disabled**, **Brief**, and **Extended**. By default, Business Process Monitor runs the scripts using the Disabled log level; this means that only minimum information is logged to the MDRV log for each run of the script.

You can change the log level for all runs of a particular script, but note that changing the log level to Brief or Extended introduces extra overhead in the MDRV log files, and may slow down the run of the script (so affecting the measured run times). An Extended log is helpful for debugging a script, but is otherwise not recommended.

Note: You can also change the log level when you invoke a single run of the script, as described in “Viewing Task Reports” on page 148.

Setting Log File Write

Some of the scripts recorded using the Virtual User Generator include a **Log file write** option. By default, this option is disabled for Business Process Monitor and so does not appear in the Business Process Monitor Admin windows for any scripts.

The following protocols support the log file write option:

- HTTP
- OracleWebJS
- PS8
- PS8WebJS
- QTWeb
- SAP Web
- SapJS
- Siebel Web
- SOAP
- WebJS
- WinSockWeb
- WS-SOAP

If you configure Business Process Monitor to support the log file write option, you can then select the option for a script in the Business Process Monitor Admin windows. When this option is set for a particular script, Business Process Monitor creates a LogFileWrite.log file for the script each time it is run.

If you want this option available, you must change the **lfw** value to 1 in the **<Business Process Monitor root directory>\ServletContainer\conf\agentview.props** file. For more details on changing the file setting, see “Enabling Log File Write” on page 216.

Note: You can also set the log file write option (if it is enabled in Business Process Monitor) when you invoke a single run of the script, as described in “Viewing Task Reports” on page 148.

To set the log level or log file write for every run of a script:

- 1** In the Task page for the script, click **Advanced**. The Log Configuration dialog box opens.
- 2** Select the required **Log level** from the list.
- 3** (Applicable only if Business Process Monitor is supporting log file write.) If you want Business Process Monitor to create a log file for each run of the script, select the **Log file write** check box.
- 4** Click **OK**. The changes take effect starting from the next run of the script.

Viewing Task Reports

You can trigger a single run of a task (script or WebTrace), and view a report for the run, using the Invoke Task option in the Task page for the task. This option prompts Business Process Monitor to run the task immediately, and returns the data to Business Process Monitor Admin (not to HP Business Availability Center), where the results can be viewed in the Invoke Task window.

This run does not affect the task’s regular scheduling in Business Process Monitor, or the run of any other task in Business Process Monitor.

This section includes the following topics:

- ▶ “Running WebTrace Tasks” on page 149
- ▶ “Running Script Tasks” on page 149

Running WebTrace Tasks

When you use the Invoke Task option for a WebTrace task, the WebTrace is run according to the settings configured in HP Business Availability Center End User Management Administration.

For an explanation of the WebTrace report contents, see “Understanding WebTrace Reports” on page 173.

To view task data for WebTrace tasks:

- 1 In the Task page for the WebTrace, click **Invoke Task**. The Invoke Task window opens.
- 2 After a few moments, the window displays data for the WebTrace run, and each hop that it required.

Running Script Tasks

When you use the Invoke Task option for a script task, the script is run according to the settings configured in End User Management Administration; however, you have the option to add additional command line parameters, or to change the log level. (For more information on changing the log level, see “Configuring Log Settings for a Script” on page 146.) Note that these changes are only applicable for this run of the script.

For scripts set to collect component breakdown data, Business Process Monitor measures response time for each specific transaction in the script, and collects breakdown data—information about client, network, and server activity during the transaction—for each component of every Web page accessed in Web based transactions, and for each component (request) in non-Web based (TCP) transactions. This information enables you to assess whether transaction response times were affected. For example, in Web based transactions, a page content may affect response times and in non-Web based transactions, request size or the number of requests may affect response times. You can also view a page component breakdown report for each monitored Web page or TCP request in graph or table format.

For more information on the response time breakdown, see “Understanding Response Time Breakdown Reports” on page 152.

Note:

- ▶ Component breakdown is supported only for certain Virtual User Generator protocols. See “Understanding Response Time Breakdown Reports” on page 152.
- ▶ For non-Web (TCP) based protocols, the page name has no relevance in breakdown reports.

To view task data for script tasks:

- 1** In the Task page, click **Invoke Task**. The Task Content Window opens.
- 2** Select the required **Log level**.
- 3** If you want to add additional parameters to the command line, enter the information in the appropriate box.
- 4** Click **Invoke Now**. After a few moments, the Task Content window displays data for the script run, broken down by transaction.

Task Content			
Script finished running			
Transaction Name: Springfield_travel_login			
ID	Status	End Time	Duration
3	Passed	8/28/05 8:57 AM	1955
Page Name	Page ID	Number of Components	
http://taxi:1080/hpWebTours/login.pl	1	8	
	Weighted	Summary	
Retry Time (ms)	-	-	
DNS Time (ms)	-	-	
Connection Time (ms)	-	-	
SSL Handshaking Time (ms)	-	-	
Network Time to First Buffer (ms)	428	669	
Server Time to First Buffer (ms)	1514	2329	
Time to First Buffer (ms)	-	-	
Download Time (ms)	12	16	
Total Size (KB)		34343	

For an explanation of the breakdown categories shown in the window, see “Understanding Web Based Transaction Breakdown Reports” on page 157 and “Understanding Non-Web Based TCP Transaction Breakdown Reports” on page 163.

Note: If the script run failed, or if component breakdown is not supported for the script, the Task Content window shows end time and duration for the script run, and an error description as appropriate, with no breakdown information.

- 5** Where relevant for the script, the Task Content window includes a **Breakdown** area, which provides component breakdown data for each Web page. The Breakdown area contains a graph of aggregated transaction breakdown for the transactions in the script, described in “Breakdown Summary Report” on page 153.

To view the page component breakdown report for each Web page involved in the transactions, select the required option from the drop-down list (top-right corner of **Breakdown** area) and click **OK**. For an explanation of these reports, see “Page Component Breakdown Report” on page 154.

- 6** The Invoke Task window contains the following buttons (at the bottom of the window):
- **MDRV Log.** Opens the View Agent Log File window, where you can view the contents of the MDRV log for this run of the script. (The MDRV log is created if the log level was set as **Brief** or **Extended**. If the log level was set as **Disabled**, the log is created if there were errors during the run.)
 - **Browse.** Opens the BPM Log Browser at the directory for the script, enabling you to view log entries for this run of the script. For details on using the BPM Log Browser window, see “Working with Business Process Monitor Directories” on page 113.

Note: When you open the BPM Log Browser from the Invoke Task window, the directory for the script is the highest directory level that you can view.

Understanding Response Time Breakdown Reports

You can view page component breakdown data (PCBD) by invoking script tasks (where the script is set to collect page component breakdown data), as described in “Running Script Tasks” on page 149.

You can also perform an on-demand page component breakdown of any Web page using the **Invoke PCBD** option, as described in “Running an On-Demand Page Component Breakdown” on page 122.

When invoking script tasks, page component breakdown runs only if:

- ▶ in HP Business Availability Center End User Management Administration, the transaction monitor for the script was set to perform component breakdown.
- ▶ the script was recorded using one of the configured protocols.

The page component breakdown report displays a breakdown of transaction response times (in milliseconds) over time, for each component. You use the report to analyze network, server, and client health in real time. It helps you identify problematic elements of a Web page (for example, images that download slowly, or broken links) for Web based transactions, or problematic TCP activity (for example, failed connections to the server) for non-Web based (TCP) transactions. The report can also help you identify where along the network problems are occurring (for example, during DNS Resolution, or during Time to First Buffer). Web based transactions comprise Web components and TCP based transactions comprise TCP requests.

This section contains:

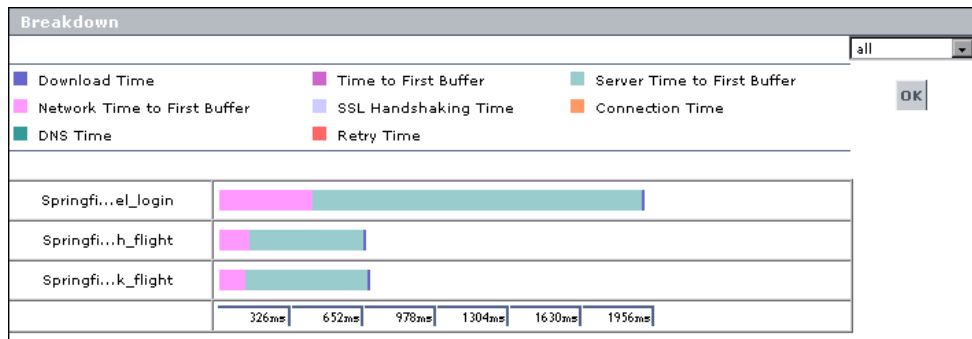
- ▶ “Breakdown Summary Report” on page 153, describing the aggregated transaction breakdown graph (not relevant for on-demand page component breakdown).
- ▶ “Page Component Breakdown Report” on page 154, describing the page component breakdown graph and table.
- ▶ “Understanding Web Based Transaction Breakdown Reports” on page 157, describing what each breakdown category is measuring in Web based transactions.

- “Understanding Non-Web Based TCP Transaction Breakdown Reports” on page 163, describing what each breakdown category is measuring in non-Web based (TCP) transactions.

Breakdown Summary Report

Note: This section is applicable for Web based transactions. For the differences in breakdown reports for non-Web based (TCP) transactions, see “Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions” on page 169.

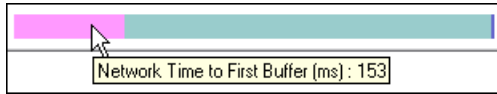
When you invoke a script task, the Task Content window **Breakdown** area displays the breakdown summary report for the task in graph format.



Each row of the breakdown summary report represents results for one transaction in the script, showing aggregated transaction breakdown for all the components in the transaction. The report’s x-axis is not a time line, but rather an indicator of transaction times in milliseconds.

The color-coded bars enable you to differentiate between the various breakdown categories for the transaction, with each colored bar representing the total time for its corresponding measurement. For example, you can view the overall DNS time for the transaction. (For explanations of the breakdown categories, see “Understanding Transaction Breakdown Categories” on page 158.)

Hold the cursor over each breakdown category in the colored bar to show a tooltip with the total time for that category.



You can correlate the breakdown summary data with transaction response time information to assess whether poor transaction response times are being caused by DNS resolution or connection problems, network latency or server delay, or client delay.

You can move from the breakdown summary report to the page component breakdown reports for each page in the transactions. For details, see the following section.

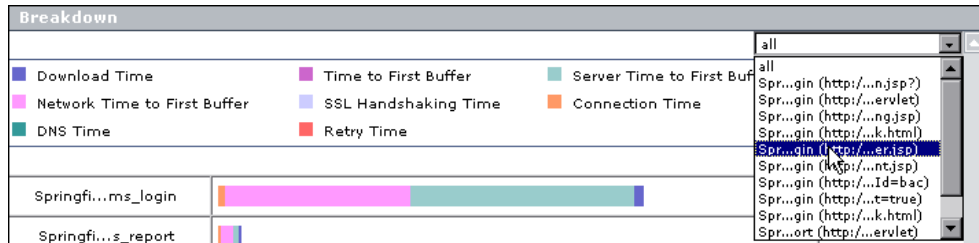
Page Component Breakdown Report

Note: This section is applicable for Web based transactions. For the differences in breakdown reports for non-Web based (TCP) transactions, see “Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions” on page 169.

The page component breakdown report enables you to assess whether transaction response times and service availability are being affected by page content. The report displays the size (in KB) of each component in a specified Web page, the total time it takes for each component to download, and the offset time for each component. The offset time for a specific component is the time that passes from the start time of the first component on the page until the start time of the specific component.

The report further breaks down each component by the breakdown categories, described in “Understanding Transaction Breakdown Categories” on page 158.

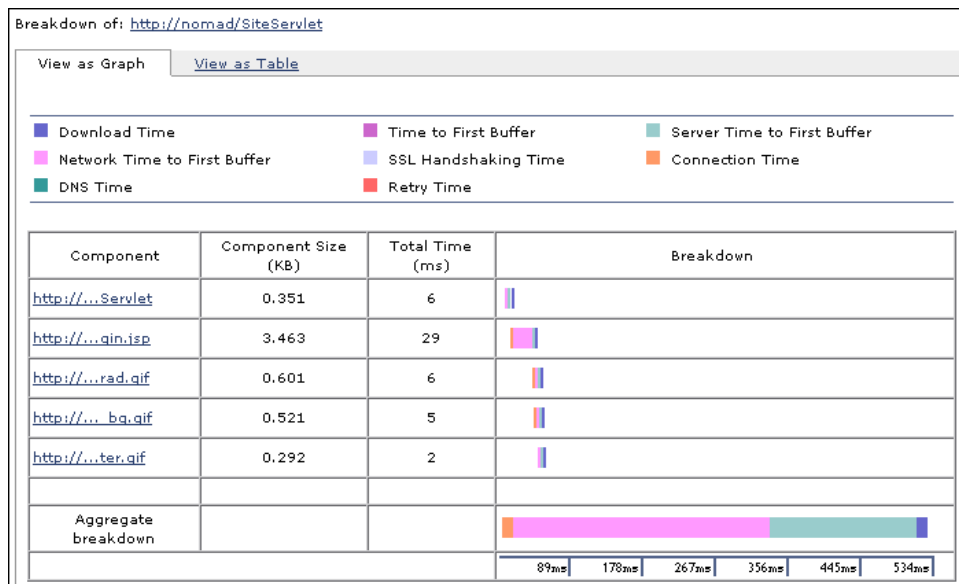
After invoking a **script task**, you view the page component breakdown report for each Web page involved in the transactions by selecting the required option from the drop-down list (top right corner) and clicking **OK**. The list displays transaction names for transactions that contain only one page, or transaction name followed by page name if there are multiple pages.



You can select **All** from the list to return to the breakdown summary report.

For **on-demand page component breakdowns**, the PCBD Content page opens directly to the report for the Web page.

The page component breakdown report is available in graph and table formats. The report opens with the **View as Graph** tab displayed.



Each row of the graph represents results for one component in the page. The color-coded bars enable you to differentiate between the various breakdown categories for that component.

The report's x-axis is not a time line, but rather an indicator of transaction times in milliseconds. Each colored bar represents the total time for its corresponding measurement.

Click the **View as Table** tab to view the breakdown in table format.

