

**ComTrade Oracle Siebel CRM/  
Oracle BI Smart Plug-in for HP  
Software  
(SPI for Siebel)**

*This Version 04.00 is for use with HP Operations  
Manager on Windows*

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User's Guide



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## Chapter 1

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## Document Overview

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## Edition History

New editions are complete revisions of the manual. The printing dates for each edition are listed below.

<b>Edition</b>	<b>Date</b>
First Edition	June 2002
Second Edition	October 2002
Third Edition	February 2003
Fourth Edition	May 2003
Fifth Edition	July 2004
Sixth Edition	November 2004
Seventh Edition	February 2005
Eighth Edition	August 2006
Ninth Edition	December 2006
Tenth Edition	July 2007
Eleventh Edition	December 2007
Twelfth Edition	October 2008
Thirteenth Edition	October 2009
Fourteenth Edition	June 2010
Fifteenth Edition	December 2010

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## Conventions

The following typographical conventions are used in this manual:

Font	Definition	Example
<i>Italic</i>	Product names, book or manual titles, man page names, and section, table, and figure titles.  Emphasis.  Window and dialog box names.	Refer to the <i>SPI for Siebel Installation and Configuration Guide</i> for additional information.  You <i>must</i> follow these steps.  The <i>Deploy policies on</i> window opens.
<b>Bold</b>	Commands on menus and buttons, dialog box titles and options, menu and icon names.	In the menu, first click <b>Actions</b> , and then <b>Agents</b> .
<code>Computer</code>	File names, syntax, directory names, or text that should be entered on screen or that is displayed on the monitor.	You will receive a license activation file <code>siebspi_licact_new.dat</code> by e-mail.

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## Product Documentation

With SPI for Siebel, the following documentation is provided:

- *SPI for Siebel Installation and Configuration Guide*  
Installation and Configuration Guide is available in PDF format (*SIEBSPI-InstallGuideWIN.pdf*).
- *SPI for Siebel User's Guide*  
User's guide is available in PDF format (*SIEBSPI-UserGuideWIN.pdf*).
- *SPI for Siebel Quick Reference Guide*  
Quick reference guide is available in PDF format (*SIEBSPI-QuickReference.pdf*).
- *SPI for Siebel - Supported Siebel and HP Software Platforms*  
Supported Platforms document is available in PDF format (*SIEBSPI-SupportedPlatforms.pdf*).
- Release notes  
Release notes are available in TXT format (*siebspi-release-notes-win.txt*).
- Readme  
Readme file is available in TXT format (*siebspi-readme.txt*).
- ComTrade software license terms file  
License file is available in TXT format (*comtrade\_software\_license\_support\_terms\_signed.txt*)

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## Customer Support

Use the following e-mail and Web page addresses if you need help with the licensing process or while using the product, and if you would like additional information about this or other ComTrade products.

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## Licensing

To obtain the license activation file you can visit ComTrade licensing portal:

<http://spi.comtrade.com/licensing/>

or send an e-mail to the following address:

[spi-licensing@comtrade.com](mailto:spi-licensing@comtrade.com)

For more information on licensing and licensing procedure refer to *SPI for Siebel Installation and Configuration Guide*.

If you encounter any problems with the licensing process, contact the ComTrade licensing department at:

[spi-licensing@comtrade.com](mailto:spi-licensing@comtrade.com)

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## Contacting Support

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### IMPORTANT

**Should you require additional assistance or information while using the product, contact the vendor that shipped the software.**

If you have purchased the software directly from ComTrade, send e-mail to:

[support-siebelspi@comtrade.com](mailto:support-siebelspi@comtrade.com)

### Before Contacting Support

Before you contact the support department, have the following information available so that a technical support analyst can work on your problem more efficiently:

- the support files `siebspi_supp.zip` (on Windows managed nodes) and `siebspi_supp.tar.Z` (on Unix managed nodes)

To create the support file, run the **SIEBSPI-Collect Information** tool on one or more nodes. To run the tool, perform the following steps:

1. Go to the **SPI for Siebel /SIEBSPI-Maintenance/SIEBSPI-Support** tool group and run the **SIEBSPI-Collect Support Information** tool. The *Select where to launch this tool* window opens.

2. Select the node(s) and click Launch to run the tool. The files `sieblespi supp .zip` or `sieblespi supp .tar` with the support information are created in the following directory on the node(s):

`<OvAgentDataDir>/siebspi/supplog` on Unix

`<OvAgentDataDir>\siebspi\supplog` on Windows

- symptoms
- sequence of events leading to the problem
- commands and options that you used
- messages you have received (a description with the time and date)

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## General Information

For marketing or business-related issues in reference to this or other ComTrade SPIs, send e-mail to:

[spi-info@comtrade.com](mailto:spi-info@comtrade.com)

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## Product Web Sites

Visit ComTrade Smart Plug-in Web site at:

[http://www.managementproducts.comtrade.com/smart\\_plug-in/siebel](http://www.managementproducts.comtrade.com/smart_plug-in/siebel)

and the company Web site at:

<http://www.comtrade.com/>

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## Chapters Summary

This guide describes how to use SPI for Siebel to monitor and manage Oracle BI and Siebel CRM application resources from the HP Software environment. It also addresses and troubleshoots some of the possible installation problems.

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### NOTE

**This document assumes that you are familiar with the HP Operations Manager administration procedures and concepts.**

The guide contains the following chapters:

- [“Getting Started” on page 9](#)
- [“Setting Up the Environment” on page 27](#)
- [“Monitoring the Availability of all Key Components of the Siebel Environment” on page 35](#)
- [“Monitoring Siebel Log Files” on page 39](#)
- [“Monitoring Siebel Components and Tasks” on page 47](#)
- [“Monitoring Siebel Database, Database Tables, and Records” on page 55](#)
- [“Monitoring Siebel Users and Siebel Applications Activity” on page 63](#)
- [“Monitoring Siebel Web Server Extension \(SWSE\)” on page 67](#)
- [“Monitoring Siebel End-User Experience and Response Times” on page 73](#)
- [“Using SPI for Siebel for Analyzing Siebel Application Response Measurement \(SARM\) Data” on page 77](#)
- [“Monitoring Oracle Business Intelligence and Siebel Analytics” on page 93](#)
- [“Monitoring Oracle Secure Enterprise Search” on page 101](#)
- [“Viewing and Analyzing Historical Data from Collected Performance Data” on page 105](#)
- [“Collecting Performance and Other Metrics from Siebel Environment” on page 119](#)
- [“Customizing SPI for Siebel” on page 139](#)
- [“The SPI for Siebel Service” on page 153](#)
- [“Troubleshooting” on page 157](#)
- [“File Locations” on page 163](#)

- [“SARM Reference Information” on page 169](#)
- [“Regular Expression Syntax” on page 175](#)

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## Chapter 2

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### Getting Started

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## About Oracle Siebel CRM

Today's organizations must manage customer interactions across multiple communications channels. The challenge is to make it easy for customers to do business with the organization any way they want-at any time, through any channel, in any language or currency-and to make customers feel that they are dealing with a single, unified organization that recognizes them at every touch point. Oracle Siebel Customer Relationship Management (Oracle Siebel CRM) solutions, designed to fit any size organization, empower companies to deliver seamless and superior customer experiences by extending CRM to everyone in their organizations and partner networks.

The Oracle Siebel CRM represents the framework for the Siebel Products and Industry solutions that are built upon them.

Products:

- . Business Analytics Applications
- . Call Center And Service
- . Customer Data Integration
- . Customer Order Management
- . Enterprise Marketing
- . Partner Relationship Management
- . Sales
- . Self Service And Ebilling
- . Loyalty Management

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## Typical Enterprise Setup of Oracle Siebel CRM

Typical enterprise setup of Oracle Siebel CRM consists of the following components:

- . Siebel Server
- . Siebel Server Components
- . Gateway Name Server
- . Web Server and Siebel Web Server Extension
- . Siebel Database Server
- . Resonate Central Dispatch (obsolete since Siebel 7.7.)
- . Siebel clients:

- Siebel High Interactivity Web Clients: Java based, using Microsoft JVM.
- Siebel HTML Clients: Functionality the same as HI web client, however everything implemented with HTML. Slower, can be used from non-Windows platforms.
- Siebel Dedicated Clients: Desktop or "fat" clients - inside LAN. Java based, internally implemented with a web server. Practically obsolete by now.

## **Siebel Server**

The Siebel Server is the middle-tier platform that supports both back-end and interactive processes for all Siebel application clients. These processes are components within the Siebel Server architecture, and support functions such as:

- Operation of business logic for Siebel Thin Clients, as well as connectivity and access to the database server and file system
- Integration with legacy or third-party data
- Automatic assignment of new accounts, opportunities, service requests, and other records
- Workflow management
- Mobile client synchronization

The Siebel Server supports both multi-process and multi-threaded components, and can operate components in background, batch, and interactive modes. Many of the Siebel Server components can operate on multiple Siebel Servers simultaneously to support an increased numbers of users or larger batch workloads.

## **Siebel Server Components and Application Object Managers**

The various programs that operate on the Siebel Server are implemented as components. A component represents only a specific type of program; a component is executed or operated as a task, or instantiation of a component, on a specific Siebel Server.

Components execute tasks in one of three run modes - background, batch, or interactive. Components are defined at the Siebel Enterprise Server level in component groups. Component groups are then assigned to one or more Siebel Servers within the Siebel Enterprise Server on which they can execute tasks.

Application Object Managers host the Business Objects layer and Data Objects layer of the Siebel CRM architecture. They primarily support Siebel Web client connections by handling multiple users simultaneously and making requests to the Siebel Server on their behalf. AOMs are hosted as components in the Siebel Server and run on the application server machine. They are providing the infrastructure for

serving multiple Siebel Web client users. A single Siebel Server can run multiple AOMs that can be configured to run as multithreaded processes on them.

### **Siebel Gateway Name Server**

The Siebel Gateway Name Server:

- Serves as a single entry point for accessing Siebel Servers
- Provides enhanced scalability, load balancing, and high availability across the Enterprise Server

Two primary services that coordinate the Enterprise Server and Siebel Servers operate within the Gateway are:

- Name Server
- Connection Brokering

The Gateway Server maintains the configuration information for all Siebel Servers in all the Enterprise Servers it manages.

### **Resonate Central Dispatch**

The Resonate Central Dispatch is used for:

- Connection Brokering
- Load Balancing

Connection Brokering is an optional service of the Gateway Server that uses the Resonate Central Dispatch product to distribute client connection requests across multiple Siebel Servers. Only client connections to the Siebel Object Manager (for thin clients), request processor, and request agent components (for Interactive Assignment) will be distributed by Resonate Central Dispatch.

### **Siebel Web Server Extension**

The Siebel Web Server Extension, operating on the Web server, connects to the Application Object Manager component operating within the Siebel Server. This connection uses Siebel's application.

### **Web Server (for example, IPlanet)**

Web Server is used with Siebel Web Server Extension. It provides a server (Web) for providing an HTTP access for Siebel Web Clients.

### **Siebel Database Server (for example, Oracle)**

The Siebel Database Server stores the data used by Oracle Siebel CRM. Siebel dedicated clients and Siebel Server components, including those that operate in

conjunction with the Siebel Thin Client, connect directly to the Database Server and make changes in real time.

## **Oracle Secure Enterprise Search**

Oracle Secure Enterprise Search (SES) allows you to search all your enterprise data sources from a single interface. It provides uniform search capabilities over multiple repositories. Oracle SES uses a crawler to collect data from these sources. The crawler supports a number of built-in source types, as well as a published plug-in (or connector) architecture for adding new types. Multiple Oracle SES instances can also share content through the federated source type.

Oracle SES supports numerous built-in source types: Web, table, file, e-mail, mailing list, OracleAS Portal, Oracle Calendar, Oracle Content Database, Oracle Applications, and so on.

## **Oracle Business Intelligence**

Oracle Business Intelligence is a suite of products based around several server products and a Microsoft Windows-based administration tool:

- Oracle BI Server - Connects to a wide range of relational and OLAP datasources and provides access, via a business metadata layer, to an integrated data set including calculations, aggregations, and KPIs
- Oracle BI Presentation Server - Connects via ODBC to Oracle BI Server and provides interactive dashboards, reports, and data visualizations through a consistent, dynamic HTML interface
- Oracle BI Delivers - Works alongside Oracle BI Presentation Server to schedule reports and create workflows that perform actions based on alerts and thresholds defined by users
- Oracle BI Publisher - Provides "boardroom-quality" reports using data sourced from relational databases, Oracle BI Answers requests, Oracle BI Discoverer workbooks, and the Oracle Business Intelligence Enterprise Edition metadata layer

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## About SPI for Siebel

ComTrade Oracle Siebel CRM/Oracle BI Smart Plug-in for HP Software (SPI for Siebel) is designed specifically for use with Oracle Siebel CRM and BI (Oracle Business Intelligence and Siebel Analytics) in HP Software environments. Developed by ComTrade, it performs proactive system monitoring and service management while providing additional control over your computing environment.

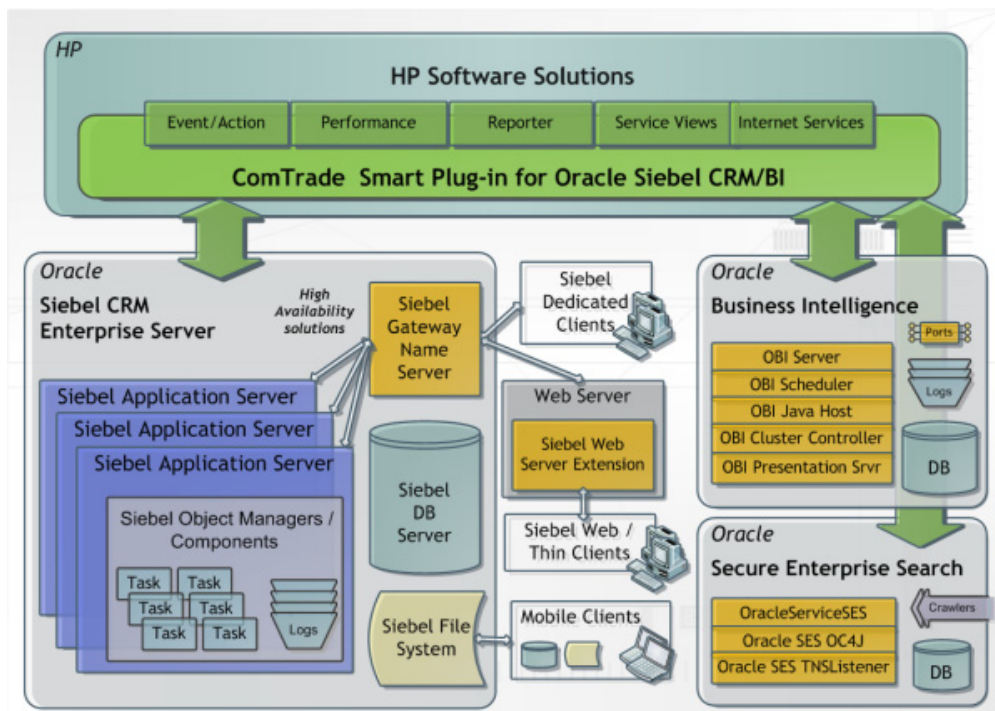
Additional benefits of using SPI for Siebel include the following:

- **Easy installation.** The standard HPOM user interface is used for all administration and configuration tasks. SPI for Siebel also uses well-known installation procedures.
- **Seamless integration into your environment.** As a pre-configured software module, SPI for Siebel "plugs into" HP Software automatically and provides an efficient and productive link between the applications that run on your server and other server applications.
- **Consistent performance.** Because SPI for Siebel runs on standard hardware, monitoring of the Siebel system has a low impact on system performance.
- **Dependable usage.** Operators are notified when errors occur. Additionally, backup is handled through the HP Software environment.
- **Built-in security features.** SPI for Siebel is compatible with the security features pre-established in the HP Software environment.
- **Comprehensive reports.** SPI for Siebel generates detailed reports on: server, database and component activity and status; remote user client synchronization history and status; event/action history; and Siebel Web Server Extensions.
- **Includes an Intelligent Smart Probe.** This feature measures customer experience when they use the software.

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## High-Level Architecture

Below is the high-level diagram of SPI for Siebel architecture.



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## Quick Introduction to SPI for Siebel

The main components of SPI for Siebel include the following:

- HP Operations Manager Policies
- HP Operations Manager Tools
- HP Operations Manager Service Map
- HP Performance Manager Graphs
- HP Reporter Reports

For a complete list and descriptions of policies, tools, and graphs, refer to the *SPI for Siebel Quick Reference Guide*.

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## Policies

Policies instruct HP Operations Manager engines how to solve system management issues, for example, “Monitor CPU Utilization”.

SPI for Siebel policies enable you to define complex rules and instructions for monitoring different systems and services. Policies are instructions for HP Operations Manager (HPOM) agents that monitor your Siebel environment. When an issue is detected, a message is sent to the HPOM console.

In addition, you can define automated actions to be performed upon detecting a specific issue, or include instructions for operators as part of the message. Every policy can start automatic or operator initiated action when issue is detected. You can check which actions were launched when issue was detected, and check the action outcome in the message annotation.

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## SPI for Siebel Policies and Policy Groups

When you install SPI for Siebel, a new top level policy group is added in the HPOM administrator GUI.

The **SPI for Siebel** policy group contains all policies, used for managing your Oracle Siebel CRM and BI environment. It contains the following main policy groups:

- SIEBSPI-Actuate e.Reporting Server
- SIEBSPI-Business Intelligence
- SIEBSPI-Oracle Secure Enterprise Search

- SIEBSPI-Oracle Siebel CRM
- SIEBSPI-Resonate Central Dispatch
- SIEBSPI-Web Servers

### **SIEBSPI-Actuate e.Reporting Server**

This policy group should only be installed on a node where the Actuate Reporting Server is installed.

### **SIEBSPI-Business Intelligence**

This policy group should be installed on a node where Oracle Business Intelligence or Siebel Analytics is installed. It contains two subgroups depending on the Business Intelligence product (SIEBSPI-Oracle Business Intelligence or SIEBSPI-Siebel Analytics), where you can find the following policy groups:

#### **SIEBSPI-OB Performance Data or SIEBSPI-SA Performance Data**

This policy group contains policies for collecting performance data, used in HP Performance Manager or HP Reporter.

#### **SIEBSPI-OB Presentation Server or SIEBSPI-SA Web Server**

This policy group contains policies that should be installed on a node where OBI Presentation Server or SA Web Server is installed.

#### **SIEBSPI-OB Scheduler or SIEBSPI-SA Scheduler**

This policy group contains policies that should be installed on a node where OBI Scheduler or SA Scheduler is installed.

#### **SIEBSPI-OB Server or SIEBSPI-SA Server**

This policy group contains policies that should be installed on a node where OBI Server or SA Server is installed.

### **SIEBSPI-Oracle Secure Enterprise Search**

This policy group should only be installed on a node where the Oracle Secure Enterprise Search is installed.

### **SIEBSPI-Oracle Siebel CRM**

This policy group contains the following policy groups:

#### **SIEBSPI-Internal**

This policy group contains policies that intercept internal siebspi messages.

### **SIEBSPI-Siebel Application Server**

This policy group should only be installed on a node where the Siebel Application Server is installed. It contains the following policy groups:

- . SIEBSPI-Autodiscovery
- . SIEBSPI-Mobile Clients and Backlogs
- . SIEBSPI-Siebel Components
- . SIEBSPI-Siebel Database
- . SIEBSPI-Siebel Log Files
- . SIEBSPI-Siebel Server Base
- . SIEBSPI-Siebel Server Performance Data
- . SIEBSPI-Siebel Users Activity
- . SIEBSPI-Statistics Metrics

### **SIEBSPI-Siebel Gateway Server**

This policy group should only be installed on a node where the Siebel Gateway server is installed.

### **SIEBSPI-Siebel Remote Client**

This policy group should only be installed on a node where a Siebel remote (mobile) client is installed.

### **SIEBSPI-Siebel Web Server Extension**

This policy group should only be installed on a node where the Siebel Web server extension is installed.

### **SIEBSPI-Smart Probe**

This policy group should only be installed on the nodes where the Siebel server or dedicated clients are installed.

### **SIEBSPI-Resonate Central Dispatch**

This policy group should be installed on all nodes in the Siebel enterprise where Resonate Central Dispatch is installed. Typically, these are the nodes where the Siebel server and gateway are installed.

### **SIEBSPI-Web Servers**

This policy group should only be installed on a node where the Siebel Web server is installed. It contains the following policy groups:

- SIEBSPI-Apache Tomcat
- SIEBSPI-IBM HTTP Web Server
- SIEBSPI-Microsoft IIS
- SIEBSPI-Sun ONE Web Server

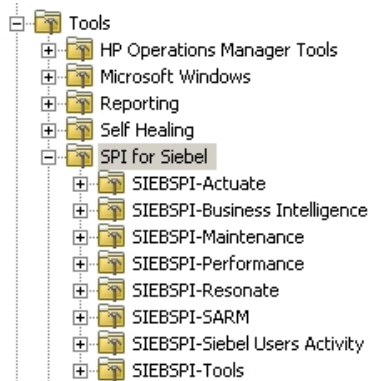
Refer to the Technical Sales Reference Guide for ComTrade Smart Plug-ins manual for more information about all available policies and policy groups.

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## Tools

SPI for Siebel supplies powerful tools for monitoring and managing your Siebel environment. SPI for Siebel enable you to inspect, analyze, and manage your Siebel environment, check the current status of the environment, and react to issues in your environment.

When you install SPI for Siebel, a new top level tool group is added in the HPOM administrator GUI.



The **SPI for Siebel** tool group contains all tools, used for managing your Siebel environment. It contains the following tool groups:

- SIEBSPI-Actuate
- SIEBSPI-Business Intelligence
- SIEBSPI-Maintenance
- SIEBSPI-Performance
- SIEBSPI-Resonate
- SIEBSPI-SARM
- SIEBSPI-Siebel Users Activity

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## Running Tools in Tool Groups

SPI for Siebel contains many tools, for example, tools for configuring SPI for Siebel, starting Siebel servers, tasks, and so on.

Most tools must be run as **Start Customized**, so you can add or change additional parameters. For example, if you want to start the Siebel server named `myserver`, use the Start Server tool with an additional parameter:

`-start_server "myserver"`

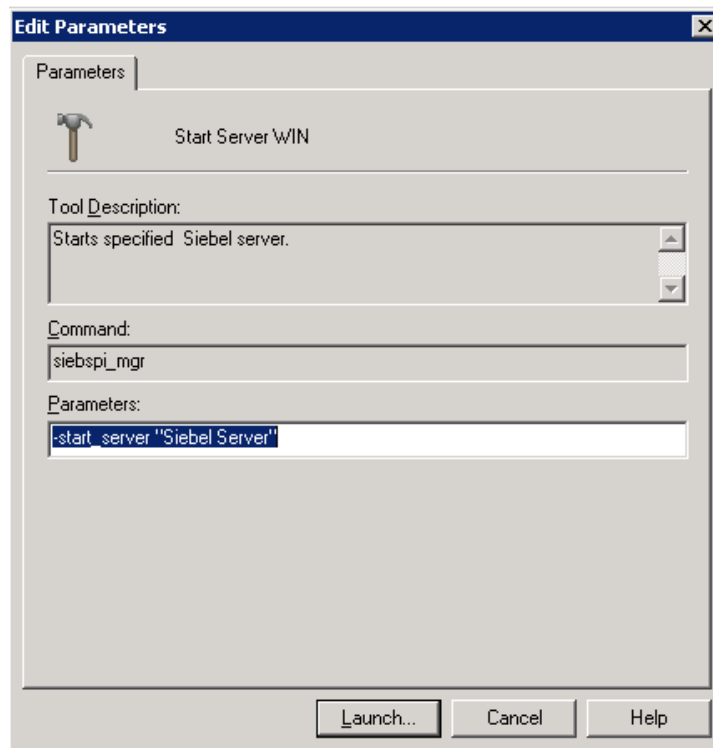
*Example:*

From the **SPI for Siebel/SIEBSPI-Tools** tool group, run the **SIEBSPI-Start Siebel Server** tool.

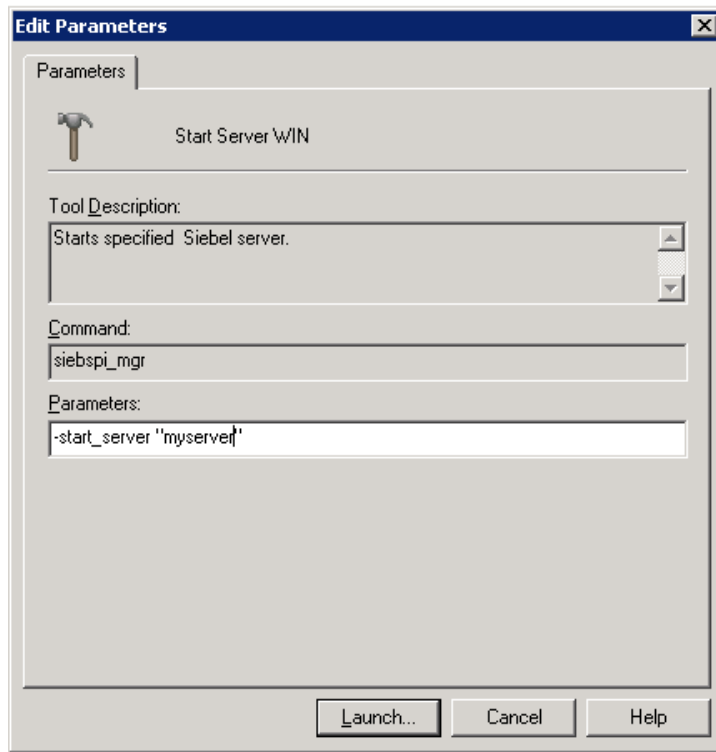
To run the **SIEBSPI-Start Siebel Server** tool, perform the following steps:

1. In the right window pane, double-click **Start Server**. The *Select where to launch this tool window* opens.

2. In the *Select where to launch this tool* window, select a node then click [Launch]. An *Edit Parameters* window opens:



3. In the **Parameters:** field, change the "Siebel Server" value to "myserver", as indicated below:



4. Click **Launch** and wait for the tool to execute.

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## NOTE

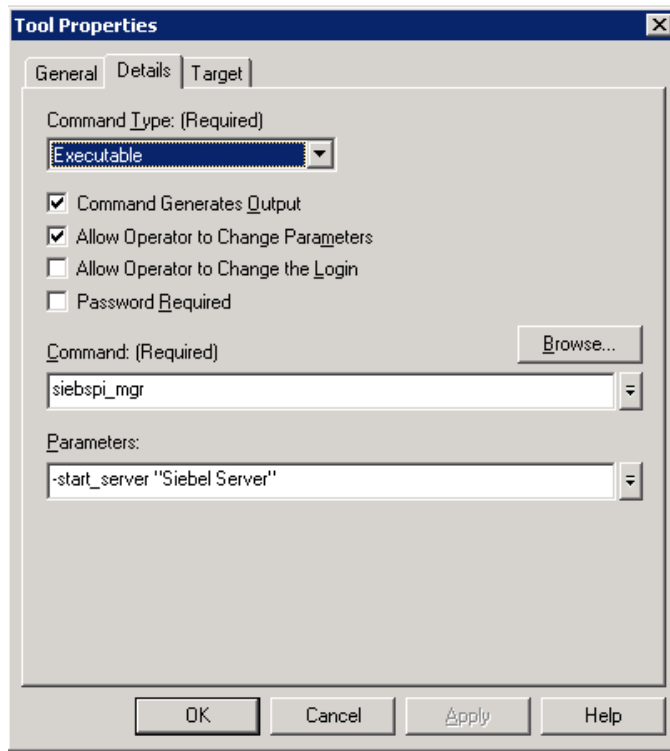
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You can customize tools to change parameters to fixed values. This can be done to enlarge your tool group with new tools, for example, "Start Server myserver1", "Start Server myserver2", and so on.

Example:

1. From the menu bar, select **Action**, followed by **Configure**, and then **Tools**. The *Configure Tools* window opens.

2. In the *Configure Tools* window, select the tool that you want to change and double-click it. The *Tool Properties* dialog box opens:



Change the tool properties as appropriate, and confirm the changes by clicking [OK].

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## Reports

SPI for Siebel also offers report functionality, where collected performance data can be represented in web-based reports. SPI for Siebel integrates HP Reporter.

