HP Operations Smart Plug-in for BlackBerry Enterprise Server Software

for the HP Operations Manager for Windows Software

Software Version: 03.00

Administration Guide

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Release 03.00: June 2009

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https://ovrd.external.hp.com/rd/register

To find more information about access levels, go to:

http://support.openview.hp.com/new_access_levels.jsp

Contents

Figures

Tables

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.

Table 1　Related Documentation

HP Software Product Name	Manual Title
Operations Manager for UNIX / Windows	Administrators reference Concepts guide Configuring circuits for HP OM DCE agents concept and configuration guide HTTPS agents concept and configuration guide Installation guide Java GUI operator's guide (more available, please refer to the HP Software support pages)
Performance Manager	Administrator's Guide User's guide and tutorials
Performance Agent	Data Source and integration Guide Installation and Configuration User's Guide Tracking your Transactions Installation and Configuration Guide Application Response Measurement API Guide (Windows only)

2 Introduction

This chapter includes the following topics:

- About the BlackBerry SPI on page 14
- Operations Manager on page 15
- Architecture on page 16
    — BlackBerry SPI software components on page 17
    — BlackBerry SPI License on page 17
- BlackBerry SPI best practice & use cases on page 18
    — Metric data collection on page 18
    — Add-On Policies on page 19

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
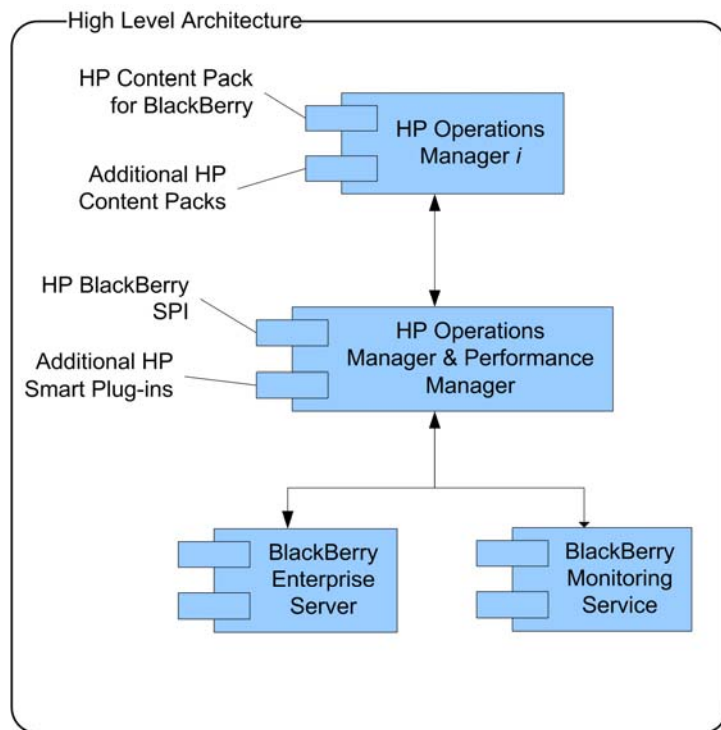
Figure 2   BlackBerry SPI Integration and Data Flow
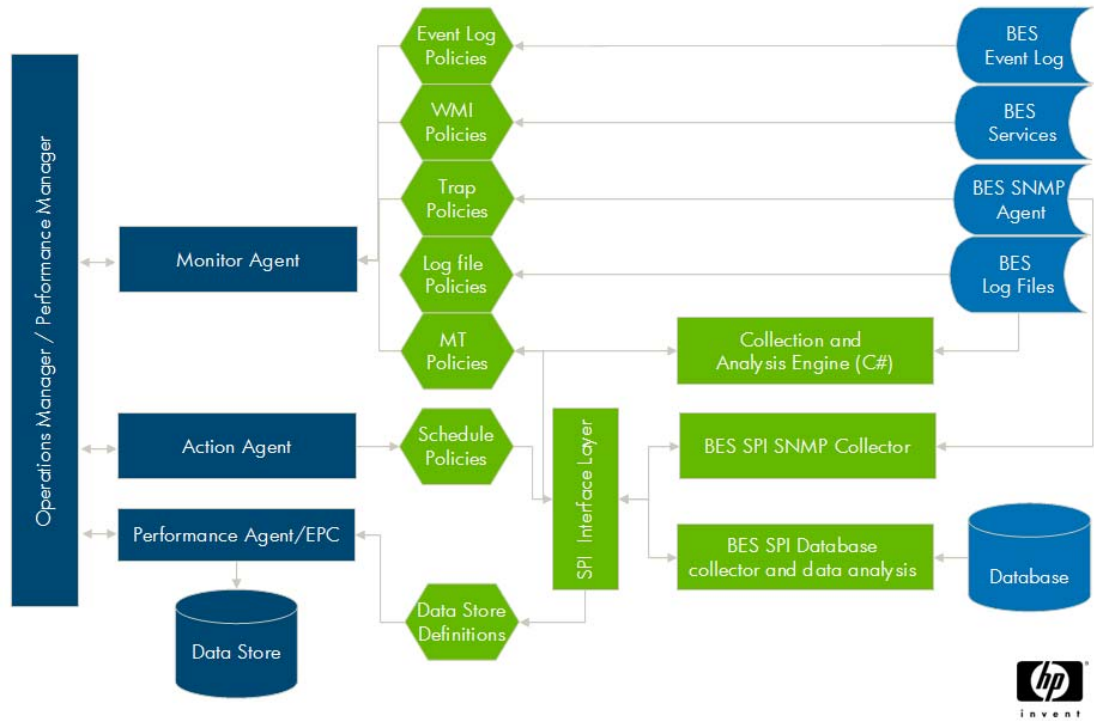
Legend

a   dark blue elements are part of the HP Operations Manager

b   green objects depict the BlackBerry SPI components

c   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.

If the BlackBerry SPI policies are deployed on a BlackBerry server without a valid or permanent license, the policies will not run properly and produce errors. All tools will not be able to execute as well. Therefore, either a permanent or evaluation license is required for operation of the BlackBerry SPI on the BlackBerry servers. This license is added to the management server during the configuration of the BlackBerry SPI.

BlackBerry SPI best practice & use cases

Metric data collection

The BlackBerry SPI Version 3.00 offers two different collection engines to collect data required for the calculation of all metrics.

1   SNMP Based Data Collection (recommended)

   a   All data is collected from the BES SNMP Agent, analyzed and forwarded to the HP Operations Agent and/or the Performance Agent.

   b   For this option the BlackBerry SPI must be deployed and configured on each BES.

   Metrics in the metric ID range below 2000 can be collected if the SNMP Based Data Collection is configured.

2   BMS Database Based Data Collection

   a   In case you have the BlackBerry Monitoring Service (BMS) installed and configured you can collect all metrics from the central BMS database.

   b   This option does not require any instrumentation or configuration deployed to the different BES in your domain.

   c   Using this collection depends fully on the data which resides in the BMS database. In case event and performance data is not written into the database, incorrect alerting can occur. Depending on the configuration of the BMS data collection subsystem data might be delayed.

Metrics in the metric ID range above 2000 can be collected additionally if the BMS Database Based Data Collection is configured.

Use cases for data collectors

We can differentiate between three different use cases, depending on your BES/BMS environment.

Use Case 1: BES only setup (no BMS set up or configured)

In case the BMS is not configured, policies contained in the "BlackBerry Monitoring Service" Policy group cannot be used. The configuration tool of the BlackBerry SPI "Configure SPI for BES" must be run on every BES in the BlackBerry domain.

Use Case 2: BES and BMS setup, combined monitoring

In case BMS is configured in your BES domain, additional metrics can be collected. Policies for the BMS based metrics (metric ID range 2000-3000) are assigned to the "BlackBerry Monitoring Service" policy group. In this case the following is required:

- On each BES the "Configure SPI for BES" tool must be run
- On the BMS server the "Configure SPI for BMS" tool is run
- Deploy the "Auto-Deploy" policy group to both
- Deploy the "BlackBerry Enterprise Server" policy group to the BES
- Deploy the "BlackBerry Monitoring Server" policy group to the BMS server

- Optional: Deploy the "BlackBerry Enterprise Server Add-on" policy group to the BES

Note

In some case a single event might trigger two messages. Example: Metrics 2115 (Percentage hung threads) and metric 115 (number of hung threads).

Please be aware that the messages do not appear at the same time bug might both indicate the same issue.

Use Case 3: BES and BMS setup, only remote monitoring

In this case the customer has the BMS set up and configured and decides to not deploy anything to the BES. All monitoring will be done using the BMS. The following steps need to be completed to achieve this:

- Run the "Configure SPI for BMS" tool
- Adapt the collector engine for each metric in the bespi_metric.cfg file (please contact support to get help for this task)
- Adjust the schedule templates to only collect the desired metric sets (please contact support to get help for this task)
- Deploy BES policies and BMS policies to the BMS server

Add-On Policies

For all policies in the "BES Log" and "BES Service Health" policy groups it is required that the BlackBerry SPI is configured locally on each node. Policies in these groups cannot be used remotely. The policies in the "BES SNMP" policy group can be configured to monitor remote systems. See HP OM documentation to configure this.

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 on page 21
- Add Responsibilities to Users on page 22
- Deploy BlackBerry SPI Instrumentation on page 22
- Configure BlackBerry SPI on page 24
- BlackBerry SPI Policy Groups on page 27
- Adding BlackBerry Servers to the BlackBerry Node Group on page 28
- Deploy policy groups to BlackBerry Enterprise Servers on page 29
- Performance Data Collection and Storing on page 29

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 please go to *https://webware.hp.com* and request an evaluation license. Please allow 24 hours for the license to be issued.

