

HP Operations Smart Plug-in for BlackBerry Enterprise Server Software

for the HP Operations Manager Software

Software Version 03.10

Administration Guide

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1 Preface

Introduction

This guide describes the architecture, installation, and functions of the HP Operations Smart Plug-in for BlackBerry Enterprise Server Software for HP Operations Manager Software (BlackBerry SPI).

The guide assumes that you have a good understanding of HP Operations Manager for Windows (HP OMW) and the BlackBerry Enterprise Server (BES).

Audience

HP Operations Manager Operators, BlackBerry Enterprise Server Administrators

Prerequisites

You should be familiar with the following topics:

- BlackBerry Enterprise Server (BES) concepts
- Deploying the HP OM Agent to a Windows system
- HP Operations Manager administration

Related Documents

This section illustrates what information is available for the BlackBerry SPI and where you can find it. The following manuals are available in PDF format:

- Administration Guide
- Installation Guide
- Reference Guide (contact support)
- Software Release Notes
- Support Matrix (SUMA)

In addition to the documentation for the BlackBerry SPI, related HP Software products also provide a comprehensive set of manuals, which aim to assist you in using the products and improving your understanding of the underlying concepts. Table 3 lists the documentation provided with products that are related to the BlackBerry SPI.

2 Introduction

This chapter includes the following topics:

- About the BlackBerry SPI
- Operations Manager
- Architecture

About the BlackBerry SPI

The HP Operations Smart Plug-in for BlackBerry Enterprise Server Software (BlackBerry SPI) maximizes the value of BlackBerry Enterprise Servers by providing management services.

The BlackBerry SPI is a complete HP Operations Manager integration, implementing distributed monitoring of the BlackBerry Enterprise Server (BES) deployed in Microsoft Exchange environments. The BlackBerry SPI further leverages your investment in HP Operations Manager by integrating management of yet another mission-critical application into HP Operations Manager.

The BlackBerry SPI provides extensive log file monitoring, performance thresholding, and handheld device monitoring which improves the overall availability and performance of the BlackBerry Enterprise Server (BES).

Operations Manager

The most important task of availability management is to monitor information processing systems and applications residing on the network. HP OM uses local HP OM agents to monitor elements and resources such as:

- Servers and clients
- Operating systems
- Middleware applications and databases
- User applications
- Networks

HP OM transforms the event stream coming from the BlackBerry Enterprise Servers into a meaningful message stream by sorting through the events and forwarding only relevant messages to the central HP Operations Management Server. Operators use the HP OM console to check these messages for problems and solve them by launching corrective actions and preconfigured tools using the Operations Manager agent. Examples of corrective actions and preconfigured tools are:

- Automatic actions to restart processes or gather diagnostic information

- Predefined operator-initiated actions to correct a problem
- Context sensitive, problem-specific help and instruction text
- Pre configured tools and applications

HP OM can solve problems by taking any or all of the following steps:

- Collect information: HP OM collects information on the status of devices, applications, and systems present in the computing environment
- Process information: HP OM makes important or critical status information available on the central console in a consolidated fashion through filtering and event correlation
- Present the problem: HP OM displays the problem in the operator desktop, highlights the problem, and shows the resolution strategy
- Act: HP OM performs predefined actions (automatic or operator-initiated) to solve and correct the problem. HP OM is an open system with a published set of APIs that let you create complete solutions

Architecture

This section provides detailed information about the architecture of the BlackBerry SPI and Content Pack.

Figure 1 High Level Architecture

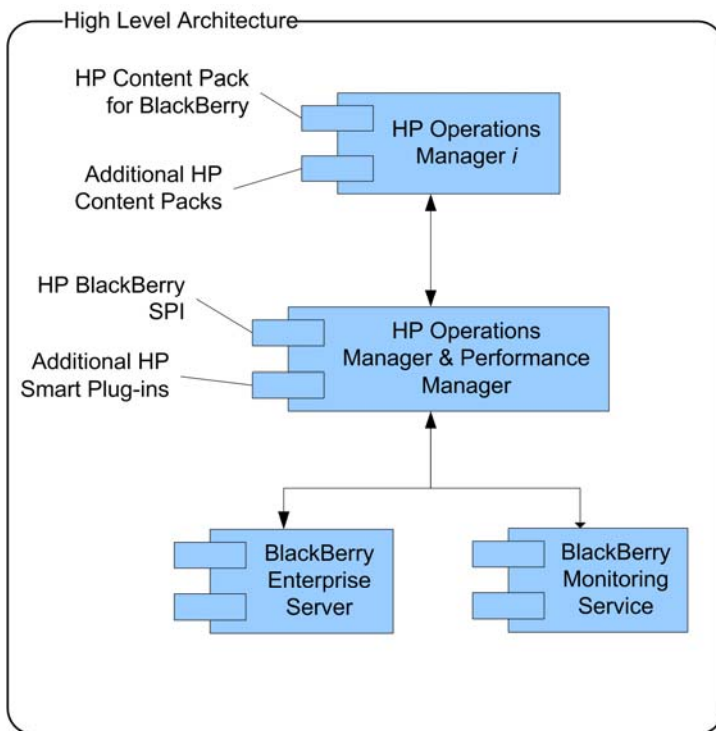
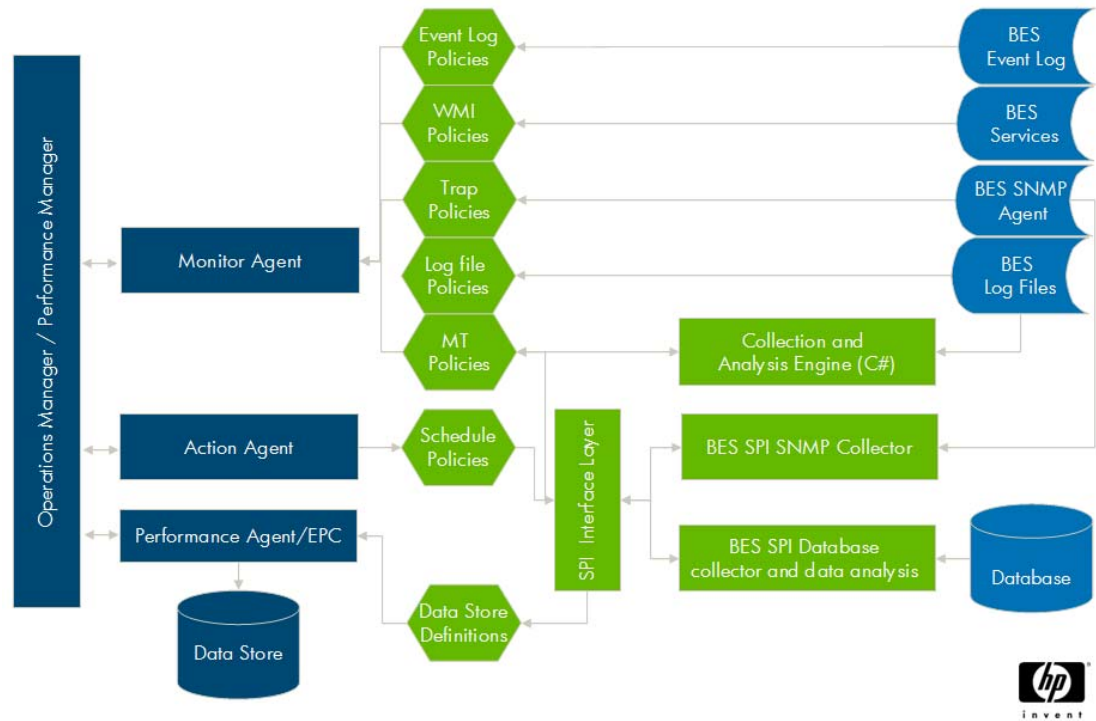


Figure 2 BlackBerry SPI Integration and Data Flow



Legend:

Dark blue elements are part of the HP Operations Manager.

Green objects depict the BlackBerry SPI components.

Mid blue elements mark BES integration points.

BlackBerry SPI software components

The BlackBerry SPI has the following software components:

- BlackBerry SPI instrumentation files
- BlackBerry SPI policies
- BlackBerry SPI tools

The location of the software components depends on the choice of Management Server platform and the particular BlackBerry Enterprise Server management requirements.

BlackBerry SPI License

The BlackBerry SPI requires one software license for each managed BlackBerry server or server partition. Licenses are not required to install the BlackBerry SPI on the Management Server. With the BlackBerry SPI installed on the Management Server, you can review the BlackBerry SPI policies, policy groups, node groups, and tools.

Evaluation license

For evaluation an **instant-on license** is created during the SPI installation. This license is not node-specific and **expires 60 days after installation** of BlackBerry SPI of the OM management server.

Permanent licenses

If you have purchased the BlackBerry SPI, please go to <https://webware.hp.com/> to request your license. The license key will be sent you by mail. There will be one key per BES.

The instant-on license may be replaced at any time with node-specific licenses following the installation process below. Note that it will stay in the list of licenses but SPI operation will be ensured for all nodes with a node-specific license, even though the instant-on license may be expired.

► **Note**

To update evaluation licenses to permanent licenses is a simple process. It does not require a reinstallation of the BlackBerry SPI.

3 Getting Started

When the installation has been successfully verified, the following steps are required to get started using the BlackBerry SPI:

- Install BlackBerry SPI Licenses
- Add Responsibilities to Users (optional)
- Deploy BlackBerry SPI Instrumentation
- Configure BlackBerry SPI
- BlackBerry SPI Policy Groups
- Adding BlackBerry Servers to the BlackBerry Node Group
- Deploy policy groups to BlackBerry Enterprise Servers
- Performance Data Collection and Storing (optional)

Install BlackBerry SPI Licenses

To monitor and manage a BES with the BlackBerry SPI, a runtime license for each BES is required. These node-specific runtime licenses must be obtained from the manufacturer of the product, NiCE GmbH in Germany.

If you bought the BlackBerry SPI, please go to <https://webware.hp.com> to obtain your runtime licenses.

For evaluation an instant-on license is created during the SPI installation. This license is not node-specific and expires 60 days after installation of BlackBerry SPI of the OM management server.

The instant-on license may be replaced at any time with node-specific licenses following the installation process below. Note that it will stay in the list of licenses but SPI operation will be ensured for all nodes with a node-specific license, even though the instant-on license may be expired.

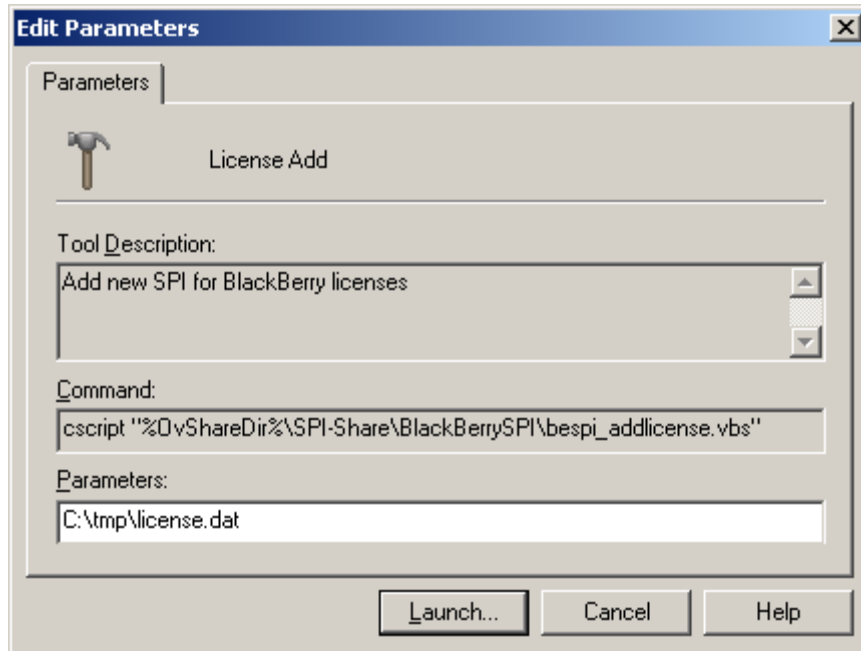
The license installation is described next:

Task 1 Copy the license file in any folder on the OM management server.

Task 2 In the OM GUI, execute the tool "**License Add**" from the "**BESPI Administration**" tool group.

Task 3 In the parameter field, you need to specify the license file with full path information where you placed it in a common folder on the management server.