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## Services Map

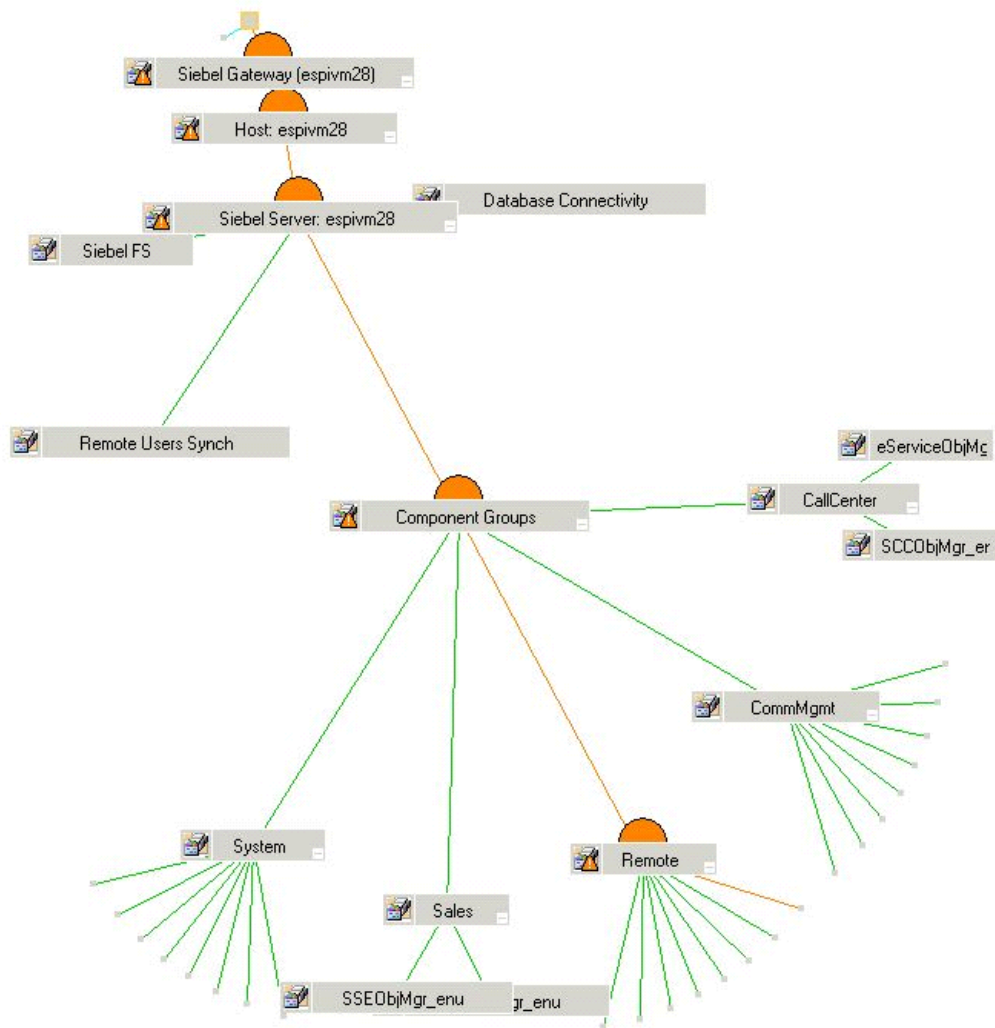
HP Service Map View is a component of the HP Operations Manager GUI. This component enables you to manage your IT (information technology) environment while focusing on the IT services that you provide.

SPI for Siebel provides support for Service Navigator. It automatically generates a Siebel service map of the Siebel enterprise configuration, which offers complete graphical representation of your Siebel environment and its hierarchical organization. All Siebel object types (Siebel Servers, Gateway Name Servers, Components, Web Server Extensions, Actuate Reporter Server, and so on) in your environment are displayed in a tree view, which shows the components and their hierarchical dependencies.

In addition, graphical representation of your Siebel environment clearly indicates relations between Siebel environment components, how they impact one another, and which business services are affected. This enables you to effectively manage services within your information technology framework.

## An example of a service map view:

View in display: Contains or Uses





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## Chapter 3

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### Setting Up the Environment

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## Setting Up the Siebel Environment

SPI for Siebel enables you to monitor and manage your Siebel environment from one, centralized point. For this purpose Siebel Servers are added as managed nodes on the HPOM management server.

Setting up your Siebel environment involves installing, licensing, and configuring SPI for Siebel on the HPOM management server and on the managed nodes. For more information on how to install, license and configure managed nodes refer to *SPI for Siebel Installation and Configuration Guide*.

When you successfully configured your environment, you can start using the SPI for Siebel product. For procedural information on how to:

- perform autodiscovery of Siebel components and update your configuration, refer to [“Mapping the Siebel Environment” on page 29](#)
- configure SPI for Siebel reporting functionality, refer to [“SPI for Siebel Integration with HP Reporter” on page 112](#).

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## Mapping the Siebel Environment

SPI for Siebel integrates HPOM Services and supports Service View. HPOM Services is a component of the HPOM GUI. It automatically generates services MOF file of your Siebel enterprise configuration. This component enables you to manage your IT environment while focusing on the IT services that you provide.

SPI for Siebel offers complete graphical representation of your Siebel environment and its hierarchical organization. All Siebel object types (Siebel Servers, Gateway Name Servers, Components, Web Server Extensions, Actuate Reporter Server, and so on) in your environment are displayed in a tree view, which shows the components and their hierarchical dependencies.

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### NOTE

**For additional information on the HP Operations Manager Services, refer to the HP Operations Manager manuals.**

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## Autodiscovery

SPI for Siebel offers autodiscovery of the Oracle's Siebel Business Applications topology, comprising different Siebel object types and their dependencies. As a result, it graphically displays the business impact of Siebel lower-level components, their failures, or performance degradations.

SPI for Siebel tool group contains a tool that performs discovery of the Siebel enterprise configuration. Additionally, it monitors the configuration. If the discovered configuration has changed, a message is sent to the management server, which is automatically acknowledged if the automatic action has completed successfully. Autodiscovery must be performed on the Siebel Server managed node. Autodiscovery on one Siebel Server in Siebel Enterprise performs discovery for the whole Siebel Enterprise. All Siebel Servers and Siebel Gateway that are part of the discovered Siebel Enterprise are added to a service tree. For more information about autodiscovery, refer to the *SPI for Siebel Quick Reference Guide*, to the `SIEBSPI_ENTERPRISE_CONFIGURATION` policy description.

If you want Web Servers with the Siebel Web Server Extension (SWSE) installed also to appear in a service tree, you need to add these nodes to configuration on the Siebel Server where autodiscovery will be performed. `SPI for Siebel` tool group contains a tool **SIEBSPI-Add SWSE nodes to Autodisc.** that will add SWSE nodes to autodiscovery of the Siebel enterprise configuration.

To perform autodiscovery, perform the following steps:

1. Assign the policy group **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Autodiscovery** to a node where the Siebel server is installed, and install the policy group to the node.
2. If you want SWSE nodes to appear in a service tree, run the **SIEBSPI-Add SWSE nodes to Autodisc.** tool on that node. Before performing autodiscovery, edit the tool parameter `swe_nodes` and type the nodes names, for example:  
`-swe_nodes "node1,node2"`
3. Run the **SIEBSPI-Autodiscovery** tool on that node.

In the *Message Browser* window, you can check whether the autodiscovery was successful or not.

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## NOTE

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**You should only assign autodiscovery policies to one node in the Siebel enterprise where the Siebel Server is installed. Additionally, to perform an autodiscovery, the policy group SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Autodiscovery must be deployed on the node where the Siebel Application Server is installed.**

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## Adding Additional Services in Service Map

If you want to include additional services in your Service Map, you can manually add them in the existing Service Map that was discovered by Autodiscovery.

To do this, execute the **Action | Configure | Services** command from the HPOM Console. For detailed information about adding services into Service Map, refer to the HP Operations Manager manuals.

Every service requires its own unique Service ID. Service IDs are defined in the policies. You can discover a Service ID by inspecting the appropriate policy for which you want to create a new service. Service IDs in Service Map should not contain any HP Operations Manager variables (for example, `<MSG_NODE_NAME>`), such as Service IDs in policies. When putting a Service ID into the Service Map, replace all variables with the actual variable values.

*Example: Creating a service for monitoring the Siebel Web Server Extension*

Service ID in the `SIEBSPI_WEB_SERVER_STATUS` policy is:

`<MSG_NODE_NAME>:SIEBEL_WEB_SERVER`

When creating a service in the Service Map, replace the variable with the variable value. Service ID (if node name is MYCOMPUTER) is:

MYCOMPUTER:SIEBEL\_WEB\_SERVER

You must use this value as a Service ID in Service Map.

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## NOTE

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**The same approach is applicable also for adding Actuate Reporter.**

Another way of discovering the actual Service ID is by inspecting the message in the HP Operations Manager Message Browser. You can do this by double-clicking the message and selecting the **General** tab, where you can see the actual Service ID. You should use the same Service ID when adding a new service in the Service Map.

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## The SPI for Siebel Support Tool

This tool is installed on the managed node and is implemented to help the support of SPI for Siebel. It collects statistics and log files from the system for easy submission to the Support Department. To use the tool, login to the management node and run it from the command-line.

### Tool locations:

- Solaris: /opt/ov/siebspi/support/siebspi\_supp
- AIX: /usr/lpp/ov/siebspi/support/siebspi\_supp
- Windows (DCE agent): C:\Program Files\HP OpenView\Installed Packages\{790C06B4-844E-11D2-972B-080009EF8C2A}\siebspi\support\siebspi\_supp.exe
- Windows (HTTPS agent): C:\Program Files\HP Openview\siebspi\support\siebspi\_supp.exe

### Collected log files locations:

- Solaris: /var/opt/ov/siebspi/supplog/siebspi\_supplog.tar.Z
- AIX: /var/lpp/ov/siebspi/supplog/siebspi\_supplog.tar.Z
- Windows (DCE agent): C:\Program Files\HP OpenView\Installed Packages\{790C06B4-844E-11D2-972B-080009EF8C2A}\siebspi\supplog\\*.\*
- Windows (HTTPS agent): C:\Program Files\HP Openview\siebspi\supplog\\*.\*

### Usage:

siebspi\_supp -status|-collect

status	Collects and displays statistical data about the installed SPI for Siebel files, the HP agent and the operating system including detailed information on the following: <ul style="list-style-type: none"><li>- The version of the SPI</li><li>- HP Agent status</li><li>- Operating system statistics</li></ul>
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- Deployed policies
- Running processes
- Installed software

#### `collect`

Collects and saves log files, statistical data about the installed SPI for Siebel files, the HP agent and the operating system in the <OvAgetDir>\siebspi\supplog directory on the node for easy submission to the Support Department

Collected detailed information includes the following:

- The version of the SPI
- HP Agent status
- Operating system statistics
- Deployed policies
- Running processes
- Installed software



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## Chapter 4

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# **Monitoring the Availability of all Key Components of the Siebel Environment**

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## About Monitoring the Availability

SPI for Siebel monitors availability of all key components in your Siebel Environment. These are the components that Siebel requires for correct operation. The key components are:

- Siebel Server service/daemon
- Gateway service/daemon
- Siebel Database
- Siebel shared file system
- Web services/daemons

### **Siebel Server Service/Daemon**

To monitor availability of the Siebel Server service/daemon on a Siebel Application server, deploy `SIEBSPI_SERVER_PROCESS` and `SIEBSPI_SERVER_PROCESS_EXT` policies to the Siebel Application server.

To monitor availability of the Siebel Server and Siebel Gateway server from a Siebel server, deploy `SIEBSPI_SERVER_AVAILABILITY` and `SIEBSPI_SERVER_AVAILABILITY_EXT` policies to the Siebel Application server.

### **Gateway Service/Daemon**

To monitor availability of the Gateway service/daemon on a Siebel Gateway server, deploy the `SIEBSPI_GATEWAY_PROCESS` policy to the Gateway server.

### **Siebel Database**

To monitor availability of the Siebel Database from a Siebel server, deploy the `SIEBSPI_DB_CONNECTIVITY` policy to the Siebel Application server.

### **Siebel Shared File System**

To monitor availability of the Siebel shared file system from a Siebel server, deploy the `SIEBSPI_SIEBEL_FS` and `SIEBSPI_SIEBEL_FS_EXT` policies to the Siebel Application server.

### **Web Services/Daemons**

To monitor availability of all Web services/daemons on a Web server that is needed for Siebel Web Server Extension to work correctly, deploy `SIEBSPI_WEB_WIN_SERVER_STATUS`, `SIEBSPI_TOMCAT_PROCESS`, `SIEBSPI_WEB_SUN60_SERVER_STATUS`, `SIEBSPI_WEB_SUN61_SERVER_STATUS`, or `SIEBSPI_WEB_IBM_HTTP_SERVER_STATUS` policies to the Siebel Web Server Extension system.

In policies that check availability of the Siebel related services and daemons, you can configure operator initiated or automatic actions to restart the unavailable service or daemon.



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## **Chapter 5**

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# **Monitoring Siebel Log Files**

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## About Monitoring Siebel Log Files

SPI for Siebel checks for errors in the most important Siebel log files within the following components:

- Siebel Gateway
- Siebel Server
- Siebel Web Server
- Siebel Server Components

You can extend this functionality to monitor any log file on a system.

If a condition in the log file is met, a message is displayed in the message browser. By default, only Siebel messages with the following severity are sent:

- Fatal error
- Error

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## Siebel Gateway and Server Log Files

For the Siebel gateway and server log files, you can change the severity of messages in the log files that are reported, for example, warning, info, and so on. To perform this action, modify the following policies:

- SIEBSPI\_GATEWAY\_LOG and SIEBSPI\_GATEWAY\_LOG\_EXT (check NameSrvr.log)
- SIEBSPI\_SERVER\_LOG and SIEBSPI\_SERVER\_LOG\_EXT (check SiebSrvr.log)
- SIEBSPI\_SERVER\_EVENT\_LOG and SIEBSPI\_SERVER\_EVENT\_LOG\_EXT (check "<SiebEntName>\_<Server\_Name>.log")

To modify a policy, perform the following steps:

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### NOTE

**Make sure that the Siebel gateway log file exists. In Siebel, version 6.0.1, there is no gateway log file available.**

1. Log in as the HPOM Administrator.
2. Select **Policy management**, followed by **Policy groups** and then **SPI for Siebel**.
3. Select the **SIEBSPI-Oracle Siebel CRM** policy group.
4. Locate and right-click the required policy:
  - For Gateway Log: The SIEBSPI\_GATEWAY\_LOG policy in the **SIEBSPI-Siebel**

**Gateway Server** policy group.

- For Server Log: In the **SIEBSPI-Siebel Application Server/SIEBSPI-Siebel Server Base** policy group, select the SIEBSPI\_SERVER\_LOG policy for the Siebel server log file or the SIEBSPI\_SERVER\_EVENT\_LOG for the Siebel server event log file.

5. In the menu select **All Tasks** and click **Edit**. A new window opens.
6. In the *Program parameters, Program name\** text box, add the -s severity option and specify the required severity level. For example:  
`siebspi_extmon -srvr -m SIEBSPI_SERVER_LOG -s 3`

The default severity level is 2. You can set one of the following severity levels:

- 0: No errors are reported
- 1: Only fatal errors are reported
- 2: Errors and fatal errors are reported
- 3: warnings, errors and fatal errors are reported
- 4: Info, warnings, errors and fatal errors are reported
- 5: Details, info, warnings, errors and fatal errors are reported

## Specifying Log File Location

If the Siebel gateway or server is installed on UNIX systems, you may receive a message indicating that the log file could not be found. If this occurs, add the **path** option. To do this, perform the following steps:

1. Follow the steps 1 to 6 as described in the previous procedure.
2. In the *Monitor Program Name*, add the -p parameter and set the path. Note that "path" is the root path where the Siebel application is installed, for example, c:\sba80 for windows or /opt/siebel for UNIX.

*Example:*

```
siebspi_extmon -srvr -m SIEBSPI_SERVER_LOG -p /opt/siebel
```

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### NOTE

If a message from SIEBSPI\_SERVER\_EVENT\_LOG is received in the message browser, an operator-initiated action, which displays a detailed log of the Siebel component that produced the error, can be executed.

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## Siebel Server Component Log Files

To monitor component log files, use the following policies:

- SIEBSPI\_SERVER\_REQ\_BROKER\_LOG, Service Request Broker

- SIEBSPI\_SC\_BROKER\_LOG, Siebel Connection Broker
- SIEBSPI\_SERVER\_MGR\_LOG, Siebel Server Manager

To add a policy, perform the following steps:

1. Log in as the HPOM Administrator.
2. Select **Policy management**, followed by **Policy groups** and then **SPI for Siebel**.
3. Select the **SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Siebel Log Files/ SIEBSPI-System Management Logs** policy group.
4. Locate and right-click the required policy, for example:  
SIEBSPI\_SERVER\_REQ\_BROKER\_LOG
5. Change the log path file name to:  
`<`siebspi_logn -l logfile -file SCCobjMgr_enu`>`
6. Save as SIEBSPI\_SCC\_OBJ\_MGR\_LOG. You can create a new policy group **SIEBSPI-Call Center Logs**.

### Adding or changing rules

To add, or change a rule:

1. Select **Rules** Tab, select a rule and click **Copy**.
2. Click **Modify...**, change the **Rule description** to "Generic Error".
3. To change the text of message or its severity, select **Actions** tab.

### Customizing policies to monitor log files

To monitor log files, change the log path files to

```
"<`siebspi_logn -l logfile -path d:\sba80\siebsrvr\bin -file system -
exten txt`>".
```

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## Monitoring Siebel Flight Data Recorder (FDR) Files

FDR files help you discover what happened before a system or a component server failure. These files have a .fdr extension and are located in:

SIEBEL\_ROOT/siebsrvr/bin

To monitor the FDR files, use the SIEBSPI\_FDR\_FILES\_EXT or SIEBSPI\_FDR\_FILES policy, located in the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Siebel Log Files** policy group.

To limit the number of arriving messages, set the optional parameter `max_log_msgs` (default value is 5).

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## Monitoring Siebel Crash Files

SPI for Siebel can monitor crash files on Siebel Application Servers on all Siebel platforms. Siebel Administrators can immediately respond to a component failure. When the Siebel server component failure occurs on a Siebel system, a “crash” file is created. For each component failure, one “crash” file is created. This file contains detailed information about the process and thread that caused the failure and other useful information. Administrator will be immediately informed that the new crash file is appearing. A `crash_*.txt` file on Microsoft Windows platforms, and “core.\*” or “core” file on UNIX platforms.

You can find information about the latest component failure on the system in the following location:

`SIEBEL_HOME\siebsrvr\bin`

The `SIEBSPI_CRASH_FILES` and `SIEBSPI_CRASH_FILES_EXT` files are located in the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Siebel Log Files** policy group.

## Customizing Policies to Monitor Crash Files

You can customize the file name, extension, and path searching conditions using parameters `file`, `exten`, and `path` in the “Program name” field of the `SIEBSPI_CRASH_FILES` policy.

To limit the number of arriving messages, use the optional parameter `max_log_msgs` (default value is 5).

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## Siebel Web Server Log File

SPI for Siebel monitors the log files for IIS on Windows and SUN One Web Server on Sun managed nodes. Only errors are reported in the HPOM message browser. To view the line in the Siebel Web server log file that produced the message, double-click the message in the message browser and click **Show Original Message**.

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## Resonate Log File

Central Dispatch records all of its activities in log files stored on each node in the Central Dispatch site.

The `SIEBSPI_RCD_AGT_LOG` file policy catches Resonate Central Dispatch Agent log file messages with severity 3 (normal), 2 (warning), and 1 and 0 (critical).

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## Actuate Report Server Log Files

The Actuate Report Server log files contain information on report server errors. The report server generates the file name using the process name, a report server generated integer, and date and time. The following is an example view server diagnostic log name:

viewsrv6.exe.1824.2002FEB08\_09\_35\_02\_Pacific\_Standard\_Time.1.log

The SIEBSPI\_RPT\_SRVR\_LOG file policy catches report server log file messages with severity Fatal, Severe, and Warning.

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## Advanced Options for Monitoring Siebel Log Files and Task Issues

### How to Set Rules in SPI for Siebel to Filter Error Messages

Some errors that are reported with SPI for Siebel may not be important to you. If you do not want to get messages about these errors displayed in the message browser, you can set rules so that SPI for Siebel is able to filter task errors and errors found in Siebel log files to report only errors that are important to you.

The following policies are now able to ignore the specified messages:

- SIEBSPI\_SERVER\_EVENT\_LOG
- SIEBSPI\_SERVER\_LOG
- SIEBSPI\_GATEWAY\_LOG
- Any policy that is monitoring Siebel component and sends results to SIEBSPI\_CHECK\_TASKS\_EXT, for example SIEBSPI\_SCC\_OBJ\_MGR\_COMPONENT or SIEBSPI\_REQ\_PROC\_COMPONENT

For SPI for Siebel to be able to ignore some messages, perform the following steps:

1. Create a text file with the rules. The file can be stored on the managed node on any location on the disk. If it is stored in the SPI for Siebel configuration directory {OVAgent InstallDir}/siebspi/conf, the short name in the -rules parameter is enough. If it is stored on any other location on the disk, the full path is required. The file may contain several rules. Every single line in the file contains one string or regular expression.

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### NOTE

For regular expression syntax, refer to [“Regular Expression Syntax” on page 176](#).

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2. You can use this functionality in two ways:

- In the file, specify all messages that you do not want to receive and change the program parameters in the policy by adding the following parameters:  
-rules <file name>

All the error messages that match the rules defined in the C:\rules.txt file will be ignored.

- In the file, specify all messages that ONLY you want to receive (others will be ignored) and change the program parameters in the policy by adding the following parameters:  
-rules <file name> [-send\_filtered]

All the error messages that match the rules defined in the C:\rules.txt file will be sent to the HPOM console.

3. Deploy any of the policies listed above that were changed.

*Example: How to set the rules to ignore some messages from the Siebel Gateway log file*

In this example, we are getting error messages from the Siebel Gateway log file, which we want to ignore. The following entries are in the Gateway log file:

```
SisnTcpIp      SisnSockError 1      0      2010-06-30 16:34:03 3328: [TCPIP-  
server] recv() failed for sd=656 (err=10054 | An existing connection was forcibly  
closed by the remote host (peer).)
```

```
SisnTcpIpSisnSockError      1      0      2010-06-30 16:34:03 4028:  
[TCPIP-server] recv() failed for sd=708 (err=10054 | An existing  
connection was forcibly closed by the remote host (peer).)
```

The message is then displayed in the HPOM message browser. To ignore this message, perform the following steps:

1. Create the {OVAgent InstallDir}/siebspi/conf/rules.txt file on managed node with the following content:  
.\*An existing connection was forcibly closed by the remote host.\*
2. Change the program parameters in the SIEBSPI\_GATEWAY\_LOG policy:  
siebspi\_extmon -m SIEBSPI\_GATEWAY\_LOG -gtwy -rules rules.txt
3. Deploy the modified policy to the Siebel Gateway server system.



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## **Chapter 6**

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# **Monitoring Siebel Components and Tasks**

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## About Monitoring Siebel Components and Tasks

SPI for Siebel offers monitoring of components and tasks. Components are checked for changes in their status, for example, online and offline, while tasks are monitored for errors in their exit status and for the minimum and maximum number of running tasks.

---

### Monitoring Siebel Components and Tasks

Monitor policies for Siebel components automatically monitor different language versions of specified Siebel component. In case you do not want or do not need to monitor components in specific language versions, change the monitor policy for that specific component using the `-skip_lang` parameter.

To monitor the components and their tasks, assign and install policies from the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Server Components** policy group on all components that you want to monitor. In addition, the following policies from the same group must also be assigned and installed:

To monitor the tasks exit status, install the following:

- SIEBSPI\_CHECK\_TASKS\_EXT

To monitor the component status, install the following:

- SIEBSPI\_COMP\_STATUS\_EXT

To monitor the maximum number of running tasks on components, install the following:

- SIEBSPI\_NUM\_TASKS\_TOO\_HIGH\_EXT

To monitor the minimum number of running tasks on components, install the following:

- SIEBSPI\_NUM\_TASKS\_TOO\_LOW\_EXT

If you want to collect performance data for the component, you can specify this with a parameter as described below.

By default, both the change of component status and task exit status are checked. However, you can disable one of them by deleting a parameter in the *Monitor Program Name* of the policy.

The following table describes the parameters:

Parameter	What is monitored
-status	Status of the component
-min_tasks N	Minimum tasks for the component; N specifies the min threshold
-max_tasks	Maximum tasks for the component
-task_exit	Task exit status
-perf	Collect performance information for the component
-skip_lang "lang1, lang2...	Ignore the components ending with specified language extensions

If you do not want to monitor the status of the components and the exit status of tasks, you do not need to install both (SIEBSPI\_CHECK\_TASKS\_EXT and SIEBSPI\_COMP\_STATUS\_EXT) monitor policies. Assign and install only the required one.

When monitoring the task exit status, you can also use the following feature: In the message browser, when a message that a task has exited with error is reported, you can start an operator-initiated action to list the log file contents of the Siebel server task which produced the message as an annotation to the message.

---

## NOTE

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**It is not recommended to deploy more than 10 policies for Siebel components containing -perf parameter on one managed node.**

Below is an example of how to modify a monitor policy to monitor only the component status changes of the Transaction Merger component:

1. Select **Policy management**, followed by **Policy groups**.
2. Go to **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Siebel Components/SIEBSPI-Siebel Remote** policy group.
3. In the right window pane, right-click the SIEBSPI\_TXN\_MERGE\_COMPONENT policy.
4. In the menu click **All Tasks** and then **Edit**. The *SIEBSPI\_TXT\_MERGE\_COMPONENT [ 3.x] (Measurement Threshold)* window opens.
5. In the *Program parameters, Program name\** text box, modify the command line:  
`siebspi_extmon -srvr -m SIEBSPI_TXN_MERGE_COMPONENT -component`

"Transaction Merger" -status

6. Click [Save and Close] to commit the changes and exit the window.

---

## NOTE

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**For the changes to take effect, you must deploy the modified policy on a node where the Siebel server is installed.**

---

## Adding a Policy for Monitoring Server Statistic Metrics

SPI for Siebel can monitor Siebel Server and Component statistics on Windows and Unix platforms.

This policy group **SIEBSPI-Statistics Metrics** is located in the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server** policy group with the following policies:

- SIEBSPI\_SERVER\_STATS
- SIEBSPI\_SERVER\_STATS\_EXT
- SIEBSPI\_COMPONENT\_STATS
- SIEBSPI\_COMPONENT\_STATS\_EXT

---

## NOTE

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SIEBSPI\_COMPONENT\_STATS has additional parameter 'component' for component name:

```
siebspi_extmon -mon SIEBSPI_COMPONENT_STATS -stats_list "AvgConnTime  
AvgSQLExecTime" -component "comp. alias e.g. SCCObjMgr_enu"
```

Additional statistics names (aliases) can be gathered from Siebel Server Manager (srvrmgr), with following command:

```
list statistics for server 'siebelservername' component 'componentname'  
under the STAT_ALIAS column.
```

*Example:*

How to add a policy for monitoring statistic metrics NumDBConnRtrs and NumDLRbkRtrs for the Siebel Application Server:

1. Select **Policy management**, followed by **Policy groups**.
2. Go to the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Statistics Metrics** tool group.
3. In the right window pane, right-click the **SIEBSPI\_SERVER\_STATS** policy.

4. In the menu click **All Tasks** and then **Edit**. The *SIEBSPI\_SERVER\_STATS [4] (Measurement Threshold)* window opens.
5. In the *Program parameters*, *Program name\** text box, modify the command line:  
`siebspi_extmon -mon SIEBSPI_SERVER_STATS -stats_list "NumDBConnRtrs  
NumDLRbkRtrs TotalTasks"`
6. Click **Save** and **Close** to commit the changes and exit the window.

---

## NOTE

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For the changes to take effect, you must deploy the modified policy on a node where the Siebel server is installed.

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## Advanced Component Monitoring Options

### Changing External Policy Name that will Collect Component Results

By default, all SIEBSPI\_\*\_COMPONENT monitor policies send results to standard Siebel component external monitor policies (SIEBSPI\_CHECK\_TASKS\_EXT, SIEBSPI\_COMP\_STATUS\_EXT, SIEBSPI\_NUM\_TASKS\_TOO\_HIGH\_EXT, SIEBSPI\_NUM\_TASKS\_TOO\_LOW\_EXT) as described in the previous section. The common thresholds, defined in those external monitor policies, are applied to all of them.

In situations when you need to define component specific thresholds, instructions, or actions, you can use the following parameters:

Parameter	Description
-extmon	Custom external monitor policy
-[status2  min_tasks2  max_tasks2  task_exit2]	What should be monitored and sent to the custom external monitor policy

This way you define what should be monitored and to which external monitor policy the results should be sent. You can combine standard parameters and the custom one in one component policy as long as you define custom external policies.

The required postfixes for custom external monitor policies are:

- component status external monitor policy = \*\_CS\_EXT
- task exit status external monitor policy = \*\_TS\_EXT
- number of tasks to low external monitor policy = \*\_TL\_EXT
- number of tasks to high external monitor policy = \*\_TH\_EXT

*Example:*

Siebel component "Workflow Monitor Agent" should send status results to the custom monitor policy `SIEBSPI_WORK_MON_CS_EXT`. Additionally, the number of running tasks (alarm if the number of running tasks: >70%, >90%) should be monitored.

Perform the following steps:

1. Create a copy of the `SIEBSPI_COMP_STATUS_EXT` external policy and save it under `SIEBSPI_WORK_MON_CS_EXT`
2. Customize Thresholds (if required, also: Actions, Instructions, and so on)
3. Customize `SIEBSPI_WORK_MON_COMPONENT` policy command line to:  
`siebspi_extmon -srvr -m SIEBSPI_WORK_MON_COMPONENT -component "Workflow Monitor Agent" -extmon SIEBSPI_WORK_MON -status2 -max_tasks`

## Using Instance Filter in Policies

To define your own thresholds for a specific Siebel component, modify the standard Siebel component external policies (`SIEBSPI_CHECK_TASKS_EXT`, `SIEBSPI_COMP_STATUS_EXT`, `SIEBSPI_NUM_TASKS_TOO_HIGH_EXT`, `SIEBSPI_NUM_TASKS_TOO_LOW_EXT`).