Breakdown of: <http://nomad/Servlet>

View as Graph View as Table

Component	Component Size (KB)	Total Time (ms)	Offset Time (ms)	Retry Time (ms)	DNS Time (ms)	Connection Time (ms)	SSL Handshaking Time (ms)	Network Time to First Buffer (ms)	Server Time to First Buffer (ms)	Time to First Buffer (ms)	Download Time (ms)	Error Message
http://...Servlet	0.351	6	7	-	-	-	-	1	4	-	1	-
http://...qin.jsp	3.463	29	13	-	-	2	-	25	0	-	2	-
http://...rad.gif	0.601	6	42	-	-	2	-	3	0	-	1	-
http://...bq.gif	0.521	5	43	-	-	1	-	4	0	-	0	-
http://...ter.gif	0.292	2	48	-	-	-	-	2	0	-	0	-

The following functionality is available for the page component breakdown reports:

- ▶ Click the **Breakdown of** link to open the monitored Web page for the component breakdown report in a new browser window.
- ▶ Hold the cursor over the name of a component (in the graph or table views) to show the full name and a depiction of the component (for icons).

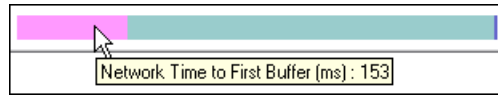
http://welco...setcookie.js	1.439	156	
http://welco...lload_ov2.js	7.478	308	
http://welco...lcome_ov2.js			
http://welco...rrw_sbmt.gif			
http://welco...ss_image.jpg	4.599	155	

Component name

http://welcome.hp-ww.com/img/hpweb_1-2_arw_sbmt.gif

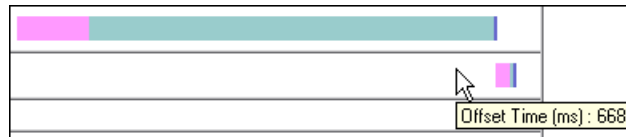
Click the name link to view the component in a new browser window.

- In the graph view, hold the cursor over each breakdown category in the colored bar to show a tooltip with the response time taken for that category.



In the table view, the time for each category is specified under the relevant column in the table.

- In the graph view, hold the cursor over the white space to the left of a component's colored bar to show a tooltip with the offset time for that component.



In the table view, the offset time is specified in a separate column in the table.

Note: Gaps in time between components (time between one component finishing and the next one starting) represent processing time—client-side delays caused by browser think time, CPU think time, HTML page processing time, time needed to open sockets or threads, and so forth.

Understanding Web Based Transaction Breakdown Reports

The Web based protocols for which Business Process Monitor can perform transaction breakdown are configured in the **BdSupportedProtocols** setting in the **agent1.cfg** file on the Business Process Monitor machine. For details on the agent1.cfg file, see “Parameters in agent1.cfg” on page 185. If a script for which Business Process Monitor is configured to collect transaction breakdown data contains multiple protocols, Web based breakdown is used providing one of the protocols is a Web based protocol that is included in the **BdSupportedProtocols** configuration setting.

Note:

- ▶ Transaction breakdown is not supported by Business Process Monitors running scripts recorded in wininet mode in HP Virtual User Generator.
 - ▶ Page component breakdown does not function for streaming objects, such as Java Applets, sounds, and movies. This is because the engine that runs the page component breakdown uses technology that only handles components that can be parsed directly from the HTML code (for example, images).
-

This section includes the following topics:

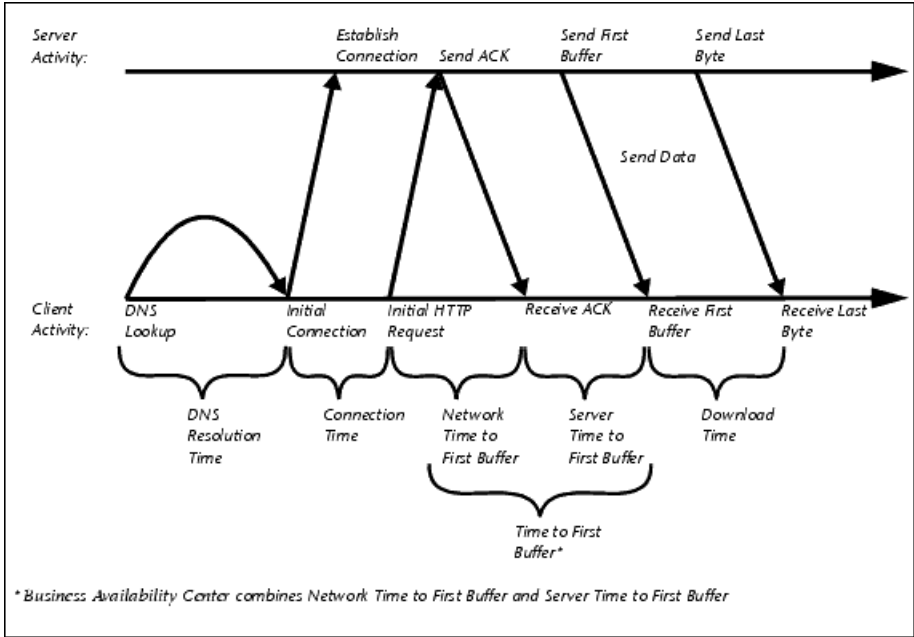
- ▶ “Understanding Transaction Breakdown Categories” on page 158
- ▶ “Understanding Download Time” on page 162

Understanding Transaction Breakdown Categories

The transaction breakdown reports display a breakdown of average transaction response times (in milliseconds) over time, for the selected time frame. Response times are broken down by retry time, DNS resolution time, connection time, network time to first buffer, server time to first buffer, download time, and client time. If your site uses SSL authentication, SSL handshaking time appears in the chart after connection time.

The diagram below illustrates the relationship between the report’s main breakdown categories (shown along the bottom of the diagram) and client/server activity during transaction execution.

Note that retry time, SSL handshaking time, and client time are not shown in this diagram. They are described in the breakdown category table. For details, see “DNS Resolution” on page 160.



The following table describes the report's breakdown categories. Times are calculated by taking the average of all transaction runs within the specified time period.

Name	Description
Retry Time	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. Retry time only relates to HTTP or TCP errors that execute a retry after the error.
DNS Resolution	Displays the average amount of time needed to resolve the DNS name to an IP address, using the closest DNS server. The DNS Lookup measurement is a good indicator of slow DNS resolution or other problems with the DNS server.
Connection Time	Displays the average amount of time needed to establish an initial connection with the Web server performing the transaction. The connection measurement is a good indicator of problems along the network or whether the server is responsive to requests.
SSL Handshaking Time	Displays the average amount of time taken to establish an SSL connection (includes the client hello, server hello, client public key transfer, server certificate transfer, and other—partially optional—stages). After this point, all the communication between the client and server is encrypted. Note: The SSL handshaking measurement is only applicable for HTTPS communications.
Network Time to First Buffer	Displays the average amount of time that passes from the moment the first HTTP request is sent until receipt of ACK. The network measurement is a good indicator of network quality (look at the time/size ratio to calculate download rate).

Name	Description
Server Time to First Buffer	<p>Displays the average 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, since the server typically sends data over multiple connections, and therefore is usually working while data is being transmitted over the network. For more details, see “Understanding Download Time” on page 162.</p>
Client Time	<p>Displays the average amount of time that passes while a request is delayed on the client machine. Client-related delays can include browser think time, CPU think time, HTML page processing time, time needed to open sockets, application delays caused by heavy applets, and so on.</p> <p>Note: Client time is calculated by subtracting all other measured times from the total transaction time.</p>

Note: In certain circumstances, for example, when the Business Process Monitor is using a proxy server, the transaction breakdown mechanism cannot differentiate between server time to first buffer and network time to first buffer. In these cases, the report displays the time between initial HTTP request and receipt of first buffer as Time to First Buffer.

Understanding Download Time

When a Business Process Monitor running a script communicates with a Web server (specified by the URLs in the script), communication is carried out, by default, over four connections simultaneously.

As the Web page is retrieved, its various components (images, applets, and so on) travel in data packets from server to client across these multiple connections.

As a result, at any point along the time line after the server sends the first buffer until the client receives the last byte for the page, data packets may be traveling over the network through some of the connections while others are being processed by the server through the remaining connections. The download time in the report represents the sum total of the time when network resources and server resources are in use at the same time, between the time the client receives the first buffer and the last byte.

Understanding Non-Web Based TCP Transaction Breakdown Reports

The non-Web based (TCP) protocols for which Business Process Monitor can perform transaction breakdown are configured in the **AdvancedTcpBdSupportedProtocols** setting in the **agent1.cfg** file on the Business Process Monitor machine. For details on the agent1.cfg file, see “Parameters in agent1.cfg” on page 185. If a script for which Business Process Monitor is configured to collect transaction breakdown data contains multiple protocols, TCP breakdown is used providing one of the protocols is a non-Web based protocol that is included in the **AdvancedTcpBdSupportedProtocols** configuration setting and none of the protocols is a Web based protocol that is included in the **BdSupportedProtocols** configuration setting (in which case Web based breakdown is used).

Note:

- ▶ Non-Web based (TCP) transaction breakdown is supported on Windows only.
- ▶ Supported protocols must be TCP request/response based protocols.
- ▶ Non-Web based (TCP) transaction breakdown cannot be used with VuGen Speed Simulation.

This section includes the following topics:

- ▶ “Understanding How HP Business Availability Center Breaks Down Transaction Response Times” on page 164
- ▶ “Understanding Transaction Breakdown Categories for Non-Web Based (TCP) Transactions” on page 164
- ▶ “Understanding Time to First Buffer and Download Time for Non-Web Based (TCP) Transactions” on page 169
- ▶ “Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions” on page 169
- ▶ “Notes and Limitation for Non-Web Based (TCP) Protocols” on page 170

Understanding How HP Business Availability Center Breaks Down Transaction Response Times

When HP Business Availability Center runs a Business Process Monitor script and measures response time for a specific transaction, HP Business Availability Center collects breakdown data—information about TCP activities during the transaction—for each request (component) of the transaction. A TCP request (component) represents a sequence of measurements starting with a DNS resolution, TCP Connect operation, or a Send operation on an open connection and ending with the last Receive operation for the relevant starting operation.

Because some TCP based protocols can use multiple connections, at any given moment in time there can be an overlap in the various breakdown categories.

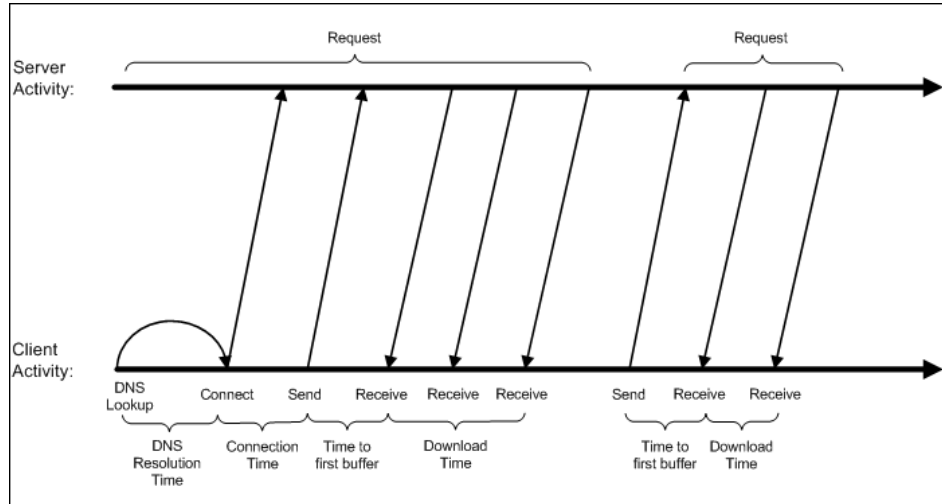
HP Business Availability Center uses a weighted algorithm to display the breakdown data that it collects. Every breakdown category for every element of the connection requests is taken into consideration, and weight is given to the element according to its value relative to the other elements in the concurrent time period. For example, the Connect time for each request in the connection is collected, weighted, and then displayed under the Connect time category.

Understanding Transaction Breakdown Categories for Non-Web Based (TCP) Transactions

The transaction breakdown reports display a breakdown of average transaction response times (in milliseconds) over time, for the selected time frame. Response times are broken down by DNS resolution time, connection time, time to first buffer, download time, and client time.

The diagram below illustrates the relationship between the report's main breakdown categories (shown along the bottom of the diagram) and TCP client/server activity during transaction execution. In the diagram, there are two sequential TCP requests included in the same connection.

Note that client time is not shown in this diagram and is described in the breakdown category table. For details, see “Client Time” on page 168.



The following table describes the report's breakdown categories, which comprise a TCP request. Times are calculated by taking the average of all transaction runs within the specified time period.

Name	Description
DNS Resolution	<p>Displays the average amount of time needed to resolve the DNS name to an IP address, using the closest DNS server. The DNS Lookup measurement is a good indicator of slow DNS resolution or other problems with the DNS server.</p> <p>Note: If the DNS resolution is adjacent to a Connect for the same IP address, it is considered part of the request (component) and its time is displayed in the breakdown reports. Otherwise, the DNS resolutions of one or more hosts without an adjacent Connect are considered as a separate request (component). In such cases, only the DNS Resolution time is displayed for that request and for all other measurements, a minus sign (-) is displayed.</p>
Connection Time	<p>Displays the average amount of time needed to establish an initial connection with the TCP server performing the transaction. The connection measurement is a good indicator of problems along the network or whether the server is responsive to requests.</p> <p>Note: If a connection did not occur within a request's (component's) context, a minus sign (-) is displayed for the connection time in the breakdown reports.</p>

Name	Description
Time to First Buffer	<p>Displays the average amount of time that passes from the first TCP Send up to and including the first Receive of a component.</p> <p>This measurement includes both network time and server time that are required for handling the first TCP buffer and therefore, it is a good indicator of both network quality and server delay.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This measurement is only shown if both Sends and Receives are included in the request (component). ▶ If there are no Sends or Receives within a request (component), a minus sign (-) is displayed in the breakdown reports.
Network Time to First Buffer	<p>Displays the time from the first Send up to and including the last Send. This measurement is a good indicator of network quality.</p> <p>Note: This measurement is only shown if there are Sends included in the request (component), but no Receives.</p>
Server Time to First Buffer	<p>This measurement is only shown if there are Sends included in the request (component), but no Receives. A minus sign (-) is displayed in the breakdown reports.</p>

Name	Description
Download Time	<p>Displays the time from the receipt of the second TCP buffer up to and including receipt of the last byte.</p> <p>Download time usually only includes network time and is influenced by both network quality and component size.</p> <p>For more details, see “Understanding Time to First Buffer and Download Time for Non-Web Based (TCP) Transactions” on page 169.</p> <p>Note: If a download did not occur within a request’s (component’s) context, a minus sign (-) is displayed for the download time in the breakdown reports.</p>
Client Time	<p>Displays the average amount of time that passes while a request is delayed on the client machine. Client-related delays can include CPU think time, processing time, time needed to open sockets, time between the last Receive of a request and the first Send of the next request in the same connection, and so on.</p> <p>Note: Client time is calculated by subtracting all other measured times from the total transaction time.</p>

Note: Either Time to First Buffer or Network Time to First Buffer and Server Time to First Buffer are displayed.