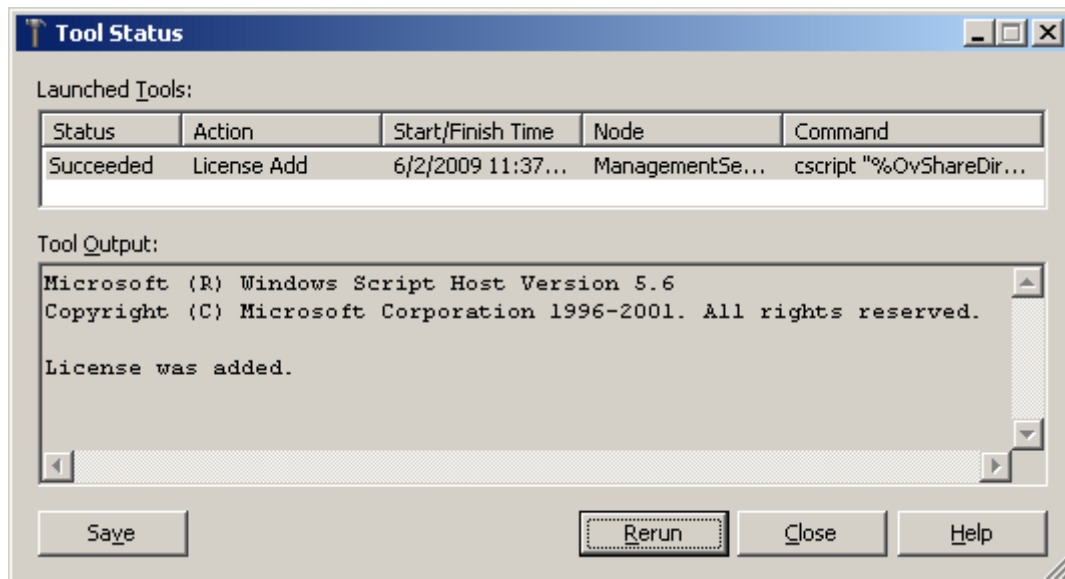
Figure 3 Add BlackBerry SPI License into OM for Windows



Task 4 Then press "Launch" to start the process.

An application output window will appear showing the progress of the license installation. You may close that window when the installation has completed.

Figure 4 License has been added successfully



Task 5 All licenses contained in the downloaded file will now be added to the instrumentation for later deployment.

Add Responsibilities to Users (optional)

The installation of the BlackBerry SPI added two user roles to assign responsibilities for the BlackBerry SPI for all relevant HP OM users:

- **BlackBerry Operator** is responsible for the daily maintenance of the BES under his command.
- **BlackBerry SPI Admin** is responsible for the setup and maintenance of the BlackBerry SPI.

Deploy BlackBerry SPI Instrumentation

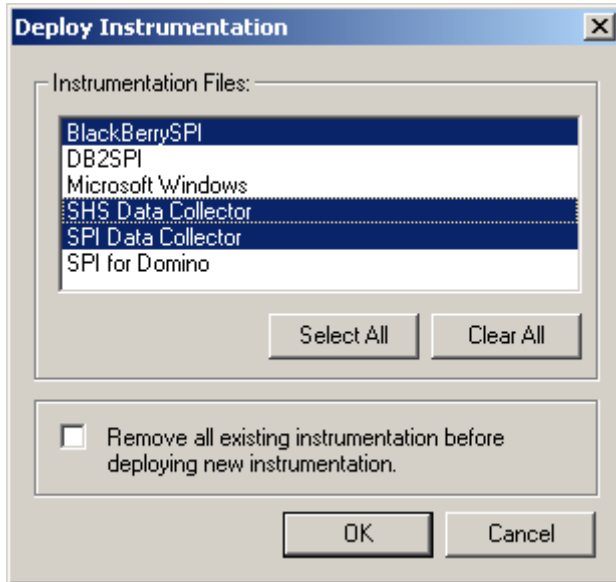
The BlackBerry SPI tools and policies require instrumentation, which is contained in the instrumentation directory on HP Operations Management server. Before distributing any policies, deploy the instrumentation on each BES:

- **Select the node(s)**
- In the context menu select "**All Tasks**" -> **Deploy instrumentation**
- Select the "**Blackberry SPI**" and the "**SPI Data Collector**" (using +CTRL for selection) instrumentation files

► **Note**

Do not deploy any policies at this point!

Figure 5 Deploy Instrumentation



Configure BlackBerry SPI

To prepare the environment for the BlackBerry SPI executables and scripts, the configuration tool **Configure SPI for BES** needs to be executed.

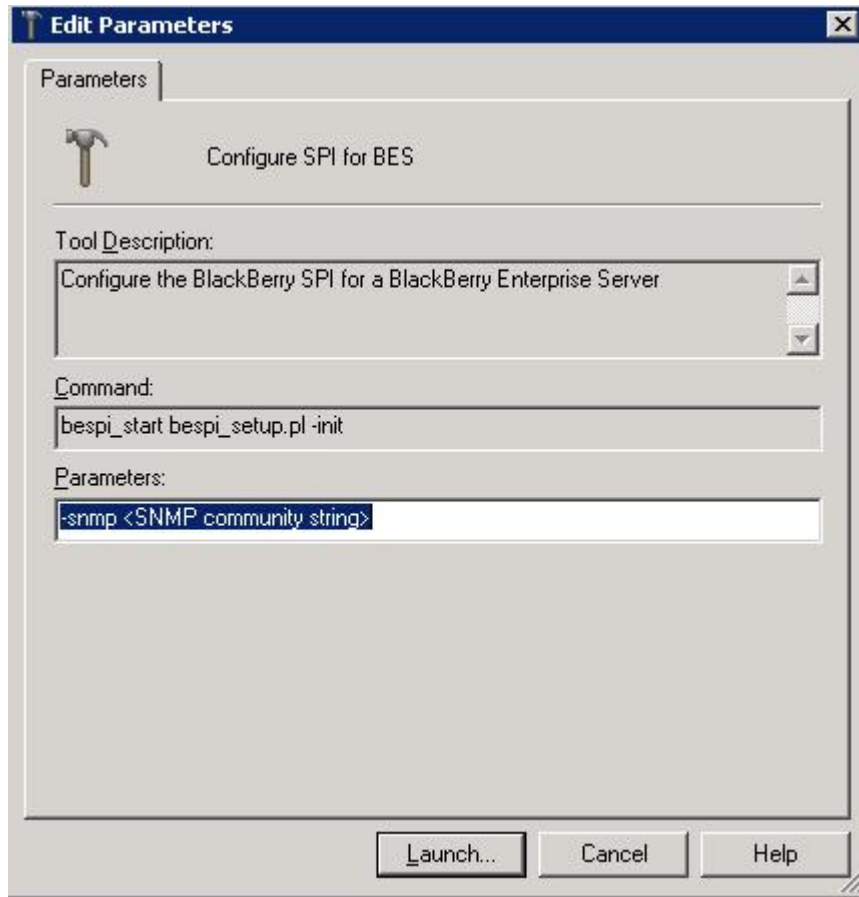
To enable the BlackBerry SPI to work with the BES SNMP Agent, execute the tool **Configure SPI for BES** from the **SPI for BlackBerry → BESPI Administration** tool group

In order to run this tool successfully, you must provide the **SNMP Community Key** in the tool.

Please follow these steps:

- 1 Execute the tool “**Configure SPI for BES**” and replace <SNMP Community Key> with the real string.

Figure 6 Edit Parameters for Configure SPI for BES



- 2 Press the button “**Launch**”.

The environment configuration will now be set up on the BlackBerry server.

► **Note**

Make sure that the SNMP Community Key is correct. If you discover a typo after you have pressed the “**Launch**” button, use Update SPI configuration for BES.

To delete the configuration use the tool **Delete SPI Configuration** from the tool group **SPI for BlackBerry – BESPI Administration**.

SNMP Host

BlackBerry SPI configuration uses SNMP Host with the default value of “localhost”. Please ensure that the "localhost" is allowed to access the SNMP information on the node.

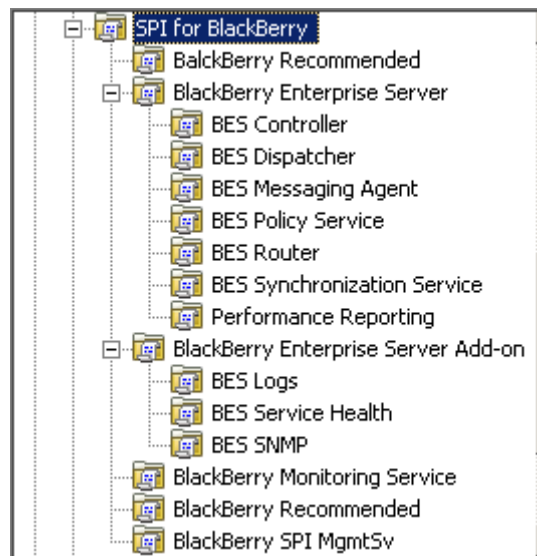
If the SNMP Service is set any other string like the server name or the IP address, this parameter of the SPI configuration file needs to be changed. Refer to troubleshooting section “Manual configuration of the SNMP data collector”.

BlackBerry SPI Policy Groups

In order for the BlackBerry SPI to work, you must deploy policies from the BES policy group to the BlackBerry Enterprise Server resp. from the BlackBerry Monitoring Service policy group¹ to server hosting the BlackBerry Monitoring Service.

In the HP OMW console, you should see an additional policy group called “**SPI for BlackBerry**”.

Figure 7 SPI for BlackBerry Policy Group after Installation



The most important policies are contained in the policy group **BlackBerry Recommended**. They are applicable for both BlackBerry Enterprise Server (BES) and the BlackBerry Monitoring Service Server (BMS).

The BlackBerry SPI **BlackBerry Recommended** policy group contains the following policies:

- BESPI_SNMPTTraps
- BESPI_EventLog
- BESPI_BESCoreServices¹
- BESPI_SPILog
- BESPI_opcmmsg
- BESPI_ServiceDiscovery
- BESPI_getsize_spilog
- BESPI_getsize_spitrace
- BESPI_fs_spilog
- BESPI_fs_spitrace

Use the Node Configuration editor to deploy these policies as described in the next section (unless you disable auto deployment).

Detailed information about the policies groups and the policies they contain may be found in chapter “Policies” on page 39 as well as the BlackBerry Reference Guide.

► **Note**

¹ Not available in HP OM for UNIX 8 since WMI policies are not supported.

Adding BlackBerry Servers to the BlackBerry Node Group

To add BlackBerry Enterprise Servers to the BlackBerry Node Group, do the following:

- 1 In the HP OMW console, open the Node Configuration editor, select the BlackBerry Enterprise Servers, right-click, and then select Copy.
- 2 Select the **BlackBerry** Node Group, right-click, and select Paste Shortcut.
- 3 Click OK to close the Node Configuration editor and complete this step.

► **Note**

If the Auto deploy feature of HP OMW is disabled, you should manually deploy the **BlackBerry Recommended** policy group to each BES server.

Deploy policy groups to BlackBerry Enterprise Servers

To deploy the **BlackBerry Recommended** policies if the automatic deployment is not activated or to deploy other specific policy groups follow this procedure:

- 1 Navigate the console tree to the **BlackBerry Recommended** policy group (or other policy group), and right-click to display the shortcut menu.
- 2 From the shortcut menu, click **Deploy on**.
- 3 In the Deploy on dialog box, select the BES target systems or the node group **BlackBerry** and click **OK**.
- 4 Check the deployment jobs window to verify that there are no problems with the distribution.

Detailed information about the policies groups and the policies they contain may be found in chapter “Policies” on page 39 as well as the BlackBerry Reference Guide.

► **Note**

Additionally to the policy deployment to the BES servers, one policy group needs to be deployed to the OM Management Server:

The policy group “**BlackBerry Service Tree**” needs to be deployed to the OM Management Server to ensure the correct creation of the BlackBerry Service Tree below the Service Tree in the HP OM Console.

► **Note**

Beware that the HP OM agent may need to be configured to receive SNMP Version 2 traps, which are sent by BlackBerry Enterprise Server 5.0.

Per default the OM agent receives SNMP traps version 1 which are sent by BlackBerry Enterprise Server 4.0

For more information refer to the chapter “Troubleshooting”.

Performance Data Collection and Storing (optional)

BES performance metrics that are collected may not only be monitored and measured, but stored to create graphs.

These data stores are located on each BES server and need to be set up and started with the help of BlackBerry SPI tools from the “BESPI Performance Tools” tool group on page 27:

- “Create Report Data Store” on page 28
- “Data Storing on” on page 28

4 Tools

The BlackBerry SPI provides tools concerning the administration and performance of the BlackBerry Enterprise Server as well as the administration of BlackBerry SPI itself.