You can define instance filters for a specific Siebel component in each of the above policies (set object name to components alias). Every instance filter defines which thresholds are processed for a specific object name (component alias used). You can use default actions as policies and customize thresholds according to your needs.

*Example:*

You would like to define your own definition in the `NUM_TASKS_TOO_HIGH_EXT` policy for the Siebel Call Center Object Manager component. Alarms should be triggered when the number of running tasks exceeds 50% (minor) and 80% (major) of the component maximum number of running tasks.

To change the policy:

1. Open the `NUM_TASKS_TOO_HIGH_EXT` policy for editing.
2. Click the **Specify instance filters** button.
3. Enter the Rule name and set Object name to Siebel component alias and click [OK].

Default thresholds will be used for this specific Siebel component only. You must write new actions for other Siebel component to be monitored (take default actions as a policy).

## How To Create a New Policy for Monitoring Custom Component

You can create you own policies for monitoring Siebel components that are not provided out-of-the-box.

Perform the following steps:

1. Copy one of the existing policies for component monitoring.
2. Define the same name in the policy command line with the `-m` parameter as the name of the policy:  
`-m <Monitor policy name>`
3. Compare the spelling of the component name (parameter `-component`) in the policy command line with the output from **SIEBSPI-List Components** tool. It is very important that they match.  
`-component "<long Siebel component name in Siebel>"`

*Example:*

New policy name: `SIEBSPI_ECOMM_WIRELESS_COMPONENT`

New policy program name:

`siebspi_extmon -srvr -m SIEBSPI_ECOMM_WIRELESS_COMPONENT -component`

`"eCommunications for Wireless Object Manager (ENU)"`

`-perf -status -task_exit`

## Analyzing Siebel Component Crashes

Sometimes a Siebel server component may crash while it is executing or while it is shutting down. The symptoms vary depending on the type of the component that has crashed. For example, if an Object Manager crashes, all users connected to that Object Manager will be disconnected.

After the crash (or task error), it is very useful for the Siebel administrator to find out who (which user) was responsible for the crash and what the user executed before the crash, so the problem can be analyzed and eliminated.

Note that different Siebel components have different log Event types. With a little modification of log Event types also other components can be traced.

To configure SPI for Siebel to be able to get information about the user and actions responsible for the Siebel component crashes, perform the following steps:

1. Enable user logging for the component:

From the **SPI for Siebel/SIEBSPI-Tools** tool group, launch the **SIEBSPI-Set EventLog Level** tool and change the tool parameters to:

`4 -event_type "ObjMgrSessionLog" -comp "SCCObjMgr_enu"`

2. Enable activity logging for the component:

Launch the **SIEBSPI-Set EventLog Level** tool again and change the tool parameters to:

- ```
4 -event_type "EventContext" -comp "SCCObjMgr_enu"
```
3. Add an automatic action to the SIEBSPI\_CHECK\_TASKS\_EXT policy into the condition task exited with error that will find the user, actions he or she performed, and issues from the task log file:  

```
siebspi_catl -p <$OPTION(logpath)> -c <$OPTION(comp_alias)> -t  
<$OPTION(task_id)>  
-req_exp ".*EventContext|Siebel Id|newUser|Error.*"
```
  4. Deploy the policies to the managed nodes.
  5. Check the message annotation after the component crash (task error) that displays in the message browser and analyze the output.

If you want to reset component logging levels, perform the following steps:

1. Disable user logging for the component:

Launch the **SIEBSPI-Set EventLog Level** tool and change the tool parameters to:

```
1 -event_type "ObjMgrSessionLog" -comp "SCCObjMgr_enu"
```

2. Disable activity logging for the component:

Launch the **SIEBSPI-Set EventLog Level** tool again and change the tool parameters to:

```
1 -event_type "EventContext" -comp "SCCObjMgr_enu"
```

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## Chapter 7

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# **Monitoring Siebel Database, Database Tables, and Records**

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## About Monitoring Siebel Database, Database Tables, and Records

SPI for Siebel provides basic monitoring for database, database tables, and records in your Siebel environment.

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## Monitoring Database Availability, Login Time, and Transaction Time from Siebel Server System

The monitor policy `SIEBSPI_DB_CONNECTIVITY` checks database server availability and connectivity from the Siebel server systems. To obtain the database login time, you can use the `SIEBSPI_DB_LOGIN_TIME` policy.

To obtain the transaction time, `SIEBSPI_DB_TRANSACTION_TIME` runs a synthetic transaction, which is a set of predefined SQL statements.

To obtain the number of open connections to the Siebel database you can use `SIEBSPI_DB_SESSION`. Administrators are notified if real-time response times exceed the predefined monitor thresholds or if the database is not available.

It is also possible to collect this performance data and generate reports that show you potential database problems and slowdowns in time. (for additional information, refer to [“Viewing and Analyzing Historical Data from Collected Performance Data” on page 105](#)). For this purpose you can use performance monitors:

- `SIEBSPI_DB_LOGIN_PERFORMANCE`
- `SIEBSPI_DB_TRANS_PERFORMANCE`
- `SIEBSPI_DB_SESSION_PERFORMANCE`

Users can write their own SQL queries that will be used with the `SIEBSPI_DB_TRANSACTION_TIME` monitor to measure the transaction time of the database. To measure the database transaction with your custom SQL queries, perform the following steps:

1. Save your SQL query into the following directory:  
`{OvAgent InstallDir}/siebspi/conf`
2. Open the `SIEBSPI_DB_TRANSACTION_TIME` policy.
3. Change the program parameters in the policy:  
`siebspi_dbperf -mon SIEBSPI_DB_TRANSACTION_TIME`  
`-transaction -sql_name "your sql name"`  
`-sql_file "SQL file to be executed"`

4. Change the thresholds levels in the policy conditions.
5. Deploy the SIEBSPI\_DB\_TRANSACTION\_TIME policy to the Siebel server system.

To collect the transaction data obtained with your custom SQL queries, follow these instructions:

1. Open the SIEBSPI\_DB\_TRANSACTION\_PERFORMANCE policy.
2. Change the program parameters in the policy:  

```
siebspi_dbperf -mon SIEBSPI_DB_TRANSACTION_PERFORMANCE  
-transaction -sql_name "your sql name"  
-sql_file "SQL file to be executed" -p
```
3. Deploy the SIEBSPI\_DB\_TRANSACTION\_PERFORMANCE policy to the Siebel server system.

---

## Monitoring the Size of the Siebel Database Tables

The SIEBSPI\_WORKFLOW\_BACKLOG and SIEBSPI\_TRANS\_PROCESSOR\_BACKLOG policies in the policy group **SIEBSPI-Mobile Clients and Backlogs** are designed to monitor the size of the Siebel database tables. It is also possible to collect this performance data with the SIEBSPI\_\*\_BACKLOG\_PERF policies and generate reports that show database backlogs trends in time.

It is also possible to monitor a specific table from the Siebel database. Refer to the instructions below about how to create a custom policy to monitor any Siebel database table.

## Monitoring the Transaction Processor Backlog Table

When the **System Preference Docking:Transaction Logging** is TRUE, Oracle's Siebel Business Applications will record transactions to the transaction log table (S\_DOCK\_TXN\_LOG). The Transaction Processor (txnproc) is responsible for deleting entries from this table, once all txnprocs in the system have copied them to the Application server TXNPROC directory. Enterprise visible data will be routed to the active mobile clients. The backlog is the number of transactions in S\_DOCK\_TXN\_LOG. However, a backlog of 1000 transactions is not usually considered a problem.

The SIEBSPI\_TRANS\_PROCESSOR\_BACKLOG (optionally SIEBSPI\_TRANS\_PROCESSOR\_BACKLOG\_PERF) policy must be deployed on the Siebel server system to monitor the size of the S\_DOCK\_TXN\_LOG table.

For more information on transaction processor backlog, see the policy instructions or refer to the *Siebel Remote and Replication Manager Administration Guide*.

## Monitoring the Workflow Policies Backlog Table

When the Workflow policy condition is triggered, a record is inserted in the Escalation Request table, S\_ESCL\_REQ. This table contains all the rows in the database that could trigger a Workflow Policy to take action. After the workflow Monitor Agent processes a request, it removes the row from this table.

If the table becomes very large, this could indicate that the number of policies being monitored is too large and a new Workflow Policies process needs to be created to share the load. If rows are being monitored and are not removed after the time interval is met, this could indicate that a policy was deactivated without removing the database triggers. The triggers continue to send data which is not processed by the Workflow Policies instance.

The SIEBSPI\_WORKFLOW\_BACKLOG (optionally SIEBSPI\_WORKFLOW\_BACKLOG\_PERF) policy must be deployed on the Siebel server system to monitor the size of the S\_ESCL\_REQ table.

For more information on workflow backlog, see the policy instructions or refer to the *Siebel Workflow Administration Guide*.

## Monitoring any Siebel Database Table for Backlogs

To monitor the size of any Siebel database table, perform the following steps:

1. Make a copy of the SIEBSPI\_WORKFLOW\_BACKLOG policy and rename it.
2. Change the program parameters in the policy:  
`siebspi_dbperf -mon "new policy name"  
-backlog_name "your backlog name" -table "table that should be monitored"`
3. Change the threshold levels in the policy conditions.
4. Deploy the new policy to the Siebel server system.

To collect data about the size of your table, perform the following steps:

1. Make a copy of the SIEBSPI\_WORKFLOW\_BACKLOG\_PERF policy and rename it.
2. Change the program parameters in the policy:  
`siebspi_dbperf -mon "new policy name" -backlog_name "your backlog name"  
-table "table that should be monitored" -p`
3. Deploy the new policy to the Siebel server system.

---

## Monitoring the Records Value in the Siebel Database Tables

The SIEBSPI\_SYNCH\_BACKLOG, SIEBSPI\_SYNCH\_BACKLOG\_EXT, SIEBSPI\_TRANS\_MERGER\_BACKLOG, SIEBSPI\_TRANS\_MERGER\_BACKLOG\_EXT, SIEBSPI\_TRANS\_ROUTER\_BACKLOG and SIEBSPI\_TRANS\_ROUTER\_BACKLOG\_EXT policies in the policy group SIEBSPI-Mobile Clients and Backlogs are designed to monitor the synchronization, transaction merger, and transaction router backlogs. It is also possible to collect this performance data with the SIEBSPI\_\*\_BACKLOG\_PERF policies and generate reports that show you database record value trends in time.

These backlogs are extracted from Siebel database with predefined SQL queries, stored in the {OVAgent InstallDir}/siebspi/conf directory.

It is also possible to monitor custom backlogs. Refer to the instructions below on how to create custom policy to monitor the results from your SQL queries.

The difference between this policies and policies in the previous section is that policies in the previous section monitor the number of records in database tables, and policies in this section monitor the value for specific field in each record. For example, the number of hours from last user synchronization for each remote user, or the number of unsynchronized files on server for each remote user.

### Monitoring the SYNCHRONIZATION BACKLOG

Synchronization Backlog indicates that there is a substantial amount of data that must be downloaded by a remote user. Remote users need to synchronize daily to keep the amount of data low. To monitor the number of files that need to be sent to a particular client, deploy the SIEBSPI\_SYNCH\_BACKLOG and SIEBSPI\_SYNCH\_BACKLOG\_EXT (optionally SIEBSPI\_SYNCH\_BACKLOG\_PERF) policies to the Siebel server system.

### Monitoring the TRANSACTION MERGER BACKLOG

Transaction merger backlogs indicate that remote users have made changes on their local databases and uploaded the changes to the server, but these changes have not been committed to the server database yet. A high backlog here indicates that not all changes made by remote users are visible on the server. To monitor the number of files that need to be merged from a particular client, deploy the SIEBSPI\_TRANS\_MERGER\_BACKLOG and SIEBSPI\_TRANS\_MERGER\_BACKLOG\_EXT (optionally SIEBSPI\_TRANS\_MERGER\_BACKLOG\_PERF) policies to the Siebel server system.

## Monitoring the TRANSACTION ROUTER BACKLOG

Transactions are created when data is updated on the server database. These transactions need to be routed to remote users so that they can see the updates. A backlog of transactions indicates that not all of the data has been routed.

To monitor the number of transactions that need to be routed to a particular client, deploy the `SIEBSPI_TRANS_ROUTER_BACKLOG` and `SIEBSPI_TRANS_ROUTER_BACKLOG_EXT` (optionally `SIEBSPI_TRANS_ROUTER_BACKLOG_PERF`) policies to the Siebel server system.

## Monitoring Any Record in Any Siebel Table for the Last Date of Change and if Any Numeric Values Exceed Threshold

Sometimes you would like to know which Siebel workflows are not processed for a certain number of days, which opportunities, contacts, or orders were not changed since the specific date or which opportunities are really big (for example, revenue is more than a certain amount of money). You can get all that information with SPI for Siebel. You can monitor any record in any Siebel table for the last date of change with SPI for Siebel tools and policies.

Use the **SIEBSPI-Pending Workflows** tool in the **SPI for Siebel/SIEBSPI-Performance/SIEBSPI-Mobile Clients and Backlogs** tool group to display workflow requests that are older than the specified number of days.

Use the **SIEBSPI-Inactive Opportunities** tool in the **SPI for Siebel/SIEBSPI-Performance/SIEBSPI-Mobile Clients and Backlogs** tool group to display opportunities that were not changed for more than the specified number of days.

You can also customize the existing tools to monitor any Siebel table for records older than the specified time or records with the value greater than the specified value.

To monitor pending workflow requests, use the `SIEBSPI_WORKFLOW_REQ` and `SIEBSPI_WORKFLOW_REQ_EXT` policies, located in the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Mobile Clients and Backlogs** policy group.

*Example: How to create a tool that will report opportunities with the revenue greater than 10.000\$*

1. Save the SQL query below into the following directory and file on the managed node:

```
{OVAgent InstallDir}/siebspi/conf/siebspi_big_oppty.sql
```

*If you use the Oracle or DB2 database type:*

```
SELECT      'NAME: ' || NAME || ',   ROW_ID: ' || ROW_ID AS OPPORTUNITY,  
SUM_REVN_AMT
```

```
FROM          %DATABASE%.S_OPTY
ORDER BY SUM_REVN_AMT DESC
```

*If you use MS SQL database type:*

```
SELECT      'NAME: ' + NAME + ',      ROW_ID: ' + ROW_ID AS OPPORTUNITY,
SUM_REVN_AMT
FROM          %DATABASE%.S_OPTY
ORDER BY SUM_REVN_AMT DESC
```

2. Make a copy of the Inactive opportunities tool and rename it.
3. Change the program parameters in the tool:

```
siebspi_dbperf -columns 2 -col1 1 -col2 2 -sql_file
siebspi_big_oppty.sql -print -threshold 10000
```

Parameters' descriptions:

- columns**        Number of columns returned by your SQL query, for example, 2
- col1**            Number of column that returns a string value, for example, 1
- col2**            Number of column that returns a float, integer or date-timevalue, for example, 2; this value is then compared to the threshold value.
- sql\_file**        Name of your sql file, for example, siebspi\_synch.sql
- threshold**        Value that must be exceeded by the "col2" value to include record to the list, for example, 300
- threshold\_day**   Include only records with the date value in "col2" older than x days, for example, 30
- threshold\_date**   Include only records with the date value in "col2" older than this date, for example, 10-12-2006

The following two parameters are used in policies, but not in tools:

- ext\_mon**        Policy name, for example, SIEBSPI\_SYNCH\_BACKLOG
- pair**            Name of the backlog, for example, synchBL. This is used just in policies that writes data into performance agent (name ending with \_PERF)

4. Launch the new tool.

Similar procedure can be used to create policies that will report records that exceed threshold into HPOM message browser. You can copy and modify the SIEBSPI\_WORKFLOW\_REQ and SIEBSPI\_WORKFLOW\_REQ\_EXT policies.



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## Chapter 8

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# **Monitoring Siebel Users and Siebel Applications Activity**

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## About Monitoring Siebel Users and Siebel Applications Activity

SPI for Siebel enables you to monitor the usage of different Siebel applications and the users activity.

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### Monitoring Siebel Users that Are Logged into Siebel Application (Object Manager Component)

This functionality includes monitoring the number of users connected to Siebel Applications (Object Manager Components) between two monitor intervals, and the number of active users in monitoring moment. To turn this monitoring on, add a command-line parameter `usercount` into existing or new component monitor policies (only for Object Manager policies).

In addition to the number of users, information on when Siebel users logged in, logged out, and for how long they were connected to a Siebel Application can be collected. To turn this monitoring on, add a command-line parameter `usertime` into existing or new component monitors policies (only for Object Manager policies).

*Example: Modifying the existing "Call Center Object Manager" component*  
`siebspi_extmon -srvr -m SIEBSPI_SCC_OBJ_MGR_COMPONENT -component "Call Center Object Manager" -perf -status -usercount -usertime`

*Example: Creating a new policy for "Call Center Object Manager" component*  
`siebspi_extmon -srvr -m NEW_SCC_OBJ_MGR_COMPONENT -component "Call Center Object Manager" -usercount -usertime`

There are two Performance Manager graph templates available that display the number of users connected to Siebel Applications (Object Manager Components) between two monitor intervals, and the number of active users in monitoring moment. For details, refer to [“Viewing and Analyzing Historical Data from Collected Performance Data” on page 105](#).

You can also check who (which users) is connected to Siebel Application (Object Manager Component) at the moment and what are the users doing with the **SIEBSPI-Users Connected to Object Manager Component** tool that is located in the **SPI for Siebel/SIEBSPI-Siebel Users Activity** tool group. This information is important, for example, if something unusual is happening to the system. It can also be useful to get information about the process PID and task number for each user session in that moment.

The tool outputs the following information:

- component name and alias
- Siebel user name
- login time
- siebmtshmw process PID
- task ID
- last view accessed by user
- last applet accessed by user

Before you use the tool for the first time, you need to modify the tool program parameters with the name of the Object Manager Component for the tool that you want to monitor. For example, for Call Center Object Manager (SCCObjMgr\_enu):  
`-comp "SCCObjMgr_enu"`

If you want to have more tools for different Object Manager Components, you can make a copy of the existing tool and create a new one for each.

There are also web-based reports available that present collected data:

- Users connected to Siebel Applications (Object Manager Components), grouped by users
- Users connected to Siebel Applications (Object Manager Components), grouped by Siebel Applications
- Number of users connected to Siebel Applications (Object Manager Components)

For more information about these reports, refer to [“SPI for Siebel Integration with HP Reporter” on page 112](#).

---

## Monitoring Siebel Users' Last Login Time into Siebel Applications

Sales managers, business managers, and Siebel administrators can require information about the last time when Siebel users were connected into Siebel Applications.

To collect the information on inactive users, you can use the **SIEBSPI-Last Siebel User Login Time** tool. It is located in the **SPI for Siebel/SIEBSPI-Siebel Users Activity** tool group.

For reporting purposes, you can use the policy **SIEBSPI\_USER\_LOGIN\_PERFORMANCE**, located in the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Siebel Users Activity** policy group. By default, this policy collects data on Siebel users last login time on a daily basis.

SPI for Siebel enables you to specify Siebel users not to include in the data collection and reports. The list of excluded users is located in the configuration file:

<OVInstallDir>/siebspi/conf/exclude\_user.cfg

By default, the following users are excluded: GUESTCST, GUESTCP, GUESTTERM, PROXYE, and UNIVERSALQUEUE. You can also deactivate or activate users in the exclusion list by adding or removing the // mark at the beginning of the line.

Available web based report to present the collected data:

- Number of days since last login of Siebel user (Top 50 inactive users)

For more information about this report, refer to [“SPI for Siebel Integration with HP Reporter” on page 112.](#)

---

## Monitoring Last Time When a Siebel User Added or Changed Account, Contact, or Opportunity

Sales managers, business managers, and Siebel administrators can require information about the last time when Siebel users add or change account, contact, or opportunity in Siebel Applications.

To get this information, you can use **SIEBSPI-Last Siebel User Action time** tool from the **SPI for Siebel/SIEBSPI-Siebel Users Activity** tool group.

You can also use the following tools from the **SIEBSPI-Siebel Users Activity** tool group:

- **SIEBSPI-Last Account Change**
- **SIEBSPI-Last Contact Change**
- **SIEBSPI-Last Opportunity Change**

For reporting purposes, you can use the **SIEBSPI\_USER\_ACTION\_PERFORMANCE** policy. It is located in the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Siebel Users Activity** policy group. By default, this policy collects data about Siebel users last action time on a daily basis.

SPI for Siebel enables you to specify Siebel users not to include in the data collection and reports. For more information, refer to [“Monitoring Siebel Users' Last Login Time into Siebel Applications” on page 65.](#)

Available web based report to present the collected data:

- Number of days since last update of account, opportunity or contact (Top 50 inactive Siebel users)

For more information about this report, refer to [“SPI for Siebel Integration with HP Reporter” on page 112.](#)

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## **Chapter 9**

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# **Monitoring Siebel Web Server Extension (SWSE)**

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## About Monitoring Siebel Web Server Extension (SWSE)

The Siebel Web Server Extension, operating on the Web server, connects to the Application Object Manager component operating within the Siebel Server. This connection uses Siebel's application. When accessing Siebel applications using the Web client, no components are hosted on the client. The client interacts through a Web browser.

SPI for Siebel offers tools and policies that help system administrators have a better understanding of the use of the Web server. To report current SWSE data statistics, use the **SIEBSPI-Show SWSE System and Application Statistics** tool from the **SPI for Siebel/SIEBSPI-Performance** tool group.

It outputs the current SWSE data about:

- Average response times  
This event measures the time needed to receive a callback response from the Siebel server. This event functions with CTI and internal login callbacks. A callback is a mechanism used by the Siebel Server to initiate communication with the plug-in.
- Average close session time  
This event reflects the amount of time needed to close a session.
- Average open session time  
This event reflects the amount of time needed to open a session.
- Average request time  
This event is the amount of time needed to submit a request to the Siebel Server and to get a response back. For example, if the user (on the browser) clicked on a button then the plug-in receives the request and invokes a service on the Siebel Server.
- Number of attempts to use the application  
Number of attempts to use the specified Siebel Applications
- Average time it took to open a session to specified application

To monitor this statistic data values, install the following policies from the policy group **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Web Server Extension/SIEBSPI-SWSE Statistics Page**:

- SIEBSPI\_SWSE\_AVERAGE\_APPLICATION\_RESPONSE\_TIME
- SIEBSPI\_SWSE\_AVERAGE\_CLOSE\_SESSION\_TIME
- SIEBSPI\_SWSE\_AVERAGE\_OPEN\_SESSION\_TIME
- SIEBSPI\_SWSE\_AVERAGE\_REQUEST\_TIME
- SIEBSPI\_SWSE\_AVERAGE\_RESPONSE\_TIME

To collect SWSE performance statistics data, install the following policies:

- SIEBSPI\_SWSE\_SYSTEM\_STATISTIC\_PERF
- SIEBSPI\_SWSE\_APPLICATION\_STATISTIC\_PERF

Note that before you can use these policies and tools, you need to customize their command lines with the Siebel Application name that is used on your SWSE. You can get the correct application name from the url address that is used to login into your Siebel application. For example, if you use:  
`http://gander/callcenter_enu/start.swe`

the name is `callcenter_enu`

To configure the SIEBSPI\_SWSE\_AVERAGE\_CLOSE\_SESSION\_TIME policy, perform the following steps:

1. Open the policy.
2. Change the program name parameter from:  
`siebspi_web -application "Application name, e.g. callcenter_enu" -f SWSE_AVG_CLOSE_TIME -mon SIEBSPI_SWSE_AVERAGE_CLOSE_SESSION_TIME`

to:

- `siebspi_web -application " callcenter_enu" -f SWSE_AVG_CLOSE_TIME -mon SIEBSPI_SWSE_AVERAGE_CLOSE_SESSION_TIME`

To monitor SWSE log file for errors, install the following policy from the policy group **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/ SIEBSPI-Siebel Web Server Extension**:

- SIEBSPI\_WEB\_SERVER\_LOG

For more information about the log file monitoring, refer to [“Monitoring Siebel Log Files” on page 39](#).

---

## Monitoring the Availability of Web Server Services and daemons Needed for SWSE to Work Correctly

SPI for Siebel offers tools and policies that help system administrators have all important web server services and daemons up and running.

To monitor availability of web services and daemons, install the following policies from the policy group **SPI for Siebel/SIEBSPI-web Servers/SIEBSPI-<web server>** (depending on the type of web server that is used):

Tomcat:

SIEBSPI\_TOMCAT\_PROCESS

MS IIS:

SIEBSPI\_WEB\_WIN\_SERVER\_STATUS

Sun ONE Web Server 6.0:  
SIEBSPI\_WEB\_SUN60\_SERVER\_STATUS

Sun ONE Web Server 6.1:  
SIEBSPI\_WEB\_SUN61\_SERVER\_STATUS

IBM HTTP Web Server:  
SIEBSPI\_WEB\_IBM\_HTTP\_SERVER\_STATUS

For starting or stopping web services, use the following tools from the **SIEBSPI-Siebel Services** tool group:

- **SIEBSPI-Start WEB Server**
- **SIEBSPI-Stop WEB Server**

If you use web server that is not supported with the provided policies and tools, SPI for Siebel offers easy customization that enables you to monitor any new web servers.

With the `-daemon` parameter, you can select which daemon process you want to monitor. To specify which daemon will be monitored, add this parameter to the policy command line, for example:

Policy: SIEBSPI\_WEB\_SERVER\_MYSRV\_STATUS  
`siebspi_extmon -m SIEBSPI_WEB_SERVER_MYSRV_STATUS -daemon <daemon_name>`

In tools, used for starting or stopping the web server, you can also specify a daemon name that differs from the default. This name is used when performing the check if daemon is running before the start or stop. The `-daemon` parameter enables you to select which daemon process you want to check. The `-script` parameter enables you to change the web server start/stop script. To specify which script will be used, add this parameter to the tool command line, for example:

Tool: **SIEBSPI-Stop WEB Server**  
`siebspi_mgr -service stop_web -script <script_name> -daemon <daemon_name>`

or

Tool: **SIEBSPI-Start WEB Server**  
`siebspi_mgr -service start_web -script <script_name> -daemon <daemon_name>`

---

## Monitoring Availability and Response Time of Ports on the Siebel Server Machine from the SWSE Machine

SPI for Siebel offers tools and policies that can be used for checking availability and response times of ports on the Siebel Server machine from the SWSE machine and contrariwise.

For monitoring port availability, install the following policies from the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Web Server Extension/SIEBSPI-Port Response and Availability** policy group:

- SIEBSPI\_PORT\_AVAILABILITY
- SIEBSPI\_PORT\_AVAILABILITY\_EXT

For monitoring port response time (ms), install the following policies from the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Web Server Extension/SIEBSPI-Port Response and Availability** policy group:

- SIEBSPI\_PORT\_RESPONSE\_TIME
- SIEBSPI\_PORT\_RESPONSE\_TIME\_EXT

For displaying current port response time (ms), the following tool can be used from the **SPI for Siebel/SIEBSPI-Performance** tool group:

- **SIEBSPI-Port Performance**

Note that before you can use this policies and tools, you need to customize their command lines with the port numbers that you want to monitor. For example, to configure the SIEBSPI\_PORT\_AVAILABILITY policy, open the Modify policy window and change the program name parameter from:

```
siebspi_extmon -m SIEBSPI_PORT_AVAILABILITY -target target_host -port port1,port2,...
```

to:

```
siebspi_extmon -m SIEBSPI_PORT_AVAILABILITY -target target_host -port 80
```

Optionally you can also specify non-default time interval that policy or tool will wait for port to response, by adding the parameter `-timeout <Timeout in seconds>` into the policy or tool program name parameter.



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## **Chapter 10**

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# **Monitoring Siebel End-User Experience and Response Times**

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## About End-User Monitoring

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### Siebel Mobile and Dedicated Clients End-User Monitoring

Smart Probe is a program that runs on Siebel clients and shows the clients Siebel server availability and connectivity. It monitors the login time and transaction time with two monitors that are started every n-seconds. To obtain the transaction time, Smart Probe runs a synthetic transaction, which is a set of pre-defined client actions, for example, query for Account Names in Accounts. Administrators are notified if real-time response times exceed the predefined monitor thresholds or if the Siebel server/Siebel database is not available. Smart Probe works on any computer where a **Siebel Mobile/Dedicated web client** is installed.

The Smart Probe policy for monitoring transaction time, `SIEBSPI_SP_TRANSACTION_TIME`, or the policy for collecting performance data, `SIEBSPI_SP_PERFORMANCE` (Siebel client login and transaction time), in the policy group **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Smart Probe** can be modified to execute a different transaction.

For example, assume that you want to query the Last Names of your Contacts. You can modify the `SIEBSPI_SP_TRANSACTION_TIME` policy to monitor the transaction time of the user query by performing the following steps:

1. Log in as the HPOM Administrator.
2. Go to the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Smart Probe** policy group.
3. In the right window, select the `SIEBSPI_SP_TRANSACTION_TIME` policy and right-click it.
4. In the menu click **All Tasks**, followed by **Edit**. A new window opens.
5. In the **Program parameters, Program name\*** text field, add the `-busobj`, `-buscomp` and `-compfield` parameters. For example:  
`siebspi_sp -t -busobj "Contact" -buscomp "Contact" -compfield "Last Name"`

Additionally, the `SIEBSPI_SP_PERFORMANCE` policy can be modified in the same manner.