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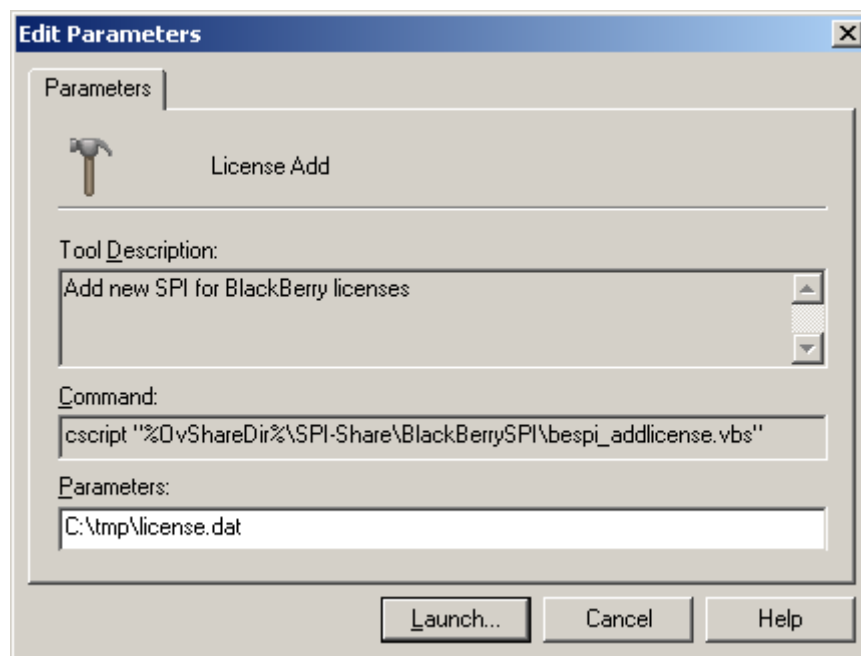
Task 4   Then press "OK" to start the process.

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

Figure 4   License has been added successfully
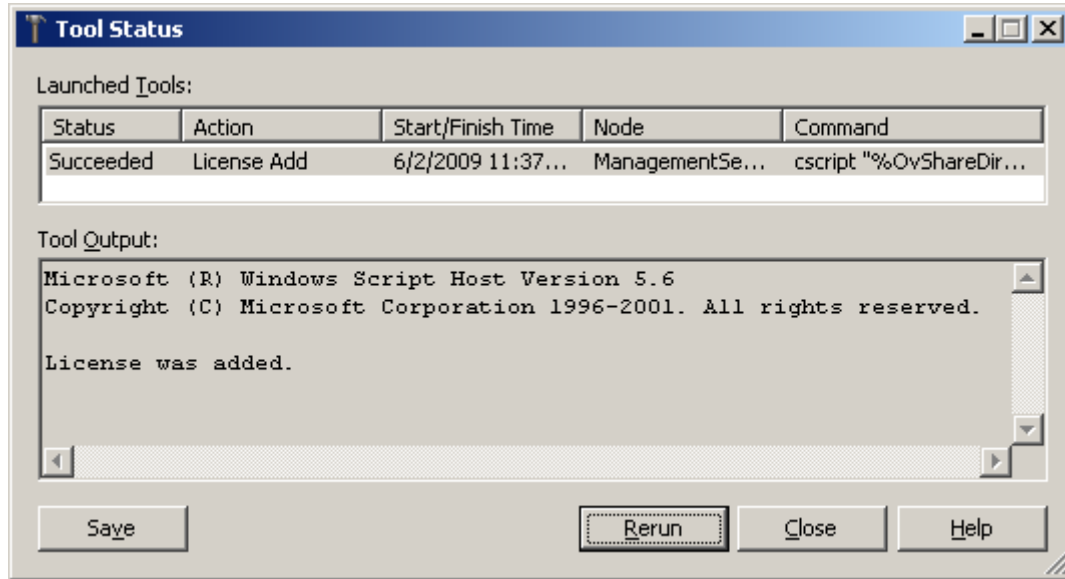
Task 5   All licenses contained in the downloaded file will now be added to the instrumentation for later deployment.

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
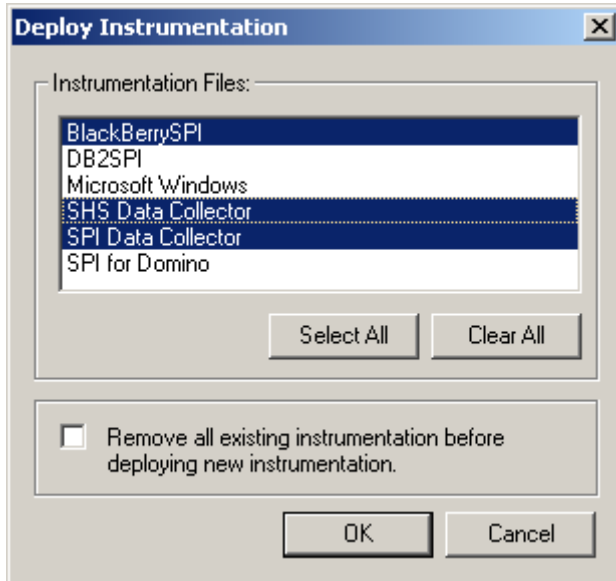
Configure BlackBerry SPI

To prepare the environment for the BlackBerry SPI executables and scripts, **one of the two configuration tools** needs to be executed. Which one to choose depends on the BlackBerry server installation type. (Please see BlackBerry SPI best practice & use cases on page 18)

For a BlackBerry Enterprise Server (BES), choose **Configure SPI for BES** tool on page 24; for a BlackBerry Monitoring Service (BMS) choose the **Configure SPI for BMS** tool on page 25.

Configuration on a BES server

To enable the BlackBerry SPI to work with the BES SNMP Agent, execute the tool **Configure SPI for BES** from the **SPI for BlackBerry – SPI 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
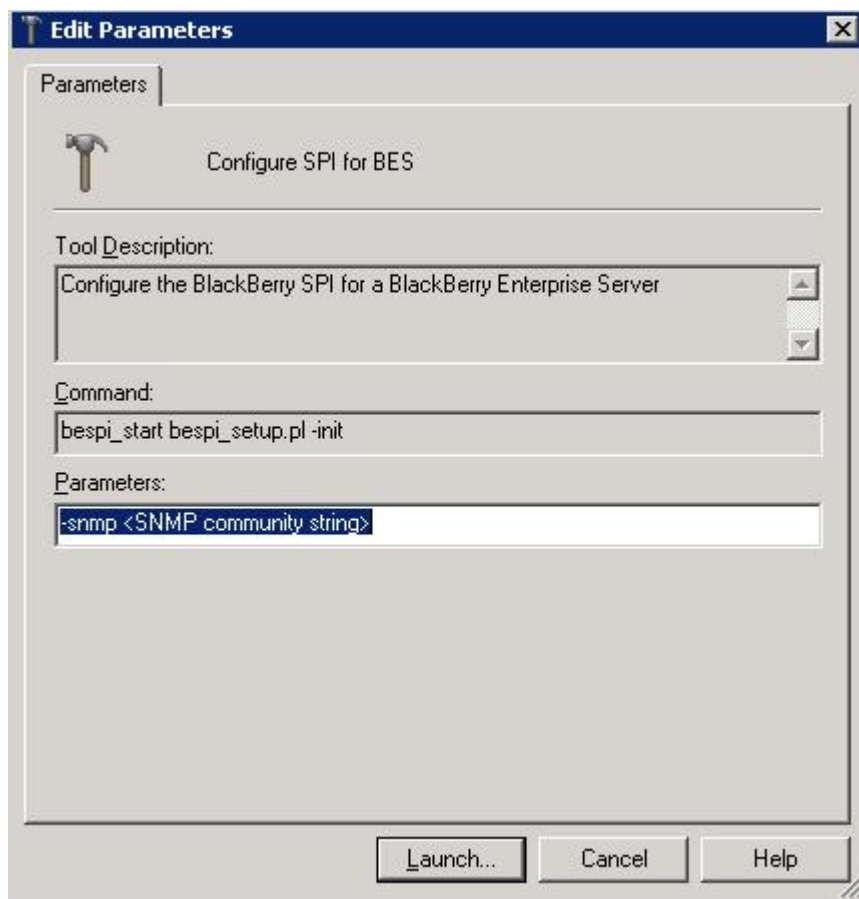
2   Press the button "Launch".

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 – SPI Administration**.

Configuration on a BMS server

In case you decide to use any of the BMS based metrics, located in the "**BlackBerry Monitoring Service**" policy group, the SPI requires connection information for the BMS database.

The connection can be either configured using an interactive setup from the node's command prompt or as a non-interactive setup from the HP OM for Windows Console. The interactive setup is much more convenient.

