

# HP ITSM Enterprise Suite

Software Version: 2015

## ITSM Enterprise Suite Deployment Guide

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# Introduction

The HP ITSM Enterprise Suite provides an extensive service management solution that includes incident management, problem management, change management, request fulfillment, event management, and knowledge management, as well as service level management, service catalog management, service portfolio management and service asset & configuration management. In addition to core process functionality, the suite includes extensive monitoring and reporting capabilities that support proactive management activities and availability management.

The flexible design of the ITSM Enterprise Suite enables modules to be used independently whilst still being completely relational. This allows customers to build on their service management capabilities within timescale and budget constraints.

## How to use this document

The service management solution system described in this document is a very large and complex one. The ITSM Enterprise Suite Deployment Guide contains many complex and large products, each of which are complex systems in their own right. Each of these products have their own documentation, installation and integration steps. Due to large volume of the documentation, it is not within the scope of this document to re-create all of that information. Instead, the purpose of this document is to provide an overall example scheme of what a complete ITSM solution might look like. It will define a system topology including many of the products (but not all) contained within the ITSM Enterprise Suite, and how to deploy those products in such a way as to provide a complete service management solution.

As such, this document will provide guidance and installation steps that describes one possible service management solution. The intent is to show an example that can be tailored for your organization's needs. In many cases, this document will refer you to

the associated product documentation. For example, this document will not describe all possible steps to install Operations Manager i or IT Business Analytics. This document will refer you to the product documentation for the installation and deployment of these products. Further, due to the use of Deployment Manager, it will not describe how to install Service Manager, instead relying on Deployment Manager.

## Links to all referenced documentation

### **Service Manager:**

- *HP Service Manager Help Center*

### **Asset Manager:**

*HP Asset Manager 9.50 Release Notes*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01446907>

### **Universal Configuration Management Database:**

*HP Universal CMDB 10.20 Deployment Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01364377>

*HP Universal CMDB 10.20 Support Matrix*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01364276>

*HP Universal CMDB 10.20 Discovery and Integrations Content - HP Integrations*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01367254>

**HP Universal CMDB 10.20 All PDFs**

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01502033>

**Operations Manager i:**

*HP Operations Manager i 10.01 Installation and Upgrade Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01223598>

*HP Operations Manager i Integrations Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01223606>

**Business Service Management:**

*Business Service Management 9.25 Installation Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01134334>

*Business Service Management 9.25 Integration: Service Manager Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01357692>

*Business Service Management 9.25 System Requirements and Support Matrices*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01134344>

**Service Health Reporter:**

*Service Health Reporter 9.40 Interactive Installation Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01273124>

*Service Health Reporter 9.40 Support Matrix*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01273123>

*Service Health Reporter 9.40 Integration Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01403734>

**IT Business Analytics (formerly Executive Scorecard):**

*IT Business Analytics 9.50 Installation and Configuration Guide*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01275262>

*IT Business Analytics 9.50 Content Reference Guides*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01010240>

*IT Business Analytics 9.50 Support Matrix*

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01010277>

## Components in the ITSM Enterprise Suite

The ITSM Enterprise Suite provides a complete service management solution. It is comprised of the following HP products:

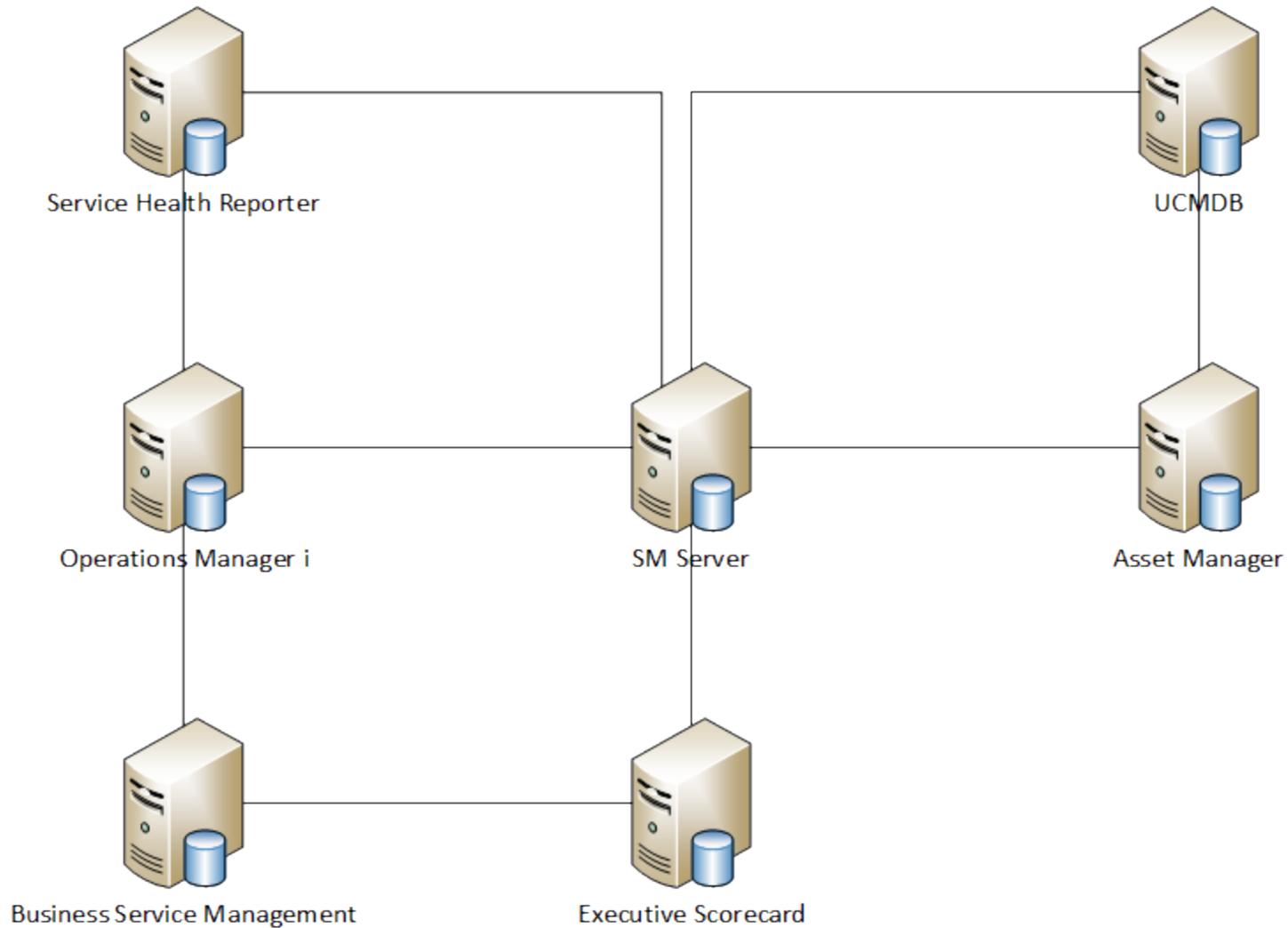
- Service Manager Enterprise Suite
  - Service Manager 9.40, including HP SM Smart Analytics, Knowledge Management the Service Portal.
  - Universal Configuration Management Database 10.20
- HP Asset Manager Enterprise Suite
  - Asset Manager 9.50
- HP IT Business Analytics (Formerly IT Executive ScoreCard)
  - IT Business Analytics 9.50

- **HP Operations Bridge Suite Premium Edition**
  - **Operations Manager i 10.01**
  - **Service Health Reporter 9.40**
  - **Business Service Management 9.25**
  - **Also includes:**
    - **Operations Agent 11.14**
    - **SiteScope 11.30**

# System topology

For simplicity, in defining the system topology, we require that each of the products within the ITSM Enterprise Suite requires its own server. By doing this, we simplify the deployment model, presenting as clear and concise a system topology as possible, and limiting our exposure to hardware failure. In our deployment model, we used virtual machines (VMs) due to their flexibility and configurability. However, it is expected that your organization will adapt the model provided in this document for your own needs.

## **An overview of the system topology:**

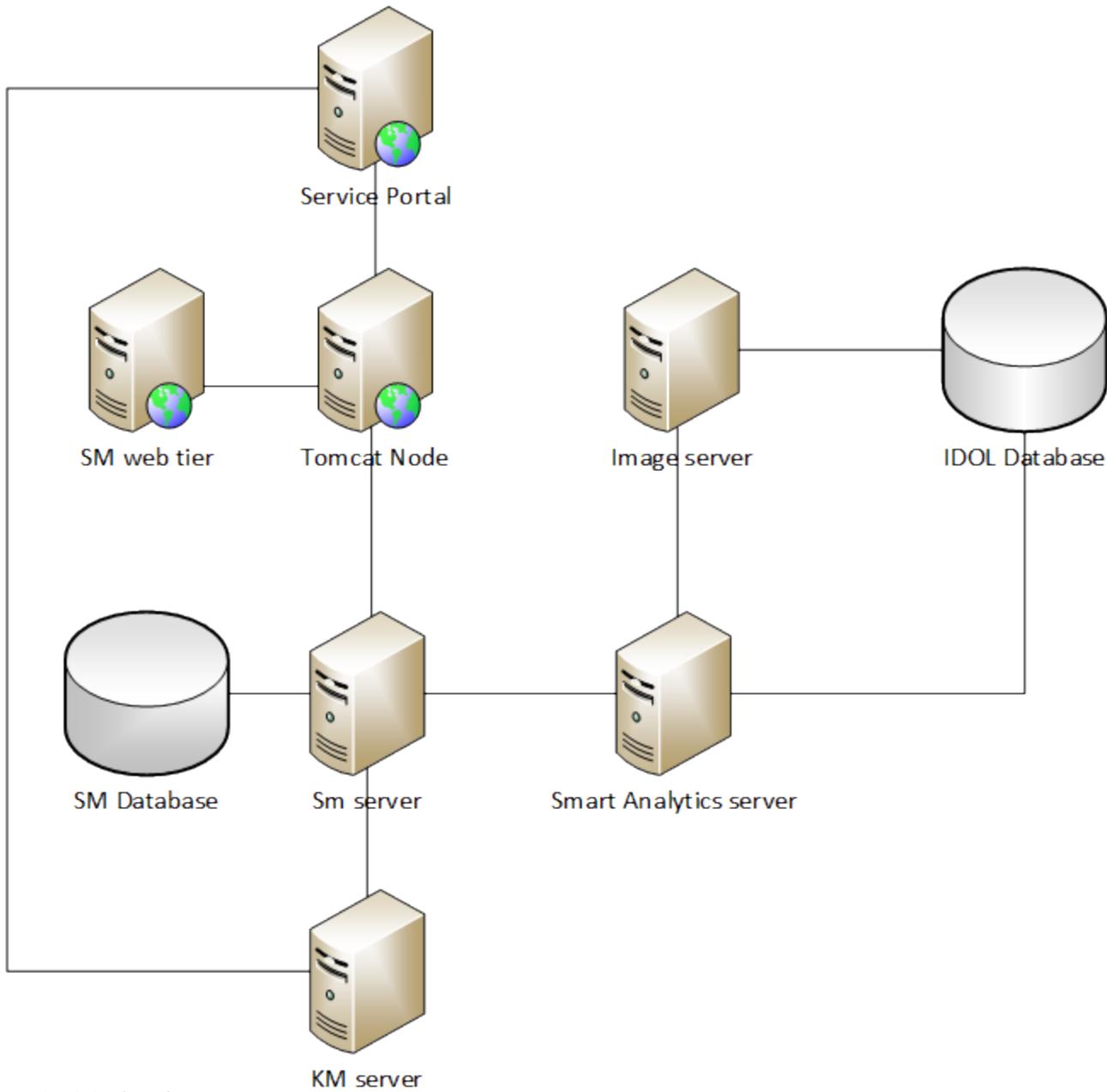


As indicated in the diagram, each component of the ITSM Enterprise Suite may itself contain other components. For example, Service Manager alone includes the Service Manager server, the database, the Service Manager web tier (including

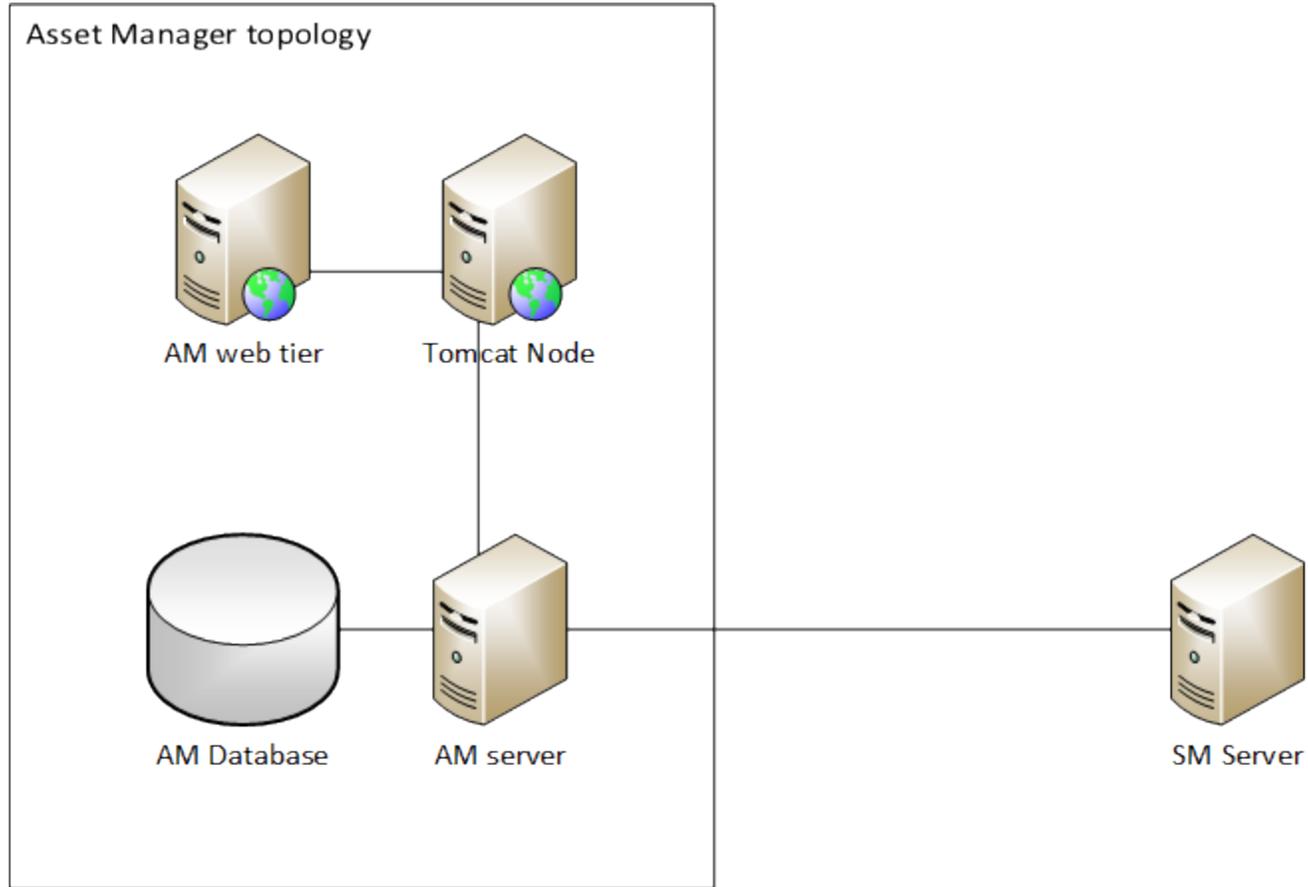
Apache and tomcat nodes), the Service Portal, the knowledge management server, and Smart Analytics, which itself may include the IDOL server and an image server. In fact, every node in the preceding diagram, contains at least its own application server and separate database. These more detailed topologies are shown in the following diagrams.

### **Service Manager**

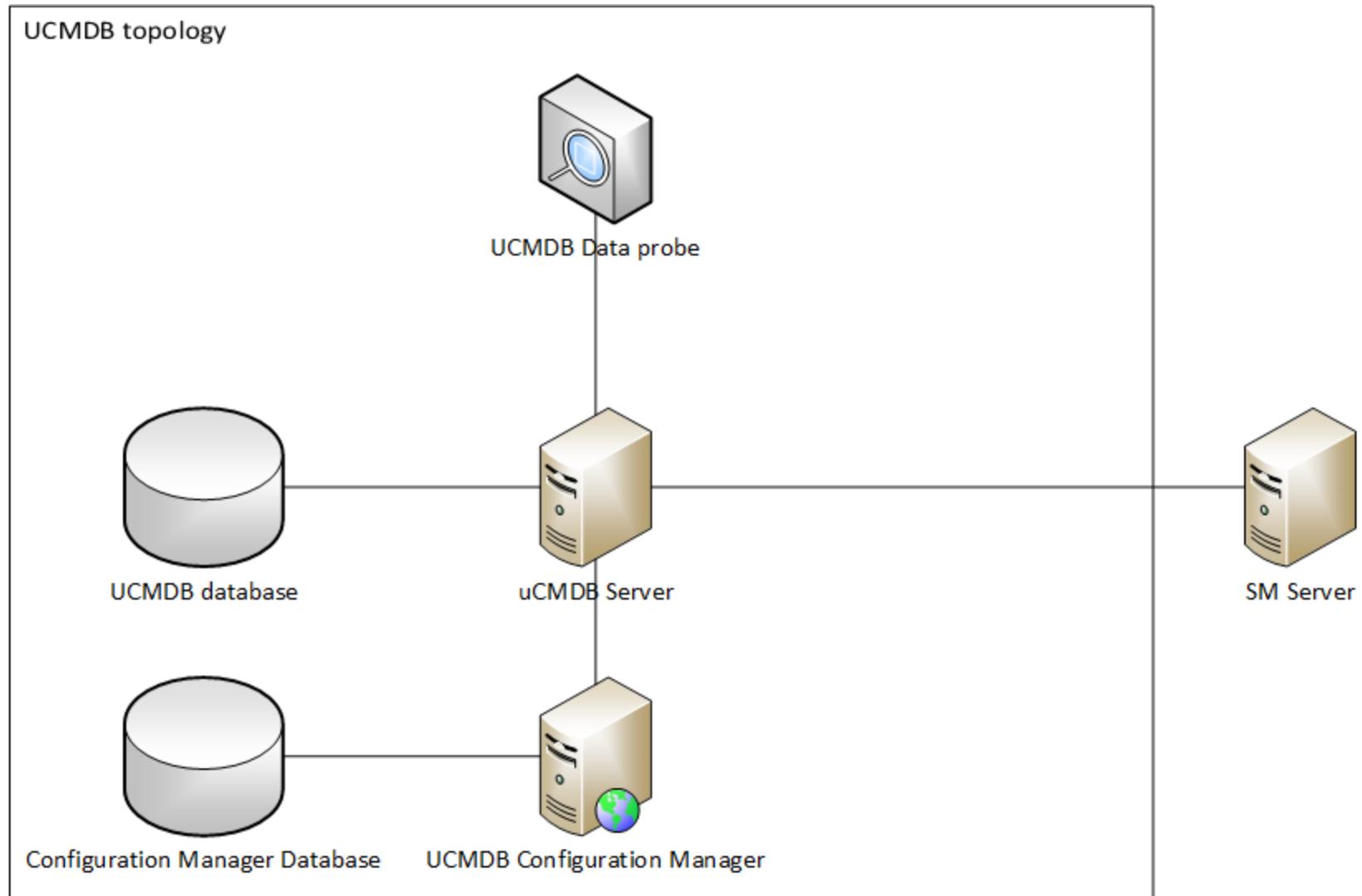
Service Manager topology



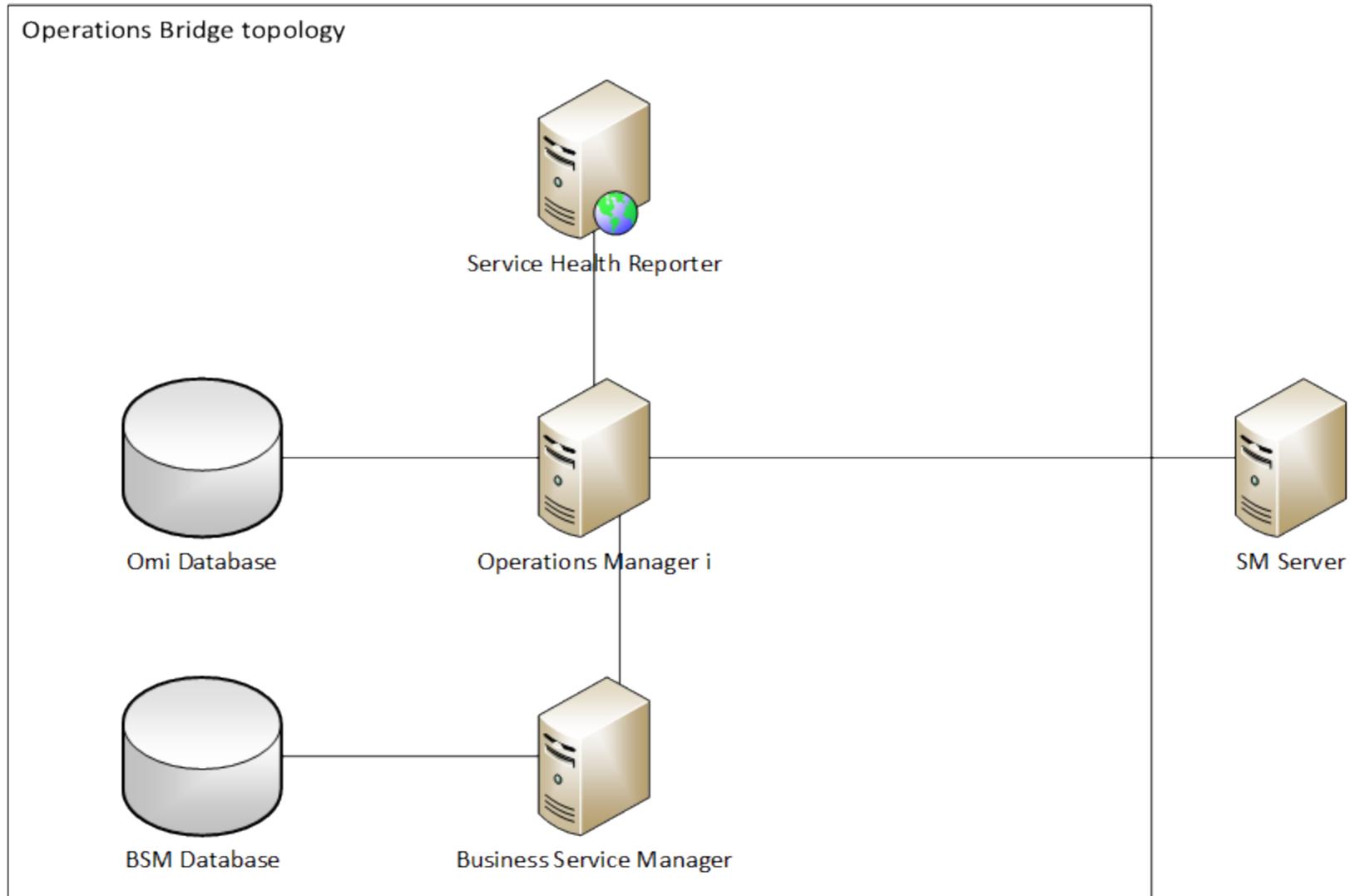
### Asset Manager



### Universal Configuration Management Database



Operations Bridge topology



## Sizing requirements

The following table indicates basic sizing requirements for each product. For simplicity, we standardize core speed to the greatest common denominator in this case, 2.4 GHz. In general, the higher the CPU speed the better.

Product	Component	Minimum Cores (@ 2.4 GHz)	RAM	Hard Disk	Operating System/Manufacturer (64 bit)	Notes
Service Manager	Server	8	48 GB	120GB	Windows Server 2012 Red Hat Linux 6.5	
	RDBMS	6	16 GB	4-6 x148 GB RAID	MS SQL Server/Oracle	
	Smart Analytics	4	16 GB	100 GB	Windows Server 2012 Red Hat Linux 6.5	
	Web tier	8	16 GB	70 GB	Tomcat 7.0	
	Knowledge Management	4	8 GB	120 GB		
	Service Portal	2	3 GB	32 GB	Flash	Java Heap Size >= 1024 MB

Product	Component	Minimum Cores (@ 2.4 GHz)	RAM	Hard Disk	Operating System/Manufacturer (64 bit)	Notes
Universal Configuration Management Database	Universal CMDB	8	16 GB		Windows Server 2012 Red Hat Linux 6.5	<ul style="list-style-type: none"> <li>■ The virtual memory for Windows should be at least 1.5 times the size of the physical memory.</li> <li>■ The Linux swap file size should be equal in size to the physical memory.</li> </ul>
	Universal CMDB Configuration Manager	8	16 GB		Windows Server 2012 Red Hat Linux 6.5	
Asset Manager	Server & Web tier	2	16 GB	4-6 x148 GB RAID	Windows Server 2012 Red Hat Linux 6.5	
IT Business Analytics	SAP BusinessObjects Enterprise Server	8	16 GB	80 GB	Windows Server 2012 Red Hat Linux 6.5	

<b>Product</b>	<b>Component</b>	<b>Minimum Cores (@ 2.4 GHz)</b>	<b>RAM</b>	<b>Hard Disk</b>	<b>Operating System/Manufacturer (64 bit)</b>	<b>Notes</b>
	Data Warehouse Server	8	16 GB	120 GB	Windows Server 2012 Red Hat Linux 6.5	
	Executive Scorecard Server	8	16 GB	80 GB	Windows Server 2012 Red Hat Linux 6.5	
	SQL Server	24	48 GB	1 TB	MS SQL Server 2012	

<b>Product</b>	<b>Component</b>	<b>Minimum Cores (@ 2.4 GHz)</b>	<b>RAM</b>	<b>Hard Disk</b>	<b>Operating System/Manufacturer (64 bit)</b>	<b>Notes</b>
Operations Bridge	Operations Manager i	4	16 GB	250 GB	Windows Server 2012 Red Hat Linux 6.5	
	Service Health Reporter (server)	16	32 GB	500 Mb	Windows Server 2012 Red Hat Linux 6.5	
	Service Health Reporter (Sybase IQ)	16	32 GB	4.5 TB	Windows Server 2008 Red Hat Linux 6.5	
	Service Health Reporter (Collectors)	4	8 GB	300 GB		Maximum 10,000 nodes.
	Business Service Management	8	24 GB	250 GB	Windows Server 2012 Red Hat Linux 6.5	

# Installation guidance

In the following sections, we describe the simplest and most expedient method to install the Hewlett Packard Enterprise ITSM Enterprise Suite. The content related to specific products is generally sourced from the documentation for those products. However, for the purposes of this comprehensive suite, we have made a number of arbitrary design decisions.

As a result, we leverage Deployment Manager wherever possible. IN cases where Deployment Manager is not used, we present only the single most common option for installing a specific product. For example, while the IT Business Analytics installation documentation describes two, three, and four server options to install IT Business Analytics and it's associated components, we present only the recommended four server production environment installation instructions. Similar design choices have been made for all other products. At the beginning of each major section, a few paragraphs are devoted to explaining which choices were made for the subsequent installation method.

## Using Deployment Manager

You can use HP Deployment Manager to facilitate the installation and integration of Service Manager, Asset Manager, UCMDB and the other components of the ITSM Enterprise Suite. Deployment manager is a software package that can download, install, configure, and integrate several Hewlett Packard software products. It was primarily designed to facilitate installation of Service Manager (SM) and its core integrations. In the ITSM Enterprise Suite, we use it to install Service Manager (including Knowledge Management, Smart Analytics, and the Service Portal), Asset Manager (AM), Universal Configuration Management Database (uCMDB) and configure the integrations between SM and uCMDB, Knowledge Management, the Service Portal, and Smart Analytics. By leveraging Deployment Manager, we can quickly and easily create and

install the base ITSM system. After which, we will install and deploy the other components of the suite and integrate those components into the overall system architecture.

**Note:** Deployment Manager cannot handle the integration between Service Manager and Asset Manager at this time.

Deployment Manager includes a number of embedded scripts that will download and install the appropriate packages. You can create an environment for the ITSM Enterprise Suite consisting of multiple servers. After creating the environment, you can select various packages and components, assign those packages to the various servers, specify the various integrations, and then simply execute the script. Deployment Manager will then automatically download all necessary packages, install all software to the various servers, configure and deploy any appropriate web tiers, and integrate the various software packages.

For example, suppose you wanted to install Service Manager and uCMDB together on two separate servers. For the Service Manager installation, you want to create a database, install knowledge management, and install the service portal. For the uCMDB installation, you need to install the database, install uCMDB, including the uCMDB data probe and the uCMDB Configuration Manager. To do this in Deployment Manager, you create a new environment, add the two servers to the environment. Then, select the “Install Service Manager” wizard, specify the appropriate server in the script, select the “Install uCMDB” wizard, and then specify the second server in the script. When you execute the scripts, deployment manager will automatically download the packages, install the base Service Manager and uCMDB on to the appropriate servers, including the databases, any Apache server and Tomcat application servers, and deploy any appropriate web applications. After the installation and deployment of all components are complete, Deployment Manager will consider both the SM and uCMDB server side integrations. Additionally, if you later on decided to add Asset Manager into your environment, you would simply add another server to your pre-existing Deployment Manager environment, and execute the “Install Asset Manager” script.

For the purposes of this document, we will not discuss how to install or configure Deployment Manager. To do that, refer to the Deployment Manager documentation.

## Platform limitations

The use of Deployment Manager imposes certain limitations on the deployment of the ITSM Enterprise Suite. These are detailed in the following list:

- Deployment Manager only contains scripts for Microsoft Windows and Linux platforms. Therefore, if your organization is using HP UX or AIX you must manually install, configure, and integrate all products deployed by Deployment Manager. To do this, refer to the installation and configuration documentation for each individual product.
- If you plan on using multi-tenancy in the Universal Configuration Management Database, you cannot use Deployment Manager. Therefore, you must use the installation and configuration documentation for the Universal CMDB to do this.

## Installing Deployment Manager

### Install Deployment Manager

The server that hosts ITSM Deployment Manager must have access to all target environments and servers. Specific PowerShell settings will be applied to access target Windows servers from this server. Connections to Linux servers will be established by using SSH. It is important to understand that all installation files that ITSM Deployment Manager uses will be stored on this server as well. This includes automatically downloaded patches and third party software, as well as the official version of the products that you want to install and will have to upload to this server by using ITSM Deployment Manager. Apart from those two main requirements on storage and network access, ITSM Deployment Manager requires only a working Apache Tomcat server to run.

#### **Minimum system requirements**

**Processor:** 1 CPU core

**RAM:** 1 GB

**Hard disk space:** 20GB

**Note:** This is the recommended size to store HP software installer files, patches, and third party open source software. The actual size that is required may vary due to usage patterns in ITSM Deployment Manager.

**Operating system(s):**

Both the servers on which ITSM Deployment Manager is running and the servers that ITSM Deployment Manager manages can run one of the following operating systems:

- Windows Server2008 x64
- Windows Server2008 R2 x64
- Windows Server2012 x64
- Windows Server2012 R2 x64

**Note:** ITSM Deployment Managersupports patched versions of Windows Serveronly. To download and install the Microsoft Visual C++ Redistributable Package, visit the following Microsoft website: <http://support.microsoft.com/kb/2019667>

You may need to consult your Windows Server administrator, your local IT team, or Microsoft Support to ensure that you understand Microsoft's requirements to install the Visual C++ Redistributable Package on yourservers.

Additionally, the servers that ITSM Deployment Managermanages can run one of the following operating systems:

- Red Hat Linux Enterprise version 6.5

**Note:** To use Linux, you must ensure that you have the following configuration:

- An account with write permission for the /files /opt, /usr/local, /usr/lib, and /ect/profile folders.  
  
(HP products install on /opt, third party products install on /usr/local) ■ A C/C++ compiler (for Apache HTTP server) is installed.
- A 32-bit library for running 32-bit JREs, such as glibc.i686, is installed.
- SSH/FTP connections with username and password are allowed.
- The account is in the sudo list (can execute command by using sudo).
- Python 2.6 (or later) is installed.

**Browser(s):**

- Google Chrome (recommended)
- Mozilla Firefox (latest version)
- Windows Internet Explorer 9
- Windows Internet Explorer 10

**Note:**

- ITSM Deployment Manager does not require any plugins to function.
- Currently, ITSM Deployment Manager does not support Windows Internet Explorer 11.

**JDK:**

Java (JDK) and Tomcat 7. The JVM memory should be set between 512MB and 1024MB.

**Tomcat:**

Apache Tomcat 7.x 64-bit web server.

**Network**

Traffic between the servers on which ITSM Deployment Manager is running and the servers that ITSM Deployment Manager manages requires the following ports:

- PowerShell (HTTP traffic): TCP/5985
- PowerShell (HTTPS traffic): TCP/5986
- Tomcat default HTTP Connector(HTTP traffic): TCP/8080

**Note:** These ports are common defaults and may have been changed by your network or by your computer administrators. Forexample, if the Tomcat serverthat is running ITSM Deployment Manager is integrated with an Apache web server, the ITSM Deployment Manager server now operates with a default port value of TCP/80 HTTP.

## Step 1: Deploy Apache Tomcat

Deploy the Apache Tomcat web server. Forinformation about supported versions, see the "Minimum system requirements" section in the *Deployment Manager Quick Start Guide*.

## Step 2: Configure the database

Afteryou deploy and unpack the `.war` file in Tomcat, you may need to configure the `web.xml` file, depending on the type of database that you will use.

### **H2 Database**

By default, ITSM Deployment Manager is configured to use the embedded H2 database. If you are satisfied with this default setting, no furtheraction is required. You can easily back up the database before you upgrade ITSM Deployment Manager by making a copy of the database files.

### **Microsoft SQL Server Database**

In order to run ITSM Deployment Manager with a Microsoft SQL Server database, an active instance of SQL Server is required. ITSM Deployment Manager is compatible with all editions of SQL Server (Express, Web, Standard, and Enterprise).

To configure the SQL Server database for use with ITSM Deployment Manager, follow these steps:

1. Create a new, empty database on an instance of SQL Server that is located within your network. ITSM Deployment Manager then configures the required tables when it connects to the database for the first time.

2. Configure the connection string to use the format in the following example:

```
192.168.145.129:1433/DM;user=dmuser;password=Deploy@Mgr44
```

3. 3. Modify the connection string in the web.xml file within the web application to use the following format:

```
<context-param>
  <param-name>DatabaseType</param-name>
  <param-value>h2</param-value>
</context-param>
<context-param>
  <param-name>DatabaseConnectionString</param-name>
  <param-value>[instance-ip]:1433/[dbname];user=
[user];password=[password]
</param-value>
</context-param>
```

This example contains the following placeholders:

- [instance-ip] – the IP address or host name of the SQL Server instance
- [dbname] - the name of the database
- [user] - the SQL Server username

- [password] - the SQL Server user's password

**Note:** Do not include the square brackets in the connection string.

### Step 3: Start Apache Tomcat

Start Apache Tomcat in order to get Deployment Manager up and running.

### Step 4: Log in to Deployment Manager

Navigate to the web page that is located on the Tomcat instance (for example, <http://host:8080/DM>). The ITSM Deployment Manager login page (see Figure 1) is displayed.

**Note:** Do not use localhost or the 127.n.n.n IP class for the host name in the URL, as external servers resolve back to this host name when installation packages and patches are deployed.

Then, log in to ITSM Deployment Manager by using the following credentials:

- Username: admin
- Password: admin

**Note:** After you log in for the first time, you will be prompted to change these default credentials.

### Step 5: Configure the installation file folder

All automatically downloaded and manually uploaded installation files (and license files) will be stored in the same location. The current instance of Tomcat must have access to that location. This enables ITSM Deployment Manager to store software binaries and patches in order to deploy them to remote servers. We recommend that you perform

this step while connected to the ITSM Deployment Manager server, as you will need to access local folders and partitions.

To configure the installation file folder, follow these steps:

1. On the **Administration** tab, click **System Settings** in the left-hand pane.
2. In the right-hand pane, type the path to the installation file folder in the Installer path where all binaries and patches will be located field.
3. Click **Save**.

## Step 6: Create an environment

For information about how to do this, see ["Create a Deployment Manager environment" on page 44](#).

## Step 7: Upload the license files

You can upload license files only after you have created at least one environment in ITSM Deployment Manager and added at least one server to this environment. All licenses for your products will be specific to each server for each product. We recommend that you perform this step while connected to the ITSM Deployment Manager server, as you will need to access local folders and partitions.

To make licenses available for use by ITSM Deployment Manager, follow these steps:

1. On the **Environments** tab, click **Licenses** in the left-hand pane.
2. In the right-hand pane, click **Upload file** next to the product for which you want to add a license, and then browse to the appropriate license file.

**Note:** The license file deployment feature is currently available only for HP Service Manager, Asset Manager, and UCMDB. You must upload other license files manually. To do this, refer to individual product documentation.

3. Select the license file, and then click **Open**.

**Note:**

ITSM Deployment Manager stores the license files locally on its installation file folder after you upload them. The files are installed on individual servers when you use Deployment Manager to install the associated products.

You can specify a different license file for each server on which you have an applicable HP product installed.

## Step 8: Upload the installation files

ITSM Deployment Manager automatically downloads and installs third party software from the internet and patches for the HP products that it supports from the HP Software Support Online website. However, you must manually download HP software hotfixes, the installation files for HP software content packs, and the installation files for the release versions of HP products, and then upload them to ITSM Deployment Manager by using the installation file manager interface in ITSM Deployment Manager. We recommend that you perform this step while connected to the ITSM Deployment Manager server, as you will need to access local folders and partitions.

ITSM Deployment Manager will save the files that you upload to the installation file folder that you configured in step 5.

To upload installation files to ITSM Deployment Manager, follow these steps:

1. On the **Administration** tab, click **Installer File Manager** in the left-hand pane. The right-hand pane displays all of the products that ITSM Deployment Manager does not automatically download.
2. In the right-hand pane, click **Upload file** next to the product for which you want to add an installation file, and then browse to the appropriate file.
3. Select the file, and then click **Open**.

**Caution:** Currently, ITSM Deployment Manager does not validate the file that you select. You will not receive a warning if you select an incorrect file type. Make sure that you select and upload the correct installation file, or you will experience errors when you use ITSM Deployment Manager to install HP software.

## Configure Windows for Powershell

Some of the ITSM Deployment Manager features rely on Microsoft Windows PowerShell technology. In order for ITSM Deployment Manager to successfully manage your Windows-based servers, PowerShell must be configured on each remote server and on the ITSM Deployment Manager host server.

All PowerShell scripts used by ITSM Deployment Manager are code-signed by HP to verify their authenticity and to maintain a high level of security.

The following steps describe how to open the Windows firewall to allow remote PowerShell commands as well as set the target machines to trust only the ITSM Deployment Manager web server. All remote commands must be authenticated later when you configure the servers by using ITSM Deployment Manager .

### Step 1: Configure the ITSM Deployment Manager server

To configure the ITSM Deployment Manager server, follow these steps:

1. Log in to the server as an Administrator.
2. Run PowerShell as an Administrator.
3. Run the following commands and answer "Yes" when prompted by PowerShell:

```
Set-ExecutionPolicy RemoteSigned
```

```
Start-Service WinRM
```

```
Set-Item wsman:\localhost\client\trustedhosts *
```

**Note:** To restrict the specific target servers that can be contacted, replace the asterisk (\*) in command with a list of IP addresses. You may choose to restrict the trusted server list or not depending on your security policy.

To do this, you will need to update this list each time that you add new servers to ITSM Deployment Manager environments. However, by doing this you will ensure that the ITSM Deployment Manager host server does not access other servers by using remote scripting.

## Step 2: Configure the target machines

To configure the target machines, follow these steps:

1. Log in to the machine as an Administrator.
2. Run the following commands and answer "Yes" when prompted by PowerShell:

```
Start-Service WinRM
```

```
WinRM QuickConfig
```

```
Enable-PSRemoting -Force
```

```
Set-Item
```

```
WSMan:\localhost\Plugin\Microsoft.PowerShell\Quotas\MaxMemoryPerShellMB 1024
```

**Note:** Note: You may need to run the following command to ensure that these memory settings are set correctly:

```
dir WSMan:\localhost\Shell
```

Check the value of MaxMemoryPerShellMB. If the value is less than 1024 (or the value that you used in the Set-Item command), you must run the following additional command, in which X= 1024 or higher:

```
Set-Item WSMan:\localhost\Shell\MaxMemoryPerShellMB <X>
```

## Create a Deployment Manager environment

To create a new environment, follow these steps:

1. On the **Environments** tab, click the **+** icon on the left-hand pane to display the Environment Details dialog box.
2. Enter the name of your new environment. The name of the environment should be descriptive (such as "San Diego Development," "San Diego Production," or "San Diego UAT").
3. Select or clear the **Visible to All** option to determine whether the environment is visible to you only or to all ITSM Deployment Manager users, and then click **Save**.
4. Click **Add Server** button to define the servers within the environment.
5. Enter an arbitrary name that will identify the server easily, such as "SM Web Tier 1" or "SM RTE Load Balancer."
6. Enter the IP address of the server. Currently, ITSM Deployment Manager does not support hostnames or Fully Qualified Domain Names.
7. Enter the username and password of the server so that ITSM Deployment Manager can successfully open a PowerShell session, and then click **Save**.

**Note:** You may not need to add username and password details if ITSM Deployment Manager and the target servers are located in the same Windows domain.

The servers are now recognized by ITSM Deployment Manager. A green label with an "Online" status appears for each server that you have defined. If any servers display a red label and an "Offline" status, check that the server is powered on and that the specified IP address is correct. If any errors occur during the process of adding a server, the errors are displayed in the server's detailed information box

## Install Service Manager

To install Service Manager, follow these steps:

1. Log in to your instance of Deployment Manager, and then navigate to **Environments**.
2. Select your environment.
3. Click the **HP Service Manager - Installation** wizard.
4. Specify the following values as appropriate for your environment and licenses. The values specified are examples based on the default licensing for the ITSM Enterprise Suite.
  - SM version you want to install: SM 9.40
  - Total number of users that will run concurrently on Service Manager Web? **100**
  - Total number of users that will run concurrently on Service Manager Mobility? **0**
  - Total number of users that will run concurrently on Service Request Catalog? **100**
  - Environment Mode: **Deploy on a single server**

**Note:** For larger environments, you may wish to deploy select **Deploy on multiple servers**. You will have the opportunity to install the Service Manager components in various locations on the several screens.

5. Click **Next**.
6. Select which server you want to host the Service Manager server.
7. Specify the drive on which you want to install the Service Manager server.
8. Click **Next**.

9. Select which server you want to host the Service Manager web tier.
10. Specify the drive on which you want to install the Service Manager web tier.
11. Click **Next**.
12. Select the database you will use ( **SQL Server** or **Oracle**).
13. Select which server you want to host the Service Manager database.
14. **Optional:** Specify an alternative name for the Windows Data Source Name (ODBC).
15. **Optional:** Specify an alternative name for the database.
16. Specify a user name for the database.
17. Specify a password for the database.
18. Click **Next**.
19. **Optional:** Click to install the Service Manager Help Center.
20. Click **Install Later**.

To execute this package immediately and install Service Manager server, web tier, databases, and the Service Portal, follow these steps:

1. Navigate to the **Packages** tab, select your environment from the list, and then click on the **Install Service Manager** package.
2. Review the individual tasks.
3. When you are ready to install Service Manager, click **Execute Package**.

## Install and integrate Knowledge Management

Deployment Manager automatically install and integrate the Knowledge Management component to Service Manager and to the Service Portal. To install Knowledge Management, follow these steps:

1. Log in to your instance of Deployment Manager, and then navigate to **Environments**.
2. Select your environment and then click on **More Wizards**.
3. Click **HP Service Manager - Knowledge Management**.
4. Specify the following values for the Knowledge Management server:
  - Which server should the master type of the SM Knowledge Management be installed on? **<any server>**
  - KM version you want to install? **SM 9.40**
5. Click **Next**.
6. Select the SM Load balancer server.
7. Add a check to the other Service Manager servers.
8. Specify the User Name and Password.

**Note:** If you are not using the default user Name and Password of Falcon/, you may need to specify an appropriate user name and password in Service Manager first.

9. Click **Install Later**

To execute this package immediately and install Knowledge Management, follow these steps:

1. Navigate to the **Packages** tab, select your environment from the list, and then click on the **Install HP Knowledge Management on...** package.
2. Review the individual tasks.
3. When you are ready to install Knowledge Management, click **Execute Package**.

## Integrate Knowledge Management and the Service Portal

To integrate Knowledge Management with the previously installed Service Portal (which was installed when you installed Service Manager), follow these steps:

1. Navigate to **Packages**.
2. Click the **+** icon to add a new package.
3. Specify a name for the package, select the environment on which you installed Service Manager and Knowledge Management, and then click save.
4. Click **Execute Package**.

## Install and integrate Smart Analytics

To install Service Manager Smart Analytics, follow these steps:

1. Log in to your instance of Deployment Manager, and then navigate to **Environments**.
2. Select your environment and then click on **More Wizards**.
3. Click **HP SM Smart Analytics Installation**.
4. Specify the following values as appropriate for your environment:
  - Select version to install: **IDOL 10.7 (SM 940)**
  - Select the installation type: **Standalone**.
5. Check all boxes under, select the components you wish to install:  
**IDOL Server**  
**Image Server**.
6. Click **Next**.

7. Specify which server in your environment will host the IDOL server.
8. Specify which server in your environment will host the Image server.
9. Specify the server on which you installed Service Manager.
10. Click **Install Later**.

To execute this package immediately and install SM Smart Analytics, follow these steps:

1. Navigate to the **Packages** tab, select your environment from the list, and then click on the **Install SM Smart Analytics on...** package.
2. Review the individual tasks.
3. When you are ready to install Knowledge Management, click **Execute Package**.

## Install and connect UCMDB

### Note:

- Deployment Manager does not fully integrate Service Manager and the Universal Configuration Management Database. Push and population operations must still be performed manually. For information on how to do this, see the ["Integrate Service Manager and UCMDB" on page 1](#) and ["HP Service Manager Integration Using the SMEnhancedGenericAdapter 9-x" on page 1](#).
- If you plan to use multi-tenancy for the Universal Configuration Management Database, you must configure multi-tenancy at the time of installation. In this case, you cannot use Deployment Manager. Therefore, you should use the installation procedures described in the Universal Configuration Management Database Installation Guide.

To install the Universal Configuration Management Database, follow these steps:

1. Log in to your instance of Deployment Manager, and then navigate to **Environments**.
2. Select your environment and then click on **More Wizards**.
3. Click **HP UCMDB - Installation and Integration Wizard**.
4. Specify the following values for the Knowledge Management server:
  - Which server should the master type of the SM Knowledge Management be installed on? **<any server>**
  - Select the database type: **MSSQL** or **Oracle**
  - Choose an existing database server. **<any server>**
  - Database User Name: **<any name>**
  - Database Password: **<any password>**
  - Select SM server you want to integrate: **Select your SM server**
  - Specify the User Name and Password.

**Note:** If you are not using the default user Name and Password of Falcon/, you may need to specify an appropriate user name and password in Service Manager first.

- Select UCMDB Version: **[10.20]**
5. Click **Install Later**.

To execute this package immediately and install Universal Configuration Management Database, follow these steps:

1. Navigate to the **Packages** tab, select your environment from the list, and then click on the **Install UCMDB and Integrate with SM on...** package.
2. Review the individual tasks.

3. When you are ready to install Universal Configuration Management Database, click **Execute Package**.

## Install Asset Manager

**Note:** Deployment Manager can install Asset Manager, but cannot automate any integrations involving Asset Manager. Therefore, to integrate Asset Manager to Service Manager and Universal Configuration Management Database, you must do so manually. Refer to the following sections for more details.

To install the Asset Manager, follow these steps:

1. Log in to your instance of Deployment Manager, and then navigate to **Environments**.
2. Click **HP Asset Manager Installation Wizard**.
3. Specify the following values for the Asset Manager server:
  - AM version you want to install: **AM 9.50**
  - Select which server you want to install Asset Manager: **<any server>**
  - Select the database type: **MSSQL** or **Oracle**
  - Choose an existing database server. **<any server>**
  - Database User Name: **<any name>**
  - Database Password: **<any password>**
  - Choose a language: **Any language**
4. Click **Install Later**.

To execute this package immediately and install Asset Manager, follow these steps:

1. Navigate to the **Packages** tab, select your environment from the list, and then click on the Asset Manager package.
2. Review the individual tasks.
3. When you are ready to install Asset Manager, click **Execute Package**.

## Installing Operations Manager i

**Note:** In general, you should follow the product documentation for each product to install and configure the product, and then read and implement the associated integration guides.

To install Operations Manager i, follow the steps in the *HP Operations Manager i10.01 Installation and Upgrade Guide*. The *HP Operations Manager i10.01 Installation and Upgrade Guide* is an interactive installation document, which allows you to select various configuration items. For the HP ITSM Enterprise Suite example use case, which includes 250 to 900 nodes and is a smaller deployment, we use the following options for the installation:

- **Enterprise Deployment**
- **Install and configure OMi**
- **Single Server Environment**
- **PostgreSQL (embedded)**
- **Windows or Linux**

You may additionally choose to view instructions for additional options, such as Load balancing, hardening, and so on. When you click **View**, you will see a set of instructions for you to install Operations Manager i for your specific configuration.

**Note:** Verify the hardware and software requirements according to the

documentation prior to beginning the installation.

## Install OMi

### Step 1: Check the hardware requirements

**Processor:** Processor with 4 CPU cores minimum, 8 recommended. All CPU cores must be 2.4 GHz or higher.

In virtual environments, make sure the number of virtual CPUs is equivalent to 4 (or 8) physical CPU cores.

**Tip:** As OMi performance is dependent upon processor speed, it is recommended to get the fastest possible processor to ensure proper performance.

**Memory:** The following table lists the physical memory requirements (in GB). The total memory (physical memory plus swap/page file) should be at least 8 GB more than the minimum.

Deployment		Single Server	Data Processing Server	Gateway Server
Small (up to 2,000 nodes)	Minimum	10	8	4
	Recommended	12	10	6
Medium (up to 5,000 nodes)	Minimum	14	12	6
	Recommended	18	16	8
Large (more than 5,000 nodes)	Minimum	28	26	10
	Recommended	32	30	12

**Embedded PostgreSQL:** When using the embedded PostgreSQL database on a single or data processing server, additional 1 GB virtual memory is required.

**Disk space:** OMi requires the following disk space:

Default Folders	Minimum (GB)	Recommended (GB)
C:\HPBSM\	20	50
C:\Program Files\HP\HP BTO Software	1	2
C:\ProgramData\HP\BSM		
%TEMP%	2.5 (During installation only.)	

## Step 2: Check the software requirements

- **TCP.** It is highly recommended that you make the following change in the Windows registry:

For the registry key HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters, create a new key TcpTimedWaitDelay (DWORD) and set the (Decimal) value to 60.

If this is not done, there may be a problem with exhausting the available TCP resources because the time delay default value may be too long.

**Tip:** Back up the registry before making any changes to it.

- **User Account Control (UAC).** UAC must be disabled before installing . UAC is enabled by default in some version of Windows Server (for example, Windows Server 2008 SP2) and must be manually disabled. For information on disabling UAC, see the Microsoft documentation (for example, [Microsoft TechNet](#)).
- **Fully qualified domain name (FQDN).** Each server must have a resolvable FQDN. To verify, run the commands hostname and nslookup. If either command returns an FQDN, your domain name is supported.

The FQDNs of the server machines must consist only of the following characters: a-z, A-Z, 0-9, hyphen (-), period (.)

- **Name resolution.** The servers must be able to resolve the names of the machines with which they must communicate. These include all servers, database servers, and data collectors.
- **Java.** Oracle Java 7 is copied onto the machine during server installation as part of the installation.
- **Coexistence.** servers must be installed on dedicated computers and must not run other applications.

Installing servers together with most other HP products on the same physical machine may result in port conflicts, performance issues, or other unexpected behavior. The coexistence of servers with HP Operations Agent and the Data Flow Probe is supported. For details on coexistence support, see the Support Matrix at:

<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM323488>

- **Ports.** The installation checks that the following ports are available:

80, 1098, 1099, 2506, 2507, 8009, 8080, 29000

If the installation checks indicate that these ports are in use, the installation does not fail but it is recommended that you free the necessary ports.

For a complete list of ports used by , see "Port Usage" in the Administration Guide.

- **Time zone.** All servers and database servers must have the same settings for the following:
  - Time zone
  - Daylight Saving Time configuration

- Time
- **HP Software L-Core.** installs the HP Software L-Core packages. If a lower version of these packages is already installed, the packages are automatically upgraded. Otherwise, the currently installed version is not overwritten. This change cannot be reversed.

**Web server.**

- requires a web server in the deployment and therefore by default installs the Apache web server on all gateway servers. In Windows environments, you can alternatively install a Microsoft IIS web server.

**Note:** There must be only one running web server on a computer that uses the same port that uses. For example, if you select to use Apache HTTP Server during the installation, and you are installing on a computer on which IIS is already running, make sure to stop the IIS service and set its startup status to Manual before you begin the installation process.

**Apache HTTP Server.** uses a version of the Apache HTTP Server that has been adapted by HP for .

runs its Apache HTTP Server, by default, through port 80. The installation checks whether port 80 is available, and generates a warning if it is already in use. You can change the Apache port in the Connection Settings page of the configuration wizard.

By default, the Apache HTTP Server is not enabled for SSL use. For details on configuring the Web server to use SSL, see <http://httpd.apache.org/docs/2.2/ssl/>. SSL should be enabled for all the directories in use by , as configured in the Apache configuration files (`httpd.conf` and `httpd-ssl.conf`).

**Microsoft IIS.** If you want to use the IIS web server, install it on all gateway servers before installing . The IIS web server must be up and running prior to the installation. During configuration, the IIS settings are automatically configured to work with .

When using the IIS web Server, only supports the IIS default application pool.

The following IIS roles must be enabled:

- Application Development section: **ISAPI Extensions** role
- Application Development section: **ISAPI Filters** role
- Common HTTP Features section: **Static Content** role
- Common HTTP Features section: **HTTP Redirection** role (IIS 8 only)
- Management Tools section: **IIS Management Scripts and Tools** role

**Note:** Some command-line interfaces and UIs may not return detailed error information in the HTTP body. You can configure IIS to send detailed errors, as described below:

- a. Open IIS Manager and navigate to the web site.
- b. In **Feature View**, double-click **Error Pages**.
- c. Right-click on the **Error Pages** page and click **Edit Feature Settings**. In the **Error Responses** section, select **Detailed Errors**.

### Step 3: Check the client requirements

- **Resolution.** 1600x900 or higher (recommended); 1280x1024 (supported).
- **Browser requirements.**
  - The browser must be set to accept third-party cookies and allow session cookies.
  - The browser must be set to enable JavaScript execution.
  - The browser must allow popups from the application.
  - Internet Explorer users must set browser caching to automatically check for newer versions of stored pages (Internet options > General > Browsing history >

Settings > Temporary Internet Files > Check for newer versions of stored pages: automatically).

- **Fonts.** The following fonts must be installed on client systems:
  - Arial
  - Meiryō for Japanese locales
  - Malgun Gothic or Arial for Korean locales
  - SimHei or SimSun for Simplified Chinese locales

## Step 4: Check the network configuration requirements

- **Network segments.** It is recommended that all servers are installed on the same network segment.

If servers, including the database servers, are installed on multiple network segments, it is highly recommended that the number of hops and the latency between the servers be minimal. Network-induced latency may cause adverse affects to the application and can result in performance and stability issues. We recommend the network latency should be no more than 5 milliseconds, regardless of the number of hops.

- **IPv6 support.** All management information in that represents an IP address can be either an IPv4 or IPv6 address, and the data is processed, stored, and displayed correctly in the product. can be installed on dual-stack servers, but the network transport between components is limited to IPv4 routing and does not yet support IPv6 addresses.

For details on enabling IPv6, see [Enable IPv6 support \(optional\)](#).

## Step 5: Check the database requirements

If you use a local PostgreSQL database instance, OMi installs and configures the instance for you on the same computer that hosts the OMi data processing server.

## Step 6: Check the privileges of the installing user

You need administrative privileges for the computers on which you are installing and configuring OMi servers.

## Step 7: Start the OMi installation wizard

In a single-server deployment, you install all components and servers on one computer.