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### NOTE

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For the changes to take effect deploy the new policies on a node where the Siebel Mobile/Dedicated web client is installed.

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## OVIS Smart Probe for Siebel

### Installation Instructions

For information on how to install and configure OVIS Smart Probe for Siebel, refer to *OVIS SMARTProbe for Siebel Installation and Configuration Guide*.

You can find the self-extracting installation file for HP Internet Services and OVIS Smart Probe for Siebel documentation on the SPI for Siebel download page:

- OVISProbeforSiebel\_03\_20.exe
- OVIS\_SmartProbe\_for\_Siebel\_03\_20.pdf

OVIS SMARTProbe for Siebel target is a Web Server that is used by Siebel Web Clients to access Oracle Siebel CRM Applications. OVIS SMARTProbe for Siebel supports all Web Servers that are supported by:

- Oracle Siebel CRM Applications 7.7, 7.8, or 8.x.



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## Chapter 11

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### **Using SPI for Siebel for Analyzing Siebel Application Response Measurement (SARM) Data**

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## About Siebel ARM

Siebel ARM is a framework for capturing critical performance data in Oracle's Siebel Business Applications. Siebel ARM captures response times at key monitoring points within the Siebel Server infrastructure. These Siebel ARM monitoring points are classified in the following distinct areas within the Siebel infrastructure:

- **Web Server Time.** The time a request has spent on the Web server.
- **Infra-Network Time.** The time between a request from the Web server and the Siebel Server (including the network time).
- **Siebel Server Time.** The time Siebel Server and Database Server need to process the request (time between Server Thread (SMI) and any database-layer calls).
- **Database Time.** The time spent for any Siebel Database-layer calls.
- **Tool-Specific Time.** The time spent in tool-specific areas of the infrastructure.

The Siebel ARM feature monitors system performance in the infrastructure and tool-specific pre defined areas, which appear in Siebel ARM output.

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## How Can SPI for Siebel Help You Analyze Siebel Transactions

SPI for Siebel provides diagnostic tools that help administrators to correlate Oracle's Siebel Business Applications end-user performance and availability problems to their root causes within the Siebel infrastructure. These tools help you to find problematic areas in Siebel user transactions, where the most time, CPU or memory is spent. SPI also provides tools that can be used from HPOM console for setting SARM parameters on the node, and to start or stop collecting SARM information on the node.

If you want to use SARM and SPI to analyze problematic transaction, perform the following steps:

1. If you do not want to have default values, set SARM parameters on all managed nodes that will be used by transaction (Siebel Web Server Extension, Siebel Servers) using SPI for Siebel tools.
2. Start the collection of SARM data on all involved managed nodes, using SPI for Siebel tools.
3. Execute problematic transaction (manually or using any of the automated tools for login into Siebel and performing transactions).

4. Stop the collection of SARM data on all involved managed nodes, using SPI for Siebel tools.
5. Copy SARM log files from all involved managed nodes to one location on the machine where analyzing will be performed.
6. Analyze transaction and find problematic areas and bottlenecks, using SPI for Siebel tools.

For detailed instructions on how to perform these steps, refer to the following sections. Steps are described using a real-life example. A company is having performance problem using Siebel applications for sales automation. When users try to go to Contacts View, and then to Contacts List Screen, and perform there a query by last name, it takes about 3 minutes before the results are displayed. We will try to find out where the problematic areas are.

---

## Setting SARM Parameters Using SPI for Siebel Tools

SPI for Siebel provides tools that can be used to set all SARM parameters on managed nodes from a central point (HPOM). You can set parameters on both, Web Server and Siebel Server. The following tools are provided in the tool group **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-SARM Parameters**:

- **SIEBSPI-Change SARM Buffer Size**
- **SIEBSPI-Change SARM File Size**
- **SIEBSPI-Change SARM Max Files Number**
- **SIEBSPI-Change SARM Period**

Before you use these tools, you should configure (modify) tools parameters. For the complete list and descriptions of the tools parameters, refer to the *SPI for Siebel Quick Reference Guide*.

## SARM Parameters Descriptions

In SARM, the following parameters and environment variables are defined:

| Parameter Display Name   | Parameter Alias | Environment Variable Name |
|--------------------------|-----------------|---------------------------|
| SARM Granularity Level*  | SARMLevel       | SIEBEL_SARMLevel          |
| SARM Buffer Size         | SARMBufferSize  | SIEBEL_SARMBufferSize     |
| SARM Period              | SARMPeriod      | SIEBEL_SARMPeriod         |
| SARM Max Number of Files | SARMMaxFiles    | SIEBEL_SARMMaxFiles       |
| SARM Data File Size      | SARMFileSize    | SIEBEL_SARMFileSize       |

\*This parameter is used later for enabling/disabling SARM

### **SARM Buffer Size**

The Siebel ARM framework uses a buffered data generation mechanism. Siebel ARM collects data and stores it in memory. After the in-memory data size reaches a threshold defined by SARM Buffer Size Siebel ARM outputs the stored data to file on a physical disk. The SARM Buffer Size parameter or environment variable is specified in bytes. The default value is 5,000,000 bytes (approximately 5 MB). The valid settings range from 100,000 bytes to 50,000,000 bytes.

Siebel ARM also outputs stored data to a file based on elapsed time, which is defined by the parameter or environment variable SARM Period. The setting of this parameter may determine the size of the data saved to the file rather than the threshold value defined by SARM Buffer Size.

For example, if SARMBufferSize is 5 MB and there are five instances (processes) of the component, then the total memory used is 25 MB.

### **SARM Period**

Siebel ARM collects data and stores it in memory. The time period specified by the SARM Period parameter or environment variable determines when Siebel ARM outputs the stored data to a file on a physical disk regardless of the value set for SARM Buffer Size. The parameter is specified in minutes, and has a default value of 3 minutes. The valid settings for this parameter range from 1 minute to 60 minutes.

Only use SARM Period to output Siebel Server performance data based on elapsed time. Siebel ARM outputs Web server performance data based only on the SARM Buffer Size value.

### **SARM Max Number of Files**

Specifies the maximum number of Siebel ARM files created per component instance. The default value is four, and there is no Siebel-specified upper limit to the number of files Siebel ARM creates. (The parameter or environment variable SARM Data File Size configures how large a file becomes before a new file is stored on the physical disk.)

The number of active Siebel ARM files per component process is 1 plus the value of SARM Max Number of Files. That is, Siebel ARM removes the oldest file for that process only after the SARM Max Number of Files-plus-1 file reaches SARM Data File Size.

See the description for SARM Data Size for an example on how to calculate memory usage using these parameters or environment variables.

### **SARM Data File Size**

Specifies how large a file becomes before Siebel ARM stores data in a new file on the physical disk. The parameter is specified in bytes. The default value is 15000000 bytes (15 MB), and there is no Siebel-specified upper limit to file size.

Until the specified size is reached, Siebel ARM continues to append file segments to the current file. When the file limit is reached, Siebel ARM creates a new file. (The parameter or environment variable SARM Max Number of Files configures the number of files maintained by Siebel ARM.)

When Siebel ARM reaches the file number specified by **SARM Max Number of Files** (that is, there are SARM Max Number of Files of size SARM Data File Size), Siebel ARM removes the first (that is, the oldest) file when the next file reaches the SARM Data File Size limit. Therefore, the maximum amount of disk space used is approximately SARM Max Number of Files + 1 times SARM Data File Size bytes. This amount of memory is per-process (per component instance).

For example, if SARM Data File Size is 15 MB, SARM Max Number of Files is 4, and there are 5 instances (processes) of the component, then the maximum amount of disk space consumed is approximately 375 MB—that is, 15MB per file, times 5 files per process, times 5 processes (instances of component).

---

## **Starting the Collection of SARM Data Using SPI for Siebel Tools**

SPI for Siebel provides tools that can be used to start collecting SARM data on managed nodes from a central point (HPOM). To start collecting SARM data on both, Web Server and Siebel Server, use SPI for Siebel tools for changing SARM Granularity Level. The following tools are provided in the tool group **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-SARM Parameters**:

- **SIEBSPI-Start SARM Data Collection on Level 1 (ARM)**
- **SIEBSPI-Start SARM Data Collection on Level 2 (Detail)**

Before you use these tools, you can configure (modify) tools parameters. For the complete list and descriptions of the tools parameters, refer to the *SPI for Siebel Quick Reference Guide*.

### **SARM Granularity Level**

Specifies the amount of response measurement detail logged to Siebel ARM files and effectively enables or disables the Siebel ARM feature. This parameter or environment variable has the following settings:

- **1 (ARM)**. This setting captures general application performance and is based on the application response measurement (ARM) standard. At this level, Siebel ARM collects information such as process and component boundaries, third-party

software calls, database measurements, workflow execution, and script performance. Use this level for general performance monitoring.

- **2 (Detail).** This setting captures the information at level 1 as well as detailed information such as steps of workflow execution, construction of large objects, reading of large files, and crossing significant architectural areas. Use this level for problem diagnostics.

---

## Executing Problematic Siebel User Transactions

After SARM data collection is enabled, you should execute problematic transaction. You can do this manually in Siebel GUI or use any of the automated applications for login into Siebel and performing transactions.

We recommend performing transactions without any other user activity on the nodes when SARM data collection is enabled. That way the SARM log files will be smaller and analyzing will be easier and quicker.

---

## Stopping the Collection of SARM Data Using SPI for Siebel Tools

SPI for Siebel provides tools that can be used to stop collecting SARM data on managed nodes from a central point (HPOM). To stop collecting SARM data on both, Web Server and Siebel Server, use the SPI tools for changing SARM Granularity Level to 0. This setting is the default value and disables Siebel ARM. To stop collecting SARM data, use the **SIEBSPI-Stop SARM Data Collection** tool, located in the **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-SARM Parameters** tool group.

Before you use this tool, you can configure (modify) tool's parameters. For a complete list and descriptions of the tools parameters, refer to the *SPI for Siebel Quick Reference Guide*.

---

## Copying SARM Log Files to Location for Analyzing

To get a complete picture of the complete transaction, it is important that you use SARM files from Siebel Web Server Extension and from Siebel Server(s) together when analysis is performed. Usually, those SARM files are located on several computers. In such cases, copy all files to a single computer to a directory, where analysis will be performed. Alternatively, share (NFS, SAM, and so on) remote directories where SARM files are located.

We recommend you to perform analysis on a computer that is not part of the Siebel environment, because analyzing big amount of SARM files takes a lot of time and machine resources.

---

## Analyzing Transactions Using SPI for Siebel Tools

This is the most important step and reason that all previous steps were performed. SPI for Siebel provides two ways for analyzing SARM data:

- **Call graph workflow analysis**  
The Call Graph displays how the specific areas and methods were called within the session. It also displays the specific metric values, for example, `duration`, `cpu_time`, `cpu_perc`, `pooled_memory_usage` and `pooled_memory_calls`
- **Performance aggregation analysis**  
This analysis displays problematic areas in Siebel. The tool analyzes Siebel areas (for example, SWE) for the specific metric (for example, "total response time") maximum values. When the area is found, it analyzes the child areas to see which child area took the most time. After that, the tool calculates in which child area the calls take the most time. When the call (method) is discovered, the tool displays a performance summary for that call.

### Tools for Running Call Graph Workflow Analysis

SPI for Siebel provides tools that you can use to execute Call Graph Workflow Analysis. This analysis is divided into 2 steps:

1. Create comma-separated files (CSV) from SARM binary log files. To do this, use the SPI for Siebel tool that is using Siebel tool for creating CSV files. The files are used for later analysis.

For this purpose, the **SIEBSPI-Run Call Graph (CSV) Workflow Analysis** tool is provided in the **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-Call Graph Workflow Analysis** tool group.

The CSV files are placed in the `.../siebspi/tmp` directory.

For more information about this SARM CSV files, refer to [“Siebel ARM \(SARM\) Reference Information” on page 170](#).

2. Execute analysis that shows Call graph workflow.

Use the tool **SIEBSPI-List Sessions Using CSV SARM Data** from the **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-SARM Call Graph Workflow Analysis** tool group to display all available sessions in current SARM files. This information can be later

used for running Call Graph Workflow analysis (using parameter `-session {session id}`) to filter output on one session.

The following tools are provided for displaying workflow data tree in the **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-SARM Call Graph Workflow Analysis/ Show Workflow from CSV SARM Data** tool group:

- **SIEBSPI-Show Workflow Data Using All Metrics**
- **SIEBSPI-Show Workflow Data Using Metric '%CPU'**
- **SIEBSPI-Show Workflow Data Using Metric 'Count'**
- **SIEBSPI-Show Workflow Data Using Metric 'CPUTime'**
- **SIEBSPI-Show Workflow Data Using Metric 'Duration'**
- **SIEBSPI-Show Workflow Data Using Metric 'PooledMemoryCalls'**
- **SIEBSPI-Show Workflow Data Using Metric 'PooledMemoryUsage'**
- **SIEBSPI-Show Workflow Data Using Metric 'SystemMemoryCalls'**
- **SIEBSPI-Show Workflow Data Using Metric 'SystemMemoryUsage'**

It is important that you use SARM files from Siebel Web Extension and from Siebel Server(s). Usually those SARM files are located on several computers. To use SARM files from different locations, specify the directories (local or remote) using `-include_sarm_dirs` parameter.

*Example:*

```
siebspi_sarm -list_sessions  
              -include_sarm_dirs /net/node/sarm,/this/too
```

Example output:

```
Session: 30969  
Session: 30970  
Session: 30971  
Session: 30972
```

This example will use SARM files on a local computer in original Siebel log directories and the SARM files in the following directories: `/net/node/sarm` and `/this/too`. For example, `/net/node/sarm` is a NFS mounted directory and `/this/too` is a local temporary directory.

If you do not want to use the SARM files in original Siebel log directories on the computer where you execute the tool, specify the `-exclude_original_sarm_dirs` parameter.

*Example:*

```
siebspi_sarm -list_sessions  
              -include_sarm_dirs /net/node/sarm,/this/too  
              -exclude_original_sarm_dirs
```

In this case, only the SARM files in directories /net/node/sarm and /this/too will be used.

The same parameters can also be used for other tools, for example, **SIEBSPI-Run Call Graph (CSV) Workflow Analysis**.

The Call Graph displays how the specific areas and methods were called within the session. It also displays the specific metric values, for example, SystemMemoryUsage (on areas).

Analysis can be done for the specified metric and/or session.

*Example command line:*

```
siebspi_sarm -call_graph
             -session 30928
             -metric Duration
```

Example output:

```
sadmin
|
| Session: !1.c5c.78d0 - Task ID: 30928
|
| +- Area_SWSE.Receive request [Duration(MiliSecs): 150.515]
| |
| | +- Area_SWSE.Send message to app server [Duration(MiliSecs): 8.725]
| | |
| | | +- Area_INFRA.Request Receipt (sessID SeqID) [Duration(MiliSecs): 112.588]
| | | |
| | | | +- Area_OBJMGR.Service Invoke Method.Web Engine Interface
| | | | [Duration(MiliSecs): 111.368]
| | | | |
| | | | | +- Area_SWE.Invoke Applet Method.Account Entry Applet
| | | | | [Duration(MiliSecs): 110.576]
| | | | | |
| | | | | | +- Area_OBJMGR.BusComp Write Record.Account [Duration(MiliSecs):
| | | | | | 105.292]
| | | | | | |
| | | | | | | +- Area_OBJMGR.BusComp Write Record.Activity Plan
| | | | | | | [Duration(MiliSecs): 0.013]
| | | | | | | |
| | | | | | | | +- Area_OBJMGR.BusComp Write Record.Activity Plan
| | | | | | | | [Duration(MiliSecs): 0.005]
| | | | | | | | |
| | | | | | | | | +- Area_OBJMGR.BusComp Query Execution.Activity Plan
| | | | | | | | | [Duration(MiliSecs): 4.004]
| | | | | | | | | |
| | | | | | | | | | +- Area_OBJMGR.BusComp Write Record.Activity Plan
| | | | | | | | | | [Duration(MiliSecs): 0.006]
| | | | | | | | | | |
| | | | | | | | | | | +- Area_DBC.Prepare SQL statement [Duration(MiliSecs): 0.328]
| | | | | | | | | | | |
| | | | | | | | | | | +- Area_DBC.Execute SQL statement [Duration(MiliSecs): 2.535]
| | | | | | | | | | | |
| | | | | | | | | | | | +- Area_OBJMGR.BusComp Write Record.Activity Plan
| | | | | | | | | | | | [Duration(MiliSecs): 0.006]
| | | | | | | | | | | | |
| | | | | | | | | | | | | +- Area_DBC.Get Record from DB [Duration(MiliSecs): 0.006]
| | | | | | | | | | | | | |
| | | | | | | | | | | | | +- Area_DBC.Write Record to DB [Duration(MiliSecs): 72.376]
| | | | | | | | | | | | | |
```

```

|           +- Area_OBJMGR.Service Invoke Method.Task Assistant UI Service
[Duration(MiliSecs): 0.044]
|           |
|           +- Area_INFRA.Request Receipt (sessID SeqID) [Duration(MiliSecs): 21.650]
|           |
|           +- Area_OBJMGR.Service Invoke Method.Web Engine Interface
[Duration(MiliSecs): 19.900]
|           |
|           +- Area_OBJMGR.Service Invoke Method.Task Assistant UI Service
[Duration(MiliSecs): 0.046]
|           |
|           +- Area_OBJMGR.Service Invoke Method.Communications Client
[Duration(MiliSecs): 0.074]
|           |
|           +- Area_CSS.Communiations Client Invoke Method.ShellUIExit
[Duration(MiliSecs): 0.029]

```

## HPOM Tools for Discovering and Analyzing Problematic Siebel Areas

SPI for Siebel provides tools that can be used to discover problematic areas in Siebel transactions. This analysis is divided into 2 steps:

1. To perform the Performance Aggregation Analysis, first run the tool **SIEBSPI-Run Performance Agg. Analysis**. A result of running a performance aggregation analysis of a Siebel ARM file is an extensible markup language (XML) output file. This file contains timing data for the instrumented areas.

For this purpose, the **SIEBSPI-Run Performance Agg. Analysis** tool is provided in the **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-SARM Performance Agg. Analysis** tool group.

This will generate the `siebspi_sarm_paa.xml` file that will be placed in the `.../siebspi/tmp` directory. This file is then used for displaying problematic areas.

For more information about SARM Performance Aggregation Analysis refer to [“Siebel ARM \(SARM\) Reference Information” on page 170](#).

2. Execute analysis that discovers problematic areas in Siebel transaction.

To actually display the problematic areas, you must run the tool for a specific metric in the **SPI for Siebel/SIEBSPI-SARM/SIEBSPI-SARM Performance Aggregation Analysis/SIEBSPI-Show Problematic Areas** tool group:

- **SIEBSPI-Average Exclusive Memory**
- **SIEBSPI-Average Execution Time**
- **SIEBSPI-Average Inclusive Memory**
- **SIEBSPI-Average Recursive Time**
- **SIEBSPI-Average Response Time**
- **SIEBSPI-Maximum Execution Time**
- **SIEBSPI-Maximum Recursive Time**
- **SIEBSPI-Percent of Response Execution Time**

- **SIEBSPI-Percent of Response Recursive Time**
- **SIEBSPI-Custom Metric**
- **SIEBSPI-Total Exclusive Memory**
- **SIEBSPI-Total Execution Time**
- **SIEBSPI-Total Inclusive Memory**
- **SIEBSPI-Total Recursive Time**
- **SIEBSPI-Total Response Time**

Tools analyze Siebel areas (for example, SWE) for specific metric maximum values (for example, Average Exclusive Memory). When the area is found, it also analyses the child areas to see which child area took the most time.

After that, the tool calculates in which child area the calls take the most time. When the call (method) is discovered, the tool displays a performance summary for that call. The tool also displays performance summary for a call that had the shortest execution time.

*Example:*

```
siebspi_sarm -show_problematic_area
              -metric InclusiveMemory
              -submetric Average
              -detailed
```

Example output:

```
=====
Analyzing areas for Average InclusiveMemory
=====

Areas Average InclusiveMemory (ordered):

Workflow                WORKFLOW    94464.00  bytes
Web Server Plugin       SWSE      80677.00  bytes
Request Broker          SRB       4216.00  bytes
Database Connector      DBC       218.00  bytes

Area where the maximum Average InclusiveMemory was measured: workflow(WORKFLOW)

MaxAllocated InclusiveMemory for WORKFLOW was measured here:

workflow(WORKFLOW).Invoke workflow method(WORKFLOW_ENGNE_INVOKE).BusSvcMgrInit

This call performance data:

SarmID                7841
Memory                167586  bytes
ResponseTime          1003.068
PercentCPU            4.67
SarmID                7841
TypeLevel             Sarm(1)
RootID                7841
ParentSarmID          0
ParentTimeID          0
ParentProcID          0
AreaCodeSymbol        WORKFLOW
```

|                    |                        |
|--------------------|------------------------|
| AreaDescription    | Workflow               |
| SubAreaCodeSymbol  | WORKFLOW_ENGNE_INVOKE  |
| SubAreaDescription | Invoke workflow method |
| Count              | 1                      |
| Duration           | 1003.068 ms            |
| PooledMemoryUsage  | 197454 bytes           |
| PooledMemoryCalls  | 7532                   |
| SystemMemoryUsage  | 167586 bytes           |
| SystemMemoryCalls  | 2152                   |
| AppInt1            | 0                      |
| AppInt2            | 0                      |
| AppString1         | BusSvcMgrInit          |
| AppString2         |                        |

Workflow(WORKFLOW) child areas Average Memory:

|                    |     |            |
|--------------------|-----|------------|
| Database Connector | DBC | 2.00 bytes |
|--------------------|-----|------------|

Child area where the maximum Average Memory was measured: Database Connector(DBC)

Workflow(WORKFLOW) child areas Average Memory/Invocations :

|                    |     |            |
|--------------------|-----|------------|
| Database Connector | DBC | 0.00 bytes |
|--------------------|-----|------------|

Child area where the maximum Average Memory/Invocations was measured: Database Connector(DBC)

After the first stage, if you do not want the analysis to go automatically to the area with the maximum value (in example above this is WORKFLOW), you must use the `-force_area {SARM area}` parameter.

*Example:*

```
siebspi_sarm -show_problematic_area
              -metric InclusiveMemory
              -submetric Average
              -detailed
              -do_not_refresh
              -force_area SWSE
```

It is important that you use SARM files from Siebel Web Extension and from Siebel Server(s). Usually those SARM files are located on several computers. In such case, copy all files to one single computer in a temporary directory. Alternatively, share (NFS, SAMBA...) remote directories where SARM files are located. To use SARM files from different locations, specify the directories (local or remote) using the `-include_sarm_dirs` parameter.

*Example:*

```
siebspi_sarm -show_problematic_area
              -metric InclusiveMemory
              -submetric Average
              -detailed
              -include_sarm_dirs /net/node/sarm,/this/too
```

This example will use SARM files on a local computer in original Siebel log directories and the SARM files in the following directories: `/net/node/sarm` and `/this/too`. For example, `/net/node/sarm` is a NFS mounted directory and `/this/too` is a local temporary directory.

If you do not want to use the SARM files in original Siebel log directories on the computer where you execute the tool, specify the `-exclude_original_sarm_dirs` parameter.

*Example:*

```
siebspi_sarm -show_problematic_area
             -metric InclusiveMemory
             -submetric Average
             -detailed
             -exclude_original_sarm_dirs
             -include_sarm_dirs /net/node/sarm,/this/too
```

In this case, only the SARM files in directories `/net/node/sarm` and `/this/too` will be used.

Example output:

```
=====
Analyzing areas for Average InclusiveMemory
=====

Areas Average InclusiveMemory (ordered):

Workflow                                WORKFLOW    94464.00  bytes
Web Server Plugin                      SWSE        80677.00  bytes
Request Broker                        SRB         4216.00  bytes
Database Connector                    DBC         218.00   bytes

Area where the maximum Average InclusiveMemory was measured: Workflow(WORKFLOW)

Further analysis was forced with this area: SWSE

MaxAllocated InclusiveMemory for SWSE was measured here:

Web Server Plugin(SWSE).Receive request(SWSE_REQUEST)

This call performance data:

SarmID                                610212
Memory                               269962  bytes
ResponseTime                         120001.270
PercentCPU                           0.00
SarmID                                610212
TypeLevel                            Sarm(1)
RootID                                610212
ParentSarmID                          0
ParentTimeID                          0
ParentProcID                          0
AreaCodeSymbol                        SWSE
```

|                    |                   |
|--------------------|-------------------|
| AreaDescription    | Web Server Plugin |
| SubAreaCodeSymbol  | SWSE_REQUEST      |
| SubAreaDescription | Receive request   |
| Count              | 1                 |
| Duration           | 120001.270 ms     |
| PooledMemoryUsage  | 273226 bytes      |
| PooledMemoryCalls  | 1242              |
| SystemMemoryUsage  | 269962 bytes      |
| SystemMemoryCalls  | 276               |
| AppInt1            | 0                 |
| AppInt2            | 0                 |
| AppString1         |                   |
| AppString2         |                   |

MaxDeallocated InclusiveMemory for SWSE was measured here:

Web Server Plugin(SWSE).Receive request(SWSE\_REQUEST).!1.9fc.527d

This call performance data:

|                    |                   |
|--------------------|-------------------|
| SarmID             | 90636             |
| Memory             | -3056999 bytes    |
| ResponseTime       | 237.767           |
| PercentCPU         | 0.07              |
| SarmID             | 90636             |
| TypeLevel          | Sarm(1)           |
| RootID             | 90636             |
| ParentSarmID       | 0                 |
| ParentTimeID       | 0                 |
| ParentProcID       | 0                 |
| AreaCodeSymbol     | SWSE              |
| AreaDescription    | Web Server Plugin |
| SubAreaCodeSymbol  | SWSE_REQUEST      |
| SubAreaDescription | Receive request   |
| Count              | 1                 |
| Duration           | 237.767 ms        |
| PooledMemoryUsage  | -3052231 bytes    |
| PooledMemoryCalls  | 1443              |
| SystemMemoryUsage  | -3056999 bytes    |
| SystemMemoryCalls  | 366               |
| AppInt1            | -1                |
| AppInt2            | 0                 |
| AppString1         |                   |
| AppString2         | !1.9fc.527d       |

Web Server Plugin(SWSE) child areas Average Memory:

|                   |      |            |
|-------------------|------|------------|
| Web Server Plugin | SWSE | 0.00 bytes |
|-------------------|------|------------|

Child area where the maximum Average Memory was measured: Web Server Plugin(SWSE)

Web Server Plugin(SWSE) child areas Average Memory/Invocations :

|                   |      |            |
|-------------------|------|------------|
| Web Server Plugin | SWSE | 0.00 bytes |
|-------------------|------|------------|

Child area where the maximum Average Memory/Invocations was measured: Web Server Plugin(SWSE)

Similarly, you can use the following parameters to force the analysis for other stages:

- force\_child\_area {SARM child area from which  
further analysis starts on  
the second level}
- force\_child\_area\_per\_invocations {SARM child area  
from which further analysis starts  
for metric / invocations on the  
second level}



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## Chapter 12

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# **Monitoring Oracle Business Intelligence and Siebel Analytics**

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## About Monitoring Business Intelligence

SPI for Siebel provides policies and tools for monitoring the status of the Oracle Business Intelligence and Siebel Analytics key components. Business Intelligence has become the most important tool for making the correct business decisions and therefore it is very important that all key parts are running and available.

---

### NOTE

Throughout the manual, the **Business Intelligence (BI)** term is used for both, Oracle Business Intelligence and Siebel Analytics products.

---

## Autodiscovery of the Business Intelligence Environment

SPI for Siebel offers autodiscovery of the installed Business Intelligence component on a node and creates or adds components to the service tree.

SPI for Siebel also monitors any configuration changes on a managed node with Business Intelligence installed.

To perform autodiscovery of the BI environment, install the following policy from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBI Server** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Server** policy group:

- SIEBSPI\_BI\_AUTODISCOVERY

Run the **SIEBSPI-BI Autodiscovery** tool from the **SPI for Siebel/SIEBSPI-Business Intelligence** tool group to generate or update the service tree.

---

## Monitoring Business Intelligence Services

SPI for Siebel monitors the status of the following services and daemons:

### Oracle Business Intelligence

- Oracle BI Cluster Controller
- Oracle BI Java Host
- Oracle BI Presentation Server
- Oracle BI Scheduler
- Oracle BI Server

## Siebel Analytics

- Siebel Analytics Cluster
- Siebel Analytics Web
- Siebel Analytics Scheduler
- Siebel Analytics Server

When a service is not available, a critical message is sent to the HPOM console.