Table 1 BlackBerry SPI Tools

Tool Group	Tool
BlackBerry Administration	Cancel Kill Device
	Kill Device
	Lookup Device ID
	Resend Service Book
	Send Message
BESPI Performance	Data Storing off
	Data Storing on
	Report Data Delete
	Report Data Setup
BESPI Administration	BlackBerry Service Discovery
	BlackBerry SPI off
	BlackBerry SPI on
	Configuration File Update
	Configure SPI for BES
	Delete SPI Configuration
	Import Java Certificate
	License Add
	License List
	License Check
	Trace Disable
	Trace Enable
	Assign BESPI ServiceTree (applicable for OM for UNIX only)

BlackBerry Administration Tools

The BlackBerry SPI provides tools for BlackBerry Administration as described in this section.

► Note

Admin authority is required for all BlackBerry Administration tools.

Also a Java Certificate needs to be imported to avoid errors and warnings. Use the tool “Import Java Certificate” from the tool group “BESPI Administration” to import the certificate.

Assign BESPI ServiceTree:

Assign the service tree to an HP OM user to add the service tree to the users view. This tool is only applicable and required on OM for UNIX.

For more details about Service Tree Generation see “Service Tree Generation,, on page 46.

Kill Device

This tool kills a handheld device of a user with a given delay and specifies if a user override is possible.

Parameters

-user <user id> Replace <user id> with the ID of the user whose device should be killed.

-delay <delay in minutes> Insert the delay during which this kill command may be cancelled; either by the user or by the admin.

-uo (TRUE|FALSE) Specify TRUE if the user should be able to override this kill command or FALSE if only the admin should have this option.

-admin <admin name> Replace <admin name> with the real string.

-pw <admin password> Type in the admin password to authorize the execution.

Cancel Kill Device

Cancel the kill command for a specific user.

Parameters

-user <user id> Replace <user id> with the ID of the user whose device should have been killed.

-cancel Do not remove! This strings specifies that the kill command should be cancelled.

-admin <admin name> Replace <admin name> with the real string.

-pw <admin password> Type in the admin password to authorize the execution.

Lookup Device ID

Look up the device ID of a specific user.

Parameters

- user <user id> Replace <user id> with the ID of the user whose device ID you want to look up.
- admin <admin name> Replace <admin name> with the real string.
- pw <admin password> Type in the admin password to authorize the execution.

Resend Service Book

Resend the service book to a specified user.

Parameters

- user <user id> Replace <user id> with the ID of the user to whom the service book should be resend.
- admin <admin name> Replace <admin name> with the real string.
- pw <admin password> Type in the admin password to authorize the execution.

Send Message

Send a message to a recipient with a specific subject.

Parameters

- rid <recipient id> Replace < recipient id> with the ID of the recipient to whom the message should be send.
- subject <subject> Specify the subject for the message.
- message <message> Insert the message replacing <message> string.
- admin <admin name> Replace <admin name> with the real string.
- pw <admin password> Type in the admin password to authorize the execution.

BESPI Performance Tools

These tools are used to store the performance data which is collected from all templates in the policy group “**BlackBerry Enterprise Server**”. To preserve this data for reporting and

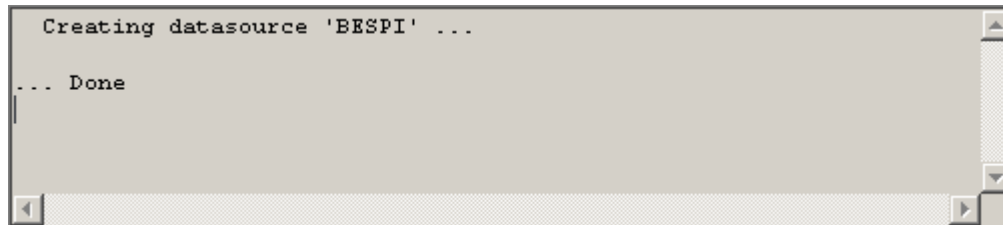
graphing, a data store needs to be set up. This may be done at any time after the configuration of the SPI is finished.

Data storing may be switched off and on for maintenance periods. The data store may also be deleted and created again while BlackBerry SPI is running.

Create Report Data Store

This tool creates the Report Data Store where all collected data is kept. It may be deleted and re-created again independently from the BlackBerry SPI itself.

Figure 8 Create Data Store Output



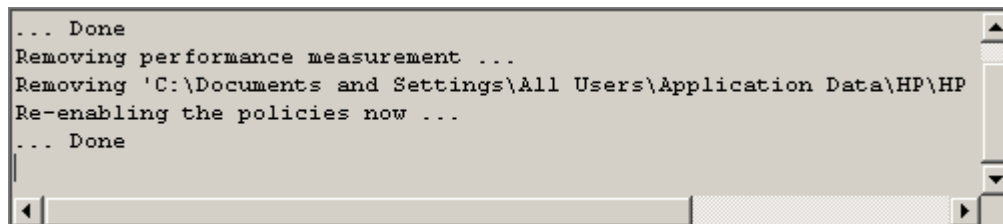
```
Creating datasource 'BESPI' ...  
... Done
```

When BlackBerry SPI is configured and collection policies are deployed, the data store will be ready to be filled. To start the storing of the report data, execute the tool “Data Storing on”.

Delete Report Data Store

Use this tool to delete the Report Data Store where all collected data is kept. It may be deleted and re-created again independently from the BlackBerry SPI itself.

Figure 9 Delete Data Store Output



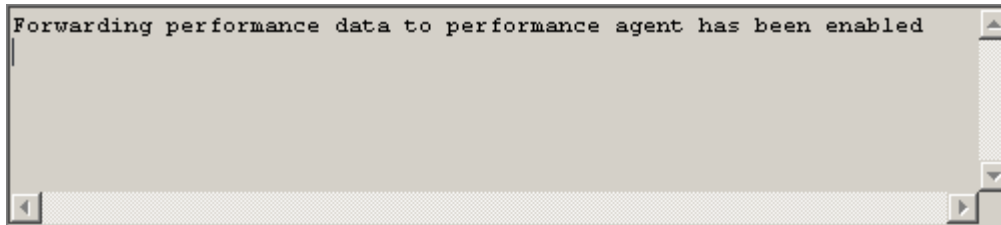
```
... Done  
Removing performance measurement ...  
Removing 'C:\Documents and Settings\All Users\Application Data\HP\HP'  
Re-enabling the policies now ...  
... Done
```

This tool also switches off the storing of the Report Data. After creating the Report Data Store again, the tool “Data Storing on” has to be executed again to switch on the storing of the Report Data.

Data Storing on

This tool switches on the storing of the Report Data from all templates from the policy group “BlackBerry Enterprise Server”. In order to execute correctly, the Data Store needs to be set up before with the help of the performance tool “Create Report Data Store”.

Figure 10 Data Storing on Output

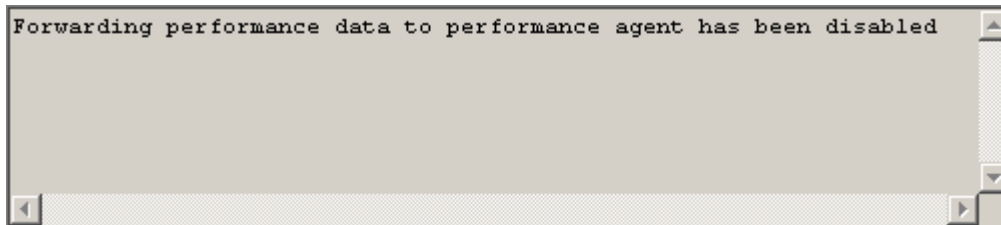


Forwarding performance data to performance agent has now been enabled. The performance agent will store the performance data in the Report Data Store.

Data Storing off

This tool switches off the storing of the Report Data from all templates from the policy group "BlackBerry Enterprise Server". In order to execute correctly, the Data Store needs to be set up before with the help of the performance tool "Create Report Data Store".

Figure 11 Data Storing off Output



Forwarding performance data to performance agent has been disabled which means no data will be stored.

BESPI Administration Tools

The following tools are used for the administration of BlackBerry SPI.

License Add

This tool allows the addition of new runtime licenses on the management server.

All BlackBerry servers monitored with the BlackBerry SPI need to have an appropriate runtime license. This is a node-locked license, which is checked by the BlackBerry SPI.

On the NiCE customer portal there is only one license file per customer, holding all runtime licenses that have been obtained. This file is distributed to the managed nodes together with the Instrumentation with standard HP OM means.

In order to add new runtime licenses to this common file on the management server, a tool is available in the Administration tool group, "**Add Licenses**".

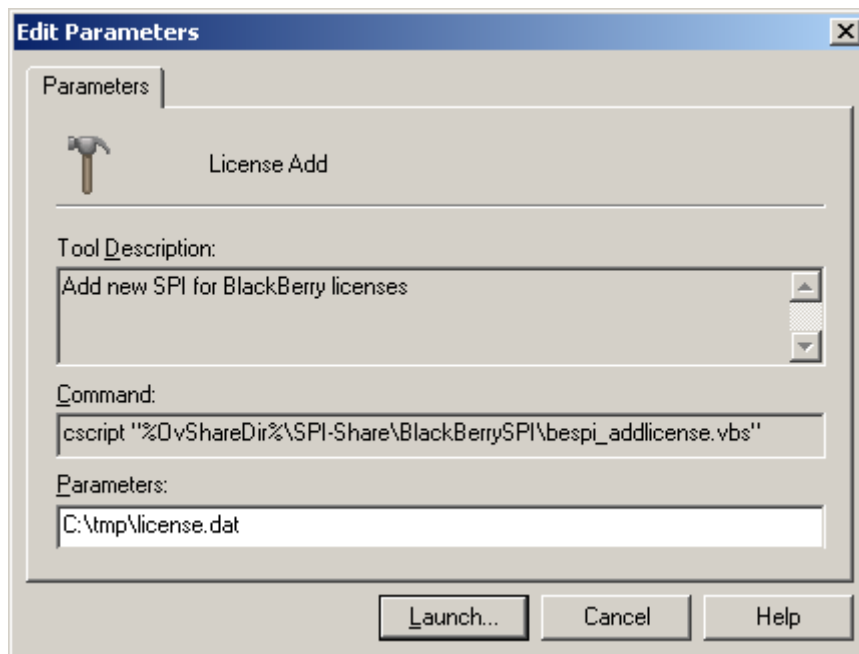
In order to install new runtime licenses, the following steps must be performed:

Start the License Add Tool from the GUI

Make sure you have placed the BlackBerry license update file in a common folder (directory) on the management server.

- 1 In the OM GUI, execute the tool "**License Add**" from the "**Administration**" tool group.
- 2 In the parameter field, you need to specify the license file with full path information where you placed it in a common folder on the management server.

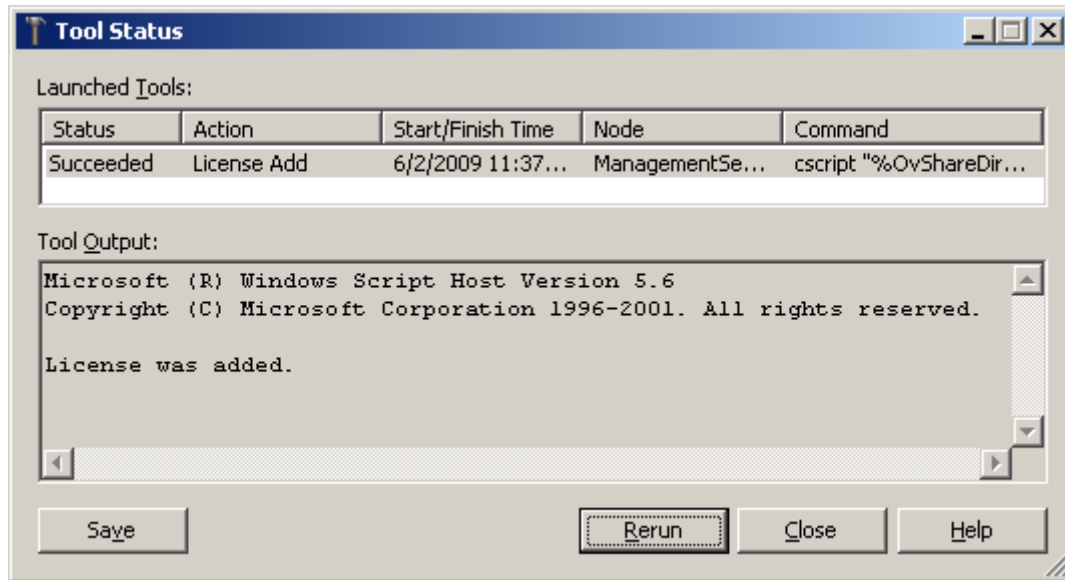
Figure 12 Add BlackBerry SPI License into OM for Windows



- 3 Then press "**OK**" to start the process.

An application output window will appear showing the progress of the license installation. You may close that window when the installation has completed.

Figure 13 License has been added successfully



All licenses contained in the downloaded file will now be added to the instrumentation for later deployment. You have to re-deploy the SPI instrumentation to activate the new license on the node.