### **Start the installation wizard:**

1. Make sure that there are no other installations or processes that may be using the Windows Installer. If there are, the installation hangs and cannot continue running. You must stop the other installation, stop the installation by clicking the **Cancel** button in the installation wizard, and re-run the installation.
2. Download the installation .ZIP file to the system that you want to install:

```
HPOMi_Image-<version>-Win5.2_64-release.zip
```

Unzip the installation files, navigate to the `install.bat` file, and run it. Setup begins.

### **Note:**

- If you attempt to run the installation over the network onto a virtual machine, the installation fails. Copy the contents of the zip file locally.
- You may receive an anti-virus warning. You can proceed with the installation without taking any action and with the anti-virus software running on the

machine.

- Installing in console mode (`-console`) is not supported on Windows.
- The Modify and Repair options are not supported and therefore unavailable when rerunning the installation wizard.

### **Choose the language:**

Your installer may offer additional languages. The language that you choose in the language selection window becomes language of the installation wizard.

Select the language that you want to use in the installation wizard, then click **OK**.

**Note:** Your selection does not affect the language of the configuration wizard, which is determined by the operating system, or the language used in .

### **OMi initializes**

During the initialization phase, the installer checks the system for the following:

- Sufficient disk space in TEMP%
- Sufficient physical memory
- Supported operating system

### **Read the introduction**

The **Introduction** page describes the installation wizard. Familiarize yourself with the information provided and then click **Next**.

### **Review the license agreement**

In the License Agreement page, accept the license agreement and click Next to continue with the installation. If you decline, the installation cannot proceed.

### **Choose the setup type**

In the **Setup Type** page, select **Single Server**. This option installs the gateway and data processing servers on the same machine. Click **Next** to continue.

**Note:** If OMi detects a previous installation on the machine, a message warns you that any customized configuration data will be overwritten.

### Specify the installation folders

Select the following folders for installation:

- Installation folder for HP shared content.

The following components and servers are included in the HP shared content:

- HP Software Cross Platform Component
- HP Software Cross Platform Component Java
- HP Software Security Core
- HP Software HTTP Communication
- HP Software Certificate Management Client
- HP Software Security Core Java
- HP Software HTTP Communication Java
- HP Software Performance Access Java
- HP Software Graphing Component
- HP Software Process Control
- HP Software Certificate Management Server

**Note:** There is additional shared data in %ALLUSERSPROFILE%\HP\BSM\.

- Installation folder for product specific content. This path must meet the following

requirements:

- Must be 15 characters or less
- Must only contain the following characters: a-z, A-Z, 0-9, underscore (\_), hyphen (-), period (.), backslash (\), slash (/), or colon (:)
- Must end with HPBSM
- Must not already exist

If the requirements are not met, during the next step, the installation prompts you to give a different name.

**Note:** If you are installing onto a machine running Windows 2008 R2 Server, you may get the following message: The installation folder for shared content is not valid. The problem may in fact be that you do not have the necessary administrator permissions to install on the machine. Check with your system administrator.

Click **Next**.

### **Review the product requirements**

The installation wizard checks that the system meets the requirements for installing .

Click **Next** in the **Product Requirements** page.

**Note:** If a requirement check fails, review the warning message and make sure the system meets the product requirements listed in this document. After updating the system resources, click **Previous** and then **Next** to continue with the installation.

### **Install**

Review the information in the **Pre-Install Summary** page and then click **Install** to start the installation. This phase of the installation can take approximately 30-60 minutes in a virtual environment.

### **Choose the next steps**

When the post-installation wizard appears, the installation is almost finished. You can choose to continue with the configuration of OMi, to upgrade OMi from a previous version, or to quit the installation wizard and configure or upgrade OMi later.

To start the configuration wizard manually, run the `<OMi_HOME>\bin\config-server-wizard.bat` file.

Click **Configure OMi**, and then click **Next**.

The configuration wizard starts.

### **Complete the installation wizard**

The installation wizard displays a summary of the installation after OMi has been successfully installed. Click **Done** to conclude the installation.

## Step 8: Configure OMi

After the configuration wizard starts, the **Configuration Options** page displays.

In the **Configuration Options** page, click **Custom configuration**. This option displays all wizard pages, enabling you to specify custom values for all OMi configuration settings. Then click **Next**.

### **Configure Database settings**

In the **Database Settings** page you can select the relational database management system you want to use with OMi, create new database instances, or connect to existing ones.

To configure the embedded PostgreSQL database on your single-server installation, select **PostgresEmbedded** and specify the password of an OMi administrative user to access the PostgreSQL database. Then click **Next** to continue.

### **Configure the Connection Settings**

In the **Connection Settings** page you can choose the web server to be used with . Additionally, you can configure the URL that users use to access .

**Note:** The configuration wizard displays the **Connection Settings** page only when configuring a single-server or gateway server installation. The page is not shown when configuring a data processing server.

**Web server.** Choose the web server you want to use with your deployment:

- **Apache HTTP Server.** This is the default web server. installs the Apache web server on all gateway servers during the installation. This is the web server that must be used in Linux environments.

runs the Apache HTTP server by default through port 80. Click **Check Port** to test the connection to the web server. If port 80 is already in use, specify a different port.

- **Microsoft IIS.** If you want to use a Microsoft IIS web server in a Windows environment, you must first install the web server on all gateway servers. The configuration wizard only lists web servers that are already installed on the computer you are configuring. During configuration, the IIS settings are automatically configured to work with .

**URL.** By default, users access through the fully qualified domain name and web server port of the single or gateway server. If the default port is changed, update the port in the URL, for example: `http://myserver.example.com:8000`.

If you have a load balancer, enter the fully qualified domain name and port of the load balancer. This is the load balancer used to access the site.

Then click **Next**.

### **Configure the license**

In the **License** page you can configure the license that uses.

If you are running the wizard for the first time, you can select to use the evaluation license or upload your new license to the server.

If this is not the first time you are running this wizard, you can select to skip this step or upload additional licenses.

**Note:** You can also update your licenses after is installed in the License Management page in .

The license file has a .DAT suffix and must be in a local or network location accessible to the server running the wizard.

Click **Next**.

### **Configure the login settings**

In the **Login Settings** page you can set the passwords of the users.

**Administrator password.** Type and confirm the password of the administrator (admin) for the UI. The password is required when the admin user logs into . You can later change the password in the UI.

**JMX password.** Type and confirm the password of the administrator (admin) for the JMX console of the application server. This password is only valid on the server that you are currently configuring.

Click **Next**.

### **Configure the server deployment**

In the **Server Deployment** page you can enable User Engagement and define the size of your deployment.

#### 1. *Optional.* Enable **User Engagement**.

The innovative User Engagement feature applies game dynamics to add extra stimulation to users by providing business-enhancing challenges, accelerating operations bridge efficiency and user know-how. Successful progress through the various activities is rewarded with achievements and real-time notifications of great performance, helping to provide extra motivation to better engage with which improves users' performance in their daily work. Timelines are available to record each user's progress and collection of achievements.

**Tip:** If you do not want to enable User Engagement now, you can enable it later in the infrastructure settings (**Administration > Setup and Maintenance > Infrastructure Settings > Applications > Operations Management - User Engagement > Enable User Engagement**).

2. Select the **Number of monitored nodes** that send events to . This includes any nodes that are present as CIs in and that send events to (for example, nodes connected to HP Operations Manager (HPOM), nodes directly connected to , and target connectors).
3. *Optional.* Click **Advanced** to adjust the maximum memory that the Java Virtual Machine (JVM) allocates to the processes. To change the allocated memory, click **Manual override** and type the new numbers in the fields.
4. Click **Next**.

### Deploy management packs

In the **Management Packs** page you can select the management packs to install in your deployment. Dependencies between management packs are resolved automatically. You can choose to not install dependent management packs. However, some functionality will then not be available in the installed packs.

Management packs provide add-on content on top of . They deliver automatic and end-to-end monitoring solutions of infrastructure and applications. Management packs enable users to monitor, detect, troubleshoot, and remediate issues in the IT domain. They increase the productivity of the user by optimizing and automating various tasks, and reduce the mean time to resolve (MTTR) incidents.

Management packs discover application domains and proactively monitor the domains for availability and performance issues. They include, for example, management templates, aspects, policy templates, performances graphs, troubleshooting tools, auto remediation flows, and topology-based event correlation (TBEC) rules.

To install management packs after the first configuration, run the configuration wizard again and select the management packs you want to install.

**Tip:** It is recommended to disable before running the configuration wizard, and to enable it after the configuration:

- Windows 2008: Select **Start > Programs > HP Operations Manager i > Administration > Disable HP Operations Manager i**.
- Windows 2012: Press **Ctrl + Esc** and start typing **Disable HP Operations Manager i**. Then click **Disable HP Operations Manager i** in the search results.

Alternatively, use the `opr-mp-installer` command-line interface to install management packs without having to disable . For more information about `opr-mp-installer`, see the Administration Guide.

Once installed, management packs cannot be removed. They appear in the **Management Packs** page but are not available for clearing.

See the Release Notes for more details on the management packs that come out of the box with . To update a management pack to a later version than the one included with , download the management pack from [HP Live Network](#) and install the pack manually. You can also download and install additional management packs not included with . However, your updates are not reflected in the configuration wizard.

For more information about the management packs, see the management pack documentation.

Select the management packs that you want to install in your environment, then click **Next**.

### **Apply the configuration**

The **Configuration** page displays the current settings.

1. Check that your selections are correct. To change a setting, click **Edit**.
2. When you are ready, click **Next** to start the configuration.
3. Review the progress of the configuration.

### **Complete the configuration wizard**

After the configuration has been successfully applied, the configuration wizard displays a summary of the configuration changes. Click **Finish** to conclude the configuration.

## Start OMi processes

### To start :

- Windows 2008: Select **Start > Programs > HP Operations Manager i > Administration > Enable HP Operations Manager i**.
- Windows 2012: Press **Ctrl + Esc** and start typing **Enable HP Operations Manager i**. Then click **Enable HP Operations Manager i** in the search results.

### To stop :

- Windows 2008: Select **Start > Programs > HP Operations Manager i > Administration > Disable HP Operations Manager i**.
- Windows 2012: Press **Ctrl + Esc** and start typing **Disable HP Operations Manager i**. Then click **Disable HP Operations Manager i** in the search results.

### Note:

- If you used the configuration wizard to add a new gateway server or modify the previously defined database types or connection parameters, restart all servers and data collectors after successfully completing the configuration wizard.
- If you used the configuration wizard to modify any databases on a running deployment, My Workspace and Service Health will no longer contain any pages and components, and perspectives are removed. To restore My Workspace and Service Health pages and components and perspectives:
  - a. Open the following directory:

*<gateway server root directory>/conf/uimashup/import.*

This contains two directories: `/loaded`, and `/toload`.

- b. Copy the contents of the `/loaded` directory into the `/toload` directory.
- c. Restart .

## Launch OMi

You log in to from a client machine's browser using the Login page. To access the login page and log in for the first time:

1. In the web browser, enter the following URL:

```
http://<fully_qualified_domain_name>/omi
```

*<fully\_qualified\_domain\_name>* is the FQDN of the server. If there are multiple servers, or if is deployed in a distributed architecture, specify the load balancer or gateway server URL.

2. Enter the default administrator user (`admin`), and the password specified in the configuration wizard, and click **Log In**. After logging in, the user name appears at the top right.
3. *Recommended:* Create additional administrative users to enable administrators to access the system. For details on creating users in the system, see "Users, Groups, and Roles" in the Administration Guide..

### Note:

- For login troubleshooting information, see "Troubleshooting and Limitations" in the Administration Guide.
- For details on login authentication strategies that can be used in , see

"Authentication Management" in the Administration Guide.

- For details on accessing securely, see the Administration Guide.

When you have completed your session, it is recommended that you log out of the web site to prevent unauthorized entry.

To log out:

Click **Logout** in the user menu.

## Installing Service Health Reporter

**Note:** In general, you should follow the product documentation for each product to install and configure the product, and then read and implement the associated integration guides.

To install Service Health Reporter, follow the steps in the *HP Service Health Reporter 9.24 Installation and Upgrade Guide*. The *HP Service Health Reporter 9.24 Installation and Upgrade Guide* is an interactive installation document, which allows you to select various configuration items. For the HP ITSM Enterprise Suite example use case, we use the following options for the installation:

- **Install**
- **Linux**
- **Typical**
- **Select to install remote collectors**

**Note:** We use Linux for this installation for simplicity; It allows us to install all components of Service Health Reporter on a single server.

You may additionally choose to view instructions for additional options, such as Load balancing, hardening, and so on. When you click **View**, you will see a set of instructions for you to install Service Health Reporter for your specific configuration.

**Note:** Verify the hardware and software requirements according to the documentation prior to beginning the installation.

## Install Service Health Reporter

### Installation Prerequisites

These prerequisites apply to the system where you want to install HP Service Health Reporter and also the remote systems where you want to install the SHR data collector.

#### Hardware Requirements

For a list of hardware requirements, see the *HP Service Health Reporter Support Matrix*.

#### Disk Space Requirements

Ensure that you have required space as follows in `/opt` and `/tmp` directories:

- To download and merge the SHR media files, allocate at least 30 GB in the `/tmp` directory on each system.
- To install SHR components, allocate at least 20 GB in the `/opt` directory on each system.
- To download and merge the SHR remote collector media files, allocate at least 15 GB in the `/tmp` directory on each system.
- To install SHR remote collector, allocate at least 10 GB in the `/opt` directory on each system.

- Do not start the installation directly from the mount point location.
- Do not download and merge the TAR files directly from the mount point location.

- If additional external storage space is required to be added, ensure that no other applications are installed in the /opt directory.

### Software Requirements

For the complete list of software requirements, see the *Requirements* section in the *HP Service Health Reporter Support Matrix*.

### Operating System Requirements

For the complete list of operating system requirements, see the *Requirements* section in the *HP Service Health Reporter Support Matrix*.

Before you install SHR, you must update your operating system, apply all patches, establish network connectivity, and disable the anti-virus software.

Ensure that the following libraries are available on each system where you plan to install SHR components.

Red Hat Enterprise Linux 6.x	Red Hat Enterprise Linux 5.5
The list indicates the minimum required versions of required libraries. You can install a higher version of each library, if available.	

<ul style="list-style-type: none"> <li>• compat-libstdc++-33-3.2.3-69.i686</li> <li>• compat-libstdc++-33-3.2.3-69.x86_64</li> <li>• libXext-1.1-3.i686</li> <li>• libXext-1.1-3.x86_64</li> <li>• libXext-devel-1.1-3.i686</li> <li>• libXext-devel-1.1-3.x86_64</li> <li>• libstdc++-4.4.4-13.x86_64</li> <li>• libstdc++-4.4.4-13.i686</li> <li>• libXtst-1.0.99.2-3.i686</li> <li>• libXtst-1.0.99.2-3.x86_64</li> <li>• libXau-1.0.5-1.i686</li> <li>• libXau-1.0.5-1.x86_64</li> <li>• libXdmcp-1.0.3-1.i686</li> <li>• libxcb-1.5-1.x86_64</li> <li>• libxcb-1.5-1.i686</li> <li>• libXrender-0.9.5-1.i686</li> <li>• libXrender-0.9.5-1.x86_64</li> <li>• glibc-2.12-1.7.x86_64</li> <li>• glibc-2.12-1.7.i686</li> <li>• libgcc-4.4.1-13.i686</li> <li>• libgcc-4.4.4-13.x86_64</li> </ul>	<ul style="list-style-type: none"> <li>• compat-libstdc++-33-3.2.3-61.x86_64</li> <li>• compat-libstdc++-33-3.2.3-61.i386</li> <li>• libXext-1.0.1-2.1.x86_64</li> <li>• libXext-1.0.1-2.1.i386</li> <li>• libXext-devel-1.0.1-2.1.x86_64</li> <li>• libXext-devel-1.0.1-2.1.i386</li> <li>• libstdc++-4.1.2-48.x86_64</li> <li>• libstdc++-4.1.2-48.i386</li> <li>• libXtst-1.0.1-3.1.x86_64</li> <li>• libXtst-1.0.1-3.1.i386</li> <li>• libXau-1.0.1-3.1.x86_64</li> <li>• libXau-1.0.1-3.1.i386</li> <li>• libXdmcp-1.0.1-2.1.i386</li> <li>• libXrender-0.9.1-3.1.x86_64</li> <li>• libXrender-0.9.1-3.1.i386</li> <li>• glibc-2.5-47.i686</li> <li>• glibc-2.5-47.x86_64</li> <li>• libgcc-4.1.2-48.i386</li> <li>• libgcc-4.1.2-48.x86_64</li> <li>• libX11-1.0.3-11.x86_64</li> <li>• libX11-1.0.3-11.i386</li> </ul>
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<ul style="list-style-type: none"> <li>• libX11-1.3-2.i686</li> <li>• libX11-1.3-2.x86_64</li> <li>• libXi-1.3-3.x86_64</li> <li>• libXi-1.3-3.i686</li> <li>• alsa-lib-1.0.22-3.i686</li> <li>• alsa-lib-1.0.22-3.x86_64</li> <li>• nss-softokn-freebl-3.12.7-1.1.i686</li> <li>• ncurses-libs-5.7-3.20090208.i686</li> <li>• ncurses-libs-5.7-3.20090208.x86_64</li> <li>• redhat-lsb.i686</li> <li>• redhat-lsb.x86_64</li> </ul>	<ul style="list-style-type: none"> <li>• libXi-1.0.1-3.1.x86_64</li> <li>• libXi-1.0.1-3.1.i386</li> <li>• alsa-lib-1.0.17-1.x86_64</li> <li>• alsa-lib-1.0.17-1.i386</li> <li>• glibc-2.5-47.i686</li> <li>• glibc-2.5-47.x86_64</li> <li>• redhat-lsb.i686</li> <li>• redhat-lsb.x86_64</li> </ul>
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Ensure that the swap space is twice the size of the RAM. To allocate sufficient swap space, perform the following steps:

1. Log on to the system as root.

The root user must be the owner of the `/opt` and `/var` directories.

2. To set up the swap space by creating a new swap file, run the following commands :

- `dd if=/dev/zero of=<swapfile_full_path> bs=1M count=<swap_size_in_MB>`
- `mkswap <swapfile_full_path>`
- `swapon <swapfile_full_path>`

In this instance, `<swapfile_full_path>` is the name of the new swap file (including full path to the file) and `<swap_size_in_MB>` is the space (in MB) that you want to allocate.

For example, to allocate swap space by creating a new `/extraswap` file:

```
dd if=/dev/zero of=/extraswap bs=1M count=16384
```

```
mkswap /extraswap
```

```
swapon /extraswap
```

3. For the change to remain in effect even after a system restart, add the following line in the `/etc/fstab` file:

```
<swapfile_full_path>swap swap defaults 0 0
```

In this instance, `<swapfile_full_path>` is the name of the newly created swap file in the previous step.

For example:

```
/extraswap swap swap defaults 0 0
```

4. Restart the system.

### **Port Availability**

SHR uses a number of default ports for different services. Ensure that the following ports are free before installing SHR components.

Service	Port Number	Protocol	Inbound	Outbound	Description
HP PMDB Platform DB Logger	21408	TCP	Yes	Yes	The HP PMDB Platform DB Logger service persists logs in the database through this port.
HP PMDB Platform Collection	21409	TCP	Yes	Yes	The JMX management port for the Collection service. The IM service monitors collection using this interface.
HP PMDB Platform IM	21410	TCP	Yes	No	The JMX management port for the IM service.
HP PMDB Platform Timer	No port	NA	NA	NA	The Timer service for SHR.
HP PMDB Platform Administrator	21411	TCP	Yes	No	The SHR web application server port, which hosts the Administration web application. The Report cross-launch functionality depends on this service.

<b>Service</b>	<b>Port Number</b>	<b>Protocol</b>	<b>Inbound</b>	<b>Outbound</b>	<b>Description</b>
HP Software Communication Broker	383	TCP	Yes	Yes	SHR uses this port to communicate with collectors installed on remote servers.
Administration Console web server	21416	TCP	Yes	Yes	The JMX management port for the SHR administration web server.
HP PMDB Platform Collection	21418	HTTP	Yes	No	The connection port to the HTTP server for the SiteScope generic data integration.
HP PMDB Platform Collection	21419	HTTPS	Yes	No	The connection port to the HTTP server for the SiteScope generic data integration.
HP PMDB Platform Collection	8080	HTTP	No	Yes	The connection port to collect data from the SiteScope Data Acquisition API.
HP PMDB Platform Sybase Service	21424	TCP	Yes	Yes	Port for the Sybase IQ server.

Service	Port Number	Protocol	Inbound	Outbound	Description
Sybase IQ Agent 15.4	21423	TCP	Yes	No	Port for the Sybase IQ Agent.
HP-SHR-Postgre - PostgreSQL Server 9.0	21425	TCP	Yes	Yes	Port for the PostgreSQL service.
Apache Tomcat	8080	TCP	Yes	No	This is the SAP BusinessObjects Application Service port. The SAP BusinessObjects Central Management Console and the SAP BusinessObjects InfoView web applications are hosted on this port.
SAP BOBJ Central Management Server	6400	TCP	Yes	Yes	This is the port for the SAP BusinessObjects Central Management Server, which is mainly used for SAP BusinessObjects authentication purposes.

Service	Port Number	Protocol	Inbound	Outbound	Description
Server Intelligence Agent (HOML01GEATON)	6410	TCP	Yes	Yes	Port for the SAP BusinessObjects Server Intelligence Agent, which manages all SAP BusinessObjects-related tasks.
BOE120SQLAW	2638	TCP	Yes	Yes	Port for the SAP BusinessObjects repository database.
RTSM	21212	TCP	No	Yes	This is the port that is configured in the Administration Console for the RTSM data source. Using this port, SHR connects to RTSM.
HPOM	Any	TCP	No	Yes	This is the port that is configured in the Administration Console for the HPOM database. SHR uses this port to connect to the HPOM database.

Service	Port Number	Protocol	Inbound	Outbound	Description
HP Operations Agent	383	TCP	No	Yes	SHR uses this port to connect to the HP Operations agent.
HP BSM Profile database	Any	TCP	No	Yes	This is the port that is configured in the Administration Console for the Profile database.  SHR uses this port to connect to the Profile database and the OMi database.

**Web Browser Requirements**

To view the SHR Administration Console in Internet Explorer or Mozilla Firefox, you must enable the ActiveX and the JavaScript controls. Follow the Help menu of the web browser for assistance with enabling them.

For a list of supported Web Browsers, see *"Web Browsers and Plug-ins"* in the *HP Service Health Reporter Support Matrix*.

**Preinstallation Tasks and Checklist**

After ensuring that the installation prerequisites are fulfilled, you must perform a series of tasks to prepare the server for the SHR installation.

**Task 1: Disable Anti-Virus**

Anti-virus applications can hinder the installation of SHR. Temporarily disable any anti-virus software that might be running.

Re-enable the anti-virus software after the installation is complete.

## **Task 2: Configure Firewall**

If you use firewall software, ensure that the firewall allows traffic through the required ports (see *Installation Prerequisites > Port Availability*) on the SHR system.

To disable the firewall, perform the following steps:

1. Log on as root and run the following commands:

**Note:** The root user must be the owner of the /opt and /var directories.

```
chkconfig iptables off  
  
chkconfig ip6tables off  
  
/etc/init.d/iptables stop  
  
/etc/init.d/ip6tables stop
```

## **Task 3: Prepare the Linux System**

On the Linux system, you must perform a set of additional steps.

### *Task 3.1: Disable SELinux*

To disable SELinux, in the /etc/sysconfig/selinux file, set the parameter SELINUX = disabled.

### *Task 3.2: Configure the Kernel Parameters (only if you use Red Hat Enterprise Linux 6.x)*

To configure the Kernel parameters, follow these steps:

1. Open the file /etc/sysctl.conf file.
2. Set the values of the parameters as given below:

**Note:** If higher values are specified for these parameters already, do not make any modifications.

- kernel.msgmnb = 65536
- kernel.msgmax = 65536
- kernel.shmmax = 68719476736
- kernel.shmall = 4294967296
- kernel.sem = 250 1024000 250 4096
- vm.max\_map\_count = 1000000

### *Task 3.3: Configure the Hostname*

Log on to the SHR system, and configure the hostname in the `/etc/hosts` file.

If you configure a hostname, it should be added after these two lines as they appear by default.

```
127.0.0.1 localhost.localdomain localhost
```

```
192.168.0.1 server1.example.com server1
```

The naming convention for the hostname is: <IP address> <FQDN of SHR host system>  
<Short name of SHR host system>

### *Task 3.4: Configure the limits.conf File*

Open the `/etc/security/limits.conf` file and increase the number of open files by setting the following values:

```
* soft nofile 65535
```

```
* hard nofile 65535
```

### *Task 3.5: Configure the 90-nproc.conf File (only if you use Red Hat Enterprise Linux 6.x)*

Open the `/etc/security/limits.d/90-nproc.conf` file and comment out the following line (by adding a `#` character in the beginning):

```
#*soft nproc 1024
```

Restart the Linux system for all the changes to take effect.

#### **Task 4: Verify the Fully Qualified Domain Name (FQDN) of the System**

Before performing the SHR installation, you must verify that DNS lookup returns the accurate FQDN of the system. If the entry for the DNS lookup is different from the host name of the system, you may experience difficulties in logging on to the SHR Administration Console. This can occur because during the SAP BusinessObjects installation, the host name of the system is used for creating the servers/services and registering them.

To verify the FQDN of the host system, follow these steps:

1. Open the command line interface and type the following command to check the hostname of the system:

```
hostname -f
```

Note down the hostname of the system.

2. Type the following command to view the IP address of the system:

```
ifconfig
```

3. Type the following command to verify the FQDN of the displayed IP address:

```
nslookup<IP_address>
```

where, `<IP address>` is the IP address of the system.

Ensure that the name displayed after running the `nslookup` command matches the name displayed after running the `HOSTNAME` command. If the names do not match, you must change the hostname of the system.

#### **Task 5: Assemble the media**

On the HP software download web site, the SHR installation media for Linux is distributed as a collection of the following three files:

HPSHR\_940\_Lin64.part1

HPSHR\_940\_Lin64.part2

HPSHR\_940\_Lin64.part3

Before you start installing SHR, you must download all three files, and then combine them into a single `.tar` file.

**To create the SHR installation media, follow these steps:**

Download the SHR media files into a temporary directory on the system where you want to install SHR components.

1. To create a new directory for installing SHR, run the following command:

```
mkdir <directory name>
```

For example: `mkdir /tmp/HPSHR_9.4-parts`

2. To go to the directory that you created in the previous step, run the following command:

```
cd <temp location>
```

For example: `cd /tmp/HPSHR_9.4-parts`

3. Download the `.tar` file parts into the newly created temporary directory.

4. To merge the contents into a single `.tar` file, run the following command:

```
cat HPSHR_940_Lin64.part? > /tmp/HPSHR_9.4-parts/HPSHR940.tar
```

The SHR 9.40 media is now available as a single `.tar` file in the following location:

`/tmp/HPSHR_9.4-parts/HPSHR940.tar`

**Additional Considerations**

- Always install SHR as root.

The root user must be the owner of the `/opt` and `/var` directories.

- Ensure that system time does not change during the course of the installation. Make sure the system does not automatically transition to the daylight saving time during installation.
- Do not install SHR from a network share. Installation of SHR over the network is not supported.

**Note:** The SHR installer does not support forced reinstallation. In the event of a unsuccessful installation, you must manually remove all the files that were placed by the installer and start the installation process again.

## Typical Installation: Install on a Single System

Install HP Service Health Reporter Server, Sybase IQ Server, and SAP BusinessObjects Server on a single system.

### Installing from the Command Line Console

1. Go to the media root.

Media root is the directory where the contents of the SHR media (the `.tar` file) are extracted.

2. At the command prompt, type the following command:

```
./HP-SHR_9.40_setup.bin -i console
```

3. Press **Enter** to start the installation. The Choose Locale section appears.

**Note:** At any point in time during installation, you can type `back` to go to the previous page and type `quit` to cancel the installation.

4. Choose the locale in which you want to install SHR, and press **Enter**. The installer shows the introductory information in the console.
5. Press **Enter**.
6. The installer shows the license agreement details. Type **Y** to accept the agreement, and then press **Enter**. The installer shows different installation options.

**Note:** Review the screen prompts carefully before pressing **Enter** each time. Pressing the Enter button continuously might take you through the next steps with the default selections.

7. Type **1** for **Typical HP Service Health Reporter Installation** to install SHR, Sybase IQ, and SAP BusinessObjects. Press **Enter**.

The installer performs necessary prerequisite checks and shows the result of the check in the console.

8. If the prerequisite check fails or shows warning messages, ensure that all the prerequisites are met and start the installation again.

If the prerequisite check displays any missing libraries, check the list of missing libraries from the location `/tmp/SHR-Missing-Patches.txt` and install them. Start the SHR installation again.

9. If the prerequisite check is successful, press **Enter**. The installer shows preinstallation summary in the console.
10. Press **Enter** to start the installation.
11. After successful installation, run the following command:

```
hostname -f
```

Check if the hostname is displayed.

If the installation fails, click **Rollback** and wait till the product gets rolled back. Run the rollback utility as follows:

1. In the command line console, go to the rollback utility path.

You will find the Rollback utility file in the location from where the installation setup files were extracted for installation.

2. Run the following command:

```
sh rollback-utility.sh
```

**Note:** During SHR installation in Linux, SAP BusinessObjects client tools are also installed but not supported on Linux. If SHR is installed on a Linux server, you must install the SAP BusinessObjects client tools on a Windows operating system for developing or customizing application content. For more information, see *Developing Content in Linux using CDE* section of *HP Service Health Reporter Content Development Guide*.

To perform the post-installation configuration tasks, see the *HP Service Health Reporter Configuration Guide*.

## Post-Installation Task for Sybase IQ

On a system with the Simplified Chinese or Japanese locale, manually delete the following files after installation:

- \$PMDB\_HOME/Sybase/IQ-15\_4/res/dblgzh\_iq12\_eucgb.res
- \$PMDB\_HOME/Sybase/IQ-15\_4/res/dblgzh\_iq12\_cp936.res

- `$PMDB_HOME/Sybase/IQ-15_4/res/dblgja_iq12_eucjis.res`
- `$PMDB_HOME/Sybase/IQ-15_4/res/dblgja_iq12_sjis.res`

## Validating SHR Installation

Perform the following to verify the success of installation on Linux operating system:

1. Log on as root.
2. Run the following command:

```
chkconfig --list
```

The command output lists the SHR services. Run the following commands for each of the services to ensure that they are running satisfactorily :

- `service HP_PMDB_Platform_Administrator status`
- `service HP_PMDB_Platform_Collection status`
- `service HP_PMDB_Platform_DB_Logger status`
- `service HP_PMDB_Platform_IM status`
- `service HP_PMDB_Platform_PostgreSQL status`
- `service HP_PMDB_Platform_Sybase status`
- `service HP_PMDB_Platform_IA status`
- `service TrendTimer status`

To check the status of the SAP BusinessObjects services, run the following commands at the command line console:

- a. `su - SHRBOADMIN`
- b. `cd /opt/HP/BSM/BO/bobje`
- c. `sh ccm.sh -display`

The command output shows the status of SAP BusinessObjects services. All services must be enabled and running.

**Note:** If you have installed SHR on RHEL 6.6, after configuring SHR, ensure that you perform *Manual Restart of Tomcat Services* steps in *HP Service Health Reporter Configuration Guide*.

## Installing the SHR Data Collector on a Remote System (Optional)

In the typical installation mode of SHR, the data collector is installed on the same system where SHR is installed. But, you can also install the data collector on a separate server. Also, you can install collectors on multiple systems as necessary.

**To install a collector on a remote system running on Windows, perform the following steps:**

1. All software requirements mentioned in the Prerequisites section must be met on the system where you want to install the data collector.
2. In the system where you have installed SHR, browse to the SHR install directory `%PMDB_HOME%`, and locate the following file:

`HP-SHR-09.40-RemotePoller_9.40_setup.exe`

You can also find this EXE file in the `packages\HP-SHR-09.40-RemoteCollector` folder on the SHR media.

3. Copy the file to the system where you want to install the collector.
4. Log on to the system where you want to install the collector as administrator.

5. Ensure that the remote system and the SHR system are in the same time zone.
6. Ensure that the system is registered in the Domain Name System (DNS).

Alternatively, ensure that:

- The `hosts` file on the SHR system includes a entry of the collector system.
- The `hosts` file on the collector system includes a entry of the SHR system.

The `hosts` file is located at `C:\Windows\System32\drivers\etc`

7. Browse to the folder where you copied the `HP-SHR-09.40-RemotePoller_9.40_setup.exe` file and run it.
8. The License Agreement page appears. Review the license agreement, select **I accept...**, and then click **Next**.
9. Review the folders in which the data collector would install. To change the installation folders, use the adjoining Browse buttons. Click **Next**.

**Note:** Do not enter spaces or special characters other than the - (hyphen) in the non-default folder name. The installation path must be less than 20 characters.

The installer performs checks for installation prerequisites and shows the result of the check on the Install Check page.

10. On the Product Requirements page, if the checks are successful, click **Next**.
11. The Pre-Installation Summary page appears. Review the summary, and click **Install**.
12. After the installation is complete, click **Done**.

**To install a collector on a remote system running on Linux, perform the following steps:**

1. All software requirements mentioned in Prerequisites must be met on the system

where you want to install the data collector.

2. In the system where you have installed SHR, browse to the SHR install directory `$PMDB_HOME` and locate the following file:

```
HP-SHR-09.40-RemoteCollector.tar.gz
```

3. Transfer the file to the system where you want to install the collector.
4. Log on to the system where you want to install the collector as root. The root user must be the owner of the `/opt` and `/var` directories.
5. Ensure that the remote system and the SHR system are in the same time zone.
6. Ensure that the system is registered in the Domain Name System (DNS).

Alternatively, ensure that:

- The `hosts` file on the SHR system includes a entry of the collector system.
- The `hosts` file on the collector system includes a entry of the SHR system.

The `hosts` file is located at `/etc/hosts`

7. Extract the contents of the `HP-SHR-09.40-RemoteCollector.tar.gz` file into a local directory by running the following command:

```
tar -xvf HP-SHR-09.40-RemoteCollector.tar.gz
```

The contents of the `HP-SHR-09.40-RemoteCollector.tar` file are extracted from the archive.

### Installing from the Command Line Console

1. Run the following command in the command line console.

```
./HP-SHR-RemotePoller_9.40_setup.bin -i console
```

2. Press **Enter** to start the installation.

**Tip:** At any point in time during installation, you can type back to go to the previous page and type quit to cancel the installation.

3. Choose the locale in which you want to install SHR, and press **Enter**.
4. The installer shows the introductory information in the console. Press **Enter**.
5. Review the license agreement details. Type **Y** to accept the agreement and press **Enter**.

The installer performs checks for installation prerequisites and shows the result of the check on the Install Check page.

6. The installer shows preinstallation summary in the console. Press **Enter** to start the installation.

**Note:** The collector is enabled to collect data from data sources only after you configure the collectors through SHR Administration Console.

## Next Steps

### **have Task: Start the Sybase IQ Database**

On the Linux system, run the following commands:

1. `cd /etc/init.d`
2. `service HP_PMDB_Platform_Sybase status`

If the command output shows that the HP\_PMDB\_Platform\_Administrator service is stopped, run the following command:

```
service HP_PMDB_Platform_Sybase start
```

### **Task: Configure SHR for Multiple Profile Database Support**

**Caution:** Perform this task only if you want to configure RTSM as the topology source for SHR.

You can skip this task and proceed to *Task 1: Launching the Administration Console* section in the *HP Service Health Reporter Configuration Guide* if you want to configure HPOM or VMware vCenter as the topology source.

SHR supports the configuration of and data collection from multiple Profile databases that are deployed in your HP BSM/OMi environment.

However, to ensure that SHR identifies and displays all the existing Profile databases in the Administration Console, follow these steps:

1. Log on to the HP BSM/OMi host system through remote access.

**Note:** If your HP BSM/OMi setup is distributed, you can access through the gateway server as well as the data processing server. HP recommends that you use the gateway server.

2. Browse to the %topaz\_home%\Conf folder.
3. Copy the following files from the %topaz\_home%\Conf folder of the HP BSM/OMi host system to the %PMDB\_HOME%\config folder on the SHR system:
  - encryption.properties
  - seed.properties

**Note:** If you are configuring the Management/Profile database under Oracle RAC, you also need to copy the file `bsm-tnsnames.ora` to the %PMDB\_HOME%\config folder on the SHR system.

After copying the files, you need to start the HP PMDB Platform Administrator service. Perform the following steps:

1. On the SHR system, click **Start > Run**. The Run dialog box appears.
2. In the Open field, type `services.msc`. The Services window appears.
3. On the right pane, right-click **HP\_PMDB\_Platform\_Administrator**, and then click **Restart**.
4. Close the Services window.

Type the following command at the command prompt:

```
service HP_PMDB_Platform_Administrator restart
```

After installing SHR, you must perform configuration steps to configure SHR to use data sources. For more information, see *HP Service Health Reporter Configuration Guide*.

**Caution:** Take a backup of the SHR database so that you can restore it later. If you fail to take a data back up, you risk losing it permanently. For more information, see the "*Database Backup and Recovery*" section in the *HP Service Health Reporter Configuration Guide*.

## Change the Default SAP BusinessObjects Database Password

SHR is installed with a default SAP BusinessObjects database password. Perform this task to change the default SAP BusinessObjects database password.

After installing SHR, follow these steps to modify the default password of the database embedded with SAP BusinessObjects:

1. Go to `<BusinessObejcts installed drive>:\Program Files (x86)\Business Objects\SQLAnywhere12\bin`
2. Open the `dbisqlc` application.
3. Type the credentials as follows:

User name = DBA.

Password = pmdb\_admin.

Server name = BOE120SQLAW\_<shrshorthostname>.

Database name = BOE120.

4. Run the following command in the sql window:

```
ALTER USER <shrshorthostname> IDENTIFIED BY <new password>;
```

```
ALTER USER DBA IDENTIFIED BY <new password>;
```

5. Repeat the same steps for database BOE120\_AUDIT.

After updating the password, follow these steps:

1. Go to CCM from **Start > All Programs > BusinessObjects XI 3.1 > BusinessObjects Enterprise > Central Configuration Manager**
2. Stop the Server Intelligence Agent (SIA); right-click and select **Properties**.
3. Go to the **Configuration** tab, you may see a error pop up click **OK** to proceed, and then click **Specify** of BOE120.
4. Click on the **Update Data Source Settings** .
5. Click **OK**.
6. Select **SQL Anywhere (ODBC)** and click **OK**.
7. The Select Datasource window appears. Select **Machine Data Source** tab.
8. Double-click DSN **BOE120** and provide the password that was changed and click **OK**.
9. Repeat from step 3 for BOE120\_AUDIT database by selecting the **BOE120\_AUDIT**.
10. Start the SIA.

To check if the password is modified, log in to the database using the new password.

SHR is installed with a default SAP BusinessObjects database password. Perform this task to change the default SAP BusinessObjects database password.

After installing SHR, follow these steps to modify the default password of the database embedded with SAP BusinessObjects:

1. Log in to the system as root.
2. Run the following command to switch to SHRBOADMIN user:

```
su -SHRBOADMIN
```

3. Go to `/opt/HP/BSM/BO/bobje/SQLAW/Bin/`.

4. Run the following command:

```
source /opt/HP/BSM/BO/bobje/setup/env.sh
```

5. Run the following command:

```
./dbisqlc
```

The credentials window appears. Click **Cancel**.

6. Select **Command**, and then click **Connect....** The Connect credentials window appears.

7. Type the following details:

- a. USER ID = DBA.

- b. Password = pmdb\_admin.

- c. Database Name = `<shrshorthostname>BOE120`.

- d. Server = `<shrshorthostname>BOE120_SHR`.

8. Run the following command in the sql window:

```
ALTER USER <shrshorthostname> IDENTIFIED BY <new password>;
```

**ALTER USER DBA IDENTIFIED BY <new password>;**

9. To modify the default password for BOE120\_AUDIT, click **Command**, and then click **Connect....**
10. Type the following details:
  - a. USER ID = DBA.
  - b. Password = pmdb\_admin.
  - c. Database Name = <shrshorthostname>BOE120\_AUDIT.
  - d. Server = <shrshorthostname>BOE120\_AUDIT\_SHR.

11. Run the following command in the sql window:

**ALTER USER <shrshorthostname> IDENTIFIED BY <new password>;**

**ALTER USER DBA IDENTIFIED BY <new password>;**

After updating the password, follow these steps:

1. Go to /opt/HP/BSM/BO/bobje.
2. Run the following command:

```
./cmsdbsetup.sh
```
3. Provide the SIA name as *PRD\_SHR* and click on Enter.
4. The prompt shows stop SIA. Type *yes*, and then click on Enter.
5. The prompt asks you to update. Type *update*, and then click on Enter.
6. Type *yes* and click Enter.
7. Type *SQL Anywhere*.
8. Type *2*, and then click on Enter.

9. Type DSN as <shrshorthostname>BOE120, and then click on Enter.
10. Type user as SHR, and then click on Enter.
11. Type the new password, which you changed recently, and then click on Enter.
12. Repeat the above steps with the DSN as <shrshorthostname>BOE120\_AUDIT DSN.
13. Run the following commands:

```
./stopservers
```

```
./startservers
```

To check if the password is modified, log in to the database using the new password.

## Troubleshooting

### **Symptom: Installation Failure caused by SAP BusinessObjects Error**

**Description:** While running the HP Software installer, the installation fails and the following error message is displayed:

*SAP BusinessObjects is installed on the system. Please uninstall it before installing HP SH Reporter.*

**Resolution:** If you have any component of SHR (such as SAP BusinessObjects or Sybase IQ) preinstalled or not cleanly uninstalled from a previous uninstall on your system, the SHR installation will fail because the installer tries to install the components that are bundled with the product.

To resolve this problem, you must clean up the existing components from the system and rerun the installer. For a virtual system, consider reimaging the VM, if feasible.

### **Symptom: Installation Failure caused by SAP BusinessObjects Error**

**Description:** While running the HP Software installer, the installation fails and the following error message is displayed:

*SAP BusinessObjects is installed on the system. Please uninstall it before installing HP SH Reporter.*

**Resolution:** If you have any component of SHR (such as SAP BusinessObjects or Sybase IQ) preinstalled or not cleanly uninstalled from a previous uninstall on your system, the SHR installation will fail because the installer tries to install the components that are bundled with the product.

To resolve this problem, you must clean up the existing components from the system and rerun the installer. For a virtual system, consider reimaging the VM, if feasible.

**Symptom: Installation failure due to missing libraries**

**Description:** While installing SHR, if there any missing libraries the installation pre-check will fail.

**Resolution:** To resolve this problem, perform the following steps:

1. From the file `/tmp/SHR-Missing-Patches.txt` get the list of missing libraries.
2. Install the missing libraries.
3. Re-initiate SHRinstallation.

For more information, see the "Installation Prerequisites" section in this document.

**Symptom: Installation failure due to missing libraries**

**Description:** While installing SHR, if there any missing libraries the installation pre-check will fail.

**Resolution:** To resolve this problem, perform the following steps:

1. From the file `/tmp/SHR-Missing-Patches.txt` get the list of missing libraries.
2. Install the missing libraries.
3. Re-initiate SHRinstallation.

For more information, see the "Installation Prerequisites" section in this document.

**Symptom: Unable to Bring up SHR Services after Successful Installation**

**Description:** If SHR is installed on a virtual machine that is not restarted after the installation, the environment variables set by the installer will not be available to the user resulting in SHR services not coming up in spite of multiple retry.

**Resolution:** After installing SHR, ensure that you restart the virtual machine.

**Symptom: Unable to Bring up SHR Services after Successful Installation**

**Description:** If SHR is installed on a virtual machine that is not restarted after the installation, the environment variables set by the installer will not be available to the user resulting in SHR services not coming up in spite of multiple retry.

**Resolution:** After installing SHR, ensure that you restart the virtual machine.

**Symptom: Remote Sybase IQ Database Creation Fails**

In the HP Service Health Reporter Configuration Wizard, while trying to create the Sybase database file on a remote system, the post-install fails and the following error message is displayed:

*<time stamp>,018 ERROR,  
com.hp.bto.bsmr.dao.helper.CreateSybaseIQDatabase.executeSQL, Could not connect to  
the database.*

*<time stamp>,049 ERROR,  
com.hp.bto.bsmr.dao.helper.CreateSybaseIQDatabase.executeSQL , Specified database  
not found*

**Resolution 1:** This error occurs if the database file location specified in the HP Service Health Reporter Configuration Wizard includes one or more spaces in the file path. To resolve this problem, make sure that the specified database file location exists on the remote system. In addition, make sure that the path provided in the Post-Install wizard does not contain any spaces.

**Resolution 2:** This error can occur when adequate disk space is not available on the drive. The installer does not warn in case of a remote database. Increasing the disk space should resolve the issue.

**Symptom: Sybase IQ Hangs**

**Description:** SHR servers that have four or less CPUs, Sybase IQ hangs because of low `iqgovern` parameter value that is computed automatically.

**Resolution:**

Windows: Add `"-iqgovern 50"` parameter to the `%PMDB_HOME%\config\pmdbConfig.cfg` file and restart the Sybase IQ database.

Linux: Add `"-iqgovern 50"` parameter to the `$PMDB_HOME/config/pmdbConfig.cfg` file and restart the Sybase IQ database.

**Symptom: Sybase IQ Hangs**

**Description:** SHR servers that have four or less CPUs, Sybase IQ hangs because of low `iqgovern` parameter value that is computed automatically.

**Resolution:**

Windows: Add `"-iqgovern 50"` parameter to the `%PMDB_HOME%\config\pmdbConfig.cfg` file and restart the Sybase IQ database.

Linux: Add `"-iqgovern 50"` parameter to the `$PMDB_HOME/config/pmdbConfig.cfg` file and restart the Sybase IQ database.

**Symptom: SHR Fails to Create the Sybase Schema**

**Description:** If SHR fails to create the Sybase schema after you complete the post-installation configuration tasks, an error message appears in the database log files. The Sybase database log files—`<hostname>.0001.srvlog` and `<hostname>.0001.stderr`—are present in the `/opt/HP/BSM/Sybase/IQ-16_0/logfiles` directory on Linux.

The following error message appears in the Sybase database log files:

```
"utility_db" (utility_db) stopped
```

Only the Sybase database log files show the error message; no error messages appear in the Administration console.

**Resolution:** Restart the Sybase service by running the following command:

```
service HP_PMDB_Platform_Sybase stop
```

```
service HP_PMDB_Platform_Sybase start
```

**Symptom: SHR Fails to Create the Sybase Schema**

**Description:** If SHR fails to create the Sybase schema after you complete the post-installation configuration tasks, an error message appears in the database log files. The Sybase database log files—`<hostname>.0001.srvlog` and `<hostname>.0001.stderr`—are present in the `/opt/HP/BSM/Sybase/IQ-16_0/logfiles` directory on Linux.

The following error message appears in the Sybase database log files:

```
"utility_db" (utility_db) stopped
```

Only the Sybase database log files show the error message; no error messages appear in the Administration console.

**Resolution:** Restart the Sybase service by running the following command:

```
service HP_PMDB_Platform_Sybase stop  
service HP_PMDB_Platform_Sybase start
```

**Symptom: After Installation, User is Unable to Perform Post-Install Steps**

**Description:** After installation, when user clicks Next, the subsequent page does not load despite enabling Java scripts to run.

**Resolution:** This occurs when the system date on which SHR is installed is much older than that of the ESX (in case of a VM). In such a scenario, the Tomcat server does not allow any requests from the client. Hence, it is always advisable to update the system date to current and install.

Perform the following steps:

1. Change system date to current.
2. Apply the permanent license.

When the system date is changed by more than three months, the license expires.

3. Restart Admin service, Tomcat server, and SAP BusinessObjects servers.
4. Log on and perform the post configuration again.

**Symptom: After Installation, User is Unable to Perform Post-Install Steps**

**Description:** After installation, when user clicks Next, the subsequent page does not load despite enabling Java scripts to run.

**Resolution:** This occurs when the system date on which SHR is installed is much older than that of the ESX (in case of a VM). In such a scenario, the Tomcat server does not allow any requests from the client. Hence, it is always advisable to update the system date to current and install.

Perform the following steps:

1. Change system date to current.
2. Apply the permanent license.

When the system date is changed by more than three months, the license expires.

3. Restart Admin service, Tomcat server, and SAP BusinessObjects servers.
4. Log on and perform the post configuration again.

**Symptom: SHR Uninstall Fails**

**Description:** Uninstalling SHR might not have completely uninstalled Sybase IQ Server.

**Resolution:** Uninstall Sybase IQ Server Suite 15.4 (64-bit) manually and restart your system.

**Symptom: After Uninstalling SHR, Reinstall Fails**

**Description:** After uninstalling SHR on a Windows system, when a reinstall is performed, the installer fails to launch and displays a Scripting Host not Found error.

**Resolution:** This error is encountered when the Path environment variable in Windows is corrupted. Add the %systemroot%\System32 string to the Path environment variable by performing the following steps:

1. Right-click My Computer, and then click Properties.
2. Click the Advanced tab.
3. Click Environment Variables.
4. In the System Variable group, select Path.
5. Click Edit and add the string %systemroot%\System32 if missing.

**Symptom: After Uninstalling SHR, Reinstall Fails**

**Description:** After uninstalling SHR on a Windows system, when a reinstall is performed, the installer fails to launch and displays a Scripting Host not Found error.

**Resolution:** This error is encountered when the Path environment variable in Windows is corrupted. Add the %systemroot%\System32 string to the Path environment variable by performing the following steps:

1. Right-click My Computer, and then click Properties.
2. Click the Advanced tab.
3. Click Environment Variables.
4. In the System Variable group, select Path.
5. Click Edit and add the string %systemroot%\System32 if missing.

**Symptom: After interrupted installation, unable to continue reinstall with the installed components**

**Description:** This issue may occur when you accidentally quit the SHR installation wizard and later continue to reinstall with the existing components.

**Resolution:** Perform the following steps to resolve this problem:

1. Start the installation wizard and review the Pre-Install Summary.
2. Select the **Force repair of already installed component packages** and click **Install**.
3. If the reinstall fails then, click **Rollback** in the pop-up message. The installed components will be removed.
4. Now perform a new installation.

**Symptom: After interrupted installation, unable to continue reinstall with the installed components**

**Description:** This issue may occur when you accidentally quit the SHR installation wizard and later continue to reinstall with the existing components.

**Resolution:** Perform the following steps to resolve this problem:

1. Start the installation wizard and review the Pre-Install Summary.
2. Select the **Force repair of already installed component packages** and click **Install**.
3. If the reinstall fails then, click **Rollback** in the pop-up message. The installed components will be removed.
4. Now perform a new installation.

**Symptom: Data Collection Failure across all Configured Nodes**

**Description:** Data collection in SHR fails with an Address already in use error logged in the topologycollector.log file.

**Resolution:** This error occurs when the number of TCP/IP ports used exceeds the default value of 5000. To resolve this problem, you must make changes in the Windows Registry. Follow these steps:

1. Click **Start > Run**. The Run dialog box appears.
2. In the Open box, type `regedit`. The Registry Editor window appears.
3. On the left pane, expand *HKEY\_LOCAL\_MACHINE*, expand *SYSTEM*, expand *CurrentControlSet*, expand *Services*, expand *Tcpip*, and then click **Parameters**.
4. On the right pane, right-click anywhere, point to New, and then click **DWORD Value** to add a new entry. Add the following entries:
  - MaxUserPort = 65535 (decimal)
  - MaxFreeTcbs = 65535 (decimal)
  - MaxHashTableSize = 65535 (decimal)
  - TcpTimedWaitDelay = 30 (decimal)

Restart the system after making changes in the Registry Editor.

**Symptom: Data Collection Failure across all Configured Nodes**

**Description:** Data collection in SHR fails with an Address already in use error logged in the `topologycollector.log` file.

**Resolution:** This error occurs when the number of TCP/IP ports used exceeds the default value of 5000. To resolve this problem, you must make changes in the Windows Registry. Follow these steps:

1. Click **Start > Run**. The Run dialog box appears.
2. In the Open box, type `regedit`. The Registry Editor window appears.
3. On the left pane, expand *HKEY\_LOCAL\_MACHINE*, expand *SYSTEM*, expand *CurrentControlSet*, expand *Services*, expand *Tcpip*, and then click **Parameters**.

4. On the right pane, right-click anywhere, point to New, and then click **DWORD Value** to add a new entry. Add the following entries:
  - MaxUserPort = 65535 (decimal)
  - MaxFreeTcbs = 65535 (decimal)
  - MaxHashTableSize = 65535 (decimal)
  - TcpTimedWaitDelay = 30 (decimal)

Restart the system after making changes in the Registry Editor.

**Symptom:** After uninstall a collector and reinstall it on a system, SHR fails to communicate with the collector.

**Description:** If you uninstall a collector and reinstall it on a system, SHR fails to communicate with the collector and error messages appear when you try to configure the collector in the Administration Console.

You can occasionally experience this issue even after installing the collector for the first time.

**Resolution:** To resolve this, manually import the certificate from the SHR system to the collector system by following these steps:

1. Log on to the collector system.
2. Run the following command:

```
ovcoreid
```

Note down the ID displayed in the console.

3. Log on to the SHR system.
4. Run the following command:

```
ovcm -issue -file <file> -name<node name>-coreid<core_ID>
```

In this instance, *<core\_ID>* is the ID that you noted down in step 2.

The command prompts for a password. If you do not want to use a password, press Enter without typing anything.

In this instance, *<file>* is the name of the certificate file that you want to manually import to the collector system; you must specify the file name with complete path to the directory where you want to store the file. *<node name>* is the FQDN of the collector system.

5. Transfer the certificate file to the collector system.
6. Log on to the collector system.
7. Run the following command:

```
ovcert -importcert -file<file>
```

**Symptom: After uninstall a collector and reinstall it on a system, SHR fails to communicate with the collector.**

**Description:** If you uninstall a collector and reinstall it on a system, SHR fails to communicate with the collector and error messages appear when you try to configure the collector in the Administration Console.

You can occasionally experience this issue even after installing the collector for the first time.

**Resolution:** To resolve this, manually import the certificate from the SHR system to the collector system by following these steps:

1. Log on to the collector system.
2. Run the following command:

```
ovcoreid
```

Note down the ID displayed in the console.

3. Log on to the SHR system.
4. Run the following command:

```
ovcm -issue -file <file> -name<node name>-coreid<core_ID>
```

In this instance, <core\_ID> is the ID that you noted down in step 2.

The command prompts for a password. If you do not want to use a password, press Enter without typing anything.

In this instance, <file> is the name of the certificate file that you want to manually import to the collector system; you must specify the file name with complete path to the directory where you want to store the file. <node name> is the FQDN of the collector system.

5. Transfer the certificate file to the collector system.
6. Log on to the collector system.
7. Run the following command:

```
ovcert -importcert -file<file>
```

**Symptom: Installation fails for Management database package while installing as Domain user**

**Description:** SHR installation fails with domain user during HPPmdbPostgreSQL package installation with the following error in the install log.

```
C:/HP-SHR/Postgres/data ... initdb: could not change permissions of directory "C:/HP-SHR/Postgres/data": Permission denied in %temp%\install-postgresql.log (or) %temp%\bitrock_installer.log
```

**Resolution:** Uninstall SHR and create a local user that is a member of the Local Administrators group with administrator rights and install SHR again.

**Symptom: Installation fails for Management database package while installing as Domain user**

**Description:** SHR installation fails with domain user during HPPmdbPostgreSQL package installation with the following error in the install log.

*C:/HP-SHR/Postgres/data ... initdb: could not change permissions of directory "C:/HP-SHR/Postgres/data": Permission denied in %temp%\install-postgresql.log (or) %temp%\bitrock\_installer.log*

**Resolution:** Uninstall SHR and create a local user that is a member of the Local Administrators group with administrator rights and install SHR again.

**Symptom: Installer fails to display that installation is complete.**

**Description:** This issue may appear while performing SHR installation, upgrade or installing Remote Collectors. The installer progress bar shows that the installation is in process but the **Done** button is enabled. This is because the installer is not refreshed.

**Resolution:** Click **Done** to complete the process and check the install log files as follows to see if all the components are installed.

- Windows: %temp%/../HP-SHR\_9.40\_HPOvInstaller.txt
- Linux: /tmp/HP-SHR\_9.40\_HPOvInstaller.txt

**Symptom: Installer fails to display that installation is complete.**

**Description:** This issue may appear while performing SHR installation, upgrade or installing Remote Collectors. The installer progress bar shows that the installation is in process but the **Done** button is enabled. This is because the installer is not refreshed.