To monitor BI Presentation Server services, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIPresentation Server** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Web Server** policy group:

- SIEBSPI\_BI\_PRESENTATION\_SERVER\_SERVICE
- SIEBSPI\_BI\_JAVA\_HOST\_SERVICE (Oracle BI only)

To monitor BI Server services, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIServer** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SAServer** policy group:

- SIEBSPI\_BI\_SERVER\_SERVICE
- SIEBSPI\_BI\_CLUSTERCONTROLLER\_SERVICE

To monitor Scheduler services, install the following policy from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIScheduler** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SAScheduler** policy group:

- SIEBSPI\_BI\_SCHEDULER\_SERVICE

With SPI for Siebel tools, you can check the status, start, or stop the services. For a list and descriptions of BI Services tools, refer to the *SPI for Siebel Quick Reference Guide*.

---

## Monitoring Business Intelligence Processes

SPI for Siebel monitors CPU and memory usage for the following BI processes:

### Oracle Business Intelligence

On the Windows node:

- NQSserver.exe
- NQScheduler.exe
- Sawserver.exe
- NQSClusterController.exe

- Sawjavahostsvc.exe

On the Unix node:

- Sawjavahostsvc
- nqsserver
- nqscheduler
- sawserver
- nqsclusterontroller

### **Siebel Analytics**

On the Windows node:

- NQSComGateway.exe
- NQScheduler.exe
- Sawserver.exe
- ClusterController.exe
- Sawjavahostsvc

To monitor CPU and memory usage for the BI Presentation Server processes, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIPresentation Server** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Web Server** policy group:

- SIEBSPI\_BI\_PRESENTATION\_SERVER\_MEM
- SIEBSPI\_BI\_PRESENTATION\_SERVER\_CPU
- SIEBSPI\_BI\_JAVA\_HOST\_MEM (Oracle BI only)
- SIEBSPI\_BI\_JAVA\_HOST\_CPU (Oracle BI only)

To monitor CPU and memory usage for the BI Server processes, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIServer** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Server** policy group:

- SIEBSPI\_BI\_SERVER\_MEM
- SIEBSPI\_BI\_SERVER\_CPU
- SIEBSPI\_BI\_CLUSTERCONTROLLER\_MEM
- SIEBSPI\_BI\_CLUSTERCONTROLLER\_CPU

To monitor CPU and memory usage for the BI Scheduler processes, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIScheduler** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Scheduler** policy group:

- SIEBSPI\_BI\_SCHEDULER\_MEM

- SIEBSPI\_BI\_SCHEDULER\_CPU

By default, the policies send results to the external policy SIEBSPI\_BI\_CPU\_MEM\_EXT. To get notifications about high memory or CPU usage for one of the processes, you must have this policy deployed.

---

## Monitoring Business Intelligence Ports

SPI for Siebel monitors the performance and availability of the following default ports:

- 9703 port: for ODBC connections on the OBI & SA Servers (NQSServer)
- 9704 port: for OC4J (Oracle Containers for java) web access
- 9705 port: for Server Scheduler (NQScheduler)
- 9706 port: for Cluster Controller Clustering port
- 9710 port: for Presentation Server (OBI) Web (SA) - Sawserver
- 9810 port: for java host

To monitor the performance and availability of the BI Presentation Server ports, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBI Presentation Server** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Web Server** policy group:

- SIEBSPI\_BI\_PRESENTATION\_SERVER\_PORT
- SIEBSPI\_BI\_JAVA\_HOST\_PORT

To monitor the performance and availability of the BI Server ports, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBI Server** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Server** policy group:

- SIEBSPI\_BI\_SERVER\_PORT
- SIEBSPI\_BI\_CLUSTERCONTROLLER\_PORT
- SIEBSPI\_BI\_OC4J\_PORT

To monitor the performance and availability of the BI Scheduler ports, install the following policy from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBI Scheduler** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Scheduler** policy group:

- SIEBSPI\_BI\_SCHEDULER\_PORT

---

## Monitoring Business Intelligence Cache

SPI for Siebel provides cache monitoring, so you can make Business Intelligence more efficient.

With SPI for Siebel, you can monitor the size of cache folders which can be on different locations. To do this, set thresholds in the percentage of use in the `SIEBSPI_BI_CACHE_SIZE` policy. By default, this policy sends results to the external policy `SIEBSPI_BI_CACHE_SIZE_EXT`. To get notifications, you must have this policy deployed.

You can also monitor the percentage of queries read from cache files with the `SIEBSPI_BI_CACHE_PERCENTAGE_QUERY` policy. By default, this policy sends results to the external policy `SIEBSPI_BI_CACHE_PERCENTAGE_QUERY_EXT`. To get notifications, you must have this policy deployed.

SPI for Siebel also provides the following tools that you can use to check the size of cache folders and the percentage of cache usage:

- **SIEBSPI-Cache Size**
- **SIEBSPI-Queries Read From Cache**

---

## Monitoring Business Intelligence Usage Tracking

Business Intelligence servers support the accumulation of usage tracking statistics, which capture valuable information about users, performance, and so on, that can be used in a variety of ways, for example, database optimization, aggregation strategies, or billing users or departments based on the resources they consume.

SPI for Siebel monitors user usage by tracking accumulated usage statistics. You can monitor:

- the percentage of queries read from cache
- the number of rows returned to client
- the average query duration

To monitor usage tracking, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIServer** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SAServer** policy group:

- `SIEBSPI_BI_AVG_DURATION_QUERY`
- `SIEBSPI_BI_CACHE_PERCENTAGE_QUERY`
- `SIEBSPI_BI_RETURNED_ROWS_QUERY`

By default, these policies send results to the external policies SIEBSPI\_BI\_AVG\_DURATION\_QUERY\_EXT, SIEBSPI\_BI\_CACHE\_PERCENTAGE\_QUERY\_EXT, and SIEBSPI\_BI\_RETURNED\_ROWS\_QUERY\_EXT. To get notifications, you must have these policies deployed.

SPI for Siebel provides the following tools for monitoring usage tracking:

- **SIEBSPI-Average Query Duration**
- **SIEBSPI-Number Of Returned Rows**
- **SIEBSPI-Queries Read From Cache**

---

## Monitoring Business Intelligence Scheduler Jobs

Business Intelligence Scheduler is an extensible application and server that manages and schedules jobs. Business Intelligence Scheduler supports two kinds of jobs:

- Scripted jobs
- Unscripted jobs, called iBots

SPI for Siebel monitors scheduled and managed jobs (workflow) and reports jobs with the status FAILED.

To monitor BI scheduled and managed jobs, install the following policy from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIScheduler** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Scheduler** policy group:

- SIEBSPI\_BI\_FAILED\_JOBS\_QUERY
- SIEBSPI\_BI\_FAILED\_SCHEDULER\_QUERY

By default, these policies send results to the external policies SIEBSPI\_BI\_FAILED\_JOBS\_QUERY\_EXT and SIEBSPI\_BI\_FAILED\_SCHEDULER\_QUERY\_EXT. To get notifications, you must have these policies deployed.

SPI for Siebel provides the following tools for monitoring scheduled and managed jobs, located in the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-BIScheduler** tool group:

- **SIEBSPI-Failed Managed Jobs**
- **SIEBSPI-Failed Scheduled Jobs**

---

## Monitoring Business Intelligence Database

SPI for Siebel provides basic monitoring for database in your Business Intelligence environment.

To monitor BI database, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIServer** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Server** policy group:

- SIEBSPI\_BI\_DB\_CONNECTIVITY
- SIEBSPI\_BI\_DB\_LOGIN\_TIME
- SIEBSPI\_BI\_DB\_TRANSACTION\_TIME

The monitor policy SIEBSPI\_BI\_DB\_CONNECTIVITY checks database server availability and connectivity from the BI systems. To obtain the database login time, you can use the SIEBSPI\_BI\_DB\_LOGIN\_TIME policy.

To obtain the transaction time, the SIEBSPI\_BI\_DB\_TRANSACTION\_TIME policy runs a synthetic transaction, which is a set of predefined SQL statements.

SPI for Siebel provides the following tools for monitoring BI database, located in the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-BI Database** tool group:

- SIEBSPI-Database Connectivity
- SIEBSPI-Database Login Time
- SIEBSPI-Database Transaction Time

---

## Monitoring Business Intelligence Delivery

SPI for Siebel monitors the ftp and mail delivery.

To monitor ftp and mail delivery, install the following policies from the **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Oracle BI/SIEBSPI-OBIServer** or **SPI for Siebel/SIEBSPI-Business Intelligence/SIEBSPI-Siebel Analytics/SIEBSPI-SA Server** policy group:

- SIEBSPI\_BI\_FTP\_AVAILABILITY
- SIEBSPI\_BI\_MAIL\_AVAILABILITY

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## Chapter 13

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# **Monitoring Oracle Secure Enterprise Search**

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## About Monitoring Oracle Secure Enterprise Search

SPI for Siebel provides basic monitoring of Oracle Secure Enterprise Search. Currently, only monitoring of Oracle Secure Enterprise Search on Windows is supported. Provided functionalities include monitoring of Oracle Secure Enterprise Search services and crawler log files.

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## Monitoring Oracle Secure Enterprise Search Services

SPI for Siebel monitors the status of the following services:

- Oracle Secure Enterprise Search Service
- Oracle Secure Enterprise Search OC4J Service
- Oracle Secure Enterprise Search TNS Listener Service

When a service is not available, a critical message is sent to the HPOM console.

To monitor Oracle Secure Enterprise Search service, install the **SIEBSPI\_OSES\_SERVICE** policy from the **SPI for Siebel/SIEBSPI-Oracle Secure Enterprise Search** policy group.

To monitor Oracle Secure Enterprise Search OC4J service, install the **SIEBSPI\_OSES\_OC4J\_SERVICE** policy from the **SPI for Siebel/SIEBSPI-Oracle Secure Enterprise Search** policy group.

To monitor Oracle Secure Enterprise Search TNS Listener service, install the **SIEBSPI\_OSES\_TNS\_LISTENER\_SERVICE** policy from the **SPI for Siebel/SIEBSPI-Oracle Secure Enterprise Search** policy group.

---

## Monitoring Oracle Secure Enterprise Search Crawler Log Files

The log file records all crawler activity, warnings, and error messages for a particular schedule. It includes messages logged at startup, runtime, and shutdown. A new log file is created when crawler is restarted. SPI for Siebel monitors crawler log files and reports to HPOM console each time a line with one of the following severities is written to a log file:

- Warning (a message with a warning severity arrives to the HPOM console)
- Error (a message with an error severity arrives to the HPOM console)
- Fatal error (a message with a critical severity arrives to the HPOM console)

A message contains following information:

- Message text from a log file
- Crawler name
- Timestamp

To monitor Oracle Secure Enterprise Search crawler log files, install the following policies from the **SPI for Siebel/SIEBSPI-Oracle Secure Enterprise Search** policy group:

- SIEBSPI\_OSES\_LOG\_FILES
- SIEBSPI\_OSES\_LOG\_FILES\_EXT



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## Chapter 14

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### **Viewing and Analyzing Historical Data from Collected Performance Data**

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## Analyzing Historical Data from Collected Performance Data Using HP Performance Manager

HP Performance Manager provides a central point from where you can monitor and manage the performance of all networked systems in your environment. Using Performance Manager you can analyze historical data from Performance Agent systems, receive alarms generated by Performance Agent, and predict future resource usage. HP Performance Manager also allows you to perform the following functions:

- Select a data source and list the graphs associated with it
- Choose a graph to view, select how the graph will display, and change the metrics graphed
- Draw graphs
- Drill down to view detail over a period of time
- Export and import systems and graph policies
- Design graphs and save them as policies
- Receive and view alarms
- Create forecasts

For additional information on HP Performance Manager, refer to the HP Performance Manager documentation.

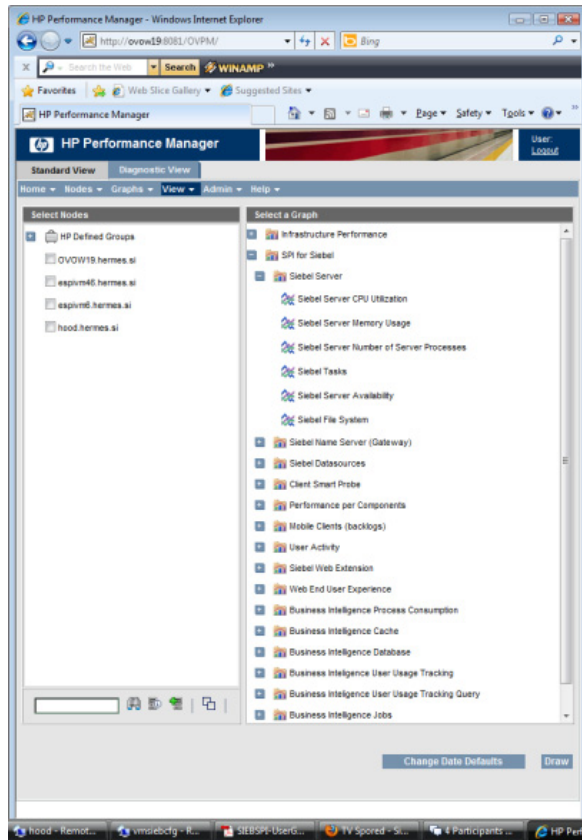
---

## HP Performance Manager User Defined Graph Templates

For easier work with Performance Manager, you can use the predefined graph templates of SPI for Siebel performance data. You can download the file with predefined Performance manger Graphs from the SPI for Siebel download web page.

Copy the `VPI_GraphsSPI_for_Siebel.txt` or `VPI_GraphsSPI for Siebel.txt` file (usually located in the `<OVInstallDir>/newconfig/OVPM` directory) into your Performance Manager's data directory to be fully integrated with them.

Note that available graphs are listed under the family **SPI for Siebel**.



The following tables list and describe graphs available for use and refer to both HP Performance Agent and CODA Agent usage.

*Table 1. The SPI for Siebel family*

| Category             | Graph Name                    | Description                                                                                            |
|----------------------|-------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Siebel Server</b> |                               |                                                                                                        |
|                      | Siebel Server CPU Utilization | Displays Siebel server CPU utilization.                                                                |
|                      | Siebel Server Memory Usage    | Displays Siebel server memory usage.                                                                   |
|                      | Siebel Tasks                  | Displays the number of Siebel tasks, active tasks, completed tasks, and completed tasks with an error. |
|                      | Siebel Server Availability    | Displays Siebel Server availability.                                                                   |

| Category                            | Graph Name                    | Description                                                                                                            |
|-------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                     | Siebel File System            | Includes information on Siebel file server disk usage (kb) and disk free space (%).                                    |
| <b>Siebel Name Server (Gateway)</b> |                               |                                                                                                                        |
|                                     | Name Server CPU Utilization   | Displays gateway CPU utilization.                                                                                      |
|                                     | Name Server Memory Usage      | Displays gateway memory usage.                                                                                         |
| <b>Siebel Datasources</b>           |                               |                                                                                                                        |
|                                     | DS Login Time                 | Displays login time required by the DB client to connect to the database.                                              |
|                                     | DS Transaction Time           | Displays transaction time.                                                                                             |
|                                     | Workflow Policies Backlog     | Displays workflow policies backlog.                                                                                    |
|                                     | Transaction Processor Backlog | Displays transaction processor backlog.                                                                                |
|                                     | Database Sessions             | Displays the number of database sessions.                                                                              |
| <b>Client Smart Probe</b>           |                               |                                                                                                                        |
|                                     | Client Smart Probe            | Displays login time required by the client to connect to the server and transaction execute time from the client host. |
|                                     | Login Time                    | Displays login time required by the client to connect to the server.                                                   |
|                                     | Transaction Time              | Displays transaction execute time from the client host.                                                                |
| <b>Performance per Components</b>   |                               |                                                                                                                        |
|                                     | CPU Time                      | Displays component CPU time.                                                                                           |
|                                     | Average SQL Times             | Displays average SQL times per components.                                                                             |
|                                     | SQL Times                     | Displays SQL times per components.                                                                                     |
|                                     | Memory Usage                  | Displays component memory usage.                                                                                       |
|                                     | CPU Utilization               | Displays component CPU utilization.                                                                                    |
|                                     | Total Tasks                   | Displays the number of total tasks per components.                                                                     |
| <b>Mobile Clients (backlogs)</b>    |                               |                                                                                                                        |
|                                     | Clients not Synchronized      | Displays the number of users needing to synchronize and number of remote clients on the Siebel enterprise.             |

| Category                                         | Graph Name                                       | Description                                                                                                            |
|--------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                  | Files Transaction Router Backlogs                | Displays transaction router backlogs.                                                                                  |
|                                                  | Synchronization Backlogs                         | Displays synchronization backlogs.                                                                                     |
|                                                  | Transaction Router Backlogs                      | Displays transaction router backlogs.                                                                                  |
| <b>Siebel User Activity</b>                      |                                                  |                                                                                                                        |
|                                                  | All Active and Connected Users                   | Displays the number of active and connected users for Siebel Application (component).                                  |
|                                                  | All Active Users                                 | Displays the number of active users for Siebel Application (component).                                                |
|                                                  | All Connected Users                              | Displays the number of connected users for Siebel Application (component).                                             |
| <b>Siebel Web Extension</b>                      |                                                  |                                                                                                                        |
|                                                  | Average Close Session Time                       | Displays the average close session time of Siebel Web Extension.                                                       |
|                                                  | Average Open Session Time                        | Displays the average open session time of Siebel Web Extension.                                                        |
|                                                  | Average Open Session Time per Application        | Displays the average open time of the specific Siebel Web Extension Application.                                       |
|                                                  | Average Request Time                             | Displays the average request time of Siebel Web Extension.                                                             |
|                                                  | Average Response Time                            | Displays the average response time of Siebel Web Extension.                                                            |
| <b>Web End User Experience</b>                   |                                                  |                                                                                                                        |
|                                                  | Web End User Experience                          | Displays web end user login time, action time, and logoff time.                                                        |
| <b>Business Intelligence Process Consumption</b> |                                                  |                                                                                                                        |
|                                                  | Business Intelligence Service Availability       | Displays availability of Business Intelligence services, for example, BI Server, BI Presentation Server, BI Scheduler. |
|                                                  | Business Intelligence Process CPU Consumption    | Displays CPU consumption for Business Intelligence processes.                                                          |
|                                                  | Business Intelligence Process Memory Consumption | Displays memory consumption for Business Intelligence processes.                                                       |

| Category                                               | Graph Name                                       | Description                                                                       |
|--------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Business Intelligence Cache</b>                     |                                                  |                                                                                   |
|                                                        | Business Intelligence Cache Size and Used Cache  | Displays cache size and used cache for Business Intelligence.                     |
|                                                        | Cache Consumption                                | Displays cache consumption for Business Intelligence in percentage.               |
|                                                        | Cache Performance (Inserts)                      | Displays cache performance (inserts) for Business Intelligence.                   |
|                                                        | Cache Performance (Hits)                         | Displays cache performance (hits) for Business Intelligence.                      |
|                                                        | Cache Performance (Hits and Inserted)            | Displays cache performance (hits and inserted) for Business                       |
| <b>Business Intelligence Database</b>                  |                                                  |                                                                                   |
|                                                        | Database Transaction Time                        | Displays Business Intelligence database transaction time.                         |
|                                                        | Database Login Time                              | Displays Business Intelligence database login time.                               |
|                                                        | Database Login Time vs. Transaction Time         | Displays Business Intelligence database login time vs. transaction time.          |
| <b>Business Intelligence User Usage Tracking</b>       |                                                  |                                                                                   |
|                                                        | Number of Users                                  | Displays the number of users connected to Business Intelligence.                  |
|                                                        | Number of Queries                                | Displays the number of executed queries.                                          |
|                                                        | Max Total Time vs. Average Total Time            | Displays query maximal total time vs. query average total time of usage tracking. |
|                                                        | Sum Total Time                                   | Displays the sum of total time.                                                   |
|                                                        | Total Time, Compile Time, Time in DB             | Displays total time, compile time, and time in database.                          |
|                                                        | Number of Rows Returned by the Back-End Database | Displays the number of rows returned by the back-end database.                    |
|                                                        | Number of Rows Returned to the Client            | Displays the number of rows returned to the client.                               |
| <b>Business Intelligence User Usage Tracking Query</b> |                                                  |                                                                                   |

| Category                          | Graph Name                 | Description                                     |
|-----------------------------------|----------------------------|-------------------------------------------------|
|                                   | Longest Running Queries    | Displays the longest running queries.           |
|                                   | Query Analysis             | Displays query analysis.                        |
| <b>Business Intelligence Jobs</b> |                            |                                                 |
|                                   | Business Intelligence Jobs | Displays Business Intelligence jobs statistics. |

## Sample Graph Output

Below are two sample graphs that can be produced. Both graphs relate to the Siebel Enterprise graph group.

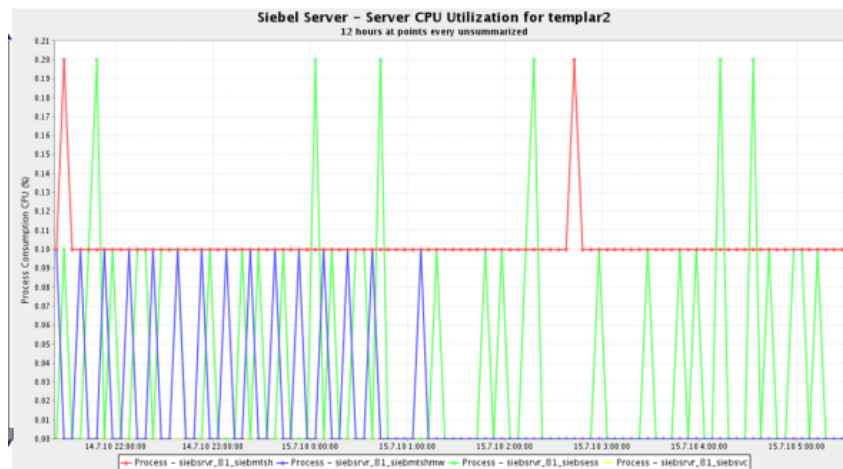
---

### NOTE

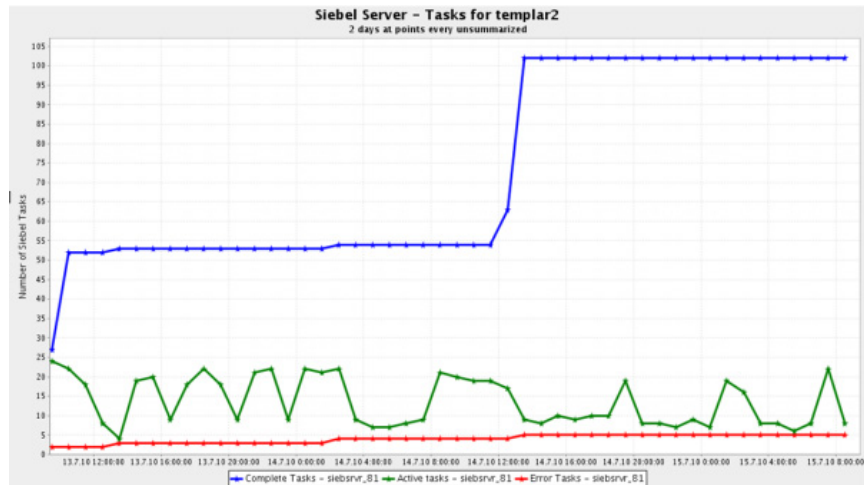
---

All graphs display output in similar format to that shown in the sample graphs [here](#).

The following graph reflects Siebel Application Server CPU utilization statistics.



The following graph displays Siebel Server tasks information.



---

## SPI for Siebel Integration with HP Reporter

HP Reporter creates Web-based reports from data derived from the targeted systems that it "discovers". Discovery of a system can occur if the system is running the HP Performance Agent software (formerly known as OVPA or MWA agents) or CODA Agent (part of the HPOM Agent).

After Reporter has run through its discovery, it gathers data based on pre-defined and user-specified lists of metrics. This data is then used to generate reports. From the data it collects, Reporter automatically generates many different reports, providing critical information about the systems in your computing environment.

### Deploying Policies and Collecting Performance Data

To produce reports, policies must be deployed. After the policies are successfully deployed, the CODA or MWA agent begins to collect performance data. For all Siebel systems where MWA or CODA agents are collecting data, HP Reporter can be used to generate reports.

### How HP Reporter Creates Reports

HP Reporter follows the steps below when producing reports:

1. ["Perform System Discovery" on page 113](#)
2. ["Gather Performance Data" on page 113](#)

### 3. [“Generate Reports” on page 114](#)

## Perform System Discovery

HP Reporter creates Web-based reports from data derived from the targeted systems that it "discovers". During a system discovery, Reporter looks for systems that are specified in the Discovery Area, and which have a CODA or HP Performance Agent agent installed on them. It then adds those systems to the Discovered Systems group.

Note that the following group is created automatically for SPI for Siebel purposes: **Siebel**

If you want to create this group manually, follow these steps:

1. In the left pane, right-click [Discovered Systems].
2. Select **Add Group**.
3. In the **Add Group** dialog box, type the new group name **Siebel**.
4. Click [Add].

## Gather Performance Data

After Reporter has run through its discovery, it gathers performance data from each discovered system and places it in a local database. Additionally, Reporter collects data only for those metrics that it knows about. These metrics are specified under **Metrics Lists**.

Metric lists control what information is gathered from a system into the Reporter's database. A metric list groups metrics from a single metric class supplied by the performance agent for UNIX or Windows. The metric list can also select the degree of summarization (points every 5 minutes, hour, day, and so on) and how much data to gather and retain in the database. The shorter the interval, the more records collected. The default summarization level is one hour. Metric lists are tightly connected to Data Source and Objects within that Data Source on each system.

The following metric lists are created for SPI for Siebel reports:

- SIEBEL\_COMP
- SIEBEL\_APP
- SIEBEL\_AMO
- SIEBEL\_UL
- SIEBEL\_UA
- SIEBEL\_TR
- SIEBEL\_BL
- SIEBEL\_DS
- SIEBEL\_SP

- . SIEBEL\_GW
- . SIEBEL\_ENT\_STATS
- . SIEBEL\_ENT\_PROC
- . SIEBEL\_ENT\_AVAIL
- . SIEBEL\_ENT\_TASKS
- . SIEBEL\_ENT\_FS
- . SIEBEL\_ENT\_REMOTE
- . SIEBEL\_SWE1
- . SIEBEL\_SWE2
- . SIEBEL\_SWE\_API
- . BI\_PROC\_UTIL
- . BI\_CACHE
- . BI\_CACHE1
- . BI\_DBPERF\_TRNS
- . BI\_DBPERF\_LOGIN
- . BI\_JOBS
- . BI\_JOBS1
- . BI\_USAGE\_QUERY

More information about metrics that are contained in this metric list is explained in the chapter [“Collecting Performance and Other Metrics from Siebel Environment”](#) on page 119.

## Generate Reports

Reporter generates HTML reports based on the data available in the local Reporter database.

The following report family is created for SPI for Siebel purposes:

- . Siebel

Reports are divided into the following categories:

### Siebel Enterprise

- . Gateway CPU utilization  
Shows the average CPU consumption of the Siebel gateway server processes during the reporting interval
- . Gateway memory utilization  
Shows the amount of physical memory in use for Siebel gateway server processes during the reporting interval
- . Siebel servers & file system usage

Shows the number and percent of running servers during the interval and the size of the Siebel file system

- Siebel Clients  
Shows the number of remote clients and the number of clients that must perform synchronization

### **Siebel Servers**

- Siebel Server CPU utilization  
Shows the average CPU utilization of all Siebel server processes and the average CPU utilization of the siebmtsh and siebses processes separately
- Siebel Server Memory Usage  
Shows the average memory usage of all Siebel server processes and the average memory usage of the siebmtsh and siebses processes separately
- Siebel Server Tasks  
Shows the average number of tasks started for server components, average number of active tasks, completed tasks, and tasks completed with an error
- Siebel Server Messages  
Shows the average size and average number of reply (request) messages sent (received) by the servers during the interval
- Siebel Object Manager Sessions  
Shows the average connect and response time for Object Manager sessions, average number of requests per Object Manager session, and the average number of errors during the Object Manager session.
- Siebel Server SQL Operations  
Shows the average time and average number of SQL execute, fetch, and parse operations for Siebel servers during the interval.

### **Siebel Components**

- Siebel Component CPU utilization  
Shows the average CPU utilization for the Siebel components during the reporting interval
- Siebel Component Memory Usage  
Shows the average memory usage for the Siebel components during the reporting interval
- Siebel Component SQL Operations  
Shows the average time and average number of SQL execute, fetch, and parse operations for the Siebel components during the interval

- Siebel Component Tasks  
Shows the number of total tasks for the Siebel components during the reporting interval

### **Siebel Clients**

- Siebel Clients Response  
Shows the average response time for Siebel clients during the reporting interval
- Synchronization Backlogs  
Shows the number of files that need to be sent to the particular client
- Transaction Merger Backlogs  
Shows the number of files that need to be merged from the particular client
- Transaction Router Backlogs  
Shows the number of transactions that need to be routed to the particular client

### **Siebel Datasources**

- Siebel DB Login Time  
Shows the average DB login time for Siebel servers during the reporting interval
- Siebel DB Transaction Time  
Shows the average DB transaction time during the reporting interval
- Siebel DB Table Size Growth  
Shows the average number of records in the Siebel database tables during the reporting interval

### **Siebel Users Activity**

- Users connected to Siebel Applications (Object Manager Components) grouped by users  
Shows Siebel user activity in Siebel Applications. The first part of the report focuses on determining top/bottom 30 users by the time spent using Siebel Applications. The second part of the report shows in detail for each user when they logged in, logged out and for how long they were connected to a Siebel Application. Grouping is performed by Siebel Enterprises and Siebel Servers.
- Users connected to Siebel Applications (Object Manager Components) grouped by Siebel Applications  
Shows Siebel users activity in Siebel Applications. The first part of the report focuses on summary connection time for Siebel Applications and summary number of Siebel users' connections to Siebel Application. The second part of the report shows in detail for each Siebel Application when users logged in, logged out, and for how long they were connected to the Siebel Application. Grouping is

performed by Siebel Enterprise and Siebel Servers.