In any case the following information is required:

- database type (-dbt MSSQL) (other database types are not yet supported)
- connection type (-ct ODBC | -ct OLEDB)
- connection string which depends on the database and connection type as well as whether the Database source name (DSN) is configured or not. (-cs <connection_string>)
- BES Management Database Name (-mdb <bes_dbname>)
- MDS Services Database Name (-sdb <mds_dbname>)

Some examples for the parameter <connection_string>:

- **connection type ODBC and DSN is not configured:**

„<Driver={SQL Server};Server=my_bms_srv\instance;Database=bes_dbname;Uid=;Pwd=>"

- **connection type ODBC and DSN is configured:**

<DSN=datasourcename;Uid=;Pwd=>"

- **connection type OLEDB:**

„<Provider=SQLOLEDB;Data Source=my_bms_server\instance;Integrated Security=SSPI;>"

Non-interactive setup from the OMW console

Please follow the steps below:

1 Execute the tool "Configure SPI for BMS" from the "Administration" tool group.

2 Edit the Parameters in the parameter field:

Figure 7   Edit Parameters for Configure SPI for BMS
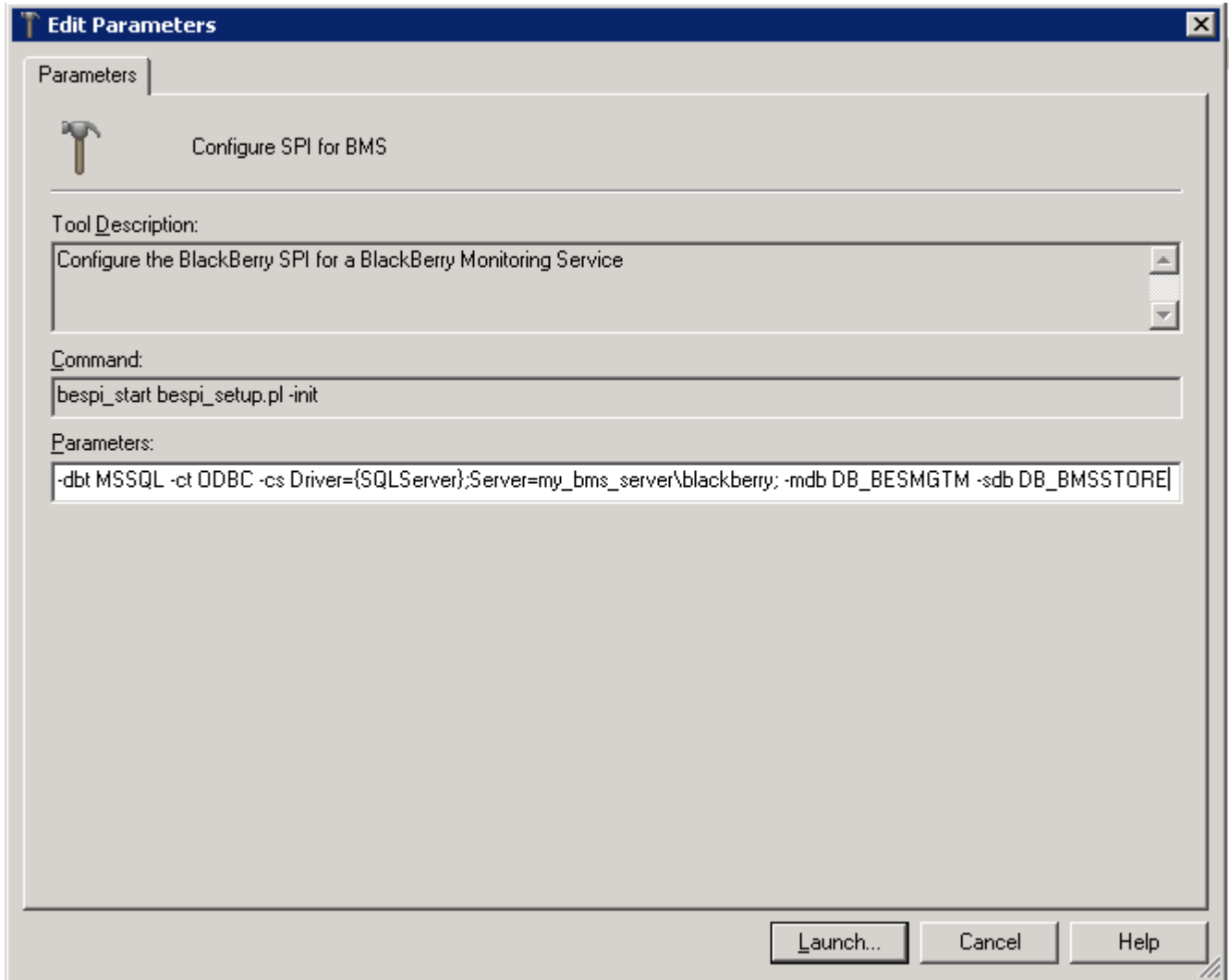
Choose the connection type by deleting the one that is not used.

3   Replace the place holder strings with the real connection string and database names. Be sure to use quotes, if a string contains spaces or semicolons as the connection string does per default!

4   To execute the tool press "Launch" button.

Note

If the tool execution was not successful, make sure that all parameters are correct and use the "**Update SPI configuration for BMS**" tool.

Interactive setup on the BMS server

You can run an interactive setup at the command prompt of any BES server which you wish to be the BMS monitoring station. This is the most convenient way, but sometimes it is not possible due to security policies. You may run this on the BMS server itself.

To run the configuration in interactive mode, execute the following command:

bespi_start.bat bespi_setup.pl -init

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

Processing 'BESPI_AlertLog' ...

     * Disable all policies for the specified selection on host 'localhost'.

Do you want to set up an SNMP monitoring? [y|n]: n

Do you want to set up a database connection? [y|n]: y

Please provide connection parameters. Press enter for using default parameter.

Database server is MSSQL or DB2? Default is (MSSQL): MSSQL

Connection type is ODBC or OLEDB? Default is ODBC: ODBC

Enter the user id:

Enter the password:

Is the ODBC datasource configured (N/Y)?. Default is Y: n

Enter the server(host) name: w135\blackberry

Enter the BES Management database name. Default is BESMgmt: bes_mgt

Enter the BlackBerry MDS Services database name. Default is BMSStore: bms_store

Enter the driver name. Default driver name is {SQL Server}: {SQL Server}

DB Server is: MSSQL

DB Connection type is: ODBC

DB Connection String is: Driver={SQL Server};Server=w135\blackberry;Uid=;Pwd=

BlackBerry Enterprise Server Management DB Name is: bes_mgt

BlackBerry MDS Services DB Name is: bms_store

Testing db connection...

Db Connection test is succeeded.

Configuration file is successfully saved on the disc...

Press any key...

Thank you, initialization finished. Configuration is in 'C:\ProgramData\HP\HP BTO Software\conf\BESPI'

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 BMS policy group to server hosting the BlackBerry Monitoring Service.

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

Figure 8　SPI for BlackBerry Policy Group after Installation

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

The BlackBerry SPI Auto-Deploy policy group contains the following policies:

- BESPI_MetCollLog
- BESPI_SNMPTraps
- BESPI_EventLog
- BESPI_BESCoreServices
- BESPI_SPILog
- BESPI_opcmsg

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 46 as well as the BlackBerry Reference Guide.

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 Auto-Deploy policy group to each BES server.

Deploy policy groups to BlackBerry Enterprise Servers

To deploy the Auto-Deploy 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 Auto Deploy 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 46 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.

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 tool group Performance Tools on page33:

- Create Report Data Store on page 33
- Data Storing on on page 33

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
Performance	Data Storing off
	Data Storing on
	Report Data Delete
	Report Data Setup
SPI Administration	BlackBerry SPI off
	BlackBerry SPI on
	Import Java Certificate
	License Add
	License List
	License Check
	BlackBerry Service Discovery
	Configure SPI for BES
	Configure SPI for BMS
	Update SPI for BES Configuration
	Update SPI for BMS Configuration
	Delete SPI Configuration

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 "SPI Administration" to import the certificate.

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.

Performance Tools
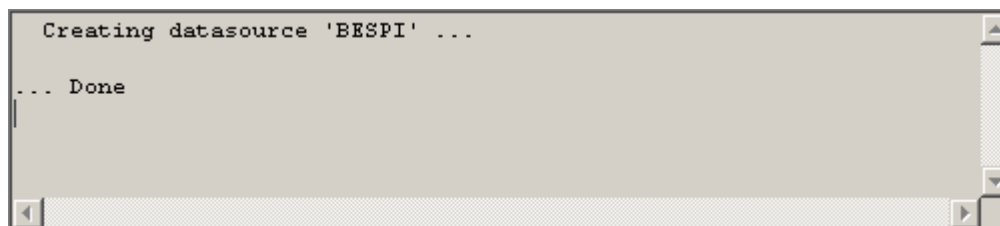
These tools are used to store the performance data which is collected from all templates in the policy group "BlackBerry Enterprise Server". To preserve this data for reporting and graphing, a data store needs to be set up. This may be done at any time after the configuration of the SPI is finished.