**Resolution:** Click **Done** to complete the process and check the install log files as follows to see if all the components are installed.

- Windows: %temp%/../HP-SHR\_9.40\_HPOvInstaller.txt
- Linux: /tmp/HP-SHR\_9.40\_HPOvInstaller.txt

**Symptom: Installer fails to display that installation is complete.**

**Description:** This issue may appear while performing SHR installation, upgrade or installing Remote Collectors. The installer progress bar shows that the installation is in process but the **Done** button is enabled. This is because the installer is not refreshed.

**Resolution:** Click **Done** to complete the process and check the install log files as follows to see if all the components are installed.

- Windows: %temp%/../HP-SHR\_9.40\_HPOvInstaller.txt
- Linux: /tmp/HP-SHR\_9.40\_HPOvInstaller.txt

**Symptom: Sybase IQ database removal failed after uninstall.**

**Description:** This issue occurs while performing uninstall of SHR. The Sybase IQ database is not removed properly, you will see a pop up as follows:

*"Initialize action for HP Service Health Reporter 9.40 (Removing Sybase IQ schema) was not successful."*

**Resolution:** You can move ahead with the uninstall and run the rollback utility. For the steps, see *"Post Uninstalling SHR"* section in this guide.

**Symptom: Uninstall is not clean.**

**Description:** This issue occurs while performing uninstall of SHR, you will see a pop up saying there is a failure as follows:

*"Initialize action for package HPPmdbCollector 9.40.000 (HP PMDB Collector) (Performing Collection housekeeping) was not successful."*

**Resolution:** You can ignore the pop up and move ahead with the uninstall and run the rollback utility. For the steps, see *"Post Uninstalling SHR"* section in this guide.

**Symptom: Failure in upgrade command.**

**Description:** This issue may occur after upgrade of SHR, you will see a message saying there is a failure in the upgrade command.

**Resolution:** From the command line console run the following script:

```
%Ovinstalldir%\nonOV\perl\a\bin\perl %PMDB_
```

```
HOME%\upgrade\940\applyPatch.pl %PMDB_HOME%\..\ "%ovinstalldir%"  
%PMDB_HOME%\upgrade\940
```

```
/opt/OV/nonOV/perl/a/bin/perl  
/opt/HP/BSM/PMDB/upgrade/940/applyPatch.pl /opt/HP/BSM/ /opt/OV/  
/opt/HP/BSM/PMDB/upgrade/940/
```

**Symptom: Failure in service precheck while upgrade.**

**Description:** While upgrade, if all the SHR services are not stopped this issue may occur.

**Resolution:** From the PMDB\_HOME\temp folder check the UpgradeServiceCheck.log file to find the cause of failure.

**Symptom: After upgrade, few links in the Administration Console may fail to work.**

**Description:** After upgrade, the CMC and InfoView links may fail to work SHR Administration Console. This issue may occur if the SAP BusinessObjects services are not running.

**Resolution:** Perform the following steps to stop the SAP BusinessObjects services:

1. Log on to the SHR system
2. Open the Services window
3. Start the Business Objects Webserver Service

1. Log on to the system as root.
2. Run the following command to start the webserver:

```
sh /opt/HP/BSM/BO/bobje/tomcatstartup.sh
```

**Symptom: Installation with username having special character "&" requires system startup.**

**Description:** While installing SHR with username having special character & then the system requests for startup.

**Resolution:** Click **Continue** and proceed with your installation.

**Symptom: Installation with username having special character "&" requires system startup.**

**Description:** While installing SHR with username having special character & then the system requests for startup.

**Resolution:** Click **Continue** and proceed with your installation.

**Symptom: After Uninstall, reinstall hangs on RHEL 5.5.**

**Description:** After uninstall, when you reinstall SHR on Linux RHEL 5.5, the system hangs while installing BusinessObjects.

**Resolution:** Ensure that you perform SHR installation on a new Linux RHEL 5.5 system.

**Symptom: YUM check warning after SHR installation**

**Description:** After installing SHR and meeting all the pre-requisites, the following message appears with a list of missing libraries:

*Found 42 pre-existing rpmdb problem(s), 'yum check' output follows:*

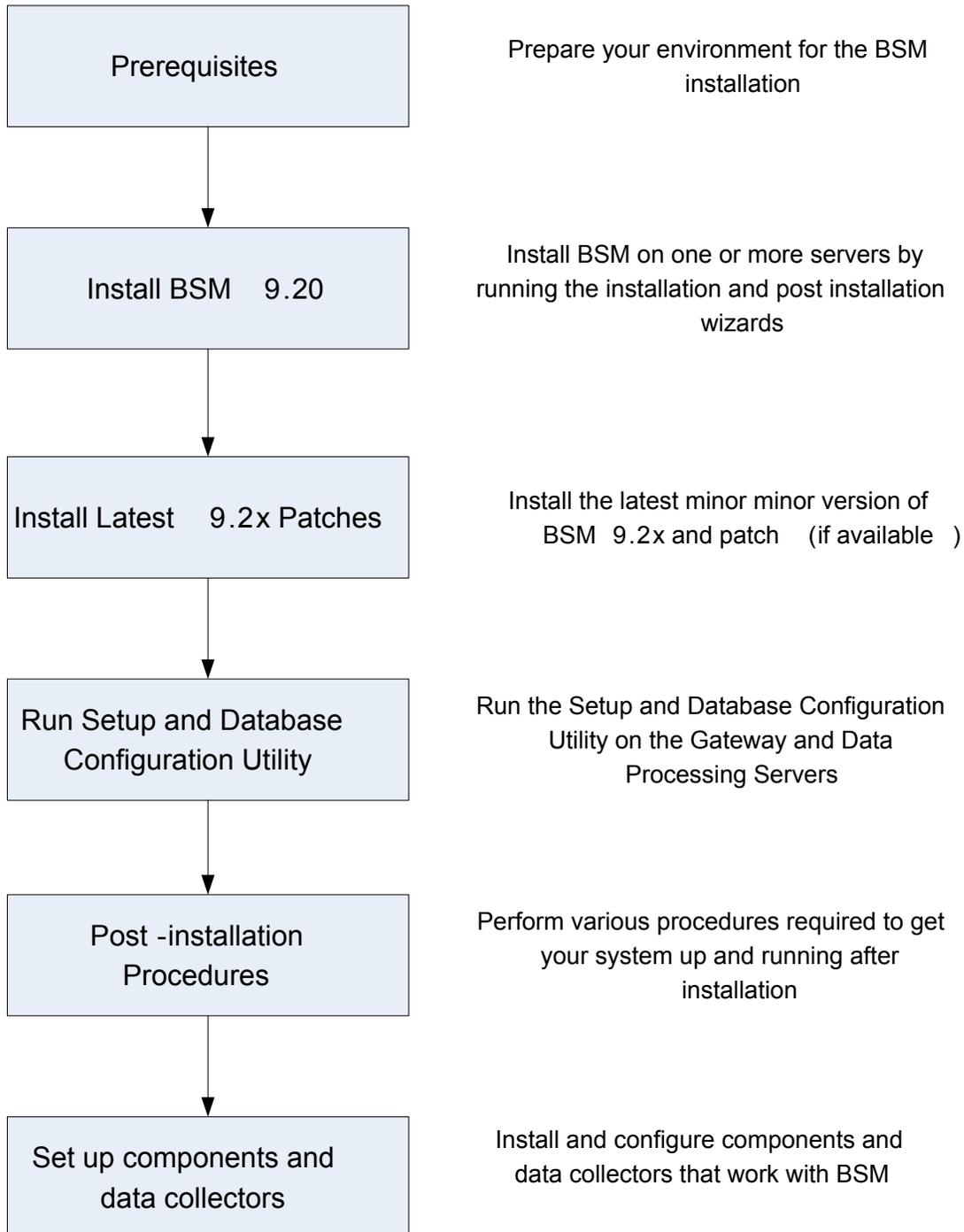
**Resolution:** If you get a list of missing libraries while performing the YUM check, you can ignore these libraries as they are not mandatory for SHR. This does not affect the functionality of SHR.

## Install Business Service Management

**Note:** In general, you should follow the product documentation for each product to install and configure the product, and then read and implement the associated integration guides.

# BSM 9.2x Installation Overview

The installation of BSM 9.2x involves the following main steps:



# General Prerequisites

Perform the following steps before starting the installation process:

## 1. Create deployment plan

Create a complete deployment plan including the required software, hardware, and components. For details, see the BSM Getting Started Guide and the BSM System Requirements and Support Matrixes.

## 2. Order and register licenses

Order licenses with a sales representative based on your deployment plan. Register your copy of BSM to gain access to technical support and information on all HP products. You will also be eligible for updates and upgrades. You can register your copy of BSM on the [HP Software Support site](https://softwaresupport.hp.com) (<https://softwaresupport.hp.com>).

## 3. Prepare hardware

Set up your BSM servers and your BSM database server. For information about setting up your database server, see the BSM Database Guide.

## 4. Set up web server (optional)

BSM installs the Apache web server on all BSM Gateway servers during the installation. If you would like to use the Apache web server and you have already installed IIS web server, stop the **IIS Web Server** service before installing BSM. Do not change the **Startup Type** setting of this service. Do not remove **IIS Web Server** as a role. If you would like to use the IIS web server, install and enable it on all Gateway servers before installing BSM.

**Note:** There can only be one running Web server on a server machine that uses the same port as BSM. For example, if you use the Apache HTTP Server during BSM server installation and you are installing on a machine on which IIS is already running, make sure to stop the IIS service and set its startup status to **Manual** before you begin the installation process.

## Installation Prerequisites - Windows

Note the following before installing BSM servers on a Windows platform:

- It is recommended that you install BSM servers to a drive with at least 40 GB of free disk space. For more details on server system requirements, see the BSM System Requirements and Support Matrixes.
- If BSM servers, including the database servers, are installed on multiple network segments, it is highly recommended that the number of hops and the latency between the servers be minimal. Network-induced latency may cause adverse affects to the BSM application and can result in performance and stability issues. We recommend the network latency should be no more than 5 milliseconds, regardless of the number of hops. For more information, contact HP Software Support.
- BSM servers must be installed on dedicated machines and must not run other applications. Certain BSM components can coexist on BSM servers. For details on coexistence support, see the BSM System Requirements and Support Matrixes Guide.
- If you use the IIS web server, it must be up and running prior to BSM installation.
- If you plan to use the IIS web server, install it prior to BSM installation and enable it after the installation is completed.
- BSM servers must not be installed on a drive that is mapped to a local or network resource.
- Due to certain web browser limitations, the names of server machines running the Gateway Server must consist only of alphanumeric characters (a-z, A-Z, 0-9), hyphens (-), and periods (.). For example, if the names of the machines running the Gateway Server contain underscores, it may not be possible to log into the BSM site when using Microsoft Internet Explorer 7.0 or later.
- During BSM server installation, you can specify a different path for the BSM directory

(default is **C:\HPBSM**), but note that the full path to the directory must not contain spaces, cannot contain more than 15 characters, and should end with **HPBSM**.

- User Access Control (UAC) must be disabled before installing BSM. UAC is enabled by default in some version of Windows Server (for example: 2008 SP2) and must be manually disabled.
- If you plan to run BSM servers on a hardened platform (including using HTTPS protocol), review the hardening procedures described in the BSM Hardening Guide.
- If you do not have a profile database on your source environment, please add one before starting the upgrade. The database should be marked as the default profile database. Most users already have a profile database, but in some scenarios where BSM is being used exclusively for OMi, a profile database may not have been previously created.
- You must have administrator privileges to install BSM on the server machine.
- In the BSM cluster, open port 21212 on the Data Processing Server.

**Note:** During installation, the value of the Windows Registry key `HKLM\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\ReservedPorts` is updated to include the following port ranges required by BSM: 1098-1099, 2506-2507, 8009-8009, 8080-8080, 4444-4444, 8083-8083, 8093-8093.

These ports ranges are not removed from the registry key at BSM uninstall. You should remove the ports from the registry key manually after uninstalling BSM if they are no longer needed by any other application.

## Installation Prerequisites - Linux

Note the following before installing BSM servers on a Linux platform:

- It is recommended that you install BSM servers to a drive with at least 40 GB of free disk space. The /tmp directory should have at least 2.5 GB of free disk space. You can change the /tmp directory by running the following command:

```
export _JAVA_OPTIONS=-Djava.io.tmpdir=/new/tmp/dir
```

where /new/tmp/dir is the new /tmp directory

For more details on server system requirements, see the BSM System Requirements and Support Matrixes.

- If BSM servers, including the database servers, are installed on multiple network segments, it is highly recommended that the number of hops and the latency between the servers be minimal. Network-induced latency may cause adverse affects to the BSM application and can result in performance and stability issues. We recommend the network latency should be no more than 5 milliseconds, regardless of the number of hops. For more information, contact HP Software Support.
- BSM servers must be installed on dedicated machines and must not run other applications. Certain BSM components can coexist on BSM servers. For details on coexistence support, see the BSM System Requirements and Support Matrixes Guide.
- Before installing BSM on a Linux machine, make sure that SELinux will not block it. You can do this by either disabling SELinux, or configuring it to enable java 32-bit to run.
  - To disable SELinux, open the **/etc/selinux/config** file, set the value of **SELINUX=disabled**, and reboot the machine.
  - To configure SELinux to enable java 32-bit to run, execute the command **setsebool -P allow\_execmod on**.

- BSM servers must not be installed on a drive that is mapped to a network resource.
- Due to certain Web browser limitations, the names of server machines running the Gateway Server must only consist of alphanumeric characters (a-z, A-Z, 0-9), hyphens (-), and periods (.). For example, if the names of the machines running the Gateway Server contain underscores, it may not be possible to log in to the BSM site. To access the BSM site in this case, use the machine's IP address instead of the machine name containing the underscore.
- If you plan to run BSM servers on a hardened platform (including using HTTPS protocol), review the hardening procedures described in the BSM Hardening Guide.
- You must be a root user to install BSM on the server machine.
- If you will be running BSM as a non-root user, you must install sudo on the server machine.
- The **DISPLAY** environment variable must be properly configured on the BSM server machine. The machine from which you are installing must be running an X-Server as the upgrade process cannot be performed silently.
- The **DISPLAY** environment variable must be properly configured on the BSM server machine. The machine from which you are installing must be running an X-Server unless you are installing BSM in silent mode. For details, see ["Installing BSM Silently" on page 212](#).
- If you do not have a profile database on your source environment, please add one before starting the upgrade. The database should be marked as the default profile database. Most users already have a profile database, but in some scenarios where BSM is being used exclusively for OMi, a profile database may not have been previously created.
- In the BSM cluster, open port 21212 on the Data Processing Server.

- Before installing BSM 9.20 followed by BSM 9.24 on Oracle Linux (OEL) or Red Hat Enterprise Linux operating systems for supported 5.x versions and 6.x versions, you must install the following RPM packages on all machines running BSM:

■ glibc	■ libXext
■ glibc-common	■ libXtst
■ nss-softokn-freebl	■ compat-libstdc++-33
■ libXau	■ libXrender
■ libxcb	■ libgcc
■ libX11	■ openssl098e
■ compat-expat1	■ rpm-devel

For supported 5.x versions of Oracle Linux (OEL) or Red Hat Enterprise Linux operating systems, you must install the following additional RPM packages on all machines running BSM:

■ libXi	■ libuuid
■ alsa-lib	■ unixODBC
■ apr	■ expat
■ apr-util	

**To install the RPM packages listed in the upper table, run the RPM installation tool on all machines running BSM:**

**<BSM9.24\_install\_folder>/rhel\_oel\_installation\_fix/rpm\_installer.sh.**

- If the script fails to install any of the RPM packages, the following message appears:

```
!!! ERROR: package <package name> has not been installed
successfully
```

In this case, refer the problem to your system administrator.

- If the script detects that an RPM package is already installed, it skips that package and continues with the next package.

However, you can force the tool to try to re-install any pre-installed packages by adding the **f** parameter to the command:

```
<BSM9.24_install_folder>/rhel_oel_installation_fix/rpm_installer.sh f
```

If the Yum Linux upgrade service is not functional on your machine, you will need to download and install the necessary RPM packages manually by running the following command:

```
yum install -y openssl098e glibc.i686 glibc-common.i686 nss-softokn-
freebl.i686 libXau.i686 libxcb.i686 libX11.i686 libXext.i686 libXtst.i686 compat-
libstdc++-33.i686 libXrender.i686 libgcc.i686 compat-expat1 rpm-devel
```

**Note:** The RPM installation tool does not install the additional RPM packages required for the supported 5.x versions of Oracle Linux (OEL) or Red Hat Enterprise Linux operating systems. To install these RPM packages, run the command:

```
yum install -y openssl098e libXi.i686 alsa-lib.i686 apr.i686 libXau.i686 apr-
util.i686 libX11.i686 libuuid.i686 unixODBC.i686 expat.i686
```

The version of these packages changes from system to system. You can download the packages from any RPM repository site that matches your system specifications. The following RPM search tool can assist you in this task (<http://rpm.pbone.net/>).

**To determine the package version you need to download, execute the following command in a terminal window:**

**rpm -qa \${PACKAGE\_NAME} (ex: rpm -qa glibc )**

The command will return the following text:

```
# rpm -qa glibc  
glibc-2.12-1.132.el6.x86_64
```

This text indicates the package version required for your machine.

In this case, you would need to download the i686 architecture package with the same version - glibc-2.12-1.132.el6.i686 – and install it manually.

## Install BSM 9.20

Install BSM 9.20 on a set of servers. This set can be either one Gateway Server and one Data Processing Server, or one one-machine server. In the first case, run the wizards on the Data Processing Server first. The wizard will direct you as to when to begin installation on the Gateway Server.

The installation wizard will guide you to run the post installation wizard. After running the post-installation wizard, you have the option of running the setup and database utility automatically now, or running it later.

**Run the installation and post-installation wizards. Do not run the Setup and Database Configuration Utility yet. Exit the wizard on the last screen of the post-installation wizard without continuing.**

**DO NOT START BSM BEFORE INSTALLING THE MINOR-MINOR PATCH.**

**Note:** If the host system for the BSM installation is preinstalled with an HP Operations Agent, you must configure the agent to run under the same user as BSM. You must install BSM using a user with root (Linux) or administrative privileges (Windows). If necessary, switch the user under which the agent is running to the root user (Linux) or the user with administrative privileges that is being used to install BSM (Windows).

**To run the installation BSM 9.20 wizard:**

- For Windows:

**DVD1 > Windows\_Setup > HPBsm\_9.20\_setup.exe**

**Note:** If you are installing BSM on Windows Server 2012, you must select Apache as your web server in the post-installation wizard. After installing BSM 9.24 or higher you will have the option to switch the web server to IIS8.

- Stop the **IIS Web Server** service before running the BSM 9.20 Post Install procedure. Do not change the **Startup Type** setting of this service. Do not remove **IIS Web Server** as a role.
- You must rerun the Post Install manually to switch the web server to IIS after installing BSM 9.24 or higher.

- For Linux:

**DVD2 > Linux\_Setup > HPBsm\_9.20\_setup.bin**

Alternatively, you can run these wizards in silent mode. For details, see ["Installing BSM Silently" on page 212](#).

For more details, see the following sections:

- ["Installing BSM on a Linux Platform" on page 181](#)
- ["Installing BSM on a Windows Platform" on page 188](#)

# Install the Latest BSM 9.2x Minor Minor Release and Patch

Install the latest minor minor version of BSM 9.2x and patch (if available).

## 1. Prerequisites

- It is recommended that you back up all BSM databases and files you made custom changes to.
- Make sure that BSM has been fully stopped on all machines and that there are no open connections (for example, from Windows Explorer) from any machines to the BSM root directory or any of its subdirectories.

## 2. Download and install the latest minor minor version from the HP Software Support site

- a. Go to the [HP Software Support](https://softwaresupport.hp.com) web site (<https://softwaresupport.hp.com>) and sign in.
- b. Click **Search**.
- c. Select the relevant product, version , and operating system.
- d. Under Document Type, select **Patches**.
- e. Locate the applicable patch, save it locally and launch the relevant setup file to install the patch.
- f. Run the installation files on all BSM servers (Gateway and Data Processing).

**Note:** If you are installing the 9.22 minor-minor patch on top of a Windows installation of BSM in a custom directory (not C:\HPBSM), you may receive the message “Finalize action for HP Business Service Management 9.22

(Generate Response File) was not successful”. You can ignore this message by clicking OK and continue with the installation. The only impact is that a template response file, to be used for silent installation only, will not be created as part of the installation.

- g. The post-installation wizard is automatically run after the patch installation.
- h. If there was an HPOM agent on the system before installing BSM which was configured to run as a non-root user, you can reconfigure BSM to run as the same non-root user as the HPOM agent.

**Note:** Both products (BSM and HPOM Agent) must run as the same user. If you change BSM to run as a different user, you must also change HPOM Agent to the same non-root user. For details how to switch the HPOM Agent to a non-root user, please refer to the HPOM Agent manuals.

- i. Repeat this procedure for the latest intermediate patch (if available).

### 3. Switch Web Server (optional)

If you are using Windows Server 2012 and you want to use the IIS8 web server, perform the following procedure:

- a. In IIS8, enable the following roles:
  - o In the **Application Development** section: **ISAPI Extensions** and **ISAPI Filters**.
  - o In the **Management Tools** section: **IIS Management Scripts and Tools**
- b. Rerun the post-installation wizard and specify IIS as the web server. The post-installation wizard can be run from the following location: **<HPBSM root directory>\bin\postinstall.bat**.

### 4. Log out and in

If you are installing BSM in a Linux environment, and you selected a non-root user in the post-installation wizard, log out and log in using the non-root user you selected.

#### **5. Run the Setup and Database Configuration Utility**

Run the Setup and Database Configuration Utility on the Gateway and Data Processing Servers. For details, see "[Server Deployment and Setting Database Parameters](#)" on page 199.

#### **6. Re-apply manual changes**

If you have made changes in the HP BSM root directory to files that are updated during patch installation, for example, while performing hardening procedures on your system, you must reapply those changes after patch installation on all relevant BSM machines. You can access your modified files from the backup folder located at: <HP BSM root directory>\installation\<PATCH\_NAME>\backup\<PATH\_TO\_FILE> <REMOVED AS INSTRUCTED BY TAMIR MITELMAN>

#### **7. Enable BSM**

Enable BSM on all servers.

# Post-Installation Procedures

This chapter contains the following topics:

## General Post-Installation Procedures

Perform these tasks to complete the installation/upgrade process:

**Note:** If you use the IIS web server, stop the **IIS Web Server** service before running the post installation procedure. Do not change the **Startup Type** setting of this service. Do not remove **IIS Web Server** as role.

### • Upgrading Customized Service Health KPIs

In BSM 9.2x, the internal format of the KPI parameter “KPI is critical if” was changed. As a result, this value may be incorrect following upgrade, if you have created or customized KPIs.

To fix this, perform the following:

- a. Access the JMX console on the Gateway Server via `http://<Gateway Server name>:8080/jmx-console`, and enter your user name and password.
- b. Click **service=repositories-manager** in the Topaz section.
- c. Locate the **upgradeCriticalIf()** operation.
- d. Click **Invoke**.

### • Service Health and SLM repository post-upgrade procedure

When you installed BSM 9.1x, content that was imported using out-of-the-box content packs was categorized in the Service Health and SLM repositories as **Custom**

or **Predefined (Customized)**, rather than as **Predefined**.

After you install BSM 9.2x, run the Repository Data Transfer tool to automatically re-label this out-of-the-box content in the repositories as **Predefined**, using the following steps:

- a. Access the JMX console on the Gateway Server via `http://<Gateway Server name>:8080/jmx-console`, and enter your user name and password.
- b. Click **service=content-manager** in the Topaz section.
- c. Locate the **invokeRepositoryTool()** operation.
- d. Click **Invoke**.

**Note:** If you have customized any repository items, they are not affected by this procedure.

## • Service Health Top View post-upgrade

In BSM 9.2x, extensive improvements were made to the Top View component. For details, refer to the sections on Top View in the BSM User Guide and in the BSM Application Administration Guide.

As a result of the changes made to the underlying Top View infrastructure, the following infrastructure settings from earlier BSM versions are now deprecated in BSM 9.2x:

- **Top View Data Refresh Rate - For Legacy MyBSM**
- **Top View Font Name**
- **Top View Green Color Property**

These infrastructure settings were located in the Service Health Application - Top View Properties section of the Service Health Application infrastructure settings. If you customized these settings prior to upgrade, your customizations are removed.

In addition, if you used a custom background image for Top View, after upgrade save the image in `<Gateway Server root directory>/AppServer/webapps/site.war/images/topview`, and enter the image file name in the **Custom Background Image Name** infrastructure setting.

- **SLM - Upgrading SLAs from BSM 9.x to 9.2x using Baselineing**

The following section is only relevant for users who have SLAs with BPM transaction CIs with the BPM Percentile Sample-Based rule defined on performance HIs, or Groovy rule (Rules API).

BSM 9.2x introduces the concept of baselining. In End User Management, Business Process Monitor performance metrics are analyzed over a period of time, and are used to provide a baseline comparison for establishing acceptable performance ranges.

Baselining influences the transaction thresholds, and will therefore have an impact on your SLA calculation. If you want to minimize this influence so that your SLA calculation results are similar to pre-baselining, perform the steps described in [Upgrading SLAs from BSM 9.x to 9.2x to Work with Baselining](#).

- **Upload content packs**

Wait for the BSM services to be started again and then upload the content packs again. Execute the following command on the Gateway Server:

```
<HPBSM Install Directory>/opr/bin/ContentManager -  
username admin -password admin -a -forceReload
```

## • ETI display label

If you have alerts configured with an Event Template, the ETI display label needs to be manually upgraded. To upgrade the display label, execute the following JMX command from the BSM 9.2x Data Processing Server:

```
BAC.Alerts.Upgrade service=change EtI name to ID update()
```

## • Upgrade custom reports

In some cases, custom reports are not migrated properly during the upgrade. If this is the case, execute the following command from the JMX console as follows:

- a. Open the JMX console from **http://<FQDN of BSM Gateway server>:8080/jmx-console/**
- b. In the Topaz section, select **EUM Custom report upgrader service**.
- c. Complete the fields and click **Invoke**.

## • Delete temporary internet files

When logging into BSM for the first time after upgrading, delete the browser's temporary Internet files. This should be done on each browser that accesses BSM.

## • Back up files

Back up the following files from the BSM 9.1x servers:

- <Gateway Server installation directory>/AppServer/webapps/site.war/openapi/excels directory
- <Data Processing Server installation directory>/cmdb/general directory
- <Data Processing Server installation directory>/BLE/rules/<custom rules jar> file(s)

## • SHA baseline data

The following note is relevant if you were using SHA with Performance or Operations Agents which include one of the following SPIs: WebLogic, WebSphere, Oracle, MSSQL.

The baseline may be inaccurate for at least one week after running the upgrade wizard. This is due to an improvement in the way instances in the SPIs are interpreted by SHA.

## • Disable firewall between BSM servers

In general, placing firewalls between BSM servers is not supported. If an operating system firewall is active on any BSM server machine (GW or DPS), a channel must be left open to allow all traffic between all BSM Gateway and DPS servers.

Additionally, to enable BSM users and data collectors to communicate with the BSM Gateway servers, you must leave open the relevant ports depending on your BSM configuration. The required ports are typically 443 or 80, and 383. For details, see "Port Usage" in the BSM Platform Administration Guide.

## • Update Data Collectors

See the System Requirements and Support Matrixes, available from **Help > Planning and Deployment** and the Updated Components section in the HP Business Service

Management Release Notes to determine if you must upgrade your data collector to the latest supported version.

## • Configure Event Traffic when using OM Agent 8.60

If you installed BSM on a Linux machine with OM Agent 8.60, you must run the batch processes below. If you do not run them, the connection of the OM Agent on the BSM server with the OM server may be broken.

Run the following batch processes on all BSM machines (GW and DPS):

- `/opt/OV/lbin/bbc/install/configure.sh`
- `/opt/OV/lbin/xpl/install/configure.sh`

## • Create Profile Database

You create the profile database schema after running the installation wizards. For more information, see "Database Administration" in the BSM Platform Administration Guide.

## • Upload additional licenses

The main BSM license is entered during the main BSM installation. However, a number of BSM applications require additional licenses. To use these applications, you must obtain licenses from HP. For more information visit [HP Software Support site](https://softwaresupport.hp.com) (<https://softwaresupport.hp.com>).

You upload the license files in the License Manager. For more information, see "License Manager Page" in the BSM Platform Administration Guide.

- **Configure LW-SSO when load balancer is located in separate domain**

If you are using a load balancer and it is not in the same domain as servers integrating with BSM (for example, NNMI, TransactionVision, OO), you will need to customize a LW-SSO configuration. For details, see LW-SSO Configuration for Multi-Domain and Nested Domain Installations in the BSM Platform Administration Guide.

- **Configure load balancer or reverse proxy certificates**

If you are using a Load Balancer or Reverse Proxy in which your data sources are not communicating directly with the BSM Gateway Server, perform the following task:

**Note:** Generally, OMi certificates must be exchanged on all nodes (Data Processing Servers, Gateway Servers, manager of manager configurations, and Load balancers). However, some load balancer technologies include a by-pass or pass-through functionality for incoming encrypted messages to its pool members. When using such technologies, certificate exchange on the Load Balancer node is not required if you are Load Balancing on the recommended OSI layer 2 or 4.

For details about Reverse Proxy configuration, see the BSM Hardening Guide.

- a. Request server and client certificates from your Certificate Authority for each front-end server (could be a load balancer VIP or a reverse proxy VIP)

If you do not have a Certificate Authority, you can issue an OMi certificate from the BSM Data Processing server with the following command:

```
ovcm -issue -file <certificate file> -name <Fully Qualified Domain Name of load balancer or reverse proxy node> [ -pass <passphrase>]
```

- b. Import these certificates to the load balancer or reverse proxy.
  - c. Make sure the load balancer/reverse proxy trusts your Certificate Authority (you may need to import the Certificate Authority certificate into the load balancer/reverse proxy).
  - d. On the load balancer/reverse proxy add a listener on port 383.
- **Copy files from production server or restore them from backup**

Restore the following files to the BSM:

- <Gateway Server installation directory>/AppServer/webapps/site.war/openapi/excels directory
- <Data Processing Server installation directory>/cmdb/general directory
- <Data Processing Server installation directory>/BLE/rules/<custom rules jar> file (s)
- <Gateway Server installation directory>/JRE/lib/security/cacerts
- <Gateway Server installation directory>/JRE64/lib/security/cacerts

## • Reconfigure Integration with HPOM

This procedure is only required if you are performing a staging upgrade. If you had previously configured an integration with HPOM, repeat the following procedure that

you performed when configuring this connection for the first time: "How to Set Up a Forwarding Target in the HPOM for UNIX Node Bank" in the BSM - Operations Manager Integration Guide.

## • Perform hardening procedures

If you want to secure the communication between BSM servers, perform the procedures in the BSM Hardening Guide.

If your original environment was secured with SSL and you are upgrading using a staging environment, you need to repeat the hardening procedures described in the BSM Hardening Guide.

If your original environment was secured with SSL and you are upgrading directly, you need to repeat the following hardening procedures:

- a. If you had previously made changes to **<HP BSM root directory>\EJBContainer\server\mercury\deploy\jboss-web.deployer\server.xml** while performing hardening procedures on your system, repeat the "Securing JBOSS" procedure in the Hardening Guide after the patch installation on all relevant BSM machines.
- b. If you had previously configured SSL on an IIS web server used by BSM, you need to verify HTTPS port binding in IIS is set to the correct port (443).
- c. If you had previously configured SSL on the Apache web server used by BSM, you may need to reapply the changes to httpd.conf and httpd-ssl.conf files as follows:
  - In **<HP BSM root directory>\WebServer\conf\httpd.conf**, uncomment the following two lines:

```
LoadModule ssl_module modules/mod_ssl.so
```

```
Include conf/extra/httpd-ssl.conf
```

- In **<HP BSM root directory>\WebServer\conf\extra\httpd-ssl.conf**, specify paths to **SSLCertificateFile** and **SSLCertificateKeyFile**
- Restart the HP BSM Apache web service

## • Ensure all processes started properly

You can check to ensure that all processes started properly. For details, see "How to View the Status of Processes and Services" in the BSM Platform Administration Guide.

## • Modify the product\_name\_enum

If you are planning to use Operations Manager i, perform the following steps:

- Go to **Admin > RTSM Administration > Modeling > CI Type Manager**.
- From the CI Types list, select **System Type Manager**.
- Select **product\_name\_enum** and click **Edit**.
- Type **lync\_server** and click **Add**.
- Click **OK**.

## • Install and Configure System Health

System Health enables you to monitor the performance of the servers, databases, and data collectors running on your BSM system and ensure that they are functioning properly. It is recommended that you install and configure System Health after you deploy BSM servers. For details, see the System Health Guide.

## • Check installation log files

You can see the installation log file by clicking the **View log file** link at the bottom of the installer window.

In a Windows environment, this log file, along with additional log files for separate installation packages, is located in the **%temp%\..\HP0vInstaller\<BSM version>** directory.

In a Linux environment, the logs files are located in the **/tmp/HP0vInstaller/<BSM version>** directory.

The installer log file name is in the following format:

**HPBsm\_<VERSION>\_<DATE>\_HP0vInstallerLog.html** or **HPBsm\_<VERSION>\_<DATE>\_HP0vInstallerLog.txt** (for example, HPBsm\_9.10\_2010.10.21\_13\_34\_HP0vInstallerLog.html).

Individual installation package log file names are in the following format:

**Package\_<PACKAGE\_TYPE>\_HPBSM\_<PACKAGE\_NAME>\_install.log** (for example, Package\_msi\_HPBSM\_BPIPkg\_install.log).

## • Overwrite custom changes (optional)

BSM 9.2x comes with built in content packs. If any of the data in these content packs conflicts with a previously existing custom change, BSM keeps the custom change and does not overwrite it.

**To overwrite your custom changes with the new 9.2x data:**

- a. Open the Content Packs page from **Admin > Platform > Content Packs**.
- b. Select each content pack. In the content pack summary, there is a column

indicating the origin of each artifact. For each item whose value is **predefined (customized)**, this indicates that the artifact was customized and is different from the one delivered with 9.2x.

- c. To overwrite a change, locate the artifact in the corresponding admin user interface and select **restore to default**.

## • Restore BSM service changes

If you manually configured different users to run BSM services, these settings must be configured again. For details, see "[Changing BSM Service Users](#)" on page 284.

## • Install component setup files

The component setup files are used to install the components used by BSM. The component setup files are not installed as part of the basic BSM installation. They are located separately in the Web delivery package download area and in the **Data Collectors and Components\components** directory of the BSM DVDs and must be installed separately to the BSM Downloads page. The component setup files can then be downloaded from BSM and used when required. For details on working with the BSM Downloads page, see "Downloads Overview" in the BSM Platform Administration Guide.

**Note:** The components on the Downloads page are updated for each major and minor release (for example: 9.00 and 9.20). To download updated components for minor releases and patches (for example, 9.22), go to the [HP Software Support site \(https://softwaresupport.hp.com\)](https://softwaresupport.hp.com).

You must run all DVDs provided for installation to enable downloading all the BSM data collectors and components.

**Note:** You can install a component by using the component's setup file directly from the network or DVD. For details on installing a component, refer to the individual documentation for the component you want to install. The relevant documentation is available from the Downloads page in BSM after the component's setup files are copied to the Downloads page.

The procedure for installing component setup files to the Downloads page differs, depending on whether you are installing a Web delivery version or DVD delivery version of BSM.

- Installing Component Setup Files Using a Web Delivery Version

Copy the component setup files that you want available in the Downloads page from the appropriate directory in the release download area to the **<BSM root directory>\AppServer\webapps\site.war\admin\install** directory on the BSM Gateway Server. If required, create the **admin\install** directory structure.

- Installing Component Setup Files Using a DVD Delivery Version

There is a setup utility in the **Data Collectors and Components** directory on the DVD that copies the component setup files from the DVD to the **<BSM root directory>\AppServer\webapps\site.war\admin\install** directory on the BSM Gateway Server.

During the setup process, you can choose which data collectors to copy by selecting the relevant checkboxes.

**Note:** You can install all or some of the component setup files on multiple Gateway Servers, with the files installed on a specific server being available on that server's Downloads page.

To install component setup files to the BSM Downloads page:

- i. Insert the BSM DVD into the drive of the BSM Gateway Server on which you want to copy the component setup files.
- ii. On the Setup window, click the **Data Collectors and Components Downloads Page Setup** link to open the Data Collector Wizard.

If the Setup window does not appear on your screen, navigate to the **Data Collectors and Components** directory on the DVD and run **copydc.bat**.

- iii. Follow the on-screen instructions to complete the wizard.

## • Enable IPv6 Support (optional)

BSM by default communicates using IPv4. If your environment uses IPv4 and IPv6, you can choose to use either IPv4 or IPv6, but not both. To enable IPv6, run the following commands on all BSM servers (GW and DPS):

```
ovconfchg -ns sec.cm.server -set IsIPV6Enabled TRUE
```

```
ovc -kill
```

```
ovc -start
```

## • Restart BSM

Restart BSM by disabling and then enabling all servers. For details, see ["Starting and Stopping BSM" on the next page](#).

## Starting and Stopping BSM

After completing the BSM server installation, restart your computer. It is recommended that you do this as soon as possible. Note that when the machine restarts, you must log in as the same user under which you were logged in before restarting the machine.

After installing the BSM servers (either together on one machine, or at least one instance of each server type in a distributed deployment) and connecting the server machines to the databases, you launch BSM on each server machine.

**Note:** You can check which BSM servers and features are installed on a BSM server machine by viewing the [INSTALLED\_SERVERS] section of the **<BSM server root directory>\conf\TopazSetup.ini** file. For example, `Data_Processing_Server=1` indicates that the Data Processing Server is installed on the machine.

### To start or stop BSM in Windows:

Select **Start > Programs > HP Business Service Management > Administration > Enable | Disable Business Service Management**. When enabling a distributed environment, first enable the Data Processing Server and then enable the Gateway Server.

### To start or stop BSM in Linux:

```
/opt/HP/BSM/scripts/run_hpbsm {start | stop | restart}
```

### To start, stop, or restart BSM using a daemon script:

```
/etc/init.d/hpbsmd {start| stop | restart}
```

**Note:** When you stop BSM, the BSM service is not removed from Microsoft's Services window. The service is removed only after you uninstall BSM.

## Logging In and Out

You log in to BSM from a client machine's browser using the login page. LW-SSO is BSM's default authentication strategy. For details, see "Logging into BSM with LW-SSO" in the BSM Platform Administration Guide.

You can disable single sign-on authentication completely, or you can disable LW-SSO and use another supported authentication strategy. For details on selecting an authentication strategy, see "Set Up the Authentication Strategies" in the BSM Platform Administration Guide.

**Tip:** For complete login help, click the **Help** button on the login page.

### To access the BSM login page and log in for the first time:

1. In the Web browser, enter the URL `http://<server_name>.<domain_name>/HPBSM` where **server\_name** and **domain\_name** represent the FQDN of the BSM server. If there are multiple servers, or if BSM is deployed in a distributed architecture, specify the load balancer or Gateway Server URL, as required.

**Note:** Users running previous versions of BSM can still use bookmarks set to access the URL `http://<server_name>.<domain_name>/mercuryam` and `http://<server_name>.<domain_name>/topaz`

2. Enter the default administrator user ("admin"), and the password specified in the Setup and Database Configuration utility, and click **Log In**. After logging in, the user name appears at the top right.
3. (Recommended) Create additional administrative users to enable BSM administrators to access the system. For details on creating users in the BSM system, see "User Management" in the BSM Platform Administration Guide.

**Note:**

- For login troubleshooting information, see "Troubleshooting and Limitations" in the BSM Platform Administration Guide.
- For details on login authentication strategies that can be used in BSM, see "Authentication Strategies — Overview" in the BSM Platform Administration Guide.
- For details on accessing BSM securely, see the BSM Hardening Guide.

When you have completed your session, it is recommended that you log out of the Web site to prevent unauthorized entry.

**To log out:**

Click **Logout** at the top of the page.

## Add Additional BSM Servers

Once you have a working BSM 9.2x environment, you can add new Gateway and Data Processing servers as desired.

### To add new BSM servers to an existing BSM environment:

1. Run the installation and post-installation wizards. **Do not run the Setup and Configuration Utility when prompted.**
  - Windows:  
**DVD1 > Windows\_Setup > HPBsm\_9.20\_setup.exe**  
For more details, see "[Installing BSM on a Windows Platform](#)" on page 188
  - Linux:  
**DVD2 > Linux\_Setup > HPBsm\_9.20\_setup.bin**  
For more details, see "[Installing BSM on a Linux Platform](#)" on page 181
2. Install the latest minor minor version of BSM 9.2x and patch (if available)
  - a. Go to the [HP Software Support](https://softwaresupport.hp.com) web site (https://softwaresupport.hp.com) and sign in.
  - b. Click **Search**
  - c. Select the relevant product, version , and operating system (for example, **Application Performance Management (BAC) > 9.25 > Windows**).
  - d. Under Document Type, select **Patches**.
  - e. Locate the applicable patch.
  - f. Save the package locally and launch the relevant setup file to install the patch.

- g. Run the installation files on all BSM servers (Gateway and Data Processing).
  - h. Run the post-installation wizard. This wizard follows the patch installation automatically.
  - i. Repeat this procedure for the latest intermediate patch (if available).
3. Copy additional files

Some additional files are needed to allow BSM to verify the validity of the database.

- a. Find the version of your BSM database by running the following query in the management database:

```
SELECT * FROM system where sys_name = 'dbpatchver'
```

This will return the version of your database (for example, 1085 for BSM 9.23).

- b. Go to **DVD root directory \packages\DBVerifyVersions\<version\_of\_your\_database>**.
  - c. Copy and overwrite the contents of the folder with the same version number as your database to your server's **HPBSM\dbverify** directory.
4. Run the Setup and Database Configuration utility
- **Windows:** On the BSM server, select **Start > Programs > HP Business Service Management > Administration > Configure HP Business Service Management**. Alternatively, you can run the file directly from **<BSM\_Installation\_Directory>\bin\config-server-wizard.bat**.
  - **Linux:** On the BSM server machine, open a terminal command line and launch **/opt/HP/BSM/bin/config-server-wizard.sh**.

For more details about this utility, see "[Server Deployment and Setting Database Parameters](#)" on page 199.

**5. Restart all BSM servers**

After you have installed all additional servers, restart all other BSM servers and data collectors to allow them to recognize the new servers.

# Configuring Secure Access to BSM Reverse Proxy

This chapter describes the security ramifications of reverse proxies and contains instructions for using a reverse proxy with BSM.

This chapter discusses only the security aspects of a reverse proxy. It does not discuss other aspects of reverse proxies, such as caching and load balancing.

A reverse proxy is an intermediate server that is positioned between the client machine and the Web server(s). To the client machine, the reverse proxy seems like a standard Web server that serves the client machine's HTTP or HTTPS protocol requests with no dedicated client configuration required.

The client machine sends ordinary requests for Web content, using the name of the reverse proxy instead of the name of a Web server. The reverse proxy then sends the request to one of the Web servers. Although the response is sent back to the client machine by the Web server through the reverse proxy, it appears to the client machine as if it is being sent by the reverse proxy.

BSM supports a reverse proxy in DMZ architecture. The reverse proxy is an HTTP or HTTPS mediator between the BSM data collectors/application users and the BSM servers.

Your data collectors may access BSM through the same virtual host or a different virtual host as your application users.

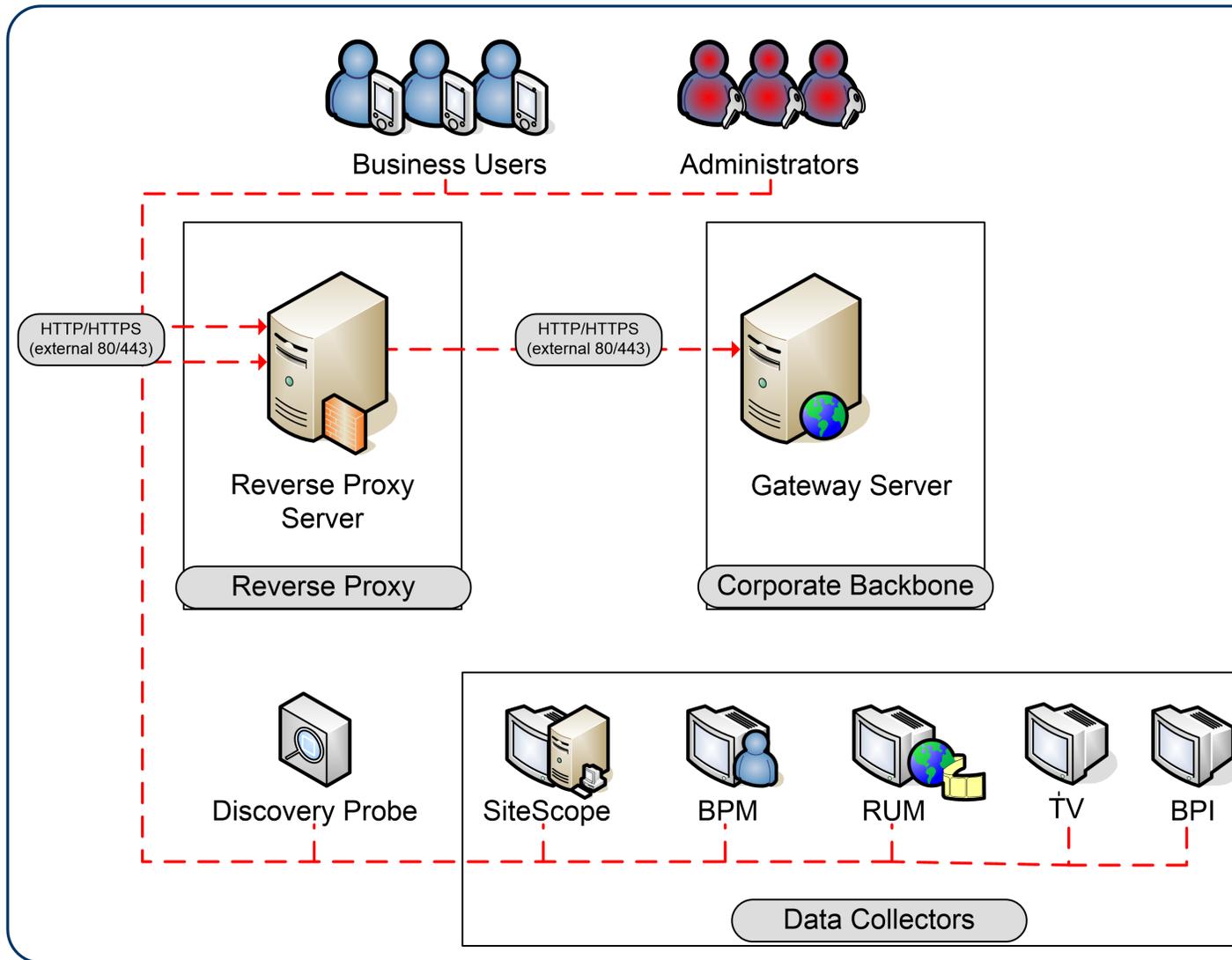
## Reverse Proxy Configuration

In this topology, the reverse proxy context is divided into two sections:

- Communication that is redirected to the Virtual Host for Data Collectors.
- Communication that is redirected to the Virtual Host for Application Users.

The use of a reverse proxy is illustrated in the diagram below. Your data collectors may access BSM through the same virtual host or a different virtual host as your application

users. For example, your environment may use one load balancer for application users and one load balancer for data collectors.



Reverse proxy BSM support should be configured differently in each of the following cases:

Scenario #	BSM Components Behind the Reverse Proxy
1	Data collectors (Business Process Monitor, Real User Monitor, SiteScope, Data Flow Probe, BSM Connector)

Scenario #	BSM Components Behind the Reverse Proxy
2	Application users
3	Data collectors and application users

**Note:**

- When configuring a Reverse Proxy with TransactionVision, only one instance of the TransactionVision UI/Job Server exists, even if there are multiple Gateway Servers in your environment.

## Reverse Proxy Configuration Workflow

This section describes the overall workflow for configuring a reverse proxy to work with BSM servers. The procedure differs depending on the web server of your reverse proxy.

1. If you have a load balancer that is functioning as a reverse proxy, you do not need to configure an additional reverse proxy. For details, see ["Load Balancing for the Gateway Server" on page 248](#).
2. Perform the relevant procedure depending on whether your reverse proxy is using the Apache or IIS web server.  
  
Apache. ["Configuring a Reverse Proxy - Apache" on the next page](#).  
  
IIS. ["Configuring a Reverse Proxy - IIS" on page 165](#).
3. Perform the procedure to configure your reverse proxy. BSM currently only supports using the apache web server as your reverse proxy. For details, see ["Configuring a Reverse Proxy - Apache" on the next page](#).
4. Configure BSM to support your reverse proxy. For details, see ["HP BSM Specific Configuration" on page 173](#).

## Configuring a Reverse Proxy - Apache

This section contains the procedures describing how to configure a reverse proxy using an apache web server.

**Note:** Securing access to the reverse proxy should be performed as part of the Hardening Workflow. For details, see *Hardening Workflow* in the Hardening Guide.

This section contains the following topics:

- ["Configuring Apache to Work as a Reverse Proxy " below](#)
- ["Configuring BBC Port 383 Connection on Reverse Proxy" on page 157](#)
- ["Reference - Support for BSM Application Users" on page 159.](#)
- ["Reference - Support for BSM Data Collectors" on page 163.](#)

### Configuring Apache to Work as a Reverse Proxy

**Note:** Securing access to the reverse proxy should be performed as part of the Hardening Workflow. For details, see *Hardening Workflow* in the Hardening Guide.

1. Configure Apache to work as a reverse proxy.

Apache must be manually configured to function as a reverse proxy.

**For example:**

- a. Open the <Apache installation directory>\Webserver\conf\httpd.conf file.
- b. Enable the following modules:

```

    ◦ LoadModule proxy_module modules/mod_proxy.so

    ◦ LoadModule proxy_http_module modules/mod_proxy_http.so

c. Add the following lines:

ProxyRequests off

<Proxy *>
    Order deny,allow
    Deny from all
    Allow from all
</Proxy>
ProxyTimeout 300
    
```

2. Add support for application users and data collectors as seen in the following example. For more details, see ["Reference - Support for BSM Application Users" on page 159](#) and ["Reference - Support for BSM Data Collectors" on page 163](#).

**Data Collectors:**

ProxyPass	/ext	http://DATA/ext
ProxyPassReverse	/ext	http://DATA/ext
ProxyPass	/topaz/topaz_api	http://DATA/topaz/topaz_api
ProxyPassReverse	/topaz/topaz_api	http://DATA/topaz/topaz_api
ProxyPass	/mam-collectors	http://DATA/mam-collectors
ProxyPassReverse	/mam-collectors	http://DATA/mam-collectors

**Application Users:**

ProxyPass	/mercuryam	http://USERS/mercuryam
ProxyPassReverse	/mercuryam	http://USERS/mercuryam
ProxyPass	/hpbsm	http://USERS/hpbsm
ProxyPassReverse	/hpbsm	http://USERS/hpbsm
ProxyPass	/topaz	http://USERS/topaz
ProxyPassReverse	/topaz	http://USERS/topaz
ProxyPass	/webinfra	http://USERS/webinfra
ProxyPassReverse	/webinfra	http://USERS/webinfra

```

ProxyPass /filters http://USERS/filters
ProxyPassReverse /filters http://USERS/filters
ProxyPass /TopazSettings http://USERS/TopazSettings
ProxyPassReverse /TopazSettings http://USERS/TopazSettings
ProxyPass /opal http://USERS/opal
ProxyPassReverse /opal http://USERS/opal
ProxyPass /mam http://USERS/mam
ProxyPassReverse /mam http://USERS/mam
ProxyPass /mam_images http://USERS/mam_images
ProxyPassReverse /mam_images http://USERS/mam_images
ProxyPass /mcrs http://USERS/mcrs
ProxyPassReverse /mcrs http://USERS/mcrs
ProxyPass /rumproxy http://USERS/rumproxy
ProxyPassReverse /rumproxy http://USERS/rumproxy
ProxyPass /bpi http://USERS/bpi
ProxyPassReverse /bpi http://USERS/bpi
ProxyPass /odb http://USERS/odb
ProxyPassReverse /odb http://USERS/odb
ProxyPass /uim http://USERS/uim
ProxyPassReverse /uim http://USERS/uim
ProxyPass /ucmdb-api http://USERS/ucmdb-api
ProxyPassReverse /ucmdb-api http://USERS/ucmdb-api
ProxyPass /ucmdb-ui http://USERS/ucmdb-ui
        connectiontimeout=1000 timeout=1000
ProxyPassReverse /ucmdb-ui http://USERS/ucmdb-ui
ProxyPass /tv http://USERS/tv
ProxyPassReverse /tv http://USERS/tv
ProxyPass /tvb http://USERS/tvb
ProxyPassReverse /tvb http://USERS/tvb
ProxyPass /opr-admin-server/messagebroker/amfsecure
        http://USERS/opr-admin-server/messagebroker/amf
ProxyPassReverse /opr-admin-server/messagebroker/amfsecure
        http://USERS/opr-admin-server/messagebroker/amf
ProxyPass /opr-admin-server/messagebroker/amfpollingsecure
        http://USERS/opr-admin-server/messagebroker/amfpolling
ProxyPassReverse /opr-admin-
server/messagebroker/amfpollingsecure

```

```

ProxyPass          http://USERS/opr-admin-server/messagebroker/amfpolling
                   /opr-console/messagebroker/amfsecure
ProxyPassReverse   http://USERS/opr-console/messagebroker/amf
                   /opr-console/messagebroker/amfsecure
ProxyPass          http://USERS/opr-console/messagebroker/amf
ProxyPassReverse   http://USERS/opr-admin-server
                   /opr-admin-server
ProxyPass          http://USERS/opr-admin-server
ProxyPassReverse   http://USERS/opr-admin-
server
ProxyPass          /opr-console
ProxyPassReverse   http://USERS/opr-console
ProxyPassReverse   http://USERS/opr-console
ProxyPass          /opr-gateway
ProxyPassReverse   http://USERS/opr-gateway
ProxyPassReverse   http://USERS/opr-gateway
ProxyPass          /opr-web
ProxyPassReverse   http://USERS/opr-web
ProxyPassReverse   http://USERS/opr-web
ProxyPass          /OVPM
ProxyPassReverse   http://USERS/OVPM
ProxyPassReverse   http://USERS/OVPM
ProxyPass          /topaz/sitescope
ProxyPassReverse   http://USERS/topaz/sitescope
http://USERS/topaz/sitescope
ProxyPass          /cm
ProxyPassReverse   http://USERS/cm
ProxyPassReverse   http://USERS/cm

```

**Note:** If you are using IDM-SSO, you may need to add the following lines (replace siteminderagent in the syntax below with the name of your IDM-SSO vendor):

```

ProxyPass          /siteminderagent
http://USERS/siteminderagent
ProxyPassReverse   /siteminderagent
http://USERS/siteminderagent

```

### 3. Verify reverse proxy points to BSM

- Restart Apache
- Go to `http://<RP>/topaz` - verify that you see the BSM login page. At this point, if you enter your credentials you would see an empty page because BSM is not yet configured to work with a reverse proxy.

## Configuring BBC Port 383 Connection on Reverse Proxy

For all products/components using a BBC channel for communication to be able to forward events to the HP BSM server in the reverse proxy environment, port 383 used by the BBC protocol must be configured on the reverse proxy.

The following general steps use Apache as an example:

1. Before beginning this procedure, perform the steps in the "How to Establish a Trust Relationship for an HPOM Server Connection" chapter in the BSM - Operations Manager Integration Guide.
2. Make sure you have established the trust relationship between the HPOM server and the BSM servers as described in the section "How to Establish a Trust Relationship for an HPOM Server Connection" of the BSM - Operations Manager Integration Guide.

If you add an additional trust relationship to BSM after performing the following procedure, you must issue the certificate for the ReverseProxy node and run this procedure again.

3. Use the utility below to issue a certificate for the ReverseProxy node. This can be done from the BSM processing server or any HPOM server, but not from the BSM gateway server.