Understanding Time to First Buffer and Download Time for Non-Web Based (TCP) Transactions

Time to First Buffer includes both network time (for sending the packet) and server time (for processing the packet), whereas Download time usually includes only network time (for downloading the rest of the reply packets). This means that if both Time to First Buffer and Download times increase, it is a good indicator of network quality problems and if only Time to First Buffer increases, it is usually a good indicator of server delay problems.

Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions

The same breakdown reports are used to display Web based breakdown data and non-Web based (TCP) breakdown data, but the following differences apply when viewing non-Web based (TCP) breakdown data:

- ▶ The **Page** column (which displays page names for Web based transactions) is not applicable for non-Web based transactions and a minus sign (-) is displayed in this column for all non-Web based components.
- ▶ The **Retry Time** and **SSL Handshake Time** columns are not applicable for non-Web based transactions and a minus sign (-) is displayed in these columns for all non-Web based components.
- ▶ In the **Component/Request** column (which displays URLs for Web based breakdown data), the name of the TCP request (component) is displayed. The name can be one of the following:
 - ▶ **TCP_BdwnDns<nnn>**. For DNS only components (for example, a DNS component that does not have an adjacent Connect component correlated to the same IP address). The number in the display is sequentially incremented for each component entry. For such entries, only the DNS Resolution time is displayed and for all other measurements, a minus sign (-) is displayed.
 - ▶ **TCP_BdwnReq<nnn>**. For TCP request components. The number in the display is sequentially incremented for each component entry.
- ▶ For non-Web based (TCP) components, there is no tooltip available for the **Page** column.
- ▶ You cannot click a non-Web based (TCP) component to drill down to further information about it.

Notes and Limitation for Non-Web Based (TCP) Protocols

The following table lists the TCP protocols for which breakdown data can be displayed, together with special notes and limitations where applicable:

Protocol	Notes and Limitations
SAP GUI	Multi-threaded protocol.
SMTP	N/A
POP3	The communication in a POP3 script usually starts with a server's greeting message. Consequently, the first TCP breakdown component (request) in the script is usually reported with valid DNS and Connect times, whereas the Download time is reported as 0 and all other time measurements are not applicable and are shown with a minus (-) sign in the reports.
IMAP	The communication in an IMAP script usually starts with a server's greeting message. Consequently, the first TCP breakdown component (request) in the script is usually reported with valid DNS and Connect times, whereas the Download time is reported as 0 and all other measurements are not applicable and are shown with a minus (-) sign in the reports.
Oracle 2-Tier	Some of the steps in an Oracle 2-Tier script end with data being sent by the client, without receiving any response. Consequently, there are TCP breakdown components reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.
ODBC	N/A
FTP	Both FTP passive and FTP active modes are supported.
LDAP	The last step in an LDAP script (which terminates the connection to the server) usually ends with data being sent by the client, without receiving any response. Consequently, there is a corresponding TCP breakdown component reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.

Protocol	Notes and Limitations
EJB	Multi-threaded protocol.
RMI Java	<ul style="list-style-type: none"> ▶ Multi-threaded protocol. ▶ Both RMI over IIOP and RMI over JRMP are supported. ▶ Some Java applications which use the RMI protocol send many ping requests between application-driven RMI calls. Consequently, the TCP breakdown reports many components with a small Time to First Buffer value and with a Download size of approximately 1 byte. ▶ The last step in an RMI script (which terminates the connection to the server) sometimes ends with data being sent by the client, without receiving any response. Consequently, there is a corresponding TCP breakdown component reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.

Protocol	Notes and Limitations
Java Record/Replay	<ul style="list-style-type: none"> ▶ This is a new protocol added in VuGen 9.0 which supports and combines the following Java protocols—RMI, CORBA, JMS, JACADA, and Custom Hooks. TCP breakdown is supported only when the script is recorded using RMI protocol calls. If the script includes other protocol calls, TCP breakdown results are not defined. ▶ Multi-threaded protocol. ▶ Both RMI over IIOP and RMI over JRMP are supported. ▶ Some Java applications which use the RMI protocol send many ping requests between application-driven RMI calls. Consequently, the TCP breakdown reports many components with a small Time to First Buffer value and with a Download size of approximately 1 byte. ▶ The last step in a Java Record/Replay script (which terminates the connection to the server) sometimes ends with data being sent by the client, without receiving any response. Consequently, there is a corresponding TCP breakdown component reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.
Oracle NCA	<p>If the script works over HTTP communications, you can run it using Web breakdown (which is the default).</p> <p>If the protocol is run using TCP socket communications instead of HTTP, Web breakdown is not applicable and you can run it using TCP breakdown instead, providing that:</p> <ul style="list-style-type: none"> ▶ the script is recorded in such a way so that the Active Types with which the script is recorded are Oracle NCA only (that is, the script does not include WEB(HTTP/HTML)). ▶ you move the Oracle NCA protocol from the BdSupportedProtocols list to the AdvancedTcpBdSupportedProtocols list in the agent1.cfg file on the Business Process Monitor machine.

Understanding WebTrace Reports

WebTrace is a network diagnostics tool that provides traceroute information to a specified destination. WebTrace records the route through the Internet from your host machine to the destination Web server. Business Process Monitor supports WebTrace over TCP, UDP, and ICMP.

The WebTrace report provides information on network performance, which helps you analyze application performance issues.

WebTrace Content
End time: 5/28/07 12:19 PM
Reachable: true
Destination name: www.hp.com
Destination IP: 192.151.52.187
Source IP: 16.59.38.222
Round trip time: 171
Retries: 2
Number of hops: 21
Hops:
1. Hop name: -
Hop IP: 16.59.38.1
Hop reachable: true
Hop retries: 0
Hop round trip time: < 10 ms
2. Hop name: -
Hop IP: 10.168.195.17
Hop reachable: true
Hop retries: 0
Hop round trip time: < 10 ms
3. Hop name: -
Hop IP: 199.203.26.16

For each destination, the WebTrace report breaks down route time from the host machine to the destination machine, to include the following information for the WebTrace run:

- ▶ **Round trip time.** The time it takes, in milliseconds, for a packet of data to be sent from the host machine to the destination Web site.
- ▶ **Retries.** The number of times a data packet tries, but fails, to reach its destination due to timeout, network difficulty, and so forth.
- ▶ **Number of hops.** The number of intermediate servers the data packet encounters before it reaches its destination.

In addition, the WebTrace report displays the following routing details:

- ▶ **<Hop number>.** The position of the hop in the order that the hops occur
- ▶ **Hop name.** The name of the intermediate server
- ▶ **Hop IP.** The IP address of the intermediate server
- ▶ **Hop reachable.** Whether it was possible to reach the specific hop
- ▶ **Hop round trip time.** The time, in milliseconds, from the source to the specific hop

Browsing the Script Log Files

You can view the log files for all runs of a script by clicking **Browse** in the Task page to open the Log Browse window. (This button is disabled until Business Process Monitor sends the path for the script directory to Business Process Monitor Admin, generally after the first run of the script.)

You use the Log Browse window in the same way as the browse windows for the Config and Workspace directories, as described in “Viewing Configuration and Log Files” on page 113.

Note: When you view log files from the script Task page, the directory for the script is the highest directory level that you can view.

8

Business Process Monitor Configuration Files

This chapter describes parameters in the HP Business Process Monitor configuration files.

This chapter includes:

- About Business Process Monitor Configurable Options on page 176
- Parameters in `topaz_agent_ctrl.cfg` on page 177
- Parameters in `agent1.cfg` on page 185
- Parameters in `topaz_data_server.cfg` on page 195
- Parameters in `sconn.cfg` on page 206

About Business Process Monitor Configurable Options

The Business Process Monitor configuration files define default parameter values that are used for Business Process Monitor functioning. Some of these values can be changed within the configuration files, while other parameter values should only be changed using Business Process Monitor Admin, or should not be changed at all. Not all of the parameters automatically appear in the configuration files, but can be added manually if you want to override the default value used by Business Process Monitor.

To change parameter values within a configuration file:

- 1 Stop Business Process Monitor.
- 2 Open the configuration file in a text editor.
- 3 Modify the value of the parameter as required.
- 4 Save the file and restart Business Process Monitor.

Note: When working on a Windows platform in languages other than English, do not edit and save configuration files in Notepad. Saving configuration files in UTF-8 format in Notepad may cause severe functionality problems in Business Process Monitor.

The Business Process Monitor configuration files are located in the **<Business Process Monitor application directory>\config** directory. The default Business Process Monitor application directory is:

- ▶ Windows 2003 and Windows XP
C:\Documents and Settings\All Users\Application Data\HP\BPM
- ▶ Windows Vista
C:\ProgramData\HP\BPM
- ▶ Solaris
/opt/HP/HP_BusinessProcessMonitor

Parameters in topaz_agent_ctrl.cfg

The <Business Process Monitor application directory>\config**topaz_agent_ctrl.cfg** file, which controls communication between the Gateway Server and Business Process Monitor, contains the following parameters:

Section	Parameter	Description	Default Value	Changing the Value
commcenter	DisableSubLogs	Instructs Business Process Monitor on whether to create the commcenter_Site#.txt logs for the instance. The following two options are available: <ul style="list-style-type: none"> ➤ 0 – the logs are created ➤ 1 – the logs are not created 	0	The value can be changed in the topaz_agent_ctrl.cfg file.
commcenter	LogMaxSize	Determines the maximum <Business Process Monitor root directory>\Workspace\commcenter\commcenter.txt log file size (in kilobytes).	5120 kilobytes	The value can be changed in the topaz_agent_ctrl.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
commcenter	LogLevel	<p>Instructs Business Process Monitor to log only entries of the specified level or higher to the commcenter.txt file. The following levels exist:</p> <ul style="list-style-type: none"> ➤ fatal ➤ error ➤ warning ➤ flow ➤ debug <p>If this parameter is set to debug, all entries are logged; if the parameter is set to flow, all entries aside from debug are logged; if the parameter is set to warning, both the flow and debug entries are not logged, and so forth.</p>	Flow	The value can be changed in the <code>topaz_agent_ctrl.cfg</code> file.
commcenter	LogNumOf Backups	Determines the number of log history files to keep.	5	The value can be changed in the <code>topaz_agent_ctrl.cfg</code> file.
commcenter	LogBackupOn Open	Instructs Business Process Monitor to back up the existing commcenter.txt log file when opening a new log file.	True	The value can be changed in the <code>topaz_agent_ctrl.cfg</code> file.
commcenter	LogBackupOn MaxSize	Instructs Business Process Monitor to back up the commcenter.txt log file when it reaches its defined maximum size.	True	The value can be changed in the <code>topaz_agent_ctrl.cfg</code> file.

Section	Parameter	Description	Default Value	Changing the Value
commcenter	LogBackupDuration	Determines the duration (in hours) for which the backups of the commcenter.txt log file are kept.	168 hours	The value can be changed in the <code>topaz_agent_ctrl.cfg</code> file.
HTTPSender	HTTPSenderTimeoutSec	The timeout, in seconds, for HTTP requests from HP Business Availability Center.	600 seconds	Do not change this value.
General	HostVersion	The version of Business Process Monitor installed on the machine.	<Business Process Monitor version>	Do not change this value.
General	UserDomain	The domain of the user that is to run all the Business Process Monitor processes, if they are to be run by a specific user.	""	The value can be changed in Business Process Monitor Admin.
General	UserPasswd	The encrypted password of the user that is to run all the Business Process Monitor processes, if they are to be run by a specific user.	""	The value can be changed in Business Process Monitor Admin.
General	UserName	The name of the user that is to run all the Business Process Monitor processes, if they are to be run by a specific user.	""	The value can be changed in Business Process Monitor Admin.
General	RegistrationHourInterval	The interval at which Business Process Monitor communicates with HP Business Availability Center to check whether registration data is valid.	12 hours	Do not change this value.

Section	Parameter	Description	Default Value	Changing the Value
General	Workspace	<p>The directory in which the Business Process Monitor log files are stored.</p> <p>Note that if you change this value, only some of the log files under the Workspace directory are moved to the new path (logs in commcenter and agent1 directories), not all.</p> <p>If you want to change the location of <i>all</i> logs under the Workspace directory, see “Moving the Workspace Logs” on page 217.</p>	<p>For Windows: <Business Process Monitor root directory>\Workspace</p> <p>For UNIX: <Business Process Monitor root directory>/workspace</p>	The value can be changed in the topaz_agent_ctrl.cfg file.
Site#	SiteURL	The HP Business Availability Center URL.	<HP Business Availability Center URL>	The value can be changed in Business Process Monitor Admin.
Site#	JobPoll	The interval, in minutes, between requests to HP Business Availability Center to send jobs.	2 minutes	The value can be changed in Business Process Monitor Admin.
Site#	SiteVersion	The HP Business Availability Center version.	<HP Business Availability Center version>	Do not change this value.
Site#	UserPasswd	The encrypted password of the user that is to run the instance’s transactions, if these are to be run by a specific user.	""	The value can be changed in Business Process Monitor Admin.