- Number of users connected to Siebel Applications (Object Manager Components)  
Shows the number of users connected to Siebel Applications (Object Manager Components) between two monitor intervals, and the number users active in monitoring moment. First part of the report focuses on determining the top/bottom 30 Siebel Applications and Siebel Servers by the number of the Siebel user's connections. The second part of the report shows in detail how the number of connected users between the two intervals varied in time.
- Number of days since last update of account, opportunity or contact (Top 50 inactive Siebel users)  
Shows the date and time a Siebel user last added or changed an account, contact or opportunity, and the number of days since the last action, for the top 50 inactive Siebel users. Graph shows the top 20 inactive users.
- Number of days since last login of Siebel user (Top 50 inactive users)  
Shows how many days ago a Siebel user last logged in, and the last login time, for the top 50 inactive Siebel users. Graph shows the top 20 users.



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## **Chapter 15**

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# **Collecting Performance and Other Metrics from Siebel Environment**

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## About Collecting Performance and Other Metrics from the Siebel Environment

SPI for Siebel provides integration into both embedded (Embedded Performance Component of the HPOM Agent - CODA) and full-functioning (HP Performance Agent) performance management.

Integration with HP Performance Manager requires that HP Performance Agent or an Embedded Performance Component of the HPOM Agent is running on the managed node.

---

## HP Performance Agent

HP Performance Agent (formerly OVPA or MWA) collects, summarizes, time stamps, and detects alarm conditions on current and historical resource data across a system. It also provides performance, resource, and end-to-end transaction response time measurements, and supports network and database measurement information.

Data collected outside of HP Performance Agent can be integrated using data source integration (DSI) capabilities. For example, network, database, and your data from SPI for Siebel, can be assimilated through DSI and used similarly as other data collected by HP Performance Agent. All DSI data is logged, time stamped, and can be setup for alarms. For additional information about Performance Agent, refer to the *HP Performance Agent: Data Source Integration Guide*.

All data collected or received by HP Performance Agent can be analyzed using spreadsheet programs, or HP or other third-party analysis products.

The data logged by HP Performance Agent allows you to perform the following tasks:

- Characterize environmental workloads
- Analyze resource usage for load balancing
- Perform trend analysis
- Perform service-level management based on transaction response time
- Perform capacity planning
- Respond to alarm conditions
- Solve system management problems before they arise

HP Performance Agent also gathers information on system activity and allows for customization. You can accept default configurations, or set parameters to collect data for specific conditions.

For additional information on HP Performance Agent, refer to the HP Performance Agent manuals.

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## Embedded Performance Component (CODA) of the HPOM Agent

Integration of SPI for Siebel performance data is also possible with the Embedded Performance Component of the HP Performance Agent of the HP Agent.

In this case, performance metrics are collected by the Embedded Performance Component, which is part of the HPOM agents. The performance component collects performance instance and counter and information from many sources, mainly operating systems. The collected values are stored in a proprietary persistent data store from which they are gathered and changed into presentation values. Programs including HP Reporter and HP Performance Manager for Windows can use these values.

---

### NOTE

**You cannot extract, export, view, or aggregate the data directly on a managed node.**

The Embedded Performance Component is a powerful API and the data collection tool distributed with HP Operations Manager. The Embedded Performance Component collection is the preferred data collection mechanism and is always used when the Embedded Performance Component is installed on the managed node. For compatibility, some wrapper functions are used that provide the same interface as HP Performance Agent; however, the Embedded Performance Component is actually used.

In summary, the HP Operations Agent or Embedded Performance Agent is available with the HPOM agent. It provides the following:

- Lightweight system performance metric collection and storage via a Coda subagent
- Data can be visualized from HP Operations Manager, HP Performance Manager, and HP Reporter
- Its Black Box Communication (BBC) datacomm requires less ports through a firewall

---

## Using SPI for Siebel with HP Performance Agent (MWA)

Data Source Integration (DSI) technology allows you to use HP Performance Agent to log data, define alarms, and access metrics from new data sources beyond the

metrics logged by the HP Performance Agent scopeux collector. Metrics can be acquired from data sources such as databases, LAN monitors, and end-user applications.

Make sure that you have selected the MWA - HP Performance Agent option for the performance agent when configuring the SPI for Siebel. Otherwise, use the **SIEBSPI-Configure-direct** tool for selecting it.

For collecting performance data, you can use all policies described in [“Metrics Collected with the SPI for Siebel Policies” on page 122](#).

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## Using SPI for Siebel with Embedded Performance Agent (CODA)

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### IMPORTANT

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**Make sure that you have read the Software Requirements section in *SPI for Siebel Installation and Configuration Guide*. You will need the "SPI Data Collector" instrumentation deployed on your managed node before proceeding.**

Data Source Integration To Dynamic Data Feed (DSI2DDF) technology provides a command-line interface to the Embedded Performance Component (EPC) and passes the performance data to the EPC agent.

For this purpose, you can use the same policies in SPI for Siebel that you use for collecting performance data into HPPA, which is described in the next section *Metrics Collected with the SPI for Siebel Policies*. However, be sure that you have selected the **CODA - Embedded Performance Agent** option for the performance agent when configuring the SPI for Siebel. Via that configuration the policies collect data from the Siebel environment and store it in CODA.

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## Metrics Collected with the SPI for Siebel Policies

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### Policies Used for Collecting Performance Data

| Policy name                             | Description                                                       | Metric Group     |
|-----------------------------------------|-------------------------------------------------------------------|------------------|
| SIEBSPI_SERVER_AVAILABILITY_PERFORMANCE | Collects the performance data for the Siebel Servers Availability | SIEBEL_ENT_AVAIL |
| SIEBSPI_SERVER_FS_PERFORMANCE           | Collects the performance data of the Siebel server filesystem     | SIEBEL_EMT_FS    |
| SIEBSPI_SERVER_PROCESS_PERFORMANCE      | Collects the performance data of the Siebel server processes      | SIEBEL_ENT_PROC  |

| Policy name                                                                                                                                                                   | Description                                                                                                        | Metric Group      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------|
| SIEBSPI_SERVER_REMOTE_PERFORMANCE                                                                                                                                             | Collects the performance data of the Siebel remote clients                                                         | SIEBEL_ENT_REMOTE |
| SIEBSPI_SERVER_STATS_PERFORMANCE                                                                                                                                              | Collects the performance data of the Siebel server statistics                                                      | SIEBEL_ENT_STATS  |
| SIEBSPI_SERVER_TASKS_PERFORMANCE                                                                                                                                              | Collects the performance data of the Siebel server tasks                                                           | SIEBEL_ENT_TASKS  |
| SIEBSPI_GATEWAY_PERFORMANCE                                                                                                                                                   | Collects the performance data for the Siebel Gateways                                                              | SIEBEL_GW         |
| SIEBSPI_SP_PERFORMANCE                                                                                                                                                        | Collects Smart Probe performance data                                                                              | SIEBEL_SP         |
| SIEBSPI_DB_TRANS_PERFORMANCE                                                                                                                                                  | Collects database transaction performance data                                                                     | SIEBEL_TR         |
| SIEBSPI_DB_SESSION_PERFORMANCE                                                                                                                                                | Collects database sessions performance data                                                                        | SIEBEL_BL         |
| SIEBSPI_DB_LOGIN_PERFORMANCE                                                                                                                                                  | Collects database login performance data                                                                           | SIEBEL_DS         |
| SIEBSPI_*_COMPONENT with "-perf" option                                                                                                                                       | Collects Siebel Components performance data                                                                        | SIEBEL_COMP       |
| SIEBSPI_*_COMPONENT with "-usercount" option                                                                                                                                  | Collects data about number of Siebel users active on Siebel Components                                             | SIEBEL_APP        |
| SIEBSPI_*_COMPONENT with "-usertime" option                                                                                                                                   | Collects data about Siebel users activity (login) on Siebel Components                                             | SIEBEL_AMO        |
| SIEBSPI_SYNCH_BACKLOG_PERF<br>SIEBSPI_TRANS_MERGER_BACKLOG_PERF<br>SIEBSPI_TRANS_PROCESSOR_BACKLOG_PERF<br>SIEBSPI_TRANS_ROUTER_BACKLOG_PERF<br>SIEBSPI_WORKFLOW_BACKLOG_PERF | Collects database tables backlog data                                                                              | SIEBEL_BL         |
| SIEBSPI_USER_LOGIN_PERFORMANCE                                                                                                                                                | Collects data about Siebel users last login time                                                                   | SIEBEL_UL         |
| SIEBSPI_USER_ACTION_PERFORMANCE                                                                                                                                               | Collects data about Siebel users last update of account, opportunity or contact                                    | SIEBEL_UA         |
| SIEBSPI_SWSE_SYSTEM_STATISTIC_PERF                                                                                                                                            | Collects SWSE System statistics performance data                                                                   | SIEBEL_SWE1       |
| SIEBSPI_SWSE_APPLICATION_STATISTIC_PERF                                                                                                                                       | Collects SWSE Application statistics performance data                                                              | SIEBEL_SWE2       |
| SIEBSPI_SWSE_LIST_*_PERF                                                                                                                                                      | Collects the performance data for Siebel Web Server extension action (List - Accounts, Contacts, or Opportunities) | SIEBEL_SWE_API    |

| Policy name                            | Description                                                   | Metric Group      |
|----------------------------------------|---------------------------------------------------------------|-------------------|
| SIEBSPI_BI_PROCESS_PERF                | Collects the performance data for BI processes.               | BI_PROC_UTIL      |
| SIEBSPI_BI_CACHE_PERF                  | Collects the cache performance data.                          | BI_CACHE          |
| SIEBSPI_BI_CACHE_TRACKING_PERF         | Collects the usage tracking cache performance data.           | BI_CACHE1         |
| SIEBSPI_BI_DB_LOGIN_PERF               | Collects the database login time performance data.            | BI_DBPERF_LOGIN   |
| SIEBSPI_BI_DB_TRANSACTION_PERF         | Collects the database transaction time performance data.      | BI_DBPERF_TRNS    |
| SIEBSPI_BI_JOBS_PERF                   | Collects the scheduled jobs performance data.                 | BI_JOBS, BI_JOBS1 |
| SIEBSPI_BI_USAGE_TRACKING_GENERAL_PERF | Collects the usage tracking performance data for all queries. | BI_USAGE_QUERY    |
| SIEBSPI_BI_USAGE_TRACKING_PERF         | Collects the usage tracking performance data.                 | BI_USAGE_QUERY    |

## Metrics Collected with SIEBSPI\_SERVER\_STATS\_PERFORMANCE

### Metric group SIEBEL\_ENT\_STATS

| Metric Name      | Metric Label          | Description                                           |
|------------------|-----------------------|-------------------------------------------------------|
| ST_SRVR_NAME     | Server Name           | Siebel Server Name                                    |
| ST_ENT_NAME      | Enterprise Name       | Siebel Enterprise Name                                |
| ST_AVG_CONN_TIME | Avg. Connect Time     | Average connect time for Object Manager sessions      |
| ST_AVG_CPU_TIME  | Avg. CPU Time         | Total CPU time for component tasks (in seconds)       |
| ST_AVG_R_TIME    | Avg. Response Time    | Average Object Manager response time                  |
| ST_AVG_REP_SIZE  | Avg. Reply Size       | Average size of reply messages (in bytes)             |
| ST_AVG_REQ_P_S   | Avg. Req. Per S       | Average number of requests per Object Manager session |
| ST_AVG_REQ_SIZE  | Avg. Request Size     | Average size of request messages (in bytes)           |
| ST_AVG_SQL_EXE_T | Avg. SQL Execute Time | Average time for SQL execute operations (in seconds)  |

| <b>Metric Name</b> | <b>Metric Label</b>  | <b>Description</b>                                            |
|--------------------|----------------------|---------------------------------------------------------------|
| ST_AVG_SQL_F_T     | Avg. SQL Fetch Time  | Average time for SQL fetch operations (in seconds)            |
| ST_AVG_SQL_P_T     | Avg. SQL Parse Time  | Average time for SQL parse operations (in seconds)            |
| ST_AVG_THINK_TIME  | Avg. Think Time      | Average end-user think time between requests                  |
| ST_ELAPSED_TIME    | Elapsed Time         | Total elapsed (running) time for component tasks (in seconds) |
| ST_NUM_DBConn_RET  | Num of DBConn Retr.  | Number of re-tries due to DB connection loss                  |
| ST_NUM_DLRBK_RET   | Num of DLRbk Re.     | Number of re-tries due to deadlock rollbacks                  |
| ST_NUM_EXHAS_RET   | Num of Exhausted Re. | Number of times all re-tries are exhausted                    |
| ST_NUM_OF_SLEEPS   | Num of Sleeps        | Total amount of sleep time for component tasks (in seconds)   |
| ST_NUM_SQL_EXECS   | Num of SQL Exec.     | Total number of SQL execute operations                        |
| ST_NUM_SQL_FETCHES | Num of SQL Fetch.    | Total elapsed time for SQL fetch operations (in seconds)      |
| ST_NUM_SQL_PASES   | Num of SQL Parses    | Total elapsed time for SQL parse operations (in seconds)      |
| ST_OBJ_MANAGER_ERR | Object Manager Err.  | Number of errors encountered during Object Manager session    |
| ST_REPLY_MESSAGES  | Reply Messages       | Number of reply messages sent by the server                   |
| ST_REQ_MESSAGES    | Request Messages     | Number of request messages received by the server             |
| ST_SIEB_FS_FREE    | Sieb FS free (%)     | Siebel file server disk free space (%)                        |
| ST_SIEB_FS_SIZE    | Sieb FS size (kb)    | Siebel file server disk usage (kb)                            |
| ST_SLEEP_TIME      | Sleep Time           | Total amount of sleep time for component tasks (in seconds)   |
| ST_SQL_EXEC_TIME   | SQL Execute Time     | Total elapsed time for SQL execute operations (in seconds)    |
| ST_SQL_FETCH_TIME  | SQL Fetch Time       | Total elapsed time for SQL fetch operations (in seconds)      |

| Metric Name       | Metric Label        | Description                                              |
|-------------------|---------------------|----------------------------------------------------------|
| ST_SQL_PARSE_TIME | SQL Parse Time      | Total elapsed time for SQL parse operations (in seconds) |
| ST_TOT_REPLY_SIZE | Total Reply Size    | Total size (in bytes) of reply messages                  |
| ST_TOT_REQ_SIZE   | Total Request Size  | Total size (in bytes) of request messages                |
| ST_TOT_RESP_TIME  | Total Response Time | Total Object Manager response time (in seconds)          |
| ST_TOT_TASKS      | Total Tasks         | Total number of tasks started for server components      |
| ST_TOT_THINK_TIME | Total Think Time    | Total end-user think time (in seconds)                   |

## Metrics Collected with SIEBSPI\_SERVER\_AVAILABILITY\_PERFORMANCE

### Metric group SIEBEL\_ENT\_AVAIL

| Metric Name    | Metric Label    | Description                                       |
|----------------|-----------------|---------------------------------------------------|
| ENTA_SRV_NAME  | Server Name     | Siebel Server name                                |
| ENTA_ENT_NAME  | Enterprise Name | Siebel Enterprise name                            |
| ENTA_SRV_AVAIL | Server Av.(%)   | Percent of running servers (%)                    |
| ENTA_NUM_SRV   | Num of Servers  | Number of Siebel servers in the Siebel Enterprise |

## Metrics Collected with SIEBSPI\_SERVER\_FS\_PERFORMANCE

### Metric group SIEBEL\_ENT\_FS

| Metric Name   | Metric Label      | Description                            |
|---------------|-------------------|----------------------------------------|
| ENTF_SRV_PATH | Srv & FS Path     | Siebel Server and file system SPI ID   |
| ENTF_SRV_NAME | Server Name       | Siebel Server name                     |
| ENTF_NAME     | Enterprise Name   | Siebel Enterprise name                 |
| ENTF_FS_PATH  | FS Path           | Siebel file system path                |
| ENTF_FS_FREE  | Sieb FS free (%)  | Siebel file server disk free space (%) |
| ENTF_FS_SIZE  | Sieb FS size (kb) | Siebel file server disk usage (kb)     |

## Metrics Collected with SIEBSPI\_SERVER\_PROCESS\_PERFORMANCE

### Metric group SIEBEL\_ENT\_PROC

| Metric Name    | Metric Label       | Description                                  |
|----------------|--------------------|----------------------------------------------|
| ENTP_SRV_PROC  | Srv & Proc. Name   | Siebel Server and process SPI ID             |
| ENTP_SRVR_NAME | Server Name        | Siebel Server name                           |
| ENTP_NAME      | Enterprise Name    | Siebel Enterprise name                       |
| ENTP_PROC_NAME | Process Name       | Siebel process name                          |
| ENTP_PROC_CNT  | Num. Oof Proc.     | Number of running processes on Siebel server |
| ENTP_CPU_UTIL  | Proc CPU Util.(%)  | Siebel process CPU utilization (%)           |
| ENTP_MEM_USG   | Proc Mem Usage(kb) | Siebel process memory Usage (kb)             |

## Metrics Collected with SIEBSPI\_SERVER\_PROCESS\_PERFORMANCE

### Metric group SIEBEL\_ENT\_PROC

| Metric Name    | Metric Label       | Description                                  |
|----------------|--------------------|----------------------------------------------|
| ENTP_SRV_PROC  | Srv & Proc. Name   | Siebel Server and process SPI ID             |
| ENTP_SRVR_NAME | Server Name        | Siebel Server name                           |
| ENTP_NAME      | Enterprise Name    | Siebel Enterprise name                       |
| ENTP_PROC_NAME | Process Name       | Siebel process name                          |
| ENTP_PROC_CNT  | Num. Oof Proc.     | Number of running processes on Siebel server |
| ENTP_CPU_UTIL  | Proc CPU Util.(%)  | Siebel process CPU utilization (%)           |
| ENTP_MEM_USG   | Proc Mem Usage(kb) | Siebel process memory Usage (kb)             |

## Metrics Collected with SIEBSPI\_SERVER\_TASKS\_PERFORMANCE

### Metric group SIEBEL\_ENT\_TASKS

| Metric Name    | Metric Label    | Description                        |
|----------------|-----------------|------------------------------------|
| ENTT_SRVR_NAME | Server Name     | Siebel Server name                 |
| ENTT_NAME      | Enterprise Name | Siebel Enterprise name             |
| T_NUM_OF_TASKS | Num of Tasks    | Number of Siebel tasks on a Siebel |

|                    |                     |                                                            |
|--------------------|---------------------|------------------------------------------------------------|
| T_NUM_ACTIVE_TASKS | Num of Act. Tasks   | Number of active tasks on a Siebel server                  |
| T_NUM_CMPLT_TASKS  | Num of Completed T. | Number of completed tasks on a Siebel server               |
| T_NUM_EXIT_ERR_T   | Num Exit Error T.   | Number of completed tasks with an error on a Siebel server |

## Metrics Collected with SIEBSPI\_SERVER\_REMOTE\_PERFORMANCE

### Metric group SIEBEL\_ENT\_REMOTE

| Metric Name         | Metric Label       | Description                                     |
|---------------------|--------------------|-------------------------------------------------|
| ENTR_SRVR_NAME      | Server Name        | Siebel Server name                              |
| ENTR_NAME           | Enterprise Name    | Siebel Enterprise name                          |
| R_NUM_REM_CLIENTS   | Num of Remote Cli. | Number of remote clients on a Siebel enterprise |
| R_NUM_USR_NEED_SYNC | Clients Need Sync. | Number of users needing to synchronize          |

## Metrics Collected with SIEBSPI\_GATEWAY\_PERFORMANCE

### Metric group SIEBEL\_GW

| Metric Name   | Metric Label          | Description                                    |
|---------------|-----------------------|------------------------------------------------|
| GW_ENT_NAME   | Enterprise Name       | Siebel Enterprise Name                         |
| GW_NAME       | Gateway Server Name   | Siebel Gateway Server Name                     |
| GW_SERVER_CPU | Gateway Server CPU%   | Siebel Gateway name server CPU utilization (%) |
| GW_SERVER_MEM | Gateway Srv. MEM (kb) | Siebel Gateway name server memory Usage (kb)   |

## Metrics Collected with SIEBSPI\_SP\_PERFORMANCE

### Metric group SIEBEL\_SP

| Metric Name | Metric Label    | Description                 |
|-------------|-----------------|-----------------------------|
| SP_INSTANCE | Instance ID     | Siebel mobile client SPI ID |
| SP_ENT_NAME | Enterprise Name | Enterprise Name             |

|                     |                       |                                                                         |
|---------------------|-----------------------|-------------------------------------------------------------------------|
| SP_CL_HOST_NAME     | Client Host Name      | Mobile client host name                                                 |
| SP_CL_DB_LOGIN_T    | Client Login Time(ms) | Login time required by the client to connect to the database            |
| SP_CL_DB_SQL_EXEC_T | Client SQL Time(ms)   | Transaction execute time from the client host                           |
| SP_TRANS_STRING     | Transaction String    | The name of Siebel's business component, business object and filed name |

## Metrics Collected with SIEBSPI\_DB\_LOGIN\_PERFORMANCE

### Metric group SIEBEL\_DS

| Metric Name   | Metric Label      | Description                                                     |
|---------------|-------------------|-----------------------------------------------------------------|
| DS_ENT_NAME   | Enterprise Name   | Enterprise Name                                                 |
| DS_HOST_NAME  | Host Name         | DB client host name                                             |
| DS_DB_LOGIN_T | DB Login Time(ms) | Login time required by the DB client to connect to the database |

## Metrics Collected with SIEBSPI\_DB\_TRANS\_ACTION\_PERFORMANCE

### Metric group SIEBEL\_TR

| Metric Name      | Metric Label        | Description             |
|------------------|---------------------|-------------------------|
| TR_ENT_NAME      | Enterprise Name     | Enterprise name         |
| TR_HOST_NAME     | Host Name           | Mobile client host name |
| TR_DB_SQL_NAME   | DB SQL Name         | Name of SQL             |
| TR_DB_SQL_EXEC_T | Client SQL Time(ms) | SQL execute time        |

## Metrics Collected with SIEBSPI\_\*\_BACKLOG\_PERF

### Metric group SIEBEL\_BL

| Metric Name  | Metric Label    | Description                 |
|--------------|-----------------|-----------------------------|
| BL_INSTANCE  | Instance ID     | Siebel mobile client SPI ID |
| BL_ENT_NAME  | Enterprise Name | Enterprise Name             |
| BL_HOST_NAME | Host Name       | Mobile client host name     |

|                      |                |                                 |
|----------------------|----------------|---------------------------------|
| BL_DB_BACKLOG_NAME   | Backlog Name   | Name of backlog                 |
| BL_DB_BACKLOG_VALUE  | Backlog Value  | Backlog value                   |
| BL_DB_BACKLOG_STRING | Backlog String | Additional backlog string value |

## Metrics Collected with SIEBSPI\_\*\_COMPONENT with the "-perf" Parameter Specified

### Metric group SIEBEL\_COMP

| Metric Name        | Metric Label          | Description                                                   |
|--------------------|-----------------------|---------------------------------------------------------------|
| CS_AVG_SQL_EXE_T   | Avg. SQL Execute Time | Average time for SQL execute operations (in seconds)          |
| CS_AVG_SQL_F_T     | Avg. SQL Fetch Time   | Average time for SQL fetch operations (in seconds)            |
| CS_AVG_SQL_P_T     | Avg. SQL Parse Time   | Average time for SQL parse operations (in seconds)            |
| CS_COM_NAME        | Component Name        | Siebel Component Name                                         |
| CS_CPU_UTIL        | Component CPU Util.   | Siebel Component CPU utilization (CPU%)                       |
| CS_CPU_TIME        | Component CPU Time    | Siebel Component CPU Time                                     |
| CS_ELAPSED_TIME    | Elapsed Time          | Total elapsed (running) time for component tasks (in seconds) |
| CS_ENT_NAME        | Enterprise Name       | Siebel Enterprise Name                                        |
| CS_NUM_OF_SLEEPS   | Num of Sleeps         | Total amount of sleep time for component tasks (in seconds)   |
| CS_NUM_SQL_EXECS   | Num of SQL Exec.      | Total number of SQL execute operations                        |
| CS_NUM_SQL_FETCHES | Num of SQL Fetch.     | Total elapsed time for SQL fetch operations (in seconds)      |
| CS_NUM_SQL_PASES   | Num of SQL Parses     | Total elapsed time for SQL parse operations (in seconds)      |
| CS_MEM_USAGE       | Srv. Mem Usage        | Siebel component memory usage (kb)                            |
| CS_SLEEP_TIME      | Sleep Time            | Total amount of sleep time for component tasks (in seconds)   |
| CS_SQL_EXEC_TIME   | SQL Execute Time      | Total elapsed time for SQL execute operations (in seconds)    |

|                   |                |                                                          |
|-------------------|----------------|----------------------------------------------------------|
| CS_SQL_FETCH_TIME | SQL Fetch Time | Total elapsed time for SQL fetch operations (in seconds) |
| CS_SQL_PARSE_TIME | SQL Parse Time | Total elapsed time for SQL parse operations (in seconds) |
| CS_SRVR_NAME      | Server Name    | Siebel server name                                       |
| CS_TOT_TASKS      | Total Tasks    | Total number of tasks for Siebel component               |

### Metrics Collected with SIEBSPI\_\*\_COMPONENT with the "-usercount" Parameter Specified

#### Metric group SIEBEL\_APP

| Metric Name        | Metric Label         | Description                                                                             |
|--------------------|----------------------|-----------------------------------------------------------------------------------------|
| APP_ENT_NAME       | Enterprise Name      | Enterprise Name                                                                         |
| APP_SRVR_NAME      | Server Name          | Siebel Server name                                                                      |
| APP_APPLICATION    | Siebel Appl Name     | Siebel Application (Component) name                                                     |
| APP_ACT_USER_COUNT | Active users counter | Count of all Siebel users logged to Siebel Application in monitoring moment             |
| APP_ALL_USER_COUNT | Users counter        | Count of all Siebel users logged to Siebel Application between two monitoring intervals |

### Metrics Collected with SIEBSPI\_\*\_COMPONENT with the "-usertime" Parameter Specified

#### Metric group SIEBEL\_AMO

| Metric Name     | Metric Label     | Description                                       |
|-----------------|------------------|---------------------------------------------------|
| AMO_ENT_NAME    | Enterprise Name  | Enterprise Name                                   |
| AMO_SRVR_NAME   | Server Name      | Siebel Server name                                |
| AMO_APPLICATION | Siebel Appl Name | Siebel Application (Component) name               |
| AMO_USER        | Siebel User Name | Siebel user name                                  |
| AMO_STARTTIME   | Login time       | Time when Siebel user log into Siebel Application |
| AMO_STOPTIME    | Logout time      | Time when Siebel user log out from Application    |

## Metrics Collected with SIEBSPI\_USER\_LOGIN\_PERFORMANCE

### Metric group SIEBEL\_UL

| Metric Name   | Metric Label     | Description                 |
|---------------|------------------|-----------------------------|
| UL_ENT_NAME   | Enterprise Name  | Enterprise Name             |
| UL_USER       | Siebel User Name | Siebel user name            |
| UL_LAST_LOGIN | Last login time  | Siebel user last login time |

## Metrics Collected with SIEBSPI\_USER\_ACTION\_PERFORMANCE

### Metric group SIEBEL\_UA

| Metric Name         | Metric Label            | Description                                         |
|---------------------|-------------------------|-----------------------------------------------------|
| UA_ENT_NAME         | Enterprise Name         | Enterprise Name                                     |
| UA_USER             | Siebel User Name        | Siebel user name                                    |
| UA_LAST_ACCOUNT     | Last account change     | Time when Siebel user last time changed account     |
| UA_LAST_OPPORTUNITY | Last opportunity change | Time when Siebel user last time changed opportunity |
| UA_LAST_CONTACT     | Last contact change     | Time when Siebel user last time changed contact     |

## Metrics Collected with SIEBSPI\_SWSE\_SYSTEM\_STATISTIC\_PERF

### Metric group SIEBEL\_SWE1

| Metric Name       | Metric Label        | Description                |
|-------------------|---------------------|----------------------------|
| SWE1_ENT_NAME     | Enterprise Name     | Enterprise Name            |
| SWE1_AR_TIME      | Avg Response Time   | Average response time      |
| SWE1_AC_SESS_TIME | Avg Close Sess Time | Average close session time |
| SWE1_AO_SESS_TIME | Avg Open Sess Time  | Average open session time  |
| SWE1_ARQ_TIME     | Avg Request Time    | Average request time       |

## Metrics Collected with SIEBSPI\_SWSE\_APPLICATION\_STATISTIC\_PERF

### Metric group SIEBEL\_SWE2

| Metric Name       | Metric Label       | Description               |
|-------------------|--------------------|---------------------------|
| SWE2_ENT_NAME     | Enterprise Name    | Enterprise Name           |
| SWE2_APPLICATION  | Siebel Appl Name   | Siebel Application name   |
| SWE2_AO_SESS_TIME | Avg Open Sess Time | Average open session time |