For example:

```
ovcm -issue -file <certificate_file> -name <FQDN (fully qualified domain name) of Reverse Proxy> [-pass <passphrase>]
```

4. Use openssl to convert it for use by Apache reverse proxy, as in the following:

**SSLCertificateFile:**

```
openssl pkcs12 -in <certificate_file> -out oprcl.crt
```

**SSLCertificateKeyFile:**

```
openssl rsa -in oprcl.crt -out oprcl.pem
```

**SSLProxyMachineCertificateFile:**

```
openssl pkcs12 -in <certificate_file> -out oprcl.p12 -nodes -  
clcerts
```

**SSLCACertificateFile:**

```
ovcert -exporttrusted -file trusts.cer
```

5. Copy the files to the following directories:

**SSLCertificateFile:**

```
<Apache_Install_Dir>/Apache2.2/conf/oprcl.crt
```

**SSLCertificateKeyFile:**

```
<Apache_Install_Dir>/Apache2.2/conf/oprcl.pem
```

**SSLProxyMachineCertificateFile:**

```
<Apache_Install_Dir>/Apache2.2/conf/oprcl.p12
```

**SSLCACertificateFile:**

```
<Apache_Install_Dir>/Apache2.2/conf/trusts.cer
```

6. Modify <BSM Gateway Installation Directory>/WebServer/conf/extra/httpd-ssl.conf file:

- a. Add the following line after the line Listen 443:

```
Listen 383
```

**For example:**

```
#  
Listen 443  
Listen 383  
#
```

- b. Add a virtual host section for port 383 before the SSL Virtual Host Context section.

**Note:** In the following, replace **<FQDN of Reverse Proxy>** with the fully qualified domain name of the reverse proxy. For example:  
**<VirtualHost bsmgw dualip.test.net:383>**

```
<VirtualHost <FQDN of Reverse Proxy>:383>

ServerName <value of "friendlyName" in oprcl.crt>
ServerAlias <hostname of RP>
ServerAdmin <admin email>
DocumentRoot "<Apache_Install_Dir>/Apache2.2/htdocs"
ErrorLog "<Apache_Install_Dir>/Apache2.2/logs/<FQDN of Reverse Proxy>-error.log"
TransferLog "<Apache_Install_Dir>/Apache2.2/logs/<FQDN of Reverse Proxy>-access.log"
ProxyRequests Off
SSLProxyEngine on
SSLEngine on
SSLCipherSuite ALL:!ADH:!EXPORT56:RC4+RSA:+HIGH:+MEDIUM:+LOW:+SSLv2:+EXP:+eNULL
SSLCertificateFile "<Apache_Install_Dir>/Apache2.2/conf/oprcl.crt"
SSLCertificateKeyFile "<Apache_Install_Dir>/Apache2.2/conf/oprcl.pem"
SSLProxyMachineCertificateFile "<Apache_Install_Dir>/Apache2.2/conf/oprcl.p12"
SSLCACertificateFile "<Apache_Install_Dir>/Apache2.2/conf/trusts.cer"
<Proxy *>
Order deny,allow
Allow from "<DomainName> e.g. .devlab.ad"
</Proxy>
ProxyPass / "https://<FQDN of BSM Gateway>:383/"
ProxyPassReverse / "https://<FQDN of BSM Gateway>:383/"
</VirtualHost>
```

## Reference - Support for BSM Application Users

The following table can be used as a reference for application users to connect via the reverse proxy.

Requests for ... on the Reverse Proxy Server	Proxy Request to be Served by:
/hpbsm/*	http://[Virtual Host for Application Users]/hpbsm/* https://[Virtual Host for Application Users]/hpbsm/*
/bpi/*	http://[Virtual Host for Application Users]/bpi/* https://[Virtual Host for Application Users]/bpi/*

Requests for ... on the Reverse Proxy Server	Proxy Request to be Served by:
/filters/*	http://[Virtual Host for Application Users]/filters/* https://[Virtual Host for Application Users]/filters/*
/mam/*	http://[Virtual Host for Application Users]/mam/* https://[Virtual Host for Application Users]/mam/*
/mam_images/*	http://[Virtual Host for Application Users]/mam_images/* https://[Virtual Host for Application Users]/mam_images/*
/mcrs/*	http://[Virtual Host for Application Users]/mcrs/* https://[Virtual Host for Application Users]/mcrs/*
/mercuryam/*	http://[Virtual Host for Application Users]/mercuryam/* https://[Virtual Host for Application Users]/mercuryam/*
/odb/*	http://[Virtual Host for Application Users]/odb/* https://[Virtual Host for Application users]/odb/*
/opal/*	http://[Virtual Host for Application Users]/opal/* https://[Virtual Host for Application Users]/opal/*
/opr-admin-server/messagebroker/amfpolling/*	http://[Virtual Host for Application Users]/opr-admin-server/messagebroker/amfpolling/* https://[Virtual Host for Application Users]/opr-admin-server/messagebroker/amfpollingsecure/*  <b>Note:</b> Append the word secure to each resource URL when using https.

Requests for ... on the Reverse Proxy Server	Proxy Request to be Served by:
/opr-admin-server/ messagebroker/amf/*	<p>http://[Virtual Host for Application Users]/opr-admin-server/ messagebroker/amf/*</p> <p>https://[Virtual Host for Application Users]/opr-admin-server/ messagebroker/amfsecure/*</p> <p><b>Note:</b> Append the word secure to each resource URL when using https.</p>
/opr-console/ messagebroker/amf/*	<p>http://[Virtual Host for Application Users]/opr-console/ messagebroker/amf/*</p> <p>https://[Virtual Host for Application Users]/opr-console/ messagebroker/amfsecure/*</p> <p><b>Note:</b> Append the word secure to each resource URL when using https.</p>
/opr-admin-server/*	<p>http://[Virtual Host for Application Users]/opr-admin-server/*</p> <p>https://[Virtual Host for Application Users]/opr-admin-server/*</p>
/opr-console/*	<p>http://[Virtual Host for Application Users]/opr-console/*</p> <p>https://[Virtual Host for Application Users]/opr-console/*</p>
/opr-gateway/*	<p>http://[Virtual Host for Application Users]/opr-gateway/*</p> <p>https://[Virtual Host for Application Users]/opr-gateway/*</p>

Requests for ... on the Reverse Proxy Server	Proxy Request to be Served by:
/opr-web/*	http://[Virtual Host for Application Users]/opr-web/* https://[Virtual Host for Application Users]/opr-web/*
/OVPM/*	http://[Virtual Host for Application Users]/OVPM/* https://[Virtual Host for Application Users]/OVPM/*
/rumproxy/*	http://[Virtual Host for Application Users]/rumproxy/* https://[Virtual Host for Application Users] /rumproxy/*
/topaz/*	http://[Virtual Host for Application Users]/topaz/* https://[Virtual Host for Application Users]/topaz/*
/TopazSettings/*	http://[Virtual Host for Application Users] /TopazSettings/* https://[Virtual Host for Application Users] /TopazSettings/*
/tv/*	http://[Virtual Host for Application Users]/tv/* https://[Virtual Host for Application Users]/tv/*
/tvb/*	http://[Virtual Host for Application Users]/tvb/* https://[Virtual Host for Application Users]/tvb/*
/ucmdb-api/*	http://[Virtual Host for Application Users]/ucmdb-api/* https://[Virtual Host for Application users]/ucmdb-api/*

Requests for ... on the Reverse Proxy Server	Proxy Request to be Served by:
/ucmdb-ui/*	<p>http://[Virtual Host for Application Users]/ucmdb-ui/*                      https://[Virtual Host for Application users]/ucmdb-ui/*</p> <p>Note: If you are using a Reverse Proxy and you have an integration with HP Universal CMDB, make sure your reverse proxy timeout setting is at least 1000 seconds.</p> <p>For example, in your reverse proxy http.conf file, modify the line that starts with ProxyPass as follows:</p> <pre>ProxyPass /ucmdb-ui http://&lt;my BSM GW server&gt;/ucmdb-ui connectiontimeout=1000 timeout=1000</pre>
/uim/*	<p>http://[Virtual Host for Application Users]/uim/*                      https://[Virtual Host for Application Users]/uim/*</p>
/webinfra/*	<p>http://[Virtual Host for Application Users]/webinfra/*                      https://[Virtual Host for Application Users]/webinfra/*</p>

## Reference - Support for BSM Data Collectors

The following table can be used as a reference for data collectors to connect via the reverse proxy.

Requests for... on the Reverse Proxy Server	Proxy Request to be Served by:
/topaz/topaz_api/*	<p>http://[Virtual Host for Data Collectors]/topaz/topaz_api/*                      https://[Virtual Host for Data Collectors]/topaz/topaz_api/*</p>
/topaz/sitescope/*	<p>http://[Virtual Host for Data Collectors]/topaz/sitescope/*                      https://[Virtual Host for Data Collectors]/topaz/sitescope/*</p>

Requests for... on the Reverse Proxy Server	Proxy Request to be Served by:
/ext/*	http://[Virtual Host for Data Collectors]/ext/* https://[Virtual Host for Data Collectors]/ext/*
/cm/*	http://[Virtual Host for Data Collectors]/cm/* https://[Virtual Host for Data Collectors]/cm/*
/mam-collectors/*	http://[Virtual Host for Data Collectors]/mam-collectors/* https://[Virtual Host for Data Collectors]/mam-collectors/*
/tv/*	http://[HP TransactionVision UI/Job Server]: 21000/tv/* https://[HP TransactionVision UI/Job Server]: 21001/tv/*  <b>Note:</b> If you want to use AJP to enable the Reverse Proxy server to communicate with the HP TransactionVision UI/Job Server, use the following: http://[HP TransactionVision UI/Job Server]: 21002/tv/*
/axis2/*	http://[Virtual Host for Data Collectors]/axis2/* https://[Virtual Host for Data Collectors]/axis2/*  <b>Note:</b> Required if SOAP adaptor is used with embedded Runtime Service Model (RTSM) for replication into secure BSM via reverse proxy.

**Note:**

- Make sure your reverse proxy supports priority handling logic, which enables a specific expression to be handled before a more generic one, if required. For example, the **/topaz/topaz\_api/\*** expression must be handled before the **/topaz/\*** expression.
- For some reverse proxies, a reverse pass is also required. The reverse pass changes the HTTP or HTTPS headers returned from the server to relative

headers. For an example of a reverse pass, see "[Configuring Apache to Work as a Reverse Proxy](#)" on page 153.

## Configuring a Reverse Proxy - IIS

This section contains the procedure describing how to configure a reverse proxy using an IIS web server. Procedures describing steps that are performed in products other than BSM are for example purposes only.

**Note:** Securing access to the reverse proxy should be performed as part of the Hardening Workflow. For details, see *Hardening Workflow* in the Hardening Guide.

This section contains:

["Configure IIS to Work as a Reverse Proxy"](#) below

["Configure IIS Reverse Proxy to Work with SSL"](#) on the next page

["Configure IIS to Require Client Authentication - Optional"](#) on page 168

["Additional Required Configurations for some Data Connections"](#) on page 169

### Configure IIS to Work as a Reverse Proxy

This procedure may differ depending on your version of IIS.

**For example:**

1. Install the Application Request Routing (ARR) extension. For details, see <http://www.iis.net/downloads/microsoft/application-request-routing>.
2. Open the IIS Manager.
3. Create a new IIS web site, or use the default web site.
4. Create a new IIS Server Farm named BSM.

- a. Add a new server to the farm with the IP of your BSM Gateway server.
  - b. When prompted, allow it to create a URL rewrite rule.
5. Enable IIS to function as a proxy.
- a. Select the main tree node (server name) > Application Request Routing Cache > Server Proxy Settings.
  - b. Check the **Enable proxy** box.
  - c. Set the **HTTP version** to **Pass through**.
  - d. Check the **Reverse rewrite host in response headers** box.
  - e. Click **Apply**.
6. Verify reverse proxy points to BSM

Go to `http://<Reverse Proxy FQDN>/topaz` - verify that you see the BSM login page. At this point, if you enter your credentials you would see an empty page because BSM is not yet configured to work with a reverse proxy.

## Configure IIS Reverse Proxy to Work with SSL

**Note:** Securing access to the reverse proxy should be performed as part of the Hardening Workflow. For details, see *Hardening Workflow* in the Hardening Guide.

1. Establish trust on the reverse proxy to the CA that issued the server certificate

Import the CA root certificate of the authority that issued the server certificate for this server into the computer truststore using mmc

**For example:**

- a. From the reverse proxy, open the Microsoft Management Console (**Run > mmc**).
- b. Add a snapin (**File > Add / Remove snapin**).
- c. Select Certificates and click **Add**.
- d. Select Computer Account and click **Next**.
- e. Select Local Computer and click **Finish**.
- f. Click **OK**.
- g. Import the certificate

Import ca.cer into the Trusted Root Certificate Authorities list.

## 2. Import the server certificate to the Microsoft Management Console

Import the server certificate you obtained earlier into Personal > Certificates in the Microsoft Management Console.

## 3. Enable SSL on IIS

### **For example:**

- a. In the IIS Manager, select your web site.
- b. In the actions pane, select **Bindings**
- c. Add an HTTPS binding for port 443
- d. Specify your server certificate in the SSL Certificate field.

## 4. Configure the Reverse Proxy to Require SSL

### **For example:**

- a. In the IIS Manager, select your web site, and select **SSL settings**.
- b. Check the **Require SSL** checkbox.

## 5. Configure SSL Offloading

If your SSL terminates on the reverse proxy, perform the following steps:

- a. Run the following command to configure IIS to allow large data samples (1 MB) to pass through:

```
C:\Windows\System32\inetsrv>appcmd.exe set config -  
section:system.webserver/serveuruntime /uploadreadaheadsize:1048576  
/commit:apphost
```

- b. In the IIS Manager, Select the main tree node (server name) > Application Request Routing Cache > Server Proxy Settings
- c. Check the **enable SSL offloading** checkbox.

## Configure IIS to Require Client Authentication - Optional

### 1. Recreate the SSL binding to enable client negotiation

The previous binding will function, but may have performance issues. This binding enables negotiation, thereby increasing performance when using client authentication.

- a. Remove the current binding using the IIS manager user interface
- b. Run the following commands from the IIS server:

```
c:\windows\system32\inetsrv\appcmd set site /site.name:"Default Web Site"  
/bindings.[protocol='https',bindingInformation='*:443:']
```

```
netsh http add sslcert ipport=0.0.0.0:443 certhash=<your server certificate hash>appid={00112233-4455-6677-8899-AABBCCDDEEFF} clientcertnegotiation=enable
```

**Note:** You can find the certificate hash from mmc by viewing the thumbprint in the details of the certificate.

2. Configure the Reverse Proxy to Require a Client Certificate

**For example:**

- a. In the IIS Manager, select your web site, and select **SSL settings**.
- b. In **Client certificates**, select **Require**.

3. Specify the header the reverse proxy passes to BSM for client certificate authentication in base64 format

**For example:**

- a. From the IIS manager, select your farm and select **Proxy**.
- b. Select the checkbox **Reverse rewrite host in response header**.
- c. In the field **forward encoded client certificate in the following header**, enter the header name **CLIENT\_CERT\_HEADER**.
- d. Click **Apply**.

### Additional Required Configurations for some Data Connections

1. Install Visual C++ redistributable package.

Install Visual C++ redistributable package on the reverse proxy. For details, see [http://answers.microsoft.com/en-us/windows/forum/windows\\_7-windows\\_](http://answers.microsoft.com/en-us/windows/forum/windows_7-windows_)

[programs/trying-to-open-computer-management-the-program/5c9d301a-2191-4edb-916e-5e4958558090](https://www.technet.microsoft.com/forums/itops/thread/5c9d301a-2191-4edb-916e-5e4958558090).

2. Install L-Core/BBC on the IIS SRP:

Copy HPSHaredComp.msi from the packages folder on the BSM installation DVD to the SRP system and install by double-clicking.

3. On the IIS SRP run the following command:

**ovc –start**

4. On the IIS SRP run the following command:

**netstat –an**

Select a port NOT in use. This selected free port is referenced in the next lines as **<port>**.

5. In a command shell on the IIS SRP run the following command:

**ovconfchg –ns sec.cm.client –set CERTIFICATE\_SERVER <FQDN of BSM GW Server or Load Balancer if you have one>**

6. In a command shell on the IIS SRP run the following command:

**ovcert –certreq**

7. On BSM grant the certificate request:

- a. In the BSM UI navigate to **Admin > Operations Management > Setup > Certificate Requests** and grant the certificate request from the IIS SRP.

Alternatively you can perform this procedure in the command line as follows:

On the DPS run **ovcm -listpending**. Then run **ovcm –grant <ID>** where **<ID>** is the result of the previous command.

- b. Verify that the certificate is installed correctly by running the following command on the IIS SRP:

**ovcert -list**

If the list is not empty the certificate was installed successfully.

8. On the IIS SRP, run the following commands where <RCP IP address> is the IP address of the IIS SRP server:

**ovconfchg -ns bbc.rcp -SERVER\_PORT <port>**

For example: ovconfchg -ns bbc.rcp -set SERVER\_PORT 9383

**ovconfchg -ns bbc.http -set PROXY <RCP IP address>:<port>+(\*)-(<RCP IP address>)**

For example: ovconfchg -ns bbc.http -set PROXY 192.168.254.5:9383+(\*)-(192.168.254.5)

**Note:** Use the same port as the previous command.

**ovcreg -add "%OVDATADIR%\conf\bbc\ovbbcrp.xml"**

**ovc -start**

9. On all BSM GW servers, run the following commands:

**ovconfchg -ns bbc.cb -set ENABLE\_REVERSE\_ADMIN\_CHANNELS true**

**ovconfchg -ns bbc.cb -set RC\_CHANNELS <RCP IP address>:<port>**

**ovconfchg -ns bbc.http -set PROXY <RCP IP address>:<port>+(\*)-(<RCP IP address>,<DPS FQDN>,<DPS short hostname>)**

Note: use the same port as the previous steps.

10. On every server that will remotely connect to the BSM environment (agents,

Diagnostics server, SiteScope server using event integration, HPOM, other BSM/OMi, etc.), run the following commands:

```
ovconfchg -ns bbc.cb -set ENABLE_REVERSE_ADMIN_CHANNELS true
```

```
ovconfchg -ns bbc.cb -set RC_CHANNELS <RCP IP address>:<port>
```

```
ovconfchg -ns bbc.http -set PROXY <RCP IP address>:<port>+(*)-(<RCP IP address>)
```

Configure the agent according to the relevant documentation (SiS, Diagnostics, BSM Connector, Integration Adapter, ...) to get the relevant certificates. If this does not work out, use the following procedure to manually install the certificates on the agent system:

- a. On the agent node run the following command:

```
ovcoreid
```

Remember the output. We will refer to the output in the next few steps as <coreid>.

- b. On the BSM DPS run the following command:

```
ovcm -issue -file <nodename>.cer -node <FQDN of agent node> -coreid <coreid>
```

Select a password and remember it.

- c. Copy the created file to the agent node.
- d. On the agent node run the following command:

```
ovcert -importcert -file <nodename>.cer
```

Provide the password you selected earlier.

All message targets on these systems should target the Load Balancer if it exists, or specify one BSM GW server.

For example, the message target in the flex manager forwarding policy of the HPOM system the forwarding target must be: 'OPCMGR IP 0.0.0.0 "<BSM GW Server>', or "<LoadBalancer>, if available.

11. Verify that the configuration was successful.

a. On a BSM GW server run the following command:

```
bbcutil -ping <FQDN of SiS, Diag, BSMC, HPOM, HPOM Agent> - ovrg server
```

b. On a remote system (SiS, Diag, BSMC, HPOM, HPOM Agent) run the following command:

```
bbcutil -ping <FQDNof BSM GW server or Load Balancer if used>
```

Each command should return **eServiceOK** if the configuration was successful.

## HP BSM Specific Configuration

In addition to configuring the reverse proxy to work with BSM, you must configure BSM to work with the reverse proxy.

**Note:** BSM must be configured only if application users are connected via a reverse proxy to BSM. If the reverse proxy is being used for data collectors only, skip the instructions in this section.

**To configure BSM to work with the reverse proxy:**

1. Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**. Click **Foundations** and select the **Platform Administration** context from the drop-down box.
2. In the Platform Administration - Host Configuration pane, set the following

parameters:

- **Default Virtual Gateway Server for Application Users URL and Default Virtual Gateway Server for Data Collectors URL.** Verify that these parameters represent the URL of the machine (reverse proxy, load balancer, or other type of machine) used to access the Gateway server machine. For example, `http://my_reverse_proxy.example.com:80`.

If you are using a NAT device to access the Gateway server, enter the full URL of the NAT device. For example,

`http://nat_device.example.com:80`.

**Local Virtual Gateway Server for Application Users URL and Local Virtual Gateway Server for Data Collectors URL** (optional). If you must use more than one URL (the ones defined for the Default Virtual Server URLs, above) to access the Gateway server machine, define a Local Server URL for each machine through which you want to access the Gateway server machine. For example, `http://my_specific_virtual_server.example.com:80`.

If the **Local Virtual Services Server URL** parameter is defined for a specific machine, this URL is used instead of the **Default Virtual Services URL** for the specifically-defined machine.

- **Direct Gateway Server for Application Users Server URL.** Click the **Edit** button and delete the URL in the **value** field.
- **Direct Gateway Server for Data Collectors URL.** Click the **Edit** button and delete the URL in the **value** field.

3. In the Reverse Proxy Configuration pane, set the following parameters:

- **Enable Reverse Proxy.** Set this parameter to true. Note that this must be done after the above parameters have been configured.
- **HTTP or HTTPS Reverse Proxy IPs .** Enter the internal IPs the reverse proxies or load balancers used to communicate with the Gateway server machine.

If the IP address of the reverse proxy sending the HTTP/S request is included, the URL returned to the client is either the **Default Virtual Server URL** or the **Local Virtual Server URL** (when defined). If the IP address of the reverse proxy sending the HTTP/S request is not included, the Gateway server machine returns the base URL that it receives in the HTTP/S request.

- If the IP address of the reverse proxy sending the HTTP/S request is included, the URL returned to the client is either the Default Virtual Server URL or the Local Virtual Server URL (when defined).
- If the IP address of the reverse proxy sending the HTTP/S request is not included, the Gateway Server machine returns the base URL that it receives in the HTTP/S request.
- If no IP addresses are defined for this parameter (not recommended), BSM works in Generic Mode. This means that you will only be able to log into BSM using the Virtual URL and not directly to the Gateway.

**Note:** If your reverse proxy and BSM Gateway Servers are not in the same domain, you must add the IP of the reverse proxy to the **HTTP or HTTPS Reverse Proxy IPs** parameter. For more details, see "LW-SSO Configuration for Multi-Domain and Nested Domain Installations" in the BSM Platform Administration Guide.

To find the internal IP of your reverse proxy or load balancer:

- Log in to BSM through the reverse proxy or load balancer.
- Open the log in the following location **<BSM Gateway Server>\log\EJBContainer\UserActionsServlet.log**.
- The IP that appears in the latest **login** line in this log is the reverse proxy or load balancer IP. The entry should have your user name.

4. Increase the reverse proxy timeout.

5. Restart the HP BSM service on the BSM Gateway and Data Processing servers.

**Note:** Once you change the BSM base URL, it is assumed that the client is initiating HTTP or HTTPS sessions using the new base URL. You must therefore ensure that the HTTP or HTTPS channel from the client to the new URL is enabled.

## Notes and Limitations

BSM requires your reverse proxy to have a timeout of at least 300 seconds. This is the default for some versions of Apache, but it may have been reduced. For some processes such as installing a content pack, the timeout should be as high as 1000 seconds (see ["Configuring Apache to Work as a Reverse Proxy " on page 153](#)).

If you configured BSM to work in Generic Mode, all the BSM clients must access the BSM machine via the reverse proxy.

## Specific and Generic Reverse Proxy Mode Support for BSM

BSM servers reply to application users by sending a base URL that is used to calculate the correct references in the HTML requested by the user. When a reverse proxy is used, BSM must be configured to return the reverse proxy base URL, instead of the BSM base URL, in the HTML with which it responds to the user.

If the reverse proxy is being used for data collectors only, configuration is required only on the data collectors and reverse proxy, and not on the BSM server(s).

There are two proxy modes that control user access to BSM servers:

- ["Specific Mode" on the next page.](#)
- ["Generic Mode" on the next page.](#)

## Specific Mode

This mode should be used if you want to concurrently access BSM servers through specific reverse proxies and by direct access. Accessing the server directly means that you are bypassing the firewall and proxy because you are working within your intranet.

If you are working in this mode, each time an application user's HTTP/S request causes BSM to calculate a base URL, the base URL is replaced with the value defined for either the **Default Virtual Server URL** or the **Local Server URL** (when defined), if the HTTP/S request came through one of the IP addresses defined for the **HTTP or HTTPS Reverse Proxy IPs** parameter. If the HTTP/S request did not come through one of these IP addresses, the base URL that BSM receives in the HTTP/S request is the base URL that is returned to the client.

## Generic Mode

This mode is used when you try to access the Gateway server via the reverse proxy. Any URLs requested are rewritten and sent back with the virtual IP of the Gateway server.

If you are working in this mode, each time an HTTP/S request causes the BSM application to calculate a base URL, the base URL is replaced with the value defined for either the **Default Virtual Server URL** or the **Local Virtual Server URL** (when defined).

Note that when using this mode, you must ensure that all BSM clients are accessing the BSM servers via the URL defined for the **Default Virtual Server URL** or the **Local Virtual Server URL** parameters.

## Install and Configure Additional Components

For an end-to-end, high-level workflow for setting up BSM, as well as details about BSM components and concepts, see the BSM Getting Started Guide, available as part of the BSM Help.

Use the following references to install and configure additional components:

Item	Resource
<b>BSM Platform</b>	To configure the BSM platform, see the BSM Platform Administration Guide, available as part of the BSM Help.
<b>BSM Integrations</b>	Information about integrations between BSM and other products can be found on the HP Software Integrations site: <a href="http://support.openview.hp.com/sc/solutions/index.jsp#tab=tab3">http://support.openview.hp.com/sc/solutions/index.jsp#tab=tab3</a> .

<p><b>BSM Components</b></p>	<ul style="list-style-type: none"> <li>• <b>Real User Monitor:</b> See the Real User Monitor Installation and Upgrade Guide.</li> <li>• <b>Business Process Monitor:</b> See the Business Process Monitor Deployment Guide.</li> <li>• <b>SiteScope:</b> See the HP SiteScope Deployment Guide.</li> <li>• <b>TransactionVision:</b> See the TransactionVision Deployment Guide.</li> <li>• <b>Diagnostics:</b> See the Diagnostics Server Installation and Administration Guide.</li> <li>• <b>Service Health Analyzer PA/NNM Data Collector:</b> See the Service Health Analyzer PA/NNM Data Collector Installation Guide.</li> <li>• <b>Business Process Insight:</b> See the the Business Process Insight Server Administration Guide.</li> <li>• <b>System Health:</b> See the System Health Guide.</li> <li>• <b>BSM Connector:</b> See the BSM Connector Installation and Upgrade Guide.</li> <li>• <b>Data Flow Probe:</b> See the Data Flow Probe Installation Guide.</li> </ul>
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You can access the above resources in the following locations:

- The Planning and Deployment Guides page: Can be found on the DVD root directory (**Get\_documentation.htm**), or from BSM, go to **Help > Planning and Deployment Guides**.
- The Downloads Page: **Admin > Platform > Setup and Maintenance > Downloads**.
- The HP Software Support site <https://softwaresupport.hp.com>.

**Note:** If you are planning to install OMi Management Packs on top of BSM 9.25, you

must install the **BSM 9.25 patch for OMi Management Pack**. See the BSM Patch Installation Guide for instructions.

# Installing BSM on a Linux Platform

This appendix contains the following topics:

## Prepare Information Required for Installation

Have the following information ready before installation:

- **Maintenance number.** This is the number you received with your BSM package.
- **Web server name.** This name must also include the domain name.

**Note:** When installing on Linux, the domain name must be entered manually.

- **Administrator's e-mail address.**
- **SMTP mail server name.**
- **SMTP sender name.** This name appears on notifications sent from BSM.
- **Name of the Gateway Server machine.**
- **Name of the load balancer** (if any). This is the load balancer used to access the BSM site.
- **Port number used by the Web server.** The default port is 80.

## Working with the Web Server

BSM installed on a Linux platform works with Apache HTTP Server.

**Note:** There must only be one running Web server on a BSM server machine.

## Apache HTTP Server

BSM uses a version of the Apache HTTP Server that has been adapted by HP for BSM. It is installed during the server installation.

BSM runs its Apache HTTP Server, by default, through port 80. If port 80 is already in use, there are two ways to resolve the port conflict:

- Before beginning BSM installation, reconfigure the service using that port to use a different port.
- During BSM installation, select a different port for the Apache HTTP Server.

By default, the Apache HTTP Server is not enabled for SSL use. For details on configuring the Web server to use SSL, see <http://httpd.apache.org/docs/2.2/ssl/>. SSL should be enabled for all the directories in use by BSM, as configured in the Apache configuration file (**httpd.conf** and **httpd-ssl.conf**).

## Installing BSM Servers on a Linux Platform

You install BSM servers—the Gateway Server and Data Processing Server—from the BSM DVD provided with the BSM distribution package.

To verify that the installation files are original HP-provided code and have not been manipulated by a third-party, you can use the HP Public Key and verification instructions provided on this HP web site:

<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning>.

You can also install BSM in silent mode. For details, see "[Installing BSM Silently](#)" on [page 212](#).

**Note:** It is recommended that you do not use an emulator application, for example Exceed, to install BSM. Installing via an emulator may slow the pace of the installation and may adversely affect the appearance and functionality of the user interface.

BSM and HP Operations Agent must always run as the same user. If the host system for the BSM installation is preinstalled with an HP Operations Agent and the HP Operations Agent is configured to run as a non-root user, you must first switch the HP Operations Agent to a root user before calling the BSM installer. At the end of the installation, you can choose if BSM runs as a root user or non-root user. If you choose to run BSM as a non-root user, you must switch the HP Operations Agent to the same non-root user.

### To install BSM servers:

1. Log in to the server as user **root**.
2. Insert the BSM DVD into the drive from which you want to install. If you are installing from a network drive, mount the DVD.
3. Go to the installation root directory.

4. (Optional) You can verify that the installation files are original HP-provided code and have not been manipulated by a third-party by using the HP Public Key and verification instructions on the following website:  
<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning>.
5. Run the following script:

```
/HPBsm_9.20_setup.bin
```

6. Follow the on-screen instructions for server installation.

**Note:** If BSM detects a previous installation on the machine, a message is displayed warning that any customized configuration data will be overwritten.

- Select the setup type:
  - Select **Gateway** setup type to install the Gateway Server on the current machine.
  - Select **Data Processing** setup type to install the Data Processing Server on the current machine.
  - Select **Typical** setup type to install the Gateway Server and Data Processing Server on the same machine.
- The directory where the BSM files are copied is **/opt/HP/BSM**.
- The installation directory for HP shared content is **/opt/OV**.
- The data directory for HP shared content is **/var/opt/OV**.

**Note:** During installation you may get the following message:

The necessary ports are in use. If the installation indicates that there are ports in use, the installation does not fail but it is recommended that you free the necessary ports.

This phase of the installation can take approximately 30-60 minutes in a virtual environment.

After the process completes, you see check marks next to each of the packages and applications successfully deployed. If there are errors, an **Errors** tab opens detailing what errors may have occurred.

7. The post-installation wizard opens. Do the following:

- **Register the product.** Enter **Name**, **Company**, and **Maintenance number**.
- **Configure connection settings:**
  - **Host.** Must be the fully qualified domain name (FQDN). The name of the server may appear by default but you must add the domain manually. If you use a load balancer, here you must enter the machine name for the load balancer.
  - **Port.** If port 80, the default port, is already in use by the existing Web server, BSM notifies you to resolve the conflict.
- **View the Web server type and enter the BSM administrator email address.**  
BSM installs the Apache HTTP Server. This is the web server that must be used in Linux environments.
- **Specify the SMTP mail server:**
  - It is recommended that you specify the complete Internet address of your SMTP server. Use only alphanumeric characters.
  - In the Sender name box, specify the name to appear in scheduled reports and on alert notices that BSM sends.

**Note:** You can rerun the post-installation wizard to modify the settings. The post-installation wizard can be run from the following location: **<HPBSM root directory>/bin/postinstall.sh**. However, if you are running the post-installation wizard for the first time or it was closed before completion, use the following file instead **<HP BSM root directory>/bin/ovii-postinstall.sh <TOPAZ\_HOME>**, where **<TOPAZ\_HOME>** is the BSM installation directory (typically /opt/HP/BSM).

# Installing BSM on a Windows Platform

This appendix contains the following topics:

## Prepare Information Required for Installation

Have the following information ready before installation:

- **Target directory names.** During installation BSM installs the HP Software L-Core packages. If a lower version of these packages is already installed, the packages are automatically upgraded. Otherwise, the currently installed version is not overwritten. This change cannot be reversed.
- During the installation, you must select directories for installing these shared packages. They include:
  - HP Software Cross Platform Component
  - HP Software Cross Platform Component Java
  - HP Software Security Core
  - HP Software HTTP Communication
  - HP Software Certificate Management Client
  - HP Software Security Core Java
  - HP Software HTTP Communication Java
  - HP Software Performance Access Java
  - HP Software Graphing Component
  - HP Software Process Control
  - HP Software Certificate Management Server
- **License key.** You have the option to use an evaluation license (60 days) or import your permanent license. You can browse to a local or network location to locate your

license .DAT file.

If at a later stage you need to update the license key (for example, if you acquire a license for one or more new BSM components), you can do so within the BSM site: Select **Admin > Platform > Setup and Maintenance > License Management** and click the **Add License from File** button. For information on updating the license key, see "Licenses" in the BSM Platform Administration Guide.

- **Maintenance number.** This is the maintenance number you received with your BSM package.
- **Administrator's e-mail address.**
- **Port number used by the Web server.** This is the port for access to BSM. The default is port 80.
- **Name of the Gateway Server machine.** This name must also include the domain name.
- **Name of the load balancer** (if applicable). This is the load balancer used to access the BSM site.
- **SMTP mail server name.**
- **SMTP sender name.** This name appears on notifications sent from BSM. This name cannot contain spaces. If a name is entered with spaces the reports will not be delivered.

**Note:** After BSM is started, you can configure an alternative SMTP server via **Admin > Platform > Setup and Maintenance > Infrastructure Settings**.

## Working with the Web Server

BSM installed on a Windows platform works with Apache HTTP Server or Microsoft Internet Information Server (IIS). You specify the web server type in the post-installation wizard. You can re-run the post-installation wizard to modify these settings.

**Note:** There must be only one running Web server on a server machine that uses the same port that BSM uses. For example, if you select to use Apache HTTP Server during BSM server installation, and you are installing on a machine on which IIS is already running, make sure to stop the IIS service and set its startup status to **Manual** before you begin the installation process.

## Apache HTTP Server

BSM uses an Apache HTTP Server version that has been adapted by HP for use with BSM. It is installed during the server installation.

By default, the Apache HTTP Server is not enabled for SSL use. For details on configuring the Web server to use SSL, see <http://httpd.apache.org/docs/2.2/ssl/>. SSL should be enabled for all the directories in use by BSM, as configured in the Apache configuration file (**httpd.conf** and **httpd-ssl.conf**).

## Microsoft Internet Information Server (IIS)

- For Microsoft Windows Server 2008 using IIS 7.x Web server, see "[Microsoft Windows Server 2008 using IIS 7.x Web Server](#)" on the next page.
- For Microsoft Windows Server 2012 using IIS 8 Web server, see "[Microsoft Windows Server 2012 using IIS 8 Web Server](#)" on the next page.

### **Microsoft Windows Server 2008 using IIS 7.x Web Server**

If you are installing on a Microsoft Windows Server 2008 and using the IIS 7.X Web server, perform the following procedure:

1. In the **Control Panel**, select **Administrative Tools > Server Manager**.
2. Right-click **Roles** and select **Add server role** to launch the Add Roles wizard.
3. On the Select Role Services page, select **Web Server (IIS) role** to install.

If a popup opens with the question **Add features required for Web Server (IIS)?**, click the **Add required features** button.

4. Click **Next** twice.
5. In the Select Role Services panel, select the following roles:
  - a. **Common HTTP Features** section: **Static Content** (usually enabled by default)
  - b. **Application Development** section: **ISAPI Extensions** and **ISAPI Filters**.
  - c. **Management Tools** section: **IIS Management Scripts and Tools**
6. Click **Install**.

### **Microsoft Windows Server 2012 using IIS 8 Web Server**

If you are installing on a Microsoft Windows Server 2012 and using the IIS 8 Web server, perform the following procedure:

1. In the **Control Panel**, select **Administrative Tools > Server Manager**.
2. Click **Manage > Add Roles and Features**.
3. Click **Next**.
4. Select **Role-based or future-based installation**.
5. Click **Next**.

6. Select **Select a server from the server pool**.
7. Click **Next**.
8. On the Select Role Services page, select **Web Server (IIS) role** to install.

If a popup opens with the question **Add features required for Web Server (IIS)?**, click the **Add required features** button.

9. Click **Next** twice.
10. In the Select Role Services panel, select the following roles:
  - a. **Common HTTP Features** section:
    - **Static Content** (usually enabled by default)
    - **HTTP Redirection**
  - b. **Application Development** section: **ISAPI Extensions** and **ISAPI Filters**.
  - c. **Management Tools** section: **IIS Management Scripts and Tools**
11. Click **Next**.
12. Click **Install**.

## Installing BSM Servers on a Windows Platform

You install BSM servers—the Gateway Server and Data Processing Server—from the DVD provided with the BSM distribution package. Unless you install on a machine running IIS, BSM installs Apache HTTP Server during the installation process.

You need administrative privileges for the machines on which you are installing BSM servers. If HP Operations Agent is installed on the system and configured to run as non-root user, switch the user under which the agent is running to the user with administrative privileges that is being used to install BSM.

**Note:** Make sure that there are no other installations or processes that may be using the Windows Installer. If there are, the BSM installation hangs and cannot continue running. You must stop the other installation, stop the BSM installation by clicking the **Cancel** button in the installation wizard, and re-run the BSM installation.

The first installation wizard copies the files and packages onto your machine. The post-installation wizard enables registration, and configuring connection, Web server, and SMTP settings.

You can also install BSM in silent mode. For details, see ["Installing BSM Silently" on page 212](#).

### To install BSM servers:

1. Insert the BSM DVD into the drive from which you want to install. A splash screen opens if Autorun is enabled on the machine.

If you are installing from a network drive:

- a. Connect to the DVD.
- b. From the **Start** menu, select **Run**.

- c. Enter the location from which you are installing, followed by HPBsm\_9.20\_setup.exe. The setup file for BSM servers is located in the **Windows\_Setup** directory of the DVD. For example, enter d:\Windows\_Setup\HPBsm\_9.20\_setup.exe

**Note:** If you are installing on a virtual machine, you must copy the .exe file, as well as the packages directory, locally. If you attempt to run the installation over the network onto a virtual machine, the installation fails.

- d. Click **OK**. Setup begins.

2. Follow the on-screen instructions for server installation.

- **Language.** If your installer has been localized to offer additional languages, select one from the options available.

You may receive an anti-virus warning. You can proceed with the installation without taking any action and with the anti-virus software running on the machine.

- **Setup type:**

- Select **Gateway** setup type to install the Gateway Server on the current machine.
- Select **Data Processing** setup type to install the Data Processing Server on the current machine.
- Select **Typical** setup type to install the Gateway Server and Data Processing Server on the same machine.

**Note:** If you are installing onto a machine running Windows 2008 R2 Server, you may get the following message: The installation folder for shared

content is not valid. The problem may in fact be that you do not have the necessary administrator permissions to install BSM on the machine. Check with your system administrator.

- **Installation directories.** You must select the following directories for installation.
  - Select the installation directory for HP shared content. Note that there is additional shared data in **%ALLUSERSPROFILE%\HP\BSM\**
  - Select the installation directory for product specific content. In Microsoft Windows environments, this path must be 15 characters or less, and must not contain blank spaces. If the name exceeds 15 characters or does not end with **HPBSM**, during the next step, the installation prompts you to give a different name.

**Note:** During installation you may get the following message:

The necessary ports are in use. If the installation indicates that there are ports in use, the installation does not fail but it is recommended that you free the necessary ports. Otherwise, you will have to re-configure BSM to use a different set of ports.

This phase of the installation can take approximately 30-60 minutes in a virtual environment.

After the process completes, you see check marks next to each of the packages and applications successfully deployed. If there are errors, an Error window opens indicating which installation scripts may have failed.

3. The post-installation wizard opens. Do the following:

- **Register the product.**
- **Configure connection settings:**
  - i. **Apache HTTP Server.** If port 80, the default port, is already in use by the existing Web server, BSM notifies you to resolve the conflict. If you select Apache, you must also enter the email address of the BSM administrator.
  - ii. **Microsoft IIS.** If IIS is using a port other than port 80, enter the IIS port. If you select IIS, you must also select the IIS Web site address to be used by BSM.
- **Select the Web server type:**
  - **For Windows 2008:** If BSM does not detect an installation of Microsoft IIS on the machine, you are offered the **Apache HTTP Server** option only. If you want to run BSM with Microsoft IIS, click **Cancel** to exit the wizard. Install IIS and rerun the BSM installation.
  - **For Windows 2012:** Install BSM 9.20 with Apache Web Server. After BSM 9.24 installation, you will be able to re-run Post Install and select IIS Web server.

**Note:** Before re-running Post Install, install and enable IIS Web Server.

- **Specify the SMTP mail server:**
  - It is recommended that you specify the complete Internet address of your SMTP server. Use only alphanumeric characters.
  - In the **Sender name** box, specify the name to appear in scheduled reports and on alert notices that BSM sends. If BSM was ever installed on the same machine, a default name, **HP\_BSM\_Notification\_Manager**, may appear. You can accept this default or enter a different name.

- After BSM is started you can configure an alternative SMTP server via **Platform Administration > Admin > Platform > Setup and Maintenance > Infrastructure Settings.**

If deploying on more than one server, install additional BSM servers using the above steps.

**Note:** You can rerun the post-installation wizard to modify the settings. The post-installation wizard can be run from the following location: **<HPBSM root directory>\bin\postinstall.bat**. However, if you are running the post-installation wizard for the first time or it was closed before completion, use the following file instead **<HPBSM root directory>\bin\ovii-postinstall.bat**.

# Server Deployment and Setting Database Parameters

This appendix contains the following topics:

**Note:** If you work with Oracle Server, substitute the term **user schema** for the term **database** below.

## Setup and Database Configuration Utility Overview

You configure your server deployment and create and connect to the databases/user schemas by using the Setup and Database Configuration utility.

You can run the Setup and Database Configuration utility as part of the BSM server installation by selecting it in the last page of the post-installation wizard. Alternatively, you can run the Setup and Database Configuration utility independently after server installation. The steps involved are the same for both procedures.

When installing in a distributed environment, run the utility first on the Data Processing Server and then on the Gateway Server.

If, at a later time, you want to modify any of the database types or connection parameters, you can run the Setup and Database Configuration utility again. The BSM server on which you are running the utility must be disabled. For details, see ["Starting and Stopping BSM" on page 144](#).

After modifying database type or connection parameters, restart all BSM servers and data collectors.

**Note:** Modifying connection parameters for the management, RTSM, RTSM history, Business Process Insight, and Event databases after BSM is up and running may cause serious data loss and integrity problems.

Before beginning this procedure, it is recommended that you review ["Setting Database Parameters" on the next page](#) and ["Required Information for Setting Database Parameters" on page 203](#).

For detailed information on preparing either MS SQL Server or Oracle Server in your system for use with BSM, see the BSM Database Guide.

## Setting Database Parameters

You can set connection parameters for the following databases:

- Management
- RTSM
- RTSM History
- Business Process Insight (BPI)
- Event
- User Engagement Schema

To configure the connections for these databases, you must:

- Select the type of database you plan to use— MS SQL Server or Oracle Server
- Select to create or re-use the database on MS SQL Server, or user schema on Oracle Server. See "[Creating Databases](#)" below.
- Specify the connection parameters to the database or user schema. See "[Connecting to Existing Databases](#)" on the next page.

**Note:** If you need to change an active management database for BSM, contact HP Software Support.

## Creating Databases

You can either use the Setup and Database Configuration utility to create the databases for you on MS SQL Server or Oracle Server, or you can create these databases manually, directly in the relevant database server (for example, if your organization does not allow the use of administrator credentials during Setup). If you created the

databases manually, you must still run the Setup and Database Configuration utility to connect to them.

For instructions on creating databases manually on MS SQL Server, see "Creating and Configuring Microsoft SQL Server Databases" in the BSM Database Guide. For instructions on creating user schemas manually on Oracle Server, see "Manually Creating the Oracle Server Database Schemas" in the BSM Database Guide.

**Note:** Each database/user schema created in BSM(whether on the same database server or on different database servers) must have a unique name.

## Connecting to Existing Databases

When running the Setup and Database Configuration utility, you select whether you want to create a new database/user schema or connect to an existing one.

You generally use the **Connect to an existing schema** option in the following scenarios:

- When connecting to a database/user schema you manually created directly on MS SQL Server/Oracle Server.
- When installing BSM in a distributed environment and running the utility on servers subsequent to the first server. In this case, you should run the wizard on the Data Processing Server first and then on the Gateway servers.

You connect to the databases/user schemas that you created during the installation of the first Data Processing Server. After you have connected to the management database, by specifying the same connection parameters that you set during the installation of the first server, the connection parameters for the other databases appear by default in the appropriate screens. Not all databases appear when running on the Gateway Server.

For information on implementing a distributed deployment of BSM, see "Deployment Configurations" in the BSM Getting Started Guide.

## Required Information for Setting Database Parameters

Before setting database parameters, you should prepare the information described in the following sections.

## Configuring Connection Parameters for MS SQL Server

You need the following information for both creating new databases and connecting to existing ones:

- **Host name.** The name of the machine on which MS SQL Server is installed. If you are connecting to a non-default MS SQL Server instance in dynamic mode, enter the following: <host\_name>\<instance\_name>

**Caution:** There is a twenty six (26) character limit for the **Host name** field while running the utility. If using a host name without a domain name is not appropriate in your environment, perform one of these workarounds:

- Use the IP instead of the host name in the **Host name** field.
  - Map the host name to the IP in the Windows Hosts file. Use the host name you mapped in the **Host name** field.
- **Port.** The MS SQL Server's TCP/IP port. BSM automatically displays the default port, **1433**.
    - If you connect to a named instance in static mode, enter the port number.
    - If you connect to a named instance in dynamic mode, change the port number to **1434**. This port can dynamically listen to the correct database port.

- **Database name.** The name of the existing database that has been manually created, or the name that you will give your new database (for example, BSM\_Management).

**Note:** Database names starting with numbers are not supported.

- **User name and Password.** (if you use MS SQL Server authentication) The user name and password of a user with administrative rights on MS SQL Server. Note that a password must be supplied.

**Tip:** We recommend not using the default **sa** user for security reasons.

You can create and connect to a database using Windows authentication instead of MS SQL Server authentication. To do so, you must ensure that the Windows user running the BSM service has the necessary permissions to access the MS SQL Server database. For information on assigning a Windows user to run the BSM service, see "[Changing BSM Service Users](#)" on page 284. For information on adding a Windows user to MS SQL Server, see "Using Windows Authentication to Access Microsoft SQL Server Databases" in the BSM Database Guide.

**Note:** In Linux environments, Windows authentication is not supported.

## Configuring Connection Parameters for Oracle Server

**Note:** If your Oracle Server is on a Real Application Cluster (Oracle RAC), some of the parameters in this section should be assigned different values. For details, see the section about Support for Oracle Real Application Cluster in the BSM Database Guide.

Before setting database parameters, ensure that you have created at least one tablespace for each user schema for application data persistency purposes, and that you have set at least one temporary tablespace according to the requirements. For details on creating and sizing the tablespaces for BSM user schemas, see "Oracle Server Configuration and Sizing Guidelines" in the BSM Database Guide.

You need the following information for both creating a new user schema and for connecting to an existing one:

- **Host name.** The name of the host machine on which Oracle Server is installed.

**Caution:** There is a twenty six (26) character limit for the **Host name** field while running the utility. If using a host name without a domain name is not appropriate in your environment, perform one of these workarounds:

- Use the IP instead of the host name in the **Host name** field.
- Map the host name to the IP in the Windows Hosts file. Use the host name you mapped in the **Host name** field.

- **Port.** The Oracle listener port. BSM automatically displays the default port, **1521**.
- **SID.** The Oracle instance name that uniquely identifies the Oracle database instance being used by BSM.
- **Schema name and password.** The name and password of the existing user schema, or the name that you will give the new user schema (for example, BSM\_MANAGEMENT).

If you are creating a new user schema, you need the following additional information:

- **Admin user name and password.** (to connect as an administrator) The name and password of a user with administrative permissions on Oracle Server (for example, a System user).
- **Default tablespace.** The name of the dedicated default tablespace you created for

the user schema.

- **Temporary tablespace.** The name of the temporary tablespace you assigned to the user schema. The default Oracle temporary tablespace is **temp**.

**Note:** To create a new user BSM user schema, you must have administrative permissions and CREATE USER, CONNECT, CREATE SEQUENCE, CREATE TABLE, CREATE TRIGGER, UNLIMITED TABLESPACE, CREATE VIEW, and CREATE PROCEDURE privileges on the Oracle Server.

## Running the Setup and Database Configuration Utility

You can run the Setup and Database Configuration utility either as part of the BSM Installation process or separately. If you run the Setup and Database Configuration utility separately from BSM Installation process, note the following important points:

- If the command prompt window is open on the BSM server machine, you must close it before continuing with the Setup and Database Configuration utility.
- If running this wizard after installation to modify existing configuration and not during initial installation, you must disable BSM before running the Setup and Database Configuration utility (select **Start > Programs > HP Business Service Management > Administration > Disable HP Business Service Management**).
- Use only English characters when entering database parameters.

**Note:** You can also run this utility in silent mode. For details, see ["Installing BSM Silently" on page 212](#).

### To set database parameters and configure server deployment:

1. Launch the Setup and Database Configuration utility in one of the following ways:
  - At the end of the post-installation wizard, select the option to run the Setup and Database Configuration utility.
  - **Windows:** On the BSM server, select **Start > Programs > HP Business Service Management > Administration > Configure HP Business Service Management**. BSM launches the Setup and Database Configuration utility. Alternatively, you can run the file directly from **<BSM\_Installation\_Directory>\bin\config-server-wizard.bat**.
  - **Linux:** On the BSM server machine, open a terminal command line and launch **/opt/HP/BSM/bin/config-server-wizard.sh**.

2. Follow the on-screen instructions for configuring the databases.
  - a. **License.** If you are running this utility for the first time, you can select to use the evaluation license or download your new licenses. If this is not the first time you are running this utility, you can select to skip this step or download additional licenses. The license file has a .DAT suffix and must be in a local or network location accessible to the server running the utility.

You can update your licenses after BSM is installed in the Licenses Management page of Platform Administration. For details, see "Licenses" in the BSM Platform Administration Guide.

- b. **Server Deployment.** The recommended workflow is to enter your deployment information in the capacity calculator to determine the scope of your deployment and which applications and features you will be running. You can upload the saved capacity calculator Excel file into this page of the utility. The required fields are automatically populated with the data from the capacity calculator, based on your entries in the Excel sheet. For details, see the BSM Getting Started Guide.
  - **Users.** The number of logged in users determines whether your user load is **small, medium, or large.**
  - **Model.** The number of configuration items in your model determines whether your model is **small, medium, large, or extra-large.**
  - **Metric Data.** The number of monitored applications, transactions, locations, and hosts determines whether your metric data load is **small, medium, or large.**
  - **<List of Applications>.** Select or clear the applications to activate or deactivate for this deployment. Clear those applications you are not using to free memory and processor speed for those applications that you are using.

**Note:** If you do not enable functionality while running this utility, it is not available to any users. For example, if you do not select Custom Rules (used in OMi and labelled Custom Event Handling in the capacity calculator), users are not able to customize event processing. For details on the application options, see the tooltips in the capacity calculator.

After the installation is complete and you want to change your deployment, you can adjust capacity levels and enable or disable applications and functionality in the Server Deployment page in Platform Administration.

You can also manually enter the information in this page, but it is highly recommended that you use the capacity calculator to determine the scope and capacity of your deployment.

- c. **Login Settings.** Enter passwords for the administrator user ("admin") to access BSM and the JMX console.

Optionally, set an **Access to RTSM password** to secure communication to the Run-time Service Model from RUM, BPI, and TransactionVision.

**Note:** If you change the **Access to RTSM** password during the BSM installation, you must similarly change the password in BPI, Diagnostics, RUM, and TV.

- d. **IIS Configuration.** If you are using Microsoft Internet Information Server (IIS) version 7.X on Microsoft Windows Server 2008, BSM requires that the following IIS roles are enabled:
  - o ISAPI Extensions
  - o ISAPI Filters

- IIS Management Scripts and Tools
- Static Content

If they are already enabled, the IIS Configuration screen is not displayed.

If any of the roles are not enabled, you can request that they are automatically configured now by selecting **Automatically enable IIS roles** and clicking **Next**.

If you want to configure them manually, select **Manually enable IIS roles** and click **Next**.

- e. **Firewall Configuration.** If you are running BSM behind a firewall, when running the utility on a Gateway Server, you have the option of configuring the firewall either automatically or manually.
  - If you choose to configure automatically, **only port 383** (the event system default port) is configured. When the user decides to configure the firewall automatically we check which port is configured for BBC in XPL config and open this port. 383 is the default BBC port but if the user changed this in XPL config we open that port in the firewall instead of port 383.

You must then manually configure the same port when running the utility on the Data Processing Server because the certificate server is hosted there. You may need to open additional ports if a firewall is enabled on this server. For details, see "Port Usage" in the BSM Platform Administration Guide
  - If you choose to configure manually, no port configuration is executed and you must manually configure on both the Gateway Server and the Data Processing Server.
- f. To enable the database connections, you must click **Finish** at the end of the utility.

3. If you ran the Setup and Database Configuration utility as part of the BSM server

installation, you must start BSM on all servers only after successfully setting the parameters for all the databases. For details, see ["Starting and Stopping BSM" on page 144](#).

If you ran the Setup and Database Configuration utility to add a new Gateway Server or modify the previously defined database types or connection parameters, restart all BSM servers and data collectors after successfully completing the parameter modification process.

**Note:** If you used this utility to modify any databases on a running BSM deployment, MyBSM and Service Health will no longer contain any pages and components, and OMi perspectives are removed. To restore MyBSM and Service Health pages and components and OMi perspectives:

- Open the following directory: **<Gateway Server root directory>\conf\uimashup\import**. This contains two directories: **\loaded**, and **\toload**.
- Copy the contents of the **\loaded** directory into the **\toload** directory. Restart BSM.

## Installing BSM Silently

The wizards used to install and configure BSM can be run in silent mode. Silent mode runs the wizards from a command line, without viewing the wizard interface. This allows Linux users without X-windows to run these wizards, however it can be used in windows environments as well.

The instructions have been written for Linux. To run the files for windows environments, replace all .bin file types with .exe and .sh file types with .bat.

**Note:** Silent mode is not supported for upgrade wizards.

This appendix contains the following topics:

## How to Fully Install BSM 9.2x Silently

This procedure describes how to perform a complete installation of BSM silently, including the installation wizard, post-installation wizard, latest minor-minor release, and setup and database configuration utility.

1. Run the BSM 9.20 Installation Wizard silently by running the installation file from the command line with a **-i silent** parameter. The installation file can be found in **<BSM Installation Media>** root folder.
  - To install the Gateway and Data Processing servers on one-machine (typical installation) using the default installation directory, run the following command:

**setup.bin -i silent**

To change the default installation directory perform the following procedure before running the installation command:

- i. Create an empty file called **ovinstallparams.ini** in the same directory as the installation executable file on all BSM servers.
- ii. Copy the following section to the .ini file on the BSM Servers.

```
[installer.properties]
```

```
setup=HPBsm
```

```
prodInstallDir=<installation directory>
```

- To install the Gateway and Data Processing Servers on different machines use the following procedure:
  - i. Create an empty file called **ovinstallparams.ini** in the same directory as the installation executable file on both servers.

- ii. Copy the following section to the .ini file on the Gateway Server:

```
[installer.properties]
```

```
setup=HPBsm
```

```
group=gateway
```

If you want to change the default installation directory, add the following line as well:

```
prodInstallDir=<installation directory>
```

- iii. Run the Installation Wizard in silent mode on the Gateway Server as follows:

```
setup.bin -i silent
```

- iv. Copy the following section to the .ini file on the Data Processing Server:

```
[installer.properties]
```

```
setup=HPBsm
```

```
group=process
```

If you want to change the default installation directory, add the following line as well:

```
prodInstallDir=<installation directory>
```

- v. Run the Installation Wizard in silent mode on the Data Processing Server as follows:

```
setup.bin -i silent
```

2. Install the latest minor-minor release silently (for example, 9.24) as follows:

- a. Go to the [HP Software Support](https://softwaresupport.hp.com) web site (<https://softwaresupport.hp.com>) and sign in.

