

HP Operations Smart Plug-in for Blackberry Enterprise Server Software

for the HP Operations Manager Software

Software Version: 03.10

Installation Guide

Document Release Date: December 2009

Software Release Date: December 2009



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Release 03.00: June 2009

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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

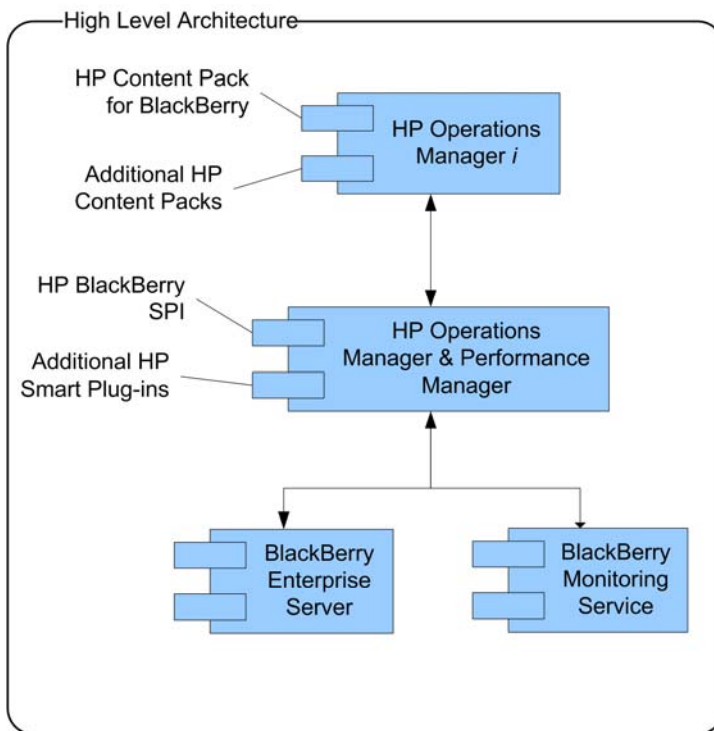
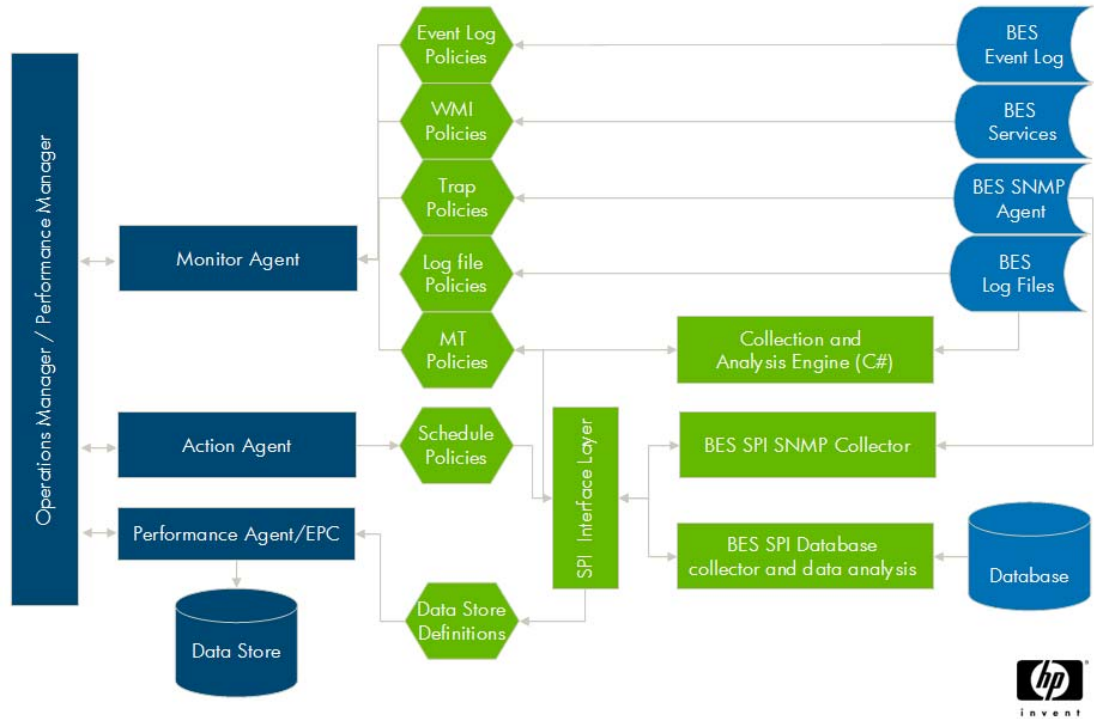


Figure 2 BlackBerry SPI Integration and Data Flow



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.

If the BlackBerry SPI policies are deployed on a BlackBerry server without a valid evaluation 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.

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 Preparation for Installation

This chapter includes the following topics:

- “BlackBerry Enterprise Server (BES) Prerequisites,, on page 15
- “HP OM Management Server Prerequisites,, on page 16
- ”Licenses,, on page 17

BlackBerry Enterprise Server (BES) Prerequisites

Hardware Requirements

These are estimated requirements. Depending on the environment, this may vary.

Disk usage is the size of the deployed instrumentation and non-usage based configuration, which is about 700KB.

Software Requirements

Ensure that the BES server meets the following software prerequisites for the BlackBerry SPI:

- Operating system must be supported
- A supported HP OM Agent (HTTPS) must be installed and running.
- Microsoft .NET runtime 2.0 and a Microsoft .NET runtime 2.0 Service pack 1 or higher are installed
- The BlackBerry SPI includes a number of metrics for which the BlackBerry Monitoring Server (BMS) database is read. During the SPI configuration (see BlackBerry SPI Administration Guide), choose to use DB Metric Collection with appropriate SQL Authentication.
- Optional: To use the **BlackBerry SPI BlackBerry Administration Tools**, the BlackBerry Administration API needs to be installed.
- Also the Java Runtime Environment (JRE) must be installed and available to the HP Software Agent environment.

Please ensure that a JRE 1.5.x or later is used. We recommend Sun JRE 1.6.x

- The SNMP service is required.

This service needs to be installed and configured on all BlackBerry Enterprise Servers to monitor the activity of the BlackBerry Enterprise Servers or BlackBerry Enterprise Servers components.

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 details refer to BlackBerry SPI Admin Guide.

► **Note**

Please note that to successfully use the BlackBerry SPI, it requires that at least one user is registered and configured with the BlackBerry Enterprise Server.

For installation and evaluation purposes, no user is required.

HP OM Management Server Prerequisites

Hardware Requirements

On the hard disk there must be at least 12 MB free disk space to accommodate the installation files.

General Software Requirements

Be careful to ensure that the HP OM for Management Server meets the following requirement before installing the BlackBerry SPI:

- HP Operations Manager, updated to the latest patches
- HP Operations Manager agent

Make sure that a supported version of one of the following products is installed and running on both the management server and the managed node:

- HP OM for Windows
- HP OM for UNIX

► **Note**

For supported versions of HP OM for the BlackBerry SPI see the current support matrix in the Support Matrix interface – SUMA:

<http://support.openview.hp.com/selfsolve/document/KM323488>

SPI Data Collector Requirement

Further ensure that the Operations Manager server meets the following software prerequisite for the BlackBerry SPI:

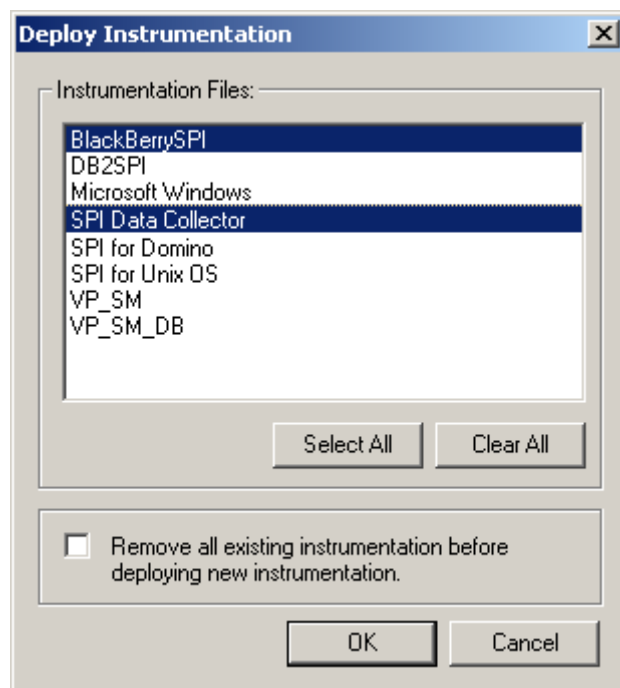
- DSI2DDF (SPI data collector) for collecting data

To verify that the SPI Data Collector is installed, use the relevant command:

Table 1 Verify SPI Data Collector Commands

Platform	Command
Windows	Start the task “ Deploy Instrumentation ” on any node in HP OMW. Look for the term “ SPI Data Collector ” in the list.
HP-UX	swlist grep DSI2DDF
Sun Solaris	pkginfo grep HPOvSpiDsi2ddf

Figure 3 SPI Data Collector in Instrumentation list on HP OMW



Licenses

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 evaluation 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.