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 9   Create Data Store Output
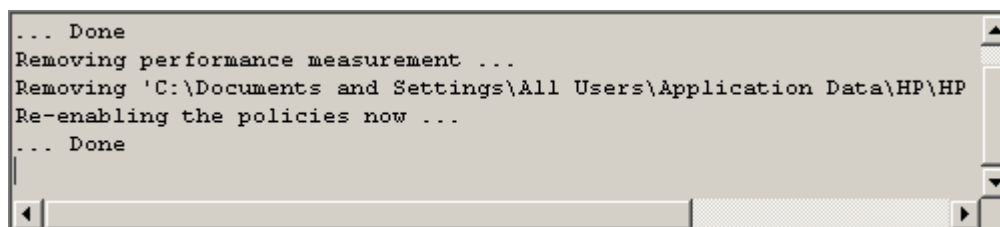
```
 Creating datasource 'BESPI' ...

... 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 10 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 11 Data Storing on Output

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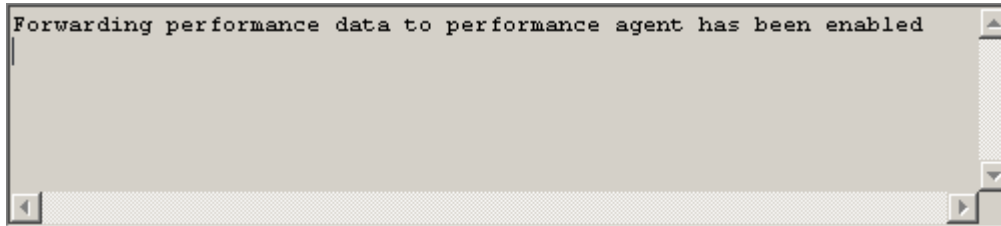
Forwarding performance data to performance agent has now been enabled. The performance agent will store the performance data in the Report Data Store.

Data Storing off

This tools 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 12 Data Storing off Output

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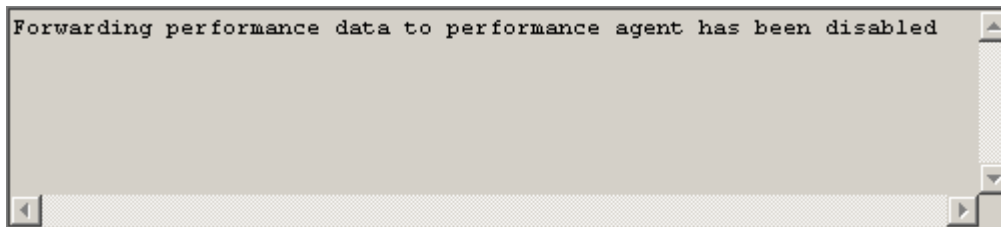
Forwarding performance data to performance agent has been disabled which means no data will be stored.

SPI 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 13 Add BlackBerry SPI License into OM for Windows
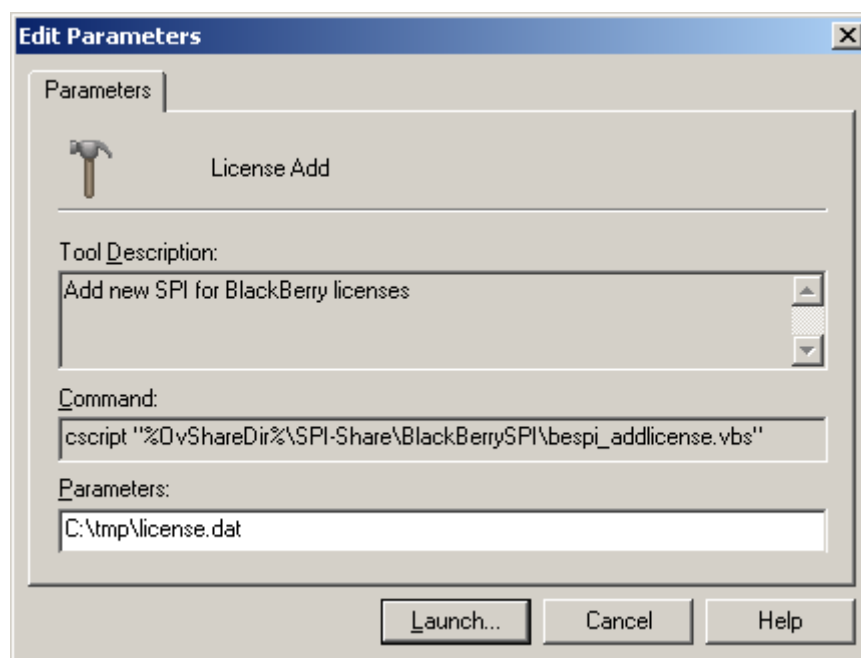
3   Then press "OK" to start the process.

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

Figure 14 License has been added successfully
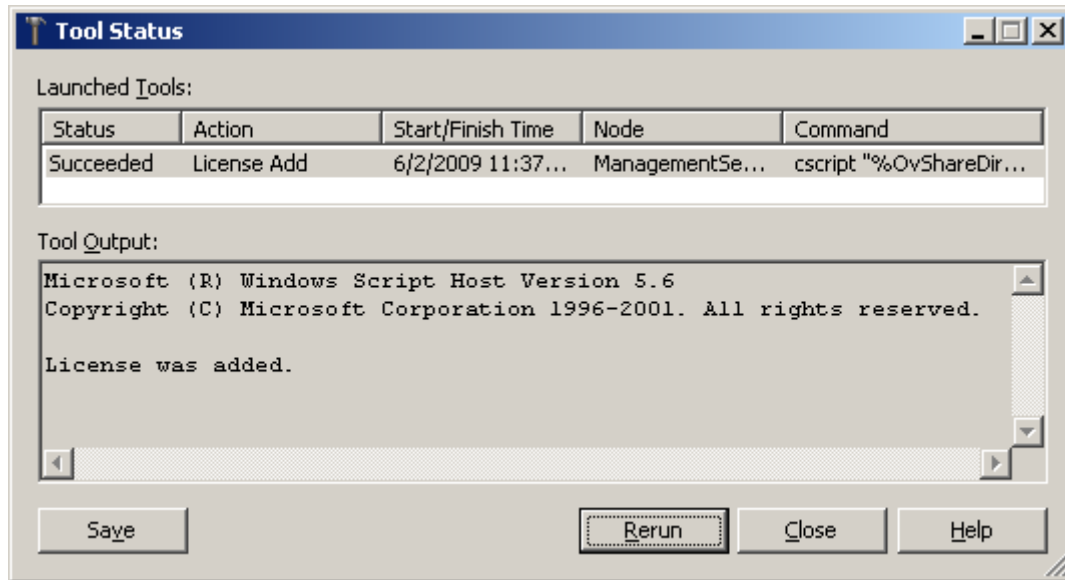
All licenses contained in the downloaded file will now be added to the instrumentation for later deployment. You have to re-deploy the SPI instrumentation to activate the new license on the node.

Note: License Terms

When installing runtime licenses you agree implicitly to the NiCE 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.03.00, features '00000000', expires 2009-12-31, not
node locked, V1 license issued 2008-11-28 11:02:37 at 49-71229-1 (r =
01baa3cd)

1 x BESPI:TIER4 only A.03.00, features '00000000', expires 2009-05-22, not
node locked, V1 license issued 2009-05-20 17:55:08 at 49-71229-1 (r =
4df2bd66)

1 x BESPI:TIER2 only A.03.00, features '12345678', expires 2009-12-31, not
node locked, V1 license issued 2009-06-04 17:47:36 at 49-71229-1 (r =
0b0f6a8c)

1 x BESPI:TIER1 from A.03.00, 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.03.00.

_____

1 x BESPI:TIER2 only A.03.00, features '12345678', expires 2009-12-31, 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.03.00, features '00000000', expires 2009-05-22, not
node locked, V1 license issued 2009-05-20 17:55:08 at 49-71229-1 (r =
4df2bd66)

1 x BESPI:TIER2 only A.03.00, features '12345678', expires 2009-12-31, not
node locked, V1 license issued 2009-06-04 17:47:36 at 49-71229-1 (r =
0b0f6a8c)

1 x BESPI:TIER1 from A.03.00, 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)
```

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 54.

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 – SPI 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 15 Edit Parameters for Configure SPI for BES
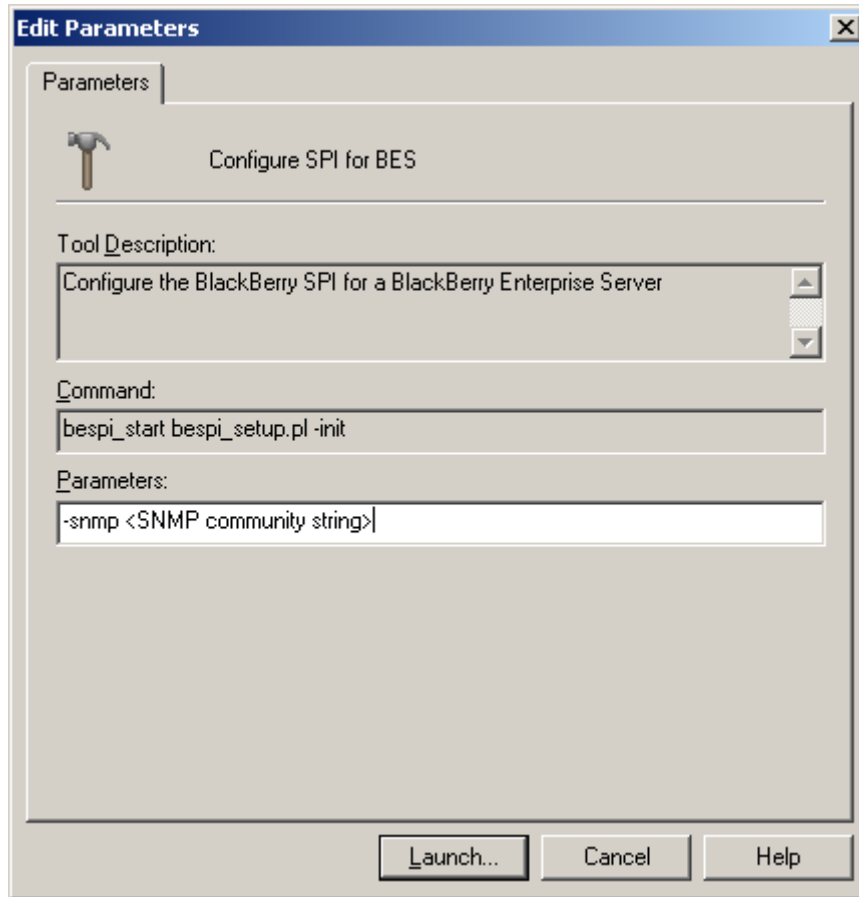
2   Press the button "Launch".