- b. Click **Search**
- c. Select the relevant product, most recent minor minor 9.2x version, and operating system (for example, **Application Performance Management (BAC) > 9.25 > Windows**).

Under Document Type, select **Patches**.

- d. Locate the installation files.
- e. Save the package locally and run the installation file silently using the following syntax:

**HPBsm924\_9.24\_setup.bin -i silent**

- 3. Open the response file in **<BSM Installation Directory>\Temp\emptyRspFile.xml** and complete the values.

- 4. Run the post-installation wizard

**silentConfigureBSM.sh <BSM Installation Directory>\temp\emptyRspFile.xml  
postinstall**

- 5. Log out of and in to Linux (optional). If you are installing BSM in a Linux environment, and you specified a non-root user in the post-installation wizard, log out and log in using the non-root user you selected.

- 6. Run the Setup and Database Configuration Utility

**silentConfigureBSM.sh <BSM Installation Directory>\temp\emptyRspFile.xml  
configserver**

- 7. Run the Post-Installation Wizard and the Setup and Database Configuration Utility silently as follows:

**silentConfigureBSM.sh <BSM Installation Directory>\Temp\<response\_file\_  
name>.xml**

The silentConfigureBSM.sh file can be found in the **<BSM Installation Directory>\bin** directory.

**Note:** You can run the two wizards separately by appending the appropriate command as follows

```
silentConfigureBSM.sh <BSM Installation Directory>\temp\emptyRspFile.xml -i silent [postinstall | configserver]
```

8. Enable BSM. For details, see "[Starting and Stopping BSM](#)" on page 144.
9. Enabling BSM for the first time may take up to an hour. To check the status of BSM, use the following URL:

**http://<BSM DPS URL>:11021/invoke?operation=showServiceInfoAsHTML&objectname=Foundations%3Atype%3DNannyManager**

10. In BSM, go to **Platform Administration > Setup and Maintenance > Server Deployment** to enable BSM applications.

## How to Generate a Response File to Rerun the Post-Installation Wizard and the Setup and Database Configuration Utility Silently

You can create an xml file with the value entries you used when running the Setup and Database Configuration Utility. This file can be used to run the wizard on different machines.

1. Run the Setup and Database Configuration Utility normally on an existing BSM system.
2. The response file is generated and stored in the **<BSM Installation Directory>/temp** directory or in a location you specified. It is automatically filled in with the values you specified when running the Post-Installation Wizard and the Setup and Database Configuration Utility.
3. You can now run the Post-Installation Wizard and the Setup and Database Configuration Utility on any machine silently with the response file using the following syntax:

**silentConfigureBSM.sh <path to response file>/<response file name>.xml**

**Note:** You can run the two wizards separately by appending the appropriate command as follows:

**silentConfigureBSM.sh <path to response file>/<response file name>.xml  
[postinstall | configserver]**

The silentConfigureBSM.sh file can be found in the **<BSM Installation Directory>/bin** directory.

## How to Configure Windows Authentication When Running the Setup and Database Configuration Utility Silently

The Setup and Database Configuration Utility allows you to configure BSM to take the database schema credentials directly from the windows authentication credentials. To enable this feature when manually creating a response file, leave the UserName and Password keys for each relevant schema blank. The following example shows the BPI schema section of the response file formatted to use windows authentication:

```

    <database name="bpi">
        <!--Enter 'create' to create a new database or
'connect' to connect to an existing database-->
        <property key="operation" value="connect"/>
        <property key="dbName" value="dbname"/>
        <property key="hostName" value="<hosturl>"/>
        <property isEncrypted="false" key="password"
value=""/>
        <property key="server" value="<serverurl>"/>
        <property key="sid" value="<sidvalue>"/>
        <property key="UserName" value=""/>
        <property key="port" value="1521"/>
        <!--Please enter your BPI Database Server Type in
value attribute-->
        <property key="dbType" value="Oracle"/>
        <!--The following four items are only relevant if you
are using an Oracle database-->
        <property key="adminUserName" value=" "/>
        <property isEncrypted="true" key="adminPassword"
value=" "/>
        <property key="defaultTablespace" value=" "/>
        <property key="temporaryTablespace" value=" "/>
    </database>

```

## How to Encrypt Passwords in the Response File

The passwords that are stored in the response file can be encrypted for added security. To do this, run the password encryption tool located in:

**<BSM Installation Directory>/bin/encrypt-password.sh**

You enter your password and the encryption tool returns a string. Copy the string to the response file where you would have entered your password.

**Limitation:** encrypted passwords are valid on the machine that ran the encryption tool.

To remove password encryption, enter the passwords in the response file normally and set the value of **IsEncrypted="false"**.

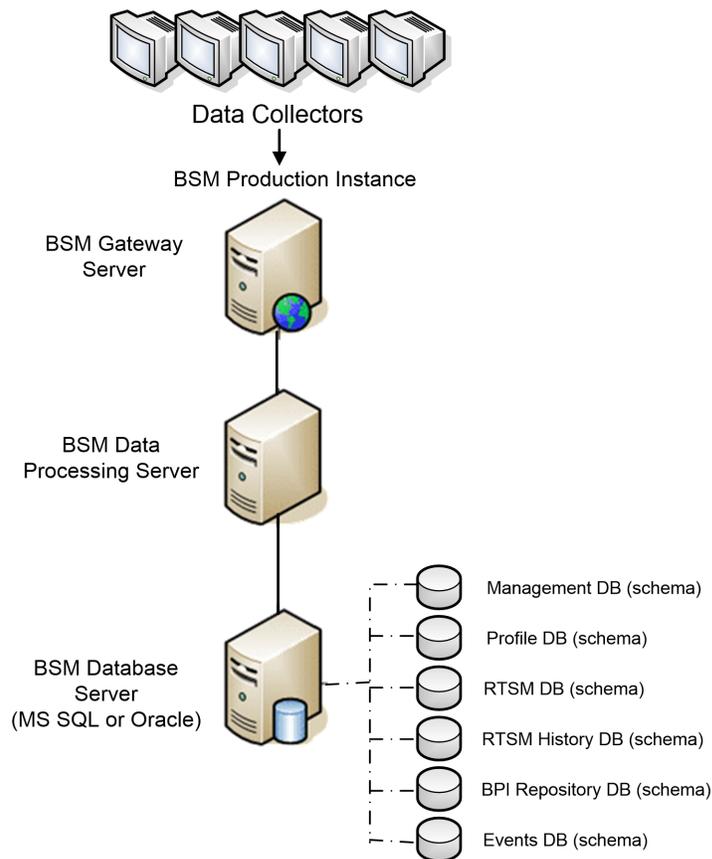
# Disaster Recovery for BSM

This appendix contains the following topics:

## Introduction to Disaster Recovery for BSM

You can set up and activate (when necessary) a Disaster Recovery system for your BSM system.

This chapter describes the basic principles and guidelines on how to set up a Disaster Recovery system, and the required steps to make the Secondary BSM system become the new Primary BSM system.



**Note:**

- Disaster Recovery involves manual steps in moving various configuration files and updates to the BSM database schemas. This procedure requires at least one BSM Administrator and one database administrator, who is familiar with the BSM

databases and schemas.

- There are a number of different possible deployment and configurations for BSM. To validate that the disaster recovery scenario works in a particular environment, it should be thoroughly tested and documented. You should contact HP Professional Services to ensure best practices are used in the design and failover workflow for any disaster recovery scenario.
- A disaster recovery machine must use the same operating system and root directory as the original environment.

## Preparing the Disaster Recovery Environment

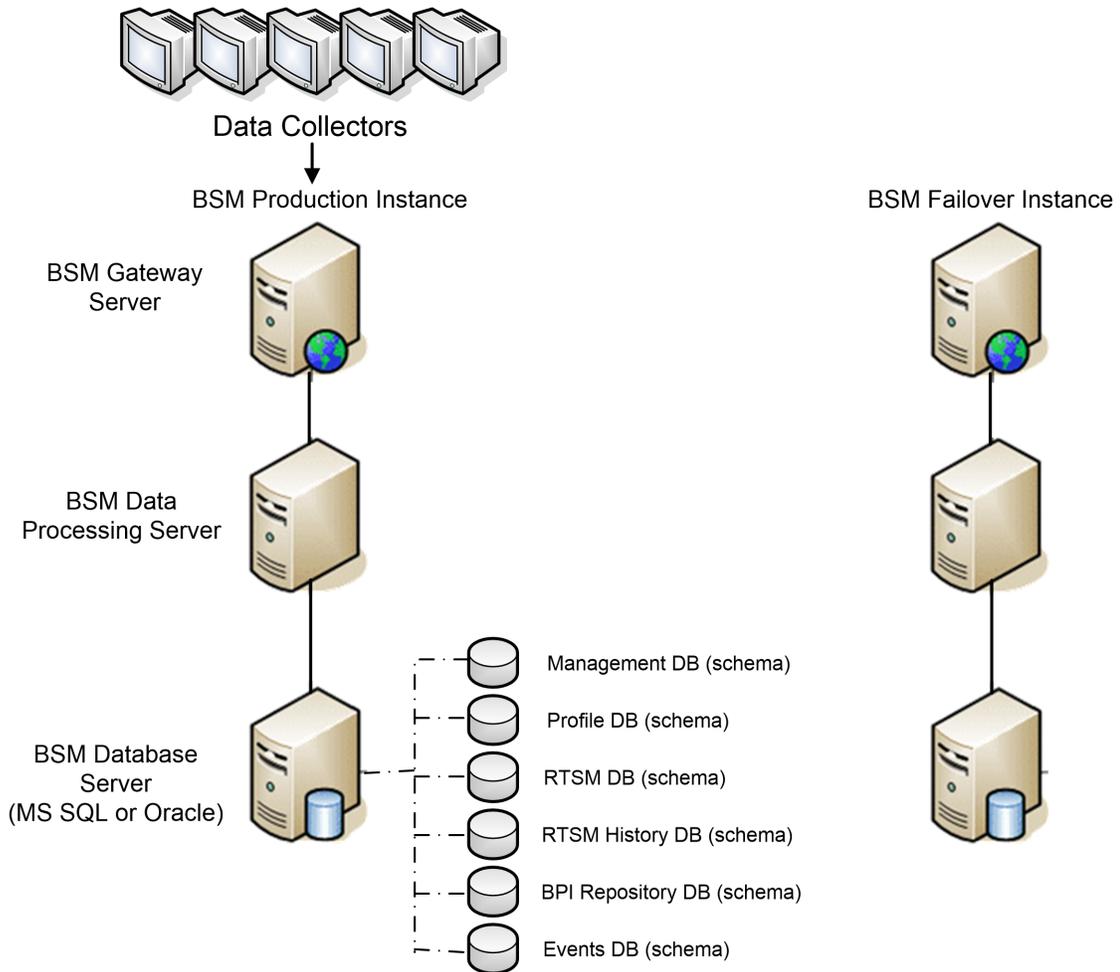
Preparing the Disaster Recovery environment by performing the following steps:

### 1. Install a set of BSM servers

Install a second instance of BSM that matches your current production environment.

- Install exactly the same version of BSM in your backup environment as that used in your production environment.
- The backup environment should be the same as your production environment (for example, one- or two-machine deployment, similar hardware), unless you have more than one GW or DPS in your production environment. In that case, you only need to create one set of BSM servers (one GW and one DPS or one one-machine) as your disaster recovery environment.
- The backup environment must use the same operating system and installation directory as the original environment.
- Do not run the Server and Database Configuration utility and do not create any databases or enable the servers.

The following diagram shows a typical BSM environment with a Failover system also installed:



## 2. Copy configuration files from the original system

Copy files you manually modified in any of the following directories from the BSM Production instance to the same server type in the Failover instance:

- conf
- odb/conf

- odb/content/
- BLE/rules/<custom rules>.jar

If you used User Reports to create Excel reports, you must manually copy these to the Failover Instance. The reports are stored in the **<Gateway Server>\HPBSM\AppServer\webapps\site.war\openapi\excels\** directory in folders for each customer ID.

Also copy any other files or directories in the system that you have customized.

**Note:** It is recommended to have at least daily backups of BSM servers. Depending on the amount and interval of configuration changes, it may be necessary to incorporate a faster interval to prevent a large loss of configuration changes in the event of losing the Production instance.

### 3. Copy additional files

Some additional files are needed to allow BSM to verify the validity of the database.

- a. Find the version of your BSM database by running the following query in the management database:

```
SELECT * FROM system where sys_name = 'dbpatchver'
```

This will return the version of your database (for example, 1085 for BSM 9.23).

- b. Go to **DVD root directory\packages\DBVerifyVersions\<version\_of\_your\_database>**.
- c. Copy and overwrite the contents of the folder with the same version number as your database to your server's **HPBSM\dbverify** directory.

## 4. Configure the Backup database

Replicate the original database. The original database can now be used as a backup, and the replicated database will be used as the primary database.

**Note:** HP recommends that only an experienced database administrator perform this phase of the Disaster Recovery scenario.

### ■ Microsoft SQL—configure database logfile shipping

To provide the most up to date monitoring and configuration data, it is critical to enable log file shipping to minimize the time in data gaps. By using log file shipping you can create an exact duplicate of the original database; out of date only by the delay in the copy-and-load process. You then have the ability to make the standby database server a new primary database server, if the original primary database server becomes unavailable. When the original primary server becomes available again, you can make it a new standby server, effectively reversing the servers roles.

The log file shipping needs to be configured for the following BSM databases:

- Management
- RTSM
- RTSM History
- Business Process Insight (BPI) repository
- Event
- User Engagement Schema (if it exists)
- Profile (all databases)
- Analytic (if it exists)

**Note:** When Business Process Insight is installed on its own server as a full installation, refer to the Business Process Insight Server Administration Guide for information regarding disaster recovery.

For details about how to configure log file shipping for Microsoft SQL, refer to the appropriate Microsoft SQL documentation.

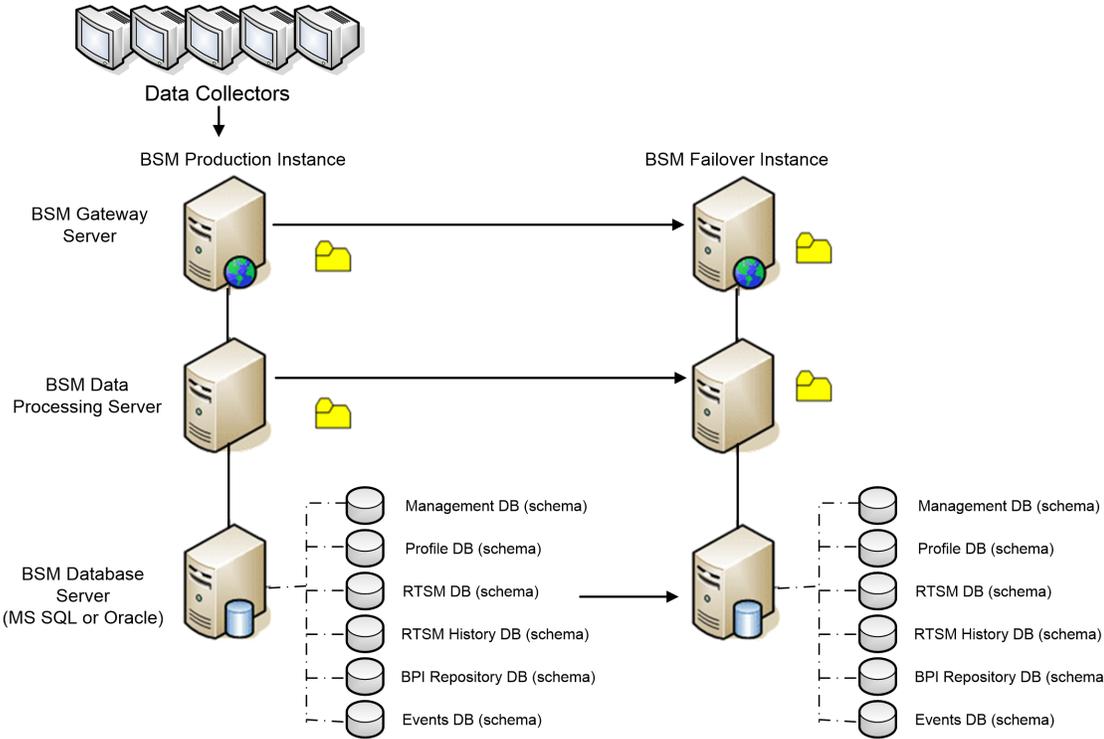
■ **Oracle—configure the Standby database (Data Guard)**

Oracle does not have logs for each schema, but only on a database level, which means that you cannot make a standby database on the schema level and must create copies of the production system databases on your backup system.

For details about how to configure a Standby database, refer to the appropriate Oracle documentation.

Upon successful completion of the Backup database configuration, the BSM Failover Database should be in sync with the BSM Production Database.

The following diagram shows the production and Failover systems with database logfile shipping enabled:



## Cleanup Procedure

Now that you have replicated the original environment, certain settings must be manually modified to avoid confusion between the original environment and the new environment. This procedure cleans up all the machine-specific references in the configurations from the Production instance.

**Note:**

- Before starting the activation procedures, the BSM Administrator should ensure that the appropriate license has been applied to the Failover instance and that all the available data collectors can communicate with the Failover instance.
- HP recommends that an experienced database administrator perform the SQL statements included in this procedure.
- The SQL statements below to be run against the management database except for the last 2 steps. The SQL statements in the last 2 steps needs to be run against the RTSM database and the Event database respectively.

1. Delete old information from High Availability (HA) tables.

Run the following queries on the management database of the disaster recovery environment:

- **delete from HA\_ACTIVE\_SESS**
- **delete from HA\_BACKUP\_PROCESSES**
- **delete from HA\_PROC\_ALWD\_SERVICES**
- **delete from HA\_PROCESSES**
- **delete from HA\_SRV\_ALLWD\_GRPS**

- **delete from HA\_SERVICES\_DEP**
- **delete from HA\_SERVICES**
- **delete from HA\_SERVICE\_GRP**
- **delete from HA\_TASKS**
- **delete from HA\_SERVERS**

2. Run the following query on the management database of the DR environment:

**Delete from PROPERTIES where NAME = 'HServiceControllerUpgrade'**

3. Switch references in the Sessions table on the management database of the DR environment to the backup databases.

a. Run the following query to retrieve all database names:

**SELECT \* FROM SESSIONS**

**where SESSION\_NAME like '%Unassigned%'**

b. Update the following columns in each received row with the following values:

- **SESSION\_NAME:** Replace with the new restored database name (only where SESSION\_NAME is like '%Unassigned%'). Use the following script:

```
UPDATE SESSIONS set SESSION_NAME='Unassigned<NEW_DB_Server_
name><NEW_schema_name><DB_User_name>'
```

```
WHERE SESSION_NAME='Unassigned<OLD_DB_Server_name><OLD_
schema_name><old_DB_User_name>'
```

- **SESSION\_DB\_NAME:** Replace with the new restored schema name. Use the following script:

```
UPDATE SESSIONS set SESSION_DB_NAME='<<NEW_schema_name>'
```

WHERE SESSION\_DB\_NAME='<OLD\_schema\_name>'

- **SESSION\_DB\_HOST:** Replace with the new restored database host name. Use the following script:

UPDATE SESSIONS set SESSION\_DB\_HOST='<<NEW\_host\_name>'

WHERE SESSION\_DB\_HOST='<OLD\_host\_name>'

- **SESSION\_DB\_PORT:** Replace with the new restored port name. Use the following script:

UPDATE SESSIONS set SESSION\_DB\_PORT='<NEW\_port\_name>'

WHERE SESSION\_DB\_PORT='<OLD\_port\_name>'

- **SESSION\_DB\_SID:** Replace with the new restored session ID name. Use the following script:

UPDATE SESSIONS set SESSION\_DB\_SID='<<<NEW\_SID\_name>>>'

WHERE SESSION\_DB\_SID='<<<OLD\_SID\_name>>>'

- **SESSION\_DB\_UID:** Replace with the new restored name. Use the following script:

UPDATE SESSIONS set SESSION\_DB\_UID='<NEW\_UID\_name>'

WHERE SESSION\_DB\_UID='<OLD\_UID\_name>'

- **SESSION\_DB\_SERVER:** Replace with the new restored server name. Use the following script:

UPDATE SESSIONS set SESSION\_DB\_SERVER='<NEW\_server\_name>'

WHERE SESSION\_DB\_SERVER='<OLD\_server\_name>'

4. Switch references in the Analytics table on the management database to the

backup databases.

- a. Run the following query to retrieve all database names:

**SELECT \* FROM ANALYTICS\_DATABASES**

- b. Update the following columns in each received row with the following values:

- o **DB\_HOST:** Replace with the new restored database host name. Use the following script:

```
update ANALYTICS_DATABASES set DB_HOST="NEWDatabasehostname'
where DB_HOST="OLDDatabasehostname";
```

- o **DB\_SERVER:** Replace with the new restored server name. Use the following script:

```
update ANALYTICS_DATABASES set DB_SERVER=' NEWDatabaseServerName"
where DB_SERVER=' OLDDatabaseServerName"
```

- o **DB\_SID:** Replace with the new restored session ID name. Use the following script:

```
update ANALYTICS_DATABASES set DB_SID ='NEWSID" where DB_
SID='OLDSID';
```

- o **DB\_PORT:** Replace with the new restored port name. Use the following script:

```
update ANALYTICS_DATABASES set DB_PORT= NewPort where DB_
PORT=OldPort
```

5. Delete bus cluster info from PROPERTIES table on the management database.

Run the following query:

**Delete from PROPERTIES where**

**NAMESPACE='MessageBroker' or NAMESPACE='SonicMQ\_Namespace' or NAMESPACE='BrokerName'**

6. Delete machines from Deployment table on the management database.

Run the following query:

**DELETE from DEPLOY\_HW**

7. Setting Manager Values of **SETTING\_PARAMETERS** table on the management database.

Update the URLs and LDAP Server in the SETTING\_PARAMETERS table.

The following table shows the keys in the Setting Manager table that need to be updated if they are present:

SP_CONTEXT	SP_NAME	Description
opr	opr.cs.host	IP address of the new primary Data Processing server (used to handle certificate requests)
platform	settings.smtp.server	Name of the SMTP server used for the alert engine
scheduledreports	settings.smtp.server	Name of the SMTP server used for scheduled reports

SP_CONTEXT	SP_NAME	Description
platform	default.core.server.url	The URL used by data collectors to access the Gateway server in BSM
platform	default.centers.server.url	The URL used by users to access BSM
platform	virtual.centers.server.url	
platform	virtual.core.server.url	

For each key in the table, modify and run the following query:

**update SETTING\_PARAMETERS set SP\_VALUE='<new value>'**

**where SP\_CONTEXT='<context value>' and SP\_NAME='<name value>'**

As follows:

- update SETTING\_PARAMETERS set SP\_VALUE='<IP of new primary DPS>' where SP\_CONTEXT='opr' and SP\_NAME='opr.cs.host'
- update SETTING\_PARAMETERS set SP\_VALUE='<newmachinename>' where SP\_CONTEXT='platform' and SP\_NAME='settings.smtp.server'
- update SETTING\_PARAMETERS set SP\_VALUE='<newmachinename>' where SP\_CONTEXT='scheduledreports' and SP\_NAME='settings.smtp.server'
- update SETTING\_PARAMETERS set SP\_VALUE='http://<newmachinename>:80' where SP\_CONTEXT='platform' and SP\_NAME='default.core.server.url'
- update SETTING\_PARAMETERS set SP\_VALUE='http://<newmachinename>:80' where SP\_CONTEXT='platform' and SP\_NAME='default.centers.server.url'

The last two settings in the table above do not need to be updated unless you are using a load balancer or a reverse proxy. In that case, update the settings as follows:

- update SETTING\_PARAMETERS set SP\_VALUE='http://<Load Balancer or Reverse Proxy>:80' where SP\_CONTEXT='platform' and SP\_NAME='virtual.centers.server.url'
- update SETTING\_PARAMETERS set SP\_VALUE='http://<Load Balancer or Reverse Proxy>:80' where SP\_CONTEXT='platform' and SP\_NAME='virtual.core.server.url'

8. Update SYSTEM Keys.

Update the following keys in the SYSTEM table on the management database:

AdminServerURL	new gateway machine
GraphServerURL	new gateway machine
GraphServerURL4.5.0.0	new gateway machine
application.tac.path	new gateway machine
application.flipper.path	new gateway machine

For each value in the table, modify and run the following query:

**update SYSTEM set SYS\_VALUE='<new value>' where SYS\_NAME='<key>'**

where **<new value>** is the new URL in the format of the original URL.

For example:

```
update SYSTEM set SYS_VALUE='http://<newmachine>:port' where SYS_NAME='AdminServerURL'
```

**Note:** The default port number is 80.

9. Empty and update tables on the RTSM database.

This procedure cleans up all the machine-specific references in the RTSM configuration tables.

Run the following SQL statements against the RTSM database:

- **update CUSTOMER\_REGISTRATION set CLUSTER\_ID=null**
- **truncate table CLUSTER\_SERVER**
- **truncate table SERVER**
- **truncate table CLUSTERS**

10. Delete old server information from the Certificate Server Authority tables.

Run the following query on the Event database:

- **delete from CSA\_SERVERS**

## Configure the New Environment

### 1. Run the Server and Database Configuration utility

Run the Server and Database Configuration utility on each machine to re-initialize the needed tables in the database. To run the Server and Database Configuration utility, select **Start > Programs > HP Business Service Management > Administration > Configure HP Business Service Management.**

**Note:** When running the Server and Database Configuration utility, make sure to reconnect to the same databases that were created for the Failover environment (that is, the one to which the backup data was shipped). Possible complete loss of configuration data will result if trying to run this on the Production instance.

Run the Server and Database Configuration utility on the machines in the same order that BSM was originally installed in the failover environment.

### 2. Enable BSM

Enable BSM on the new servers.

### 3. Run the Post Startup Cleanup procedure to disable any obsolete hosts that are not part of the Failover instance

To disable obsolete hosts:

- a. In BSM, go to **Admin > Platform > Setup and Maintenance > Server Deployment** and select **To Disable Machine**.
- b. Disable any obsolete hosts.

For details on changed host names, refer to the HP Software Self-solve knowledge base, article number KM522738, which can be accessed at <http://h20230.www2.hp.com/selfsolve/document/KM522738>.

#### 4. Update the RTSM front-end URL setting

- a. Open the JMX console as follows: **<BSM Gateway Server>:21212/jmx-console** .

**Note:** If you do not have local access to the JMX console via port 21212, you must enable remote access to the JMX console as follows:

- i. Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings > Foundations > Security**.
  - ii. In the Security-Login table, locate **Restrict remote access to JMX console** and change the value to **false**.
- b. Locate the **UCMDB-UI** section and select **UCMDB-UI:name=UI Server frontend settings**.
  - c. In the **setUseFrontendURLBySettings** section, set the value to the new BSM Gateway server including the port. For example <http://bsm-gateway-example.hp.net:80>.
  - d. Click **Invoke**.

## 5. Repeat Portions of High Availability Procedure (optional)

If you had previously configured high availability and you want to keep those settings on the disaster recovery environment repeat the "Defining a Backup Server" part of the High Availability procedure in the *BSM Installation Guide*.

## 6. Repeat Hardening Procedures (optional)

If your original environment was hardened, you need to repeat the hardening procedures on the new environment.

The reverse proxy procedures do not have to be repeated.

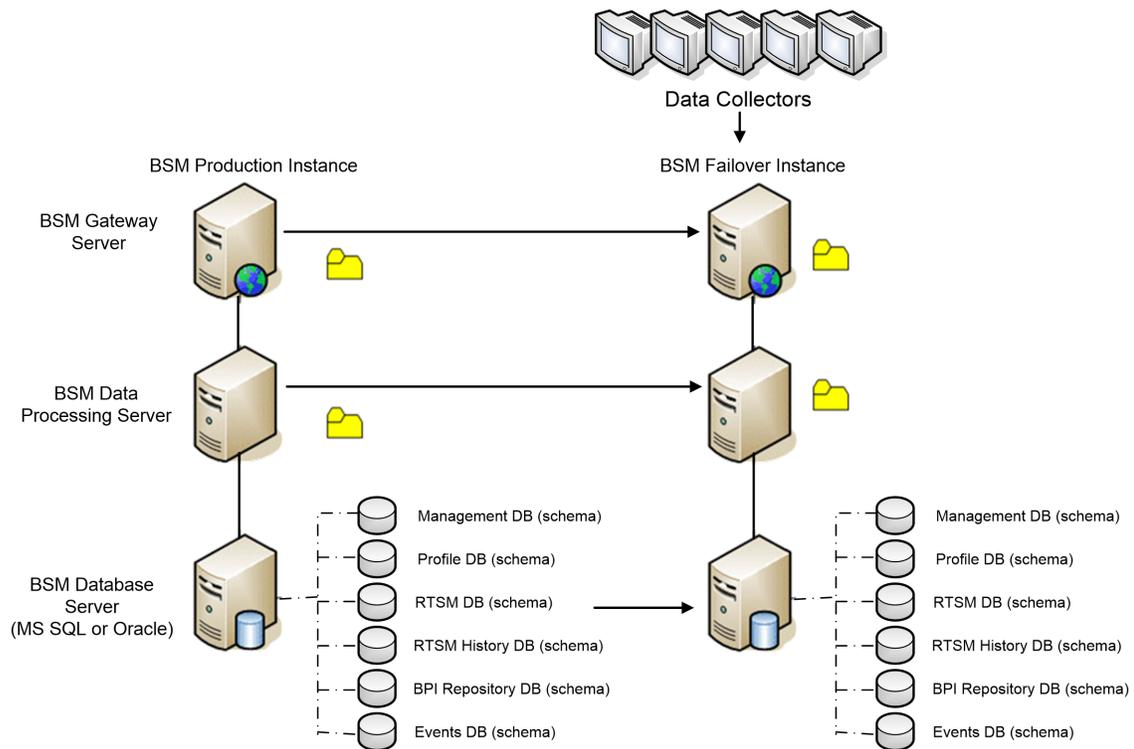
For details, see the *BSM Hardening Guide*.

## Configure Data Collectors

### 1. Configure data collectors.

Configure all the data collectors, including Business Process Monitor agents, Real User Monitor engines, SiteScopes, TransactionVision, HPOM, Service Manager, Operations Orchestration, and Business Process Insight (if installed on a separate server) to work with the Failover instance. For details, see the relevant documentation for each data collector.

The following diagram shows a fully activated Failover instance:



## 2. Configuring failover data collector connections.

If any of the data collectors also experienced a failure and were moved to different machines, the new URLs must be communicated to the BSM servers. This is done in various applications in BSM. For example:

Data Collector	Procedure
<b>Business Process Insight</b>	Go to <b>Admin &gt; Platform &gt; Setup and Maintenance &gt; Infrastructure Settings &gt; Applications &gt; Business Process Insight</b> . Change the location of the <b>Business Process Insight - Server Settings</b> and <b>Business Process Insight - Database Settings</b> to point to the new locations.
<b>SiteScope</b>	Reconnect the SiteScope servers to the BSM server from the SiteScope console.
<b>Business Process Monitor</b>	Reconnect the BPM servers to the BSM server from the BPM console.
<b>Real User Monitor</b>	Reconnect the RUM servers to the BSM server from the RUM console.

Data Collector	Procedure
<p><b>Operations Manager</b></p>	<ul style="list-style-type: none"> <li>■ Exchange certificates between your HPOM and BSM systems as described in the "How to Establish a Trust Relationship between BSM and External Servers" on page 2029.</li> <li>■ In BSM, go to the Infrastructure Settings for Operations Management:                     <p style="margin-left: 20px;"><b>Administration &gt; Platform &gt; Infrastructure Settings &gt; Applications &gt; Operations Management</b></p> <p>In the <b>Operations Management – Certificate Server Settings</b> section, enter the IP address of the new primary Data Processing Server.</p> <p>In the <b>Operations Management – HPOM Topology Synchronization Connection Settings</b> section, check the connection settings for HPOM. If you switched your HPOM server, reconfigure all entries to reflect the details of the new HPOM server.</p> <p>If no settings are recorded, leave these fields empty, and go to the next step.</p> </li> <li>■ Open the Connected Servers manager and check the HPOM server connections as follows:                     <p style="margin-left: 20px;"><b>Administration &gt; Operations Management &gt; Tune Operations Management &gt; Connected Servers</b></p> <p>If you switched your HPOM server, reconfigure all entries to reflect the details of the new HPOM server. Use the <b>Test Connection</b> button to validate communication for the current settings, even if they have not been changed.</p> </li> </ul>

Data Collector	Procedure
<p><b>Operations Manager</b> (continued)</p>	<ul style="list-style-type: none"> <li>■ In HPOM, change the Flexible Management Server Forwarding policy to specify the new BSM server as the target and deploy the new version to your HPOM management server node.</li> <li>■ Change the destination server for receiving discovery (topology) data. For details, see described in "Topology Synchronization" in the OMi part of the BSM User Guide.</li> <li>■ Restart the service, and in a Command Prompt window on the HPOM management server system, execute the command:               <p style="margin-left: 20px;"><b>ovagtrep -publish</b></p> <p>Topology data from the HPOM system should now be available in Operations Management.</p> </li> <li>■ Delete the buffered messages on the HPOM system for the old BSM server. It is not possible to re-direct these messages to the new BSM server, and these cannot be synchronized.</li> </ul> <p>Note: All messages currently in the buffer are deleted. It is not possible to distinguish between different targets and messages for other targets are also deleted.</p>

Data Collector	Procedure
<p><b>Operations Manager</b> (continued)</p>	<p><b>To delete the forwarding buffer files on HPOM for Windows:</b></p> <ol style="list-style-type: none"> <li>Stop the server processes: <b>vpstat -3 -r STOP</b></li> <li>Delete all files and folders contained within the following directories:   <b>&lt;OvDataDir&gt;\shared\server\datafiles\bbc\snf\data</b>   <b>&lt;OvDataDir&gt;\shared\server\datafiles\bbc\snf\OvEpMessageActionServer</b></li> <li>Restart the server processes: <b>vpstat -3 -r START</b></li> </ol> <p><b>To delete the forwarding buffer files on HPOM for UNIX:</b></p> <ol style="list-style-type: none"> <li>Stop the server processes: <b>ovc -kill</b></li> <li>Delete all files and folders contained within the following directories:   <b>/var/opt/OV/shared/server/datafiles/bbc/snf/data</b>   <b>/var/opt/OV/share/tmp/OpC/mgmt_sv/snf/opcforwm</b></li> <li>Restart the server processes: <b>ovc -start</b></li> </ol> <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p><b>Note:</b> If the messages are left in the forwarding buffer, there may be some performance degradation as the system regularly tries to deliver them without success. They also consume some disk space.</p> </div>
<p><b>HP Operations Orchestration</b></p>	<p>On the HP Operations Orchestration server, adopt the configuration to reflect the new BSM server according to the procedure described in the Solutions and Integrations guide.</p>

Data Collector	Procedure
<b>HP Service Manager</b>	On the HP Service Manager server, adopt the configuration to reflect the new BSM server according to the procedure described in the Solutions and Integrations guide.
<b>TransactionVision</b>	<p>You must configure in both of the following:</p> <ul style="list-style-type: none"> <li>■ Go to <b>Admin &gt; Platform &gt; Setup and Maintenance &gt; Infrastructure Settings &gt; Applications &gt; TransactionVision</b>. Change the setting of the URL that BSM uses to communicate with TransactionVision.</li> <li>■ Go to <b>Admin &gt; TransactionVision &gt; HP Business Service Management Settings</b> page. Change the URL, protocol, and port that TransactionVision uses to communicate to BSM.</li> </ul>
<b>SHA PA/NNM data collector</b>	Reconnect the SHA PA/NNM data collector by re-running the configuration-wizard.

## High Availability for BSM

This appendix contains the following topics:

## Overview of High Availability Options

You can improve your system availability and reliability using high availability options that combine multiple servers, external load balancing, and failover procedures.

Implementing a high availability configuration means setting up your BSM servers so that service is continuous despite power outages, machine downtime, and heavy load.

Load balancing and high availability can be implemented in one-machine or distributed deployments. You configure load balancing by adding an additional Gateway Server and high availability by adding a backup Data Processing Server.

High availability is implemented in two layers:

- **Hardware infrastructure.** This layer includes redundant servers, networks, power supplies, and so forth.
- **Application.** This layer has two components:
  - **Load balancing.** Load balancing divides the work load among several computers. As a result, system performance and availability increases.  
  
External load balancing is a software and hardware unit supplied by an outside vendor. This unit must be installed and configured to work with BSM applications.
  - **Failover.** Work performed by the Data Processing Server is taken over by a backup server if the primary server or component fails or becomes temporarily unavailable.

Implementation of load balancing and failover is discussed in detail throughout this chapter.

**Note:** HP Software Professional Services offers consulting services to assist customers with BSM strategy, planning and deployment. For information, contact an HP representative.

## Load Balancing for the Gateway Server

When you install multiple BSM Gateway Servers, BSM can utilize external load balancing mechanisms to help ensure the even distribution of processing and communication activities across the network. This is particularly important in cases of high load, to avoid overwhelming any single server.

**Note:** We recommend installing BSM behind a load balancer or reverse proxy. This enables additional security options and can simplify disaster recovery and upgrade procedures.

This section includes the following topics:

["Configuring Load Balancing" below](#)

["Notes and Limitations" on page 251](#)

### Configuring Load Balancing

1. Create two virtual hostnames. The virtual hostname must be a fully qualified domain name (FQDN), in the format **<servername>.<domainname>**. This requirement is necessary to support Lightweight Single Sign On authentication, which is enabled by default.

The first host name is for accessing the BSM Web site on the Gateway Server. This URL can be distributed to BSM users. The second host name is for the data collectors to access the Gateway Server. This URL must be used when configuring data collectors to communicate with BSM.

2. Enter the relevant load balancer host names in the Infrastructure Settings for the virtual servers. To do so, select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**, select **Platform Administration - Host Configuration table**:

- **Default Virtual Gateway Server for Application Users URL.** Virtual host name for the BSM Web site. The Gateway Server you are working on must be able to resolve this Virtual IP address. This means that **nslookup** for the **virtual host name for the application users** should return name and IP address when executed on this Gateway Server.
  - **Default Virtual Gateway Server for Data Collectors URL.** Virtual host name for Data Collectors. All data collectors must be able to resolve this Virtual IP address. This means that **nslookup** for the **virtual host name for the Data Collectors** should return name and IP address when executed on data collector server.
3. In the Reverse Proxy Configuration pane, set the following parameters:
- **Enable Reverse Proxy parameter = true.**
  - **HTTP Reverse Proxy IPs**

Add the internal IP addresses of the Load Balancers to this setting.

- If the IP address of the load balancer sending the HTTP/S request is included, the URL returned to the client is either the Default Virtual Server URL or the Local Virtual Server URL (when defined).
- If the IP address of the load balancer sending the HTTP/S request is not included, the Gateway Server machine returns the base URL that it receives in the HTTP/S request.
- If no IP addresses are defined for this parameter (not recommended), BSM works in Generic Mode. This means that you will only be able to log into BSM using the Virtual URL and not directly to the Gateway.

**Note:** If your load balancer and BSM Gateway Servers are not in the same domain, you must add the IP of the reverse proxy to the **HTTP or HTTPS**

**Reverse Proxy IPs** parameter. For more details, see "LW-SSO Configuration for Multi-Domain and Nested Domain Installations" in the BSM Platform Administration Guide.

**To determine the internal IP of your load balancer:**

- a. Log in to BSM through the load balancer.
  - b. Open the log in the following location **<BSM Gateway Server>\log\EJBContainer\UserActionsServlet.log**.
  - c. The IP that appears in the latest login line in this log is the internal load balancer IP. The entry should have your user name.
4. After changing the reverse proxy settings, restart the HP BSM service on the BSM Gateway and Data Processing servers.

**Note:** If your load balancer allows you to choose between Full-NAT and Half-NAT topologies, choose **Full-NAT**.

5. Configure the load balancer for data collector access. All data collectors must be able to access the Virtual IP of the Load Balancer. Use the standard settings for the load balancer, but set the following:
- The Load balancing method should be **Round robin**.
  - Use the following KeepAlive URI:
    - Send String: **GET /ext/mod\_mdrv\_wrap.dll?type=test**
    - Receive String: **Web Data Entry is up**
6. Configure the load balancer for user access.

- Use the standard settings for the load balancer, but set persistency to **stickiness by session enabled** or **Destination Address Affinity** (depending on the Load Balancer). If neither of these options are available and the choice is between **Cookie based** stickiness and **IP based** stickiness, then we recommend trying **IP based** stickiness. If this is not done properly, you may experience intermittent user interface failures.
  - Use the following KeepAlive URI:
    - Send String: **GET /topaz/topaz\_api/loadBalancerVerify\_centers.jsp**
    - Receive String: **Success**
7. Configure the load balancer for BBC channel on port 383.
- Port 383 needs to be open in both directions (meaning from the data collector through the load balancer to the gateway, and from the gateway and data processing server (not necessarily through the load balancer) to the data collectors).
  - The load balancing method should be “sticky session by IP address” for port 383.
  - Traffic on port 383 should be passed through on network layer 4 (not layer 7, no SSL offloading on the load balancer).
  - The load balancer's data connector address used for load balancing must be reachable and resolvable from all the BSM servers (gateway and data processing server ) as well.

## Notes and Limitations

- BSM supports hardware and virtual appliance based load balancers. A hardware load balancer solution is preferred for performance reasons. All load balancers must be able to configure sticky session for users and being able to configure URL based

health monitors.

- If you use two load balancers for failover, you must ensure that you configure the hostnames of both load balancers on the DNS server machine. You can then specify the machine name, hostname's FQDN, or URL of either load balancer when this information is required for the data collectors, or in the browser to open the BSM site.
- If two Gateway servers are installed into different drive paths, for example, one was installed onto the C:\ drive and the other onto the E:\ drive, BSM may not be able to be accessed.

**Workaround:** Create a duplicate path on the **C:\ drive by copying E:\<HP BSM root directory>\conf\settings to C:\HP BSM root directory>\conf\settings.**

- If you use two load balancers for failover, and the load balancers each work with more than one server type, you should define a unique virtual hostname on each load balancer for each server type, map the virtual hostnames to the actual hostnames of the corresponding servers, and ensure that you configure all the virtual hostnames on the DNS server machine. You can then specify either of the relevant virtual hostnames for each data collector, or in the browser to open the BSM site.
- When a load balancer or reverse proxy is configured, ensure that it can be reached from all BSM servers (Gateway and Data Processing Servers) with the virtual addresses specified for the connections.

## High Availability for the Gateway Server

HP Business Service Management provides high availability for the Gateway Servers to ensure that data gets to its destination and that the users can use BSM applications in the event of a server failure.

## Protected Delivery for Incoming Data

BSM provides protected data delivery for monitor data. Protected data delivery means that the data is not deleted from one data store until it is forwarded to, and stored in, the next data store.

**Note:** HP Professional Services offers best practice consulting on this subject. For information on how to obtain this service, contact your HP representative.

BSM supports the following mechanisms to help ensure high availability for the raw data:

- If the Web server of the Gateway Server machine fails, the data is either redirected to another Gateway Server by the load balancer, or is queued on the data collector until the Web Server is up.
- If the Web server of the Gateway Server machine receives the data, but the bus is down, the data is stored on the data collector until the bus is up again.
- If the bus receives the data, but the monitoring data loader is down, the data is stored on the bus until the monitoring data loader is up again. The data is then sent to the database.

## High Availability for Service Health

HP Business Service Management provides high availability for Service Health on the Gateway Server to ensure that users can continue working with Service Health even if a Gateway Server fails while a user is in the middle of a session.

When a user logs in to BSM and starts working with Service Health, the session information is registered on a specific Gateway Server and the load balancer sends all communications related to that session to the same Gateway Server. If that Gateway Server fails, the load balancer redirects the session to another Gateway Server and the session is re-registered on the new Gateway Server. The user continues working without any interruption of service and without having to log in to BSM again.

The load balancer for the Gateway Server must be set with **stickiness by session enabled**. For details, see "[Configuring Load Balancing](#)" on page 248.

**Caution:** It is possible that in certain situations, the transition from one Gateway Server to another could take a few seconds. During this transition, errors may be received for some user actions.

## High Availability for the Data Processing Server

To ensure high availability, you should install a backup Data Processing Server. For BSM to function properly in the event of a primary Data Processing Server failure, the backup Data Processing Server can take over.

**Tip:** It is recommended that when you install the primary and backup Data Processing Servers, the servers should be comparable in terms of hardware, memory, and performance.

If the high availability for the Data Processing Server is enabled and a backup server is defined, in the event that one or more services becomes unavailable, the High Availability Controller performs automatic failover and moves the services to the backup server. The server retrieves the current configuration from the management database and continues to provide the services as the new active Data Processing Server.

You can also use the JMX console to manually reassign services to the backup server. You may want to do this if for example, you are planning a maintenance on one of the Data Processing Servers. Moving the services manually can reduce BSM's downtime.

**Note:** When deploying a new BSM installation, the first Data Processing Server started becomes the default server for the assigned Data Processing Server services—that is, it becomes the primary Data Processing Server. If a second Data Processing Server is started, you can assign it to act as a backup server. For details, see "Understanding Service Reassignment" in the BSM Platform Administration Guide.

This section includes the following topics:

["Services Assigned to the Server" on the next page](#)

["Services Managed by the High Availability Controller \(HAC\)" on page 258](#)

["Configuring Automatic Failover " on page 261](#)

["Reassigning Services with JMX Console" on page 264](#)

["Manually Reassigning Services " on page 265](#)

["Manually Disabling Data Aggregator Services" on page 269](#)

## Services Assigned to the Server

Various processes are assigned to the Gateway and Data Processing Servers. Each process is responsible for running specific services. You can use the JMX console to view the services running on the BSM servers or on a specific server, such as the Data Processing Server.

To view services via the JMX Web console:

1. In a Web browser, open:

**`http://<Data Processing Server machine name>:8080/jmx-console`**

2. When prompted, enter the JMX Console authentication credentials (if you do not have these credentials, contact your system administrator).
3. In the **Topaz** section, select **service=hac-manager**.
4. Under **java.lang.String listAllAssignments()** from the database, click **Invoke**.

If you want to view the services of a specific server, such as the Data Processing Server, enter the name of the server in the parameter value. If you want to view all services, leave the parameter value for the server name empty.

The processes running on the server are displayed in a table. The JMX online table contains the following columns:

Column Name	Description
Service	The name of the assigned service.

Column Name	Description
Customer	<p>The ID of the customer to which the service is assigned. The default customer ID for an individual BSM system (one not managed by HP Software-as-a-Service) is 1.</p> <p>A service with a customer id of -1 is a global service used by all customers in a SaaS deployment.</p>
Process	<p>The name of the Data Processing Server and the name of the JVM process handling the service.</p> <p>The length of time the server has been running and the last time it was pinged are also displayed.</p>
Assigned	<p>Whether the service assignment is currently active or not, the date the service was assigned, and the length of time it has been assigned are displayed.</p>
State	<p>The current state of the service. Valid states are:</p> <ul style="list-style-type: none"> <li>1 – Stopped</li> <li>2 – Starting</li> <li>3 – Stopping</li> <li>4 – Running</li> <li>-1 – Failed</li> <li>-2 – Failed to stop</li> <li>-3 – Failed to start</li> </ul> <p>The date that the service acquired the state, and the length of time that it has been in the state are displayed.</p>
Srv. Sign	<p>Server signature.</p>
State Sign	<p>State signature (should match the server signature).</p>

## Services Managed by the High Availability Controller (HAC)

The Data Processing Server services that can be managed by HAC are described in the following table, including:

- Name of the process in JVM
- Name the High Availability Controller (HAC) uses for the process
- The services running on the process
- A description of the process

JVM Process Name	HAC Process Name	Service Name	Description of Service Location of Log File
Mercury AS	mercury_as	KPI_ENRICHMENT	KPI_Enrichment service is responsible for adding dashboard KPIs to CIs that were added to the model by external monitoring systems. The KPIs to add and the CIs to which the KPIs are added are configurable.
		BSM_DT	BSM_DT handles the configured downtimes in the system. Downtimes can be configured onto CIs and can be configured to affect alerts, events, reports, KPI calculations, and monitoring.
		VERTICALS	Verticals service is for SAP that ensures compatibility with BSM. SAP service links data retrieved from SiteScope and Business Process Monitors to SAP related entities brought from the RTSM.
		EUM_ADMIN	EUM_ADMIN handles End User Management Administration where Business Process Monitors and Real User Monitors are configured for monitoring.
mercury_odb	odb	BSM_ODB	The RTSM is a central repository for configuration information that is gathered from the various BSM and third-party applications and tools. This information is used to build BSM views.

<b>JVM Process Name</b>	<b>HAC Process Name</b>	<b>Service Name</b>	<b>Description of Service</b> <b>Location of Log File</b>
hpbsm_ bizImpact	businessimpact_ service	BIZ_IMPACT	The Business Impact component enables you to see the business CIs and SLAs that are impacted by another CI in Service Health.
		LIV_SERVICE	Local Impact View enables you to also create local impact views in Service Health. These are independent of all other views. When you modify indicator definitions on a CI within a local impact view, this has no effect on this CI in all other views.
bpi_ process_ repository	bpi_process_ repository	PROCESS_REPOS	Responsible for maintaining all Business Process Insight configurations when Business Process Insight is not installed on a separate server.
hpbsm_ offline_ _engine	offline_ engine	NOA	The New Offline Aggregator service validates and synchronizes new tasks for the offline aggregator on an hourly or daily basis.
hpbsm_ _marble _supervisor	marble_ supervisor	DASHBOARD	Dashboard service on the Data Processing Server is responsible for online business logic calculations for Service Health.

<b>JVM Process Name</b>	<b>HAC Process Name</b>	<b>Service Name</b>	<b>Description of Service</b> <b>Location of Log File</b>
hpbsm_ pmanager	pmanager	PM	The Partition and Purging Manager splits fast-growing tables into partitions at defined time intervals. After a defined amount of time has elapsed, data in a partition is no longer accessible for use in BSM reports. After an additional, defined amount of time, that partition is purged from the profile database.
hpbsm_ opr_ backend	opr_backend	OPR	Responsible for the Operations Management application.
hpbsm_ pi_engine	pi_engine	PI_ENGINE	The Service Health Analyzer engine component searches for anomalies over the baseline behavior of the system.
hpbsm_ basel_ engine	basel_engine	BASELVALIDATOR	The baseline validator validates baseline tasks against metadata and add/removes tasks if needed.

## Configuring Automatic Failover

You can configure automatic reassignment of services running on a primary Data Processing Server to a backup Data Processing Server. To configure the automatic reassignment of services running on a primary Data Processing Server to a backup Data Processing Server, you must:

- Define a backup Data Processing Server in the JMX console.
- Enable automatic failover.

**Note:** If you enable automatic failover and set the keep alive timeout to less than ten minutes, this can cause BSM services to move to the backup server after a restart. To prevent this from happening, when disabling BSM, shut down the backup server before the primary server. When enabling BSM, enable the primary server and verify that all services have started before enabling the backup server.

## Defining a Backup Server

You must use the JMX console to define or remove a backup Data Processing Server. You can also view your high availability configurations.

### To use the JMX console to define a backup server:

1. In a Web browser, open: **http://<Data Processing Server machine name>:8080/jmx-console**

When prompted, enter the JMX Console authentication credentials (if you do not have these credentials, contact your system administrator).

2. In the **Topaz** section, select **service=hac-backup**.
3. Locate **addBackupServer** and enter the following values:
  - **primaryServerName**. The name of the primary server.
  - **backupServerName**. The name of the backup server.

Use the machine name (not the FQDN) for both these parameters. If you are unsure of the machine name, you can use the **listservers** method described below to retrieve the name of the machines already configured.

4. Click **Invoke**.

**To remove a backup server:**

1. Follow steps 1 and 2 above for accessing the JMX and **hac-backup** service.

2. Locate `removeBackupServer` and enter the following value:

**primaryServerName.** The name of the primary server for which you are removing the backup server.

3. Click **Invoke**.

**To view your high availability configuration:**

1. Follow steps 1 and 2 above for accessing the JMX and **hac-backup** service.

2. Locate **listservers** and click **Invoke**.

The result displays a list of **Servers** and **Backup Servers**. If there are no backup servers defined or if high availability is not enabled, you get a message saying automatic failover is disabled.

## Enabling Automatic Failover

You enable either using the Infrastructure Settings in the BSM interface or in the JMX console. You can also use the JMX console to check whether high availability is enabled.

**To enable automatic failure in Infrastructure Settings:**

1. Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**.

2. Choose **Foundations**, select **High Availability Controller**, and locate the **Automatic Failover Enabled** entry in the General Properties table.

3. Modify the value to **true**. The change takes effect immediately.

4. Specify the other parameters in the table according to your needs. The details of each parameter are in the table.

**To enable automatic failover in the JMX:**

1. In a Web browser, open:  
`http://<Data Processing Server machine name>:8080/jmx-console`

When prompted, enter the JMX Console authentication credentials (if you do not have these credentials, contact your system administrator).

2. In the **Topaz** section, select **service=hac-backup**.
3. Locate **void setAutomaticFailoverEnabled ()**, select **True**, and click **Invoke**.

**To check whether automatic failover has been configured:**

1. Follow steps 1 and 2 above for accessing the JMX and **hac-backup** service.
2. Locate **void getAutomaticFailoverEnabled ()**, click **Invoke**.

## Reassigning Services with JMX Console

You can move services between Data Processing Servers as server availability and resource issues arise. Reassigning services can also limit downtime during maintenance of the Data Processing Servers.

You do not have to have high availability enabled to perform this procedure and the source and destination servers do not have to have been configured for high availability.

To use the JMX console to reassign services between Data Processing Servers:

1. In a Web browser, open:  
`http://<Data Processing Server machine name>:8080/jmx-console`

When prompted, enter the JMX Console authentication credentials (if you do not have these credentials, contact your system administrator).

2. In the **Topaz** section, select **service=hac-backup**.

3. Locate **moveServices()** and enter the following values:
  - **customerId**. The default customer ID for a regular BSM installation is **1**. HP Software-as-a-Service customers should use their customer ID.
  - **srcServer**. The name of the source server from where you are moving services.
  - **dstServer**. The name of the destination server to where you are moving the services.  
  
Use the machine name for both these parameters. If you are unsure of the machine name, you can use the **listservers** method described above to retrieve the name of the machines already configured.
  - **groupName**. Leave this parameter value blank.
4. Click **Invoke**. All services running on the source server are moved to the destination server.
5. Restart the online engine (MARBLE) processes after moving them to the destination server to ensure that the model remains synchronized.

## Manually Reassigning Services

**Caution:** This section is for advanced users only.

You can manually reassign services running on a primary Data Processing Server to a backup Data Processing Server should it be necessary. Since a service can only be active on one Data Processing Server, you must either remove the existing assignment, or make it inactive, before reassigning the service to a different Data Processing Server.

To reassign a service, you can either add a new assignment, or activate a previously defined, but inactive, assignment.

**Tip:** You can check that services have been reassigned, activated, or inactivated correctly by viewing the service status in the JMX Web console. For details, see ["Services Assigned to the Server" on page 256](#).

## Removing a Service's Assignment

Removing a service's assignment deletes the entry from the HA\_TASKS table in the management database so that it must be added as a new assignment if you wish to use it again in the future.

### To remove a service's current assignment:

1. In a Web browser, open:

**http://<Data Processing Server machine name>:8080/jmx-console**

When prompted, enter the JMX Console authentication credentials (if you do not have these credentials, contact your system administrator).

2. In the **Topaz** section, click **service=hac-manager**.
3. Under **removeAssignment()**, enter the following data:

- **customer\_id.** The default customer ID for an individual BSM system is **1**.HP Software-as-a-Service customers should use their customer ID in this field.

**Note:** The customer\_id for the PM and NOA services is always -1, as they are services assigned to the system as a whole, as opposed to a specific customer.

- **serviceName.** The name of the service for which you are removing the current assignment.
- **serverName.** The name of the Data Processing Server to which the service is currently assigned.

- **processName.** The name of the process (such as **mercury\_as**, **mercury\_online\_engine**, **mercury\_offline\_engine**, **topaz\_pm**).
4. Click **Invoke**. The assignment for the service is removed from the specified Data Processing Server.