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.

Updating licenses

In case you need to update license which is required when you change for instance the IP address for you BES, please contact support.

4 Installation

Before installing the HP Operations Smart Plug-in for BlackBerry Enterprise Server Software for HP Operations Manager Software (BlackBerry SPI), identify the following:

- The BlackBerry Enterprise Servers intended to monitor and manage with the BlackBerry SPI.
- The HP OM Management Server

Install the BlackBerry SPI using these steps:

- “Installation on HP OM Management Server” on page 19
- “Install BlackBerry SPI Licenses” on page 24

Before starting the installation of each component, make sure that the environment meets the prerequisite conditions described in “HP OM Management Server Prerequisites” and “BlackBerry Enterprise Server (BES) Prerequisites”.

Installation on HP OM Management Server

The following sections describe the process of installing the HP OM Management Server Component.

To run the BlackBerry SPI, you must have at least one BlackBerry Enterprise Server (BES) which is managed by the HP OM Management Server.

► **Note**

You must install from a local hard drive or CD ROM drive. The installation fails if you attempt to install from a mapped share.

Installing on HP OM for Windows

Using the installation file for the HP OM for Windows Management Server on which you are installing the BlackBerry SPI Management Server Component, perform the following tasks:

Task 1 Log on to the HP OM for Windows Management Server using an account that has local and HP OM administrative rights (a member of the HP-OVE-Admin group).

Task 2 Download the software from or insert the according SPI-DVD, (Please see Release Notes for further details)

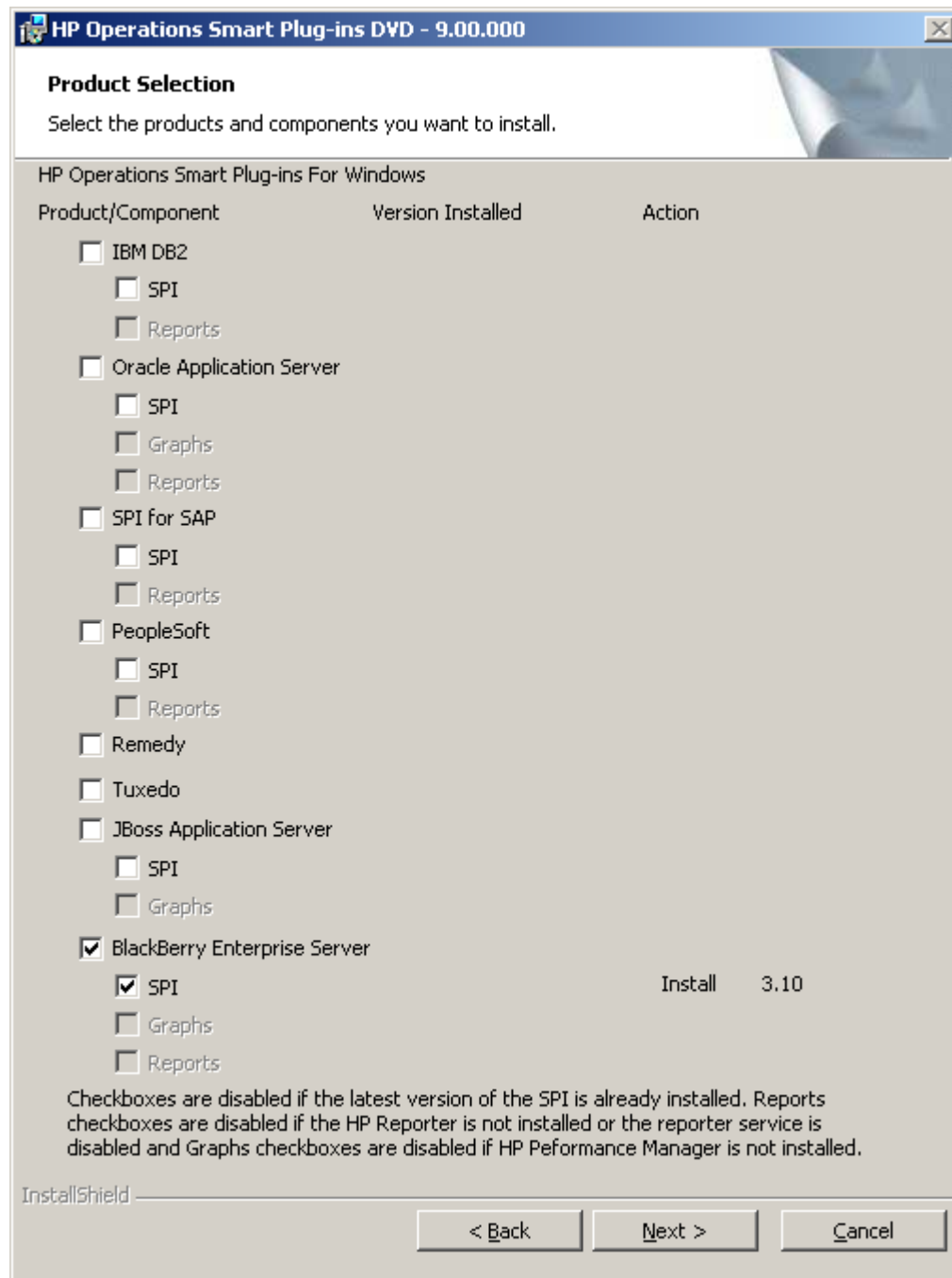
Task 3 Start Windows Explorer and navigate to the appropriate directory.

Task 4 Double-click the following file to start the installation or select the SPI during SPI DVD installation:

HPOvSpiBes.msi

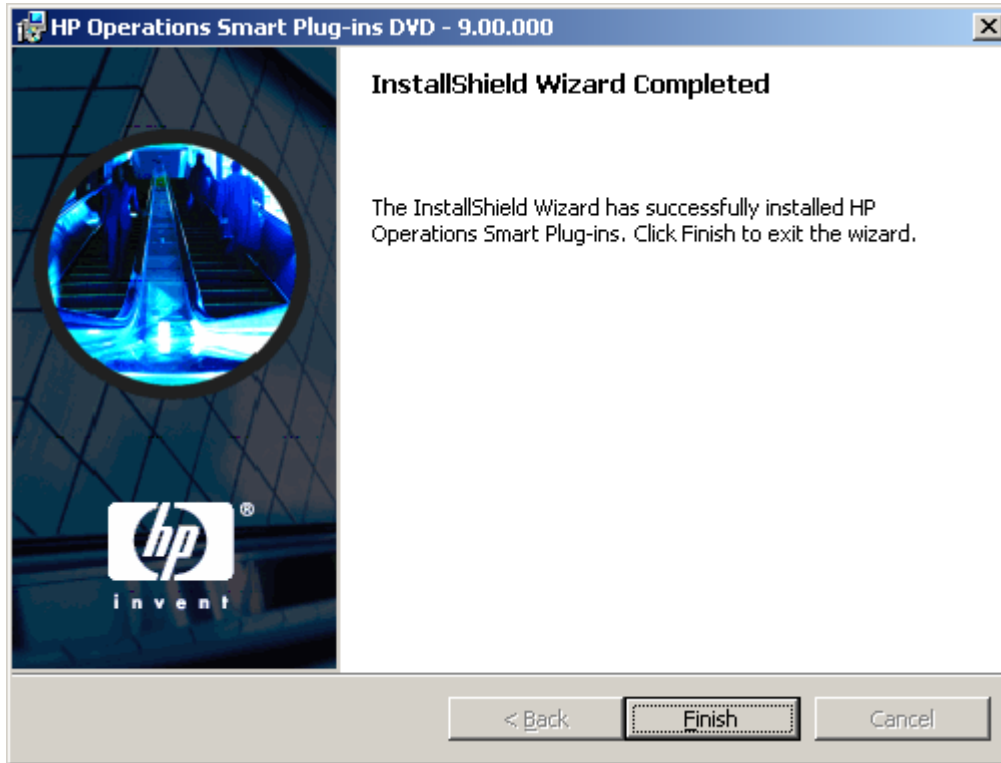
Task 5 When you see the BlackBerry SPI Enterprise Server Installation Wizard, follow the on-screen instructions.