Section	Parameter	Description	Default Value	Changing the Value
Site#	UserDomain	The domain of the user that is to run the instance's transactions, if these are to be run by a specific user.	""	The value can be changed in Business Process Monitor Admin.
Site#	HostLocation	The location defined for the host machine. This is a logical location that is used by Business Process Monitor for registration to HP Business Availability Center. The default value is the name of the Business Process Monitor host machine.	<Business Process Monitor machine location>	The value can be changed in Business Process Monitor Admin.
Site#	UserName	The name of the user that is to run the instance's transactions, if these are to be run by a specific user.	""	The value can be changed in Business Process Monitor Admin.
Site#	DisplayName	The name of the default instance displayed in the Business Process Monitor Admin table and tree.	<display name>	The value can be changed in Business Process Monitor Admin.
Site#	TimePoll	The interval, in minutes, between requests to the Gateway Server to send its local time.	60 minutes	The value can be changed in Business Process Monitor Admin.

Section	Parameter	Description	Default Value	Changing the Value
Site#	HostId	The ID of the Business Process Monitor machine.	<Business Process Monitor machine ID>	Do not change this value.
Site#	Pause Communication	Instructs Business Process Monitor to stop communication to HP Business Availability Center. When the value of this parameter is 0, communication with HP Business Availability Center is enabled; when the value is 1, communication is stopped.	0 (no pause)	The value can be changed in Business Process Monitor Admin.
Site#	LocationId	The ID of the Business Process Monitor machine location.	<Business Process Monitor machine location ID>	Do not change this value.
Site#	HostName	The name defined for the host machine. This is a logical name that is used by Business Process Monitor for registration to HP Business Availability Center. The default value is the actual name of the Business Process Monitor host machine.	<Business Process Monitor machine name>	The value can be changed in Business Process Monitor Admin.
Site#	Pause Measurements	Instructs Business Process Monitor to stop running transactions and WebTrace schemes. The following two options are available: <ul style="list-style-type: none"> ➤ 0 – no pause ➤ 1 – pause 	0 (no pause)	Do not change this value.
Site#	TimeDelta	The difference, in seconds, between Gateway Server site time and Business Process Monitor time.	<time difference>	Do not change this value.

Section	Parameter	Description	Default Value	Changing the Value
Site#	ForceLegacy	<p>Instructs the Business Process Monitor instance to use a specific protocol to communicate with HP Business Availability Center (the protocol that was used for communication in Business Process Monitor 4.5) regardless of the HP Business Availability Center version being used.</p> <p>The following two options are available:</p> <ul style="list-style-type: none"> ▶ 0 – do not force (permit use of the protocol used in the current HP Business Availability Center version) ▶ 1 – force (use the Business Process Monitor 4.5 protocol) 	0 (do not force)	Consult HP Software Support if you want to change this value.

Section	Parameter	Description	Default Value	Changing the Value
Site#	ForceVersion	<p>Instructs the Business Process Monitor instance to behave as though it is connected to the HP Business Availability Center version set in the SiteVersion parameter, and ignore the version returned by HP Business Availability Center itself.</p> <p>The following two options are available:</p> <ul style="list-style-type: none"> ▶ 0 – do not force (use version returned by HP Business Availability Center) ▶ 1 – force (use the version defined in SiteVersion) <p>Note that ForceLegacy can still be set, as it only affects communication, and not the rest of the behavior.</p>	0 (do not force)	Consult HP Software Support if you want to change this value.
Site#	HostIPFor Registration	Sets a specific IP address to be used when the Business Process Monitor instance is registered to HP Business Availability Center. For example, if the Business Process Monitor machine has more than one network card, you can specify which card to use when registering the Business Process Monitor instance.	<Business Process Monitor machine default IP address>	The value can be changed in the topaz_agent_ctrl.cfg file.
Agent1	DisplayName	The name of the Business Process Monitor machine.	<Business Process Monitor machine name>	Do not change this value.
Agents	Agent1	The list of Business Process Monitor instances.	<site1, site2,...>	Do not change this value.

Parameters in agent1.cfg

The <Business Process Monitor application directory>\config\agent1.cfg file, which controls Business Process Monitor behavior, contains the following parameters:

Section	Parameter	Description	Default Value	Changing the Value
general	TaskTimeout Minutes	Determines the amount of time after which Business Process Monitor times out all scripts and WebTrace schemes that are still running.	15 minutes	The value can be changed in the agent1.cfg file.
general	Concurrent Profiles	Determines the number of profiles that can be run concurrently. The following options are available: <ul style="list-style-type: none"> ▶ 0 – An unlimited number of profiles can run concurrently. ▶ A value other than 0 – The number specified is the maximum number of profiles that can run concurrently. 	0 (an unlimited number of profiles can run concurrently.)	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
general	GlobalRun Handler	<p>The run mode Business Process Monitor allocates when the run mode is not previously defined for the profile. The run mode determines how Business Process Monitor runs the tasks in a profile when the profile begins an iteration.</p> <p>For an explanation of the run modes, see “Run Schedule for Profile Tasks” on page 140.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> ➤ Classic ➤ Dialup ➤ Sequential ➤ Concurrent 	Classic	The value can be changed in the agent1.cfg file.
general	Webreplay Concurrent Connection Backward Compatible	<p>Determines the WebReplay behavior for the VuGen scripts. The following options are available:</p> <ul style="list-style-type: none"> ➤ Auto – Old scripts (VuGen 7.5 and below) use old WebReplay behavior and new scripts (VuGen 7.6 and higher) use new WebReplay behavior. ➤ Always – scripts always use old WebReplay behavior. ➤ Never – scripts always use new WebReplay behavior. 	Auto	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
general	AdjustScheduleToDST	<p>Determines whether time settings in Business Process Monitor are adjusted for Daylight Savings Time (DST). The following options are available:</p> <ul style="list-style-type: none"> ▶ 1 or true – times are adjusted for DST. ▶ 0 or false – times are not adjusted for DST. 	true	The value can be changed in the agent1.cfg file.
general	SaveHistoricLRWFiles	<p>If a script is configured to generate a logfilewrite log, this parameter determines whether to save only the current logfilewrite log file for the script, or to save previous logfilewrite log files as well. The following options are available:</p> <ul style="list-style-type: none"> ▶ 1 – historical files are saved. ▶ 0 – historical files are not saved. <p>Historical logfilewrite log files must be deleted manually. To avoid unnecessary use of disk space, delete old files and reset the parameter to 0 when not needed.</p>	0	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
general	SendSOEToBAC	<p>Determines whether to send Snapshot on Error data to HP Business Availability Center, or to store it locally on the Business Process Monitor machine.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> ▶ 1 – never send snapshots to HP Business Availability Center. ▶ 2 – always send snapshots to HP Business Availability Center. ▶ 3 – use the script configuration to determine whether or not to send snapshots to HP Business Availability Center. 	3	The value can be changed in the agent1.cfg file.
Offset Distributer	OffsetDistPeriod Sec	<p>Determines the offset distribution period (in seconds) used by the algorithm that calculates the start offset for the run of each profile.</p> <p>The value can be from 4 to 86400 seconds.</p> <p>For more information, see “Optimizing Profile Scheduling” on page 220.</p>	3600 seconds	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
agent	DisableSubLogs	<p>Instructs Business Process Monitor on whether to create the agent_Site#.txt logs for the instance.</p> <p>The following two options are available:</p> <ul style="list-style-type: none"> ➤ 0 – the logs are created. ➤ 1 – the logs are not created. 	0	The value can be changed in the agent1.cfg file.
agent	LogLevel	<p>Instructs Business Process Monitor to log only entries of the specified level or higher in the <Business Process Monitor root directory>\Workspace\agent1\agent.txt file. The following levels exist:</p> <ul style="list-style-type: none"> ➤ fatal ➤ error ➤ warning ➤ flow ➤ debug <p>If this parameter is set to debug, all entries are logged; if the parameter is set to flow, all entries aside from debug are logged; if the parameter is set to warning, both the flow and debug entries are not logged, and so forth.</p>	Flow	The value can be changed in the agent1.cfg file.
agent	LogBackupOn Open	Instructs Business Process Monitor to back up the existing agent.txt log file when opening a new log file.	True	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
agent	LogBackupOn MaxSize	Instructs Business Process Monitor to back up the agent.txt log file when it reaches its defined maximum size.	True	The value can be changed in the agent1.cfg file.
agent	LogMaxSize	Determines the maximum agent.txt log file size (in kilobytes).	5120 kilobytes	The value can be changed in the agent1.cfg file.
agent	LogBackup Duration	Determines the duration (in hours) for which the backups of the agent.txt log file are kept.	168 hours	The value can be changed in the agent1.cfg file.
agent	LogNumOf Backups	Determines the number of log history files to keep.	5	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
Agent_Site# (This section can be manually added to set the log parameters for each instance.)	LogLevel	Instructs Business Process Monitor to log only entries of the specified level or higher in the <Business Process Monitor root directory>\Workspace\agent1\agent_Site#.txt file. The following levels exist: <ul style="list-style-type: none"> ➤ fatal ➤ error ➤ warning ➤ flow ➤ debug If this parameter is set to debug , all entries are logged; if the parameter is set to flow , all entries aside from debug are logged; if the parameter is set to warning , both the flow and debug entries are not logged, and so forth.	Flow	The value can be changed in the agent1.cfg file.
Agent_Site#	LogBackupOnOpen	Instructs Business Process Monitor to back up the existing agent_Site#.txt log file when opening a new log file.	True	The value can be changed in the agent1.cfg file.
Agent_Site#	LogBackupOnMaxSize	Instructs Business Process Monitor to back up the agent_Site#.txt log file when it reaches its defined maximum size.	True	The value can be changed in the agent1.cfg file.
Agent_Site#	LogMaxSize	Determines the maximum agent_Site#.txt log file size (in kilobytes).	5120 kilobytes	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
Agent_Site#	LogBackup Duration	Determines the duration (in hours) for which the backups of the agent_Site#.txt log file are kept.	168 hours	The value can be changed in the agent1.cfg file.
Script Launcher	ScriptLauncher UseTCP	Determines the protocol through which Business Process Monitor communicates with the scripts. The following options are available: <ul style="list-style-type: none"> ➤ 1 – TCP protocol ➤ 0 – shared memory 	0 (shared memory)	Do not change this value.
Script Launcher	ScriptLauncher SyncEnd	Determines whether the end of a script run is synchronized with the end of a Business Process Monitor process. The following options are available: <ul style="list-style-type: none"> ➤ 1 – there is synchronization. ➤ 0 – there is no synchronization. 	0 (no synchronization)	Do not change this value.
Protocols	BdSupported Protocols	List of Web based protocols that Business Process Monitor can run with the breakdown option. Business Process Monitor runs a script with the breakdown option provided the script type is included in this setting. If a script contains multiple protocols, it runs with the breakdown option provided that one of the protocols is included in this setting.	HTTP, Oracle NCA, OracleWebJS, PS8, PS8WebJS, QTWeb, SAP_Web, SapJS, Siebel_Web, SOAP, WebJS, WinSockWeb, WS_SOAP	Do not change this value
Protocols	Snapshot Supported Protocols	Determines for which protocols HP Business Availability Center supports Snapshot on Error.	A list of the applicable VuGen protocols	Do not change this value

Section	Parameter	Description	Default Value	Changing the Value
Protocols	Coloring Supported Protocols	<p>Determines for which protocols Business Process Monitor transactions are colored in HP Diagnostics (if the option is selected in End User Management Administration).</p> <p>If the protocol replay run by the Business Process Monitor is changed, and contains an HTTP based protocol that is not included in this parameter, the protocol can be added to the list, separated by a comma.</p> <p>There should be no reason to remove protocols from the list.</p>	A list of all the Web-based Vugen protocols (that is, those using HTTP)	The value can be changed in the agent1.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
Protocols	AdvancedTcpBd Supported Protocols	<p>List of non-Web based protocols that Business Process Monitor can run with the TCP advanced breakdown option.</p> <p>Business Process Monitor runs a script with the TCP advanced breakdown option provided the script type is included in this setting.</p> <p>If a script contains multiple protocols, it runs with the TCP advanced breakdown option provided that one of the protocols is included in this setting and none of the protocols is included in the BdSupportedProtocols setting (in which case, the regular breakdown option is used).</p> <p>Note: For notes and limitations about the non-Web based protocols, see “Notes and Limitation for Non-Web Based (TCP) Protocols” on page 170.</p>	EJB, FTP, IMAP, Java Record/Replay, LDAP, ODBC, Oracle 2-Tier, POP3, RMI Java, SAP GUI, SMTP	Do not change this value

Parameters in topaz_data_server.cfg

The <Business Process Monitor application directory>\config**topaz_data_server.cfg** file, which controls the transmission of data from Business Process Monitor to the Gateway Server, contains the following parameters:

Section	Parameter	Description	Default Value	Changing the Value
data_depot	DisableSubLogs	<p>Instructs Business Process Monitor on whether to create the data_depot_Site#.txt logs for the instance.</p> <p>The following two options are available:</p> <ul style="list-style-type: none"> ➤ 0 – the logs are created ➤ 1 – the logs are not created 	0	The value can be changed in the topaz_data_server.cfg file.
data_depot	LogLevel	<p>Instructs Business Process Monitor to log only entries of the specified level or higher in the <Business Process Monitor root directory>\Workspace\agent1\data\data_depot.txt file. The following levels exist:</p> <ul style="list-style-type: none"> ➤ fatal ➤ error ➤ warning ➤ flow ➤ debug <p>If this parameter is set to debug, all entries are logged; if the parameter is set to flow, all entries aside from debug are logged; if the parameter is set to warning, both the flow and debug entries are not logged, and so forth.</p>	Flow	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
data_depot	LogBackupOn Open	Instructs Business Process Monitor to back up the existing data_depot.txt log file when opening a new log file.	True	The value can be changed in the topaz_data_server.cfg file.
data_depot	LogBackupOn MaxSize	Instructs Business Process Monitor to back up the data_depot.txt log file when it reaches its defined maximum size.	True	The value can be changed in the topaz_data_server.cfg file.
data_depot	LogMaxSize	Determines the maximum data_depot.txt log file size (in kilobytes).	5120 kilobytes	The value can be changed in the topaz_data_server.cfg file.
data_depot	LogBackup Duration	Determines the duration (in hours) for which the backups of the data_depot.txt log file are kept.	168 hours	The value can be changed in the topaz_data_server.cfg file.
data_depot	LogNumOf Backups	Determines the number of log history files to keep.	5	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
data_depot	ReportAndForget	<p>Determines whether failed reports are resent to HP Business Availability Center. The following two options are available:</p> <ul style="list-style-type: none"> ▶ True – Failed reports are ignored and not resent to HP Business Availability Center. ▶ False – Business Process Monitor tries to resend failed reports to HP Business Availability Center. 	False	Do not change this value.
soadata	LogLevel	<p>Instructs Business Process Monitor to log only entries of the specified level or higher in the <Business Process Monitor root directory>\Workspace\agent1\data\clients\soadata.txt file. The following levels exist:</p> <ul style="list-style-type: none"> ▶ fatal ▶ error ▶ warning ▶ flow ▶ debug <p>If this parameter is set to debug, all entries are logged; if the parameter is set to flow, all entries aside from debug are logged; if the parameter is set to warning, both the flow and debug entries are not logged, and so forth.</p>	Flow	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
soadata	LogBackupOn Open	Instructs Business Process Monitor to back up the existing soadata.txt log file when opening a new log file.	True	The value can be changed in the topaz_data_server.cfg file.
soadata	LogBackupOn MaxSize	Instructs Business Process Monitor to back up the soadata.txt log file when it reaches its defined maximum size.	True	The value can be changed in the topaz_data_server.cfg file.
soadata	LogMaxSize	Determines the maximum soadata.txt log file size (in kilobytes).	5120 kilobytes	The value can be changed in the topaz_data_server.cfg file.
soadata	LogBackup Duration	Determines the duration (in hours) for which the backups of the soadata.txt log file are kept.	168 hours	The value can be changed in the topaz_data_server.cfg file.
soadata	LogNumOf Backups	Determines the number of log history files to keep.	5	The value can be changed in the topaz_data_server.cfg file.
soadata	MaxSnapshot Size	Determines the maximum size of the snapshot HTML file reported to HP Business Availability Center 4.5.2 and earlier.	60 kilobytes	Do not change this value.
soadata	NumberOfSaved SnapshotDays	Determines the number of days to keep old snapshot data that is stored locally on the Business Process Monitor machine.	5	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
soadata	MaxSnapshotSizeAM5	Determines the maximum size of the snapshot HTML file reported to HP Business Availability Center 5.0 and later.	256 kilobytes	The value can be changed in the topaz_data_server.cfg file.
transdata	LogLevel	Instructs Business Process Monitor to log only entries of the specified level or higher in the <Business Process Monitor root directory>\Workspace\agent1\data\clients\transdata.txt file. The following levels exist: <ul style="list-style-type: none"> ➤ fatal ➤ error ➤ warning ➤ flow ➤ debug If this parameter is set to debug , all entries are logged; if the parameter is set to flow , all entries aside from debug are logged; if the parameter is set to warning , both the flow and debug entries are not logged, and so forth.	Flow	The value can be changed in the topaz_data_server.cfg file.
transdata	LogBackupOnOpen	Instructs Business Process Monitor to back up the existing transdata.txt log file when opening a new log file.	True	The value can be changed in the topaz_data_server.cfg file.
transdata	LogBackupOnMaxSize	Instructs Business Process Monitor to back up the transdata.txt log file when it reaches its defined maximum size.	True	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
transdata	LogMaxSize	Determines the maximum transdata.txt log file size (in kilobytes).	5120 kilobytes	The value can be changed in the topaz_data_server.cfg file.
transdata	LogBackup Duration	Determines the duration (in hours) for which the backups of the transdata.txt log file are kept.	168 hours	The value can be changed in the topaz_data_server.cfg file.
transdata	LogNumOf Backups	Determines the number of log history files to keep.	5	The value can be changed in the topaz_data_server.cfg file.
transdata	MaxSnapshot Size	Determines the maximum size of the snapshot HTML file reported to HP Business Availability Center 4.5.2 and earlier.	60 kilobytes	Do not change this value.
transdata	NumberOfSaved SnapshotDays	Determines the number of days to keep old snapshot data that is stored locally on the Business Process Monitor machine.	5	The value can be changed in the topaz_data_server.cfg file.
transdata	MaxSnapshot Size	Determines the maximum size of the snapshot HTML file reported to HP Business Availability Center 5.0 and later.	256 kilobytes	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
wtdata	LogLevel	<p>Instructs Business Process Monitor to log only entries of the specified level or higher in the <Business Process Monitor root directory>\Workspace\agent1\data\clients\wtdata.txt file. The following levels exist:</p> <ul style="list-style-type: none"> ➤ fatal ➤ error ➤ warning ➤ flow ➤ debug <p>If this parameter is set to debug, all entries are logged; if the parameter is set to flow, all entries aside from debug are logged; if the parameter is set to warning, both the flow and debug entries are not logged, and so forth.</p>	Flow	The value can be changed in the topaz_data_server.cfg file.
wtdata	LogBackupOnOpen	Instructs Business Process Monitor to back up the existing wtdata.txt log file when opening a new log file.	True	The value can be changed in the topaz_data_server.cfg file.
wtdata	LogBackupOnMaxSize	Instructs Business Process Monitor to back up the wtdata.txt log file when it reaches its defined maximum size.	True	The value can be changed in the topaz_data_server.cfg file.
wtdata	LogMaxSize	Determines the maximum wtdata.txt log file size (in kilobytes).	5120 kilobytes	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
wtdata	LogBackup Duration	Determines the duration (in hours) for which the backups of the wtdata.txt log file are kept.	168 hours	The value can be changed in the topaz_data_server.cfg file.
wtdata	LogNumOf Backups	Determines the number of log history files to keep.	5	The value can be changed in the topaz_data_server.cfg file.
PCBD	Policy	<p>Determines the page component breakdown reporting policy. The following two options are available:</p> <ul style="list-style-type: none"> ▶ Runnum – Data is automatically reported after the specified number of runs. ▶ Threshold – Data is only reported if during the transaction run, the threshold status changes to the Poor (red) status (because the previous run was less than the higher threshold, and the current run is over that threshold) and not when it changes <i>from</i> red status. <p>The transaction thresholds are defined as part of the business process profile properties within End User Management Administration.</p>	<p>Runnum</p> <p>Note: The default policy value for HP Software-as-a-Service is Threshold.</p>	The value can be changed in the topaz_data_server.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
PCBD	Runnum	Determines the number of runs after which Business Process Monitor reports page component breakdown data (applicable when the value of the Policy parameter is Runnum).	4 runs	The value can be changed in the topaz_data_server.cfg file.
soahttp	WakeupMinutes Time	Determines the amount of time, in minutes, after which all the SOA transaction samples in the queue are reported. After this amount of time has elapsed, the SOA transaction samples in the queue are reported, regardless of the number of samples in queue.	1 minute	Do not change this value without consulting HP Software Support.
soahttp	WakeupCount	Determines the number of SOA transaction samples that must be collected before all the SOA transaction samples in the queue are reported. After this number of SOA transaction samples are collected, all the SOA transaction samples in the queue are reported, regardless of the amount of time that has elapsed since the last report.	40 samples	Do not change this value without consulting HP Software Support.
soahttp	MaxChunk	Determines the maximum number of SOA transaction samples that can be sent in one HTTP request.	100 samples	Do not change this value without consulting HP Software Support.
soahttp	Priority	This parameter is not currently implemented.		

Section	Parameter	Description	Default Value	Changing the Value
txhttp	WakeupMinutes Time	Determines the amount of time, in minutes, after which all the transaction samples in the queue are reported. After this amount of time has elapsed, the transaction samples in the queue are reported, regardless of the number of samples in queue.	1 minute	Do not change this value without consulting HP Software Support.
txhttp	WakeupCount	Determines the number of transaction samples that must be collected before all the transaction samples in the queue are reported. After this number of transaction samples are collected, all the transaction samples in the queue are reported, regardless of the amount of time that has elapsed since the last report.	40 samples	Do not change this value without consulting HP Software Support.
txhttp	MaxChunk	Determines the maximum number of transaction samples that can be sent in one HTTP request.	100 samples	Do not change this value without consulting HP Software Support.
txhttp	Priority	This parameter is not currently implemented.		
wthttp	WakeupMinutes Time	Determines the amount of time, in minutes, after which all the WebTrace samples in the queue are reported. After this amount of time has elapsed, the WebTrace samples in the queue are reported, regardless of the number of samples in queue.	1 minute	Do not change this value without consulting HP Software Support.

Section	Parameter	Description	Default Value	Changing the Value
wthttp	WakeupCount	Determines the number of WebTrace samples that must be collected before all the WebTrace samples in the queue are reported. After this number of WebTrace samples are collected, all the transaction samples in the queue are reported, regardless of the amount of time that has elapsed since the last report.	1 sample	Do not change this value without consulting HP Software Support.
wthttp	MaxChunk	Determines the maximum number of WebTrace samples that can be sent in one HTTP request.	100 samples	Do not change this value without consulting HP Software Support.
wthttp	Priority	This parameter is not currently implemented.		
HTTPSender	HTTPSenderTimeoutSec	The timeout, in seconds, for HTTP requests to HP Business Availability Center.	300 seconds	Do not change this value without consulting HP Software Support.

Parameters in sconn.cfg

The <Business Process Monitor application directory>\config\sconn.cfg file, which controls the configuration options pertaining to the communication between Business Process Monitor and the Gateway Server, contains the following parameters:

Section	Parameter	Description	Default Value	Changing the Value
Site#	AuthUser	Determines the user name to be used for basic authentication, if required by HP Business Availability Center.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	AuthDelay	<p>If you defined authentication parameters for Business Process Monitor, this parameter determines whether authentication is set only after HTTP code 401 is returned, or from the first request to the Web server.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> ▶ 0 (default behavior) – Set authentication parameters from the first request. ▶ 1 – Set authentication parameters only after HTTP code 401 is returned. 	0	Do not change this value without consulting HP Software Support.
Site#	AuthDomain	Determines the domain name to be used for basic authentication, if required by HP Business Availability Center.	"" (not defined)	The value can be changed in Business Process Monitor Admin.

Section	Parameter	Description	Default Value	Changing the Value
Site#	AuthPasswd	Determines the encrypted password to be used for basic authentication, if required by HP Business Availability Center.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	HandleBinaryContentType	Determines whether to change the content type in the HTTP header of requests sent by the Business Process Monitor, when the post buffer is binary. The content type in such a case is application/octet-stream (and not application/x-www-form-urlencoded). The following two options are available: <ul style="list-style-type: none"> ▶ 0 – do not change content type ▶ 1 – change content type 	0 (do not change)	Do not change this value without consulting HP Software Support.
Site#	HeaderName	Determines the name of the header which should be added or changed, in order to add or override headers to the HTTP request sent by Business Process Monitor to HP Business Availability Center. For more information, see “Adding or Overriding HTTP Request Headers” on page 212. If this parameter is empty (or does not exist), it is ignored and no addition or change is made to the header.	"" (not defined)	The value can be added/changed in the sconn.cfg file.

Section	Parameter	Description	Default Value	Changing the Value
Site#	HeaderValue	Determines the value of the header (as defined by parameter HeaderName , above) which should be added or changed.	"" (not defined)	The value can be added/ changed in the sconn.cfg file.
Site#	ProxyName	Determines the user name to be used to connect to the proxy server, if you are connecting to HP Business Availability Center using a proxy server.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	ProxyDomain	Determines the domain name to be used to connect to the proxy server, if you are connecting to HP Business Availability Center using a proxy server.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	ProxyPasswd	Determines the encrypted user password to be used to connect to the proxy server, if you are connecting to HP Business Availability Center using a proxy server.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	ProxyUrl	Determines the proxy server URL to be used if you are connecting to HP Business Availability Center using a proxy server.	"" (not defined)	The value can be changed in Business Process Monitor Admin.

Section	Parameter	Description	Default Value	Changing the Value
Site#	ResetConnectionOnFailure	<p>Reset the caching data saved for the Business Process Monitor connection to HP Business Availability Center in case of a communication failure.</p> <p>Determines whether to re-open a new communication session to HP Business Availability Center in case of an HTTP, TCP or SSL connectivity failure. This enables communication caching data (such as SSL or DNS cached data) to be saved.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> ▶ 0 – Do not open a new communication session when there is a connectivity failure. ▶ 1 (default behavior) – Open a new communication session when there is a connectivity failure. ▶ No value – The default option is used and a new communication session is opened when there is a connectivity failure. 	1	The value can be added/changed in the sconn.cfg file.
Site#	SSLClientCert	Determines the SSL client certificate file to be used if SSL client authentication is required by HP Business Availability Center. Note that this file must be in PEM format.	"" (not defined)	The value can be changed in Business Process Monitor Admin.

Section	Parameter	Description	Default Value	Changing the Value
Site#	SSLServerCert	Determines the SSL authority certificate file to be used if the SSL protocol is required for Business Process Monitor to communicate with HP Business Availability Center. Note that this file must be in PEM format.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	SSLPVK	Determines the SSL private key file used as the pair key of the public key in the SSL client certificate file. This file is required if SSL client authentication is required by HP Business Availability Center. Note that this file must be in PEM format.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	SSLPVKPasswd	Determines the encrypted SSL private key password to be used if SSL client authentication is required by HP Business Availability Center.	"" (not defined)	The value can be changed in Business Process Monitor Admin.
Site#	SSLServer Validate	If you defined an SSL authority certificate file, this parameter determines whether to validate the certificate received in the SSL handshake. By default, the certificate is validated. If you do not want the certificate to be validated, set this parameter to 2.	1 (validate)	Do not change this value without consulting HP Software Support.

Section	Parameter	Description	Default Value	Changing the Value
Site#	SSLHostName Validate	<p>If you defined an SSL authority certificate file, this parameter determines how the host name in the server certificate is validated. The following options are available:</p> <ul style="list-style-type: none"> ▶ 1 – Full validation. ▶ 2 – Validates the existence of the host name only. ▶ 3 – Skips host name validation. 	1 (full validation)	Do not change this value without consulting HP Software Support.
Site#	UseNTLMAuth	<p>Determines whether to use NTLM authentication when communicating with HP Business Availability Center. If authentication parameters are defined and this parameter is set to 1, NTLM authentication is used. If this parameter is missing, or set to any value other than 1, basic authentication is used.</p>	0	The value can be added/changed in the sconn.cfg file.
Site#	UseNTLMProxy Auth	<p>Determines whether to use NTLM authentication when communicating with proxy. If authentication parameters are defined for proxy and this parameter is set to 1, NTLM authentication is used. If this parameter is missing, or set to any value other than 1, basic authentication is used.</p>	0	The value can be added/changed in the sconn.cfg file.