## Changing the Status of an Assigned Service

You can leave the assignment of a service to a specific Data Processing Server in the HA\_TASKS table in the management database, but make it active or inactive by changing its assigned value.

**Note:** The HA\_TASK\_ASSIGN table from previous versions is obsolete. Use the HA\_TASKS table.

To change the assigned value of an existing assignment:

1. In a Web browser, open:  
`http://<Data Processing Server machine name>:8080/jmx-console`  
  
When prompted, enter the JMX Console authentication credentials (if you do not have these credentials, contact your system administrator).
2. In the Topaz section, click **service=hac-manager**.
3. Under **changeAssignment()**, enter the following data:
  - **customerId.** The default customer ID for a regular BSM installation is **1**. HP Software-as-a-Service customers should use their customer ID.  
  
The customer\_id for the PM and NOA services is always -1 as they are services assigned to the system as a whole, as opposed to a specific customer.
  - **serviceName.** The name of the service for which you are changing the assignment value.

- **serverName.** The name of the Data Processing Server to which the service is assigned.
  - **processName.** The name of the process.
  - **assignValue.** The assigned value for the assignment. Any number between -9 and 9 is valid. The value **1** makes the assignment active and any other number makes it inactive.
4. Click **Invoke.** The assignment for the service is changed according to the **assignValue** entered.

## Adding an Assignment for a Service

You can add an assignment for a service to a specific Data Processing Server and either activate it immediately, or keep it inactive until needed. This is useful when working with a primary and a backup Data Processing Server. Assignments for all the services can be created for each server, with the assignments to the primary Data Processing Server being active, and the assignments to the backup Data Processing Server being inactive.

### To add a new assignment for a service:

1. In a Web browser, open:  
`http://<Data Processing Server machine name>:8080/jmx-console`  
  
When prompted, enter the JMX Console authentication credentials (if you do not have these credentials, contact your system administrator).
2. In the Topaz section, click **service=hac-manager.**
3. Under **addAssignment()**, enter the following data:
  - **customer\_id.** The ID of the customer for which the service is to be assigned. The default customer ID for an individual BSM system (that is, one not managed by HP Software-as-a-Service) is **1.**

**Note:** The `customer_id` for the PM and NOA services is always -1 as they are services assigned to the system as a whole, as opposed to a specific customer.

- **serviceName.** The name of the service you are assigning.
  - **serverName.** The name of the new Data Processing Server to which the service is being assigned.
  - **processName.** The name of the process.
  - **assignValue.** The assigned value for the assignment. Any number between -9 and 9 is valid. The value **1** makes the assignment active and any other number makes it inactive.
4. Click **Invoke**. The assignment for the service is added for the specified Data Processing Server.

## Manually Disabling Data Aggregator Services

The data aggregator can be disabled in System Health (preferred method). However, if you need to disable data aggregator services but either do not have or cannot use System Health, you can perform this manual procedure.

### To disable the offline aggregation and business logic engine services on the Data Processing Server:

1. Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**.
2. Select **Offline Aggregator**.
3. Edit the **Run Aggregator** parameter. Change the setting to **False**. The change takes effect immediately.

## Configuring BSM Data Collectors in a Distributed Environment

This section describes how to configure the HP Business Service Management data collectors to work in a distributed deployment.

## Business Process Monitor and Real User Monitor

For Business Process Monitors to perform their work, you must specify the Gateway Server URL in the BPM Admin Console application on each host machine on which the Business Process Monitor is running. Edit the Gateway Server URL entry in the Configure Instance page for each Business Process Monitor instance. For more information, see "Business Service Management Registration Properties Area" in the Business Process Monitor Administrator's Guide.

For Real User Monitors to perform their work, BSM requires you to specify the Gateway Server URL in the Real User Monitor Web Console. For more information, see "BSM Connection Settings" in the Real User Monitor Administration Guide.

Specify the Gateway Server address as follows:

- If you install one Gateway Server, specify the URL of this machine.
- If you cluster two or more Gateway Servers behind a load balancer, specify the URL of the load balancer.

If you use two load balancers for failover, specify the URL of either load balancer, and ensure that you configure the host names of both load balancers on the DNS server machine.

## SiteScope

For SiteScopes to perform their work, you must specify the Gateway Server URL in each SiteScope profile, using BSM System Availability Management (**Admin > System Availability Management**). For details, refer to "Configuring the Connection" in the SAM part of the BSM User Guide.

If you use a load balancer and have defined virtual IPs or URLs, you use the virtual IPs or URLs when defining the Gateway Server URL. If you use two load balancers for failover, specify the URL of either load balancer and ensure that you configure the hostnames of both load balancers on the DNS server machine.

For more information on configuring high availability for SiteScope, see the the HP SiteScope Failover Guide.

## Business Process Insight

Refer to the Business Process Insight Server Administration Guide for details on how to configure for high availability.

## Troubleshooting

This section contains troubleshooting information about High Availability related issues.

### Primary DPS Server fails

If your primary DPS server was running Domain Manager process (default) and it crashes, you must reassign this process to the backup DPS.

**To assign the Domain Manager process to a DPS:**

From the DPS server, run the following file: **<HPBSM Home Directory>\Sonic\bin\setDomainManager.bat** (or .sh for linux).

# Uninstalling BSM Servers

This appendix contains the following topics:

## Uninstalling BSM

Use the procedure below to completely uninstall BSM.

# Uninstalling BSM servers in a Windows environment

**To completely uninstall HP Business Service Management servers in a Windows environment:**

1. Uninstall BSM via the Windows user interface or silently.
  - a. Uninstall BSM Using the Windows user interface:
    - i. On the machine from which you are uninstalling HP Business Service Management, select **Start > Control Panel > Programs and Features**. Select **HP Business Service Management**.
    - ii. Click **Remove**, wait for the BSM uninstall script to remove any present updates, and follow the on-screen instructions when prompted.

**Note:** In some cases, this process may take a long time (more than 30 minutes).

**Note:** When a Minor-Minor BSM Release (for example, 9.01) is removed, any BSM Public Patches installed on top of the release are removed, as well.

- iii. If the **Show Updates** check box is selected, all the updates installed over BSM are displayed. When BSM is removed, all updates are also removed.

- b. Uninstall BSM silently:
  - i. Stop all BSM servers.
  - ii. Run the command **<HPBSM Installation Directory>\installation\bin\uninstall.bat -i silent**
2. Restart the server machine.
3. If you are running BSM with Microsoft IIS, open the IIS Internet Services Manager and check the following:
  - a. Under the **Default Web Site**, check that the following virtual directories have been removed and remove them if they still appear:
    - o bpi
    - o bsm
    - o ext
    - o HPBSM
    - o jakarta
    - o mam\_images
    - o mercuryam
    - o odb
    - o topaz
    - o tvb
    - o ucldb-ui
    - o uim

- b. Right-click the server machine name in the tree, and select **Properties**. In the Properties dialog box, with **WWW Service** displayed in the Master Properties list, click **Edit**. Select the **ISAPI Filters** tab. If the **jakartaFilter** filter still appears, remove it.

**Note:** If you plan to uninstall BSM and then reinstall it to a different directory on the server machine, there is no need to remove the **jakartaFilter** filter. However, you will need to update the path for the filter. For details, see ["After uninstalling BSM and reinstalling to a different directory, BSM does not work" on page 293](#).

4. Access the Windows Registry Editor by selecting **Start > Run**. Enter **Regedit**.

During installation, the value of the Windows Registry key **HKLM\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\ReservedPorts** was updated to include the following port ranges required by BSM: 1098-1099, 8009-8009, 8080-8080, 4444-4444, 8083-8083, 8093-8093.

These ports ranges are not removed from the registry key during uninstall. You should remove the ports from the registry key manually after uninstalling BSM if they are no longer needed by any other application.

**Tip:** When working with the registry, it is recommended that you back it up before making any changes.

## Uninstalling BSM servers in a Linux environment

1. Log in to the server as user **root**.
2. To access the uninstall program, type: **cd /opt/HP/BSM/installation/bin**
3. Stop all BSM servers.

4. Run the following script to uninstall in UI mode: **./uninstall.sh**. To perform this step in silent mode, use the command **./uninstall.sh -i silent**.
5. The BSM uninstall program begins. Follow the on-screen instructions. When the uninstall program is complete, a success message is displayed.
6. Click **Finish**.
7. Check the **HPBsm\_<version>\_HPOvInstaller.txt** log file located in the **/tmp** directory for errors. Previous installation files can be found in the **/tmp/HPOvInstaller/HPBsm\_<version>** directory.

**Note:** If you encounter problems during the uninstall procedure, contact HP Software Support.

## Uninstalling a Patch (Rolling Back)

This procedure explains how to uninstall a patch. For example, this means rolling back from BSM 9.25 to BSM 9.20. Follow the appropriate instructions depending on your operating system.

**Note:** When you uninstall a patch, the L-Core version does not revert to the previous version.

### To roll back a BSM patch to a previously installed version - Windows:

1. If you have HP Monitoring Automation installed, before rolling back to a previous version, delete all assignments and auto assignment rules using the Assignments and the Automatic Assignment Rules UIs under **Admin > Operations Management > Monitoring**.
2. If you have smart card authentication enabled, it must be disabled before you begin uninstalling a patch. For details, see the Smart Card Authentication Configuration Guide, which can be found on the Planning and Deployment Documentation page (**Help > Planning and Deployment**) or the HP Software Support site (<https://softwaresupport.hp.com>).
3. Stop the HP BSM service on all servers and confirm that they are stopped.
4. Stop the web server process on all servers (IIS Admin Service for IIS; Apache service for Apache).
5. Select the build patch to remove from **Control Panel > Programs and Features > View Installed Updates**.

To run this command in silent mode, execute **<HP BSM root directory>\installation\<Patch\_Name>\bin\uninstall.bat -i silent**.

6. When the uninstall process is complete, restart the machine if requested. Verify

that HP BSM services are not running.

7. The following step is not relevant if you are rolling back from BSM 9.22.131 (i.e., IP2) or higher.

Remove all subdirectories under the directory **<HP BSM root directory>\EJBContainer\server\mercury\work** on all Gateway servers.

8. If you installed BSM 9.23 or higher on top of BSM version 9.21 or 9.20 and are rolling back to one of those versions, you must completely uninstall Monitoring Automation or User Engagement (if they were installed) after rolling back BSM.
  - a. In the Server Deployment page, disable Monitoring Automation or User Engagement. For details, see the Monitoring Automation Installation Guide.
  - b. Uninstall BSM 9.25 by running **uninstallMaSP** (for Monitoring Automation) or **uninstall** (for User Engagement).
  - c. Uninstall Monitoring Automation or User Engagement according to the Monitoring Automation and User Engagement Installation Guides.
9. If you installed BSM 9.25 on top of BSM version 9.23 and have updated Monitoring Automation or User Engagement to the 9.25 version using the redeployment script:
  - a. Uninstall BSM 9.25 by running **uninstallMaSP** (for Monitoring Automation) or **uninstall** (for User Engagement).
  - b. Run the 9.23 redeployment script as described in the Installing the Software chapter in the Monitoring Automation and User Engagement Guides.
10. Delete the temporary internet files on each browser that accesses BSM.
11. Run the Configuration Wizard to reconfigure BSM.

Click **Start > Programs > HP Business Service Management > Administration > Configure HP Business Service Management**.

12. Restart the BSM service.

13. Restart the web server process on all Gateway servers.
14. Rerun the Setup and Database Configuration Utility without changing any of the existing settings on every BSM server (Gateway and Data Processing Servers). For details, see "[Server Deployment and Setting Database Parameters](#)" on [page 199](#) the BSM Installation Guide.
15. Reload the required TQL.

- a. Make sure BSM is started and the odb service has a status of **STARTED**.
- b. Open the following JMX console:

**<DPS Machine FQDN>:21212/jmx-console/HtmlAdaptor**

**Note:** To access the JMX console on port 21212, you must enable remote access unless you are loading the JMX console from the Data Processing Server itself. To enable remote access to the JMX console, follow the below steps in BSM:

- i. Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings > Foundations > Security**.
  - ii. In the Security-Login table, locate **Restrict remote access to JMX console** and change the value to **false**.
- c. In the JMX console, select **UCMDB:service=Packaging Services**.
  - d. In the method **deployPackages**, enter the following parameters:  
 customerId = 1 (unless it is a "SAAS" environment),  
 packagesNames = BSMDowntime"
  - e. Select **invoke**
  - f. Verify that the **BSM\_DT** service has started.

16. If you are rolling back to BSM 9.20 you need to install hotfix **QCCR1A152986** available from HP support. The hotfix must be installed on all BSM Gateway and Data Processing Servers. This is not required if you are rolling back to BSM version 9.21 or later.
17. You may also need to roll back any database that changed as a result of the upgrade. If you encounter any problems, contact HP Software Support.
18. Make sure to uninstall or rollback any updated data collectors as well.

**To roll back a BSM service pack to a previously installed version - Linux:**

1. If you have HP Monitoring Automation installed, before rolling back to a previous version, delete all assignments and auto assignment rules using the Assignments and the Automatic Assignment Rules UIs under **Admin > Operations Management > Monitoring**.
2. If the system is managed using an HP Operations Agent, change the agent user to root. For details on how to switch the HP Operations Agent user, see the HP Operations Agent manuals.
3. If you are running BSM 9.23 or higher using a non-root linux user, and you are rolling back to BSM 9.22 or lower, you must change the linux user to root before rolling back. This is because the use of non-root users was not supported before BSM 9.23.
4. Stop BSM as follows:

**`/opt/HP/BSM/scripts/run_hpbsm stop`**

5. Run the uninstall script as follows:

**`/opt/HP/BSM/installation/<Patch_Name>/bin/uninstall.sh`**

Where <Patch\_Name> is your HP BSM version. For example HPBsm922.

To run this script in silent mode, use the command

**/opt/HP/BSM/installation/<Patch\_Name>/bin/uninstall.sh -i silent**

6. The following step is not relevant if you are rolling back from BSM 9.22.131 (i.e., IP2) or higher.

Remove all subdirectories under the directory **<HP BSM root directory>/EJBContainer/server/mercury/work** for all Gateway servers.

7. If you installed BSM 9.23 on top of BSM version 9.21 or 9.20 and are rolling back to one of those versions, you must completely uninstall Monitoring Automation or User Engagement (if they were installed) after rolling back BSM.
  - a. In the Server Deployment page, disable Monitoring Automation or User Engagement. For details, see the Monitoring Automation Installation Guide.
  - b. Uninstall BSM 9.25 by running **uninstallMaSP** (for Monitoring Automation) or **uninstall** (for User Engagement).
  - c. Uninstall Monitoring Automation or User Engagement according to the Monitoring Automation and User Engagement Installation Guides.
8. If you installed BSM 9.25 on top of BSM version 9.23 and have updated Monitoring Automation or User Engagement to the 9.25 version using the redeployment script:
  - a. Uninstall BSM 9.25 by running **uninstallMaSP** (for Monitoring Automation) or **uninstall** (for User Engagement).
  - b. Run the 9.23 redeployment script as described in the Installing the Software chapter in the Monitoring Automation and User Engagement Guides.
9. Delete the temporary internet files on each browser that accesses BSM.
10. Reconfigure BSM.
  - **Windows:** Select **Start > Programs > HP Business Service Management > Administration > Configure HP Business Service Management.**

- **Linux:** Open a terminal command line and launch **`/opt/HP/BSM/bin/config-server-wizard.sh`**.

11. Restart the BSM service.

12. Restart the web server process on all Gateway servers as follows:

**`/opt/HP/BSM/WebServer/bin/apache2restart.sh`**

13. Rerun the Setup and Database Configuration Utility without changing any of the existing settings on every BSM server (Gateway and Data Processing Servers). For details, see "[Server Deployment and Setting Database Parameters](#)" on [page 199](#) the BSM Installation Guide.

# Changing BSM Service Users

This appendix provides the procedure for how to switch the Windows and Linux users associated with BSM and contains the following topics:

["Switching the Windows User" below](#)

["Switching the Linux User" on the next page](#)

## Switching the Windows User

The BSM service, which runs all BSM services and processes, is installed when you run the Setup and Database Configuration utility. By default, this service runs under the local system user. However, you may need to assign a different user to run the service (for example, if you use NTLM authentication).

The user you assign to run the service must have the following permissions:

- Sufficient database permissions (as defined by the database administrator)
- Sufficient network permissions
- Administrator permissions on the local server

**Note:** When the BSM service is installed, it is installed as a manual service. When you enable BSM for the first time, it becomes an automatic service.

### To change the BSM service user:

1. Disable BSM (**Start > Programs > HP Business Service Management > Administration > Disable HP Business Service Management**).
2. In Microsoft's Services window, double-click **HP Business Service Management**. The HP Business Service Management Properties (Local Computer) dialog box opens.

3. Click the **Log On** tab.
4. Select **This account** and browse to choose another user from the list of valid users on the machine.
5. Enter the selected user's Windows password and confirm this password.
6. Click **Apply** to save your settings and **OK** to close the dialog box.
7. Enable BSM (**Start > Programs > HP Business Service Management > Administration > Enable HP Business Service Management**).

**Note:** This procedure must be repeated if BSM is uninstalled or upgraded.

## Switching the Linux User

BSM must be configured to run on linux using a specific user. This user can be either the root or any other user. BSM supports only one user at a time. The user is defined in the post-installation wizard.

### To switch the user after BSM is installed:

1. Stop BSM.
2. Rerun the post-installation wizard and specify the new user. The post-installation wizard can be run from the following location: **<HPBSM root directory>\bin\postinstall.bat**.
3. Log out of Linux and log in with the new user.
4. Run the Setup and Database Configuration Utility

Run the Setup and Database Configuration Utility on the Gateway and Data Processing Servers. You do not have to change any settings. The Setup and Database Configuration Utility can be run from the following location **<HPBSM root**

**directory>\bin\config-server-wizard.bat.**

5. Start BSM.

## Switching Web Servers

If you have already installed BSM, and want to switch your web server type, perform the procedure below.

**Note:** If you have enabled smart card authentication and want to switch your web server from Apache to IIS or vice versa, you need to first disable smart card authentication. You can re-enable smart card authentication after you have switched web servers. For details on how to enable and disable smart card authentication, see "Smart Card Authentication" in the BSM Platform Administration Guide.

1. Stop all BSM Gateway and Data Processing servers. For details, see ["Starting and Stopping BSM" on page 144](#).
2. If you are moving from IIS to Apache, stop the IIS service or select a different port in the post-installation wizard in the next step.
3. Run the Post-Installation wizard and select the new web server type on the appropriate screen.

The post-installation wizard can be run from the following location: **<HPBSM root directory>\bin\postinstall.bat**. However, if the wizard was closed before completion, use the following file instead **<HPBSM root directory>\bin\ovii-postinstall.bat**.

4. Start all BSM Gateway and Data Processing servers.

# Troubleshooting

This appendix contains the following topics:

## Troubleshooting Resources

- **Installation log files.** For details, see "[Check installation log files](#)" on page 140.
- **Upgrade log tool.** To view a summary of errors that occurred during the configuration upgrade portion of the upgrade wizard, run the upgrade log tool located at **<HPBSM root directory>\tools\logTool\logTool.bat**. This generates a report in the same directory with the name **logTool.txt**.
- **HP Software Self-solve knowledge base.** For additional troubleshooting information, see the HP Software Self-solve knowledge base accessed from the HP Software Support (<https://softwaresupport.hp.com>).
- **BSM Tools.** You can use BSM tools to assist in troubleshooting the HP Business Service Management environment. You access the tools from **<HPBSM root directory>\tools** directory. Most of the tools should only be used in coordination with HP personnel. The Database Schema Verification utility (dbverify) and Data Marking utility should be used according to documented instructions.
- **BSM Logging Administrator.** This tool allows you to temporarily modify the level of details displayed in BSM logs, as well as create custom logs. To open the BSM Logging Administrator Tool, open the following URL:  
  
**<http://<BSM Gateway Server>/topaz/logAdminBsm.jsp>**

## Installation and Connectivity Troubleshooting

This section describes common problems that you may encounter when installing BSM or connecting to BSM following installation, and the solutions to these problems.

### The Setup and Database Configuration Utility does not allow you to enter a password

When running this utility on a Linux machine, in some cases the password field will not allow any entries. This was discovered on a Japanese RHEL5 64 machine.

**Workaround:**

Execute the wizard using a terminal emulator application, such as PuTTY or GNOME.

### Receive error message: not enough space on the drive to extract the installation files

This happens during component installation. If you enter a new path for a different drive with sufficient space, the same error message is displayed.

**Possible Cause:**

During the file extraction process, certain data is always saved to the TEMP directory on the system drive, even if you choose to save the installation files to a different location from the default path.

**Solution:**

- Free up sufficient disk space on the system drive (as specified in the error message), then continue with the installation procedure.

- If it is not possible to free up sufficient disk space on the system drive, change the path for the system's TEMP variable. To do this, select **Start > Settings > Control Panel > System > Advanced tab > Environment Variables**, and edit the path for the **TEMP** variable in the User variables area.

## Connection to a Microsoft SQL Server database fails when running the Setup and Database Configuration Utility

Verify that the user under whom the SQL Server service is running has permissions to write to the disk on which you are creating the database.

## A network login prompt appears when completing the BSM server installation

### **Possible Cause:**

This can occur if the IIS server's authentication method is not set to the default setting, **Allow Anonymous Access**.

### **Solution:**

Reset the IIS server's authentication method to the default setting, **Allow Anonymous Access**, and ensure that the default user account **IUSR\_XXX** (where "XXX" represents the name of the machine) is selected (the user account **IUSR\_XXX** is generated during IIS installation). Then uninstall and reinstall BSM.

## Tomcat servlet engine does not start and gives an error

The error message is as follows:

```
java.lang.reflect.InvocationTargetException: org.apache.tomcat.core.TomcatException:  
Root cause - Address in use: JVM_Bind
```

### **Possible Cause:**

Running Oracle HTTP Server, installed with a typical Oracle installation, on the same machine as BSM servers causes a conflict with the Tomcat servlet engine.

### **Solution:**

Stop the Oracle HTTP Server service, disable and then enable BSM.

To prevent the problem from recurring after the machine is restarted, change the Oracle HTTP Server service's startup setting to **manual**.

## Inability to install BSM components due to administrative restrictions

### **Possible Cause:**

The machine on which you are installing has policy management software that restricts access to files, directories, the Windows registry, and so forth.

### **Solution:**

If this type of software is running, contact your organization's network administration staff to obtain the permissions required to install and save files on the machine.

## After installing, receive http error 404 on the page when attempting to access BSM

Perform the following tasks:

1. Verify that all BSM processes were started by accessing the status page. For details, see "How to View the Status of Processes and Services" in the BSM Platform Administration Guide.
2. If all the services appear green in the status page, browse to BSM using port 8080 ([http://MACHINE\\_NAME:8080](http://MACHINE_NAME:8080)).  
  
Try to access the JMX console. If you can access the console, continue with step 3 trying to discover the problem.
3. Check if the Web server is started ([http://MACHINE\\_NAME](http://MACHINE_NAME)). If the Web server is started, you probably have a problem with the ISAPI filter.
4. If the problem is with the ISAPI filter and you are running on a Microsoft Windows 2008 server, check that you followed the procedure for creating a role. For details, see ["Working with the Web Server" on page 191](#).
5. The Apache server may not be successfully starting because of a port collision.

## After uninstalling BSM and reinstalling to a different directory, BSM does not work

**Possible Cause:** When uninstalling and reinstalling to a different location, the IIS ISAPI filter did not get updated to the new path.

**Solution:**

**To update the IIS ISAPI filter to the new path:**

1. Open the IIS Internet Services Manager.
2. Right-click the machine name in the tree and select **Properties**.
3. With **WWW Service** displayed in the Master Properties list, click **Edit**.
4. Select the **ISAPI Filter** tab.
5. Ensure that **jakartaFilter** is pointing to the correct BSM directory.
6. Apply your changes and quit the Internet Services Manager.
7. Restart the IIS service.

## Business Process Monitor or SiteScope data are not being reported to BSM

There are various conditions that may cause this problem. For details on causes and possible solutions, refer to the HP Software Self-solve Knowledge Base, and search for article number KM438393.

(<https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM438393>).

## Business Process Monitors fail to report to the Gateway Server running on IIS

### **Symptoms/Possible Causes:**

- No data reported to loaders
- No data in Web site reports

- An error in the **data\_deport.txt** log on the Business Process Monitor machine similar to the following:

```
Topaz returned an error (<html><head><title>Error Dispatching
URL</title></head>

<body>

The URI:<br/><b>api_reporttransactions_ex.asp</b><br/> is
<b>not</b> mapped to an API Adapter.<br/>Either the URI is
misspelled or the mapping file is incorrect (the mapping file is
located at:
D:\HPBAC/AppServer/TMC/resources/ServletDispatcher.xml)

</body>

</html>)
```

The problem can be confirmed by opening the page [http://<machine name>/ext/mod\\_mdrv\\_wrap.dll?type=report\\_transaction](http://<machine name>/ext/mod_mdrv_wrap.dll?type=report_transaction). If there is a problem, a Service Temporarily Unavailable message is displayed.

You can also submit the following URL to verify Web Data Entry status: [http://<machine name>/ext/mod\\_mdrv\\_wrap.dll?type=test](http://<machine name>/ext/mod_mdrv_wrap.dll?type=test)

This problem may be caused by the existence of **MercRedirectFilter**, which is a deprecated filter that is no longer needed for BSM and may be left over from previous versions of BSM.

**Solution:**

Delete the **MercRedirectFilter** filter and ensure that the **jakartaFilter** is the only IIS ISAPI filter running.

## Business Process Monitor is unable to connect via the Internet to the Gateway Server installed on an Apache Web server

### Possible Cause:

The Business Process Monitor machine is unable to resolve the Gateway Server name correctly.

### Solution:

- Add the Gateway Server name to the Business Process Monitor machine's **<Windows system root directory>\system32\drivers\etc\hosts** file.
- Change the Gateway Server name in the **<HPBSM root directory>\WebServer\conf\httpd.conf** file on the Gateway Server to a recognized name in the DNS.

## Post-Installation Wizard fails during BSM installation on Linux machine

This may be due to a Linux bug. Open the **/etc/sysctl.conf** file and remove the line **vm.swapiness = 0**. Restart the post installation wizard.

## Failed to install Adobe Flash Player

Adobe Flash Player is installed using the Adobe Download Manager which cannot handle automatic proxy configuration scripts. If Internet Explorer is configured to use an

automatic proxy configuration, the download manager fails and hangs with no visual response. Try configuring a proxy host manually or see the Flash Player documentation.

## BSM fails to start or BSM configuration wizard does not open

Check the supervisorwrapper.log file for the following error:

```
C:\HPBSM\conf\supervisor\manager\nannyManager.wrapper  
wrapper | OpenService failed - Access is denied.
```

If this error is present, the issue may be due to having User Access Control (UAC) enabled on a Windows system. Disable UAC on all BSM servers running Windows.

## Failure to log in based on FQDN

If you see the following error in the login screen: **The HP Business Service Management URL must include the Fully Qualified Domain Name (FQDN). Please retype HP Business Service Management URL in the address bar**, but you are connecting via FQDN, check if there is a DNS resolution for Load Balanced virtual IPs from the BSM gateways. You may need to add LB virtual IPs (for application users and for data collectors if needed) to the hosts file on BSM gateway.

## After pressing Login, nothing happens. Or user logs in, but Sitemap is empty.

### Possible Cause:

You are trying to login to BSM from the Windows Server instead of the client machine. On Windows Server, the Internet Explorer Enhanced Security Configuration is typically

enabled. With this configuration, several BSM UI features including BSM login page, may not work.

**Resolution:**

Check if the Internet Explorer Enhanced Security Configuration is enabled. If it is enabled, use a regular client for login, and not the Windows server.

If you must login from the server, either disable Internet Explorer Enhanced Security Configuration (**Control Panel > Add/remove Windows components**) or add the BSM URL to the trusted sites in the IE Security Settings.

## Java applets not opening

- If you use Internet Explorer, select **Tools > Internet Options > Connections > Local Area Network (LAN) Settings**. Clear the following options: **Automatically detect settings** and **Use automatic configuration script**.
- Select **Control Panel > Java > General** tab > **Network Settings** > select **Direct connection** option (and not the default option to **Use browser settings**).

## Uninstalling BSM results in errors

If you receive a few errors that look like the following:

The package HPOv....can not be uninstalled.

You can ignore these errors. BSM has been uninstalled correctly.

## Unreadable Eastern Asian Characters

On some RHEL6.x distributions, when choosing to install BSM in an Eastern Asian locale (Korean, Japanese or Simplified Chinese), the installation UI displays unreadable characters.

**Workaround:**

Launch the installer with a JRE that supports Eastern Asian Languages.

```
setup.bin LAX_VM ${PATH_TO_JAVA}
```

## Message Broker on Gateway does not start after upgrade to 9.24

**Possible Cause:**

Insufficient disk space on the C drive.

Sonic 8.6 uses temporary system folders during its installation. By default, these temporary system folders are located on the C drive. If there is not a minimum of 10GB free disk space, Sonic 8.6 cannot be installed – even if you are installing BSM on another drive.

**Solution:** Obtain more free space on the system's C drive (and on the BSM drive if it is not the same as the system drive), and then re-install Sonic. If you are unable to obtain enough free disk space on your C drive, create a temporary folder on another drive.

**(Optional) Create a temporary folder**

1. Create a temporary folder on a drive that has enough free space (for example, D:\TEMP)
2. Open a cmd window and run the following commands:

```
SET TEMP=D:\TEMP
```

```
SET TMP=D:\TEMP
```

3. Install Sonic using the procedure below. Be sure to run all commands in the **Installing Sonic** procedure in a cmd window. The Sonic installer will access the newly created temporary folder on the drive you designated (for example, drive D).

**Install Sonic**

1. On the Data Processing Server, go to **HPBSM\Sonic\**.
2. Remove all files and folders except the following:
  - bin
  - input
  - installation
3. Go to **HPBSM\Sonic\bin\**.
4. Run **install.bat**. It will take several minutes. This creates new folders under **HPBSM\Sonic\** such as MQ8.6, Launcher, Archives, and others.
5. Open the **HPBSM\conf\bus\jms.configuration.status.properties** file.
6. Delete the contents of the **HPBSM\conf\bus\jms.configuration.status.properties** file leaving just the **domain.manager.status** and **message.broker.status** lines. Edit these lines as follows:  
  

```
domain.manager.status=nonconfigured  
message.broker.status=nonconfigured
```
7. Go to **HPBSM\Sonic\bin\**.
8. Run the following command:  
  
**jmsProviderConfig.bat install.domain**
9. On the Data Processing Server, open the **HPBSM\conf\bus\jms.configuration.status.properties** file and verify that **domain.manager.status=configured**.
10. Start BSM.

## Install Executive Scorecard

**Note:** In general, you should follow the product documentation for each product to install and configure the product, and then read and implement the associated integration guides.

## Plan the Installation

Before you begin your deployment of IT Executive Scorecard, you should:

- Understand the components of the application. For more information, see "[HP IT Executive Scorecard Components](#)" on page 303
- Decide which type of IT Executive Scorecard licensing you are implementing, and if necessary purchase the relevant license key file. For more information, see "[HP Licensing](#)" on page 305.
- Decide whether your deployment will be for Development, Test, or Proof-of-Concept (POC), or Production environments.

For more information, see "[Deployment Solutions](#)" on page 307.

- Decide if you want to work with SAP Business Objects Enterprise.

For more information, see "[External or Internal SAP BusinessObjects Enterprise Component](#)" on page 310.

- Ensure that your hardware and software meet the system requirements.

The environments supported by IT Executive Scorecard are described in the Support Matrix document available from the [Support Site](#)

(<http://h20230.www2.hp.com/selfsolve/manuals> or from the Installation DVD).

**Limitation:** Do not use the following characters in any of the directory names specified during the IT Business Analytics installation or post-installation procedures: % ^ & < > | ' ` , ; = ( ) ! \ [ ] "

## HP IT Executive Scorecard Components

IT Business Analytics includes the following components:

- **Executive Scorecard Application** - provides means to define IT goals and objectives, to measure performance, and provides actionable insights into performance improvement plans. It includes the Dashboard, Studio, Explorer, Admin, and Finance modules.
- **Data Warehouse** - a repository for key business data that is cleansed, consolidated, and organized to support efficient queries, reports, and to populate a variety of business analytics. The contents of the Data Warehouse depend on the external HP applications that generate business data. For example, the data may originate from external applications such as HP Asset Manager or HP Project and Portfolio Management.

During the installation of Data Warehouse, if you have installed BOE, SAP BusinessObjects Data Services (BODS), the access mechanism that performs physical data extraction from the source repositories to the target database, is also installed on the Data Warehouse server.

- **SAP BusinessObjects Enterprise (BOE)** - a solution that provides reporting , analysis and information delivery via web applications. This component is optional. It SAP BusinessObjects Enterprise must already be installed before you install XS.
- **Common components** - foundations on which the IT Executive Scorecard deployment is built. Common components are automatically installed on servers when you install the Data Warehouse or IT Business Analytics components.

Other critical external components include:

- **Vertica** - An analytics database that includes the Management Scheme, the Target Scheme, the Staging Scheme, and the Result Scheme used by XS.

- **Source Application Servers** - Source data originates in external application repositories. Data Warehouse consolidates the data from one or more of these external application repositories, and makes it available for analysis by IT Business Analytics.

## HP Licensing

The HP License Key Delivery Service web site ([webware.hp.com](http://webware.hp.com)) manages HP software licensing for the IT Executive Scorecard application. You can view or download the latest version of the ESD and Webware License Management Guide from this site. The guide describes the current process to obtain your entitlement certificate, which contains the HP order number that you need to generate your permanent license keys.

Follow the steps in the ESD and Webware License Management Guide to present your HP order number, select the products that need licenses, and provide other required information.

If you are a first time visitor to the web site, you will be asked to create an account with an email address and password. Most requests to generate permanent license keys require the following:

- IT Executive Scorecard product name and number shown on the product receipt or in the email sent by HP to acknowledge the order.
- The order number from the entitlement certificate.
- A target server name and IP address.
- Contact information, such as company name, your name, fax and phone numbers, and license ownership details.

If necessary, you can return to the HP License Key Delivery Service web site and retrieve the permanent or temporary license keys again by selecting Manage Licenses on the web site home page and logging into your account.

If you have an existing SAP BusinessObjects Enterprise installation, you can use that instance. If you purchase SAP BusinessObjects Enterprise with the HP IT Business Analytics, the purchase includes the required licenses.

Other applications that generate or use data, require separate licenses.

### Permanent License Keys

After you create your user account on the HP License Key Delivery Service web site ([webware.hp.com](http://webware.hp.com)), generate the entitlement certificate, and generate the license keys, the License Key Delivery Service sends permanent keys to you in an email text file attachment. You load permanent license key files during the post-installation configuration. When a permanent IT Executive Scorecard license covering the components you are installing is loaded, details of the license are recorded to the Management database and there is no further requirement for loading the license when installing each component.

### Temporary Licence Keys

After you create your user account on the HP License Key Delivery Service web site ([webware.hp.com](http://webware.hp.com)), generate the entitlement certificate, and generate the license keys, the License Key Delivery Service sends temporary keys to you in an email text file attachment. You load temporary license key files using the License Renewal procedure. For details, see Renew your license using the Start menu in the *IT Executive Scorecard Administrator Guide*. When a temporary IT Executive Scorecard license covering the components you are installing is loaded, details of the license are recorded to the Management database and there is no further requirement for loading the license when installing each component. However when the temporary license expires, you will need to return to the HP License Key Delivery Service web site, retrieve another temporary or permanent license key, and then reload it using the License Renewal procedure. For details, see Renew your license using the Start menu in the *IT Executive Scorecard Administrator Guide*.

## Deployment Solutions

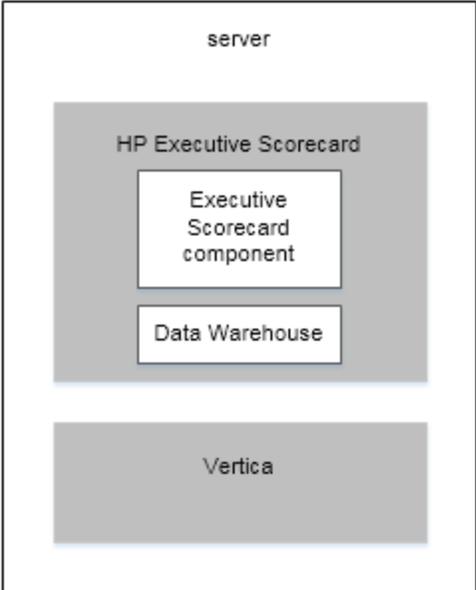
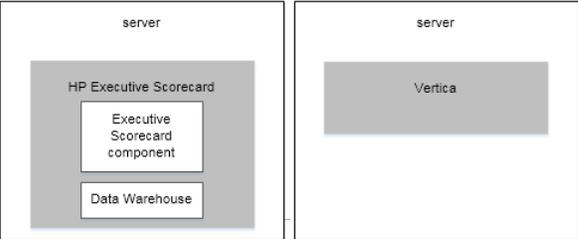
ITSM Enterprise Suite is made up of various components, such as Data Warehouse and Executive Scorecard.

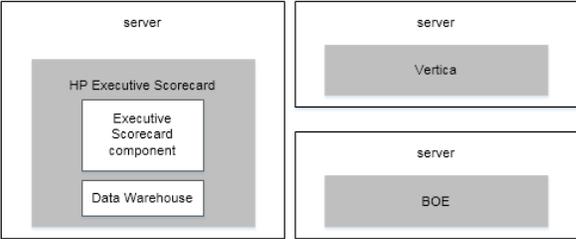
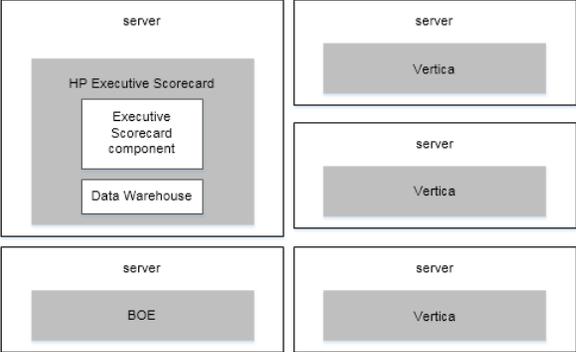
SAP BusinessObjects Enterprise is optional.

Vertica and SAP BusinessObjects Enterprise must be installed before you install ITSM Enterprise Suite. The data sources must be installed on separate servers.

The Target Scheme, Application Scheme, Result Scheme, and Extension Scheme are all part of Vertica.

Depending on the purpose of your installation, you can use one of the deployment solutions described below:

Deployment Solutions	Description	Configuration Purpose
<p><b>Minimal</b></p>	<ul style="list-style-type: none"> <li>ITSM Enterprise Suite (Data Warehouse and XS components) + Vertica on one server</li> <li>No SAP BusinessObjects Enterprise</li> </ul> 	<p>Development, Test, or Proof-of-Concept (POC)</p>
<p><b>Minimal Plus</b></p>	<ul style="list-style-type: none"> <li>ITSM Enterprise Suite (Data Warehouse and XS components) on one server</li> <li>Vertica on one server</li> <li>No SAP BusinessObjects Enterprise</li> </ul> 	<p>Development, Test, or Proof-of-Concept (POC)</p>

Deployment Solutions	Description	Configuration Purpose
<p><b>Extended</b></p>	<ul style="list-style-type: none"> <li>ITSM Enterprise Suite (Data Warehouse and XS components) on one server</li> <li>Vertica on one server</li> <li>SAP BusinessObjects Enterprise on one server</li> </ul> 	<p>Production</p>
<p><b>Extended Plus</b></p>	<ul style="list-style-type: none"> <li>ITSM Enterprise Suite (Data Warehouse and XS components) on one server</li> <li>Vertica on three servers</li> <li>SAP BusinessObjects Enterprise on one server</li> </ul> 	<p>Production</p>

For additional details, see *IT Executive Scorecard Support Matrix*.

## External or Internal SAP BusinessObjects Enterprise Component

If SAP BusinessObjects Enterprise is already installed at your site, you do not have to install a second instance that is dedicated to IT Business Analytics, and you can connect to your existing SAP BusinessObjects Enterprise.

When installing IT Business Analytics in a development/test/production environment, SAP BusinessObjects Enterprise is installed on a server by itself. If SAP BusinessObjects Enterprise is installed on its own server, it must be installed using the XS Install wizard before installing any of the other components with the IT Business Analytics installer.

## Prerequisites

Before you start the installation check the following prerequisites.

### Fully Qualified Domain Name (FQDN) settings

FQDN is required for the BOE, DWH and XS application servers. To make sure that all these servers are joined in a domain. If not, proceed as follows:

1. Update each server **host** file by adding the following line:  
**<your\_server\_IP> <your\_server\_name>.<domain\_name>.**

For example: 192.168.0.120 xserver.hp.com

2. Access XS using **https://<your\_server\_name>.<domain\_name>/xs** after completing the installation.

#### Note:

- You can only map an IP address to one FQDN in the hosts file.
- Do not change the FQDN after the completion of the XS installation.

## RDBMS

Make sure that:

1. You have obtained the supported Microsoft SQL Server software and license keys directly from Microsoft Corporation. Set up the RDBMS before you begin your IT Executive Scorecard deployment. For details, see *IT Executive Scorecard Support Matrix*.
2. You configured your supported Microsoft SQL Server with the following:

- Mixed Mode Authentication for the RDBMS Database Engine.
- TCP/IP enabled as a communications protocol for MS SQL Server.

For more information, see the relevant Microsoft SQL Server documentation.

**Note:**

- XS 9.50 does not support MS SQL Server dynamic port for named instance.

## Licenses

During the Executive Scorecard Configuration, you are required to enter the application license details.

## Data Warehouse Server

Make sure that the Data Warehouse server is configured as follows to avoid low virtual memory prompts when using M-iCP:

1. You have a free hard disk with a capacity of at least 60G.
2. You have set the server virtual memory to **system managed size**.
3. Restart the server.
4. In Folder Options, clear **Hide protected operating system files**.
5. Make sure that the **pagefile.sys** size is greater or equal to your physical memory size.
6. Make sure that you have enough free space on your system drive.

Install the following on the Data Warehouse server, before you start the Data Warehouse component installation:

1. SQLCMD utility as follows:

- a. On the Microsoft SQL Server 2008 R2 Enterprise Edition CD, run Setup.

**Note:**

- If you did not previously install Microsoft .NET Framework 3.5.1 on your server, you may be prompted to install it. When installing Microsoft .NET Framework 3.5.1, make sure that WCF Activation is unchecked.
- When installing the SQLCMD utility, make sure that the path to the utility is not enclosed in quotes ("") and does not include quotes as this might cause the installation of Data Warehouse to fail.

- b. Select **New SQL Server Standalone Installation**.

- c. On the Feature Select screen, select **Management Tools - Basic**, unselect **Management Tools - Complete**, and finish the Wizard.

**Note:** If you want to use the default HTTP port in the Executive Scorecard installation, ensure that port 80 is available after the installation of the SQLCMD tool. For more information about the ports, see the Support Matrix document available from the [Support Site](#) (<http://h20230.www2.hp.com/selfsolve/manuals> or from the Installation DVD).

2. Supported version of Microsoft Excel - This must be installed if you intend on using the Excel spreadsheets provided by Data Warehouse. Because the use of Excel spreadsheets is optional, the pre-install checks inform you if it is not installed but allows you to carry on with the installation.

## Administrator permission when working with an SQL server

Make sure that, in order for the administrator to successfully install IT Business Analytics when working with an SQL server, the user needs at least the following permission: **sysadmin**.

1. To assign these permissions, in the MSSQL database, expand the **Security** directory. Right-click the **Logins** directory that appears and select **New Login**.
2. In the **Login - New** page, enter the logon name in the **Login name** field (the logon name should have the following format: domain\username). The logon name can then be used to install IT Business Analytics.
3. Select the **SQL Server authentication** option.
4. Enter a password and confirm it.
5. Click **OK**.
6. Select **Server Roles** in the left pane, and select the **sysadmin** Server role.
7. Click **OK**.

## Email functionality inside the application.

For the “send email” functionality to work, make sure that the operating system and/or browser of the end user are configured to handle **mailto:** links.

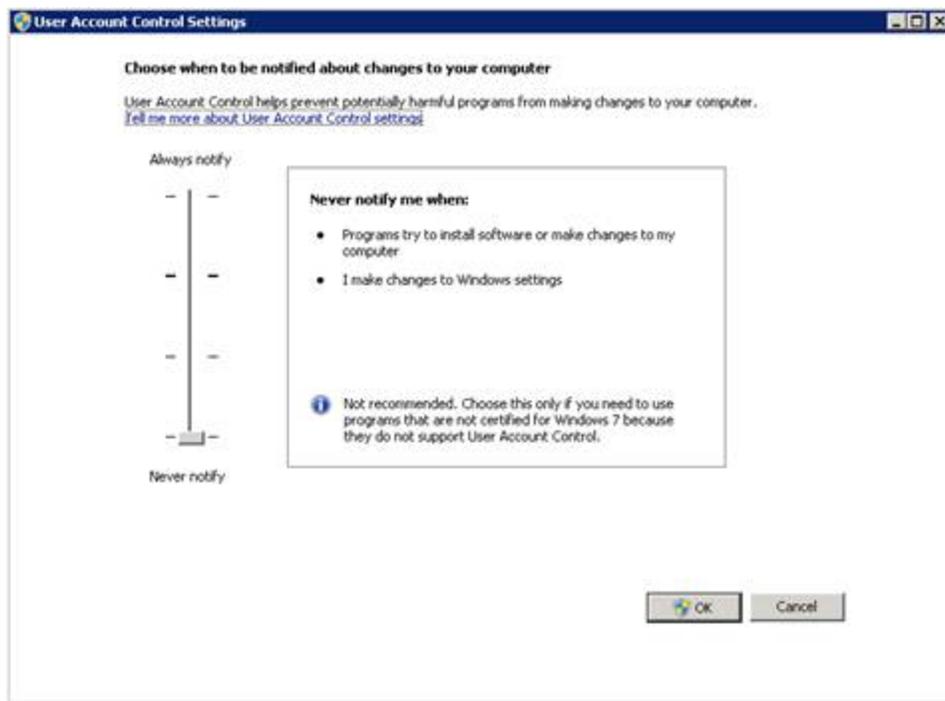
## If you integrate with HP Cloud Service Automation

1. Make sure all of your servers, including the server on which CSA is installed, belong to the same domain.

If the domain name is for example: asiapacific.hp.com, then the full machine name for XS and CSA will be XSinstance01.asiapacific.hp.com and CSAinstance01.asiapacific.hp.com.

2. Install .NET Framework 3.5.1 or above with web IIS.

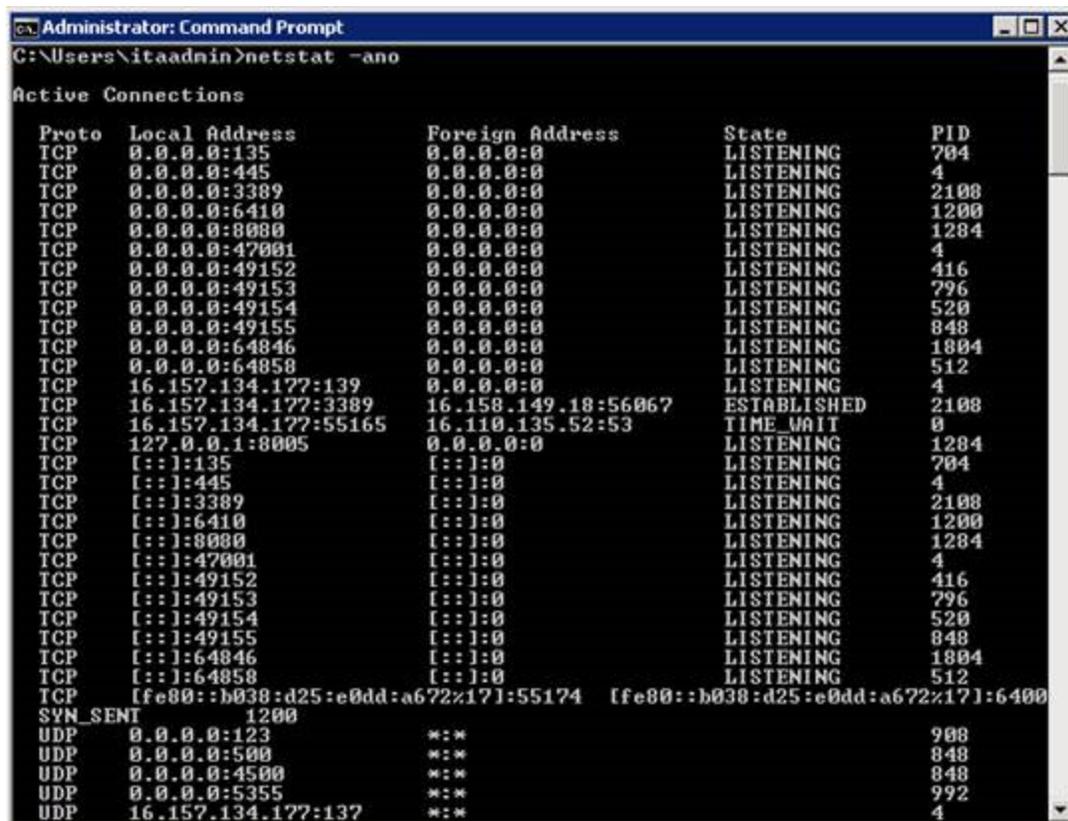
3. Install SQL CMD tool.
4. Install the Access database engine.
5. Enable system auto manage virtual memory of your server.
6. Turn off UAC (User Account Control).
  - a. Click **Control Panel > User Accounts > User Accounts > Change User Account Control Settings**.
  - b. Slide the bar to **Never Notify**.



7. Configure the Windows Firewall to allow the necessary ports.
8. Stop the Windows Process Activation Service as it will automatically occupy port **80**.

Windows Process Activation Service	The Windo...	Disabled	Local System
Windows Remote Management (WS-Management)	Windows R...	Disabled	Network S...
Windows Time	Maintains d...	Started	Automatic
Windows Update	Enables th...	Started	Automatic (D...
WinHTTP Web Proxy Auto-Discovery Service	WinHTTP i...	Manual	Local Service
Wired AutoConfig	The Wired ...	Started	Automatic
WMI Performance Adapter	Provides p...	Manual	Local System
Workstation	Creates an...	Started	Automatic
World Wide Web Publishing Service	Provides W...	Automatic	Local System

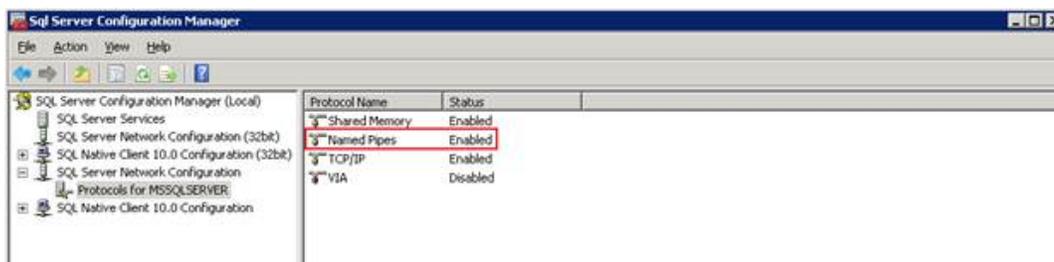
- Make sure that ports **80** and **8080** are not used by System Process before installing XS. You can check that issue using the **cmd** command.



- Edit **C:\Windows\System32\drivers\etc\hosts** and add their server IPs and full machine names to the hosts file.
- Ping BODS and BOE machine to make sure that the network between XS, BODS and BOE is reachable.
- Start the SQL Server (MSSQLSERVER) in Services.

13. Open the SQL Server Configuration Manager:

- a. Enable **Sql Server Network Configuration > Protocols for MSSQLSERVER > Named Pipes**.



- b. Stop the **SQL Server Reporting Services**, and set **Start Mode** as **Manual**.
- c. Make sure the SQL server port configuration uses the static port. XS only support static ports, not dynamic ports.
  - i. Default instance with default port
  - ii. Un-default instance with un-default port.

Before you install XS

1. Turn off the virus scanning software on the server before installing XS as virus installing software may interfere with the installation of SAP BusinessObjects Enterprise.
2. Close all Windows.

**Before the Installation**

To update necessary dll and runtime components, make sure to install the following before XS installation (check under **C:\users** if it has been installed on your machine):

- Microsoft Visual C++ 2008 SP1 Redistributable Package- x86 (not amd64/x64). You can download from <http://www.microsoft.com/en->

[us/download/details.aspx?displaylang=en&id=5582](http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=5582).

- Visual C++ Redistributable Package- x86 (not amd64/x64) for Visual Studio 2012 Update 4 in the single server for a Development/Test/OC environment or in the BOE, DWH, and XS servers in a Production environment. You can download from: <http://www.microsoft.com/en-us/download/details.aspx?id=30679>.

## Database Naming Conventions

It is recommended that you use the following database naming conventions when configuring databases in the IT Business Analytics Configuration Wizard:

<b>Database Type</b>	<b>Naming convention</b>
Management	databasename_Mng
SAP BusinessObjects CMS	databasename_Cms
SAP BusinessObjects Audit	databasename_Audit
SAP BusinessObjectsData Services	databasename_Bods
Data Warehouse Staging	databasename_Staging
Data Warehouse Target	databasename_Target
Executive Scorecard Application	databasename_Result

## Installation Overview

The HP IT Executive Scorecard Installation and Configuration Wizards are self-directing with embedded instructions and default values. You can change these values to suit your local environment. The Wizards consists of the following:

- The Installer builds the directory structure and prepares the files for configuration.
- The Configuration Wizard runs automatically on completion of the installer, collects relevant information, and installs the selected components.

The installation of a component often depends on the successful installation of other components.

Components must be installed in the following order:

### 1. **SAP BusinessObjects Enterprise**

If you already use SAP BusinessObjects BI platform 4.0 SP6 for other applications, you do not have to install a second instance that is dedicated to IT Executive Scorecard. You can use an existing SAP BusinessObjects Enterprise installation on a separate server, but it must be SAP BusinessObjects BI platform 4.0 SP6.

If you want to design your own report, you must also install the client tools. The client tools for SAP BusinessObjects BI platform 4.0 SP6 are located in the DVD root path under the **bip-client** directory.

#### **SAP BusinessObjects Enterprise Wizard Flow**

The SAP BusinessObjects Enterprise section of the IT Executive Scorecard Configuration Wizard enables you to:

- Install SAP BusinessObjects Enterprise (for Dev/Test/POC environment).

- Create the Central Management Server (CMS) database - The CMS database stores data that allows the CMS to maintain security, manage objects, and manage servers.
- Create an Audit database - The Audit database stores and then forwards audit records to the SAP BusinessObjects Enterprise servers.
- Configure connection properties for the SAP BusinessObjects Enterprise server.

## 2. Data Warehouse

You must install Data Warehouse.

### Data Warehouse Wizard Flow

The Data Warehouse section of the IT Executive Scorecard Configuration Wizard enables you to:

- Install SAP BusinessObjects Data Services (BODS).
- Create the SAP BusinessObjects Data Services (BODS) database.
- Create a Data Warehouse Staging database and define its logons - The Staging database, contains tables and snapshots critical to the Extract, Transform, and Load (ETL) process.
- Define the Data Warehouse Target database logon - The Target database, contains models that describe the format of the data that produces IT Executive Scorecard analytical information.
- Assign the Data Warehouse default currency.
- Configure an external source file location and an external source file archive location - The external file location contains Excel files that can be used by an ETL process to load data into the Data Warehouse.
- Install Data Warehouse.

For more information on Data Warehouse, see the *IT Executive Scorecard Administrator Guide*.

### 3. **Executive Scorecard**

#### **Executive Scorecard Wizard Flow**

The IT Business Analytics section of the IT Executive Scorecard Configuration Wizard enables you to:

- Install IT Executive Scorecard.
- Install the IT Executive Scorecard database.
- Install IT Financial Management.