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

Figure 16 Configure SPI for BES Output
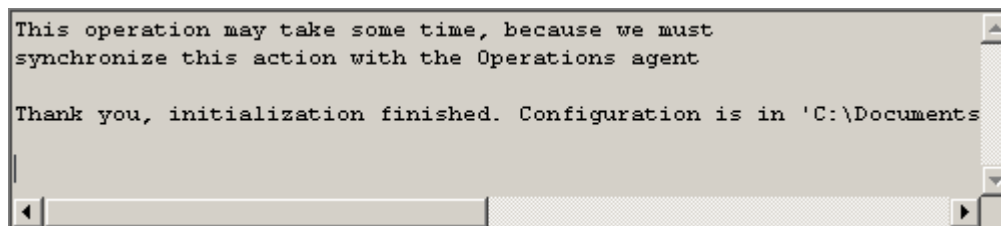
The configuration is in:

%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 – SPI Administration**.

Configure SPI for BMS

In case you decide to use any of the BMS based metrics, located in the "**BlackBerry Monitoring Service**" policy group, the SPI requires connection information for the BMS database.

The connection can be either configured using an interactive setup from the node's command prompt or as a non-interactive setup from the OMW Console.

In any case the following information is required:

- database type (-dbt MSSQL) (other database types are not yet supported)
- connection type (-ct ODBC | -ct OLEDB)
- connection string which depends on the database and connection type as well as whether the Database source name (DSN) is configured or not.

(-cs <connection_string>)

- BES Management Database Name (-mdb <bes_dbname>)
- MDS Services Database Name (-sdb <mds_dbname>)

Examples for parameter <connection_string>:

- **connection type ODBC and DNS is not configured:**

„<Driver={SQL Server};Server=my_bms_server\blackberry; Database=bes_dbname;Uid=;Pwd=>"

- **connection type ODBC and DNS is configured:**

<DSN=datasourcename;Uid=;Pwd=>"

- **connection type OLEDB:**

„<Provider=SQLOLEDB;Data Source=my_bms_server\blackberry;Integrated Security=SSPI;>"

Non-interactive setup from the OMW console

Please follow the steps below:

1   Execute the tool "Configure SPI for BMS" from the "SPI Administration" tool group.

2   Edit the Parameters in the parameter field:

Figure 17 Edit Parameters for Configure SPI for BMS
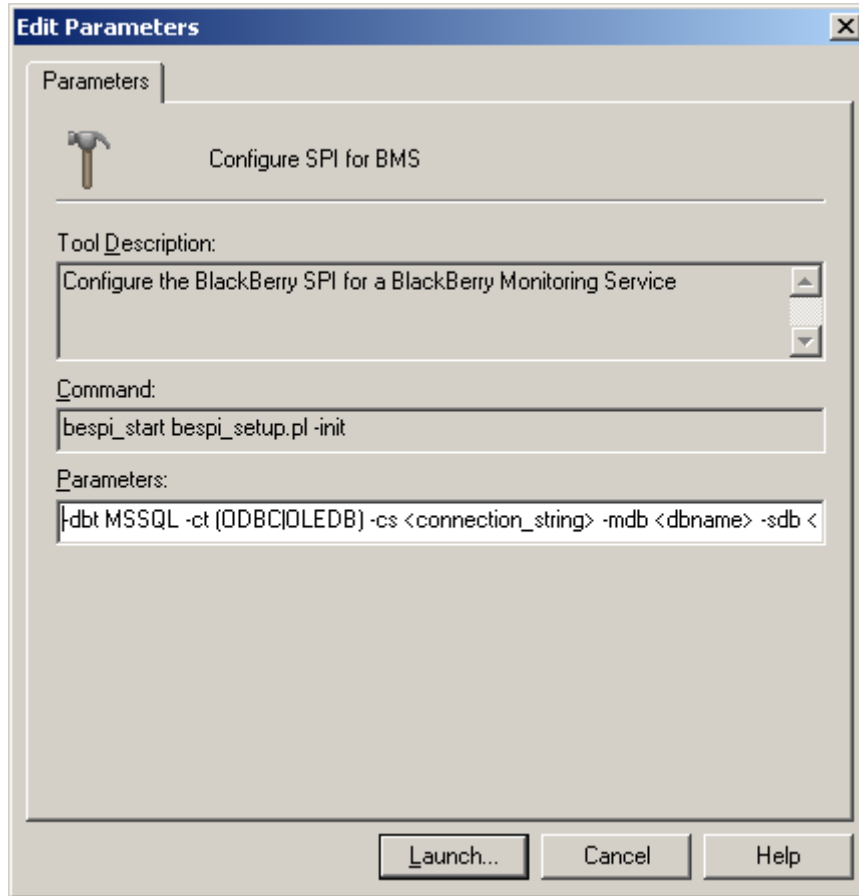
3   Choose the connection type by deleting the one that is not used.

4   Replace the place holder strings with the real connection string and database names. Be
    sure to use quotes, if a string contains spaces!

5   To execute the tool press "Launch" button.

Note

If the tool execution was not successful, make sure that all parameters are correct
and use the "**Update SPI configuration for BMS**" tool.

Interactive setup on the BMS server

You can run an interactive setup at the command prompt of any BES server which you wish
to be the BMS monitoring station. This is the most convenient way, but sometimes it is not
possible due to security policies.

To run the configuration in interactive mode, execute the following command:

bespi_start.bat bespi_setup.pl -init

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

Processing 'BESPI_AlertLog' ...

      * Disable all policies for the specified selection on host 'localhost'.
```

```
Do you want to set up an SNMP monitoring?  [y|n]: n

Do you want to set up a database connection?  [y|n]: y

Please provide connection parameters. Press enter for using default parameter.

Database server is MSSQL or DB2? Default is (MSSQL): MSSQL

Connection type is ODBC or OLEDB? Default is ODBC: ODBC

Enter the user id:

Enter the password:

Is the ODBC datasource configured (N/Y)?. Default is Y: n

Enter the server(host) name: w135\blackberry

Enter the BES Management database name. Default is BESMgmt: bes_mgt

Enter the BlackBerry MDS Services database name. Default is BMSStore:
bms_store

Enter the driver name. Default driver name is {SQL Server}: {SQL Server}


DB Server is: MSSQL

DB Connection type is: ODBC

DB Connection String is: Driver={SQL Server};Server=w135\blackberry;Uid=;Pwd=

BlackBerry Enterprise Server Management DB Name is: bes_mgt

BlackBerry MDS Services DB Name is: bms_store


Testing db connection...

Db Connection test is succeeded.

Configuration file is successfully saved on the disc...

Press any key...