Figure 4 Installation Wizard on HP OM for Windows Server



The successful installation will be concluded with a confirmation window.

Figure 5 Confirmation window



Verifying Installation

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 one of the following entries (depending on whether you installed with the SPI DVD installer or using HPOvSpiBes.msi):

HP Operations Smart Plug-ins

HP Operations Smart Plug-in for BlackBerry Enterprise Server Software

Installation on HP OM for HP-UX

Using the installation file for the HP OM for UNIX Management Server on which you are installing the BlackBerry SPI Management Server Component, perform the following task on the command line:

- 1 Login as a root user.
- 2 Insert the HP Operations Smart Plug-ins DVD into the DVD drive of the HP-UX management server. Mount the DVD if necessary.

- 3 To start the installation, type the following command:

```
swinstall BESPI
```

Verifying Installation

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

```
swlist | grep BESPI
```

You should find the following entry:

```
BESPI A.03.10.000 HP Operations Smart Plug-in for BlackBerry for OM/UNIX
```

Installation on HP OM for Solaris

Using the installation file for the HP OM for UNIX Management Server on which you are installing the BlackBerry SPI Management Server Component, perform the following task on the command line:

- 1 Login as a root user.
- 2 Insert the HP Operations Smart Plug-ins DVD into the DVD drive of the Solaris management server. Mount the DVD if necessary.
- 3 To start the installation, type the following command:

```
pkgadd -d /SOLARIS/HP_Operations_Smart_Plug-ins_SOLARIS.sparc BESPI
```

Verifying Installation

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

```
pkginfo | grep BESPI
```

You should find the following entry:

```
application BESPI HP Operations Smart Plug-in for BlackBerry
```

Verifying BlackBerry SPI components

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

Table 2 BlackBerry SPI components in the HP OM GUI

Component Type	Component Name			
Node Group	BlackBerry			
Tool Groups/ Application Groups	SPI for BlackBerry	BlackBerry Administration		
		BESPI Performance		
		BESPI Administration		
Policy Groups / Template Groups	SPI for BlackBerry	BlackBerry Recommended		
		BlackBerry Enterprise Server	BES Controller	
			BES Dispatcher	
			BES Messaging Agent	
			BES Router	
			BES Policy Service	
			BES Synchronization Service	
			BES Performance Reporting	
		BlackBerry Enterprise Server Add-on	BES Logs	
			BES Service Health	
BES SNMP Data				
BlackBerry Monitoring Service ¹				
BlackBerry SPI MgmtSv				
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 Roles / Profiles	BlackBerry Operator			
	BlackBerry SPI Admin			

► Note

¹ Not available in HP OM for UNIX 8

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

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

Install BlackBerry SPI Licenses

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

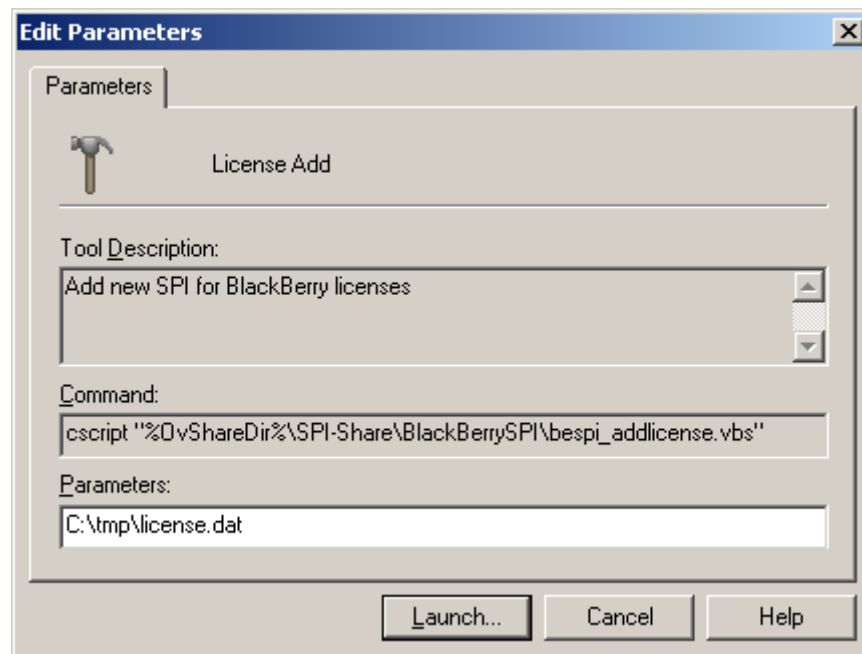
The license installation is described next:

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.

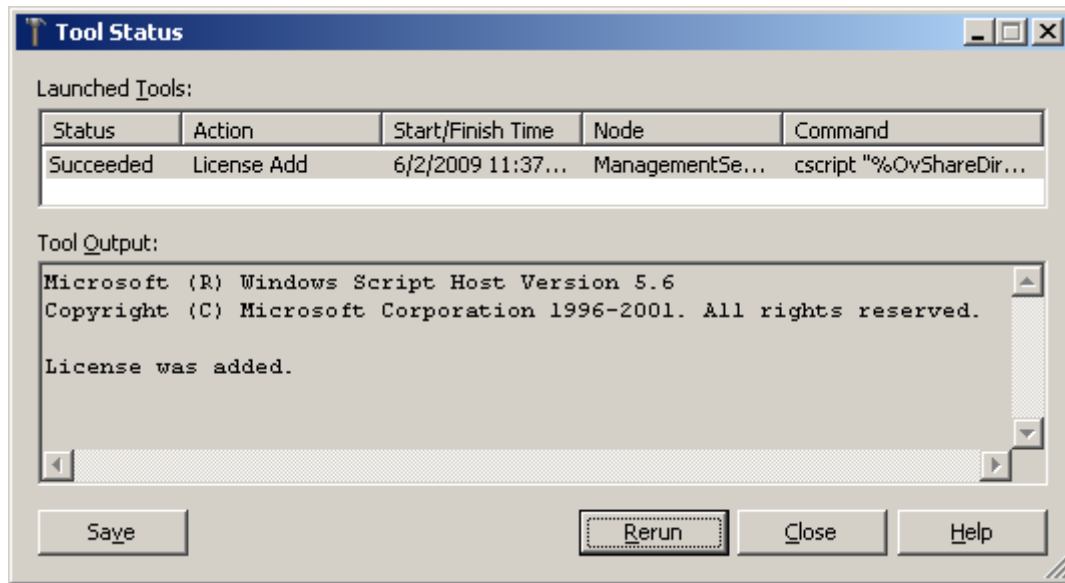
Figure 6 Add BlackBerry SPI License into OM for Windows



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 7 License has been added successfully



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

After the installations tasks have been successfully done, BlackBerry SPI needs to be configured. For detailed information please refer to the BlackBerry SPI Admin Guide.

5 De-Installation

The instructions in this section describe how to remove the BlackBerry SPI software quickly and cleanly from the Operations Manager management server and the managed node. This section covers the following topics:

- “Cleanup on BlackBerry Enterprise Server“ on page 26
- “De-Installation from HP OM for Windows” on page 27
- “De-Installation from HP OM for HP-UX” on page 29
- “De-Installation from HP OM for Solaris” on page 29

Cleanup on BlackBerry Enterprise Server

Before cleaning up the Management Server you should remove the BlackBerry SPI components from the managed nodes:

Task 1 Remove the BlackBerry SPI policies (HP OM for Windows)

This may be done by marking the BlackBerry policy group and selecting the function "All Tasks → Uninstall from ..." in the OMW Console. In the dialog choose the main node group and check the option “remove all versions”.

Task 2 Run the "Delete SPI Configuration" Tool

In the "SPI for BlackBerry" -> "BESPI Administration" tool group on the OM for Windows console, run the tool "Delete SPI Configuration" on all nodes which have the SPI configured. This will remove all configuration data.

Task 3 Run the "Delete Report Data Store" Tool

In case you have used the Performance Agent / EPC integration, you can remove the performance data stores by running the "Delete Report Data Store" tool in the "SPI for BlackBerry" -> "BESPI Performance" tool group in the OMW Console.