## Pre-Installation Wizard

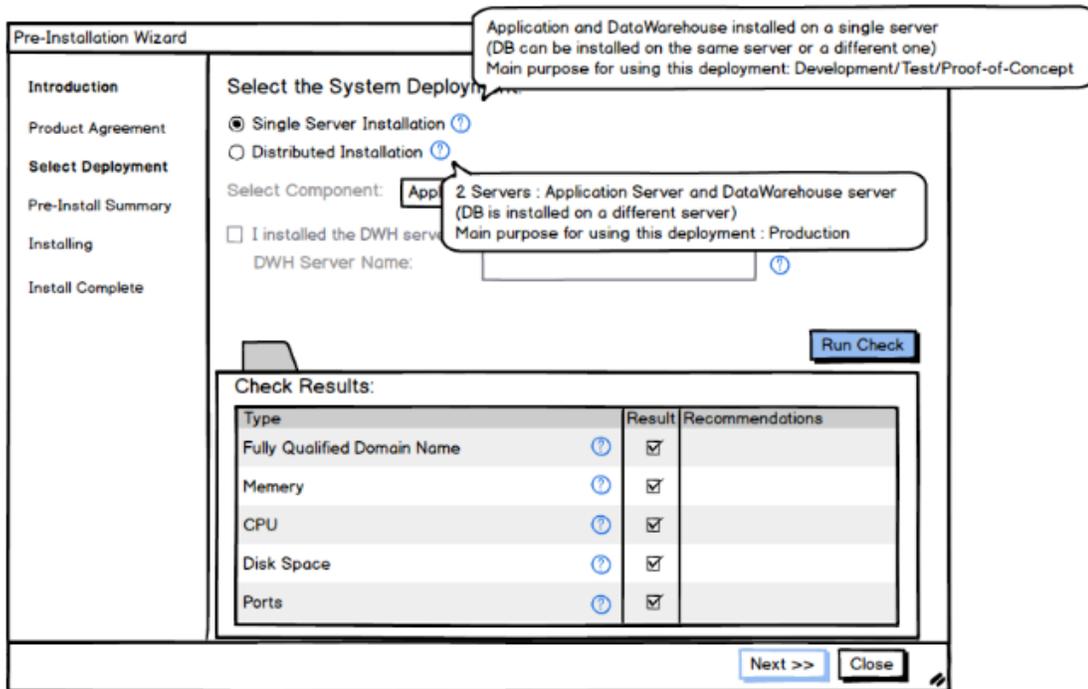
This section includes the following steps:

### Introduction (Install) page

1. Insert the XS media into the CD/DVD drive. The Pre-Installation Wizard opens.
2. In the **Introduction (Install)** page, click **Next**.







2. Click **Run Check**.

The system verifies that the server answers all needed requirements.

If the check passes with no errors, the **Next** button is enabled.

3. Click **Next**.

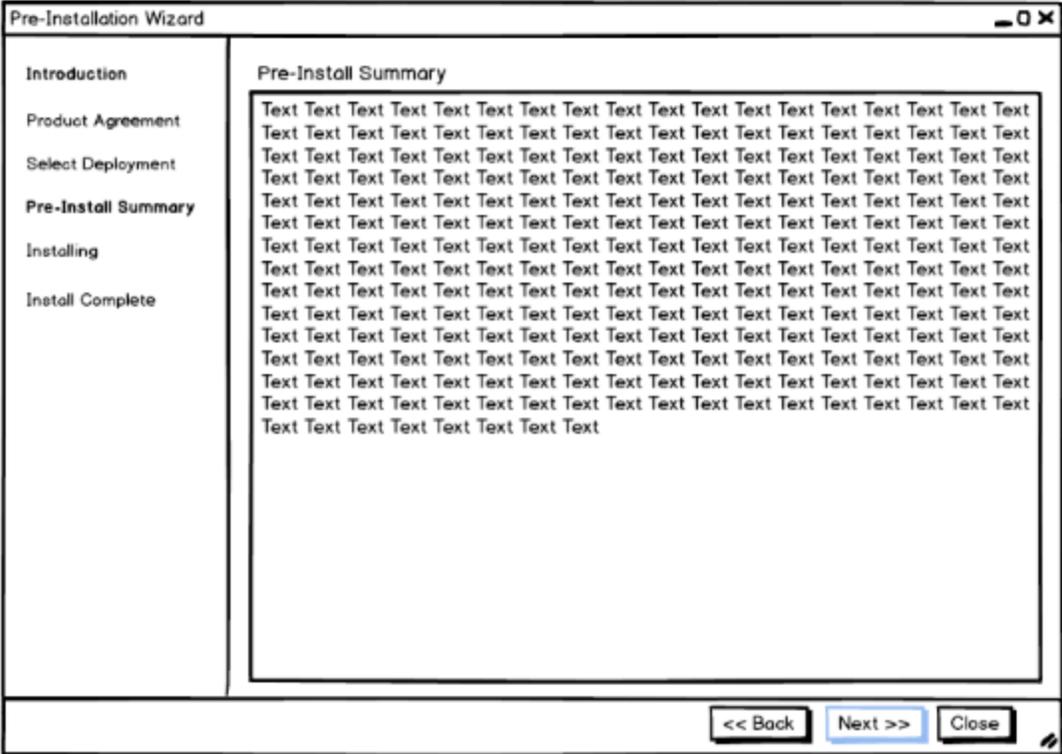
### Pre-Install Summary page

A summary of the configuration you selected is displayed on the **Pre-Install Summary** page.

1. Verify that the components you want to install are listed, and then click **Next**.

The installation files are extracted and the Installation Wizard appears

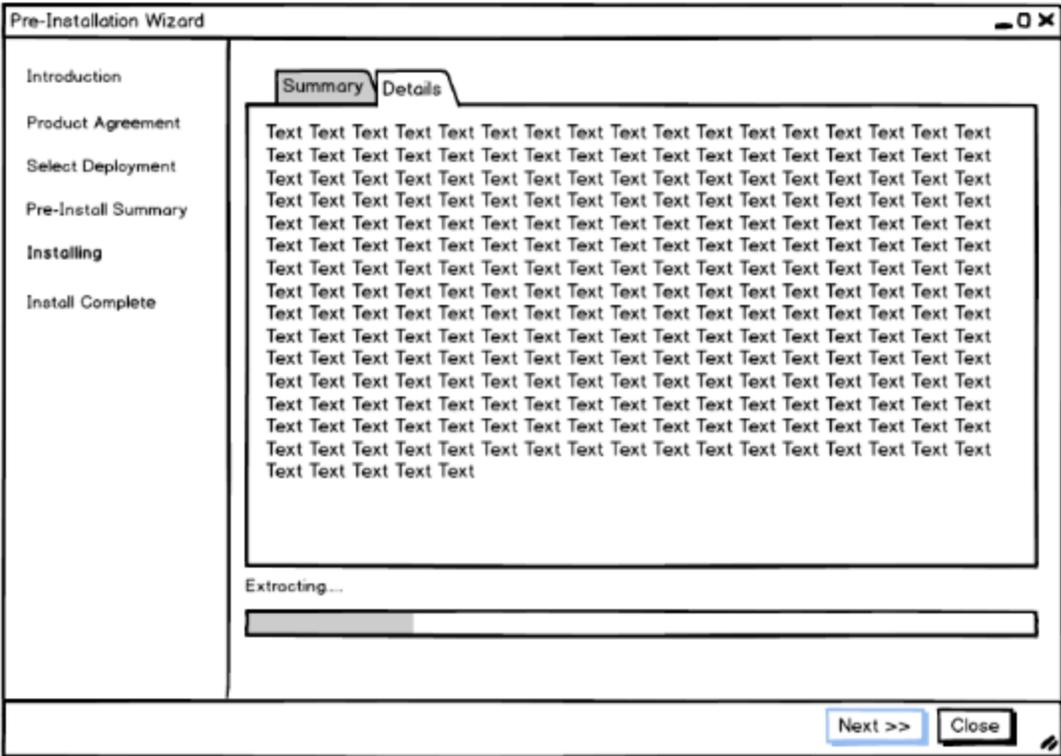
automatically.



### Installation (Extraction)

This page displays the details of the file extractions and the progress of the extraction.

Once the extracting is complete, the Installation wizard automatically appears.



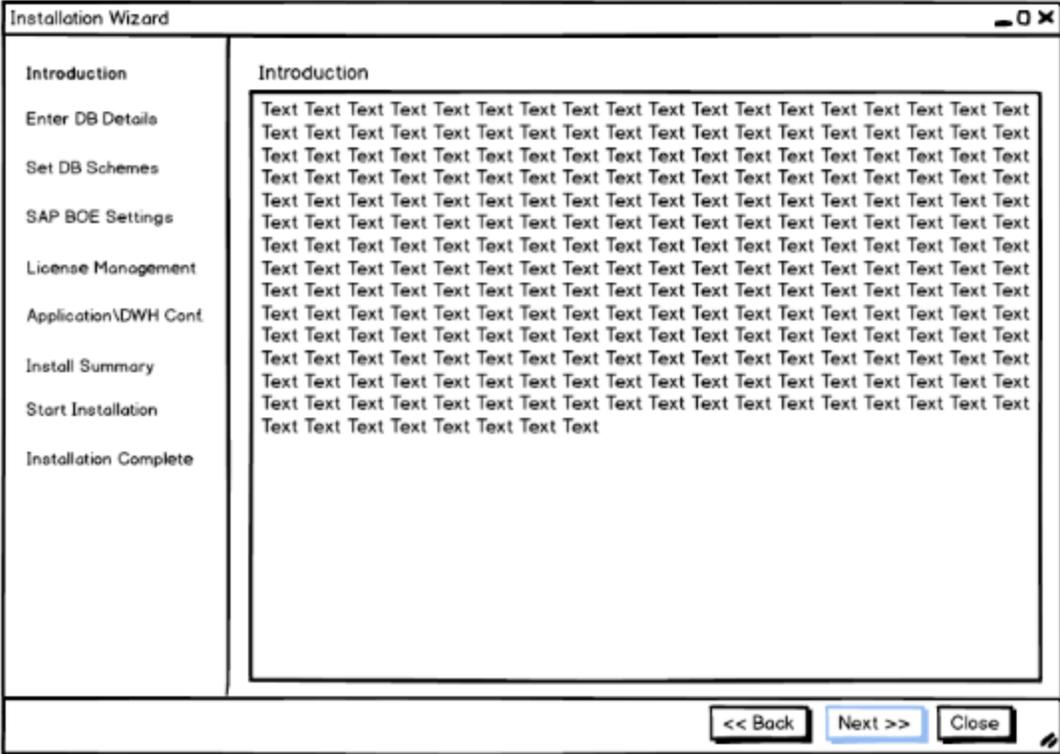
## Installation Wizard

This section includes the following steps:

### Installation Wizard - Introduction Page

The Introduction page of the Installation wizard displays ???.

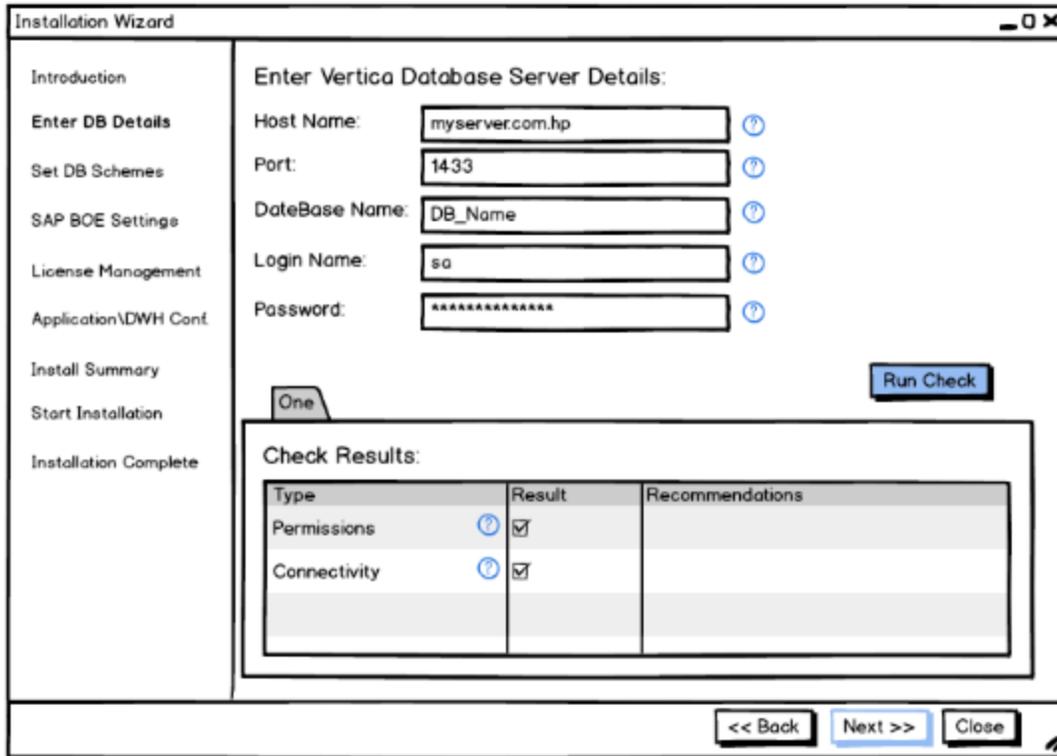
1. Click **Next**.



Enter Vertica Database Server Details

In the Enter Vertica Database Server Details page:

1. Enter the Vertica database details.



**Host Name** The fully qualified domain dynamic ename (FQDN) or IP address of the MS SQL Server hosting the Vertica database.

**Note:** If you work with the Named Instance feature, format Host Name as follows: **<host\_name>\<instance\_name>**. XS does not support dynamic ports.

<p><b>Port</b></p>	<p>The port of the MS SQL server listener. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="https://softwaresupport.hp.com/group/softwaresupport/home">Support Site</a> (<a href="https://softwaresupport.hp.com/group/softwaresupport/home">https://softwaresupport.hp.com/group/softwaresupport/home</a>) or from the Installation DVD.</p> <p>Default: 1433</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: &lt;host_name&gt;\&lt;instance_name&gt;. XS does not support dynamic ports.</p> </div>
<p><b>Database Name</b></p>	<p>The name of the Vertica database.</p> <p>Make a note of the Vertica database name as you may need it when installing other components.</p> <p>Default: DB_Name</p> <p>It is recommended to use the database naming convention. For details, see <a href="#">Database Naming Conventions</a>.</p>
<p><b>Login Name</b></p>	<p>??? should be Log on Name???</p> <p>The name of the user used to log on to the Vertica database.</p> <p>Default: sa</p>
<p><b>Password</b></p>	<p>The password of user used to log on to the Vertica database.</p> <p>Default: ???</p>

The system verifies that the server answers all needed requirements.

**???? should we explain what appears in the tab One. ???**

If the check passes with no errors, the **Next** button is enabled.

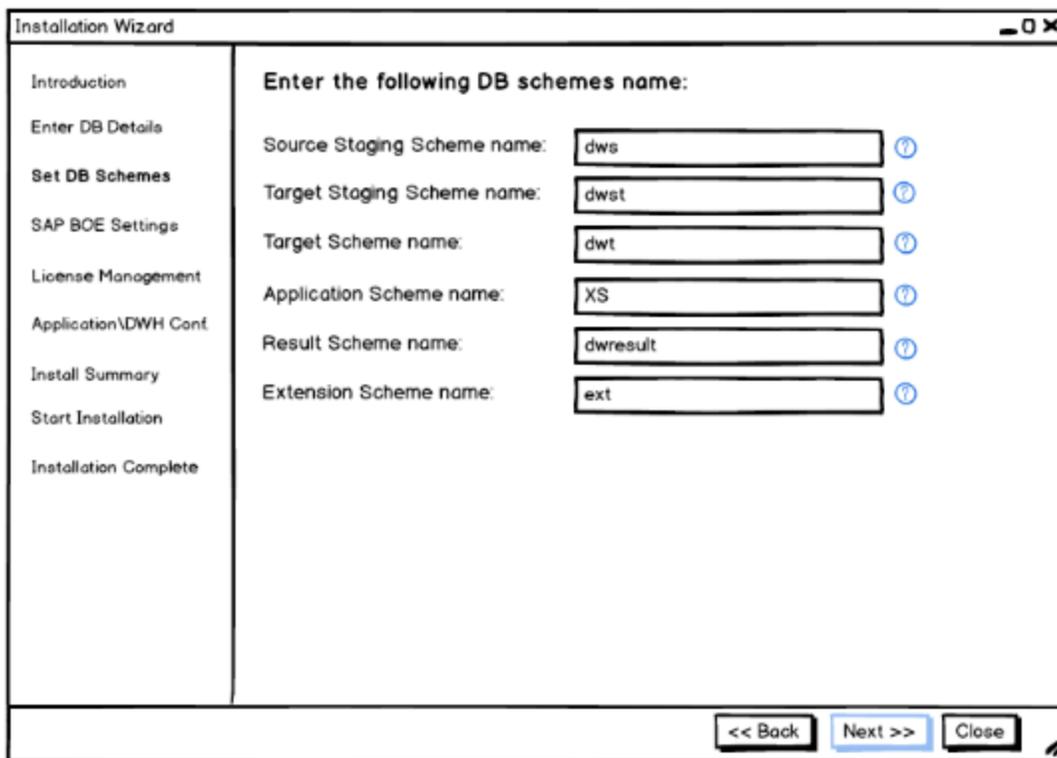
2. Click **Next**.

Enter the following DB scheme names page

**???? Should be DB scheme names ????**

In the Enter the following SB scheme name page, by default, the fields already have default names. You can enter your own values:

1. Enter your own values or keep the defaults: **--- creating the names of the databases and creating the databases (Scheme is because of Vertica)---**



<b>Source Staging Scheme name</b>	The name of the source staging scheme.  Default: <b>dws</b>
<b>Target Staging Scheme name</b>	The name of the target staging scheme.  Default: <b>dwst</b>

<b>Target Scheme name</b>	The name of the target scheme.  Default: <b>dwt</b>
<b>Application Scheme name</b>	The name of the application scheme.  Default: <b>XS</b>
<b>Result Scheme name</b>	The name of the result scheme.  Default: <b>dwresult</b>
<b>Extension Scheme name</b>	The name of the extension scheme.  Default: <b>ext</b>

After entering the DB schemes, the **Next** button is enabled.

2. Click **Next**.

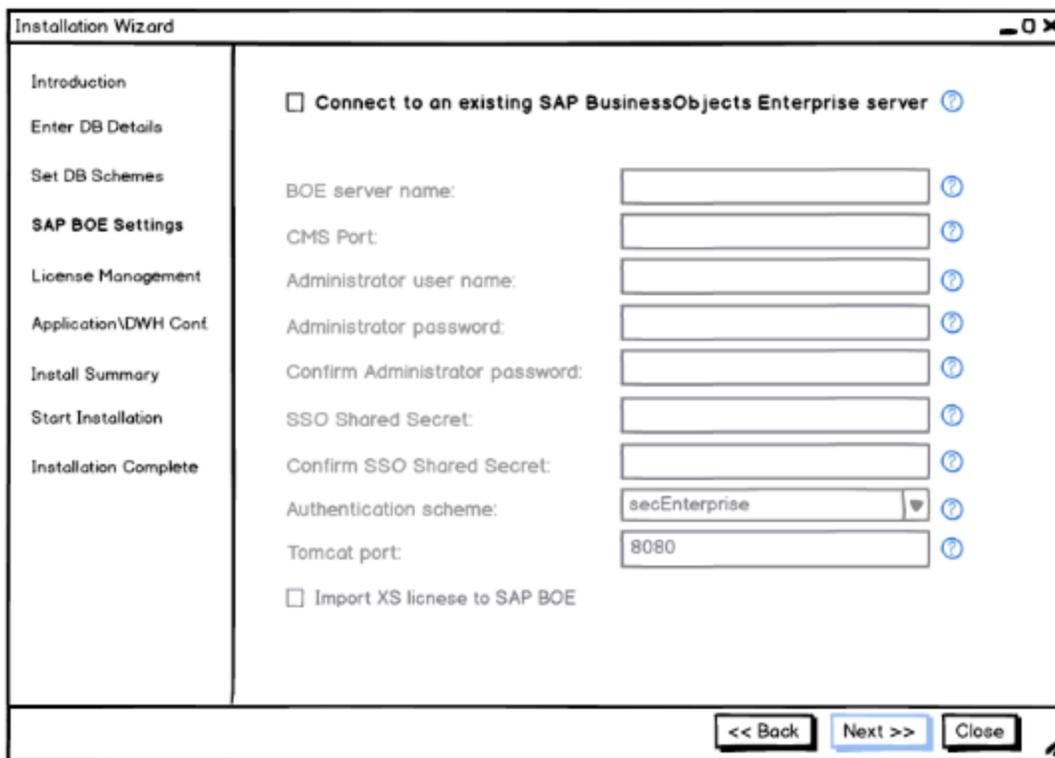
### Connect to an existing SAP Business Objects Enterprise server page

In the **Connect to an existing SAP Business Objects Enterprise server** page:

1. Select **Connect to an existing BOE server**, if you want to integrate with an existing BOE server.  
Click **Next** if you do not need to connect to BOE at this time.

Once you select this option, the rest of the fields become enabled.

2. Enter the BOE server details (if needed):



<b>BOE Server name</b>	<b>????</b>
<b>CMS Port</b>	<p>The port number of the CMS listener.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="https://softwaresupport.hp.com/group/softwaresupport/home">Support Site</a> (<a href="https://softwaresupport.hp.com/group/softwaresupport/home">https://softwaresupport.hp.com/group/softwaresupport/home</a>).</p> <p>Default: 6400</p>
<b>Administrator User Name</b>	<p>The user name for the SAP BusinessObjects Enterprise administrator.</p> <p>Use this user to log on to SAP BusinessObjects Enterprise.</p>

**Administration Password** The SAP BusinessObjects Enterprise Administrator password. This password is used only to log on to SAP BusinessObjects Enterprise.

**Note:**

- The following characters: a-z, A-Z, 0-9, \_ (underscore) are supported.
- The password cannot contain the word: administrator.
- The password must be at least 6 characters in length, and must contain a combination of two of the following; upper case, lower case, numbers and punctuation.
- The password is case-sensitive.
- The password can be changed by the Administrator. In such a case, the relevant password setting should be changed accordingly.

**SSO Shared Secret** The shared secret that is used to authenticate communications with the SAP BusinessObjects BI platform 4.0 SP6 server. If trusted authentication is configured, the shared secret entered is validated against the SAP BusinessObjects BI platform 4.0 SP6 server. If trusted authentication is not configured, the entered shared secret is configured on the SAP BusinessObjects BI platform 4.0 SP6 server.

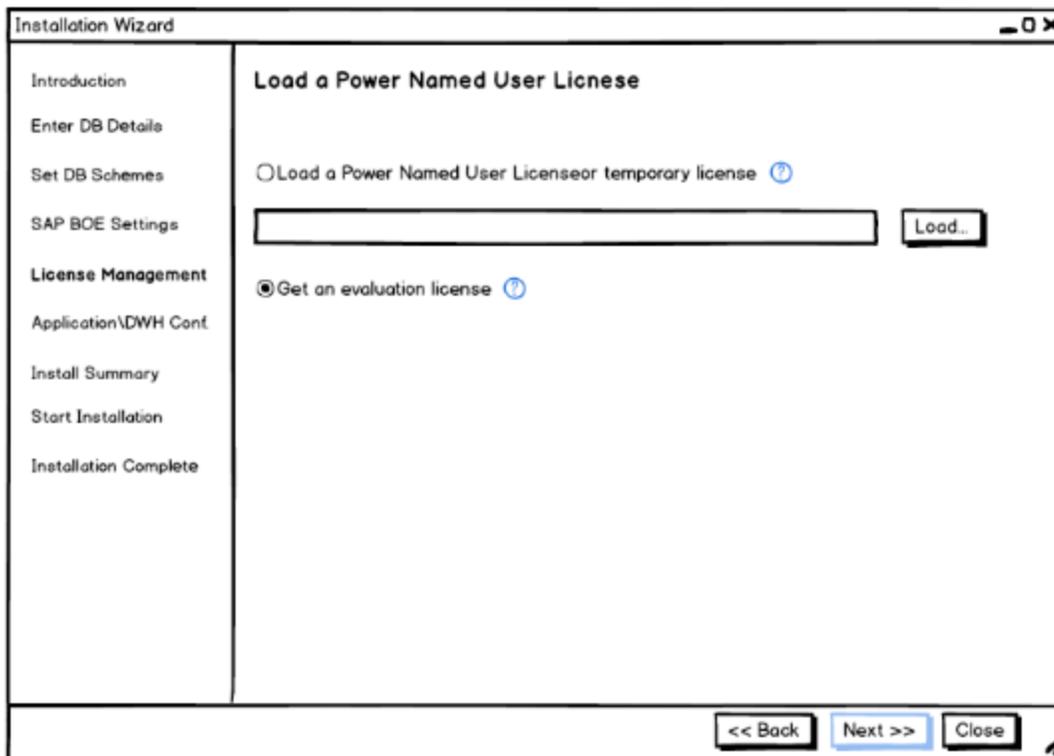
**Import XS license to SAP BOE**

3. After entering the BOE server details (if needed), the **Next** button is enabled.
4. Click **Next**.

## Load a Power Named User License page

In the **Load a Power Named User License** page:

1. Load the permanent license or use the evaluation license:



### **Load a Power Names User license or temporary license**

Select to load one of the following license types:

- **Power Named User License.** Has no expiry date and is loaded once during the post-install.
- **Temporary.** Has an expiry date. On expiration, a new license must be loaded.

To load a license, click **Load**, Navigate to the license file provided by your supplier, and then click **Load License**.

<p><b>Get an evaluation license</b></p>	<p>Select to load a one-off 60 day evaluation license. The remaining valid period of the license is displayed.</p> <p>Once the evaluation license terminates, you must load a temporary or permanent license using the License Renewal feature. For details, see Renew your License Using the Start Menu in the <i>IT Executive Scorecard Administrator Guide</i>.</p>
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After selecting the relevant license, the **Next** button is enabled.

2. Click **Next**.

## Application\DWH Configuration Page

In the Application\DWH page:

1. Enter the relevant application configuration details:

The screenshot shows the 'Application\DWH Conf.' step in the Installation Wizard. The left sidebar lists the following steps: Introduction, Enter DB Details, Set DB Schemes, SAP BOE Settings, License Management, Application\DWH Conf. (current), Install Summary, Start Installation, and Installation Complete. The main configuration area includes:

- Data related configuration:** Time Zone: Asia/Calcutta
- Web Server configuration:** HTTP Port: 80, HTTPS Port: 443
- Application authentication parameters:** Administrator User name, Administrator Password, Confirm Administrator Password

Navigation buttons at the bottom: << Back, Next >>, Close.

**Data related configuration:** **Time Zone.** The Data Warehouse time zone used when consolidating the data extracted from the data sources.

You cannot modify it after it has been defined as it impacts the calculations.

**Web Server configuration:** **HTTP Port.** The port of the HTTP listener. For more information about ports, see the Support Matrix document available from the [Support Site](https://softwaresupport.hp.com/group/software-support/home) (<https://softwaresupport.hp.com/group/software-support/home>) or from the Installation DVD).

**Note:**

- If you want to use the default HTTP port in the Executive Scorecard installation, you must ensure that port 80 is not in use by another process.
- Do not use the Tomcat port to install BOE.

Default: **80**.

**HTTPS Port.** The port of the HTTPS listener. For more information about ports, see the Support Matrix document available from the [Support Site](https://softwaresupport.hp.com/group/software-support/home) (<https://softwaresupport.hp.com/group/software-support/home>) or from the Installation DVD).

**Note:** Do not use the Tomcat port to install BOE.

Default: **443**.

**Application authentication parameters:** **Administrator user name.** The user name for the administrator. Use this user to log on to Executive Scorecard for the first time.  
**Administrator Password.** The password for the administrator.

**Note:**

- The following characters: a-z, A-Z, 0-9, \_ (underscore) are supported.
- The password cannot contain the word: administrator.
- The password must be at least 6 characters in length, and must contain a combination of two of the following; upper case, lower case, numbers and punctuation.
- The password is case-sensitive.
- The password can be changed by the Administrator. In such a case, the relevant password setting should be changed accordingly.

**Confirm Administrator Password.** Confirm the administrator password.

After entering the details, the **Next** button is enabled.

2. Click **Next**.

## Application\DWH Configuration Page - Continued

In the Application\DWH page, continue:

1. Enter the relevant application configuration details:

The screenshot shows the 'Installation Wizard' window with a sidebar on the left and a main configuration area on the right. The sidebar contains the following steps: Introduction, Enter DB Details, Set DB Schemes, SAP BOE Settings, License Management, **Application\DWH Conf.**, Install Summary, Start Installation, and Installation Complete. The main area is divided into three sections: 'Period Dimension' with dropdowns for 'First Year' (2005), 'Last Year' (2025), and 'First fiscal month of the year' (October); 'Glassfish authentication parameters' with text input fields for 'Administrator User name', 'Administrator Password', and 'Confirm Administrator Password'; and 'Currency' with a dropdown for 'Default Currency' (USD - US Dollar). Each dropdown and input field has a help icon to its right. At the bottom right, there are three buttons: '<< Back', 'Next >>', and 'Close'.

**Period Dimension:** **First Year.** The first year in the period dimension is the first year used when automatically populating Data Warehouse tables with yearly, quarterly, monthly, weekly and daily records.

Change the First Year value by clicking the up or down arrows.

**Note:** The First Year can be changed later in the Executive Scorecard Admin application, followed by running the `dw_period_dim_generator` utility.

For more information, see *Change the Data Warehouse Period Dimensions* in the *IT Executive Scorecard Administrator Guide*.

**Last Year.** The last year in the period dimension is the last year used when automatically populating Data Warehouse tables with yearly, quarterly, monthly, weekly and daily records.

Change the Last Year value by clicking the up or down arrows.

**Note:**

- The Last Year must not be lower than the current year.
- The Last Year can be changed later in the Executive Scorecard Admin application, followed by running the `dw_period_dim_generator` utility.

For more information, see *Change the Data Warehouse Period Dimensions* in the *IT Executive Scorecard Administrator Guide*.

**First fiscal month of the year.** The first fiscal month of the year in your organization.

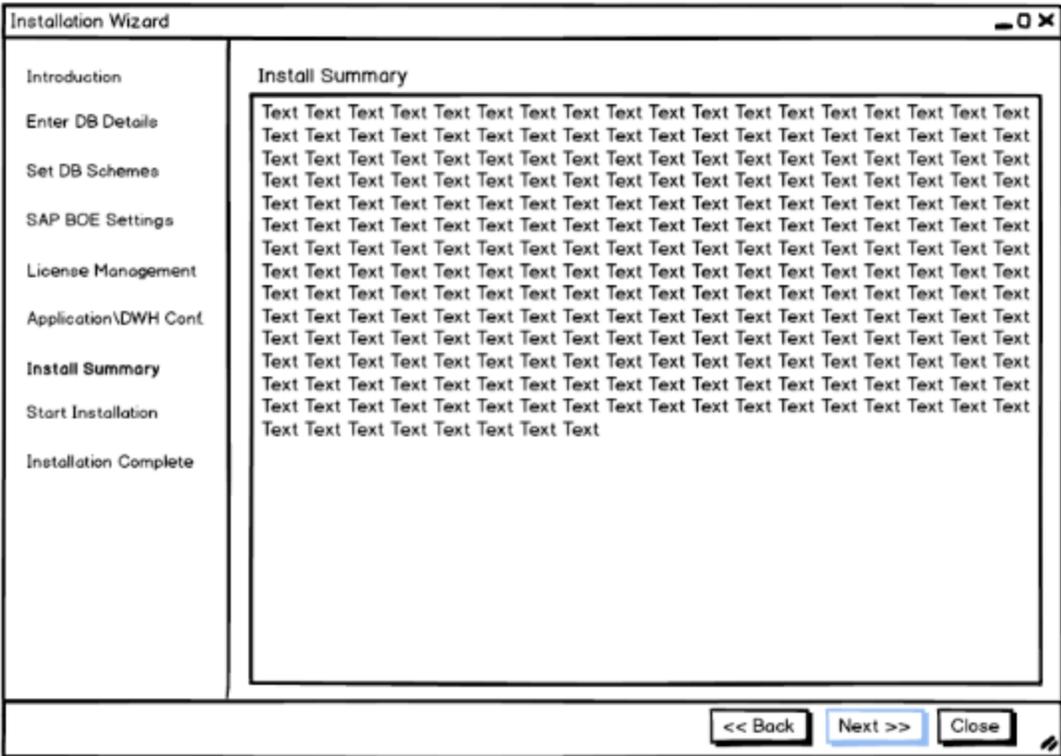
<b>Glassfish authentication parameters:</b>	<b>Administration User name. .</b> <b>Administrator Password. .</b> <b>Confirm Administrator Password. .</b>
<b>Currency:</b>	<b>Default Currency.</b> The currency to use as default.  Tip: If you are using the HP Project and Portfolio Management or the HP Asset Manager applications as data sources, make sure that you select the currency corresponding to the currency defined in these applications.  For a list of currencies, see Supported Currencies.  Default: USD - US Dollar

After entering the details, the **Next** button is enabled.

2. Click **Next**.

## Install Summary Page

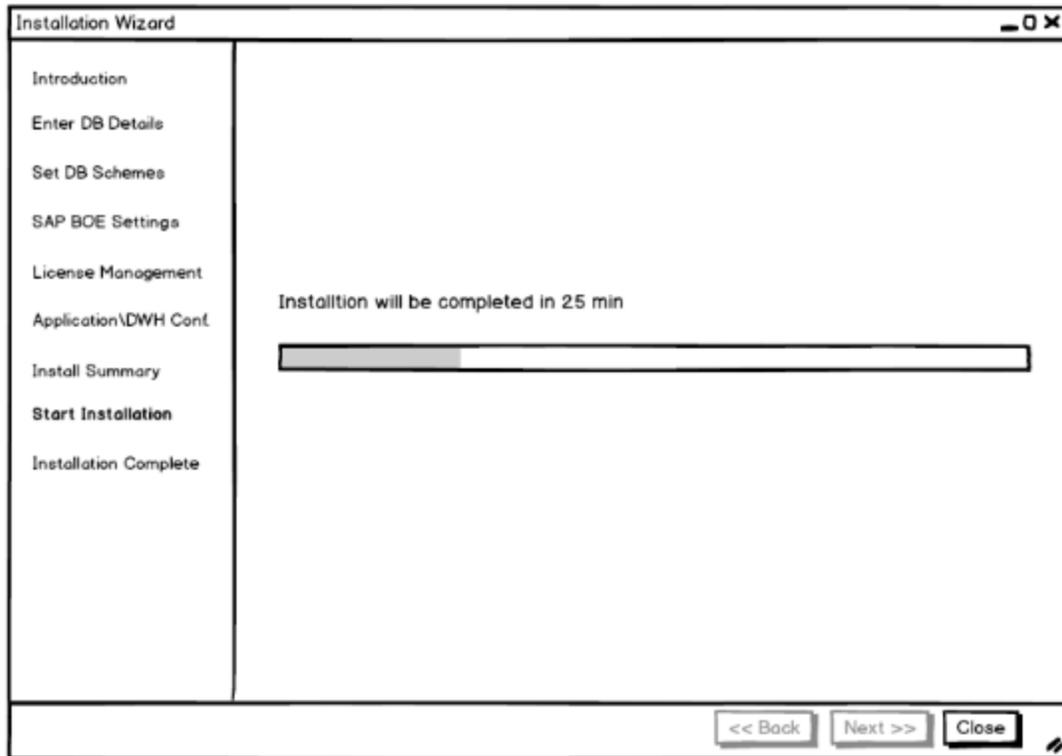
In the **Install Summary** page, a summary of the selected configuration is displayed. Click **Next** to start the installation. Click **Back** to correct the configuration.



### Start Installation Page

In the **Start Installation** page, you can view how long it will take to complete the installation.

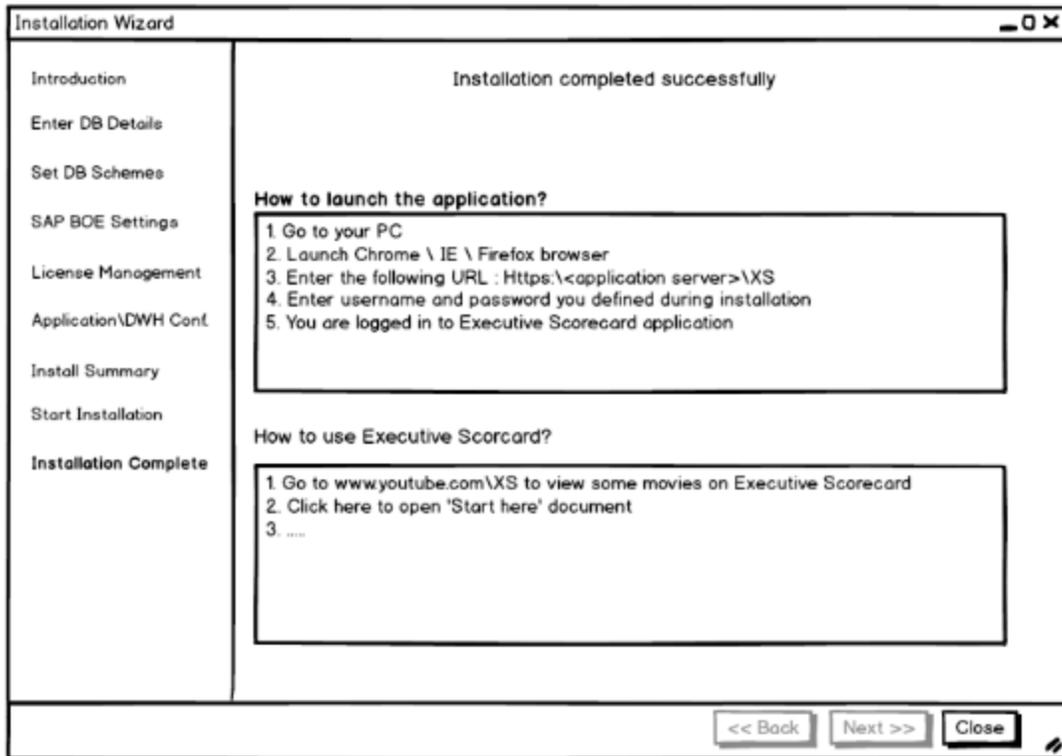
1. Click **Close** when the installation is complete.



### Installation Complete page

The **Installation Complete** page displays when the installation completes successfully. The page also details how to launch the XS application.

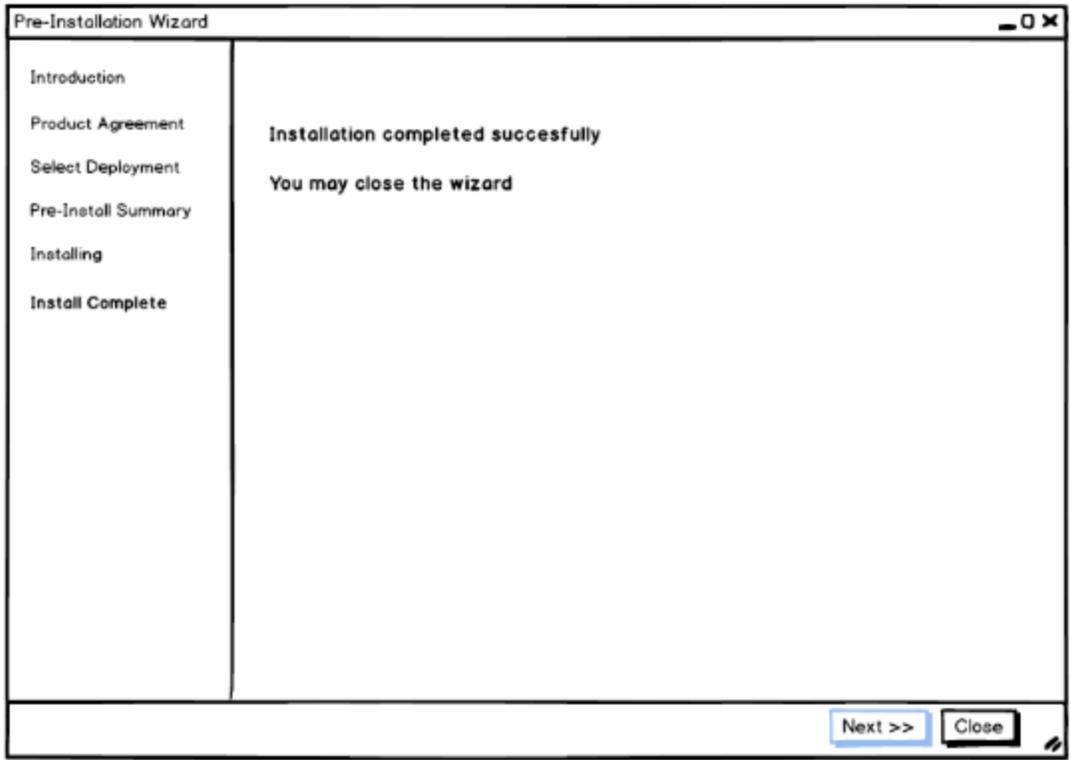
1. Click **Close**.



### Install Complete page

The Pre-Installation wizard that was still opened in the background moves to the Installation Complete page.

1. Click **Close**.



**Note:** The installation of Executive Scorecard in Single Server configuration is complete.

## 4 Servers Configuration - Installation with External SAP BusinessObjects Enterprise

This section includes the following steps:

## Prerequisites

**Note:** Virus scanning software may interfere with the installation of SAP BusinessObjects Enterprise. Turn off all virus scanning software before installing.

### Prerequisites:

- Close all Windows before you start the installation process.

- **Before the Installation**

To update necessary dll and runtime components, make sure to install the following before XS installation (check under **C:\users** if it has been installed on your machine):

- Microsoft Visual C++ 2008 SP1 Redistributable Package- x86 (not amd64/x64). You can download from <http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=5582>.
- Visual C++ Redistributable Package- x86 (not amd64/x64) for Visual Studio 2012 Update 4 in the single server for a Development/Test/OC environment or in the BOE, DWH, and XS servers in a Production environment. You can download from: <http://www.microsoft.com/en-us/download/details.aspx?id=30679>.

## Install BusinessObjects Enterprise

This section includes the following steps:

# Install BOE - Installation Steps

SAP BusinessObjects Enterprise must be the first component you install.

## Prerequisites

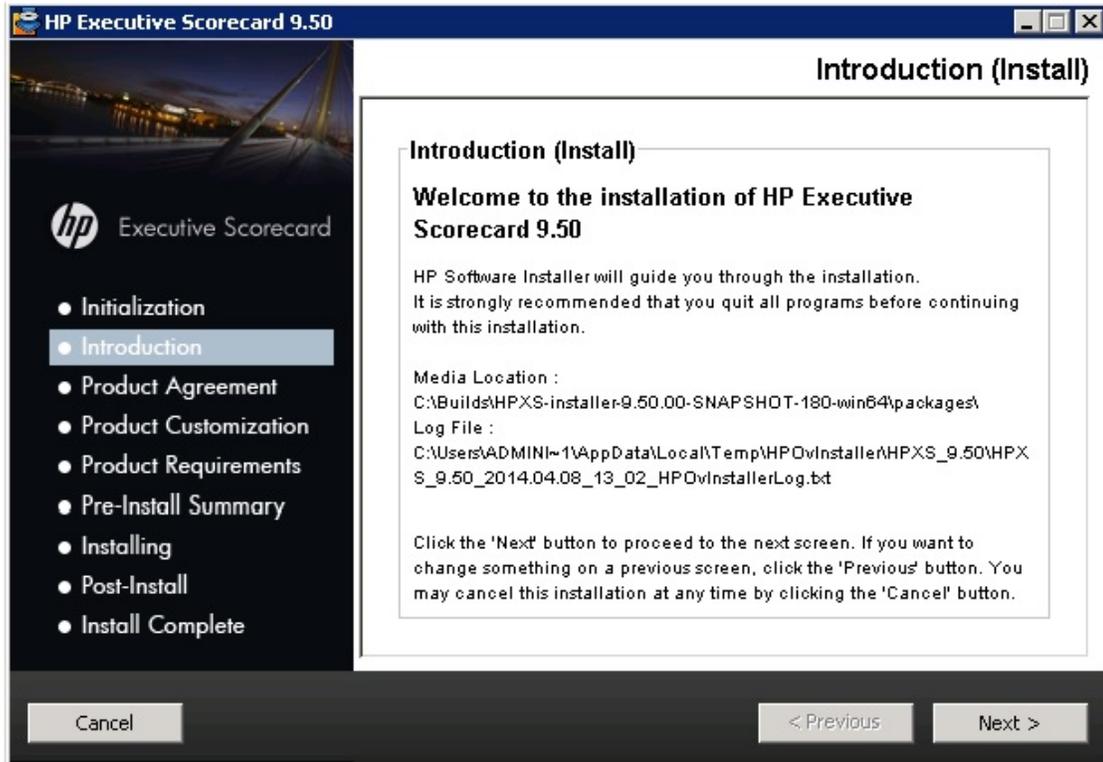
**Note:** Virus scanning software may interfere with the installation of SAP BusinessObjects Enterprise. Turn off all virus scanning software before installing.

1. Restart your server before installing SAP BusinessObjects Enterprise.
2. Close all Windows before you start the installation process.

## Install BusinessObjects Enterprise

1. See the prerequisite step above.

2. Insert the XS media into the CD/DVD drive. The installation wizard opens.



**Caution:** The CD/DVD must remain in the drive until you complete the Executive Scorecard Configuration Wizard.

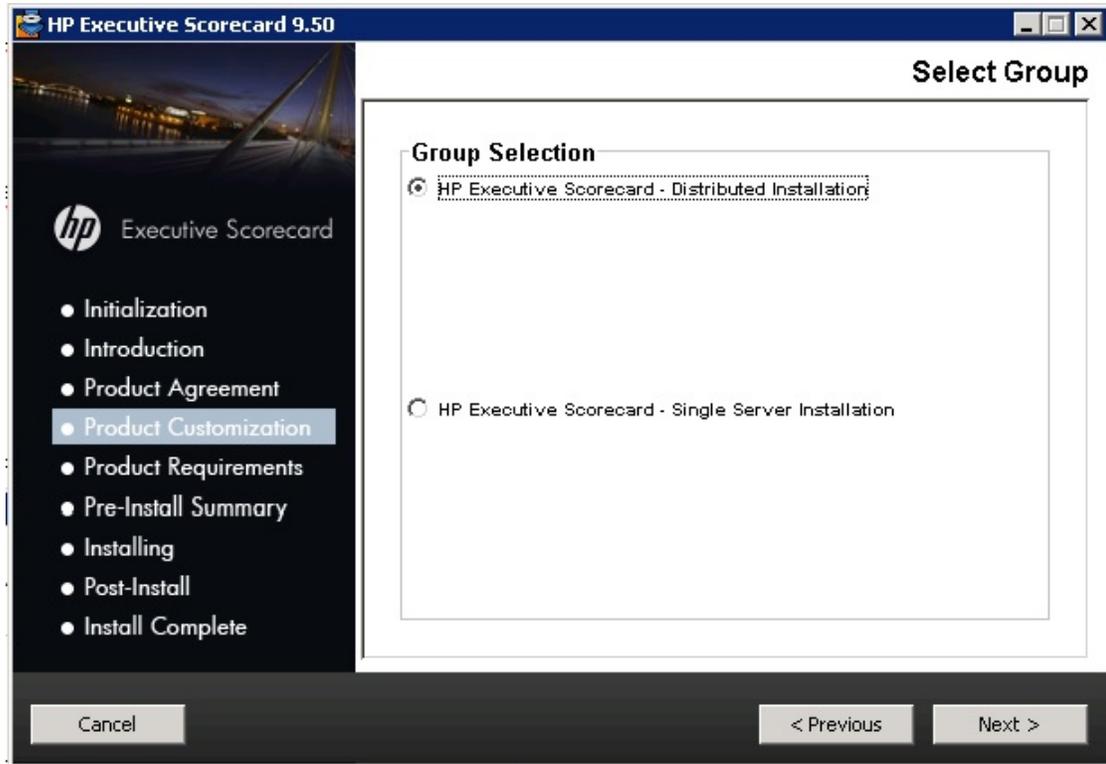
**Note:** If the installation wizard does not start automatically, run the file:  
**<DVD\_ROOT>\Windows\_Setup\HPXS\_9.50\_setup.exe**

If you copy the installation directory from the DVD or from HPLN, make sure that the path to the target directory does not include blank spaces, brackets: ( or ), or single quotes: '.

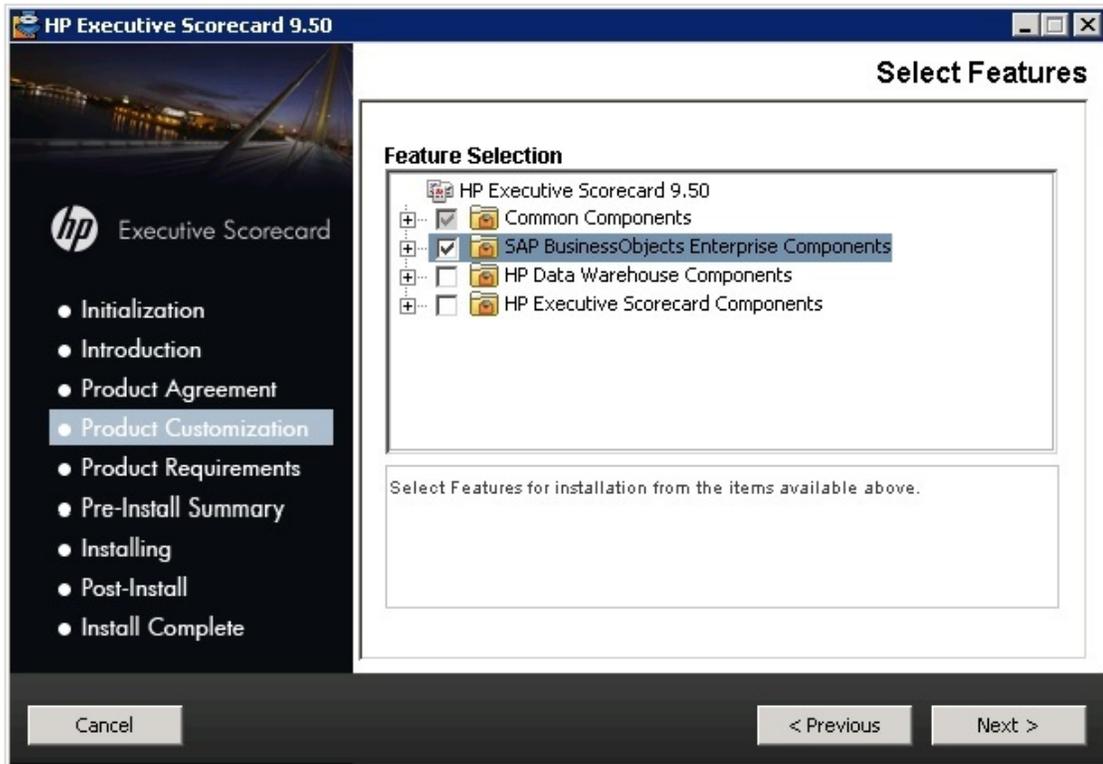
3. In the **Introduction** page, click **Next**.
4. In the **Product Agreement** page, select **I accept the License Agreement** and click

**Next.**

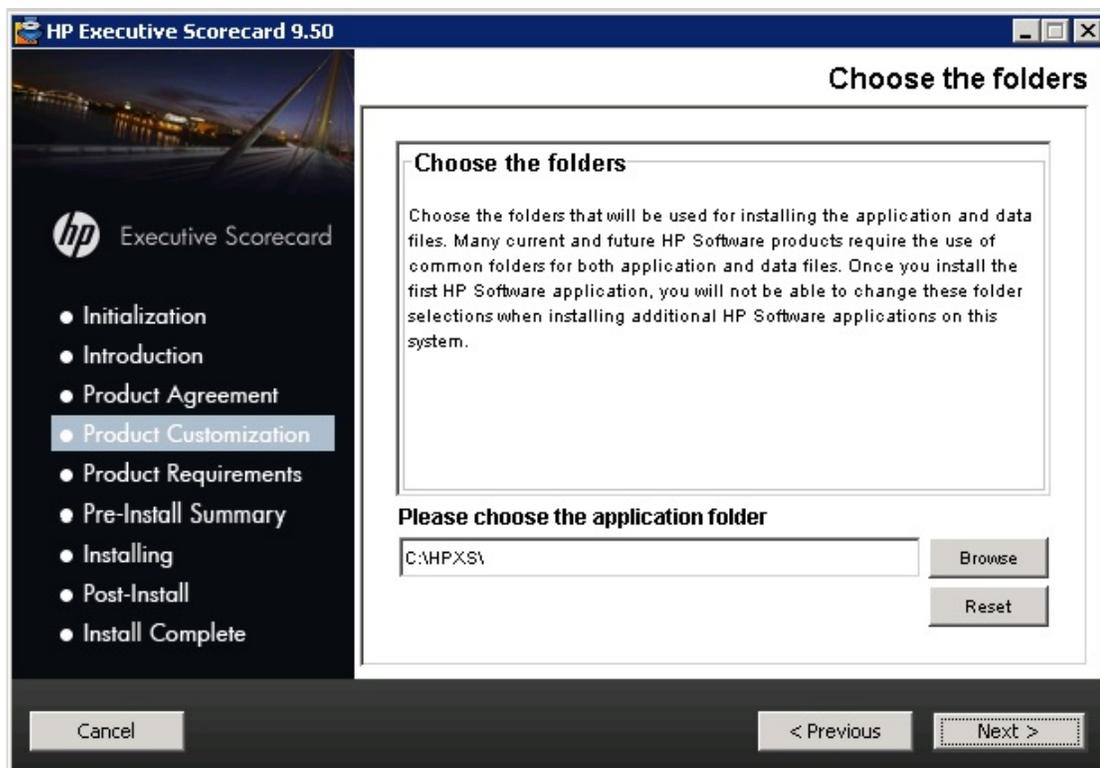
5. Follow the prompts until you get to the **Group Selection** page.
6. In the **Group Selection** page, select **HP Executive Scorecard - Distributed Installation**, and click **Next**.



7. In the **Feature Selection** page, select the component you are installing on this server and click **Next**.



8. In the **Choose the folders** page, click **Next** to accept the default application directory, or **Browse** to navigate and select a new application directory location.

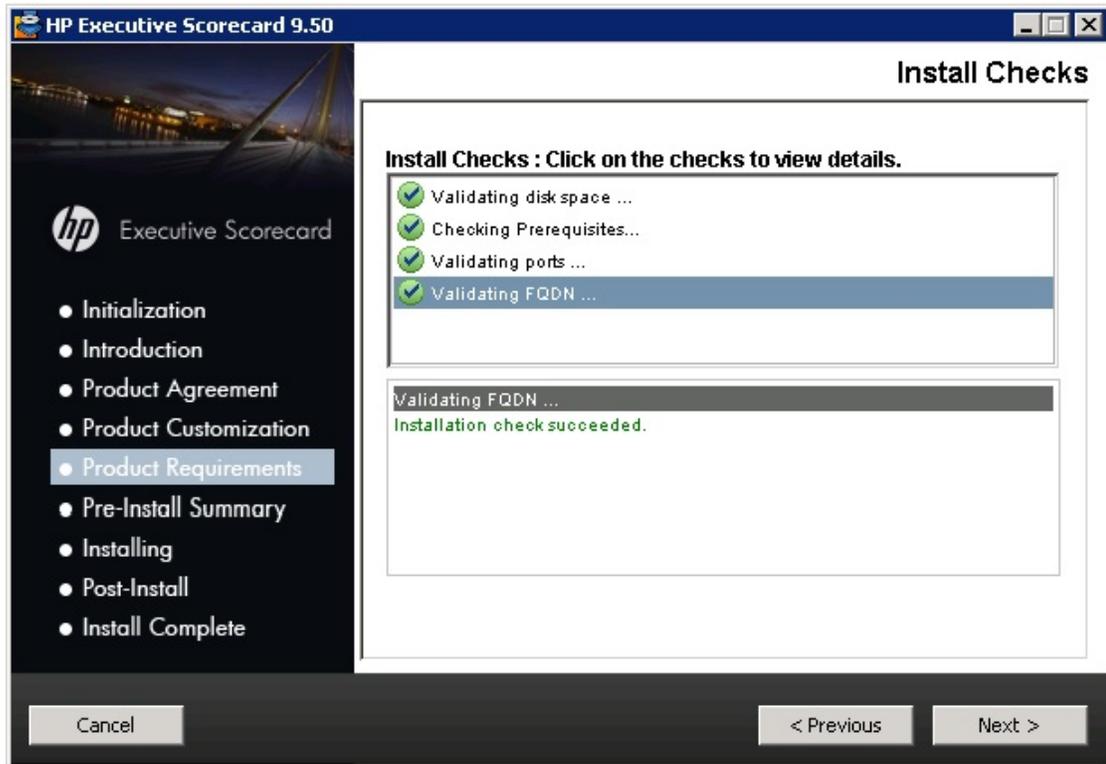


**Note:** If you enter a new application directory name, it can only contain the following characters: a-z,A-Z,0-9 and -\_ ". For example, a directory named **HP XS** is invalid.