► **Note : License Terms**

When installing runtime licenses you agree implicitly to the license terms of the BlackBerry SPI. Be sure to read them at the license terms in appendix A.

License List

This tool lists all runtime licenses currently available on the management server. However, they must be deployed to the managed nodes in order to be active.

The tool output part will display the list of all currently installed licenses:

```
1 x BESPI:TIER0 only A.03.10, features '00000000', expires 2010-12-31, not
node locked, V1 license issued 2009-11-28 11:02:37 at 49-71229-1 (r =
01baa3cd)
```

```
1 x BESPI:TIER4 only A.03.10, features '00000000', expires 2010-05-22, not
node locked, V1 license issued 2009-05-20 17:55:08 at 49-71229-1 (r =
4df2bd66)
```

```
1 x BESPI:TIER2 only A.03.10, features '12345678', expires 2010-12-31, not
node locked, V1 license issued 2009-06-04 17:47:36 at 49-71229-1 (r =
0b0f6a8c)
```

```
1 x BESPI:TIER1 from A.03.10, features '12345678', expires 2999-12-31, locked
to w103.nicelab.de, V1 license issued 2009-06-04 17:48:38 at 49-71229-1 (r =
620506af)
```

License Check

Executing the License Check tool can help finding out if there is a valid runtime license applied to this node. It is advisable to execute it if the BlackBerry SPI cannot work at all with messages like "no license found", or if similar messages show up during normal operation.

As you know, the runtime licenses are node locked and / or time-restricted, so installed runtime licenses may become invalid when the "hostname" changes or the evaluation time frame expires.

The typical output of the License Check is shown here:

List of valid licenses for version A.03.10.

```
1 x BESPI:TIER2 only A.03.10, features '12345678', expires 2010-12-31, not
node locked, V1 license issued 2009-06-04 17:47:36 at 49-71229-1 (r =
0b0f6a8c)
```

List of all licenses.

```
1 x BESPI:TIER4 only A.03.10, features '00000000', expires 2010-05-22, not
node locked, V1 license issued 2010-05-20 17:55:08 at 49-71229-1 (r =
4df2bd66)
```

```
1 x BESPI:TIER2 only A.03.10, features '12345678', expires 2010-12-31, not
node locked, V1 license issued 2010-06-04 17:47:36 at 49-71229-1 (r =
0b0f6a8c)
```

```
1 x BESPI:TIER1 from A.03.10, features '12345678', expires 2999-12-31, locked
to w103.nicelab.de, V1 license issued 2010-06-04 17:48:38 at 49-71229-1 (r =
620506af)
```

BlackBerry Service Discovery

Discover the BlackBerry Service for a faster Service Tree Update.

When new BlackBerry components are added to the BlackBerry topology (new BES Server, new Messaging Agent) and a faster update of the BlackBerry Service Tree is required, execute **“BlackBerry Service Discovery”** on the BlackBerry Server.

After a short while (30 minutes at the most), the automatic service tree update policy will recreate the BlackBerry Service Tree.

For more details about Service Tree Generation see “Service Tree Generation,, on page 46.

Configure SPI for BES

To enable the BlackBerry SPI to work with the BES SNMP Agent, execute the tool **Configure SPI for BES** from the **SPI for BlackBerry – BESPI Administration** tool group

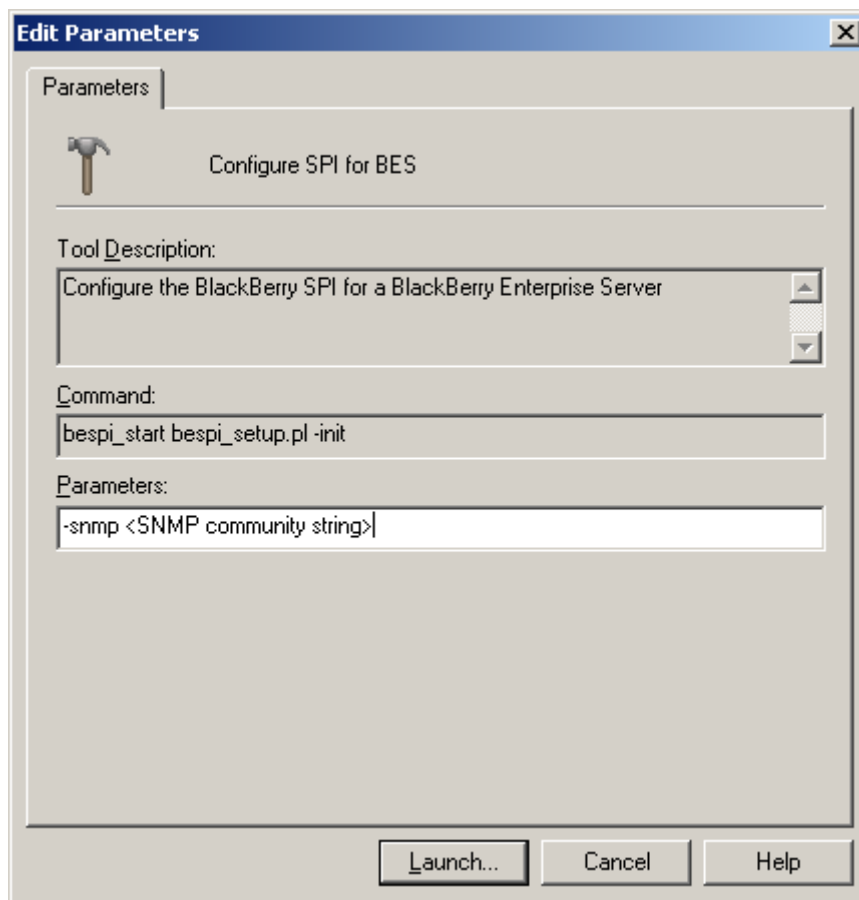
This operation may take some time, because we must synchronize this action with the Operations agent.

In order to run this tool successfully, you must provide the **SNMP Community Key** in the tool.

Please follow these steps:

- 1 Execute the tool “**Configure SPI for BES**” and replace <SNMP Community Key> with the real string.

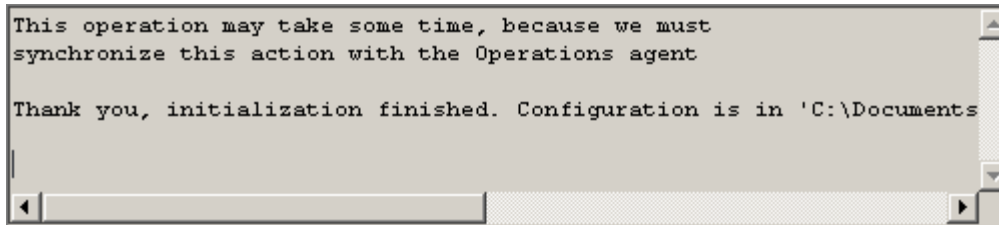
Figure 14 Edit Parameters for Configure SPI for BES



- 2 Press the button “**Launch**”.

The environment configuration will now be set up on the BlackBerry server.

Figure 15 Configure SPI for BES Output



```
This operation may take some time, because we must
synchronize this action with the Operations agent

Thank you, initialization finished. Configuration is in 'C:\Documents
```

The configuration is in:

```
%OvDataDir%\conf\BESPI
```

► **Note**

Make sure that the SNMP Community Key is correct. If you discover a typo after you have pressed the “**Launch**” button, use **Update SPI configuration for BES**.

To delete the configuration use the tool **Delete SPI Configuration** from the tool group **SPI for BlackBerry – BESPI Administration**.

► **Note**

Beware that the HP OM agent may need to be configured to receive SNMP Version 2 traps, which are sent by BlackBerry Enterprise Server 5.0.

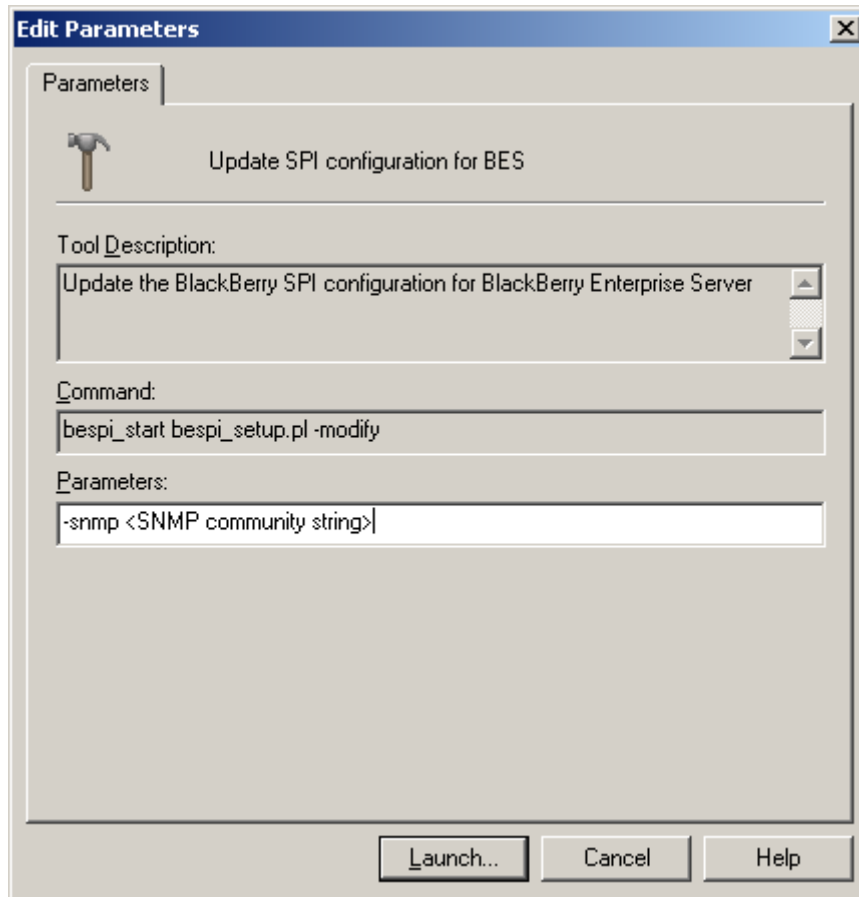
Per default the OM agent receives SNMP traps version 1 which are sent by BlackBerry Enterprise Server 4.0

For more information refer to the chapter “Troubleshooting”.

Update SPI for BES Configuration

This tool looks just like “**Configure SPI for BES**”, but it allows to change the SNMP Community Key without the need to delete other implicit configuration.

Figure 16 Update SPI Configuration for BES



Delete SPI Configuration

To clean up all configurations from the BlackBerry Server use the tool **Delete SPI Configuration**. This disables all BlackBerry SPI policies and deletes all configuration data.

The Report Data Stores will not be destroyed by this tool. To clean up the collected data, use the tool **Delete Data Store** from the **BESPI Performance** tool group.

Figure 17 Delete SPI Configuration

```
w103
      BlackBerry SPI Configuration Deletion
      =====
Removing BESPI configuration files ...
Please wait ...
Removing 'C:\Documents and Settings\All Users\Application Data\HP\HP BTO Software
Removing 'C:\Documents and Settings\All Users\Application Data\HP\HP BTO Software

The BlackBerry SPI configuration data have been deleted

Finished
```

Import Java Certificate

All communication between the Client and the Blackberry Server is done via HTTPS. A certificate needs to be added to a key store on the client to allow communicating with the Blackberry Enterprise server. There's a keystore on the BES in the registry.