Task 4 Delete the BlackBerry SPI instrumentation Configuration

In the instrumentation directory on the BlackBerry Server remove all files called bes*.*

Task 5 Clean up registry entries on the BES server from all versions of the BlackBerry SPI.

The following keys and everything lower need to be deleted:

```
HKEY_LOCAL_MACHINE\SOFTWARE\NICE\SPI\BESPI*
```

Be sure to keep all keys related to other NiCE products that you have installed, for example Lotus Domino SPI.

De-Installation on HP OM Management Server

De-Installation from HP OM for Windows

To remove the BlackBerry SPI components from the HP OM for Windows management server:

Task 1 On the OM for Windows management server, enter the Control Panel and select the function "Add/Remove Programs"

Task 2 Select one of the components for removal (depending on whether BlackBerry SPI was installed with the SPI DVD installer or using `HP0vSpiBes.msi`):

HP Operations Smart Plug-ins

HP Operations Smart Plug-in for Blackberry Enterprise Server Software

Figure 8 Select "remove" option.

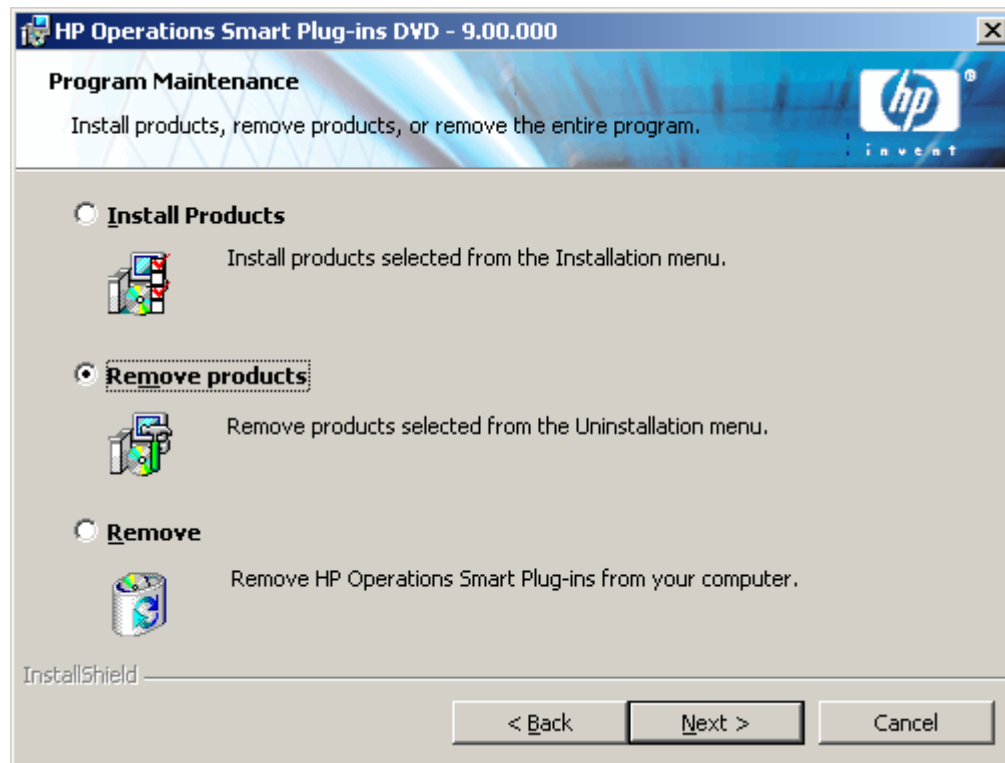
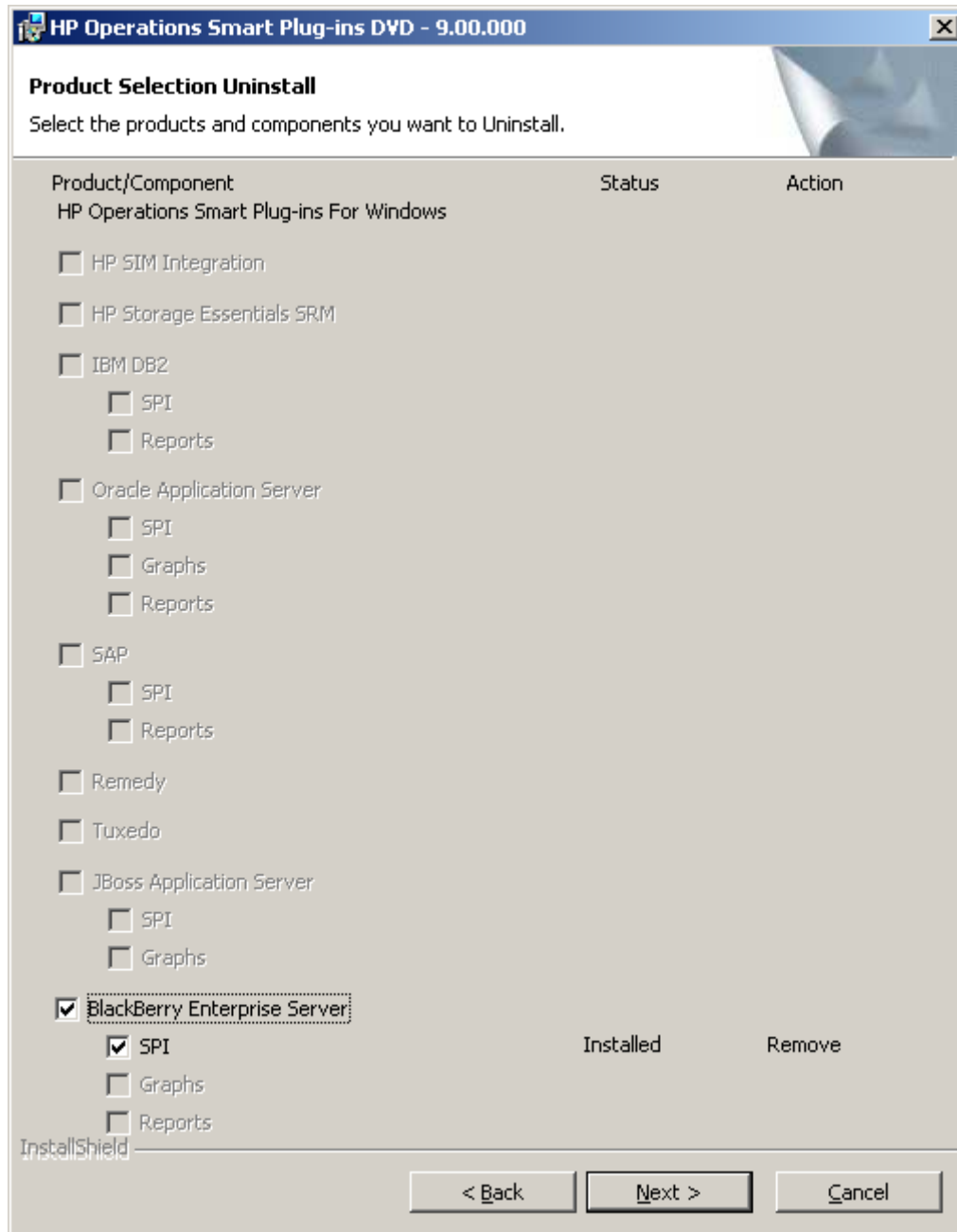


Figure 9 Select BlackBerry SPI component for removal.



In the next screen press “**Remove**”. This will remove all installed components.

Task 3 Clean up registry entries from all versions of the BlackBerry SPI. The following keys and everything lower need to be deleted:

```
HKEY_LOCAL_MACHINE\SOFTWARE\NiCE\HP Operations Smart Plug-in for BlackBerry Enterprise Server Software
```

Be sure to keep all keys related to other NiCE products that you have installed, for example Lotus Domino SPI.

The SPI related HP OM configuration elements (Policy Groups, Tools) should be removed during this process as well. Unfortunately there is no way to eliminate the BlackBerry elements from the HP OM service tree. If they still exist after all these actions, they must be deleted manually in the same manner as other configuration components.

De-Installation from HP OM for HP-UX

To remove the BlackBerry SPI components from the HP OM for UNIX management server:

- 1 Login as a root user.
- 2 To start the de- installation, type the following command:

```
swremove BESPI
```

De-Installation from HP OM for Solaris

To remove the BlackBerry SPI components from the HP OM for UNIX management server:

- 1 Login as a root user.
- 2 To start the de- installation, type the following command:

```
pkgrm BESPI
```

6 The HP Operations Management Module for BlackBerry Enterprise Server

This chapter contains instructions on how to install the HP Operations Management Module for BlackBerry Enterprise Server on the HP OMi Management Server.