Thank you, initialization finished. Configuration is in 'C:\ProgramData\HP\HP
BTO Software\conf\BESPI'
```

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 18 Update SPI Configuration for BES
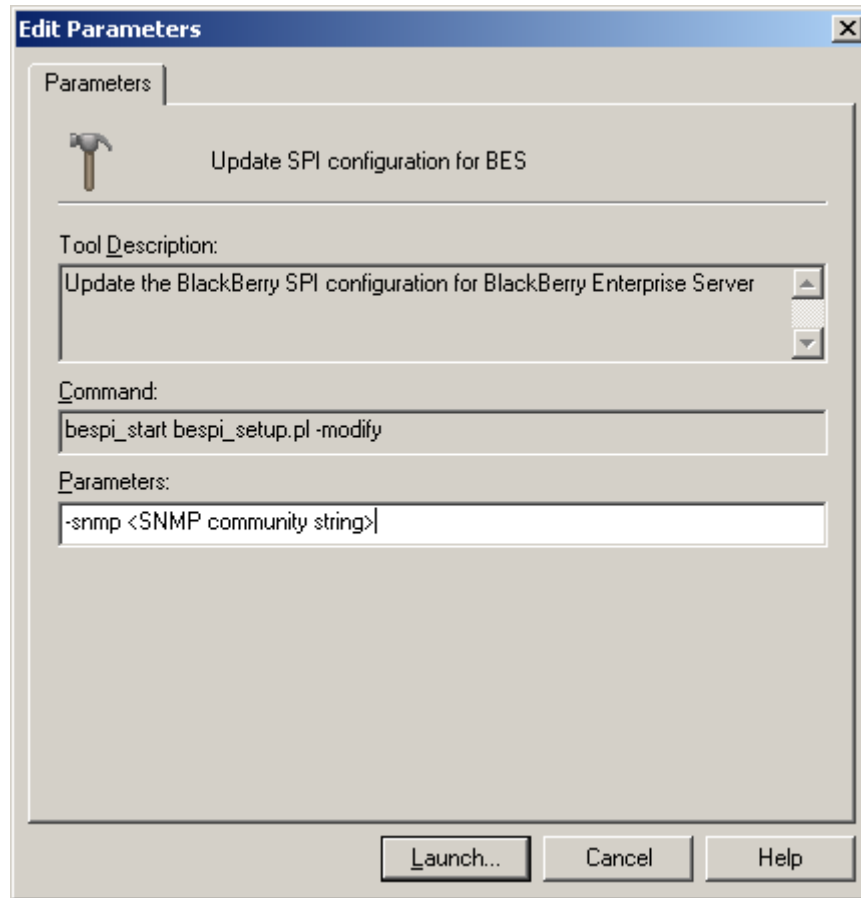
Update SPI for BMS Configuration

This tool looks just like Configure SPI for BMS, but it allows to change the database connection parameters without the need to delete other implicit configuration.

Figure 19 Update SPI Configuration for BMS
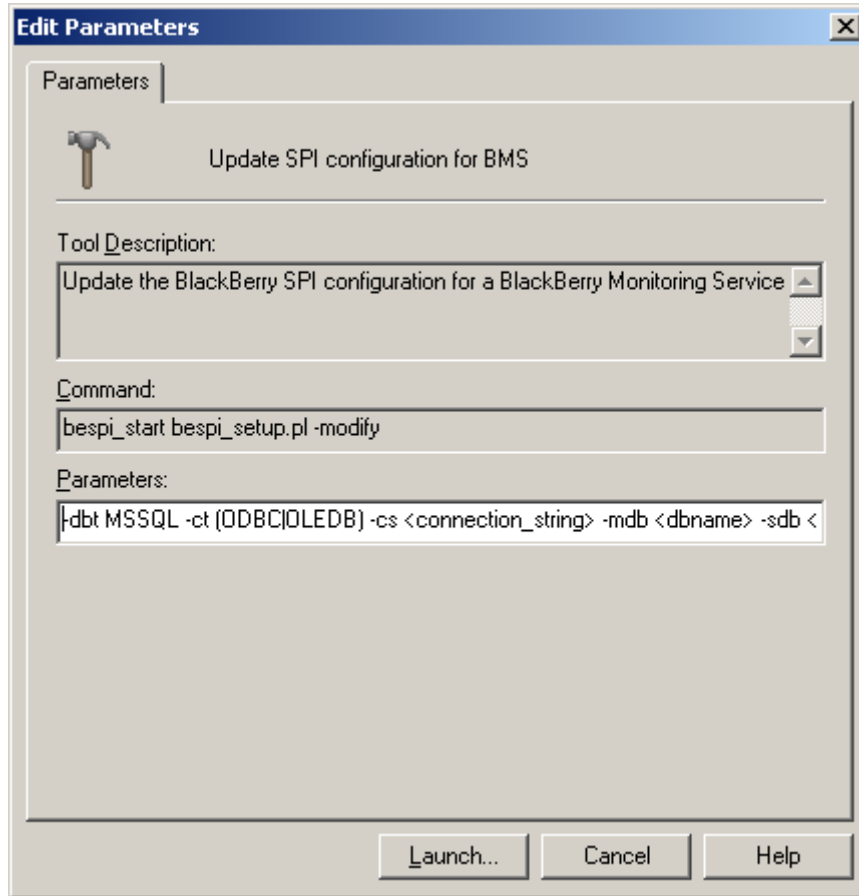
Delete SPI Configuration

To clean up all configurations from the BlackBerry Server (either BES or BMS) 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 **Performance** tool group.

Figure 20 Delete SPI Configuration
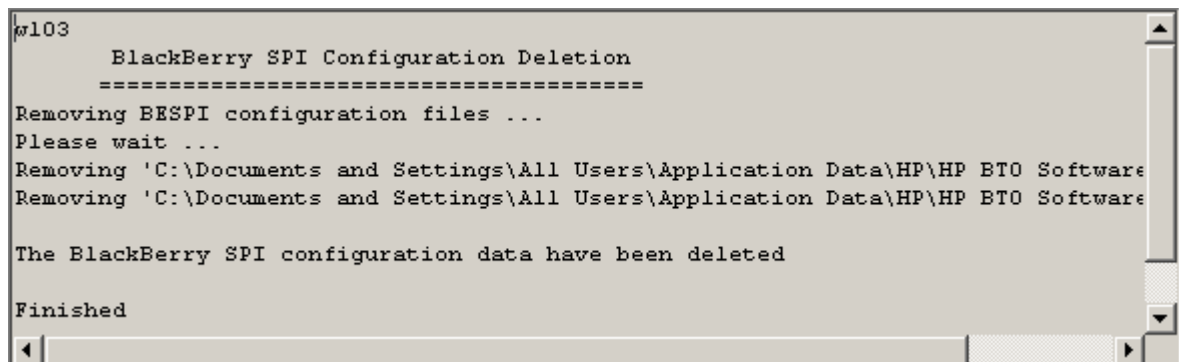
Import Java Certificate

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 **SPI Administration** tool group.

2   Edit the Parameters in the parameter field:

Figure 21 Import Java Certificate
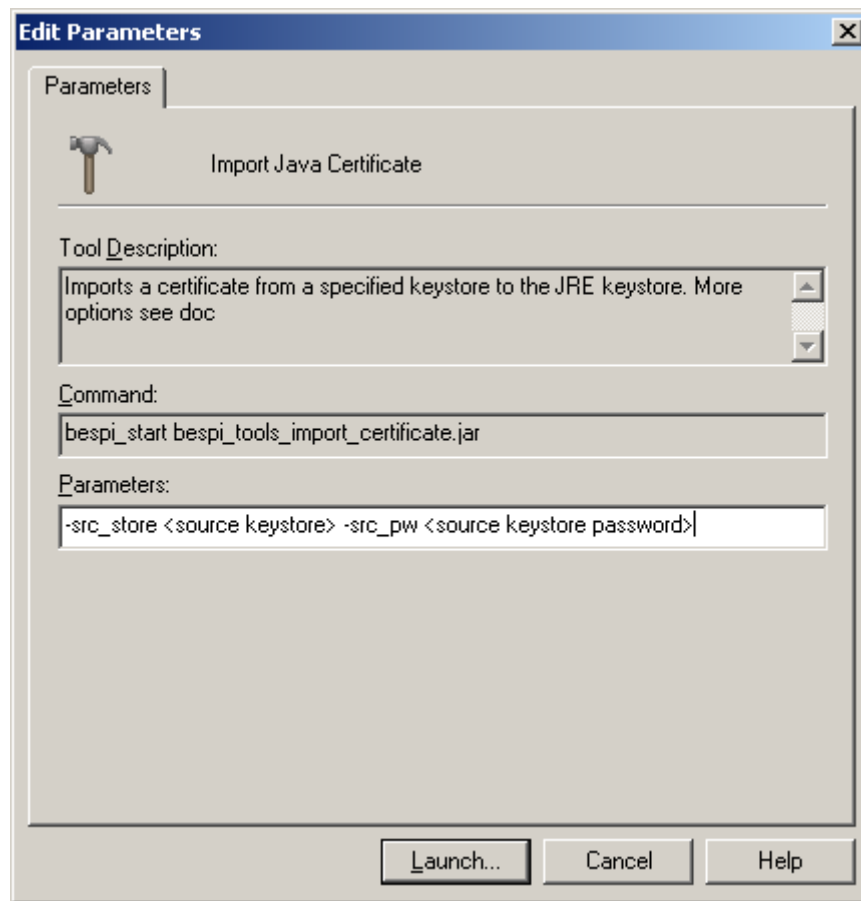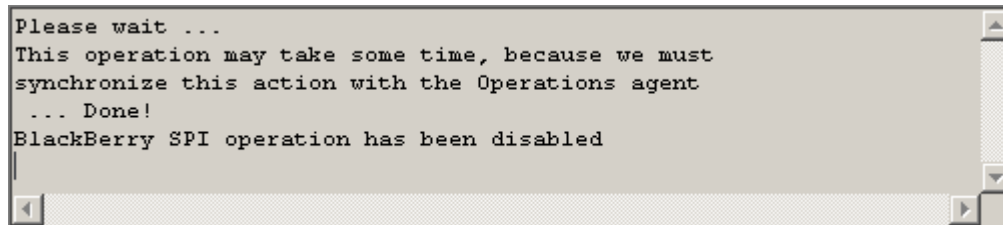
3   To execute the tool press "Launch" button.

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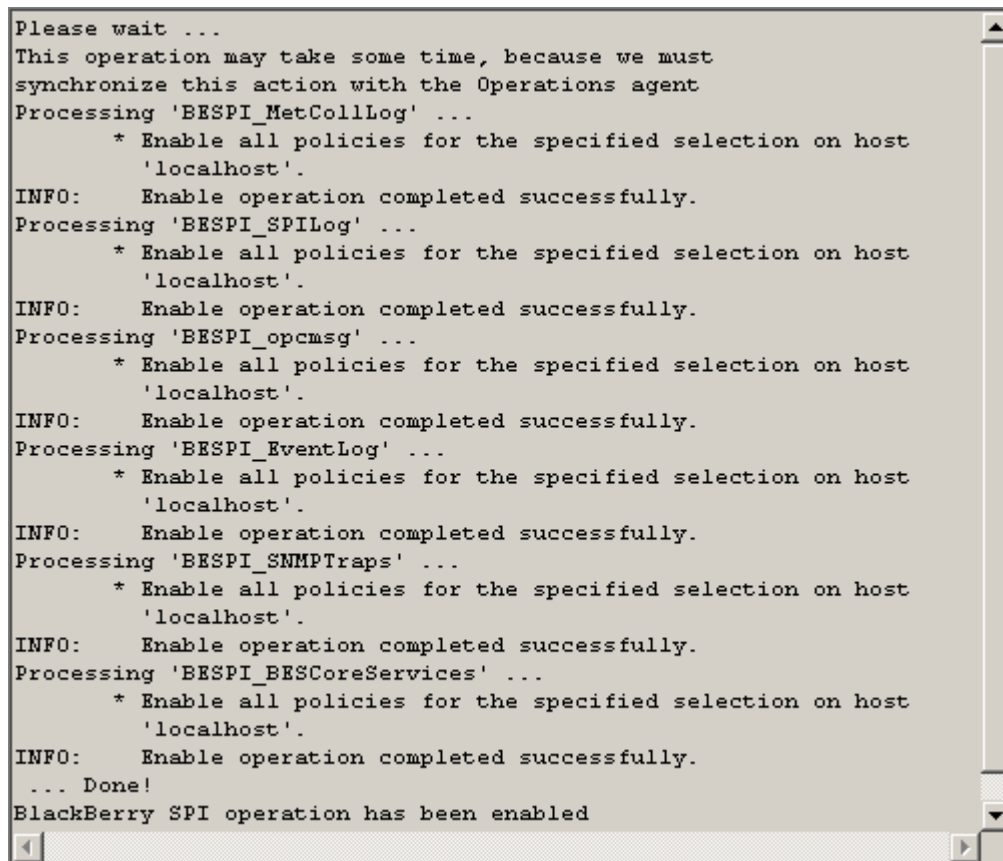
```
Please wait ...
This operation may take some time, because we must
synchronize this action with the Operations agent
 ... Done!
BlackBerry SPI operation has been disabled
```

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 23 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 **Auto-Deploy**. 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 1   BlackBerry SPI Policy Groups

Main Policy Group	Policy Group	Policy Group
SPI for BlackBerry	Auto-Deploy	
	BlackBerry Enterprise Server	BES Controller
		BES Dispatcher
		BES Messaging Agent
		BES Router
	BlackBerry Enterprise Server Add-on	BES Logs
		BES Service Health
		BES SNMP
	BlackBerry Monitoring Service	
	BlackBerry SPI MgmtSv	

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

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

Auto-Deploy

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 Auto-Deploy policy group:

- BESPI_opcmsg   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   Intercept BES SNMP Traps

- BESPI_BESCoreServices Monitor the status of core BES services

- BESPI_ServiceDiscovery Discovery object for Service Tree

- BESPI_ServiceDiscoveryMessages Trigger the creation and updates for the Service Tree

Furthermore two BlackBerry SPI self monitoring log file policies

- BESPI_SPILog   Monitor the BlackBerry SPI log file

- BESPI_MetcollLog   Monitor the BlackBerry SPI metric collection log file

Note

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

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

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_<nnnnn>_<Name>   Dedicated **Measurement Threshold** policies who send a message if the configured threshold is crossed.

- BESPI_MWAlogger   A **Scheduled Task** policy which writes the data in a CODA data store to preserve the collected performance metric data for reporting and graphing. This Data store needs to be created and storing needs be switched on before anything may be stored.

Note

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

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:

- BESPI_CNTSPingResponse — This policy monitors the BlackBerry Notes Connector service log for "PingResponse received" log messages and rates the severity.

- BESPI_DISPSystemHealthCheck — This policy monitors the DISP service logs for "system health check" messages and rates the severity.

- BESPI_MAGTMsgSentHandheld — This policy monitors the BlackBerry Server service log for "Message sent to handheld" log messages and rates the severity.

- BESPI_MAGTPingResponse — This policy monitors the BlackBerry Server service log for "PingResponse received" log messages and rates the severity.

- BESPI_MAGTThreadHealthOK — This policy monitors the MAGT service log for "Thread health OK" messages and rates the severity.

- BESPI_POLCPingResponse — This policy monitors the BlackBerry IT Admin Server service log for "PingResponse received" log messages and rates the severity.

- BESPI_ROUTPingResponse — This policy monitors the Router service log for "Ping Response received" log messages and rates the severity.

- BESPI_SYNCPingResponse — This policy monitors the BlackBerry SyncServer service log for "PingResponse 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   Monitor the status of the BMS core services

- BESPI_Collect_BMS_1d   A **Scheduled Task** policy that collects BMS performance metrics in specific intervals.

- BESPI_<nnnnn>_<Name>   Dedicated **Measurement Threshold** policies who send a message if the configured threshold is crossed.

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 54.

6 Service Tree Generation

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.

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/Auto-Deploy". The discovery process is started at every full hour per default.

2) 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/Auto-Deploy/BESPI_ServiceDiscoveryMessages" is driving this process.

3) 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.

Customer with an urgent need for a Service Tree update may use the tool "**BlackBerry Service Discovery**" from the SPI 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 `%OvAgentDir%\conf\BESPI`.

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_
```