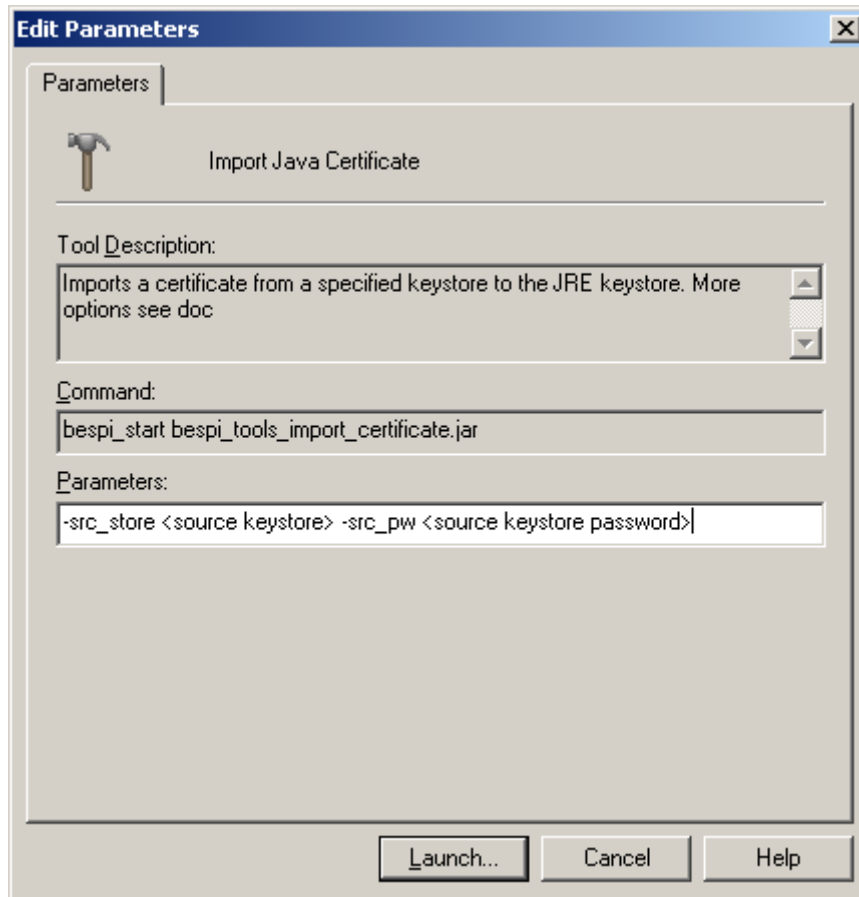
The following information is required:

- src_store <source keystore> path to the JDK keystore
- src_pw <source keystore password> password of the JDK keystore

Please follow the steps below:

- 1 Execute the tool **Import Java Certificate** from the **BESPI Administration** tool group.
- 2 Edit the Parameters in the parameter field:

Figure 18 Import Java Certificate



3 To execute the tool press “Launch” button.

BlackBerry SPI off

The operation of the BlackBerry SPI may be switched off (and on) for maintenance or other reasons. All active policies will be disabled without the need to remove them from the BES or BMS server.

Please wait ...This operation may take some time, because we must synchronize this action with the Operations agent.

Figure 19 BlackBerry SPI off

```
Please wait ...
This operation may take some time, because we must
synchronize this action with the Operations agent
... Done!
BlackBerry SPI operation has been disabled
```

BlackBerry SPI on

The operation of the BlackBerry SPI may be switched on (and off) for maintenance or other reasons. All active policies will be disabled without the need to remove them from the BES or BMS server.

Please wait ...This operation may take some time, because we must synchronize this action with the Operations agent.

Figure 20 BlackBerry SPI on

```
Please wait ...
This operation may take some time, because we must
synchronize this action with the Operations agent
Processing 'BESPI_MetCollLog' ...
    * Enable all policies for the specified selection on host
      'localhost'.
INFO:  Enable operation completed successfully.
Processing 'BESPI_SPILog' ...
    * Enable all policies for the specified selection on host
      'localhost'.
INFO:  Enable operation completed successfully.
Processing 'BESPI_opcmsg' ...
    * Enable all policies for the specified selection on host
      'localhost'.
INFO:  Enable operation completed successfully.
Processing 'BESPI_EventLog' ...
    * Enable all policies for the specified selection on host
      'localhost'.
INFO:  Enable operation completed successfully.
Processing 'BESPI_SNMPTraps' ...
    * Enable all policies for the specified selection on host
      'localhost'.
INFO:  Enable operation completed successfully.
Processing 'BESPI_BESCoreServices' ...
    * Enable all policies for the specified selection on host
      'localhost'.
INFO:  Enable operation completed successfully.
... Done!
BlackBerry SPI operation has been enabled
```

5 Policies

The BlackBerry SPI policies are organized in several policy groups. They are divided into application categories, except for the group **BlackBerry Recommended**². This group contains the most important subset of policies that are recommended for use on all BlackBerry Servers (BES and BMS).

Deploy only those policies groups that are important to the application category, in order to minimize the impact of monitoring.

Table 2 BlackBerry SPI Policy Groups

Main Policy Group	Policy Group	Policy Group
SPI for BlackBerry	BlackBerry Recommended ²	
	BlackBerry Enterprise Server	BES Controller
		BES Dispatcher
		BES Messaging Agent
		BES Router
		BES Policy Service
		BES Synchronization Service
	BlackBerry Enterprise Server Add-on	BES Logs
		BES Service Health
		BES SNMP
	BlackBerry Monitoring Service ¹	
	BlackBerry SPI MgmtSv	

Detailed Information about all policies may be found in the BlackBerry Reference Guide.

► Note

¹ Not available in HP OM for UNIX 8 since WMI policies are not supported.

² Beware that the HP OM agent may need to be configured to receive SNMP Version 2 traps, which are sent by BlackBerry Enterprise Server 5.0.

Per default the OM agent receives SNMP traps version 1 which are send by BlackBerry Enterprise Server 4.0

For more information refer to the chapter “Troubleshooting”.

► Note

The SPI configuration needs to be set up before deploying any policies of the BlackBerry SPI policy groups:

The steps to configure BlackBerry SPI:

- **Create SPI Configuration** with one of the tools from BlackBerry SPI tool group BESPI Administration.
- **Optional: Create Data Store** with the tool from BlackBerry SPI tool group BESPI Performance.
- **Deploy and enable selected policy groups** according to the application category.

BlackBerry Recommended

This policy group contains the most important policies, which should be deployed on any BlackBerry server.

If the Auto-deploy feature of HP OM for Windows is not disabled, this policy group will be deployed as soon as a BlackBerry server is assigned to the BlackBerry node group.

The following policies are part of the BlackBerry Recommended policy group:

- BESPI_opcmmsg Pass messages from BlackBerry SPI components to the Operations Manager
- BESPI_Eventlog Filter BlackBerry entries from the Windows Eventlog and send them to the Operations Manager
- BESPI_SNMPTraps ² Intercept BES SNMP Traps
- BESPI_BESCoreServices ¹ Monitor the status of core BES services
- BESPI_ServiceDiscovery Discovery object for Service Tree
- BESPI_SPILog Monitor the BlackBerry SPI log file
- BESPI_getsize_spilog get the size of the bespi_spi.log file
- BESPI_getsize_spitrace get the size of the bespi_trace.log file
- BESPI_fs_spilog Monitor the size of the bespi_spi.log file
- BESPI_fs_spitrace Monitor the size of the bespi_trace.log file

► Note

The open message interface policy is used to pass messages from any BlackBerry SPI component to the Message browser.

► Note

¹ Not available in HP OM for UNIX 8 since WMI policies are not supported.

² Beware that the HP OM agent may need to be configured to receive SNMP Version 2 traps, which are sent by BlackBerry Enterprise Server 5.0.

Per default the OM agent receives SNMP traps version 1 which are sent by BlackBerry Enterprise Server 4.0

For more information refer to the chapter “Troubleshooting”.

BlackBerry Enterprise Server

The **BlackBerry Enterprise Server** policy group contains sub groups for the following application categories:

- BES Controller
- BES Dispatcher
- BES Messaging Agent
- BES Router
- BES Policy Service
- BES Synchronization Service

Each of these subgroups is an independent module of the BlackBerry SPI. They contain the following policies.

- BESPI_Collect_Controller_60m One or more **Scheduled Task** policy that collects BES performance metrics in specific intervals.
- BESPI_<nnnn>_<Name> Dedicated **Measurement Threshold** policies who send a message if the configured threshold is crossed.

► Note

The pre-configured thresholds that come out of the box need to be adapted to the size of the environment!

► Note

Time format in OM messages is calculated depending on the BES server’s locale.

BlackBerry Enterprise Server Add-on

The policies in this group are added for backward compatibility to BlackBerry SPI 02.00.

BES Logs

The following Logfile Entry policies are contained in this policy group:

- BESPI_AlertLog monitor **the latest** BlackBerry Alert Log file.
- BESPI_AttachmentLog monitor **the latest** BlackBerry Attachment Service Log file.
- BESPI_BBManagerLog monitor **the latest** BlackBerry Manager Log file.
- BESPI_BBServerLog monitors **the latest** BlackBerry Server Log file, also called BlackBerry Messaging Agent Log file.
- BESPI_BBUALog monitor **the latest** BlackBerry Resource Kit Log file, also called BlackBerry User Administration Log file.
- BESPI_DispatcherLog monitor **the latest** BlackBerry Dispatcher Log file.
- BESPI_RouterLog monitor **the latest** BlackBerry Router Service Log file.
- BESPI_ControllerLog monitor **the latest** BlackBerry Controller Log file.
- BESPI_SynchronisationLog monitor **the latest** BlackBerry Synchronization Service Log file.
- BESPI_PolicyServiceLog monitor **the latest** BlackBerry Policy Service Log file.

► Note

There are policy rule conditions defined for 10000 and 20000 level log event messages which concern error and warnings. Other entries like informational, debug or other messages are not monitored.

About BES Log files

BlackBerry Enterprise Server writes several log files. All monitored log files are contained within the location defined by this registry key:

```
SOFTWARE\Research In Motion\BlackBerry Enterprise Server\Logging Info\LogRoot  
  
(SOFTWARE\Wow6432Node\ Research In Motion\BlackBerry Enterprise Server\Logging  
Info\LogRoot)
```

How they are stored may be configured in the BlackBerry Enterprise Server. The following configurations are supported by BlackBerry SPI:

- Storing logs in **daily folders**
- Storing logs in **one folder**
- Storing log files with a **prefix** in its name.0
- Storing log files with a different <Debug Log Ident>.

In this case two issues need to be taken into account:

- Make sure there are no blanks or spaces in the new Debug Log Identifiers. This will cause the monitoring script to fail.

- The log file monitoring policies need to be updated to call the monitoring script with the same Debug Log Identifier as defined in the BlackBerry Enterprise Server.

There are several sets of log files. Each Active BlackBerry Server Message Agent writes its own log files that are readily identifiable because they contain the Agent Number in the log file names. Each of these log files is monitored separately.

After a restart of the BlackBerry Server, all log files are recreated with an iteration number increase by 1. The old log files are still available at the same location but they are not monitored.

► Note

When starting the log file monitoring, old messages may appear which may be deleted without problem.

BES Service Health

The policies from this policy group are based on the monitoring program called bespiPolicy:

- | | |
|---|---|
| <ul style="list-style-type: none"> • BESPI_CNTSPingResponse | <p>This policy monitors the BlackBerry Notes Connector service log for "PingResponse received" log messages and rates the severity.</p> <p>Please deploy the BESPI_CNTS_PingResponse policy only to BES using IBM Lotus Domino as a Messaging Server subsystem.</p> |
| <ul style="list-style-type: none"> • BESPI_DISPSystemHealthCheck | <p>This policy monitors the DISP service logs for "system health check" messages and rates the severity.</p> |
| <ul style="list-style-type: none"> • BESPI_MAGTMsgSentHandheld | <p>This policy monitors the BlackBerry Server service log for "Message sent to handheld" log messages and rates the severity.</p> |
| <ul style="list-style-type: none"> • BESPI_MAGTPingResponse | <p>This policy monitors the BlackBerry Server service log for "PingResponse received" log messages and rates the severity.</p> |
| <ul style="list-style-type: none"> • BESPI_MAGTThreadHealthOK | <p>This policy monitors the MAGT service log for "Thread health OK" messages and rates the severity.</p> |
| <ul style="list-style-type: none"> • BESPI_POLCPingResponse | <p>This policy monitors the BlackBerry IT Admin Server service log for "PingResponse received" log messages and rates the severity.</p> |
| <ul style="list-style-type: none"> • BESPI_ROUTPingResponse | <p>This policy monitors the Router service log for "Ping Response received" log messages and rates the severity.</p> |
| <ul style="list-style-type: none"> • BESPI_SYNCPingResponse | <p>This policy monitors the BlackBerry SyncServer service log for "PingResponse</p> |

received" log messages and rates the severity.

BES SNMP

The SNMP (Simple Network Monitoring Protocol) standard is able to monitor network-attached devices for conditions that warrant administrative attention. SNMP itself does not define which information (which variables) a managed system should offer. Rather, SNMP uses an extensible design, where the available information is defined in management information bases (MIBs) by the manufacturer.

The policies monitor MIBs for RIM BlackBerry Enterprise Servers:

- BESPI_besTotMsgsPending Total number of messages queued for delivery to handhelds.
- BESPI_besTotMsgsSentPerMin Total number of messages sent from handhelds per min.
- BESPI_besTotMsgsRecvdPerMin Total number of messages delivered to handhelds per min.
- BESPI_SNMPTrap Traps sent from the BES.

BlackBerry Monitoring Service

This policy group contains policies that are designed to work on a BlackBerry Monitoring Service only. In detail it contains the following policies:

- BESPI_BMSCore Service ¹ Monitor the status of the BMS core services

► Note

¹ This policy group is not available in HP OM for UNIX 8 since WMI policies are not supported.

BlackBerry SPI MgmtSv

This policy group contains a policy that is designed to generate the BlackBerry Service Tree. It needs to be deployed to the **Operations Manager Server**.