## Metrics Collected with SIEBSPI\_SWSE\_LIST\_\*\_PERF

### Metric group SIEBEL\_API

| Metric Name       | Metric Label        | Description                                                 |
|-------------------|---------------------|-------------------------------------------------------------|
| SWE_HOST_WSRV_ACT | Host&Web&Action Key | Siebel Spi ID (host, websrv,action)                         |
| SWE_ACTION        | SWE action command  | SWSE action commadn (list accounts,contacts, opportunities) |
| SWE_WSRV_NAME     | Web Srv. Name       | Siebel Web Server name                                      |
| SWE_HOST_NAME     | Host Name           | Host Name                                                   |
| SWE_APPLICATION   | SWE Application     | Siebel web Server Application Name                          |
| SWE_TIME          | SWE Action Time     | Total time for Siebel Web Client action (ms)                |
| SWE_USER_NAME     | SWE User Name       | Siebel Client User Name                                     |

## Metrics Collected with SIEBSPI\_BI\_PROCESS\_PERF

### Metric group BI\_PROC\_UTIL

| Metric Name    | Metric Label         | Description                                       |
|----------------|----------------------|---------------------------------------------------|
| PROC_NAME      | Process Name         | Business Intelligence process name                |
| PROC_NODE_NAME | BI Node Name         | Business Intelligence node name                   |
| PROC_CPU       | CPU (%)              | Business Intelligence process CPU utilization (%) |
| PROC_MEM       | MEM (kb)             | Business Intelligence process memory usage (kb)   |
| PROC_AVAIL     | Process Availability | Business Intelligence process availability        |

## Metrics Collected with SIEBSPI\_BI\_CACHE\_PERF

### Metric group BI\_CACHE

| Metric Name     | Metric Label    | Description                                 |
|-----------------|-----------------|---------------------------------------------|
| CACHE_PATH      | Cache Path      | Business Intelligence cache path            |
| CACHE_NODE_NAME | BI Node Name    | Business Intelligence Node name             |
| CACHE_SIZE      | Cache Size (kb) | Business Intelligence Cache size (kb)       |
| CACHE_USED_PERC | Cache Used (%)  | Business Intelligence Cache consumption (%) |
| CACHE_USED_KB   | Cache Used (kb) | Business Intelligence Cache used (kb)       |

## Metrics Collected with SIEBSPI\_BI\_CACHE\_TRACKING\_PERF

### Metric group BI\_CACHE1

| Metric Name        | Metric Label      | Description                                |
|--------------------|-------------------|--------------------------------------------|
| CACHE1_NODE_NAME   | BI Node Name      | Business Intelligence node name            |
| CACHE_COUNT_ALL    | Count all queries | Count of all queries                       |
| CACHE_COUNT_INSERT | Num of Inserts    | Number of all inserted queries             |
| CACHE_COUNT_HITS   | Num of Hits       | Number of all hits                         |
| CACHE_INSERTED     | Cache Inserted(%) | Percentage of queries inserted into cache  |
| CACHE_HITS         | Cache Hits(%)     | Percentage of query hits (read from cache) |

## Metrics Collected with SIEBSPI\_BI\_LOGIN\_PERF

### Metric group BI\_DBPERF\_LOGIN

| Metric Name     | Metric Label       | Description                                                     |
|-----------------|--------------------|-----------------------------------------------------------------|
| LOGIN_NODE_NAME | BI Node Name       | Business Intelligence node name                                 |
| LOGIN_TIME      | DB Login Time (ms) | Login time required by the DB client to connect to the database |

## Metrics Collected with SIEBSPI\_BI\_TRANSACTION\_PERF

### Metric group BI\_DBPERF\_TRNS

| Metric Name    | Metric Label       | Description                          |
|----------------|--------------------|--------------------------------------|
| TRNS_NAME      | Transaction Name   | Name of the executed SQL transaction |
| TRNS_NODE_NAME | BI Node Name       | Business Intelligence node name      |
| TRNS_TIME      | DB Trans Time (ms) | SQL execute time                     |

## Metrics Collected with SIEBSPI\_BI\_CACHE\_TRACKING\_PERF

### Metric group BI\_CACHE1

| Metric Name        | Metric Label      | Description                                |
|--------------------|-------------------|--------------------------------------------|
| CACHE1_NODE_NAME   | BI Node Name      | Business Intelligence Node name            |
| CACHE_COUNT_ALL    | Count All Queries | Count of all queries                       |
| CACHE_COUNT_INSERT | Num of Inserts    | Number of all inserted queries             |
| CACHE_COUNT_HITS   | Num of Hits       | Number of all hits                         |
| CACHE_INSERTED     | Cache Inserted(%) | Percentage of queries inserted into cache  |
| CACHE_HITS         | Cache Hits(%)     | Percentage of query hits (read from cache) |

## Metrics Collected with SIEBSPI\_BI\_JOBS\_PERF

### Metric group BI\_JOBS

| Metric Name        | Metric Label     | Description                              |
|--------------------|------------------|------------------------------------------|
| JOBS_NAME_AND_ID   | Job Name and ID  | Job Name Siebel SPI ID                   |
| JOBS_NODE_NAME     | BI Node Name     | Business Intelligence node name          |
| JOBS_JOB_NAME      | Job Name         | Business Intelligence Scheduler job name |
| JOBS_JOB_ID        | Job ID           | Business Intelligence Job ID             |
| JOBS_JOB_STATUS    | Job Status       | Current status of a job                  |
| JOBS_LAST_RUN_TIME | Job Last Runtime | The last time the job was executed       |
| JOBS_NEXT_RUN_TIME | Job Next Runtime | The next time of job execution           |

|                 |                 |                 |
|-----------------|-----------------|-----------------|
| JOBS_SCRIPT_TYP | Job Script Type | Job Script type |
| JOBS_TIMEZONE   | Job Timezone    | Job time zone   |
| JOBS_USER_ID    | Job User Name   | Job user name   |
| JOBS_ERR_TEXT   | Job Error Text  | Job error text  |

#### **Metric group BI\_JOBS1**

| <b>Metric Name</b> | <b>Metric Label</b> | <b>Description</b>              |
|--------------------|---------------------|---------------------------------|
| JOBS1_NODE_NAME    | BI Node Name        | Business Intelligence node name |
| JOBS1_TOTAL        | Total Num. of Jobs  | Total number of jobs            |
| JOBS1_FAILED       | Num. of Failed Jobs | Number of failed jobs           |

### **Metrics Collected with SIEBSPI\_BI\_USAGE\_TRACKING\_GENERAL\_PERF**

### **Metrics Collected with SIEBSPI\_BI\_USAGE\_TRACKING\_PERF**

#### **Metric group BI\_USAGE\_QUERY**

| <b>Metric Name</b>   | <b>Metric Label</b> | <b>Description</b>                                   |
|----------------------|---------------------|------------------------------------------------------|
| QUERY_QUERY_NAME     | Query               | The SQL submitted for the query                      |
| QUERY_NODE_NAME      | BI Node Name        | Business Intelligence node name                      |
| QUERY_QUERY_ID       | Query Hash ID       | Unique query hash ID                                 |
| QUERY_QUERY_COUNT    | Query Count         | Total query count                                    |
| QUERY_USERS_COUNT    | Users Count         | Total Users Count                                    |
| QUERY_MAX_TOT_TIME   | Max Tot. Time (s)   | Max total time (sec)                                 |
| QUERY_AVG_TOT_TIME   | Avg Tot. Time (s)   | Average total time (sec)                             |
| QUERY_SUM_TOT_TIME   | Sum Tot. Time (s)   | Sum total time (sec)                                 |
| QUERY_MAX_ROW_COUNT  | Max Row Count       | Max number of row count returned to the client       |
| QUERY_AVG_ROW_COUNT  | Avg Row Count       | Average number of row count returnrd to the client   |
| QUERY_MAX_NUM_DB_ROW | Max Num DB Row      | Max number of row count returned by the database     |
| QUERY_AVG_NUM_DB_ROW | Avg Num DB Row      | Average number of row count returned by the database |
| QUERY_MAX_COMP_TIME  | Max Comp. Time(s)   | Max query compile time (sec)                         |

|                      |                   |                                          |
|----------------------|-------------------|------------------------------------------|
| QUERY_AVG_COMP_TIME  | Avg Comp. Time(s) | Average query compile time (sec)         |
| QUERY_MAX_DB_TIME    | Max Time in DB(s) | Max query time spent in the DB (sec)     |
| QUERY_AVG_DB_TIME    | Avg Time in DB(s) | Average query time spent in the DB (sec) |
| QUERY_SUM_DB_TIME    | Sum Time in DB(s) | Total query time spent in the DB (sec)   |
| QUERY_SUM_DB_QUERY   | Total Num Query   | Total number of queries                  |
| QUERY_AVG_DB_QUERY   | Avg Num Query     | Average number of queries                |
| QUERY_SUM_CACHE_INS  | Tot. Cache Ins.   | Total cache inserts                      |
| QUERY_SUM_CACHE_HITS | Tot. Cache Hits   | Total cache hits                         |



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## **Chapter 16**

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# **Customizing SPI for Siebel**

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## Message Correlation and State-based Browser

Message correlation helps to prevent your message browser from becoming cluttered with messages that describe the same problem. SPI for Siebel generates messages with pre-configured "Message Keys" and "Acknowledging Messages with Message Keys" properties. These make implementation of the concept for threshold as easy as possible.

---

### NOTE

**This feature is implemented in the most important policies.**

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## About State-based Browsers

When you acknowledge messages automatically, a maximum of one message per managed object exists in the browser. This message reflects the current status of the object. Thus, the message browser has become a state-based browser. SPI for Siebel has many *Message Key* and *Acknowledge messages* with message key properties within policies. For additional information, refer to one of the policies in the list below. (Note that this list is just a representative sample of all available message keys.)

- . SIEBSPI\_SERVER\_AVAILABILITY\_EXT
- . SIEBSPI\_SERVER\_PROCESS\_EXT
- . SIEBSPI\_SIEBEL\_FS
- . SIEBSPI\_NUM\_TASKS\_TOO\_HIGH\_EXT
- . SIEBSPI\_COMP\_STATUS\_EXT
- . SIEBSPI\_CHECK\_TASKS\_EXT
- . SIEBSPI\_GATEWAY\_PROCESS

Additionally, an example of a message generated by such templates is shown in the *Figure 3-1: Message Properties*.

**Message Properties**

State Commands Custom Message Attributes

General Annotations Duplicates Instructions Text

ID: c68f89a0-9372-71dc-123e-0a3105f30000

Minor

Time First Created on Node: 11/15/2007 1:03:28 PM +0100 UTC

Time First Received on Server: 11/15/2007 1:03:28 PM +0100 UTC

Number of Duplicates: 45

Time Last Received on Server: 11/26/2007 4:39:21 PM +0100 UTC

Sender:

Origin:

Primary Node Name: mondor.hermes.si

Service Id: siebspi\_s8\_mondor\_mondor\_mondor\_SIEBFS

Message Group: siebspi

Message Type:

Message Key: mondor.hermes.si:s8\_mondor:FILESYSTEM

Ack msgs w/msg key: mondor.hermes.si:s8\_mondor:FILESYSTEM

Policy: SIEBSP| SIEBEL\_FS(3.1)

PolicyType: Measurement Threshold | Service/Process Monitoring

Application: Siebel

Object: Siebel FS

☐ Unmatched

OK Cancel Apply Help

---

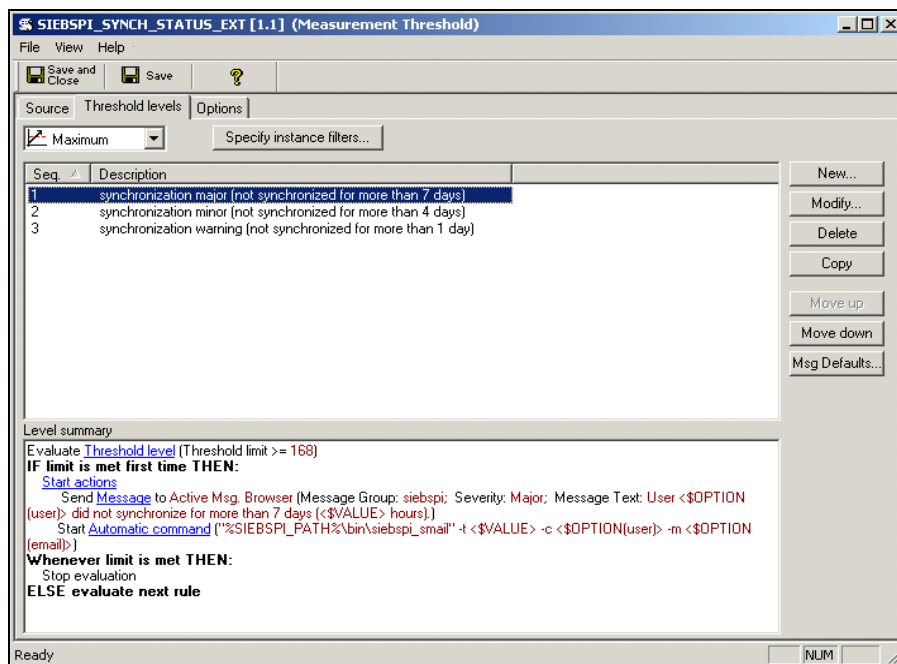
## Changing E-mail for Synchronization Status Reporting

By default, an e-mail notification with information that a remote user has not synchronized for the specified amount of time is sent only to that user. If you want that e-mail to be sent also to a fixed e-mail address (for example, a Siebel administrator) or only to a fixed e-mail address, modify the SIEBSPI\_SYNCH\_STATUS\_EXT policy, located in the **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Mobile Clients and Backlogs** policy group.

---

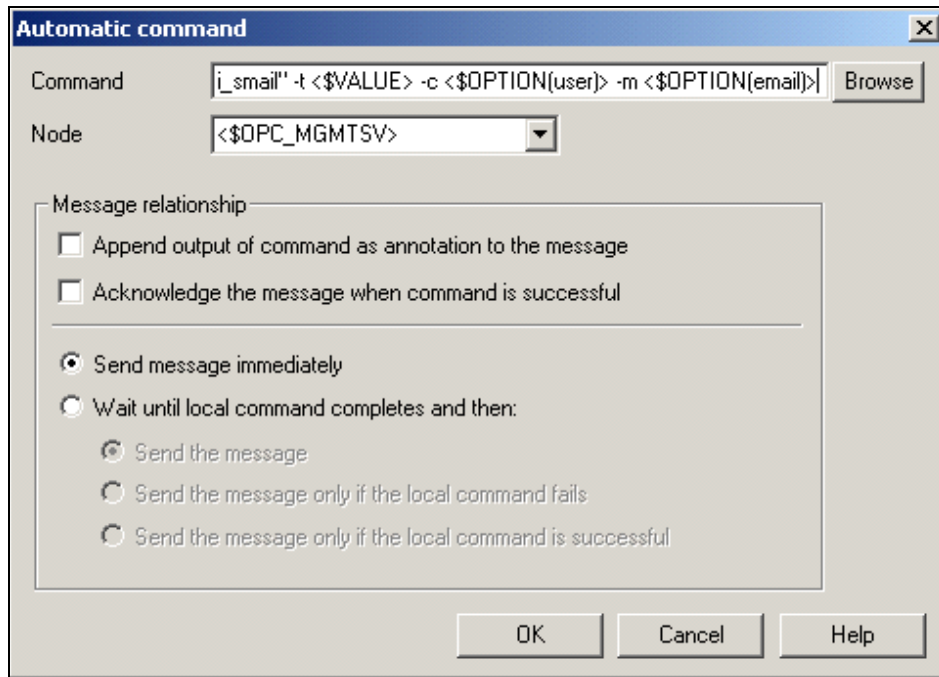
## Changing E-mail

E-mail must be changed in all three threshold levels of the SIEBSPI\_SYNCH\_STATUS\_EXT policy. (Refer to the figure below.)



Note that every threshold level contains an automatic command that is used for sending the e-mail to the recipient. The complete automatic action command is: %SIEBSPI\_PATH%\bin\siebspi\_smail" -t <\$VALUE> -c <\$OPTION(user)> -m

<\$OPTION(email)>. The e-mail address of a recipient is specified with the -m parameter.

A screenshot of a Windows-style dialog box titled "Automatic command". It has a close button (X) in the top right corner. The "Command" field contains the text: `i_smail" -t <$VALUE> -c <$OPTION(user)> -m <$OPTION(email)>`. To the right of this field is a "Browse" button. The "Node" field is a dropdown menu showing `<$OPC_MGMTSV>`. Below these fields is a section titled "Message relationship" containing several options: 

- ☐ Append output of command as annotation to the message
- ☐ Acknowledge the message when command is successful
- ☒ Send message immediately
- ☐ Wait until local command completes and then:
  - ☒ Send the message
  - ☐ Send the message only if the local command fails
  - ☐ Send the message only if the local command is successful

At the bottom of the dialog are three buttons: "OK", "Cancel", and "Help".

The default value is:  
-m <\$OPTION(email)>

This indicates that e-mail is sent only to the user who was not synchronized for the specified amount of time.

### Examples

*Example 1:*

-m "<\$OPTION(email)>, name1@dom1.com, name2@dom2.com"

This will send an e-mail message to the user who was not synchronized for the specified amount of time, and also to the following e-mail addresses:

name1@dom1.com  
name2@dom2.com

*Example 2:*

-m name@domain.com

This will send an e-mail message only to the name@domain.com email address.

---

## Sending E-mail for Synchronization Status from the Managed Node

By default, e-mail messages are sent from the management server, which requires that the management server has sendmail configured. Additionally, you can configure SPI for Siebel to send e-mail messages from the managed nodes where the Siebel Servers are installed. Follow the procedure below:

1. Select **Policy management** then **Policy groups**.
2. Go to **SPI for Siebel/SIEBSPI-Oracle Siebel CRM/SIEBSPI-Siebel Application Server/SIEBSPI-Mobile Clients and Backlogs** policy group.
3. In the right window, select **SIEBSPI\_SYNCH\_STATUS\_EXT** then right-click the policy.
4. In the menu displayed, select **All Tasks**, followed by **Edit**. The *SIEBSPI\_SYNCH\_STATUS\_EXT (Measurement Threshold)* window opens.
5. In the *SIEBSPI\_SYNCH\_STATUS\_EXT (Measurement Threshold)* window, select the **Threshold levels** tab and another window opens.
6. The window that is displayed lists three threshold levels under the **Description** field. *You need to modify each of these levels.* To do this, select a threshold level and click **[Modify]**. A *Threshold level* window opens.
7. In the *Threshold level* window, select the **Start actions** tab. In the *Start actions* dialog box, click **[Automatic command]**. The *Automatic command* window opens.
8. In the *Command* field, change the value listed to the following:  

```
siebspi_smail -t <$VALUE> -c <$OPTION(user)> -m <$OPTION(email)> -  
node
```
9. In the *Node* field, delete the **<\$OPC\_MGMTSV>** string that is displayed.
10. When the changes in steps 9 and 10 have been made, click **[OK]** to exit the *Automatic command* window. Then, click **[OK]** again to close the *Threshold levels* window.
11. To execute all changes and exit the process, in the *SIEBSPI\_SYNCH\_STATUS\_EXT (Measurement Threshold)* window click **[Save and Close]**.

---

## NOTE

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**Assign and install the monitor policy on a node where the Siebel server is installed for the changes to take effect.**

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## Managing Multiple Siebel Enterprise Environments Concurrently

By default, the SPI for Siebel configuration file `spi.cfg` is prepared and maintained on the management server. This file is deployed with the Instrumentation to the managed nodes where the SPI for Siebel configuration is updated.

To manage multiple Siebel enterprise environments at the same time, you need to prevent those automatic SPI for Siebel configuration updates from occurring. For this purpose you can use the configuration entry `MANUAL_CONFIGURATION` in the SPI for Siebel configuration file. To prevent automatic updates of the SPI for Siebel configuration, set this flag to `Y` (Yes). Note that the default value is `N` (No).

*Example:*

`MANUAL_CONFIGURATION=Y`

---

## Renaming SPI for Siebel Policies

SPI for Siebel supports changing the name of any policy that comes with SPI for Siebel. However, renaming a policy can have side effects, so this should be done very carefully following the instructions and rules described in this chapter.

---

### Renaming Policies That Are Using siebspi\_extmon Program for Monitoring Siebel Environment

You can rename any of the SPI for Siebel policies. When renaming a policy, add a new parameter to the policy program name parameter, called `-func {functionality}` or `-f {functionality}`. The value of the `-f` parameter must be the original policy name without the prefix `SIEBSPI_`.

*Example:*

Original policy: `SIEBSPI_SERVER_AVAILABILITY`

Original policy program name:

`siebspi_extmon -srvr -m SIEBSPI_SERVER_AVAILABILITY`

New policy name: `MY_SIEBSPI_SERVER_AVAILABILITY`

New policy program name:

`siebspi_extmon -srvr -m MY_SIEBSPI_SERVER_AVAILABILITY \`  
`-f SERVER_AVAILABILITY`

Some SPI for Siebel policies send monitor messages to other SPI for Siebel policies, which are collecting data and reacting to issues. These pairs of policies usually have similar names with added postfix `_EXT`.

For example, the policy `SIEBSPI_SERVER_AVAILABILITY` checks the Siebel Servers availability. The results are sent to the policy `SIEBSPI_SERVER_AVAILABILITY_EXT`. In case you rename an external monitor policy, it is important to follow the next rules.

The easiest way to rename an external monitor is adding the `_EXT` postfix to the name specified with the `-m` parameter.

*Example:*

Policy A: `MY_SIEBSPI_SERVER_AVAILABILITY`

External policy B: `MY_SIEBSPI_SERVER_AVAILABILITY_EXT`

Policy A command:

`siebspi_extmon -srvr -m MY_SIEBSPI_SERVER_AVAILABILITY`

The external monitor can also have a different name than its paired policy. In this case, you must use the `-extmon` parameter.

*Example:*

Policy A: MY\_SIEBSPI\_SERVER\_AVAILABILITY

External policy B: NEW\_SIEBSPI\_SERVER\_AVAILABILITY\_EXT

Policy A command:

```
siebspi_extmon -srvr -m MY_SIEBSPI_SERVER_AVAILABILITY \  
-extmon NEW_SIEBSPI_SERVER_AVAILABILITY_EXT
```

---

## Renaming Policies That Monitor the Siebel Server Components

Policies that monitor Siebel Components do not require the `-f` parameter for functionality description. Functionality is recognized automatically from the `-component` parameter, which is always present in the command line.

The old mandatory mask for the component the policy name (SIEBSPI\_\*\_COMPONENT) is obsolete. The policy name can be any chosen name but must be specified with the `-m` parameter in the command line:

New policy name: NEW\_SIEBSPI\_SCC\_OBJ\_MGR\_COMPONENT

New policy program name:

```
siebspi_extmon -srvr -m NEW_SIEBSPI_SCC_OBJ_MGR_COMPONENT -component  
"Call Center Object Manager" -perf -status -max_tasks -task_exit
```

By default, all SIEBSPI\_\*\_COMPONENT monitor policies send results to standard Siebel component external monitor policy (SIEBSPI\_CHECK\_TASKS\_EXT, SIEBSPI\_COMP\_STATUS\_EXT, SIEBSPI\_NUM\_TASKS\_TOO\_HIGH\_EXT, SIEBSPI\_NUM\_TASKS\_TOO\_LOW\_EXT). Therefore common thresholds, defined in those external monitor policies, are applied to all of them.

In situations when you renamed component external monitor policies or you need to define component specific thresholds, instructions, or actions, you can use the following parameters:

| Parameter                                                      | Description                                                          |
|----------------------------------------------------------------|----------------------------------------------------------------------|
| <code>-extmon</code>                                           | Custom external monitor policy.                                      |
| <code>-[status2   min_tasks2   max_tasks2   task_exit2]</code> | What should be monitored and sent to custom external monitor policy. |

This way you define what should be monitored and to which external monitor policy the results should be sent. You can combine standard parameters and the custom one in one component policy as long as you define custom external policies.

The required postfixes for custom external monitor policies are:

- component status external monitor policy = \*\_CS\_EXT
- task exit status external monitor policy = \*\_TS\_EXT
- number of tasks too low external monitor policy = \*\_TL\_EXT
- number of tasks too high external monitor policy = \*\_TH\_EXT

*Example:*

Siebel component "Workflow Monitor Agent" should send status results to custom monitor policy SIEBSPI\_WORK\_MON\_CS\_EXT. Additionally, the number of running tasks should be monitored (alarm if the number of running tasks: >70%, >90%).

Perform the following steps:

- Create a copy of the SIEBSPI\_COMP\_STATUS\_EXT external monitor policy and save it as SIEBSPI\_WORK\_MON\_CS\_EXT
- Customize Thresholds (if needed, also: Actions, Instructions...)
- Customize the SIEBSPI\_WORK\_MON\_COMPONENT policy command line to:  
`siebspi_extmon -srvr -m SIEBSPI_WORK_MON_COMPONENT -component "Workflow Monitor Agent" -extmon SIEBSPI_WORK_MON -status2 -max_tasks`

---

## Renaming Policies That Are Using siebspi\_sp Program for Monitoring Siebel Environment

A new parameter -m is introduced in siebspi\_sp program. If the policy is renamed, this parameter is set to the new monitor policy name. Functionality is recognized automatically from other parameters, and the -f parameter is not required.

*Example:*

Original policy: SIEBSPI\_SP\_LOGIN\_TIME

Original policy program name:

`siebspi_sp -l`

New policy name: MY\_SIEBSPI\_SP\_LOGIN\_TIME

New policy program name:

`siebspi_sp -l -m MY_SIEBSPI_SP_LOGIN_TIME`

---

## Renaming Policies That Are Using siebspi\_ressvc Program for Monitoring Siebel Environment

This program is used only by log file policy SIEBSPI\_RCD\_AGT\_LOG in automatic actions for conditions number 2 in 3. All messages this policy finds in a log file are sent to the external monitor SIEBSPI\_RES\_SVC\_EXT. In case you rename this external monitor, you should use the additional `-extmon` parameter in this two automatic actions commands.

*Example:*

Original external policy name: SIEBSPI\_RES\_SVC\_EXT

Original SIEBSPI\_RCD\_AGT\_LOG policy automatic action command:  
`siebspi_ressvc -s 1 -m "<subfacility>: <message>" -c <facility>`

New external policy name: MY\_SIEBSPI\_RES\_SVC\_EXT

New SIEBSPI\_RCD\_AGT\_LOG policy automatic action command:  
`siebspi_ressvc -s 1 -m "<subfacility>: <message>" -c <facility> -extmon MY_SIEBSPI_RES_SVC_EXT`

---

## Renaming Policies That Are Used in Autodiscovery Process

You can perform auto discovery using the "Autodiscovery" policy, or the policy SIEBSPI\_ENTERPRISE\_CONFIGURATION. Both send new and changed Siebel service tree configuration to external monitor policy SIEBSPI\_CONF\_UPD\_EXT.

In case you rename the external monitor policy SIEBSPI\_CONF\_UPD\_EXT, two actions are required:

- The autodiscovery tool command line should be updated with the `-extmon` parameter to specify the new external monitor name
- Program command-line in the SIEBSPI\_ENTERPRISE\_CONFIGURATION policy should be updated with the `-extmon` parameter to specify the new external monitor name

*Example:*

Original external policy name: SIEBSPI\_CONF\_UPD\_EXT

Original SIEBSPI\_ENTERPRISE\_CONFIGURATION policy program name:  
`siebspi_extmon -srvr -m SIEBSPI_ENTERPRISE_CONFIGURATION`

Original Autodiscovery tool command line:  
`siebspi_autod`

New external policy name: MY\_SIEBSPI\_CONF\_UPD\_EXT

New SIEBSPI\_ENTERPRISE\_CONFIGURATION policy program name:  
`siebspi_extmon -srvr -m SIEBSPI_ENTERPRISE_CONFIGURATION -extmon  
MY_SIEBSPI_CONF_UPD_EXT`

New Autodiscovery tool command line:  
`siebspi_autod -extmon MY_SIEBSPI_CONF_UPD_EXT`

---

## Renaming SPI for Siebel Internal Monitor Policy

SPI for Siebel is using one internal monitor policy for intercepting some common problems that can occur in the SPI programs. Default name for this policy is `SIEBSPI_INT_MESSAGE_EXT` and can be found in the `SIEBSPI-Internal` policy group.

Renaming this policy is a special case. In case you change the name for this policy, the new name must be written in the SPI for Siebel configuration file on the managed node:

`<AgentInstallDir>/siebspi/conf/spi.cfg`

You must add a new parameter called "INT\_MESSAGE\_EXT" to this file:

`INT_MESSAGE_EXT = <NEW_NAME>`

*Example:*

`INT_MESSAGE_EXT = INT_MESSAGE_EXT`

---

## Checking Mechanism for Policy Consistency

Some SPI for Siebel policies send monitor messages to other SPI for Siebel policies, which are collecting data and reacting to issues. These pairs of policies usually have similar names with added postfix `_EXT`.