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 "Auto-Deploy" 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 %OvAgentDir%\conf\BESPI 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 60

- Installation on page 61

- Usage on page 61

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 29 as well as Policies on page 46

- Data store has been created with the BlackBerry SPI tool "Create Data Store" from the Performance tool group (see Create Report Data Store on page 33)

- Data Storing has been switched on with the BlackBerry SPI tool "Data Storing on" from the Performance tool group (see "Data Storing on" on page33)

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 1   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]
BESPI:BESPI_CONTROLLER	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	HOSTSERVER[1]
BESPI:BESPI_DISPATCHER	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPI:BESPI_DISPATCHERDEV	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPI:BESPI_MSGAGENT	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPI:BESPI_MSGAGENTUSER	5/3/09 12:00:09 AM	6/10/09 12:02:16 PM	
BESPI:BESPI_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 Manger 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 2   SPI for BlackBerry graph categories
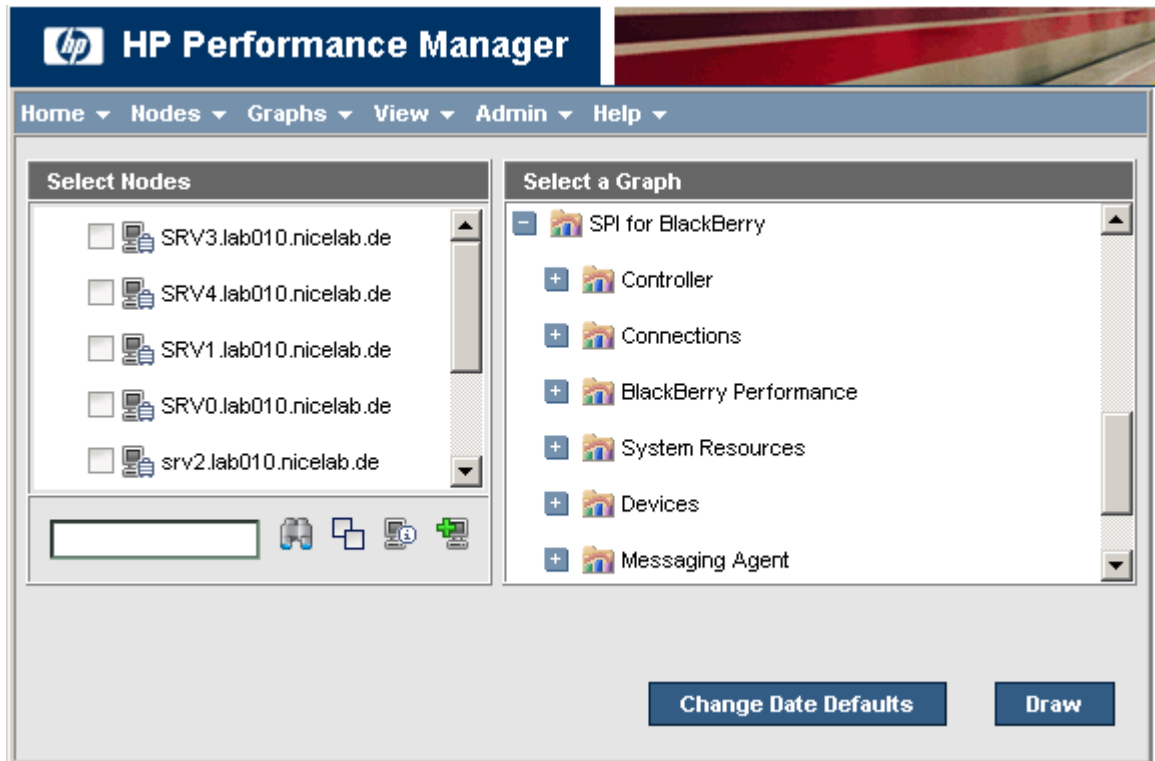
In order to view a graph, select it as well as a system where BlackBerry SPI Performance data has been stored and press **Draw**.