In detail it contains the following policy:

- BESPI_ServiceTreeGeneration Generating the service tree on the OM server

More information about the Service Tree Generation is found in the following chapter "Service Tree Generation,, on page 46.

6 Service Tree Generation

Automatic creation of the Service Tree

In the BlackBerry SPI, the service tree is generated in a three step process:

- 1 Automatic discovery of BlackBerry Enterprise Server components on the managed nodes.
- 2 Forwarding the discovery information to the OM server
- 3 Generating the service tree on the OM server

Automatic discovery of BlackBerry Enterprise Server components on the managed nodes.

This automatic discovery is executed on a regular basis via the OM Schedule Policy "BESPI_ServiceDiscovery", which is located in the policy group "SPI for BlackBerry/BlackBerry Recommended". The discovery process is started at every full hour per default.

Forwarding the discovery information to the OM server

The automatic discovery on the managed nodes generates special Service Discovery Messages. An automatic action is performed for each such message on the OM management server. This action extracts the service information and stores it on the OM management server for further processing. After the automatic action was successfully executed, the Service Discovery Message is automatically acknowledged in the active message browser.

The policy "SPI for BlackBerry/BlackBerry Recommended/BESPI_ServiceDiscoveryMessages" is driving this process.

Generating the service tree on the OM server

The service tree is generated on the OM server on a regular basis via the OM Schedule Policy "BESPI_ServiceTreeGeneration", located in the policy group "SPI for BlackBerry/BlackBerry Service Tree". The generation process takes all Service Discovery Messages received so far, builds and loads the new service tree.

The generation process is started every full and half hour per default.

Assign the Service Tree to an OM User

When using HP OM for UNIX, the OM user needs to assign the service tree to his personal view. To do this, each OM user needs to execute the tool “Assign BESPI ServiceTree” from the tools group “BESPI Administration” once.

Manual Update

Customer with an urgent need for a Service Tree update may use the tool "**BlackBerry Service Discovery**" from the BESPI Administration tool group and wait for the next half hour when the service tree is updated in the Service Navigator automatically.

7 Template Name Spaces

The metric thresholds that are delivered out of the box will probably not fit all environments or systems.

If all systems have the same requirements regarding the desired thresholds, the threshold policies may be adapted accordingly without any need to change the name or create new policies.

But often there are various databases on systems of different scale that have different requirements. In this case Template Name Spaces might be used to define different thresholds for different kinds of environments.

Template Name Spaces will give different groups (for example all testing servers or all servers used for an online shop) separate threshold monitor policies that monitor each group according to their own specific requirements.

Example of Use

Typically, a customer might distinguish policies for,

- development systems with the prefix “MYDEV_”
- test systems with the prefix “Test_”
- production systems with the prefix “Production_”

These systems may be divided into node groups defined by the customer and have different sets threshold monitoring policies. With the help of OM policy groups all policies belonging to one name space (marked with the same prefix) may be administered and deployed.

To ensure that all production servers collect all metrics und monitor them with strict thresholds one set of policies with the prefix “Production_” is created and adapted. They belong to the name space “Production_”.

Meanwhile the development and testing servers need not to be monitored very strictly, it may be enough to collect just a few of the most important metrics and even set the thresholds more tolerant. For this the name spaces “Test_”, “MYDEV_” or “Server1_” are created.

Another use case might be a regional division: The administrator wants to have different policies with different thresholds and messages for different geographic regions. He specifies the following regions:

- EMEA
- APAC
- LATAM
- NA

► Note

It is always advisable in to create a backup copy for security reasons before changing anything. In OMW the changed template will be always be saved under a different version number and a rollback is possible without explicit backup copy.

Using Template Name Spaces

In order to use Template Name Spaces, several steps are necessary:

Task 1 Switch on TNS in the BlackBerry SPI configuration file and specify the prefix

Task 2 Copy the required Measurement Threshold policies and add prefix to their names

Task 3 Adapt the thresholds in the prefixed copies

Task 4 Deploy the required policies to the selected nodes

Switching on the Template Name Spaces Feature

This special feature of the BlackBerry SPI needs to be switched on explicitly in the SPI configuration file called `bespi_spi.cfg`. It is stored in the configuration directory .

Among other switches there are the two variables `SPI_TNS_MODE` and `SPI_TNS_PREFIX` which are relevant for template name spaces:

```
#-----  
#      SPI_TNS_MODE:  
#      -----  
#      The HP Operations allows to use template prefixing  
#      also know as Template Names Space (TNS). If this is  
#      desired it can be enabled here.  
#      The prefix is specified in the SPI_TNS_PREFIX section  
#      Values:  ON          enable  
#              OFF        disable (default)  
#  
SPI_TNS_MODE OFF  
#-----  
#      SPI_TNS_PREFIX:  
#      -----  
#      The HP Operations allows to use template prefixing  
#      also know as Template Names Space (TNS). In this section  
#      the prefix is specified. Enable the usage in the  
#      SPI_TNS_MODE section.  
#      Please sepcify the template prefix here. Example:  
#      HPSERVICE_  
#
```

```
SPI_TNS_PREFIX HPSERVICE_
```

```
#-----
```

Edit the configuration file and set the variable SPI_TNS_MODE to “ON”. Enter the prefix after the variable SPI_TNS_PREFIX replacing the word “HPSERVICE_”. To configure different thresholds for different regions for example, change the config to:

```
SPI_TNS_MODE ON
```

```
SPI_TNS_PREFIX EMEA_
```

► Note

Please note that all collected values will now be sent to EMEA prefixed measurement threshold policies. If no policies with the prefix exist, the value will be sent into the void.

In case not all policies are copied and prefixed, because they are not required in this name space, copy and adapt the corresponding schedule policy as well.

In the schedule policy copy remove the metric number from the schedule command to avoid error messages.

Copy the Measurement Threshold Policy

To define a threshold for a Measurement Threshold Policy, a copy with a special name needs to be created. This name is derived from the original policy name as well as from the Template Name Space Prefix as follows:

```
<TNS_Prefix>_<Original_Policy_Name>
```

For example: the policy “BESPI_00204_DispsRPQueueLength” should be used to monitor a different threshold for the region “EMEA”. Then the copy of the original policy should be named:

```
“EMEA_BESPI_00204_DispsRPQueueLength”
```

Policy Group BES Add-on – Service Health

The policies from this policy group are based on an old monitoring program and require a special handling.

The prefixed policy copy needs to be adapted regarding the **program call**:

- 1 Copy the policy BESPI_DISPSystemHealthCheck
- 2 Change name of the from BESPI_DISPSystemHealthCheck to EMEA_BESPI_DISPSystemHealthCheck
- 3 These policies are based on a monitoring program. The “Program Name” in the prefixed policy copy needs to be adapted.

```
bespiPolicy LogMsg -f DISP -m \"*system health check*" -o  
BESPI_DISPSystemHealthCheck
```

needs to be changed according to the example above to:

```
bespiPolicy LogMsg -f DISP -m \"*system health check*" -o  
EMEA_BESPI_DISPSystemHealthCheck
```

Now these policies may be adapted as described in the next section.

Adapt the Thresholds

The thresholds might be changed in the prefixed policy according to regional requirements:

- New conditions may be created
- Conditions may be deleted
- The threshold values may be set higher or lower
- The severity of conditions may be changed
- The message text may be rewritten in the regional language

Now the policy is ready for use on the regional EMEA BlackBerry servers.

Deploy the Policy

Be sure to deploy only one policy monitoring the same object (for example: 00204_DispSRPQueueLength) to each server. This is very important when changing policies from the “BlackBerry Recommended” policy group, since those policies will get deployed automatically if the BlackBerry server is contained in the “BlackBerry” node group.

► Note

In order to help with the organization, it is advisable to create a new policy group for the changed policies (EMEA_BlackBerry) as well as a new node group (EMEA_BlackBerry) where copies of the regional nodes are kept. Now the deployment might be done solely by deploying policy groups to the node groups with the same prefix.

Switching off the Template Name Spaces Feature

To switch the Template Name Space feature off, edit the configuration file `bespi_spi.cfg` in the configuration directory on the managed BlackBerry nodes. The `SPI_TNS_MODE` should now be changed to “OFF”:

```
SPI_TNS_MODE OFF
```

The Template Name Space Prefix may stay in the configuration file. It is inactive as long as the switch `SPI_TNS_MODE` is set to “OFF”.

8 Graphing with HP Performance Manager

This chapter describes the visualization of BlackBerry SPI performance metrics with HP Performance Manager. It contains the following sections:

- “Prerequisites,, on page 52
- “Installation,, on page 53
- “Usage,, on page 53

Prerequisites

Software prerequisites

In order to view BlackBerry SPI graphs, HP Performance Manager is required. The following versions are supported:

- HP Performance Manger 6.x
- HP Performance Manager 8.x

The Performance Manager should be installed on the same system as the HP operations Manager at installation time. If Performance Manager is installed later or at another system, the integration needs to be copied manually from the BlackBerry SPI installation folder to the Performance Manager configuration directory. See section Installation for details.

Data prerequisites

The Performance Metrics need to be collected and stored for a few days. Otherwise the graphs will not show anything. The following tasks should be completed:

- One or more policy groups from the policy group BlackBerry Enterprise Server have been deployed to the BES node(s) (details see “Deploy policy groups to BlackBerry Enterprise Servers,, on page 23 as well as “Policies,, on page 39
- Data store has been created with the BlackBerry SPI tool “Create Data Store” from the BESPI Performance tool group (see “Create Report Data Store,, on page 28)
- Data Storing has been switched on with the BlackBerry SPI tool “Data Storing on” from the BESPI Performance tool group (see “Data Storing on” on page 28)

To verify that the data store have been created and that data has been stored use the “System Information” button provided by Performance Manager. Look for the data stores:

Figure 21 BlackBerry SPI Data Classes

Class	First Date	Last Date	Multi-Instances
GLOBAL	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
CPU	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	BYCPU_ID[1]
NETIF	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	BYNETIF_ID[2]
FILESYSTEM	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	FS_DIRNAME[1]
DISK	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	BYDSK_ID[1]
BESPIBESPI_CONTROLLER	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	HOSTSERVER[1]
BESPIBESPI_DISPATCHER	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPIBESPI_DISPATCHERDEV	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPIBESPI_MSGAGENT	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPIBESPI_MSGAGENTUSER	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPIBESPI_ROUTER	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	

Installation

The BlackBerry SPI Performance Manager Integration usually is installed during the SPI installation provided that HP Performance Manager is installed on the same server as the HP Operations Manager.

If Performance Manager is installed later or at another system, the integration file **VPI_GraphsSPIforBlackBerry.txt** needs to be copied manually from the BlackBerry SPI installation folder on the Operations Manager system:

```
%OvInstallDir%\BlackBerrySPI\NLS\1033\Perf\
```

to the Performance Manager configuration directory on the Performance Manager system:

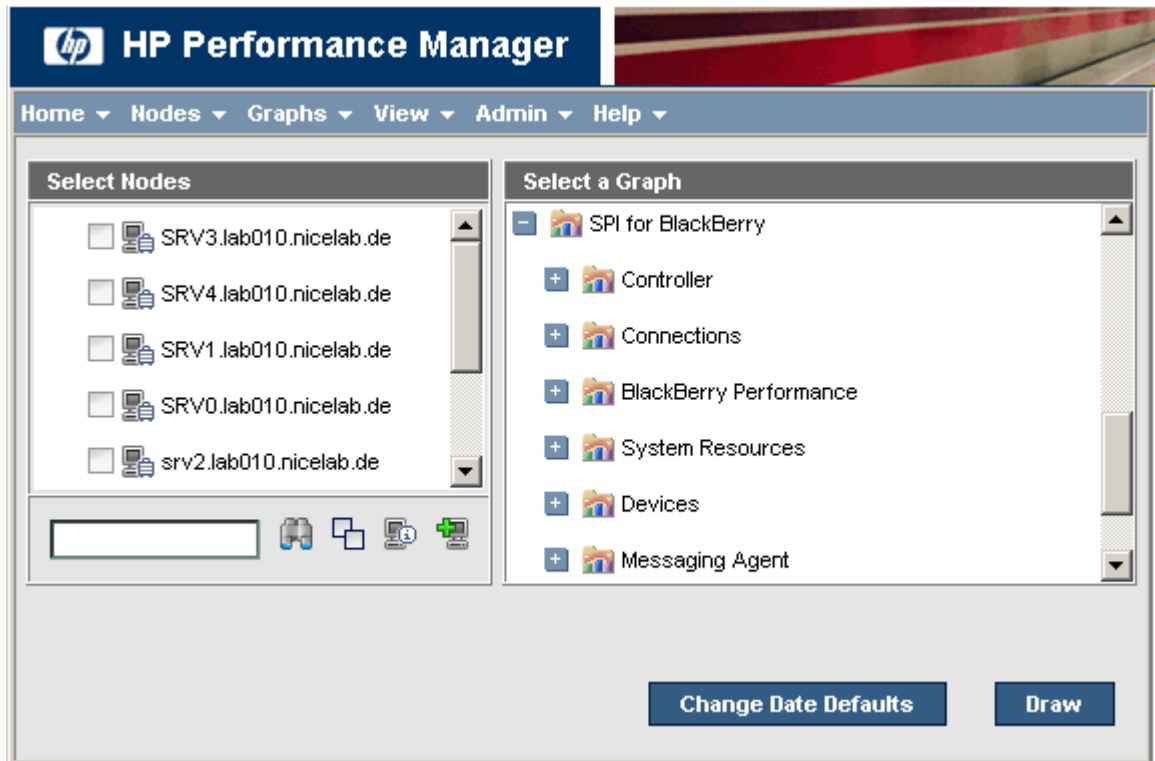
```
%OvInstallDir%\newconfig\OVPM
```

After a refresh of the Performance Manager GUI, a new graph family “SPI for BlackBerry” should be available.