For example, the policy `SIEBSPI_SERVER_AVAILABILITY` checks the Siebel Servers availability. The results are sent to the policy `SIEBSPI_SERVER_AVAILABILITY_EXT`.

It is important that you deploy both policies to the system. If you deployed the first policy to the system, you should also deploy the second policy.

SPI for Siebel is able to check if all external policies that are used by policies deployed on the managed node are also deployed to the node (consistency checking). By default, consistency checking is disabled (`MONITOR_CHECK = N`). This is only necessary when a new policy is deployed to the managed node.

You can enable consistency checking to ensure everything is deployed to the managed node. Consistency checking is enabled by setting `MONITOR_CHECK = Y` in SPI for Siebel configuration file on the managed node:

`<AgentInstallDir>/siebspi/conf/spi.cfg`

To disable consistency checking, set `MONITOR_CHECK = N` in the SPI for Siebel configuration file on the managed node.

When consistency checking is enabled and any of the used external policies are missing, a message is sent to the SPI for Siebel internal policy (by default `SIEBSPI_INT_MESSAGE_EXT`). The message contains the following attributes:

- message group: `siebspi_int`
- tool: `SPI for Siebel`
- object: `policy problem`

message text: `SIEBSPI-018: Policy "XY" that is used by another policy is not deployed on the system.`

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## **Chapter 17**

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### **The SPI for Siebel Service**

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## The SPI for Siebel Service

The SPI for Siebel service is an interface between Siebel's `srvrmgr` tool and the SPI for Siebel executables that request information from it. Therefore, the SPI for Siebel service is installed only on managed nodes where the Siebel server is installed. The main benefit of the service is that you do not need to start the `srvrmgr` command-line tool each time you require some data from the Siebel enterprise.

The SPI for Siebel service is located in:

- on Windows nodes in  
    `{HPOM Agent install dir}\siebspi\bin\siebspi_svc.exe`
- on AIX nodes in `/usr/lpp/0V/siebspi/bin/siebspi_svc`
- on other UNIX nodes in `/opt/0V/siebspi/bin/siebspi_svc`

You can use several tools and commands to manage the SPI for Siebel service. From the HPOM management server, you can use the following tools from the **SPI for Siebel/SIEBSPI-Maintenance/SIEBSPI-SPI for Siebel Service** tool group:

- **SIEBSPI-Start SPI for Siebel Service**
- **SIEBSPI-Stop SPI for Siebel Service**
- **SIEBSPI-Restart SPI for Siebel Service**
- **SIEBSPI-SPI for Siebel Status**

The described tools use the following commands, which can also be started manually:

- `siebspi_mgr -service start_spisvc`  
Starts the SPI for Siebel Service
- `siebspi_mgr -service stop_spisvc`  
Stops the SPI for Siebel Service
- `siebspi_mgr -service restart_spisvc`  
Restarts the SPI for Siebel Service
- `siebspi_mgr -service spisvc_status`  
Displays the status of the SPI for Siebel Service

You can also use the following commands on Windows Nodes:

- `siebspi_svc -install`  
Installs the SPI for Siebel Service
- `siebspi_svc -remove`  
Removes the SPI for Siebel Service

and on UNIX Nodes:

- `siebspi_svc -start`  
Starts the SPI for Siebel Service
- `siebspi_svc -stop`  
Stops the SPI for Siebel Service
- `siebspi_svc -status`  
Displays the status of the SPI for Siebel Service

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## NOTE

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On UNIX nodes, "SPI for Siebel Service" is not started automatically after the system starts. Therefore, start this service manually using the tools described above.

Make sure that the "SPI for Siebel Service" on UNIX nodes is started with the appropriate [siebel user name] if other than root. For starting and stopping the services, use the full path (for example, to start on the AIX nodes: `/usr/lpp/ov/siebspi/bin/siebspi_svc -start`)

---

## Monitoring the SPI for Siebel Service

The SPI for Siebel Service is monitored if you deploy the **SIEBSPI-Internal** policy group.

If the SPI for Siebel Service is stopped, you will receive a critical error message in your message browser. The message instructions will tell you to start the service using the commands described in the previous section.

## SPI for Siebel Service Error Messages

Descriptions of SPI for Siebel Service error messages:

**SPISVC-001:** Check if the Siebel gateway service is running. Also make sure that the configuration parameters are correct.

You should check if the Siebel gateway service is running. If it is, check if the SPI for Siebel configuration file (`spi.cfg`) parameters on the node are correct.

Check the `SIEBEL_ENTERPRISE`, `SIEBEL_GATEWAY` and `ADMIN_USERNAME` parameters. Also make sure that you entered the right administrator password for Siebel Enterprise.

**SPISVC-002:** Internal SPI for Siebel service/daemon error.

Could not execute the command.

An internal error has occurred. Check the SPI for Siebel error log file on the managed node.

**SPISVC-003:** Cannot connect to the SPI for Siebel service/daemon (`siebspi_svc`). Check if the service/daemon is running.

Refer to [“Troubleshooting” on page 157](#) for additional information.

**SPISVC-004:** SPI for Siebel Service is stopping.

If you receive this message, an attempt was made to make a request on the service while it was stopping.

**SPISVC-005:** SPI for Siebel Service is busy. Maximum number of connections reached.

This message indicates that the maximum number of requests is being handled and therefore the request for executing a command was rejected. If you consistently receive this message, you should reduce the number of policies on the managed node.

**SPISVC-006:** Timeout occurred. The request could not be processed in the specified time.

You will receive this message in the SPI for Siebel error log file if a request that has been made could not be processed in a specified timeframe. If you receive this message often, most likely the machine is very slow (check the resources usage) or there is a problem with the Siebel Gateway service.

**SPISVC-007:** No 'srvrmgr' available on host. Executing 'srvrmgr' commands is not allowed.

You will receive this message if a request has been made to execute a 'srvrmgr' command and there is no 'srvrmgr' tool available on the machine. If you receive this message on a machine where only the Siebel Application Server is installed, this is probably a SPI for Siebel configuration error. If you receive these messages on a machine with only Siebel gateway installed, you probably installed policies for the Siebel Server on the Siebel Gateway node.

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## Chapter 18

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## Troubleshooting

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## Errors and Problems

This section provides information relating to the logging and tracking of errors. It also describes the possible errors that can occur during SPI for Siebel usage, and how to resolve any problems if encountered.

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## Error Logging and Tracing

By default, error logging is on at all times. Additionally, errors are logged to the error log files at the following location:

On UNIX systems:

`/var/opt/ov/siebspi/log/error.log`

On IBM AIX:

DCE agents: `/var/lpp/ov/siebspi/error.log`

HTTPS agents: `/var/opt/ov/siebspi/log/error.log`

On Windows systems:

DCE agents: `C:\Program Files\HP OpenView\Installed Packages\{790C06B4-844E-11D2-972B-080009EF8C2A}\siebspi\log\error.log`

HTTPS agents: `C:\Program Files\HP OpenView\data\siebspi\log\error.log`

Each SPI for Siebel binary/executable on the managed node in the `cmds`, `actions` and `monitor` directories can be executed with the `-trace` option. All errors and additional "trace" information will be printed to the console and logged at the following location:

On Unix systems:

`<OVDataDir>/siebspi/log/trace.log`

On IBM AIX:

DCE agents: `/var/lpp/ov/siebspi/log/trace.log`

On Windows systems:

DCE agents: `C:\Program Files\HP OpenView\InstalledPackages\{790C06B4-844E-11D2-972B-080009EF8C2A}\siebspi\log\trace.log`

HTTPS agents: `C:\Program Files\HP OpenView\data\siebspi\log\trace.log`

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## Miscellaneous Troubleshooting

### **SPISVC-003: Cannot connect to SPI for Siebel service/daemon (siebspi\_svc). Check if the service/daemon is running.**

If you receive this message in your message browser, you should check if the SPI for Siebel service/daemon is running. If it is not, you should start it by executing the **SIEBSPI-Start SPI for Siebel Service** tool in the **SPI for Siebel/SIEBSPI-Maintenance/SIEBSPI-SPI for Siebel Service** tool group.

If the SPI for Siebel service/daemon is running and you still receive these messages, check the SPI for Siebel error log file on the managed node where the messages came from. Look for entries in the log file such as: "Could not connect to pipe". If the error code number (errno) is 231 (ERROR\_PIPE\_BUSY) on Windows nodes or ECONNREFUSED (146 on Solaris, 79 on AIX or 239 on HP-UX) on UNIX nodes, this indicates that temporarily resources could not be allocated. This means that no new connections to the SPI for Siebel service/daemon could be established.

You should check if you receive the same messages if you install only a few policies from the **SPI for Siebel/SIEBSPI-Siebel \*.\* Server** policy group and the utilization of the Siebel server is low. If you still receive these kind of messages or, if the error code number in the SPI if Siebel error log file is other than described, you should try restarting the SPI for Siebel service/daemon either with the **SIEBSPI-Restart SPI for Siebel Service** tool or manually by starting the `siebspi_mgr -service restart_spisvc` command.

If you still encounter problems with the SPI for Siebel service/daemon, contact the Support Department.

### **Some Tools Do Not Work on UN\*X Nodes**

Some SPI for Siebel tools may not work correctly on UN\*X nodes if the user name used to install Oracle's Siebel Business Applications is other than root. Therefore, the following tools must be modified by replacing the user name in the Target tab of the tools with the {siebel user name}:

- All of the tools in the **SPI for Siebel/SIEBSPI-Tools** tool group that are started with the root user
- **SPI for Siebel/SIEBSPI-Maintenance/SIEBSPI-SPI for Siebel Service/SIEBSPI-Start SPI for Siebel Service**
- **SPI for Siebel/SIEBSPI-Maintenance/SIEBSPI-SPI for Siebel Service/SIEBSPI-Restart SPI for Siebel Service**

In addition, the SPI for Siebel Service must be started with the same {siebel user name}. For more information, see also [“SPI for Siebel Service on UN\\*X Nodes” on page 160](#).

### **SPI for Siebel Service on UN\*X Nodes**

If the username used to install Oracle’s Siebel Business Applications is other than root, make sure that the SPI for Siebel Service is started with the {siebel user name} to work properly.

After installation, the SPI for Siebel Service is started automatically with the root user so you must first stop it with the **SPI for Siebel/SIEBSPI-Maintenance/SIEBSPI-SPI for Siebel Service/SIEBSPI-Stop SPI for Siebel Service** tool. After the SPI for Siebel Service has stopped, modify the **SPI for Siebel/SIEBSPI-Maintenance/SIEBSPI-SPI for Siebel Service/SIEBSPI-Start SPI for Siebel Service** tool, change the user name from root to {siebel user name}, and run the tool to start the SPI for Siebel Service with the user name that you provided.

For details about the other tools that should be changed, refer to [“Some Tools Do Not Work on UN\\*X Nodes” on page 159](#).

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## Timeouts

This section provides information relating to the timeout settings.

### Predefined Timeouts

Some SPI for Siebel executables contain different predefined timeouts that define timeframes (in seconds) in which they expect certain results to be returned from other executables or triggered actions to be completed. Those timeout parameters are exported in four configuration files on every managed node:

<OvInstallDir>/siebspi/conf/siebspi\_svc.cfg

<OvInstallDir>/siebspi/conf/siebspi\_extmon.cfg

<OvInstallDir>/siebspi/conf/siebspi\_mgr.cfg

<OvInstallDir>/siebspi/conf/siebspi\_dbperf.cfg

Configuration settings are read from these files only if the parameter is set to `Manual_configuration=Y`. Otherwise executables will use their predefined timeouts.

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### NOTE

**Settings in these timeout configuration files should not be changed without prior approval from SPI for Siebel Support.**



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## Appendix A

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## File Locations

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## File Tree on the Management Server

Platform dependent files (those for deployment on the management node) are copied to the HP Operations Manager Instrumentation folder. The Instrumentation directory is usually located in the following location:

`%OvDataDir%\Instrumentation`

On HPOM on Windows, version, 8.1x, the default location is:

`C:\Documents and Settings\All Users\Application Data\HP\HP BTO Software\shared\Instrumentation.`

On HPOM on Windows, version, 8.0x, the default location is:

`C:\Program Files\HP\HP BTO Software\Data\shared\Instrumentation`

On HPOM on Windows, version 7.50, the default location is:

`C:\Program Files\HP OpenView\Data\shared\Instrumentation`

The SPI for Siebel files that are used and executed on the management server and that are installed in the SPI for Siebel folder follow. The default location of this folder is:

`<OvOWShareInstallDir>\SPI-Share\siebspi`

On HPOM on Windows 8.1x, the default location is:

`C:\Documents and Settings\All Users\Application Data\HP\HP BTO Software\shared`

On HPOM on Windows 8.0x, the default location is:

`C:\Program Files\HP\HP BTO Software\Data\shared\SPI-Share\siebspi`

On HPOM on Windows 7.50, the default location is:

`C:\Program Files\HP OpenView\Data\shared\SPI-Share\siebspi\`

### **\siebspi\bin**

`siebspi_cfgwiz.exe`

`siebspi_configure.exe`

`siebspi_smail.exe`

`siebspi_svcupd.exe`

`siebspi_licmgr.exe`

`icudt26l.dll`

`icuin26.dll`

`icuio26.dll`

icuuc26.dll  
\\siebspi\\conf  
spi.cfg  
\\siebspi\\locale  
intmc\_en.res  
\\siebspi\\msg  
email.msg

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## SPI for Siebel - Reports

The self-extracting file for HP Reporter:

\\siebspi\\reports  
· siebspi-reports\_04.00\_windows\_NT.exe

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## OVIS Smart Probe for Siebel

The self-extracting file for HP Internet Services:

\\siebspi\\ovis\_probe  
· OVISProbeforSiebel\_03\_20.exe  
· OVIS\_SmartProbe\_for\_Siebel\_03\_20.pdf

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## Documentation

\\siebspi\\doc  
SIEBSPI-InstallGuidewIN.pdf  
SIEBSPI-UserGuidewIN.pdf  
siebspi-release-notes-win.txt  
siebspi-readme.txt  
comtrade\_software\_license\_support\_terms\_signed.txt

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## Description of Directory Structures on the Managed Node

When deploying SPI for Siebel instrumentation, the directories and files that are listed in the Instrumentation directory on the management server are created on the managed nodes file system.

### <OVInstallDir>

HP-UX, Solaris:        /opt/ov

AIX:                    /usr/lpp/ov

Windows DCE:        C:\Program Files\HP OpenView\Installed Packages\{790c06b4-844e-11d2-972b-080009ef8c2a}

Windows HTTPS: C:\Program Files\HP OpenView

### <OVDataDir>

HP-UX, Solaris:        /var/opt/ov

AIX DCE:                /var/lpp/ov

AIX HTTPS:             /var/opt/ov

Windows DCE: C:\Program Files\HP OpenView\Installed Packages\{790c06b4-844e-11d2-972b-080009ef8c2a}

Windows HTTPS: C:\Program Files\HP OpenView\Data

---

## File Tree on the Managed Node

After the installation of SPI for Siebel on the managed node, the following directories are created on the managed node file system:

<OVInstallDir>/siebspi

<OVInstallDir>/siebspi/bin

<OVInstallDir>/siebspi/cluster

<OVInstallDir>/siebspi/conf

<OVInstallDir>/siebspi/lib (on Unix nodes)

<OVInstallDir>/siebspi/locale

<OVInstallDir>/siebspi/locale/6.0.x

<OVInstallDir>/siebspi/locale/7.0.4

<OVInstallDir>/siebspi/locale/7.5.2

<OVInstallDir>/siebspi/locale/7.7

<OVInstallDir>/siebspi/locale/7.8  
<OVInstallDir>/siebspi/msg  
<OVInstallDir>/siebspi/support

<OVDataDir>/siebspi  
<OVDataDir>/siebspi/tmp  
<OVDataDir>/siebspi/log  
<OVDataDir>/siebspi/siebspi\_perf

SPI for Siebel files are also copied to the HPOM instrumentation directories on the managed node:

**On HP-UX:**

DCE agents  
/var/opt/OV/bin/instrumentation  
HTTPS agents  
/var/opt/OV/bin/instrumentation

**On IBM AIX systems:**

DCE agents  
/var/lpp/OV/bin/instrumentation  
HTTPS agents  
/var/opt/OV/OpC/bin/instrumentation

**On Windows 2000/2003 systems:**

DCE agents  
C:\Program Files\HP OpenView\Installed Packages\{790c06b4-844e-11d2-972b-080009ef8c2a}\bin\instrumentation  
HTTPS agents  
/var/opt/OV/bin/instrumentation/

**On Sun Solaris systems:**

DCE agents  
/var/opt/OV/bin/instrumentation

HTTPS agents  
/var/opt/OV/bin/instrumentation

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## **Appendix B**

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### **SARM Reference Information**

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## Siebel ARM (SARM) Reference Information

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### About Siebel ARM to CSV Conversion Data (used for Call Graph)

CSV format is a comma-separated file without any interpretation or aggregation. The CSV file contains data organized under column headers. Use third-party software applications to view this output, for example, a spreadsheet.

|    | B        | C      | D           | E      | F            | G            | H            | I              | J                 | K                 | L                       |
|----|----------|--------|-------------|--------|--------------|--------------|--------------|----------------|-------------------|-------------------|-------------------------|
|    | ThreadID | IsRoot | Type(level) | RootID | ParentSarmID | ParentTimeID | ParentProcID | AreaCodeSymbol | AreaDesc          | SubAreaCodeSymbol | SubAreaDesc             |
| 1  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 2  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 3  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 4  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 5  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 6  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 7  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 8  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 9  | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 10 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 11 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 12 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 13 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 14 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 15 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 16 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 17 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 18 | 5300     | N      | Detail(2)   | 1      | 1            | 1074205585   | 1848         | Area_SARM      | SARM Framework    | Sub_SARM_IO       | Flush SARM Buffer To Di |
| 19 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |
| 20 | 5300     | N      | Sarm(1)     | 1      | 1            | 1074205585   | 1848         | Area_SWSE      | Web Server Plugin | Sub_SWSE_SENDMSG  | Send message to app se  |

| Tag          | Description                                                                                                                                                                                                    |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SarmNode     | Data contained within this tag represents an instance of a Siebel ARM node, which is an instrumented area of the Siebel ARM architecture. Each Siebel ARM node can have zero to many nodes as its descendants. |
| SarmID       | A unique number representing the Siebel ARM node.                                                                                                                                                              |
| TypeLevel    | The granularity level at which Siebel ARM records the Siebel ARM node information.                                                                                                                             |
| RootID       | The SarmID of the root Siebel ARM node.                                                                                                                                                                        |
| ParentSARMID | The parent SarmNode from which the request traveled.                                                                                                                                                           |
| ParentTimeID | A unique ID number that generates from the starting time of the corresponding parent Siebel ARM node.                                                                                                          |
| ParentProcID | The parent process ID, that is, the OS (operating system) process ID for the Siebel component.                                                                                                                 |

| Tag                       | Description                                                                                                                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AreaCodeSymbol            | Symbol of the instrumentation area within the Siebel architecture.                                                                                                                                     |
| AreaDescription           | Name of the instrumentation area within the Siebel architecture.                                                                                                                                       |
| SubAreaCodeSymbol         | Symbol of the subarea within an area of the Siebel architecture.                                                                                                                                       |
| SubAreaDescription        | Name of the subarea within an area of the Siebel architecture.                                                                                                                                         |
| Count                     | Number of times Siebel ARM accesses this Siebel ARM Node.                                                                                                                                              |
| Duration                  | Total time to execute the instrumented area.                                                                                                                                                           |
| PooledMemoryUsage         | Amount of memory consumed from or released to the Siebel High Performance memory allocator.                                                                                                            |
| PooledMemoryCalls         | The number of calls made to the High performance memory allocator.                                                                                                                                     |
| SystemMemoryUsage         | Amount of memory consumed from or released to the operating system.                                                                                                                                    |
| SystemMemoryCalls         | The number of calls made to the operating system.                                                                                                                                                      |
| AppInt1 and AppInt2       | Context integer value captured at the point of instrumentation. The value depends on the instrumented area.                                                                                            |
| AppString1 and AppString2 | Context string value captured at the point of instrumentation. The value depends on the instrumented area. For example, the name of the method invoked or workflow process initialized.                |
| +<ChildNode>              | Expand this tag to reveal performance details on descendent nodes of the given node. The descendent nodes are defined the same as the parent node, that is, the tag definitions are the same as above. |

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## About Performance Aggregation Analysis and Data

Performance aggregation analysis is a compilation of the data contained in a Siebel ARM binary file. Siebel ARM files group performance data based on the instrumented areas.

A result of running a performance aggregation analysis of a Siebel ARM file is an extensible markup language (XML) output file. This file contains timing data for the instrumented areas.

The amount of information contained in the performance aggregation analysis XML output is dependent on the argument used for the **-a** flag when performing the analysis (either **AREA** or **DETAILS**) and the setting for the SARM Granularity Level parameter.

The performance aggregation XML output file contains the following tag schema when the **-a** flag argument is set to **DETAILS**. If the **-a** flag argument is set to **AREA** when running the analysis, the tag schema is the same minus the **<NumberOfSubAreas>** and **<SubArea>** information.

```
<Area>
  <Name>
  <Symbol>
  <NumberOfSubAreas>
  <Invocations>
    <Recursive>
    <NonRecursive>
  <ResponseTime>
    <Total>
    <Average>
    <StandardDeviation>
    +<Maximum>
    +<Minimum>
  <ExecutionTime>
    <Total>
    <Calls>
    <Average>
    <Maximum>
    <Minimum>
    <PercentOfResponse>
  <RecursiveTime>
    <Total>
    <Calls>
    <Average>
    <Maximum>
    <Minimum>
    <PercentOfResponse>
  <InclusiveMemory>
    <Total>
    <Average>
    <StandardDeviation>
    +<MaxAllocated>
    +<MaxDeallocated>
  <ExclusiveMemory>
```

- <Total>
- <Average>
- <StandardDeviation>
- +<MaxAllocated>
- +<MaxDeallocated>
- <SubArea>
  - <Name>
  - <Symbol>
  - <NumberOfInstances>
  - +<Invocations>
  - +<ResponseTime>
  - +<ExecutionTime>
  - +<Memory>
  - +<Instance>
  - +<Parents>
  - +<Children>
- <Parents>
  - <NumberOfParents>
  - <ParentArea>
    - <Name>
    - <Symbol>
    - +<InvocationsFromParents>
    - +<ResponseTime>
    - +<Memory>
- <Children>
  - <NumberOfChildren>
  - <ChildArea>
    - <Name>
    - <Symbol>
    - +<InvocationsOfChild>
    - +<ResponseTime>
    - +<Memory>



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## **Appendix C**

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### **Regular Expression Syntax**

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## Regular Expression Syntax

A regular expression is a pattern of text that consists of ordinary characters (for example, letters a through z) and special characters, known as metacharacters. The pattern describes one or more strings to match when searching a body of text. The regular expression serves as a policy for matching a character pattern to the string being searched.

Here are some examples of regular expression you might encounter:

Regular expression	Matches
<code>\bError\b</code>	Find "Error" but ignore strings like "SocketError"
<code>"\d{2}-\d{5}"</code>	"Validate an ID number consisting of 2 digits, a hyphen, and another 5 digits."
<code>"&lt;(.*?)&gt;.*&lt;/\1&gt;"</code>	"Match an HTML tag."

The following table contains the complete list of metacharacters and their behavior in the context of regular expressions:

Character	Description
<code>\</code>	Marks the next character as either a special character, a literal, a backreference, or an octal escape. For example, 'n' matches the character "n". '\n' matches a newline character. The sequence '\\\' matches "\" and \"(\" matches "(".
<code>^</code>	Matches the position at the beginning of the input string.
<code>\$</code>	Matches the position at the end of the input string.
<code>*</code>	Matches the preceding subexpression zero or more times. For example, zo* matches "z" and "zoo". * is equivalent to {0,}.

Character	Description
+	Matches the preceding subexpression one or more times. For example, 'zo+' matches "zo" and "zoo", but not "z". + is equivalent to {1,}.
?	Matches the preceding subexpression zero or one time. For example, "do(es)?" matches the "do" in "do" or "does". ? is equivalent to {0,1}
{n}	n is a nonnegative integer. Matches exactly n times. For example, 'o{2}' does not match the 'o' in "Bob," but matches the two o's in "food".
{n,}	n is a nonnegative integer. Matches at least n times. For example, 'o{2,}' does not match the "o" in "Bob" and matches all the o's in "fooooood". 'o{1,}' is equivalent to 'o+'. 'o{0,}' is equivalent to 'o*'.
{n,m}	m and n are nonnegative integers, where n <= m. Matches at least n and at most m times. For example, "o{1,3}" matches the first three o's in "fooooood". 'o{0,1}' is equivalent to 'o?'. Note that you cannot put a space between the comma and the numbers.
?	When this character immediately follows any of the other quantifiers (*, +, ?, {n}, {n,}, {n,m}), the matching pattern is non-greedy. A non-greedy pattern matches as little of the searched string as possible, whereas the default greedy pattern matches as much of the searched string as possible. For example, in the string "oooo", 'o+?' matches a single "o", while 'o+' matches all 'o's.

Character	Description
.	Matches any single character except "\n". To match any character including the '\n', use a pattern such as '[.\n]'.
(pattern)	Matches pattern and captures the match. To match parentheses characters ( ), use '\(' or '\)'.
(?:pattern)	Matches pattern but does not capture the match, that is, it is a non-capturing match that is not stored for possible later use. This is useful for combining parts of a pattern with the "or" character ( ). For example, 'industr(?:y ies)' is a more economical expression than 'industry industries'.
(?=pattern)	Positive lookahead matches the search string at any point where a string matching pattern begins. This is a non-capturing match, that is, the match is not captured for possible later use. For example 'Windows(?=95 98 NT 2000)' matches "Windows" in "Windows 2000" but not "Windows" in "Windows 3.1". Lookaheads do not consume characters, that is, after a match occurs, the search for the next match begins immediately following the last match, not after the characters that comprised the lookahead.

Character	Description
(?!pattern)	Negative lookahead matches the search string at any point where a string not matching pattern begins. This is a non-capturing match, that is, the match is not captured for possible later use. For example 'Windows (?!95   98   NT   2000)' matches "Windows" in "Windows 3.1" but does not match "Windows" in "Windows 2000". Lookaheads do not consume characters, that is, after a match occurs, the search for the next match begins immediately following the last match, not after the characters that comprised the lookahead.
x y	Matches either x or y. For example, 'z food' matches "z" or "food". '(z f)ood' matches "zood" or "food".
[xyz]	A character set. Matches any one of the enclosed characters. For example, '[abc]' matches the 'a' in "plain".
[^xyz]	A negative character set. Matches any character not enclosed. For example, '[^abc]' matches the 'p' in "plain".
[a-z]	A range of characters. Matches any character in the specified range. For example, '[a-z]' matches any lowercase alphabetic character in the range 'a' through 'z'.
[^a-z]	A negative range characters. Matches any character not in the specified range. For example, '[^a-z]' matches any character not in the range 'a' through 'z'.
\b	Matches a word boundary, that is, the position between a word and a space. For example, 'er\b' matches the 'er' in "never" but not the 'er' in "verb".

Character	Description
\B	Matches a nonword boundary. 'er\B' matches the 'er' in "verb" but not the 'er' in "never".
\cx	Matches the control character indicated by x. For example, \cM matches a Control-M or carriage return character. The value of x must be in the range of A-Z or a-z. If not, c is assumed to be a literal 'c' character.
\d	Matches a digit character. Equivalent to [0-9].
\D	Matches a nondigit character. Equivalent to [^0-9].
\f	Matches a form-feed character. Equivalent to \x0c and \cL.
\n	Matches a newline character. Equivalent to \x0a and \cJ.
\r	Matches a carriage return character. Equivalent to \x0d and \cM.
\s	Matches any whitespace character including space, tab, form-feed, etc. Equivalent to [ \f\n\r\t\v].
\S	Matches any non-whitespace character. Equivalent to [^ \f\n\r\t\v].
\t	Matches a tab character. Equivalent to \x09 and \cI.
\v	Matches a vertical tab character. Equivalent to \x0b and \cK.
\w	Matches any word character including underscore. Equivalent to '[A-Za-z0-9_]'.
\W	Matches any nonword character. Equivalent to '[^A-Za-z0-9_]'.

Character	Description
\xn	Matches n, where n is a hexadecimal escape value. Hexadecimal escape values must be exactly two digits long. For example, '\x41' matches "A". '\x041' is equivalent to '\x04' & "1". Allows ASCII codes to be used in regular expressions.
\num	Matches num, where num is a positive integer. A reference back to captured matches. For example, '(.)\1' matches two consecutive identical characters.
\n	Identifies either an octal escape value or a backreference. If \n is preceded by at least n captured subexpressions, n is a backreference. Otherwise, n is an octal escape value if n is an octal digit (0-7).
\nm	Identifies either an octal escape value or a backreference. If \nm is preceded by at least nm captured subexpressions, nm is a backreference. If \nm is preceded by at least n captures, n is a backreference followed by literal m. If neither of the preceding conditions exist, \nm matches octal escape value nm when n and m are octal digits (0-7).
\nml	Matches octal escape value nml when n is an octal digit (0-3) and m and l are octal digits (0-7).
\un	Matches n, where n is a Unicode character expressed as four hexadecimal digits. For example, \u00A9 matches the copyright symbol (©).