Installation of the BlackBerry Content Pack for HP OMi

Software Requirements

The BlackBerry Content Pack builds relationships between BlackBerry component CIs and CIs which are created by other HP OMi Content Packs:

- Exchange Content Pack (HPOprExc)
- MSSQL Server Content Pack (HPOprMss)
- Content Pack for Infrastructure Management (HPOprInf)

In addition, there are correlation rules which use these relationships to deliver more accurate messages.

This functionality requires the use and proper configuration of the Exchange and MSSQL Server Content Packs for HP Operations Manager i.

Please see the appropriate documentation for details.

Step 1 – Install the software on the HP OMi Management Server

Using the installation file for the HP OMi Management Server on which you are installing the BlackBerry Content Pack, perform the following tasks:

Task 1 Log on to the HP OMi Management Server using an account that has local administrative rights.

Task 2 Download the software from or insert the according SPI-DVD, (Please see Release Notes for further details)

Task 3 Start Windows Explorer and navigate to the appropriate directory.

Task 4 Double-click the following file to start the installation or select the SPI during SPI DVD installation:

HPOprMMBes.msi

Task 5 When you see the BlackBerry Content Pack Installation Wizard, follow the on-screen instructions.

► **Note**

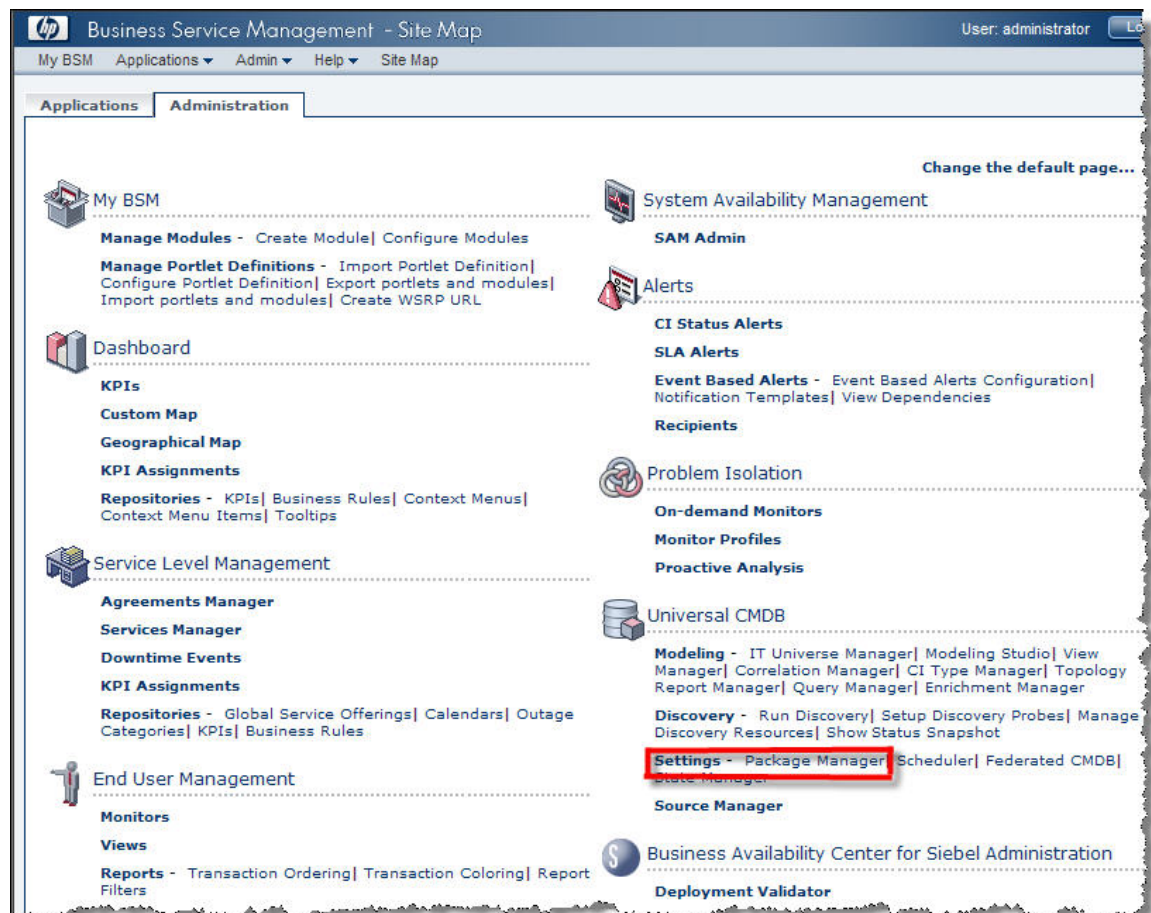
You must install from a local hard drive or CD ROM drive. The installation fails if you attempt to install from a mapped share.

Step 2 – Deploy the Universal CMDB package

The next steps have to be performed using the HP OMi management console. Please log into HP OMi as an administrative user.

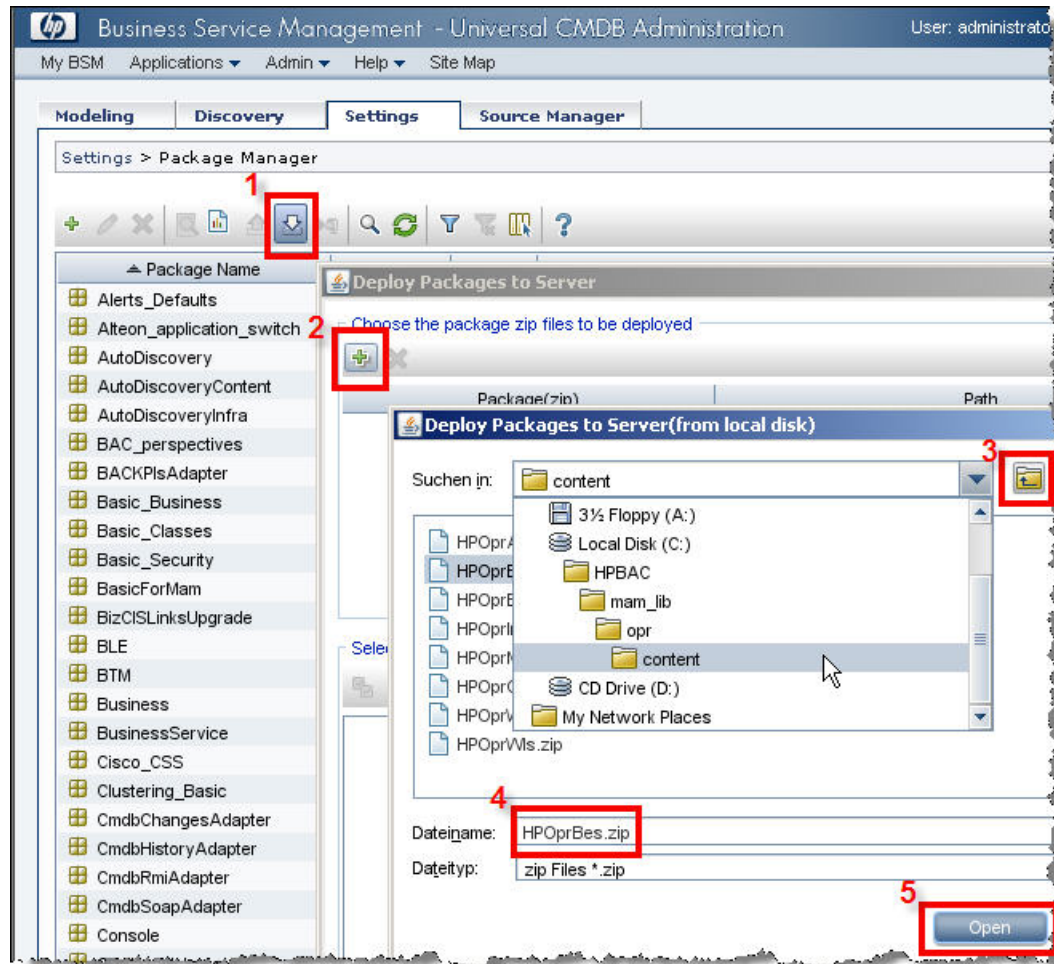
Task 1 Open the Package Manager in the Universal CMDB section.