Note: In order to enforce the Business Process Monitor to use NTLM authentication for communication with HP Business Availability Center or via a proxy server, you must make sure that under each **Site#** section (where NTLM authentication is required) one or both of the **UseNTLMAuth** and **UseNTLMProxyAuth** parameters are set to **1**, as required.

Adding or Overriding HTTP Request Headers

To add or override headers to the HTTP request sent by Business Process Monitor to HP Business Availability Center, you define the parameters **HeaderName** and **HeaderValue** in the `sconn.cfg` file, as described in the above table.

Note the following guidelines:

- ▶ To add/change more than one header, use **HeaderName2** for the second name, **HeaderName3** for the third, and so forth. Follow the same principle for the **HeaderValue** parameter.
- ▶ The number of header names must match the number of header values. Otherwise all header names and values are ignored.
- ▶ The first header should be configured with the original parameter names (no index). Business Process Monitor only reads additional headers if they are sequentially numbered. For example, if the following information is added to the `sconn.cfg` file, only the first two headers are handled. **HeaderName4** and **HeaderValue4** are ignored:

```
[Site1]
```

```
AuthDomain=""  
ProxyPasswd=""  
ProxyName=""  
SSLClientCert=""  
SSLHostNameValidate="1"  
AuthDelay="0"  
ProxyUri=""  
SSLServerCert=""  
SSLPVK=""
```

```
ProxyDomain=""  
SSLServerValidate="1"  
SSLPVKPasswd=""  
HeaderValue="Mozilla/4.0 (compatible; MSIE 5.5; Windows NT 5.0)"  
HeaderName="User-Agent"  
HeaderName2="Content-Type"  
HeaderValue2="application/x-www-form-urlencoded;charset=UTF-8"  
HeaderName4="Content-length"  
HeaderValue4="100"
```


9

Advanced Configuration Options

This chapter describes advanced configuration for HP Business Process Monitor functionality.

This chapter includes:

- ▶ Enabling Log File Write on page 216
- ▶ Moving the Workspace Logs on page 217
- ▶ Changing the Default Port on page 218
- ▶ Optimizing Profile Scheduling on page 220
- ▶ Viewing the Catalina DOS Window on page 221
- ▶ Enabling User Authentication on page 222
- ▶ Running Tomcat as a Specific User on page 223
- ▶ Running Oracle Protocol Scripts on page 225
- ▶ Changing the Maximum Number of Hops for WebTrace on page 226
- ▶ Changing the Communication Protocol Used by WebTrace on page 227
- ▶ Disabling the Close Application Mechanism on page 228
- ▶ Configuring Snapshot on Error on page 228
- ▶ Adjusting Business Process Monitor Time to Daylight Savings Time on page 231
- ▶ Communication Using SSL on page 233

Enabling Log File Write

Certain scripts (for example, HP Virtual User Generator Web-based scripts) include a log file write option. By default, this option is disabled for all scripts in Business Process Monitor. If you enable the log file write parameter in the `agentview.props` file, Business Process Monitor Admin then enables you to select the option for the run of applicable scripts (as described in “Setting Log File Write” on page 147).

To enable log file write:

- 1** Open the `<Business Process Monitor root directory>\ServletContainer\conf\agentview.props` file in a text editor.
- 2** Change the line:
 `lfw= 0`
 to
 `lfw=1`
- 3** Save the file.
- 4** Restart Business Process Monitor.

Moving the Workspace Logs

If required, you can change the path for the Workspace directory in the `topaz_agent_ctrl.cfg` file, to store the log files in a new location. However, this only moves some of the log files under the Workspace directory (logs in `commcenter` and `agent1` directories), not all.

If you want to change the location of *all* logs under the Workspace directory, use the following procedure. All file paths are under the **<Business Process Monitor root directory>**. Edit all files in a text editor.

To move all Workspace logs:

- 1** Stop Business Process Monitor.
- 2** In the `..\<Business Process Monitor application directory>\config\topaz_agent_ctrl.cfg` file, change the path for the **Workspace** parameter to the required path.
- 3** In the `..\ServletContainer\conf\agentview.props` file, change the path for the **mdrvfile** parameter to the new Workspace path.
- 4** In the `..\launch_service\dat\nanny\topaz_agent_ctrl.nanny` file, find the section that relates to your platform (Windows or Solaris), and within the section change the path after **-out** to the new Workspace path.
- 5** In the `..\launch_service\dat\nanny\webtrace.nanny` file, find the section that relates to your platform (for Windows or Solaris), and within the section change the path after **-out** to the new Workspace path.
- 6** In the `..\launch_service\dat\nanny.ini` file, change the path for the **log_output_dir** parameter to the new Workspace path.
- 7** (For Windows platforms) In the `..\servletcontainer\bin\catalina.bat` file, search for **-Dbpm.workspace**, and change the path for the parameter to the new Workspace path.
- 8** (For Solaris platforms) In the `../servletcontainer/bin/catalina.sh` file, search for **-Dbpm.workspace**, and change the path for the parameter to the new Workspace path.
- 9** Restart Business Process Monitor.

Changing the Default Port

By default, Business Process Monitor Admin uses port 2696 on the host machine. If required, you can change the port. Use the new port value in the URL when accessing Business Process Monitor Admin from a browser window.

To change the default port:

- 1 Stop Business Process Monitor and make sure that all processes are stopped.
- 2 Open `<Business Process Monitor root directory>\ServletContainer\conf\server.xml` in a text editor.
- 3 Look for the XML element **Connector** with an attribute scheme set to **http** or **https**. Change the attribute port to the required port value, and save the file.

If you are working on a Windows platform, continue with the next step.

For other platforms, skip to step 13 on page 219.

- 4 (For Windows platforms only) Select **Start > Programs > HP Business Process Monitor**, then right-click the **Business Process Monitor Admin** link. Select **Properties** from the displayed menu to open the Business Process Monitor Admin Properties dialog box.
- 5 If the Business Process Monitor Admin Properties dialog box contains a **Web Document** tab, open the tab and change the port in the **URL** box to the new port value, then click **Apply**. Skip to step 13 on page 219.

If the Business Process Monitor Admin Properties dialog box does not contain a Web Document tab, continue with the next step.

- 6 Open the **General** tab and find the **Location** field. Open a Windows Explorer window and browse to the path that appears in the **Location** field (for example, `C:\Documents and Settings\All Users\Start Menu\Programs\HP Business Process Monitor`).
- 7 Delete the **Business Process Monitor Admin** shortcut from the folder.
- 8 Select **File > New > Shortcut**. The first page of the Create Shortcut Wizard is displayed.

9 In the **Type the location of the item** box, enter the Business Process Monitor Admin URL using the new port number: `http://localhost:<new port value>/bpm/`

Click **Next**.

10 In the **Type a name for this shortcut** box, enter **Business Process Monitor Admin**.

Click **Finish**.

11 Check that a new Internet shortcut has been created in the folder.

12 Select **Start > Programs > HP Business Process Monitor**, right-click the **Business Process Monitor Admin** link, and select **Properties**. In the displayed Business Process Monitor Admin Properties dialog box, access the **Web Document** tab and check that the new port value is now displayed in the **URL** box.

13 Restart Business Process Monitor.

Optimizing Profile Scheduling

Business Process Monitor uses an algorithm to calculate the start offset for profile scheduling, as described in “Start Offset Determined by Business Process Monitor” on page 139. The distribution period for the algorithm is defined by the parameter **OffsetDistPeriodSec** in the **<Business Process Monitor application directory>\config\agent1.cfg** file. The default value for this parameter is one hour (3600 seconds), which is an optimum value when the majority of your profile schedules use the default schedule option of every 15 minutes, or a multiple of 15, for example, 30 minutes or 7.5 minutes.

If you are commonly using other schedule intervals for your profiles (meaning that the majority of your profile schedule intervals are not multiples of 15 minutes), you can change the default distribution period to fine tune the offset balancing, enabling profile runs to be more evenly dispersed. The value you use for **OffsetDistPeriodSec** is calculated using the formula **common_profile_interval * (2^x)**, where the common profile interval represents the schedule interval most commonly used for your profiles (or, if there is no predominant schedule interval, the highest schedule interval).

For example, if the majority of your profiles are set to run every 20 minutes (schedule interval 20), then the parameter **OffsetDistPeriodSec** should be set to one of the following:

$$20 * 2^0 = 20 \text{ minutes} = 1200 \text{ seconds}$$

$$20 * 2^1 = 40 \text{ minutes} = 2400 \text{ seconds}$$

$$20 * 2^2 = 80 \text{ minutes} = 4800 \text{ seconds}$$

and so forth.

It is recommended that the distribution period value be equal or greater to the highest schedule interval used in your profiles. For example, if the majority of your profiles have a schedule interval of 20 minutes, but one has a schedule of 45 minutes, then you could set the distribution period to 80 minutes. The minimum value for the period is 4 seconds, the maximum is 24 hours.

If you need assistance in determining the distribution period value that gives you maximum efficiency, contact HP Software Support.

Note: If you do not configure the distribution period to fit the schedule intervals used in your profiles, Business Process Monitor uses the default value to schedule start offset values for the profiles. In most cases, this value is adequate; however, there may be cases where the scheduling process is not optimum (profiles do not run with equal distribution in the period).

Viewing the Catalina DOS Window

By default, the Catalina DOS window is hidden when running Business Process Monitor. You can use the following procedure to keep it visible.

To view the Catalina DOS window:

- 1** Open the <**Business Process Monitor root directory**>\launch_service\dat\nanny\catalina.nanny file in a text editor.
- 2** Change the line:
show_window= 0
to
show_window=1
- 3** Save the file.
- 4** Restart Business Process Monitor.

Enabling User Authentication

The following procedure enables you to define the Web users permitted to access the Business Process Monitor Admin tool using basic authentication.

To define users for basic authentication:

- 1** Stop Business Process Monitor and make sure that all processes are stopped.
- 2** Open the `<Business Process Monitor root directory>\ServletContainer\conf\web.xml` in a text editor.
- 3** Uncomment the section called **Security Constraint and Login Configuration** and save the file.
- 4** Open the `<Business Process Monitor root directory>\ServletContainer\conf\tomcat-users.xml` in a text editor and add the list of allowed users for Business Process Monitor. All users must be assigned `roles="bpm_admin"`.

For example, the line:

```
<user name="user1" password="abc" roles="bpm_admin" />
```

adds a user called "user1" with a password of "abc" to the users who are allowed to access Business Process Monitor Admin.

- 5** Save the file.
- 6** Restart Business Process Monitor.

Running Tomcat as a Specific User

Business Process Monitor Admin uses Tomcat (Catalina) as its Web server. In general Tomcat is not considered a secure Web server. To improve security, it is recommended not to run Tomcat:

- as a system user
- on a Windows platform, as a user with administrator permissions
- on a Solaris platform, as the root user

By default, Tomcat runs under the same user to which Business Process Monitor is configured—the system user (default setting).

To configure Tomcat to run as a specific user, follow the instructions for Windows platforms, below, or for Solaris platforms on page 225.

Configuring Tomcat on a Windows Platform

On a Windows platform, you can configure Tomcat to run as a specific user using one of the methods described:

- Run the Business Process Monitor service as a specific user (currently, Tomcat and the Business Process Monitor processes run under the same Business Process Monitor Service). This solution is not recommended, unless specifically advised by HP Software Support.

You configure the Business Process Monitor service as a specific user from the **Log On** tab in the HP Business Process Monitor Properties dialog box (**Control Panel > Administrative Tools > Services**, then right-click **Business Process Monitor** and select **Properties**).

The problem with this solution is that if the user does not have administrator privileges on the machine, WebTrace tasks fail. Further, the Business Process Monitor processes, as well as the scripts it runs, are run as that user. Thus, if you want to run different Business Process Monitor instances as different users, this solution is not practical.

Note: Starting Business Process Monitor from the Start menu recreates the Business Process Monitor Service as a system user. As such, after configuring the service to run as a specific user using the method described above, make sure to start the service itself—do not use the Start menu. (To start the service, select **Start > Settings > Control Panel > Administrative Tools > Services**, and then select **Start** from the **HP Business Process Monitor** right-click menu.)

- Configure the user to run Tomcat alone. This involves disabling nanny monitoring of Tomcat and then running Tomcat from a command line. This option is problematic for two reasons: it is not possible to monitor Tomcat; when the user logs off, Tomcat stops.

To configure the user to run Tomcat alone:

- 1** Stop Business Process Monitor.
- 2** Open the file <**Business Process Monitor root directory**>\launch_service\dat\nanny\catalina.nanny in a text editor.
- 3** Change enable="1" to enable="0".
- 4** Save the file and restart Business Process Monitor.
- 5** In a Command Prompt window, move to <**Business Process Monitor root directory**>\ServletContainer\bin and execute catalina run.

Configuring Tomcat on a Solaris Platform

On Solaris platforms, you can configure Tomcat to run as a specific user during Business Process Monitor installation (by defining the user that is used to run Business Process Monitor Admin), or after installation, using the procedure that follows.

To configure Tomcat to run as a specific user after installation:

- 1** Open the file `<Business Process Monitor root directory>/launch_service/dat/nanny/catalina.nanny` in a text editor.
- 2** Edit the relevant line (`start_solv4`) so that its last parameter is the username. There is no need for a password. For example, to run Business Process Monitor Admin on Solaris as user `my_user`, change the line in `catalina.nanny` from:

```
start_solv4="/opt/HPBPM/bin/wait_deamon.sh^
="/opt/HPBPM/ServletContainer/bin/catalina.sh start"
="/opt/HPBPM/ServletContainer/logs/catalina.pid" 5"
```

to:

```
start_solv4="/opt/HPBPM/bin/wait_deamon.sh^
="/opt/HPBPM/ServletContainer/bin/catalina.sh start"
="/opt/HPBPM/ServletContainer/logs/catalina.pid" 5 my_user"
```

Running Oracle Protocol Scripts

To run Oracle protocol scripts (recorded with VuGen) from a Business Process Monitor installed on a Solaris platform, you must define certain environment variables in the scripts running Business Process Monitor. Business Process Monitor does not function if Oracle protocol scripts are included in its designated profiles, until the environment is defined.

Note: For Windows platforms, the environment for Oracle protocol scripts is defined automatically by the Oracle Client.