Figure 3   Example graph
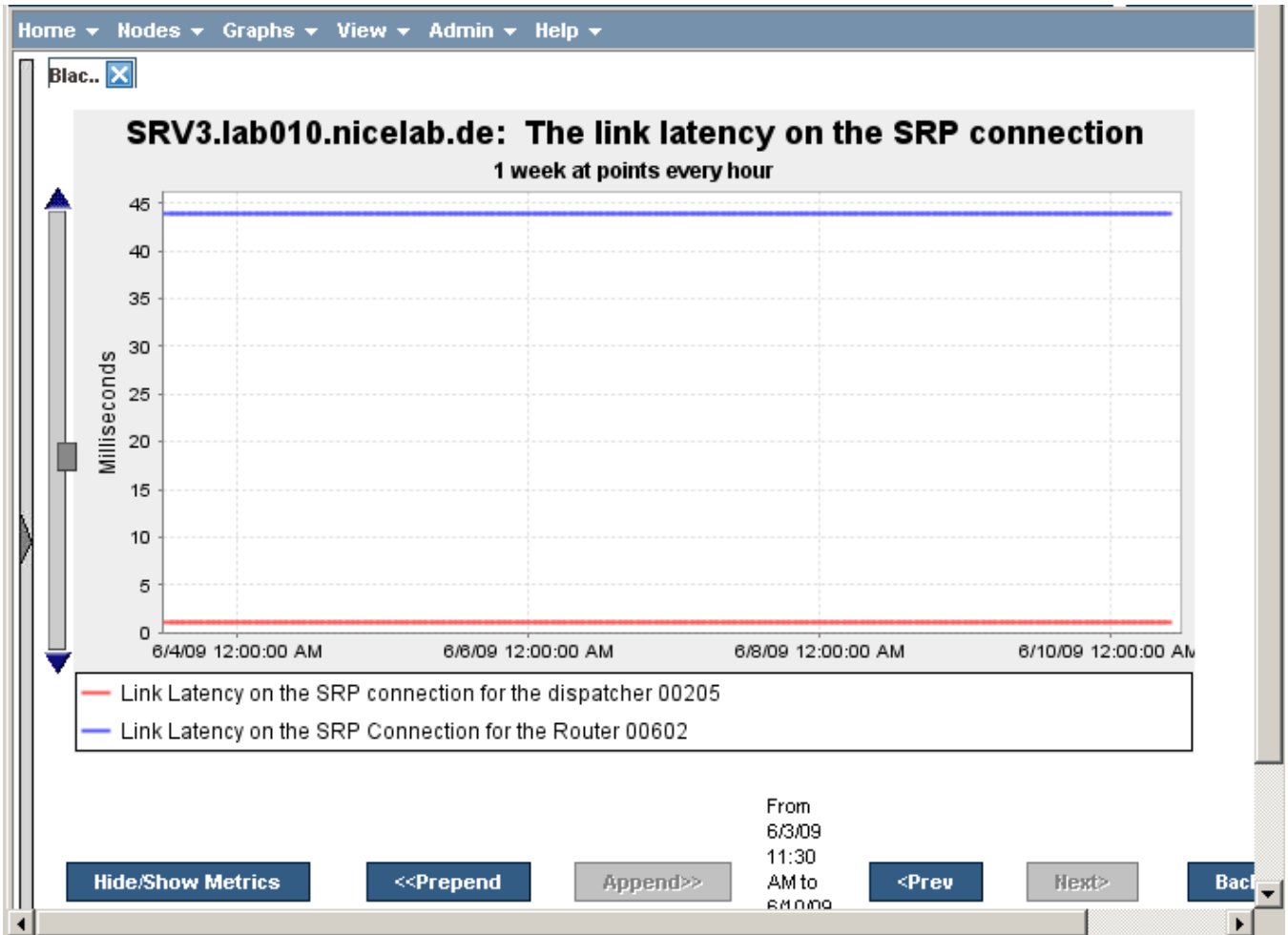
A list of all graphs may be found in the BlackBerry SPI Reference Guide.

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 65
- BlackBerry SPI Installation and Components on page 67
    - Verifying Installation on the HP OM for Windows Management Server on page 67
    - Files and Directories on the Operations Manager Management Server on page 68
    - Installed File Locations on the BlackBerry Enterprise Server on page 69
- Configuration Files on page 70
- BlackBerry SPI Runtime License File on page 71
- BlackBerry SPI Log Files on page 72
- Tracing on page 73
- Manual configuration of the SNMP data collector on page 77
- Manual configuration of the BMS data collector on page 78

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 67

  — See Special Trace Files on page 75

- Problem with the BlackBerry SPI licensing

  — See BlackBerry SPI License on page 17

  — See Install BlackBerry SPI Licenses on page 21

  — See License Add, License Check, License List on page 35 ff

  — See BlackBerry SPI Runtime License File on page 71

  — See BlackBerry SPI Log Files on page 72

- Problem with the initial configuration of the SNMP data collector

  — See BlackBerry SPI best practice & use cases on page 18

  — See Configuration on a BES server on page 24

  — See BlackBerry SPI Log Files on page 72

  — See Special Trace Files on page 75

  — See Manual configuration of the SNMP data collector on page 77

- Problems with the initial configuration of the database data collector

  — See BlackBerry SPI best practice & use cases on page 18

  — See Configuration on a BMS server on page 25

  — See BlackBerry SPI Log Files on page 72

  — See Special Trace Files on page 75

  — See Manual configuration of the BMS data collector on page 78

- Problem regarding metric collection

  — See BlackBerry SPI Log Files on page 72

  — See Tracing on page 73

- Problems regarding the performance data logging

  — See BlackBerry SPI Log Files on page 72

  — See Tracing on page 73

- Problem regarding service discovery

  — See BlackBerry SPI Log Files on page 72

  — See Tracing on page 73

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 72

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 73

BlackBerry SPI Installation and Components

Verifying Installation on the HP OM for Windows Management Server

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

- Open the Windows® "Control Panel" and use the "Add/Remove Programs" tab to display the list of installed software. You should find the following entry:

  `HP Operations Smart Plug-in for BlackBerry Enterprise Server Software`

- Check that the elements listed in this table are present in the HP OM for Windows Console GUI:

Table 1   BlackBerry SPI components in the HP OM for Windows GUI

Component Type	Component Name		
Node Group	BlackBerry		
Tool Groups	SPI for BlackBerry	BlackBerry Administration	
		Performance	
		SPI Administration	
Policy Groups	SPI for BlackBerry	Auto-Deploy	
		BlackBerry Enterprise Server	BES Controller
			BES Dispatcher
			BES Messaging Agent
			BES Router
		BlackBerry Enterprise Server Add-on	BES Logs
			BES Service Health
			BES SNMP Data
		BlackBerry Monitoring Service	
		BlackBerry SPI MgmrSv	

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		

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):

%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

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 (a Operations Manager managed node) creates the following directories on the Operations Manager managed node.

%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.

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.

For important events from the BlackBerry SPI Database Metric Data Collector, please see the .../`log/BESPI/bespi_metcoll.log` logfile.

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 03.00
```

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

#                 SPI_TRACE_PLUS:
#                 ----------------
#                 Trace addition area (extra information)
#                 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
#                 >  WARNING
#                 >  =======
#                 >  This can produce an EXCESSIVE amount
#                 >  of data; use it only when requested
#                 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
#                 Values:   OFF      Add nothing (default)
#                           ENV      Add environment settings
#                           DIAGLOG  Add diagnostic log records
#                           METRICS  Add metric value records
#                           SNAP     Add snapshot data
#                 Note:    This flag is evaluated only if the advanced
#                          tracing is not defined
SPI_TRACE_PLUS OFF
#-----------------------------------------------------------
```

Activating BlackBerry SPI Tracing: SPI_TRACE_STATUS

You can activate (or de-activate) the tracing in the BlackBerry SPI by setting the
SPI_TRACE_STATUS variable in the configuration file, bespi_spi.cfg, to either "ON" or
"OFF" , respectively. For example, to activate BlackBerry SPI tracing, set the following
variable as indicated:

```
SPI_TRACE_STATUS ON
```

Tracing starts automatically after the BlackBerry SPI writes the "ON" flag back to disk;
there is no need to restart any processes. In order to de-activate tracing, reset the

SPI_TRACE_STATUS parameter to "OFF". Tracing stops automatically after the BlackBerry SPI writes the "OFF" flag back to disk. You do not need to restart any processes.

Configuring Script to be traced: SPI_TRACE_PROCESS

You can specify which programs you want to trace by setting the SPI_TRACE_PROCESS variable in the `bespi_spi.cfg` file and using the appropriate program name as the value. For example:

```
SPI_TRACE_PROCESS bespi_mon.pl
   or
SPI_TRACE_PROCESS ALL
```

Regular Trace Files for Perl scripts and SNMP data collector

BlackBerry SPI trace data is written to the following file in the BlackBerry SPI log directory:

`…/log/BESPI/bespi_trace.log`

Note

There are no file-size limitations for the `bespi_trace.log` file while tracing is enabled!

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 69), 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 69.

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.

Manual configuration of the BMS data collector

Configuring the BMS data collector is trickier. Consider the following steps:

1   Enable the database collection in the bespi_spi.cfg configuration file

```
#                 BESPI_DB_MONITOR
#                 ---------------
#                 Enable/disable database monitoring
BESPI_DB_MONITOR ON
#-------------------------------------------------------------------
```

Change the value from OFF to ON to switch database monitoring on.

2   Configure the database connection using a command line tool or the "Update SPI for BMS Configuration" tool.

On the managed node you can use the bespi_dbcfg.exe command line utility to configure and to test the database connection.

3   Test the database connection using the configuration tool

You can use the tool described under task 2 to test the connection:

bespi_dbcfg.exe -t

Note

▶ A common mistake is to disregard the prerequisites. Please note that the BMS database collector requires the .NET 2.0 SP 1 or later to be installed on the system to work!

Note

▶ Please be sure that you have the correct database name as the connection verification does not check if the database used in step 2 actually exists.
To do a complete verification it is, please run a metric collection and verify the trace for correctness.
bespi_start bespi_mon.pl -m 2000-3000
Please see the bespi_metcoll.log or bespi_log.log for any errors or warnings.

Database data collector troubleshooting

The database data collection module is a powerful and flexible database application which allows collecting data from different BlackBerry databases. Most of the current functionalities are reserved for future usage as this module is only introduced with the BlackBerry SPI 3.0 release.

The main database collector application can be found in the instrumentation directory. It has a wide range of usages:

The database data collector is started by the same script as the SNMP data collector. Once started the bespi_mon.pl determines by reading the bespi_metrics.cfg configuration file which metric to collect using the database collector.

The bespi_metcoll.exe is spawned as a sub process by the bespi_mon.pl with exactly the required metrics set. The result is passed back in temporary C2P files. These files can be found in the trace of the bespi_mon.pl in case tracing is enabled. This is a good starting point for troubleshooting.

For tracing the database data collection see chapter Tracing on page 73 as well as section Database collector trace file on page 76.

10 BlackBerry SPI Self-Management

BlackBerry SPI Log Files

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 files described earlier and two HP OM log file policy, `BESPI_SPILog` and `BESPI_MetCollLog`, which are contained in the BlackBerry SPI "Auto-Deploy" 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_opcmsg" 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

Index