Figure 10 Open the UCMDB Package Manager



Task 2 Locate the HP Operations Management Module for BlackBerry Enterprise Server (HPOprMMBes).

Figure 11 Locate the file HPOprMMBes.zip



Task 3 Deploy the HP Operations Management Module for BlackBerry Enterprise Server.

Figure 12 Deploy the file HPOprMMBes.zip

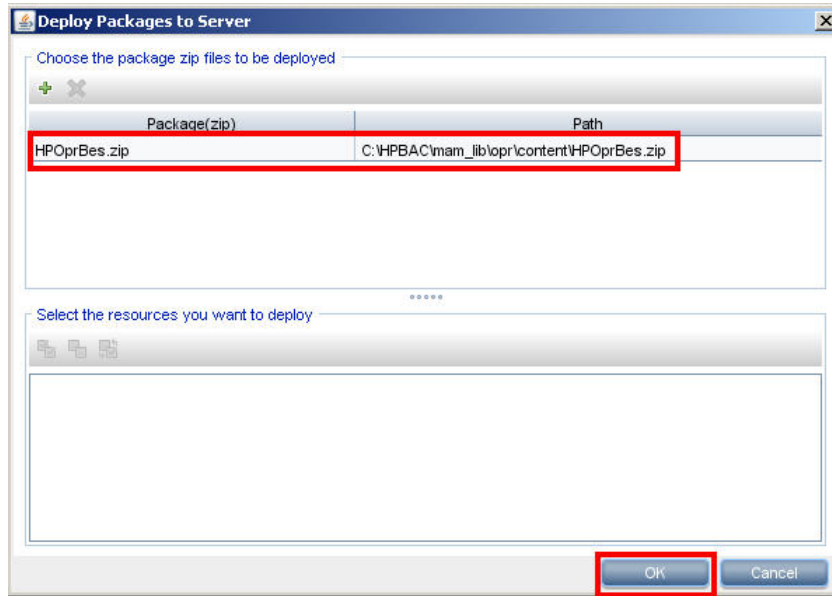
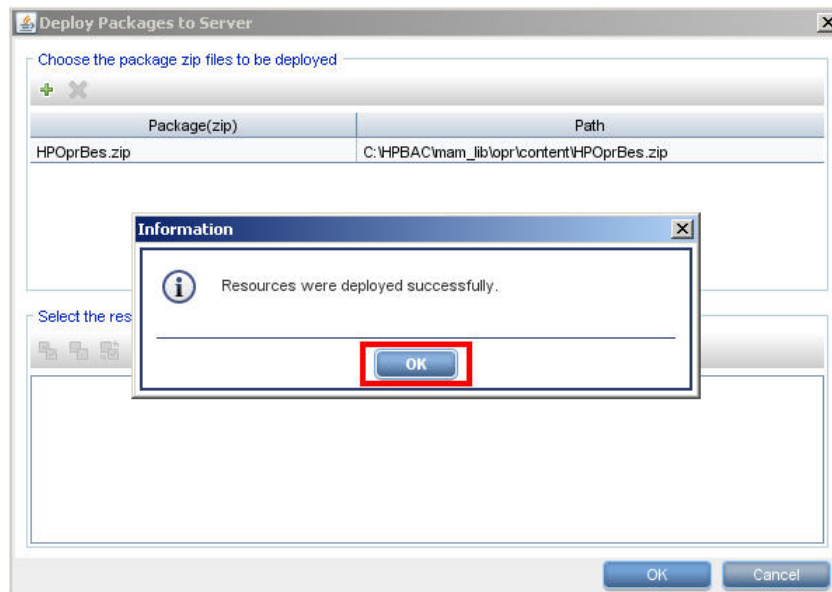
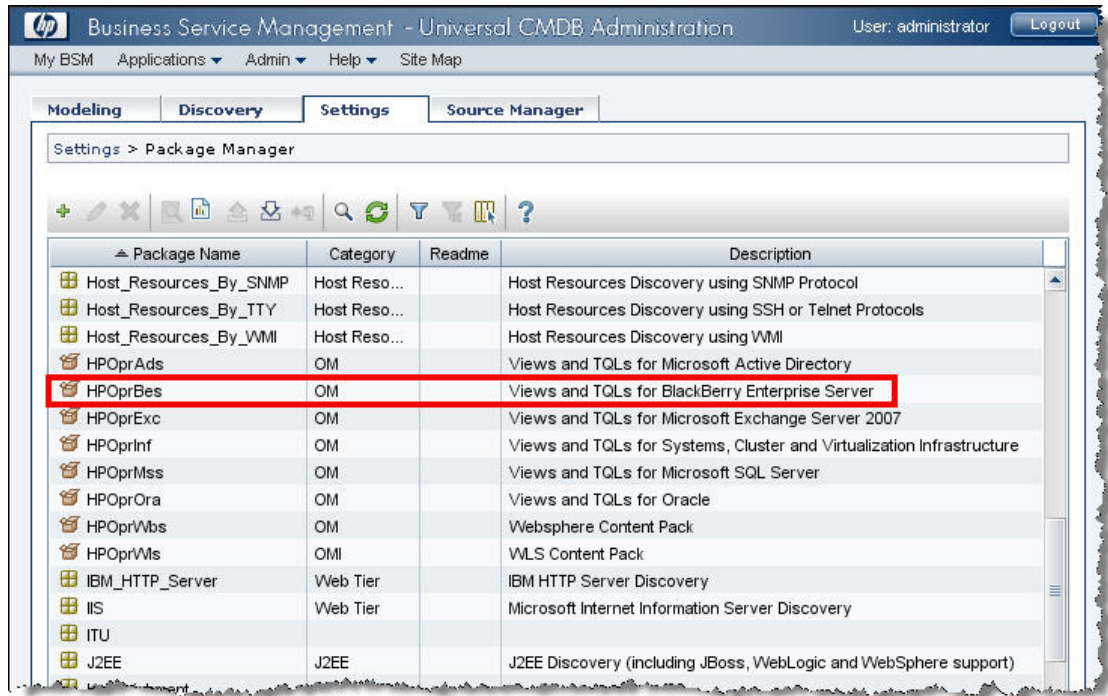


Figure 13 Check the deployment results



Task 4 Verify that the HPOprMMBes content pack has been loaded and is shown in the inventory.

Figure 14 Verify the Package Manager inventory

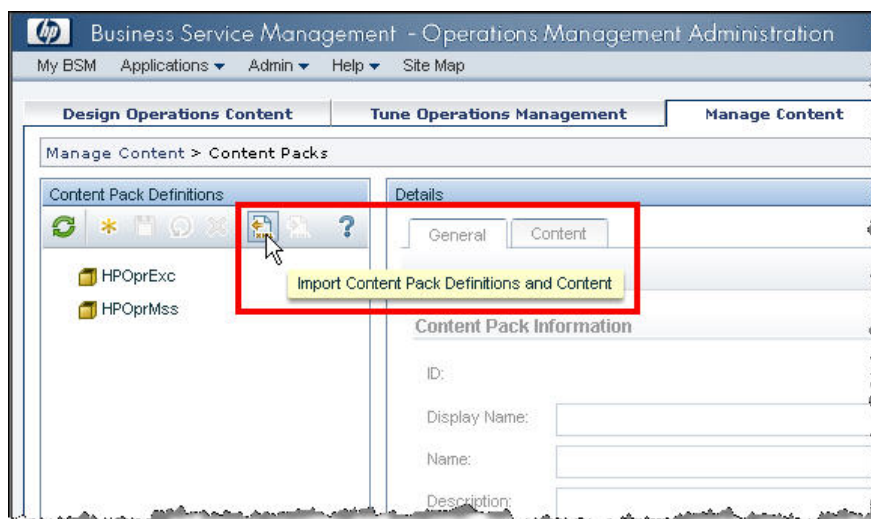


Step 3 – Import the Content Pack

The next step is to import the actual definition of the Content Pack. This step is similar for all HP Operations Management Modules (Content Packs) and is described in detail in the HP Operations Manager i "Installation and Deployment Guide", chapter "Managing Content Packs".