The variables are defined in the following files:

- <Business Process Monitor root directory>/scripts/topaz_agent_env.sh
- <Business Process Monitor root directory>/scripts/topaz_agent_env.csh

Add the variables listed below to the file. The example values given are for topaz_agent_env.sh—modify the paths as appropriate for your machine:

- **MERQ_MCHAN_SOCKNOTIFY=1; export MERQ_MCHAN_SOCKNOTIFY**
- **ORACLE_BASE=/tools/oracle/solv4/app/oracle;export ORACLE_BASE**
- **ORACLE_HOME=/tools/oracle/solv4/app/oracle/product/9.2.0.1**
- **OPENWINHOME=/usr/openwin; export LD_LIBRARY_PATH**
- **LD_LIBRARY_PATH=\${M_LROOT}/bin:\${LD_LIBRARY_PATH};
\${ORACLE_HOME}/lib**

You must also modify the **bin/lrd.ini** file so that it uses the correct version of the shared library for Oracle support. For example, if you want to use Oracle 9i release 2 (that is, Oracle 9.2.0.1), then in the **ORACLE_SOLARIS** section of the **bin/lrd.ini** file ensure that the line **9201=liblrdsolo9201.so** is not commented out and the lines above it relating to other Oracle versions are commented out.

Changing the Maximum Number of Hops for WebTrace

Business Process Monitor is set to access a maximum of 30 hops when using WebTrace to reach a site. If 30 hops are not enough to reach the site, it is reported as unreachable.

If required, you can increase or decrease the maximum number of hops by editing the default value in the **webtrace.ini** file.

To modify the maximum number of hops value:

On the Business Process Monitor machine, open the <**Business Process Monitor root directory**>\dat\webtrace.ini file in a text editor.

- 1** Look for:
 [Request]
 DefaultMaxTTL=30
- 2** Change the value for **DefaultMaxTTL** to the required number of hops.
- 3** Save your changes.
- 4** Restart Business Process Monitor for the change to take effect.

Changing the Communication Protocol Used by WebTrace

Business Process Monitor is set to use TCP when running WebTrace on Windows 2003, or ICMP when running Webtrace on Windows XP or Vista. If required, you can change the default communication protocol by editing the default value in the **webtrace.ini** file.

To modify the default communication protocol value:

- 1** On the Business Process Monitor machine, open the <**Business Process Monitor root directory**>\dat\webtrace.ini file in a text editor.
- 2** Look for:
 [Request]
 DefaultProtocol=<current protocol setting>
- 3** Change the value for **DefaultProtocol** to the required protocol.
- 4** Save your changes.
- 5** Restart Business Process Monitor for the change to take effect.

Disabling the Close Application Mechanism

The mechanism to automatically close the application being tested when running QuickTest Professional scripts (described in “QuickTest Professional Scripts” on page 91) is enabled by default for scripts run on Business Process Monitor.

If required, you can disable the mechanism for a specific script.

To disable the mechanism:

- 1** Browse to the <QuickTest Professional>\Tests\<script name> folder and open the **default.cfg** file in a text editor.
- 2** In the **General** section, add the following:

```
DisableEndProcessesOnFail=1
```

Note: To re-enable the mechanism, delete the statement.

- 3** Save the file. The mechanism no longer closes an application being tested if the QuickTest Professional script fails before it runs the last step (which closes the application).

Configuring Snapshot on Error

When recording scripts with HP Virtual User Generator or QuickTest Professional (QTP), you can enable the Snapshot on Error option.

For details on enabling Snapshot on Error in HP Virtual User Generator, see the HP Virtual User Generator documentation. For details on enabling Snapshot on Error in QuickTest Professional see the *HP QuickTest Professional User's Guide*.

Once enabled, during a script run HP Business Availability Center saves a snapshot of a page as it appears when an error occurs during the script run. The snapshots can be viewed in the Error Summary Report and in the Triage Raw Data report. For details, see “Error Summary Report” and “Triage Raw Data Report” in *Using End User Management*.

The list of HP Virtual User Generator protocols for which HP Business Availability Center supports Snapshot on Error is configured in the **SnapshotSupportedProtocols** parameter in the **agent1.cfg** file. For details, see “Parameters in agent1.cfg” on page 185.

Note: When HP Business Availability Center records a snapshot for scripts recorded using one of the Web protocols, it saves only HTML code. Resources such as images and JavaScript are not saved. Thus, errors that occur due to missing resources may be difficult to trace later on from the snapshot, especially in cases where the missing resource problem has been fixed. For example, if an image resource is missing during a script run, causing an error to be recorded, but the missing image problem is later fixed, the image is present when you open the snapshot of the page.

Storing Snapshots

You can configure Business Process Monitor to send snapshots to HP Business Availability Center or to store them locally on the Business Process Monitor machine, and you can also configure how long to keep the locally saved snapshots.

Snapshots that are stored locally on the Business Process Monitor machine are stored under the <Business Process Monitor root directory>\agent1\data\clients\saved_snapshots directory. A subdirectory is created for each day on which snapshots are taken, in the format of day_month (for example, for snapshots taken on April 20 a subdirectory called **20_4** is created). A further subdirectory is created for each snapshot in the format of profile name_transaction name_hour.minute. For example, for a snapshot generated at **11:25 PM** in transaction **trans1** in profile **prof1**, the subdirectory **prof1_trans1_23.25** is created. The actual snapshot is stored in the directory as a zip file called **snapshot.zip**. For the example above, the full pathname and file is:

```
<Business Process Monitor root directory>\agent1\data\clients\  
saved_snapshots\20_4\prof1_trans1_23.25\snapshot.zip
```

Note: If more than one snapshot file is generated for the same transaction in the same profile within a single minute, the additional snapshot files are sequentially numbered in the format of snapshot.number.zip – for example, **snapshot.2.zip**.

To configure where snapshots are stored:

- 1 Edit the **SendSOEToBAC** parameter in the [general] section of the <Business Process Monitor application directory>\config\agent1.cfg file. The possible values for the parameter are:
 - ▶ 1. Never send Snapshot on Error data to HP Business Availability Center.
 - ▶ 2. Always send Snapshot on Error data to HP Business Availability Center.
 - ▶ 3. Use the script configuration to determine where to send Snapshot on Error data (see point 2 on page 231 below). This is the default option that is used if the SendSOEToBAC parameter has not been set.

- 2** If the Business Process Monitor has been configured to use the script configuration to determine where to send Snapshot on Error data (that is, the **SendSOEToBAC** parameter has a value of **3**), then once a script has been saved, edit the **SendSnapshotDataToBAC** parameter in the **[WEB]** section of the **default.cfg** file of the script. The possible values for the parameter are:
- **0.** Do not send Snapshot on Error data to HP Business Availability Center (that is, store it locally on the Business Process Monitor machine).
 - **1.** Send Snapshot on Error data to HP Business Availability Center.

To configure how long to keep locally stored snapshots:

Edit the **NumberOfSavedSnapshotDays** parameter in the **[transdata]** section of the **<Business Process Monitor application directory>\config\topaz_data_server.cfg** file and enter the number of required days to keep old snapshot data. The default setting is 5.

Since snapshot data may not be generated every day, the setting in this parameter actually refers to the number of old snapshot directories to keep (that is, the subdirectories whose name comprises the day and month they were created).

Adjusting Business Process Monitor Time to Daylight Savings Time

You can configure Business Process Monitor to take into account Daylight Savings Time (DST) in its own time zone. When so configured, Business Process Monitor uses DST when calculating the start and stop times for profiles that are configured with GMT offset schedules.

To configure Business Process Monitor to take DST into account:

Edit the **AdjustScheduleToDST** parameter in the **[general]** section of the **<Business Process Monitor application directory>\config\agent1.cfg** file. The possible values for the parameter are:

- **1. True** - take DST into account.
- **0. False** - do not take DST into account.

The following table shows the various options for a profile with an offset from GMT of +2 hours, with a running time of 08:00 - 16:00, and running on a Business Process Monitor with a time zone offset from GMT of -2 hours:

DST in Effect in the Business Process Monitor's Time Zone	AdjustSchedule ToDST Flag Setting	Business Process Monitor Bias From Profile	Start Time of Run
No	1	4 hours	04:00 Business Process Monitor local time
Yes	1	The Business Process Monitor bias is 4 hours, but since DST is in effect it is one hour ahead, so the real bias is 3 hours (4-1).	05:00 Business Process Monitor local time
No	0	4 hours	04:00 Business Process Monitor local time
Yes	0	The Business Process Monitor bias is 4 hours and although the Business Process Monitor time zone is in daylight savings time, since the AdjustSchedule TODST flag is set to 0 , DST is ignored and the bias stays at 4 hours.	04:00 Business Process Monitor local time

Note: The `AdjustScheduleToDST` configuration is only relevant for profiles which are schedule to run according to offset from GMT. If the scheduling is done according to Business Process Monitor local time, the Business Process Monitor starts running the profile at the hour configured in the schedule, regardless of DST or GMT bias.

Communication Using SSL

You can configure Business Process Monitor to support HTTPS communication with the Gateway Server over the SSL channel and can also configure SSL support for Business Process Monitor Admin. For details on configuring HTTPS communication with the Gateway Server, see the *HP Business Availability Center Hardening Guide* PDF.

Configuring SSL Support for Business Process Monitor Admin

When you connect to Business Process Monitor Admin from a remote machine using a browser, information is sent using HTTP. This means that the data that you configure in Business Process Monitor Admin, including passwords (for example, when adding/configuring a Business Process Monitor instance), is sent "as is", in plain text. The passwords are encrypted only after arriving at the Business Process Monitor Admin machine.

If you want this data to be sent encrypted, it is possible to configure Business Process Monitor Admin to work with SSL. This enables all communication between the remote browser and Business Process Monitor Admin to be encrypted. The following procedure describes how to set Business Process Monitor Admin to run using SSL configuration.

Note: If you configure your Business Process Monitor Web server (Tomcat Web server) to support SSL communication, make sure you issue the certificate to the Business Process Monitor IP number (and not to the DNS name). This enables SSL communication with HP Business Availability Center for Web services support, for example, for page component breakdown.

To configure Business Process Monitor Admin to run using SSL:

- 1** Stop the Business Process Monitor and make sure that all processes are stopped.
- 2** Open the `<Business Process Monitor root directory>\ServletContainer\conf\server.xml` file in a text editor.
- 3** Locate the XML Connector element that is not commented out and comment it out. For example, change:

```
<Connector port="2696" maxHttpHeaderSize="8192" maxThreads="150"
minSpareThreads="25" maxSpareThreads="75" enableLookups="false"
redirectPort="8443" acceptCount="100" connectionTimeout="20000"
disableUploadTimeout="true" />
```

to:

```
<!-- <Connector port="2696" maxHttpHeaderSize="8192" maxThreads="150"
minSpareThreads="25" maxSpareThreads="75" enableLookups="false"
redirectPort="8443" acceptCount="100" connectionTimeout="20000"
disableUploadTimeout="true" /> -->
```

- 4** Locate the XML Connector element with an attribute scheme set to **https** and uncomment it. For example, change:

```
<!--<Connector port="8443" maxHttpHeaderSize="8192" maxThreads="150"
minSpareThreads="25" maxSpareThreads="75" enableLookups="false"
disableUploadTimeout="true" acceptCount="100" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS" />-->
```

to:

```
<Connector port="8443" maxHttpHeaderSize="8192" maxThreads="150"
minSpareThreads="25" maxSpareThreads="75" enableLookups="false"
disableUploadTimeout="true" acceptCount="100" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS" />
```

- 5** Save the **<Business Process Monitor root directory>\ServletContainer\conf\server.xml** file.
- 6** Create a keystore certificate by running the following command:
 - ▶ **For Windows** – **<Business Process Monitor root directory>\JRE\bin\keytool -genkey -alias tomcat -keyalg RSA**
 - ▶ **For Solaris** – **<Business Process Monitor root directory>/JRE/bin/keytool -genkey -alias tomcat -keyalg RSA**
- 7** When prompted for the keystore password, enter **changeit** (all lower case). To choose a different password, see the Tomcat documentation (<http://jakarta.apache.org/tomcat/tomcat-4.0-doc/ssl-howto.html>).
- 8** Enter general information about the certificate when prompted for this information.
- 9** When prompted for the key password for the certificate, use the same password you used previously for the keystore.
- 10** Execute the following command:

```
keytool -list
```

and enter the password: **changeit**

The following is an example of the message that appears after when the command is completed:

```
Keystore type: jks
```

```
Keystore provider: SUN
```

```
Your keystore contains 1 entry
```

```
tomcat, 27.11.2009, keyEntry,
```

```
Certificate fingerprint (MD5):
```

```
1C:6E:99:0C:69:B4:B0:F5:92:62:9B:55:87:B1:F8:14
```


Troubleshooting

If it is still impossible to access the Business Process Monitor Admin console via SSL, check the latest **catalina.<current date>.log** file located in:

- ▶ **Windows 2003 and Windows XP**—C:\Documents and Settings\All Users\Application Data\HP\BPM\Tomcat\logs
- ▶ **Windows Vista**—C:\ProgramData\HP\BPM\Tomcat\logs
- ▶ **Solaris**—/var/opt/HP/BPM/Tomact/logs

Locate the following string (the directory in the string changes according to the relevant operating system) and copy the **.keystore** file to the directory included in the string:

SEVERE: Error initializing endpoint java.io.FileNotFoundException:
C:\Windows\System32\config\systemprofile\.keystore (The system cannot find the file specified).

10

Workspace Directory and Log Files

This chapter contains information on the logs and files located in the Business Process Monitor Workspace directory that relate to running HP Business Process Monitor.

This chapter includes:

- About Business Process Monitor Logs on page 240
- Log Archives on page 241
- Log Entry Format on page 241
- Workspace Directory Architecture on page 242
- Agent1 Directory on page 244
- Data Directory on page 245
- Site1 Directory on page 246

About Business Process Monitor Logs

The Business Process Monitor processes can be divided into three main categories:

- Controller
- Agent
- Data server

Each category has one or more log files, all stored under the Workspace directory. There are different types of log files:

- logs that record flow and logics information for events.
- logs that contain resource-related issues, such as memory, communication, threads, and so forth (MDRV logs). These logs only report errors, so an entry indicates a problem in the process.

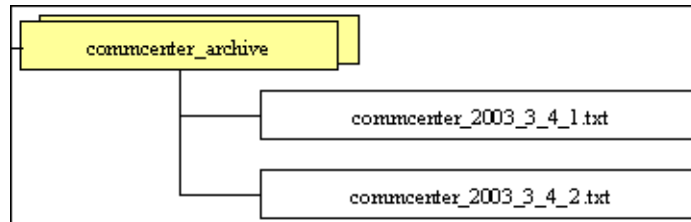
Each log file has a default memory limit of 5 MB. A new log file is started automatically for a log when the log file reaches its memory limit, or when Business Process Monitor is stopped and restarted.