Usage

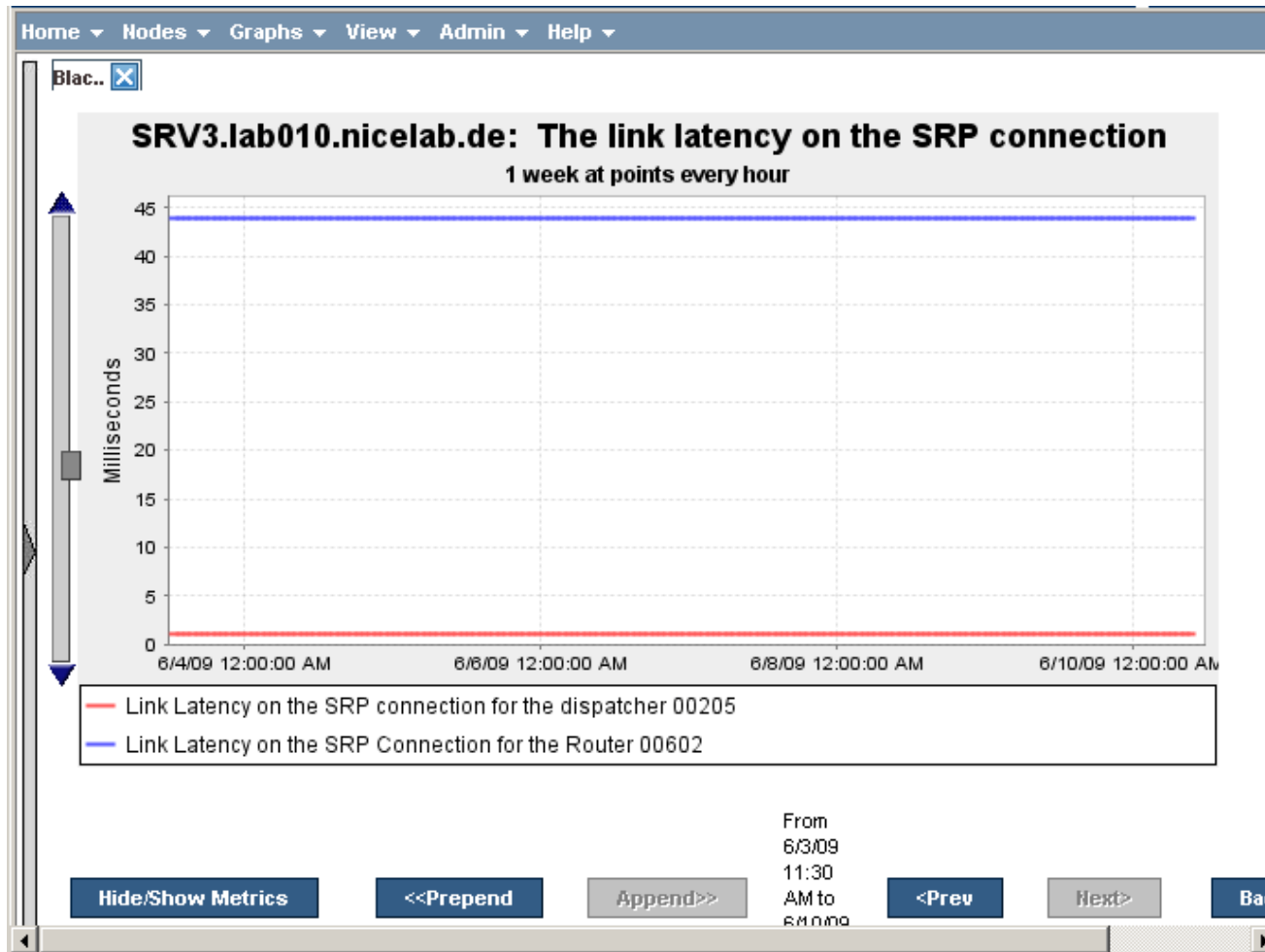
The graph family “SPI for BlackBerry” contains several categories, which in turn contain one or more graphs.

Figure 22 SPI for BlackBerry graph categories



In order to view a graph, select it as well as a system where BlackBerry SPI Performance data has been stored and press **Draw**.

Figure 23 Example graph



A list of all graphs may be found in the BlackBerry SPI Reference Guide.

9 Troubleshooting

This section describes how to troubleshoot the BlackBerry SPI. The information provided is designed to help you find, analyze, and fix problems with the BlackBerry SPI quickly and efficiently. In this section, you will find information about:

- “Troubleshooting Checklist,, on page 56
- “BlackBerry SPI Installation and Components,, on page 57
 - “Verifying Installation on the HP OM Management Server,, on page 57
 - “Files and Directories on the Operations Manager Management Server,, on page 59
 - “Installed File Locations on the BlackBerry Enterprise Server,, on page 60
- “Configuration Files,, on page 61
- “BlackBerry SPI Runtime License File,, on page 62
- “BlackBerry SPI Log Files,, on page 62
- “Tracing,, on page 63
- “Manual configuration of the SNMP data collector,, on page 67
- “Configure HP OM agent to receive SNMP v2 traps” on page 67
- “Override the Default Data Store” on page 68

Problems can occur in different areas, and you should first look at the standard scenarios explained in this section before deciding whether or not you need to investigate in more detail.

Troubleshooting Checklist

This checklist shall assist you in isolating and identifying the problem. Most often it will help to solve the problem yourself, and if not, gives hints what to collect and prepare when calling support for the product.

What describes your problem best?

- Problem with installation / de-installation
 - See "BlackBerry SPI Installation Guide"
 - See “BlackBerry SPI Installation and Components,, on page 57
 - See “Special Trace Files,, on page 66
- Problem with the BlackBerry SPI licensing
 - See “BlackBerry SPI License,, on page 15
 - See “Install BlackBerry SPI Licenses,, on page 17
 - See “License Add, License List, License Check,, on page 29ff
 - See “BlackBerry SPI Runtime License File,, on page 62

- See “BlackBerry SPI Log Files,, on page 63
- Problem with the initial configuration of the SNMP data collector
 - See “BlackBerry SPI Log Files,, on page 63
 - See “Manual configuration of the SNMP data collector,, on page 67
 - See “Special Trace Files,, on page 66
 - See “Configure HP OM agent to receive SNMP v2 traps” on page 67
- Problem regarding metric collection
 - See “BlackBerry SPI Log Files,, on page 63
 - See “Tracing,, on page 63
- Problems regarding the performance data logging
 - See “BlackBerry SPI Log Files,, on page 63
 - See “Tracing,, on page 63
- Problem regarding service discovery
 - See “BlackBerry SPI Log Files,, on page 63
 - See “Tracing,, on page 63

As a first step, make sure that the base installation of Operations Manager is operating correctly. For more information about basic trouble shooting in HP OM, see the Operations Manager online help. The online help is the primary documentation source for HP OM for Windows.

The BlackBerry SPI provides the following tools, which may be used to find and analyze problems:

Browser	Messages indicating start or stop or problems encountered
Logging	All important steps or events regarding the operation of the BlackBerry SPI itself (configuration, errors encountered etc.) are logged in a log file on the managed BlackBerry node. See “BlackBerry SPI Log Files,, on page 63.
Tracing	Useful information may be collected about each individual step performed during the operation of the BlackBerry SPI. However, tracing must be switched on and off explicitly. See section “Tracing,, on page 63.

BlackBerry SPI Installation and Components

Verifying Installation on the HP OM Management Server

To verify that the installation of the BlackBerry SPI completed successfully on the HP OM Management Server, carry out the following steps:

Task 1 To verify the installation execute the appropriate command from the table below. You should find the following entry:

Table 3 Verify Installation commands

Platform	Command
Windows	Open the Windows® " Control Panel " and use the " Add/Remove Programs " tab to display the list of installed software.
HP-UX	swlist grep BESPI
Sun Solaris	pkginfo grep BESPI

Task 2 Check that the elements listed in this table are present in the HP OM Console GUI:

Table 4 BlackBerry SPI components in the HP OM GUI

Component Type	Component Name		
Node Group	BlackBerry		
Tool Groups	SPI for BlackBerry	BlackBerry Administration	
		BESPI Performance	
		BESPI Administration	
Policy Groups	SPI for BlackBerry	BlackBerry Recommended ²	
		BlackBerry Enterprise Server	BES Controller
			BES Dispatcher
			BES Messaging Agent
			BES Policy Service
			BES Synchronization Service
			BES Router
		BlackBerry Enterprise Server Add-on	BES Logs
			BES Service Health
			BES SNMP Data
BlackBerry Monitoring Service ¹			
BlackBerry SPI MgrSv			

Service: BlackBerry Domain	BlackBerry Enterprise Server	BlackBerry Components	BlackBerry Monitoring Service BlackBerry Integration Service BlackBerry Controller BlackBerry Dispatcher BlackBerry Policy Server BlackBerry Synchronization Service BlackBerry Messaging Agent BlackBerry Administration Service BlackBerry Connection Service BlackBerry Collaboration Service BlackBerry Router BlackBerry Attachment Service
User Profiles	BlackBerry Operator		
	BlackBerry SPI Admin		

► **Note**

¹ Not available in HP OM for UNIX 8 since WMI policies are not supported.

² Beware that the HP OM agent may need to be configured to receive SNMP Version 2 traps, which are sent by BlackBerry Enterprise Server 5.0.

Per default the OM agent receives SNMP traps version 1 which are sent by BlackBerry Enterprise Server 4.0

For more information refer to the chapter “Troubleshooting”.

To verify that the Service is installed correctly, use “**Service Type Configuration Editor**”. The service will not show up in the Service Navigator until the BES node has been configured and the services have been discovered.

To verify that the User Roles/Profiles are installed correctly use “**User Role Configuration Editor**”.

Files and Directories on the Operations Manager Management Server

The installation of the BlackBerry SPI software copies the required files to the Operations Manager management server. In addition to the standard locations already available on an Operations Manager management server, the following directories are created.

On Windows (OM for Windows)

Location	Usage
%OvInstallDir%\install\BlackBerrySPI\	temporary files for the installation
%OvDataDir%\shared\SPI-Share\ BlackBerrySPI\	scripts and files for server-sided tools and actions
%OvDataDir%\shared\ Instrumentation\Categories\ BlackBerrySPI\	scripts, binaries and configuration files for operation on the managed BlackBerry server
%OvDataDir%\log\SPIInstallLogs\ BlackBerrySPI_Install.log	log file for all BlackBerry SPI activities during installation

On HP-UX, Solaris and Linux (OM for UNIX / Linux)

Location	Usage
/var/opt/OV/share/tmp/OpC_appl/bespi	temporary files for the installation
/opt/OV/bespi/install	scripts for installation / de-installation
/opt/OV/bespi/bin	scripts and files for server-sided tools and actions
/opt/OV/bespi/license	license terms
/opt/OV/bespi/ovpm	definition file for HP PM integration
/opt/OV/bespi/install.log	log file for all BlackBerry SPI activities during installation
/var/opt/OV/share/conf/bespi_base.env	environment file for scripts
/var/opt/OV/share/databases/OpC/mgd_no de/customer/<platform, system>/monitor /var/opt/OV/share/databases/OpC/mgd_no de/customer/<platform, system>/cmds	scripts, binaries and configuration files for operation on the managed BlackBerry server

► Note

The management server must be a managed node itself.

Installed File Locations on the BlackBerry Enterprise Server

Installing and configuring the BlackBerry SPI components on the BES (an Operations Manager managed node) creates the following directories on the Operations Manager managed node.