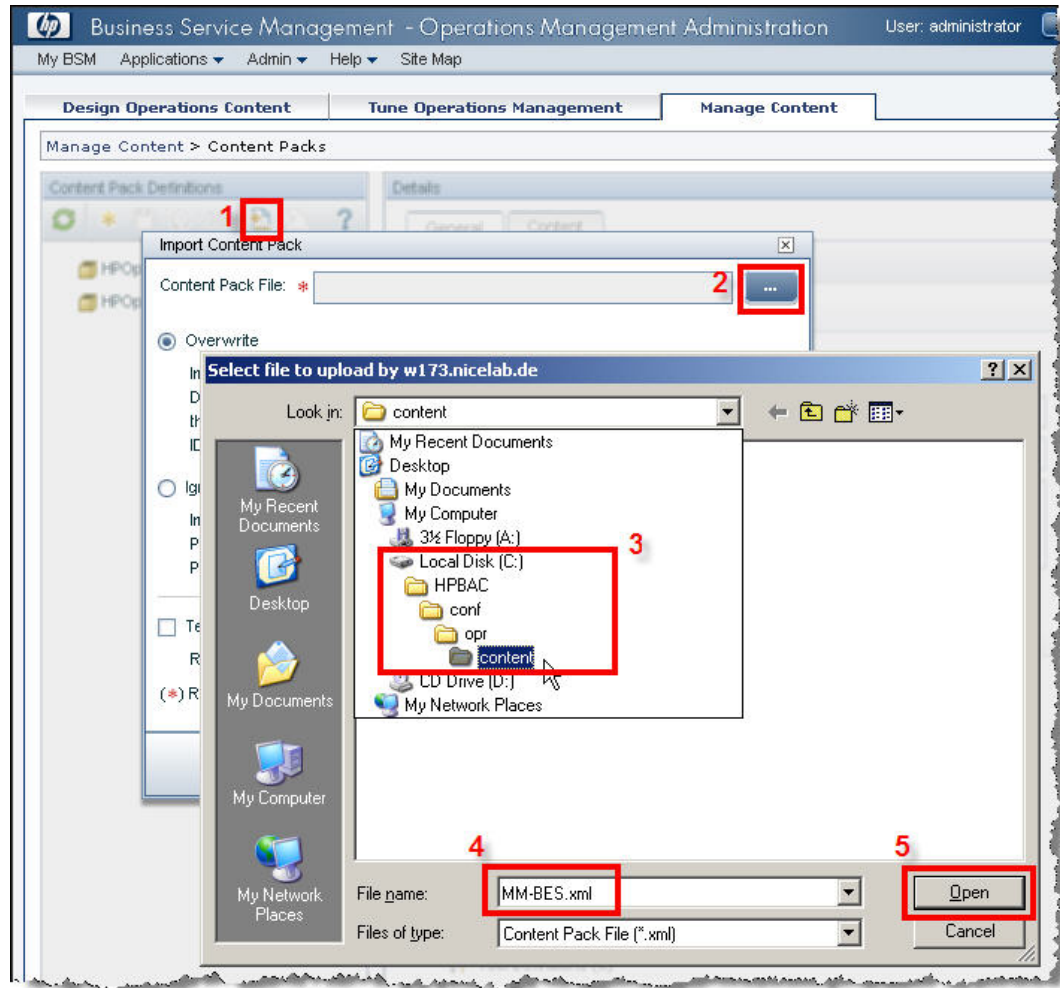
Task 1 Open the Content Pack Manager in the Operations Management section.

Figure 15 Open the Content Pack Manager



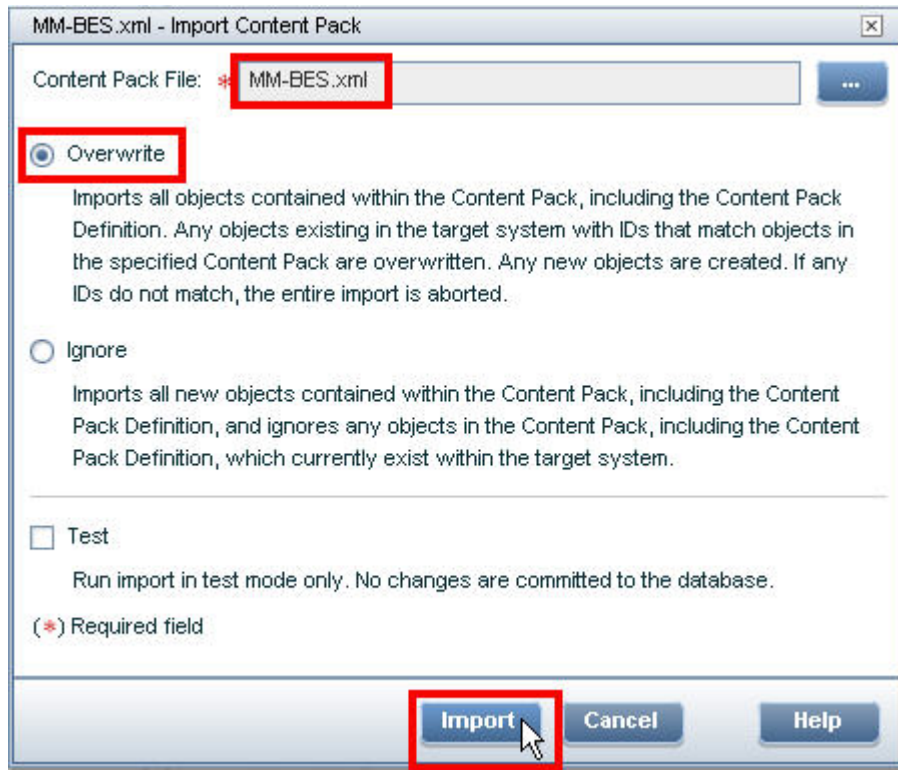
Task 2 Locate the Content Pack definition file