Note that the default values for each log can be edited in the Business Process Monitor configuration files. For more information, see Chapter 8, “Business Process Monitor Configuration Files.”

Note: For Solaris platforms, there is an additional Business Process Monitor log, **files_removed.log**, outside of the Workspace directory (<**Business Process Monitor root directory**>\.**persist_dir****files_removed.log**). This log records the number of files removed from **.persist_dir** the last time the Business Process Monitor’s **stop** script was called.

Log Archives

Most logs have a corresponding archive. Each archive holds the most recent files for the relevant log (prior to the currently active log file), up to a default maximum of five log files. When a new log file is started, the previous log file is added to the archive and, if the archive already contains the maximum number of files, the oldest file is dropped. The following example shows the archive file structure for the **commcenter_archive** directory, containing two older files for the **commcenter.txt** log.



Log Entry Format

The following are examples of log entries:

```
01/12/2003 20:57:04 FLOW  task 'war_http' (id=52) of profile 'AA_Sanity'
(id=27) is running
```

```
26/11/2003 16:08:03 ERROR  AgentCtrl: "send configuration" could not be
passed to the agent: Failed to post a message to agent 'Agent1' (error -1).
```

Each line starts with the date and time, then the level of the message. Business Process Monitor uses the following log levels for events:

- Fatal
- Error
- Warning
- Flow
- Debug

By default, Business Process Monitor is set to log only entries of level Flow and higher (meaning that Debug events are not included). You can change the default setting (to show a different level and higher) in the Business Process Monitor configuration files, as described in “Parameters in `topaz_agent_ctrl.cfg`” on page 177.

As one Business Process Monitor can serve more than one Business Process Monitor instance, some of the messages targeted to a general log (for example, `agent.txt`) are also duplicated to the log for a specific instance (for example, `agent_Site#.txt`). The instance logs for a component are located in the same directory as the component general log (the source log). In the general/source log, each duplicated message ends with `[owner: 'Site#']`. For example:

```
02/12/2003 06:14:01 FLOW  running task 'testik' (id=56) of profile 'bpm_Sanity'
(id=57) with timeout of 900 seconds [owner: 'Site3']
```

Workspace Directory Architecture

The Workspace directory contains the following logs and files for Business Process Monitor:

- ▶ **agent1**. The directory for all the logs and files relevant for the agent category. For details, see Agent1 Directory.
- ▶ **bpm_admin_audit.log (and archive)**. The log for each API call performed through Business Process Monitor Admin or the Business Process Monitor SOAP API. This includes tasks such as adding an instance, removing an instance, invoking a task, and so forth.
- ▶ **bpm_admin_out.log (and archive)**. The log of the Catalina output. (This file contains the same information printed to the Catalina DOS window, that is hidden by default. If you prefer to view the output in the window, see “Viewing the Catalina DOS Window” on page 221.)

- ▶ **commcenter.** The directory for controller logs. The directory contains the following files (and corresponding archives):
 - ▶ **commcenter.txt (and archive).** The commcenter (controller) log, logging events such as registration, and job and time poll intervals.
 - ▶ **commcenter_site1.txt (and archive).** The commcenter (controller) log for a specific Business Process Monitor instance. Each instance log contains all the entries in the **commcenter.txt** log that are relevant for the instance.
- ▶ **manager_task_invoker.** The directory for all output files and logs created for a run of a script, when the script run is invoked using the **Invoke Task** option in Business Process Monitor Admin. The directory also contains the **LogFileWrite.log** files, when log file write is enabled in Business Process Monitor and the option is set for the script run.
- ▶ **mercwebtrace.log (and archive).** A log for the mercwebtrace component used with WebTrace in Business Process Monitor.
- ▶ **nanny.log.** The log of the nanny component (responsible for launching the following processes and making sure they are up: **tp_bpm_admin**, **tp_bpm_ctrl**, and **mercwebtrace**).
- ▶ **supervisor.txt (and archive).** This log contains data regarding the launch/failure of the following processes: **tp_bpm_admin**, **tp_bpm_ctrl**, and **mercwebtrace**.
- ▶ **topaz_agent_ctrl.log (and archive).** The MDRV log for the controller category.
- ▶ **topaz_agent_manager.log (and archive).** The log for the TAM's **jmdrv**. Logs low-level Business Process Monitor Admin events.
- ▶ **webtrace.** The directory for logs relating to the mercwebtrace component, used to handle WebTrace. The directory contains the following files (with corresponding archives, as required):
 - ▶ **webtrace.txt.** The log of the management level for WebTrace, logging events such as request handling.
 - ▶ **network.txt.** The log of the networking layer in WebTrace.

Agent1 Directory

The agent1 directory contains logs and files that relate to the operation of the agent category.

Note: Site1, Site2, and so forth, are internal names for the Business Process Monitor instances. You can check which internal name is assigned to each instance in the <Business Process Monitor application directory>\config\topaz_agent_ctrl.cfg file.

The agent1 directory contains the following files:

- ▶ **agent_Site1.txt (and archive).** Logs the flow of the agent for a specific Business Process Monitor instance. Each instance log contains all the entries in the **agent.txt** log that are relevant for the instance.
- ▶ **agent.txt (and archive).** Logs the flow of the agent. Logs events such as processing scripts, running profiles, downloads, processing errors (for all Business Process Monitor instances).
- ▶ **agent_task_invoker.txt (and archive).** Logs information regarding invoked tasks (invoked using the Invoke Now option in Business Process Monitor Admin).
- ▶ **agent1_drvlog.txt (and archive).** The MDRV log for the whole agent category.
- ▶ **agent1_drvlog_launcher.txt (and archive).** A log for internal HP use.
- ▶ **data.** This directory contains all logs and files relevant for the data server. For details, see Data Directory.
- ▶ **downloads.** A temporary directory for downloads of scripts, without connection to the logs.
- ▶ **Site1.** Each "SiteX" directory contains information relating to a specific Business Process Monitor instance. For details, see Site1 Directory.
- ▶ **task_invoker.** This directory contains files regarding the runs of tasks invoked using the Invoke Now option in Business Process Monitor Admin.

- **traceroute.** A directory for traceroute server logs. The directory contains the following file (and corresponding archive):
 - tracert_drvlog.txt (and archive).** The MDRV log for the traceroute server component.

Data Directory

The data directory contains the following logs and files relating to the Business Process Monitor data server:

- **clients.** This directory contains information about the transaction and WebTrace data that is reported to the HP Business Availability Center site. The information for each finished transaction/WebTrace appears in the client logs at the moment the data is ready to be sent, while the data depot log records what data is actually sent.

The directory contains the following files (and corresponding archives):

- **saved_snapshots.** The directory used to store Snapshot on Error data that is not sent to HP Business Availability Center. For more information on configuring Snapshot on Error, see “Configuring Snapshot on Error” on page 228.
- **soadata.txt (and archive).** The log for finished SOA transaction data, including details on the SOA performance and event samples. This log also contains entries for failed SOA calls on which no SOA samples were sent to HP Business Availability Center due to missing data.
- **transdata.txt (and archive).** The log for finished transaction data. This log also contains entries for transactions that were not run due to problematic scripts, but for which special samples were sent to HP Business Availability Center.
- **wtdata.txt (and archive).** The log for finished WebTrace data.
- **data_depot.txt (and archive).** The log for all information relating to reported data, for all Business Process Monitor instances. For example, this file logs if data reporting was successful or failed, and the number of samples (in a queue) that were included in a report.

- ▶ **data_depot_Site1.txt (and archive).** The log of all information relating to reported data, for a specific Business Process Monitor instance. Each instance log contains all the entries in the **data_depot.txt** log that are relevant for the instance.
- ▶ **datasrv_drvlog.log.** The MDRV log for the whole data server category.
- ▶ **queues.** This directory contains the persistency queues for transaction, SOA transaction, and WebTrace reports that have not yet been sent to the HP Business Availability Center site, or that have not yet been acknowledged by HP Business Availability Center. (If Business Process Monitor is stopped, the reports are stored in the persistency queues until they can be sent.)
- ▶ **snapshots.** This is a temporary directory holding the snapshots (when the Snapshot on Error option is enabled for a script) that are reported by Business Process Monitor to HP Business Availability Center. For more information on the Snapshot on Error function, see Error Summary Report in *Using End User Management*, part of the HP Business Availability Center Documentation Library.

Site1 Directory

The Site1 (or Site2, Site3, and so forth) directory contains the following logs and files regarding the specific instance's job (when running a script):

- ▶ **input_job.xml.** This is the last received .xml file, describing the last job with which the instance dealt (the file may contain only the difference between the last job and the previous one).
- ▶ **persistency_job.xml (and archive).** This .xml file stores persistency information for all jobs currently assigned to the instance.

- ▶ **<profile_id#>**. This directory contains information concerning the run of a profile, for a specific profile that the instance is assigned to run. It contains:
 - ▶ **<script_id#>**. This directory contains files relating to a script in the profile:
 - ▶ **<script1>**. This directory contains files concerning the run of the script. These files include the script itself, additional files for the script, and the res directory where the output files for the script's run are stored.
 - ▶ **<script>.crc**. The .crc file for the script, containing information needed by Business Process Monitor to run the script, as defined in the database.
 - ▶ **<WebTrace_id#>**. This directory is identified by an ID value between 100–199, and is generally empty.

11

Planning Business Process Monitor Capacity

This section describes some of the issues you should consider when planning the load and resulting configuration for Business Process Monitors.

This chapter includes:

- ▶ Script Loads on page 250
- ▶ Sizing on page 252
- ▶ Business Process Monitor Configuration Tips on page 253

Script Loads

The main factors that influence the load you can assign a Business Process Monitor are:

- ▶ The hardware of the Business Process Monitor machine (in terms of the processor, memory speed, processor L2 cache memory, and so forth).
- ▶ The operating system. Since Business Process Monitor uses services provided by the operating system, differences between operating systems may impact Business Process Monitor performance.
- ▶ The total number of concurrently running scripts on the Business Process Monitor machine.

For details on hardware and operating system requirements, see “System Requirements” on page 18.

Example of a Simple Configuration with No Concurrent Script Runs

An example of a simple configuration where all the scripts included in the configuration run sequentially is a Business Process Monitor running a single profile that uses the default profile schedule of 15 minutes and that includes 15 scripts that each take one minute to complete. In this configuration there will always be a single script running, but no script will run concurrently with another.

Changes to the configuration or its environment may cause scripts to run concurrently. For example, if a script run time lasts longer than one minute due to slow performance.

Automatic Distribution of Concurrent Script Runs

When a Business Process Monitor has more than one profile configured on it, a special mechanism ensures that the distribution of concurrent running scripts is kept as low as possible.

To allow an even distribution of the Business Process Monitor's use of resources (such as CPU, memory, and network), the Business Process Monitor assigns each profile an offset. By using this offset, Business Process Monitor tries to reduce the number of concurrent script runs by staggering their start time. The offset mechanism is applied whenever a new configuration is assigned to the Business Process Monitor.

Factors Causing Concurrent Script Runs

Some of the main factors that may cause scripts to run concurrently are:

- ▶ The work load assigned to the Business Process Monitor. This includes:
 - ▶ The number of instances configured for the Business Process Monitor.
 - ▶ The number of profiles per instance.
 - ▶ The number of scripts per profile.
 - ▶ The number of transactions per script.
- ▶ The scheduled interval configured for profiles.
- ▶ The average time it takes for a script or profile to finish a single run.
- ▶ The availability and performance of monitored applications. Unavailable or slow applications result in slower script runs.
- ▶ The type of the scripts. Some protocols may take a longer time to finish than others (for example, if there is a need to work with FAT client that needs to be initialized).
- ▶ The profile run modes (classic, sequential, and so forth). Some modes (such as the stepped mode with a step value of zero) enable you to run scripts concurrently. For details on the profile run modes, see "Run Schedule for Profile Tasks" on page 140.

Note: Changing the default profile run mode overrides the automatic mechanism that distributes script runs. This reduces the load that can be assigned to a Business Process Monitor. It is strongly recommend that you do not change the default offset in high volume environments.

Sizing

Since there are a number of factors that affect the load on a Business Process Monitor, and therefore the required configuration, there are a large number of different possible configuration combinations. The following table lists some of the configurations that have been used:

	1 Instance	2 Instances	16 Instances
Profiles per instance	250	250	30
Scripts per profile	5	5	5
Transaction per script	4	4	4
WebTraces per profile	2	2	2
Total profiles	250	500	480
Total scripts	1,250	2,500	2,400
Total transactions	5,000	10,000	9,600
Total WebTraces	500	1,000	960

Changing any one of the parameters may impact the load you can run on a Business Process Monitor.

Note the following in conjunction with the listed configurations:

- ▶ All specifications are related to HTTP Web protocols only. Using scripts from other protocols may impact the load that a Business Process Monitor can run.
- ▶ The average profile run time is 30 seconds.
- ▶ Scheduling is set to 15 minutes for all profiles (this is the default schedule).
- ▶ All other profile attributes are assigned default values.

Business Process Monitor Configuration Tips

This section describes tips and recommendations for configuring Business Process Monitor:

- ▶ Business Process Monitor must run on a dedicated machine.
- ▶ Use the default profile run mode
- ▶ If you do not use one of the tried configuration sizes, use the following method to check your Business Process Monitor capacity.

To check Business Process Monitor capacity for a new configuration:

- 1** Load the Business Process Monitor with the new configuration using a rump up method (cycles). In each cycle, assign only a part of the configuration and check that the Business Process Monitor's capacity is not breached (that is, a very high usage of system resources).
- 2** Once a Business Process Monitor is assigned a new configuration, it needs to readjust its scheduling mechanism to the new work load. This readjustment phase (during which the Business Process Monitor still runs the existing configuration) may take a few minutes, depending on the work load of the existing configuration and the amount of new work required by the new configuration. During the readjustment phase, the Business Process Monitor's CPU consumption may increase, but should return to normal once the readjustment is complete.

Note: When changing a configuration, there may be a delay in transaction reports and in some cases, transaction runs may be skipped. This applies to currently running scripts.

- 3** Wait until the readjustment phase stabilizes before applying additional parts of the new configuration.

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