Location	Usage
----------	-------

%OvAgentDir%\bin\instrumentation	Instrumentation: scripts and binaries for the SPI
%OvAgentDir%\tmp\BESPI	temporary storage, pointer files
%OvAgentDir%\log\BESPI	log and trace files
%OvAgentDir%\BESPI\metrics	metric definition files, performance data stores (if PA is used)
%OvAgentDir%\conf\BESPI	configuration files

► **Note**

Scripts and binaries as well as configuration file templates are kept in the standard "instrumentation" directory.

Required Registry Keys

To successfully install BlackBerry SPI, the following registry keys need to be present and contain value from a HP OM for Windows installation which is supported by BlackBerry SPI:

The location is given relative to: **HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard**

Location
\HP OpenView\DataDir
\HP OpenView\InstallDir
\HP OpenView\OvOWShareInstallDir
\OVEnterprise\Version
\OVEnterprise\Management Server\Pmad\InstrumentationPath
\OVEnterprise\Management Server\Pmad\InstrumentationCategoriesPath

Configuration Files

BlackBerry SPI Configuration Files and Directories

There are different BlackBerry SPI configuration files which are installed and used on all managed BlackBerry nodes.

Default configuration files are distributed to the managed BlackBerry node together with the BlackBerry SPI instrumentation.

After the configuration of the SPI, the following files are copied to the configuration directory on the managed node and may be modified:

- `..\conf\BESPI\bespi_spi.cfg` file

Active image of the default configuration file `bespi_spi.cfg`; this copy may be modified to change the default behavior of the BlackBerry SPI on the managed node, like enabling or disabling performance monitoring or switching trace options.

- `..\conf\BESPI\bespi_tracedef.cfg` file

Currently not used.

- `..\conf\bespi_base.env`

Configuration file is created during the first run of the BlackBerry SPI. This file contains configuration information for the `bespi_start.bat` script. It contains all relevant directory for the SPI.

- `..\conf\BESPI\bespi_dbcfg.cfg` file

Active image of the configuration file `bespi_dbcfg.cfg`;

This file is stored as a XML structure and contains the configuration for the database metric data collector.

The file should only be changed with the help of support!

- `..\conf\BESPI\bespi_metrics.cfg` file

Active image of the configuration file `bespi_metrics.cfg`;

This file contains all metric definitions and its associated collector. Further it allows to specify the Message Object, enable or disable alarming (forward data to `opcmon` for individual metrics) and configuration of metric calculation rules.

The file should only be changed with the help of support!

- `..\conf\BESPI\Net`

This sub-directory contains Perl Modules (pm) for the SNMP data collector

- `..\conf\BESPI\lib32`

This sub-directory contains Perl libraries for 64 bit support of the SNMP collector.

BlackBerry SPI Runtime License File

In the instrumentation directory the BlackBerry SPI runtime license file, `bespi_license.dat`, is kept. This file contains all runtime licenses in encrypted form the user has obtained. It is read by the BlackBerry SPI and must not be modified at any time to preserve BlackBerry SPI operation.

If this file should be deleted or get corrupted on the BlackBerry server, simply re-deploy the "instrumentation" for a reset.

► Note

With the "License Check" tool you can verify the validity of the runtime licenses on each managed node.

Log Files

BlackBerry SPI Log Files

All important internal states and messages from the Perl layer are written to a log file on the managed node, `.../log/BESPI/bespi_spi.log`. All configuration events as well as important events during operation are logged to this file.

Many of the entries are monitored by the BlackBerry SPI itself, using logfile policies, but these do not filter all events from it nor do they provide accurate timing and sequencing in the Operations Manager message browser.

For details and the complete history you should therefore check this log file directly.

Tracing

This section describes how you can use the tracing feature incorporated in the BlackBerry SPI to help you in your troubleshooting. The information written to the trace files is designed to help you pinpoint and solve problems as quickly and efficiently as possible. This section covers the following troubleshooting areas:

► Note

Tracing can produce large amounts of data in the trace file, and there is no file-size limitation for this logging.

You should therefore use tracing only when necessary and, in addition, make sure that tracing is switched off after the targeted events have been triggered and finished.

Trace collection

To obtain a trace you need to know the script name of the BlackBerry SPI. Currently the only supported way to obtain a trace is to specify the script name in the BlackBerry SPI configuration file.

The default configuration file, `bespi_spi.cfg`, is transferred during the initial distribution of the BlackBerry SPI instrumentation from the Operations Manager management server to the Operations Manager managed nodes (BlackBerry servers). During the configuration this file is copied to the SPI configuration directory. Please do all adjustments on the file in the configuration directory (active images).

There are four entries in the configuration file that determine the trace behavior:

- SPI_TRACE_CONFIG_FILE (currently not supported)
- SPI_TRACE_STATUS
- SPI_TRACE_PROCESS
- SPI_TRACE_PLUS (currently not supported)

The following listing shows the default contents of the configuration file, `bespi_spi.cfg`.

Example: Default BlackBerry SPI -Configuration File (trace section only)

```
#####
#
# File:          bespi_spi.cfg
# Description:   The general configuration file of the BESPI
# Package:      NiCE Smart Plug-In for BlackBerry
#
# "Copyright (c) by NiCE GmbH, 2009"
#
#####

#           SPI_VERSION:
#           -----
#           Code version of the SPI installed.
#           Note:  DO NOT REMOVE OR CHANGE THIS LINE.
#                   IT IS MAINTAINED AUTOMATICALLY DURING UPGRADES.
SPI_VERSION 03.10
#-----

#           SPI_TRACE_CONFIG_FILE:
#           -----
#           Define the name of the tracing configuration file
#           for advanced SPI tracing.
#           Values: <name> Fully qualified file name
#                   OFF    Advanced tracing disabled (default)
SPI_TRACE_CONFIG_FILE OFF
#-----

#           SPI_TRACE_STATUS:
#           -----
#           Status of SPI tracing on managed node.
#           Values:  ON     Tracing enabled
#                   OFF    Tracing disabled (default)
#           Note:    This flag is evaluated only if the advanced
#                   tracing is not defined
SPI_TRACE_STATUS OFF
#-----

#           SPI_TRACE_PROCESS:
#           -----
#           Program name to be traced, e.g. bespi_showsnap.pl
#           Values:  ALL    Trace all programs
#                   <name> Name of program to be traced
#                   default is: no program
#           If more than one program is to be traced, add one
#           one line for each program
#           Note:    This flag is evaluated only if the advanced
#                   tracing is not defined
SPI_TRACE_PROCESS bespi_anyname.pl
#-----
```


Traces are generated in a two-step approach:

- 1 For each process or script that is given in a `SPI_TRACE_PROCESS` command in the configuration file, a separate trace file is created where the traces are stored.
- 2 When the process or script ends regularly, this file is appended to the general trace file `bespi_trace.log`. The interim trace files are kept in the same directory as the comprehensive one and can easily be identified by their name, which contains "bespi_trace" and a PID. If the process or script should abort before regular termination and merge, the separate trace file is preserved there.

► Note

It is good practice to check the temporary directory from time to time for remainders of such trace operations.

Special Trace Files

There are some special trace files that are always created: for configuration and upgrade.

These files are also kept in the usual log directory (see “Installed File Locations on the BlackBerry Enterprise Server,, on page 60), but under a special name:

- `bespi_setup_<DATE>.log`
- `bespi_upgrade_<DATE>.log`

These traces are enforced programmatically just as an additional precaution in case any of these critical steps should fail unexpectedly.

Additionally, an installation log `BlackBerry_Install.log` is written and stored on the Operations Manager. For the location of this file refer to section “Files and Directories on the Operations Manager Management Server,, on page 59.

Database collector trace file

All traces from the database collector (`bespi_metcoll.exe`) are written to its log file (`bespi_metcoll.log`). This file contains regular log entries as well as advanced tracing information about the database collection if tracing is enabled.

To enable tracing for the database collector include the following lines in the configuration file:

```
SPI_TRACE_PROCESS bespi_mon.pl  
  
SPI_TRACE_PROCESS bespi_metcoll.exe
```

Manual configuration of the SNMP data collector

In some cases it becomes necessary to configure or to update the SNMP collector settings like the SNMP community string. Usually the Tool "Update SPI for BES Configuration" is used for this.

Please note that although the community or SNMP password can be set in the configuration file, we recommend to use "Update SPI for BES Configuration" since it also enables the SNMP Collection.

For support reason this can be adapted in the BlackBerry SPI configuration file `bespi_spi.cfg`. This file is copied during the setup process to the BlackBerry SPI's configuration directory.

To change the community string, please look for the following section in the `bespi_spi.cfg` file:

```
# BESPI_SNMP_READSTR
# -----
# SNMP read community string, default is "public".
BESPI_SNMP_READSTR public
#-----
```

To enable the SNMP Collection, please set the parameter "BESPI_SNMP_MONITOR" to "ON".

```
# BESPI_SNMP_MONITOR
# -----
# Enable/disable SNMP monitoring
BESPI_SNMP_MONITOR ON
#-----
```

Change the parameters as required and save the file. A restart or reconfiguration is not required.

Configure HP OM agent to receive SNMP v2 traps

Per default the OM agent receives SNMP traps version 1 which are send by BlackBerry Enterprise Server 4.0

Since BlackBerry Enterprise Server 5.0 sends SNMP version 2 traps, the HP OM agent needs to be configured to receive SNMP version 2 traps with the `BESPI_SNMPTraps` policy.

The following tasks have to be completed on the BlackBerry server:

Task 1 `ovconfchg -ns eaagt -set SNMP_SESSION_MODE NNM_LIBS`

Task 2 `ovc -kill`

Override the Default Data Store

The HP Operations performance subagent (also referred to as CODA) is automatically deployed on all managed nodes. The BlackBerry SPI relies on this HP Operations subagent as the performance agent that collects/stores performance data used with HP Reporter and HP Performance Manager. If you install HP Performance Agent on a managed node, the BlackBerry SPI will create the data store but will not be able to log instance data to it.

► Remark:

For all nodes where the BlackBerry SPI is deployed together with the HP Performance Agent an override needs to be configured.

To override the default mechanism to store data—that is, to switch data logging from HP Performance Agent to CODA — if the HP Performance Agent is installed — perform the following tasks:

Task 1 Disable Graphs and Reports

Before modifying the agent setup, you must stop data collection for reporting and graphing. Then, when you have finished the agent data source setup, you can re-enable reports/graphs.

- 1 In the console tree, select **Tools** → **SPI for BlackBerry** → **BESPI Performance**.
- 2 In the details pane, double-click Delete Report Data Store and select all systems on which you to modify the default agent setup.
- 3 Click **Launch...**

Task 2 Create the nocoda.opt File

- 1 Using a text editor, open a new file.
- 2 On the managed node, save the file as `nocoda.opt` in `%ovdatadir%/conf/dsi2ddf/nocoda.opt`

► Remark:

The BlackBerry SPI requires this file to be empty or contain not the "ALL" or "BESPI" line. In case you have other SPIs on the system which also use DSI2DDF and it is required for those SPI to use PA, you need to enter the Data Sources for them into the `nocoda.opt`.

Task 3 Task 3: Enable Graphs and Reports

- 1 In the console tree, select **Tools** → **SPI for BlackBerry** → **BESPI Performance**

- 2 In the details pane double-click **Create Report Data Store** and select all systems on which you to modify the default agent setup.
- 3 Click **Launch....**
- 4 Double-click **Data Storing On** and select all systems on which you to modify the default agent setup.
- 5 Click **Launch....**

10 BlackBerry SPI Self-Management

BlackBerry SPI Log File

The BlackBerry SPI is configured to monitor its own status and notifies the user of any changes in status, problems, and errors etc. as follows:

- The BlackBerry SPI self-management feature generates messages for all internal state changes and any problems and sends the messages to the BlackBerry SPI administrator.
- Some of the messages generated by the BlackBerry SPI contain instruction text, which offers a potential explanation as to why the message was generated.

This self-management is primarily achieved via the BlackBerry SPI log file described earlier and a HP OM log file policy, `BESPI_SPILog`, which is contained in the BlackBerry SPI "BlackBerry Recommended" policy group and hence get distributed to all managed BlackBerry nodes

BlackBerry SPI Message Interceptor

Another way in which the BlackBerry SPI uses to sends alerts about its status is the "BESPI_opcmmsg" policy.

If an error occurs during the operation of the SPI, error messages are forwarded to the console. There are some specific rules which help to classify the different intercepted events. All messages concerning the operation of the BlackBerry SPI itself are assigned to the message group **BlackBerry SPI**.

Please make sure to monitor your message browser for these messages since BlackBerry monitoring might be interrupted if the SPI is not working correctly.

Glossary

API

Application Programming Interface

BES

BlackBerry Enterprise Server

HP

Hewlett-Packard Development Company

OV

HP OpenView Platform

SPI

Smart Plug-in

HP OM for UNIX

HP Operations Manager for UNIX

HP OM for Windows

HP Operations Manager for Windows

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