Figure 16 Locate the Content Pack



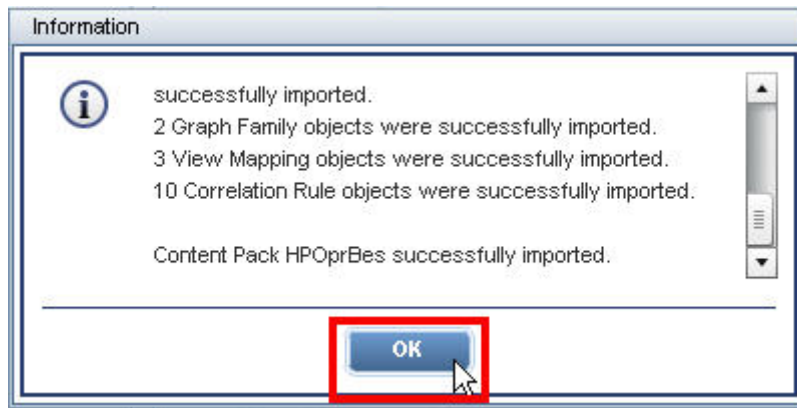
Task 3 Import the Content Pack

Figure 17 Import the Content Pack



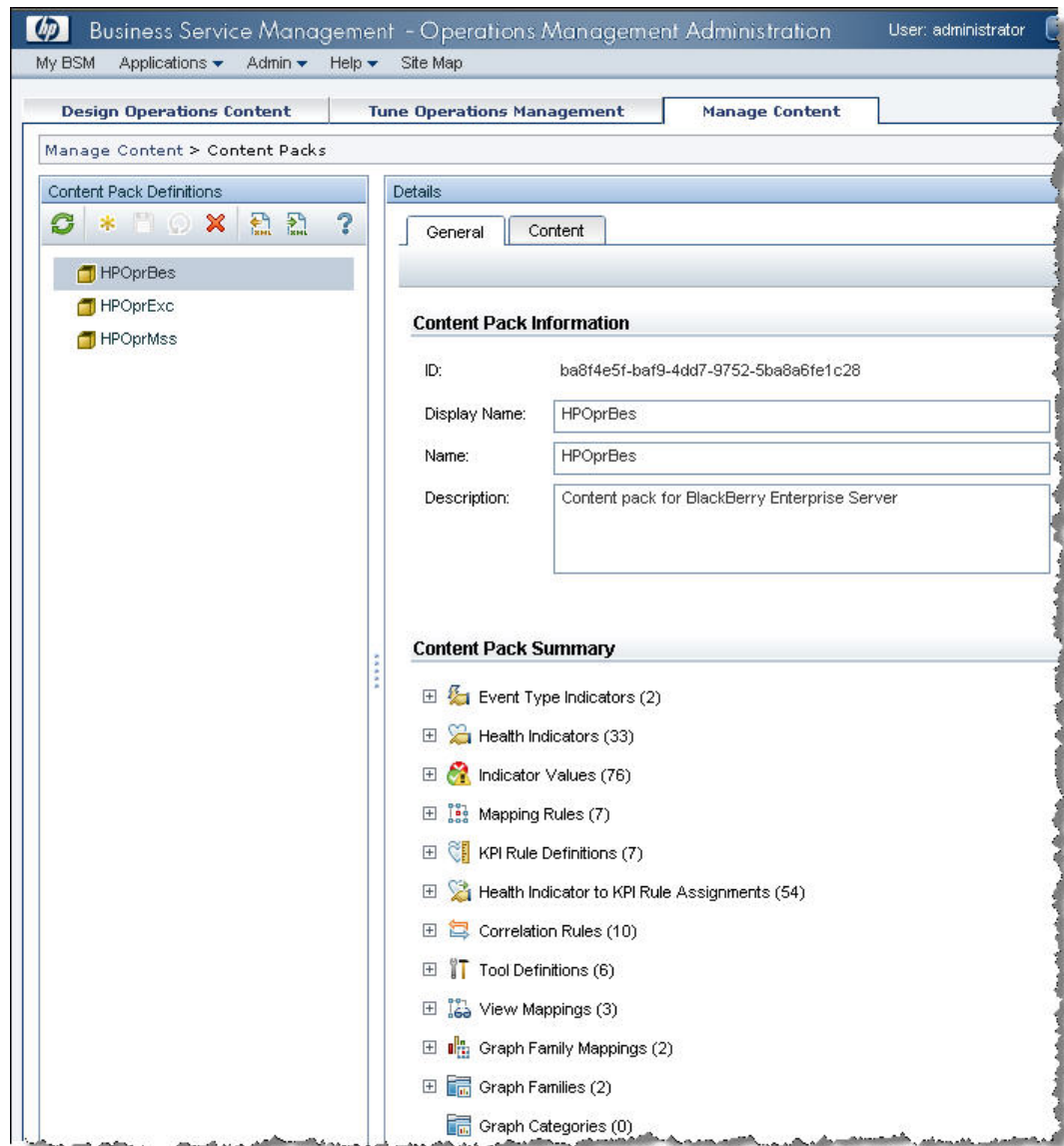
Task 4 Check the results of the import

Figure 18 Check the results of the import



Task 5 Verify the Content Pack

Figure 19 Verify the Content Pack



Step 4 – Configure the Topology Synchronization

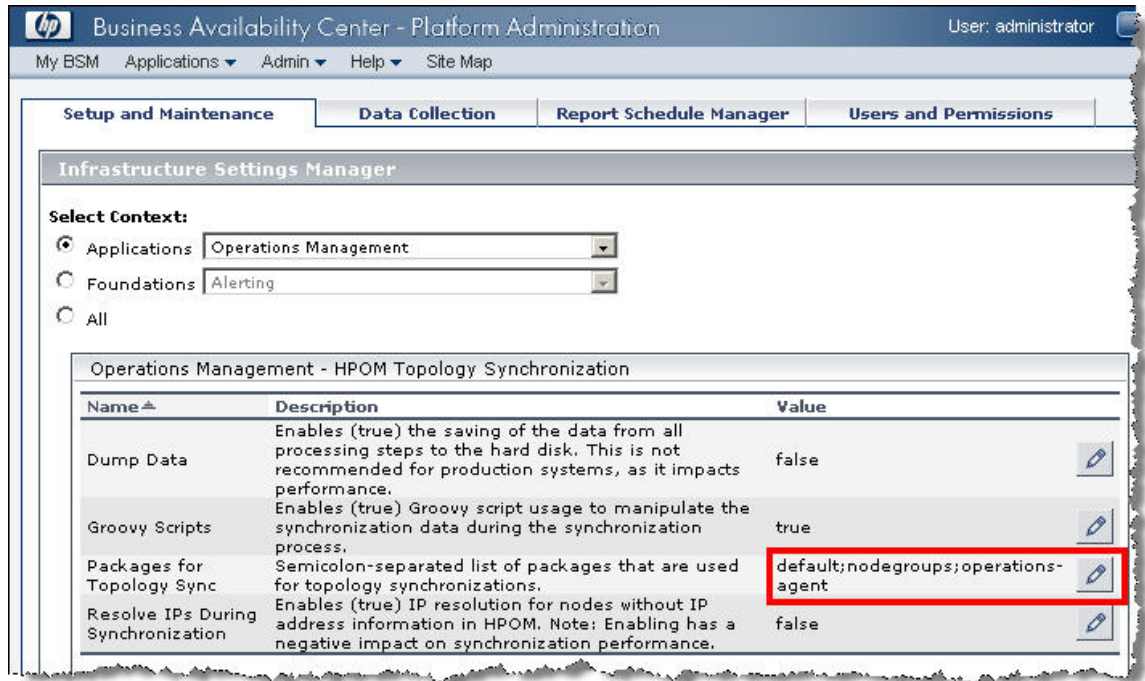
The HP OMi Topology Synchronization tool reads configuration item (CI) data from HPOM and writes it into the UCMDB.

This process has to be configured for the Content Pack related CIs and is described in detail in the HP Operations Manager i "Install and Deployment Guide", chapter "Topology Synchronization Tool".

Here are the tasks which have to be performed in order to activate the Topology Synchronization for the Content Pack for BlackBerry Enterprise Server.

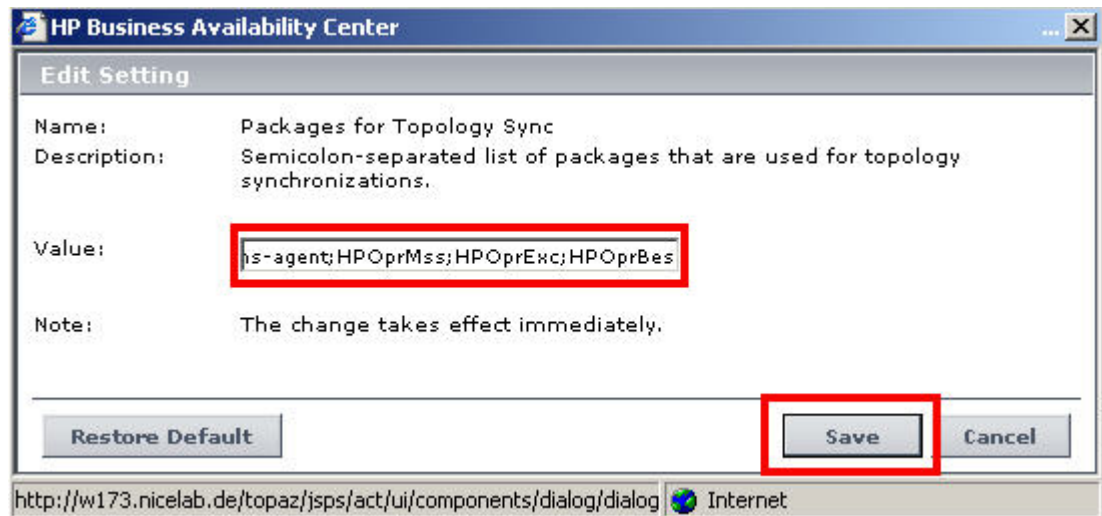
Task 1 Open the Infrastructure Settings Manager, select the context "Operations Management" and locate the section "HPOM Topology Synchronization".

Figure 20 Open the Infrastructure Setting Manager



Task 2 Add the topology synchronization directors for the BlackBerry Content Pack

Figure 21 Add the BlackBerry Content Pack to the synchronization list



Troubleshooting the BlackBerry Content Pack

CI Resolution and CI Relationships

If messages forwarded from the OM server and appearing as OMi events are not linked to the correct Blackberry CI in OMi, or if expected "use" relationships are missing in the Blackberry CI topology, please read on.

The BlackBerry SPI service discovery adds the names of MSSQL Server and Microsoft Exchange Server hosts as attributes to the BlackBerry CIs. This information is then used to establish the relationships in the BlackBerry universe.

These names are the result of a name resolution on the managed nodes, where the object reference to a MSSQL Server or Exchange Server has been discovered.

It's essential that these names are the same as those discovered by the appropriate Smart Plug-In, i.e. the Database SPI for SQL Server or the Exchange SPI.

In addition, the BlackBerry SPI adds CI resolution hints to its messages using the resolved name of the generating host.

Thus, the name resolution must deliver identical results on the OM server and the OMi server, or else the CI resolution will not succeed and the OMi events are not linked to the expected BlackBerry CI.

In short, the name resolution method has to be configured in a consistent way on both the OM and the OMi server and all OM managed hosts.

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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