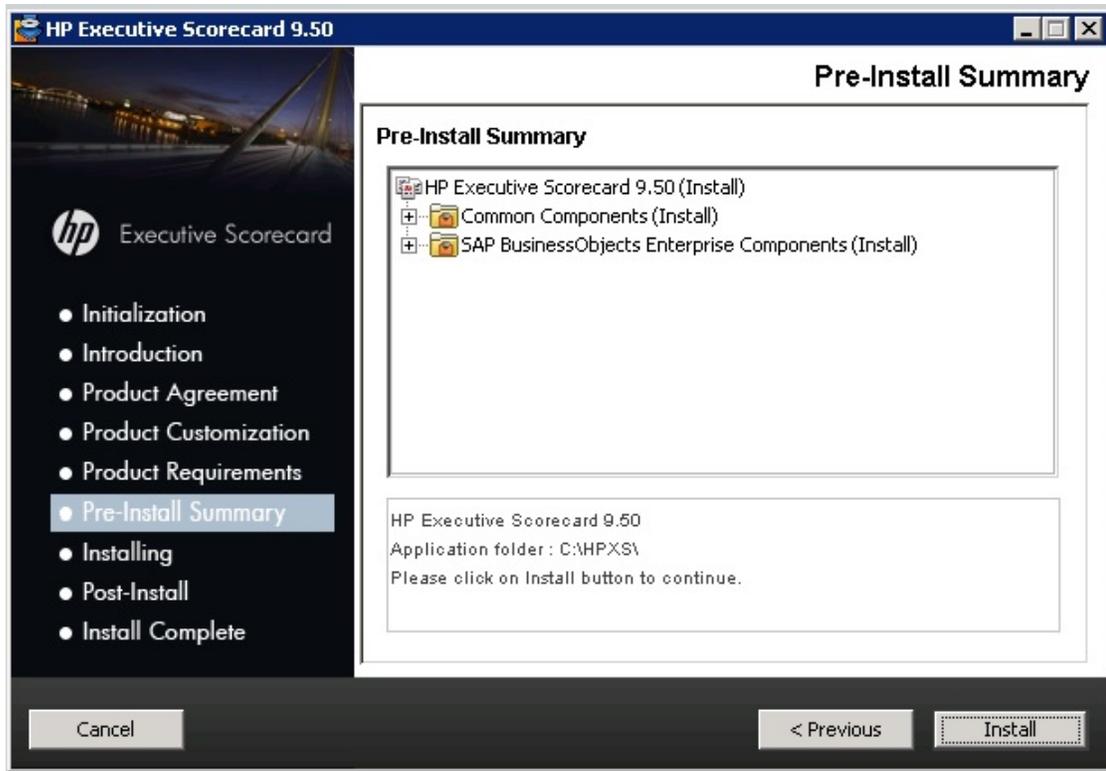
The wizard then runs a series of checks to validate system requirements.

If an installation check fails, you might be required to perform corrective action before you can run the installer. Certain checks can be corrected after a component has been installed.

9. In the **Install Checks** page, ensure that all the installation checks are successful and click **Next**.



10. In the **Pre-Install Summary** page, verify that the components you want to install are listed, and click **Install**.



The file copying process starts. On completion, the Configuration Wizard starts running.

# Management Database - Configure Management Database Settings Page

On the **Management Database - Configure Management Database Settings** page, select **Create a new database** and then click **Next**.

# Management Database - Configure Management Database Connectivity Settings Page

On the **Management Database - Configure Management Database Connectivity Settings** page, enter the following, and then click **Next**.

- XS supports only one Management database. The Management database cannot be changed after it has been defined.
- In a Production environment, make sure that the Management database and the Result database are installed on the same database server.

The screenshot shows a configuration window titled "Management Database - Configure Management Database Connectivity Settings". The window contains the following fields and controls:

- Instruction: "Enter connectivity and authentication parameters for the MS SQL Server database:"
- \* Host name:
- \* Port: <1433>
- \* Database name:
- SQL Server authentication:**
- \* Login Name:
- \* Password:
- Navigation buttons at the bottom: "<< Back", "Next >>", and "Cancel".

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the MS SQL Server hosting the Management database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b>. XS does not support dynamic ports.</p>
<b>Port &lt;1433&gt;</b>	<p>The port of the MS SQL server listener. The default port is 1433. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="#">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the Management database.</p> <p><b>Tip:</b> If needed, take note of the database name, as it may be needed when installing other components.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication:**

To work with the Data Warehouse, the user must have access to the SQLServer definition. Make sure that the permission has been assigned accordingly. For example, the SQL permission GRANT VIEW ANY DEFINITION TO public grants access to the SQL Server definition to everyone.

<b>UI Element</b>	<b>Description</b>
<b>Login Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password for the specified user.

# Management Database - Configuration Status Page

On the **Management Database - Configuration Status** page, verify that the Management database configuration was completed successfully, and then click **Next**.

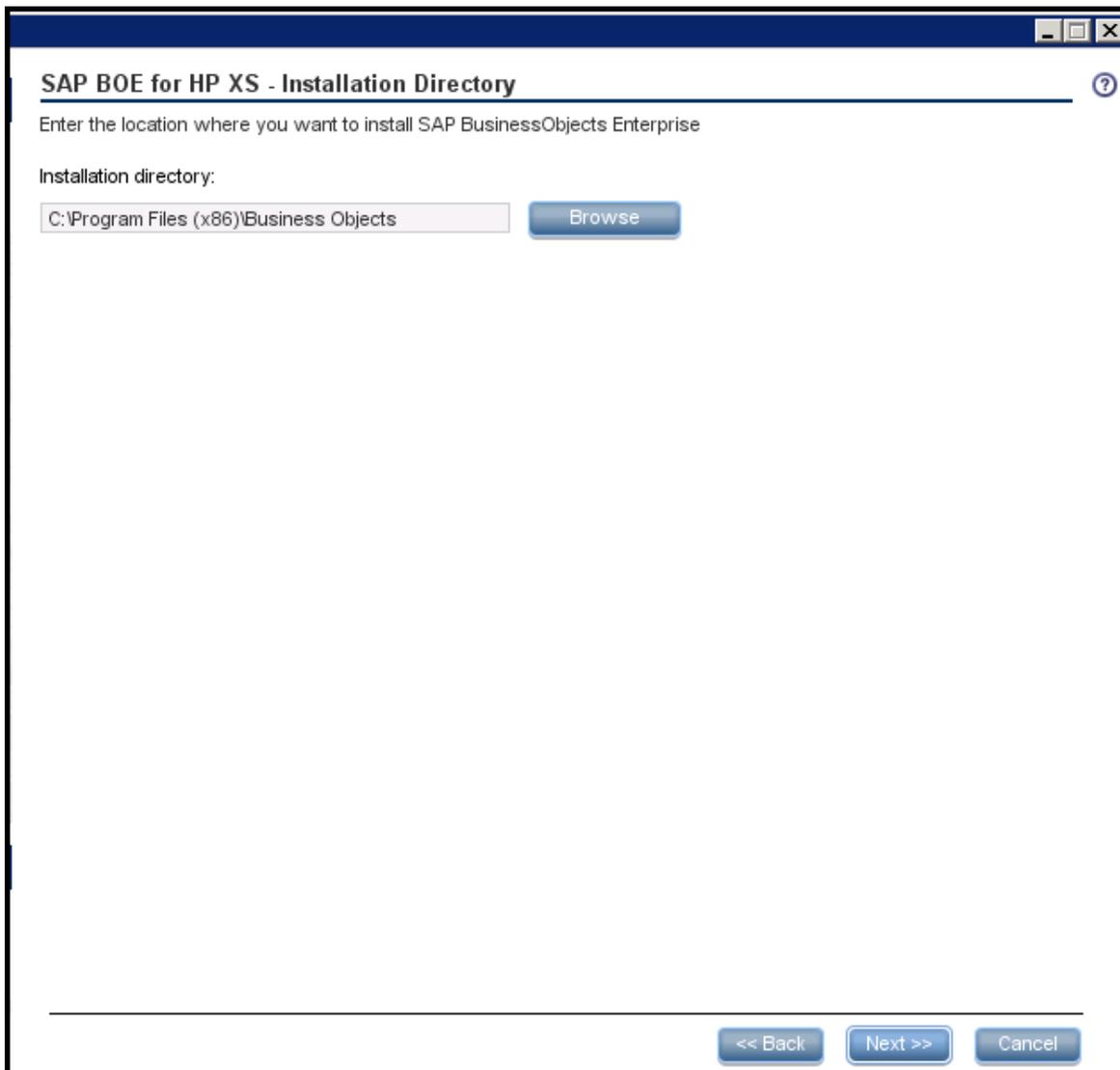
# License Management - Load a License Page

On the **License Management - Load a License** page, select **Load a Power Named User License or temporary license** and click **Next**.

UI Element	Description
<b>Load a Power Named User License or temporary license</b>	<p>Select to load one of the following license types:</p> <ul style="list-style-type: none"><li>• <b>Power Named User License</b> - Has no expiry date and is loaded once during the post-install.</li><li>• <b>Temporary</b> - Has an expiry date. On expiration, a new license must be loaded.</li></ul> <p>To load a license, click <b>Load</b>, Navigate to the license file provided by your supplier, and then click <b>Load License</b>.</p>
<b>Get an evaluation license</b>	<p>Select to load a one-off 60 day evaluation license. The remaining valid period of the license is displayed.</p> <p>Once the evaluation license terminates, you must load a temporary or permanent license using the License Renewal feature. For details, see <i>Renew your license using the Start menu in the IT Executive Scorecard Administrator Guide</i>.</p>

# SAP BOE for HP XS - Installation Directory Page

In the **SAP BusinessObjects Enterprise for HP XS - Installation Directory** page, click **Next** to accept the default installation directory, or **Browse** to navigate to and then select a new installation directory, and then click **Next**.



<b>UI Element (A-Z)</b>	<b>Description</b>
<b>Installation directory</b>	<p>The directory where SAP BusinessObjects Enterprise will be installed.</p> <p>Click <b>Next</b> to install SAP BusinessObjects Enterprise in the default installation directory.</p> <p>To select an alternate installation directory, click <b>Browse</b>, navigate to the required installation directory, select it, and proceed with the installation. It cannot be a root directory, such as c:\.</p>

# SAP BOE for HP XS - Configure Server Connectivity Page

On the **SAP BusinessObjects Enterprise for HP XS - Configure Server Connectivity** page, enter the following, and then click **Next**.

The screenshot shows a configuration window titled "SAP BOE for HP XS - Configure Server Connectivity". The window contains the following fields and values:

CMS port:	6400
Administrator password:	
Confirm administrator password:	
Tomcat port:	8080

At the bottom of the window, there are three buttons: "<< Back", "Next >>", and "Cancel".

UI Element	Description
<b>CMS port</b>	The port number of the CMS listener. The default value is 6400. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site</a> ( <a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).
<b>Administrator password</b>	<p>The SAP BusinessObjects Enterprise Administrator password. This password is used only to log on to SAP BusinessObjects Enterprise.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The following characters: a-z, A-Z, 0-9, _ (underscore) are supported.</li> <li>• The password cannot contain the word: administrator.</li> <li>• The password must be at least 6 characters in length, and must contain a combination of two of the following; upper case, lower case, numbers and punctuation.</li> </ul> <p>The password is case-sensitive.</p> <ul style="list-style-type: none"> <li>• The password can be changed by the Administrator. In such a case, the relevant password setting should be changed accordingly.</li> </ul>
<b>Confirm administrator password</b>	Confirm the Administrator password.
<b>Tomcat port</b>	The port number of the Tomcat listener. The default value is 8080. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site</a> ( <a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).

# SAP BOE for HP XS - Configure CMS Database page

On the **SAP SAP BOE for HP XS - Configure CMS Database** page, select **Create a new CMS database**, or **Connect to an existing CMS database**, and then click **Next**.

# SAP BOE for HP XS - Configure CMS Database Connectivity Settings Page

On the **SAP BusinessObjects Enterprise for HP XS - Configure Central Management Server (CMS) Database Connectivity Settings** page, if required, enter the following, and then click **Next**.

**SAP BOE for HP XS - Configure CMS Database Connectivity Settings**

Enter database configuration parameters:

\* Host name:

\* Port:

\* Database name:

**SQL Server authentication:**

\* Login Name:

\* Password:

<< Back    Next >>    Cancel

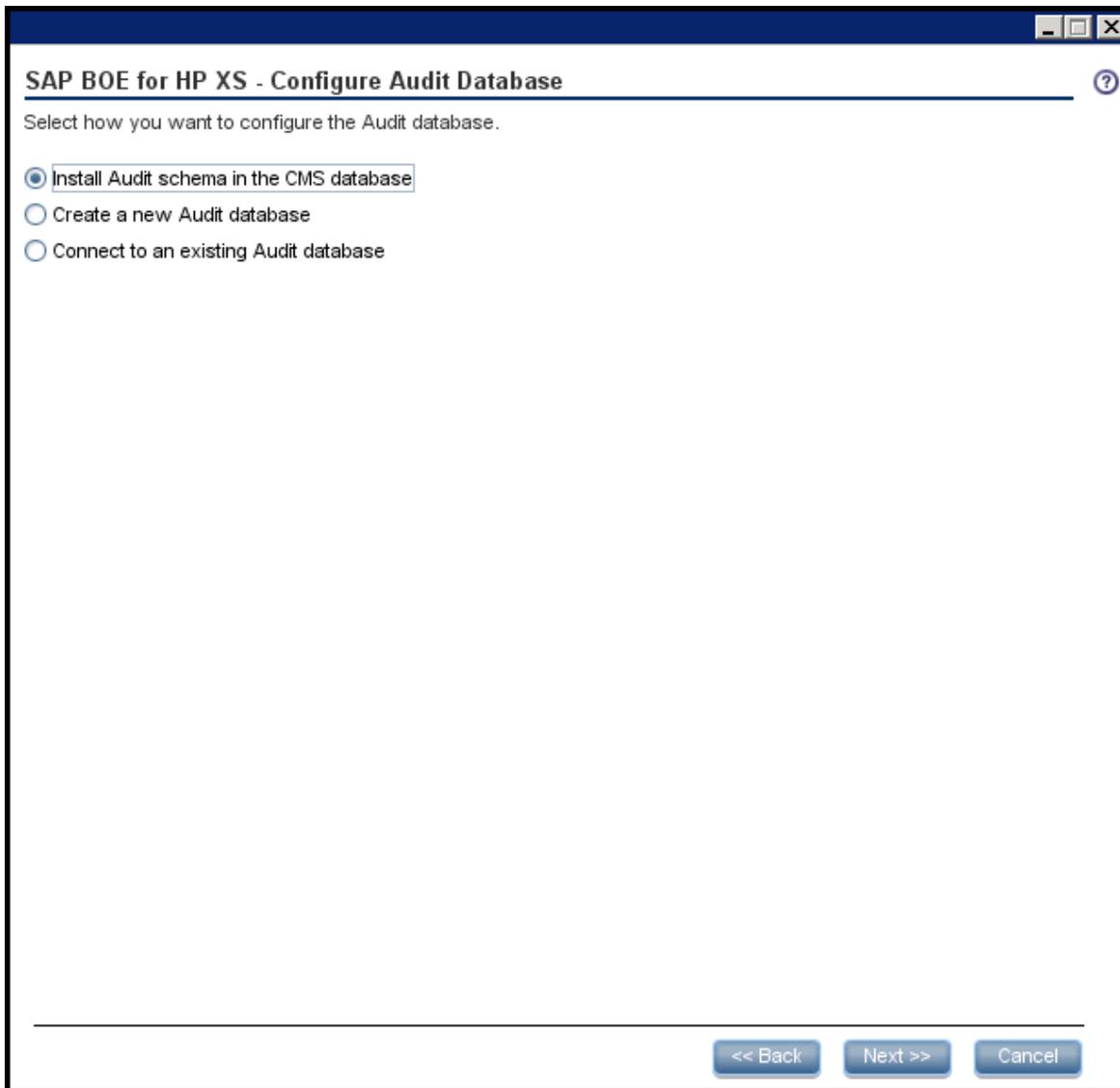
UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the MS SQL 2008 Server hosting the CMS database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b>. XS does not support dynamic ports.</p>
<b>Port</b>	<p>The port of the MS SQL server listener. The default port is 1433. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site (http://h20230.www2.hp.com/selfsolve/manuals)</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the CMS database.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication area:**

UI Element	Description
<b>Login Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password for the specified user.

# SAP BOE for HP XS - Configure Audit Database Page

On the **SAP BusinessObjects Enterprise for HP XS - Configure Audit Database** page:



UI Element	Description
<b>Install Audit schema in the CMS database</b>	Installs the Audit database schema as part of the CMS database previously created.

UI Element	Description
<b>Create a new Audit database</b>	Creates a new Audit database.
<b>Connect to an existing Audit database</b>	Connect to an existing Audit database.

- If you select **Install Audit schema in the CMS database**, which is the default and recommended option, the message **Audit database configuration was completed successfully** is displayed. You can then click **Next**.
- If you select **Create a new Audit database**, enter the relevant information and click **Next**.

UI Element	Description
<b>Host name</b>	The fully qualified domain name (FQDN) or IP address of the MS SQL 2008 Server hosting the Audit database.  <b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b> . XS does not support dynamic ports.

UI Element	Description
<b>Port</b>	<p>The port of the MS SQL server listener. The default port is 1433. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site (http://h20230.www2.hp.com/selfsolve/manuals)</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the Audit database.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication area:**

UI Element	Description
<b>Login Name</b>	<p>The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.</p>
<b>Password</b>	<p>The password for the specified user.</p>

# Install BOE - Installation Final Steps

In the **Summary** page, verify that the operations completed successfully, and then click **Finish**.

## Install Data Warehouse

This section includes the following steps:

# Prerequisite to the Installation of Data Warehouse

## **Replace dll Before DWH Installation**

Make sure to install the following before you perform the DWH installation:

Microsoft Visual C++ 2008 SP1 Redistributable Package- x86 (not amd64/x64)

<http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=5582>

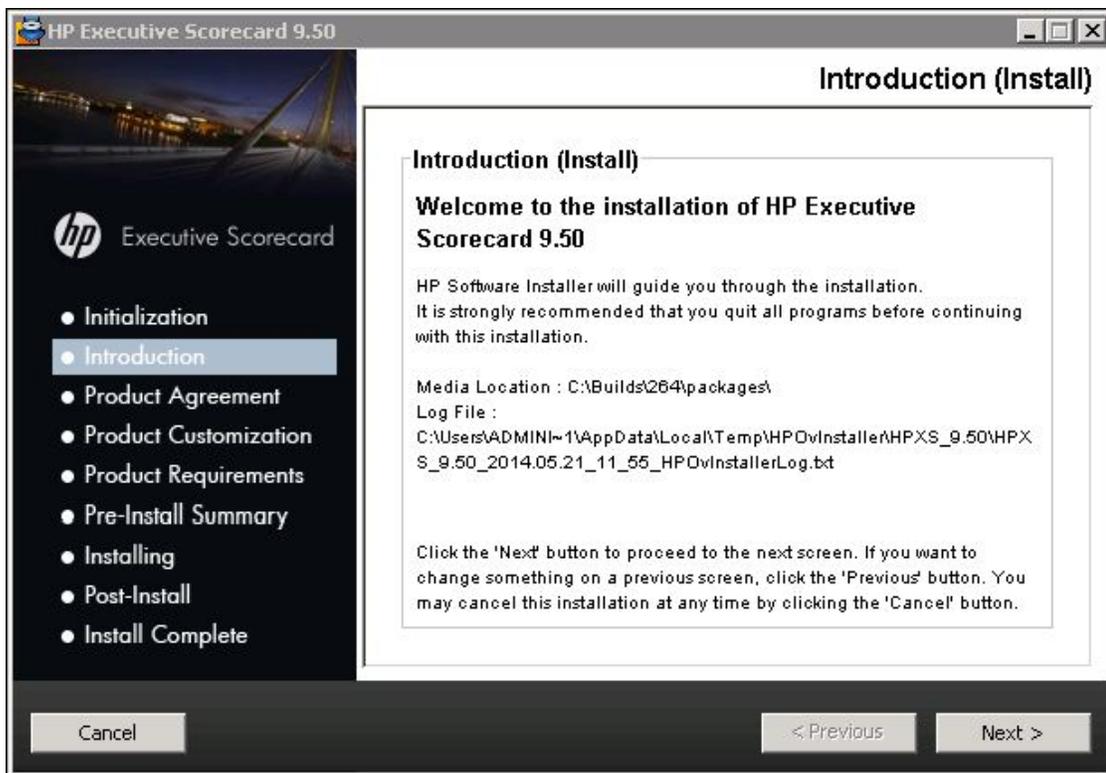
# Install Data Warehouse - Installation Steps

## Prerequisites

1. Ensure that you have the relevant installation settings required for the installation as described in the .
2. Close all Windows before you start the installation process.

## Start the installation

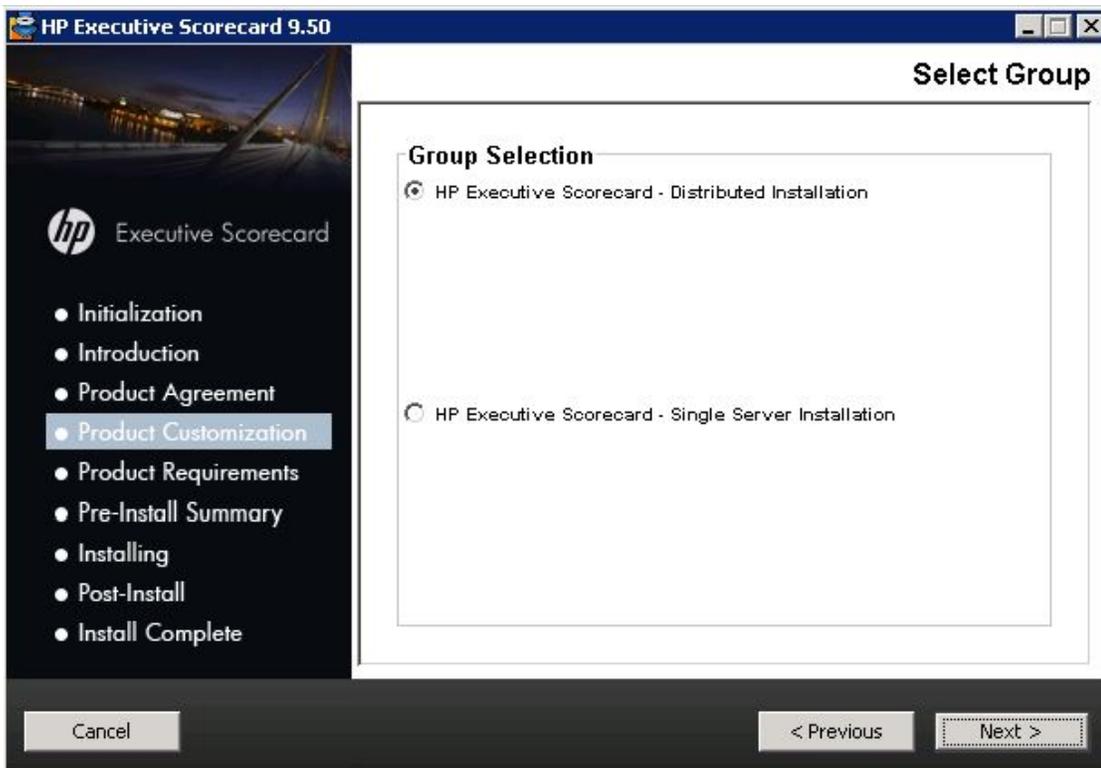
1. Insert the XS media into the CD/DVD drive. The installation wizard opens.



**Caution:** The CD/DVD must remain in the drive until you complete the IT Business Analytics Configuration Wizard.

**Note:** If the installation wizard does not start automatically, extract all the files from the .ZIP file and run the file: <DVD\_ROOT>\Windows\_Setup\HPXS\_9.50\_setup.exe.

2. Follow the prompts until you get to the **Select Group** page.
3. On the **Select Group** page, select **HP Executive Scorecard - Distributed Installation**, and then click **Next**.

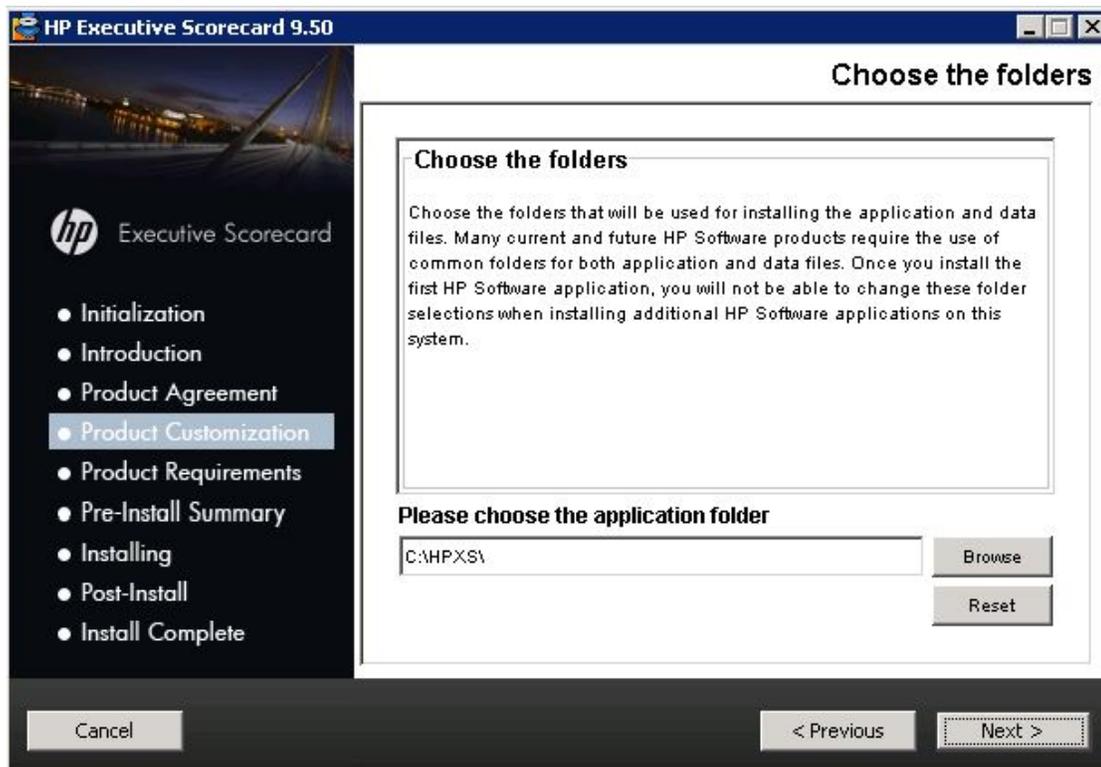


4. On the **Select Features** page, select the component you are installing on this server, and then click **Next**.



**Common Components** are automatically selected and installed with each component.

5. On the **Choose the folders** page, click **Next** to accept the default application directory, or **Browse** to navigate to and then select a new application directory location.

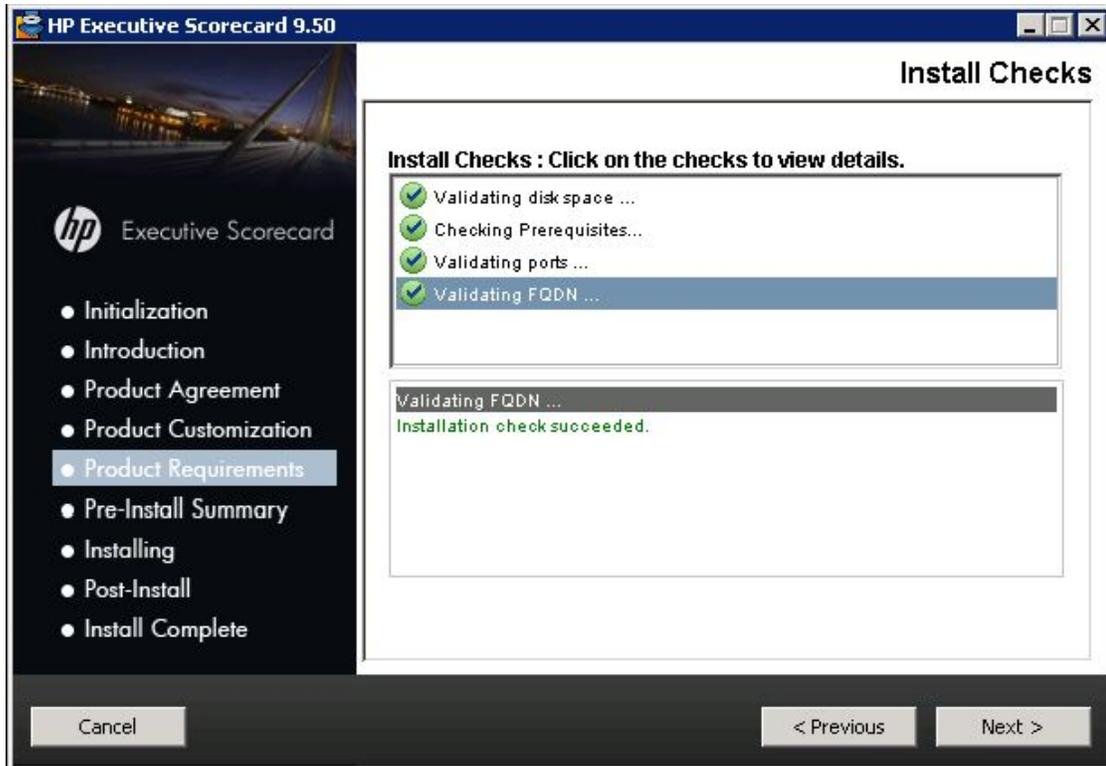


**Note:** If you enter a new application directory name, it cannot contain embedded spaces. For example a directory with a name **HP XS** is invalid.

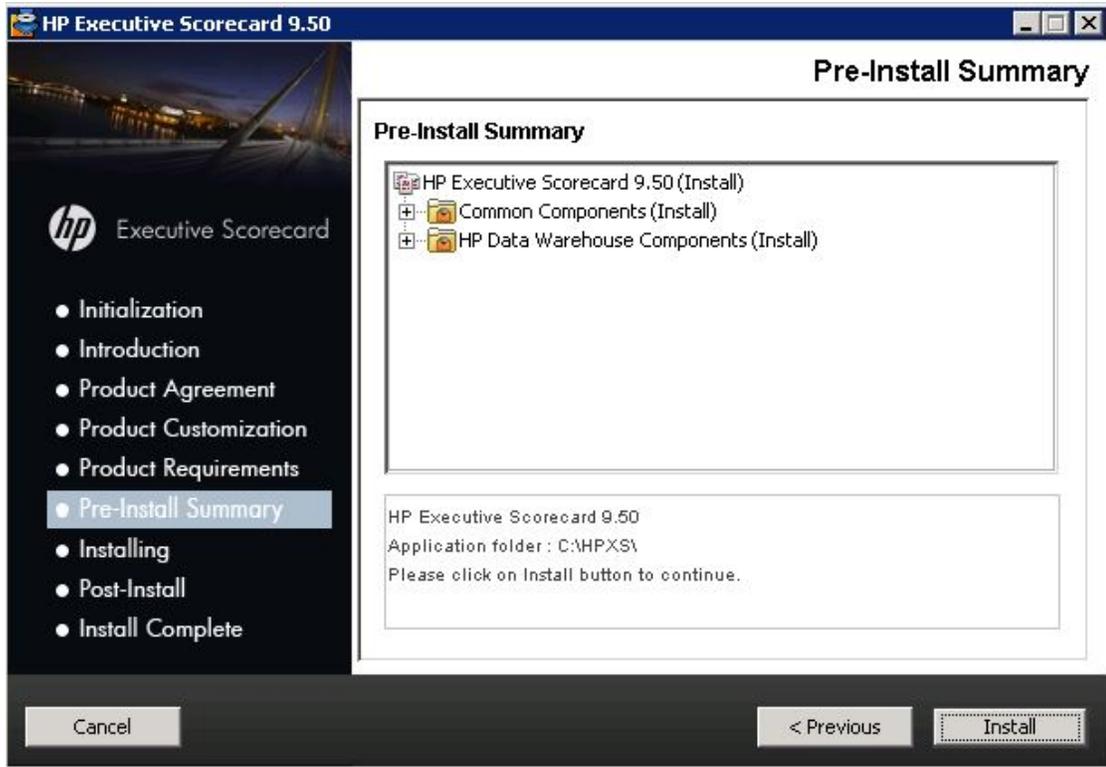
The wizard then runs a series of checks to validate system requirements.

If an installation check failed, you might be required to perform corrective action before you can run the installer. Certain checks can be corrected after a component has been installed.

6. On the **Install Checks** page, ensure that all the installation checks are successful, and click **Next**.



7. On the **Pre-Install Summary** page, verify that the components you wish to install are listed, and then click **Install**.



The file copying process starts. On completion, the Configuration Wizard begins.

# Post-Install Introduction Wizard Page

On the **Post-Install Introduction Wizard** page, click **Next**.

# Management Database - Configure Management Database Settings Page

On the **Management Database - Configure Management Database Settings** page, select **Connect to an existing one** and then click **Next**.

# Management Database - Configure Management Database Connectivity Settings Page

On the **Management Database - Configure Management Database Connectivity Settings** page, enter the following, and then click **Next**.

- XS supports only one Management database. The Management database cannot be changed after it has been defined.
- In a Production environment, make sure that the Management database and the Result database are installed on the same database server.

The screenshot shows a configuration window titled "Management Database - Configure Management Database Connectivity Settings". The window contains the following fields and controls:

- Instruction: "Enter connectivity and authentication parameters for the MS SQL Server database:"
- \* Host name:
- \* Port: <1433>
- \* Database name:
- SQL Server authentication:**
- \* Login Name:
- \* Password:
- Navigation buttons at the bottom: "<< Back", "Next >>", and "Cancel".

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the MS SQL Server hosting the Management database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b>. XS does not support dynamic ports.</p>
<b>Port &lt;1433&gt;</b>	<p>The port of the MS SQL server listener. The default port is 1433. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="#">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the Management database.</p> <p><b>Tip:</b> If needed, take note of the database name, as it may be needed when installing other components.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication:**

To work with the Data Warehouse, the user must have access to the SQLServer definition. Make sure that the permission has been assigned accordingly. For example, the SQL permission GRANT VIEW ANY DEFINITION TO public grants access to the SQL Server definition to everyone.

<b>UI Element</b>	<b>Description</b>
<b>Login Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password for the specified user.

# Management Database - Configuration Status Page

On the **Management Database - Configuration Status** page, verify that the Management database configuration was completed successfully, and then click **Next**.

# License Management - Load a License Page

On the **License Management - Load a License** page, if you connect to a valid Management database, the license file will automatically be defined. Click **Next**.

# Application Configuration - Configure Web Server Infrastructure Connectivity Page

On the **Application Configuration - Configure Web Server Infrastructure Connectivity** page, enter the following, and then click **Next**.

**Application Configuration - Configure Web Server Infrastructure Connectivity** ⓘ

Enter the following infrastructure configuration parameters.

**Data related configuration:**

\* Time zone:

**Web Server configuration:**

\* HTTP port:

\* HTTPS port:

**Business Objects enterprise:**

\* SSO shared secret:

\* Confirm SSO shared secret:

<< Back   Next >>   Cancel

**Data related configuration area:**

UI Element	Description
<b>Time Zone</b>	<p>The Data Warehouse time zone used when consolidating the data extracted from the data sources.</p> <p>You cannot modify it after it has been defined as it impacts the calculations.</p>

**Web Server Configuration area:**

UI Element	Description
<b>HTTP port</b>	<p>The port of the HTTP listener. The default port is 80. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site (http://h20230.www2.hp.com/selfsolve/manuals)</a> or from the Installation DVD).</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• If you want to use the default HTTP port in the Executive Scorecard installation, you must ensure that port 80 is not in use by another process.</li> <li>• Do not use the Tomcat port to install BOE.</li> </ul>
<b>HTTPS port</b>	<p>The port of the HTTPS listener. The default port is 443. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site (http://h20230.www2.hp.com/selfsolve/manuals)</a> or from the Installation DVD).</p> <p><b>Note:</b> Do not use the Tomcat port to install BOE.</p>

**Business Objects Enterprise area:**

<b>UI Element</b>	<b>Description</b>
<b>SSO Shared Secret</b>	The shared secret that is used to authenticate communications with the SAP BusinessObjects BI platform 4.0 SP6 server. If trusted authentication is configured, the shared secret entered is validated against the SAP BusinessObjects BI platform 4.0 SP6 server. If trusted authentication is not configured, the entered shared secret is configured on the SAP BusinessObjects BI platform 4.0 SP6 server.
<b>Confirm SSO Shared Secret</b>	Confirmation of the SSO shared secret.

# Application Configuration - Configure Infrastructure Connectivity Page

On the **Application Configuration - Configure Infrastructure Connectivity** page, enter the following, and then click **Next**.

**Application Configuration - Configure Infrastructure Connectivity**

Enter connectivity and authentication parameters:

- \* Administrator user name:
- \* Administrator password:
- \* Confirm Administrator password:

<< Back    Next >>    Cancel

UI Element	Description
<b>Administrator user name</b>	<p>The user name for the administrator.</p> <p>Use this user to log on to Executive Scorecard for the first time.</p>
<b>Administrator password</b>	<p>The password for the administrator.</p> <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>The following characters: a-z, A-Z, 0-9, _ (underscore) are supported.</li> <li>The password cannot contain the word: administrator.</li> <li>The password must be at least 6 characters in length, and must contain a combination of two of the following; upper case, lower case, numbers and punctuation.</li> </ul> <p>The password is case-sensitive.</p> <ul style="list-style-type: none"> <li>The password can be changed by the Administrator. In such a case, the relevant password setting should be changed accordingly.</li> </ul> </div>
<b>Confirm Administrator password</b>	<p>Confirmation of the administrator password.</p>

# Application Configuration - Configure Infrastructure Connectivity Page (2)

On the **Application Configuration - Configure Infrastructure Connectivity** page, enter the connectivity and authentication parameters for glassfish and then click **Next**.

**Application Configuration - Configure Infrastructure Connectivity** ?

Enter glassfish admin console authentication parameters:

\* Admin user name:

\* Admin password:

\* Confirm Admin password:

<< Back   Next >>   Cancel

UI Element	Description
<b>Administrator user name</b>	The user name for the glassfish. Use this user to log on to glassfish.
<b>Administrator password</b>	The password for the administrator.  <div style="background-color: #f0f0f0; padding: 10px;"> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>The following characters: a-z, A-Z, 0-9, _ (underscore) are supported.</li> <li>The password cannot contain the word: administrator.</li> <li>The password must be at least 6 characters in length, and must contain a combination of two of the following; upper case, lower case, numbers and punctuation.</li> </ul> <p>The password is case-sensitive.</p> <ul style="list-style-type: none"> <li>The password can be changed by the Administrator. In such a case, the relevant password setting should be changed accordingly.</li> </ul> </div>
<b>Confirm Administrator password</b>	Confirmation of the administrator password.

# Application Configuration - Configure Target Database Settings Page

On the **Application Configuration -Configure Target Database Settings** page, select **Create a new database**, and then click **Next**.

# Application Configuration - Configure Target Database Connectivity Settings Page

On the **Application Configuration - Configure Target Database Connectivity Settings** page, enter the following, and then click **Next**.

**Application Configuration - Configure Target Database Connectivity Settings** ⓘ

Enter connectivity and authentication parameters for the Target MS SQL Server database:

\* Host name:

\* Port: <1433>

\* Database name:

**SQL Server authentication:**

\* Login Name:

\* Password:

<< Back   Next >>   Cancel

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the MS SQL server hosting the target database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b>. XS does not support dynamic ports.</p>
<b>Port &lt;1433&gt;</b>	<p>The port of the MS SQL server listener. The default port is 1433. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="#">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the target database.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication area:**

UI Element	Description
<b>Login Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password for the specified logon that creates the Target database.

# Application Configuration - Periods Page

On the **Application Configuration - Periods** page, enter the following, and then click **Next**.

**Application Configuration - Periods**

Enter the date range for the data to be processed.  
Note: The date range can be extended later.

**Period Dimension**

First Year:

Last Year:

First fiscal month of the year:

<< Back   Next >>   Cancel

UI Element	Description
<b>First Year</b>	<p>The first year in the period dimension is the first year used when automatically populating Data Warehouse tables with yearly, quarterly, monthly, weekly and daily records. Change the First Year value by clicking the up or down arrows.</p> <p><b>Note:</b> The First Year can be changed later in the Executive Scorecard Admin application, followed by running the <code>dw_period_dim_generator</code> utility.</p> <p>For more information, see <b>Change the Data Warehouse Period dimensions</b> in the <i>IT Executive Scorecard Administrator Guide</i>.</p>
<b>Last Year</b>	<p>The last year in the period dimension is the last year used when automatically populating Data Warehouse tables with yearly, quarterly, monthly, weekly and daily records. Change the Last Year value by clicking the up or down arrows.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The Last Year must not be lower than the current year.</li> <li>• The Last Year can be changed later in the Executive Scorecard Admin application, followed by running the <code>dw_period_dim_generator</code> utility.</li> </ul> <p>For more information see <b>Change the Data Warehouse Period dimensions</b> in the <i>IT Executive Scorecard Administrator Guide</i>.</p>
<b>First fiscal month of the year</b>	<p>The first fiscal month of the year in your organization.</p>

# Data Warehouse - SAP BusinessObjects Data Services for HP XS Page

On the **Data Warehouse - SAP BusinessObjects Data Services for HP XS** page, enter the relevant information, and then click **Next**.

**Data Warehouse - SAP BusinessObjects Data Services for HP XS** ⓘ

Enter database connectivity and authentication details

\* Host name:

\* Port: <1433>

\* Database name:

**SQL Server authentication**

\* Login Name (requires admin permissions):

\* Password:

**Database login authentication**

\* New Login Name:

\* Password:

\* Confirm Password:

Installation directory:

 Installation of SAP BusinessObjects Data Services for HP XS may take 10-20 minutes

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the MS SQL Server hosting the SAP BusinessObjects Data Services database.</p> <ul style="list-style-type: none"> <li>• Do not use localhost as the host name.</li> <li>• Do not use the server name as the host name.</li> <li>• The sum of the number of characters of the following names must not exceed 65: <ul style="list-style-type: none"> <li>■ The Host name FQDN</li> <li>■ The SAP BusinessObjects Data Services database name</li> <li>■ The number of the server port.</li> <li>■ The Login Name.</li> </ul> </li> </ul> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: &lt;host_name&gt;\&lt;instance_name&gt;. XS does not support dynamic ports.</p>
<b>Port</b>	<p>The port of the MS SQL server listener. The default port is 1433. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site (http://h20230.www2.hp.com/selfsolve/manuals)</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the SAP BusinessObjects Data Services database.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication area:**

UI Element	Description
<b>Login Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password of the specified logon.

**Database login authentication area:**

UI Element	Description
<b>New Login name</b>	<p>A new MS SQL logon created for the SAP BusinessObjects Data Services database.</p> <p>A SAP BusinessObjects Data Services database user account with the same name is automatically created.</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The Login Name can only comprise alphanumeric characters and if required an underscore.</li> <li>• Do not use XS as a new database logon name because the XS user name is already used internally.</li> </ul> </div>
<b>Password</b>	<p>The password for the new logon.</p> <p>The same password is also applied to the database user account.</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The password can comprise alphanumeric characters and an underscore.</li> <li>• It is important that you save the password in a safe place as it may be required in certain disaster recovery scenarios.</li> </ul> </div>

UI Element	Description
<b>Confirm Password</b>	Confirmation of the password for the new logon.

**Installation directory area:**

UI Element	Description
<b>Installation directory</b>	<p><b>Note:</b> This field is displayed only when you are installing for a Production environment.</p> <p>The location where you want to install SAP BusinessObjects Data Services.</p> <p>The maximum allowable path length is 69 characters. In addition, the Installation directory field does not support multi-byte characters. To install the software on a system with a multi-byte locale, you must specify the installation directory with single-byte characters or use the default location.</p> <p>To run the Designer, a user requires both read and write access to the installation directory.</p>

# Data Warehouse - Create Staging Database Page

On the **Data Warehouse - Create Staging Database** page, enter the following, and then click **Next**.

**Data Warehouse - Create Staging Database** ⓘ

Enter the details of the Staging database

\* Host name:

\* Port: <1433>

\* Database name:

**SQL Server authentication**

\* Login Name (requires admin permissions):

\* Password:

<< Back   Next >>   Cancel

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN), or IP address of the server hosting the Staging database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: &lt;host_name&gt;\&lt;instance_name&gt;. XS does not support dynamic ports.</p>
<b>Port</b>	<p>The port of the MS SQL server listener. The default port is 1433. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The database name of the Staging database.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication area:**

UI Element	Description
<b>Login Name</b>	<p>The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.</p>
<b>Password</b>	<p>The password for the specified logon.</p>

# Data Warehouse - Define Staging Database Logins Page

On the **Data Warehouse - Define Staging Database Logins** page, enter the following, and then click **Next**.

**Data Warehouse - Define Staging Database Logins**

Enter the details of the logins mapped to the Staging Database

**Abc Database Instance Login**

- \* Abc Login Name: dwabc
- \* Abc Login Password:
- \* Confirm Password:

reuse password for all logins

**Metadata Database Instance Login**

- \* Metadata Login Name: dwmetadata
- \* Metadata Login Password:
- \* Confirm Password:

**Staging Database Instance Login**

- \* Staging Login Name: dws
- \* Staging Login Password:
- \* Confirm Password:

**Staging Target Database Instance Login**

- \* Staging Target Login Name: dwst
- \* Staging Target Login Password:
- \* Confirm Password:

<< Back   Next >>   Cancel

**Important information**

The logons will be used as specified, but the users and the schemas mapped to these logons will be dwabc, dws, dwst, dwmetadata, and dwt respectively.

You are recommended to use new logons. This ensures that the logons receive the proper permissions. If you must use existing logons, please contact support from the [support site](http://www.hp.com/go/hpsupport) (<http://www.hp.com/go/hpsupport>).

**Abc Database Instance Login area:**

UI Element	Description
<p><b>Abc Login Name</b></p>	<p>The Abc database logon name.</p> <p><b>Tip:</b> In each database instance, it is recommended to use different logon names that are unique if you plan to install several databases on the same server.</p> <p>Do not use XS as a new database logon name because the XS user name is already used internally.</p>
<p><b>Abc Login Password</b></p>	<p>The Abc database logon password.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The password can comprise alphanumeric characters and an underscore.</li> <li>• It is important that you save the password in a safe place as it may be required in certain disaster recovery scenarios.</li> </ul>
<p><b>Confirm Password</b></p>	<p>Confirmation of the password.</p>
<p><b>Reuse password for all logins</b></p>	<p>Select to reuse the password for the Metadata logon, Staging Database logon, and Staging Target Database logon.</p>

**Metadata Database Instance Login area:**

UI Element	Description
<b>Metadata Login Name</b>	The Metadata database logon name. <b>Tip:</b> In each database instance, it is recommended to use different logon names that are unique if you plan to install several databases on the same server.  Do not use XS as a new database logon name because the XS user name is already used internally.
<b>Metadata Login Password</b>	The Metadata database logon password.  <b>Note:</b> <ul style="list-style-type: none"> <li>• The password can comprise alphanumeric characters and an underscore.</li> <li>• It is important that you save the password in a safe place as it may be required in certain disaster recovery scenarios.</li> </ul>
<b>Confirm Password</b>	Confirmation of the password.

**Staging Database Instance Login area:**

UI Element	Description
<b>Staging Login Name</b>	The Staging database logon name. <b>Tip:</b> In each database instance, it is recommended to use different logon names that are unique if you plan to install several databases on the same server.  <b>Note:</b> If you install the Staging and Target databases on different instances or on different database servers, the administrator logon

UI Element	Description
	<p>creates a linked server with a specific name. The linked server feature enables the metadata logon access to the Target database that is installed on the other instance or on the other database server. Make sure to use the Fully Qualified Domain Name (FQDN).</p> <p>Do not use XS as a new database logon name because the XS user name is already used internally.</p>
<p><b>Staging Login Password</b></p>	<p>The Staging database logon password.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The password can comprise alphanumeric characters and an underscore.</li> <li>• It is important that you save the password in a safe place as it may be required in certain disaster recovery scenarios.</li> </ul>
<p><b>Confirm Password</b></p>	<p>Confirmation of the password.</p>

**Staging Target Database Instance Login area:**

UI Element	Description
<p><b>Staging Target Login Name</b></p>	<p>The Staging Target database logon name.</p> <p><b>Tip:</b> In each database instance, it is recommended to use different logon names that are unique if you plan to install several databases on the same server.</p> <p><b>Note:</b> If you install the Staging and Target databases on different instances or on different database servers, the administrator logon</p>

UI Element	Description
	<p>creates a linked server with a specific name. The linked server feature enables the metadata logon access to the Target database that is installed on the other instance or on the other database server. Make sure to use the Fully Qualified Domain Name (FQDN).</p> <p>Do not use XS as a new database logon name because the XS user name is already used internally.</p>
<p><b>Staging Target Login Password</b></p>	<p>The Staging Target database logon password.</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The password can comprise alphanumeric characters and an underscore.</li> <li>• It is important that you save the password in a safe place as it may be required in certain disaster recovery scenarios.</li> </ul> </div>
<p><b>Confirm Password</b></p>	<p>Confirmation of the password.</p>

# Data Warehouse - Define Target Database Login Page

On the **Data Warehouse - Define Target Database Login** page, enter the following, and then click **Next**.

**Data Warehouse - Define Target Database Login** ?

Enter the details of the logins mapped to the Target Database

**Target Database Instance Login**

- \* Target Login Name:
- \* Target Login Password:
- \* Confirm Password:

<< Back   Next >>   Cancel

**Target Database Instance Login area:**

UI Element	Description
<b>Target Login Name</b>	The Target database logon name. Do not use XS as a new database logon name because the XS user name is used internally.
<b>Target Login Password</b>	<p>The password for the specified logon.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The following characters: a-z, A-Z, 0-9, _ (underscore) are supported.</li> <li>• The password cannot contain the word: administrator.</li> <li>• The password must be at least 6 characters in length, and must contain a combination of two of the following; upper case, lower case, numbers and punctuation.</li> </ul> <p>The password is case-sensitive.</p> <ul style="list-style-type: none"> <li>• The password can be changed by the Administrator. In such a case, the relevant password setting should be changed accordingly.</li> </ul>
<b>Confirm Password</b>	Confirmation of the password.

# Data Warehouse - Currency Configuration page

On the **Data Warehouse - Currency Configuration** page, enter the following, and then click **Next**.

**Data Warehouse - Currency Configuration** ?

Enter the default currency setting.

**Currency**

Default Currency:

<< Back   Next >>   Cancel

**Currency area:**

<b>UI Element</b>	<b>Description</b>
<b>Default Currency</b>	The currency to use as default. You can select <b>USD - US dollar</b> as a default. <b>Tip:</b> If you are using the HP Project and Portfolio Management or the HP Asset Manager applications as data sources, make sure that you select the currency corresponding to the currency defined in these applications. For a list of currencies, see Supported Currencies.

# Data Warehouse - Configure External Source & External Source Archive File Location Page

On the **Data Warehouse - Configure External Source & External Source Archive File Location** page, select the relevant information, and then click **Next**.

The screenshot shows a configuration window titled "Data Warehouse - Configure External Source & External Source Archive File Location". The window contains the following elements:

- A header bar with the title and a help icon.
- Instructional text: "Specify the location of external source & external source archive files."
- A field for "Location:" with the text "C:\HPXS\agora\DataWarehouse\ExternalSources" and a "Browse" button.
- A checkbox labeled "Enable external source archiving" which is currently unchecked.
- A field for "Archive Location:" with the text "C:\HPXS\agora\DataWarehouse\ExternalSourcesArchive" and a "Browse" button.
- An orange warning triangle icon followed by the text: "The remainder of the Data Warehouse configuration may take 20-30 minutes".
- A footer bar with three buttons: "<< Back", "Next >>", and "Cancel".

UI Element	Description
<p><b>Location</b></p>	<p>The location of the external source files used by Data Warehouse.</p> <p>The default location is: <b>&lt;HP_XS&gt;\agora\DataWarehouse\ExternalSources</b></p> <p><b>Note:</b> Make sure you have already copied the directory from XS 9.41.</p>
<p><b>Enable external source archiving</b></p>	<p>Select to enable archiving external data source data files.</p> <p>When you select this option, Data Warehouse backs up the flat files created during the SOURCE EXTRACT phase by the FBI Framework. This backup is used in case of fault and recovery, to execute the ETL without SOURCE EXTRACT phase, meaning independently on the data source.</p>
<p><b>Archive Location</b></p>	<p>Specify where you want to archive the external data source data files.</p> <p><b>Note:</b> Because archiving data files can be memory intensive, it is recommended to archive to a dedicated separate logical drive.</p>

# Data Warehouse - Configuration Status Page

On the **Data Warehouse - Configuration Status** page, ensure that all the Data Warehouse components were successfully configured, and then click **Next**.

# Summary Page

On the **Summary** page, verify that the operations completed successfully, and then click **Next**.

## Install Executive Scorecard

This section includes the following topics:

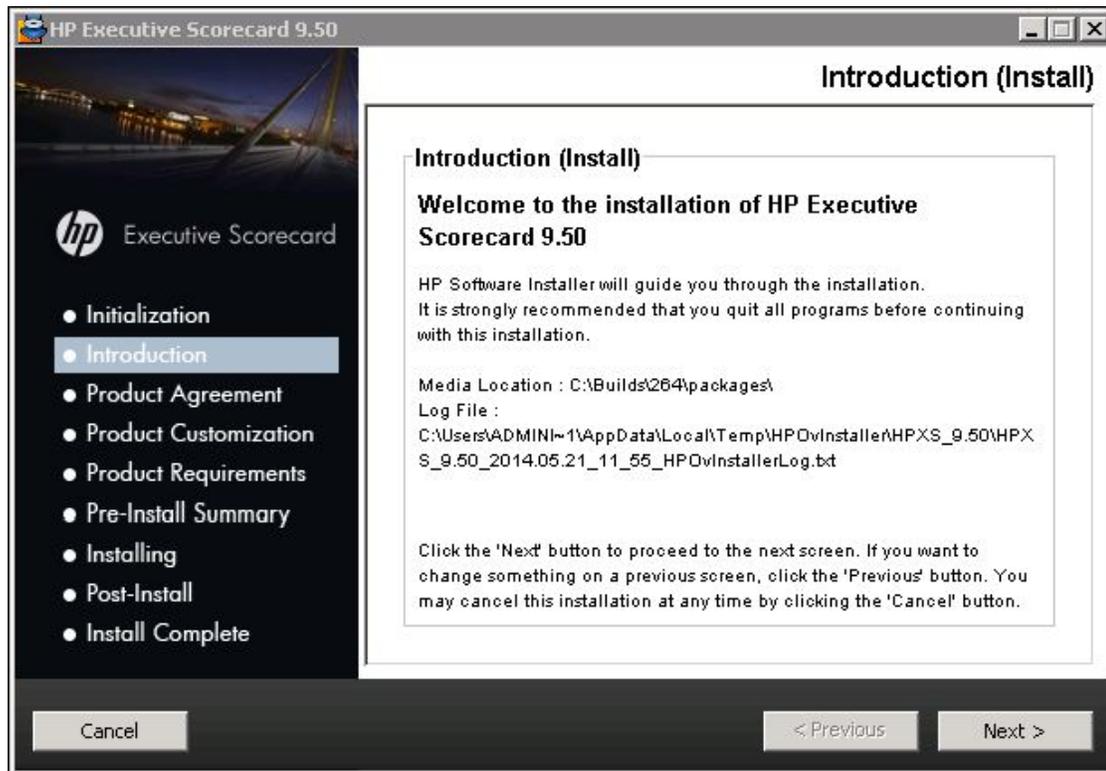
# Prerequisites

1. Ensure that you have the relevant installation settings required for the installation as described in the *IT Executive Scorecard Support Matrix*.
2. Close all Windows before you start the installation process.

# Install XS

## Start the installation

1. Insert the XS media into the CD/DVD drive. The installation wizard opens.

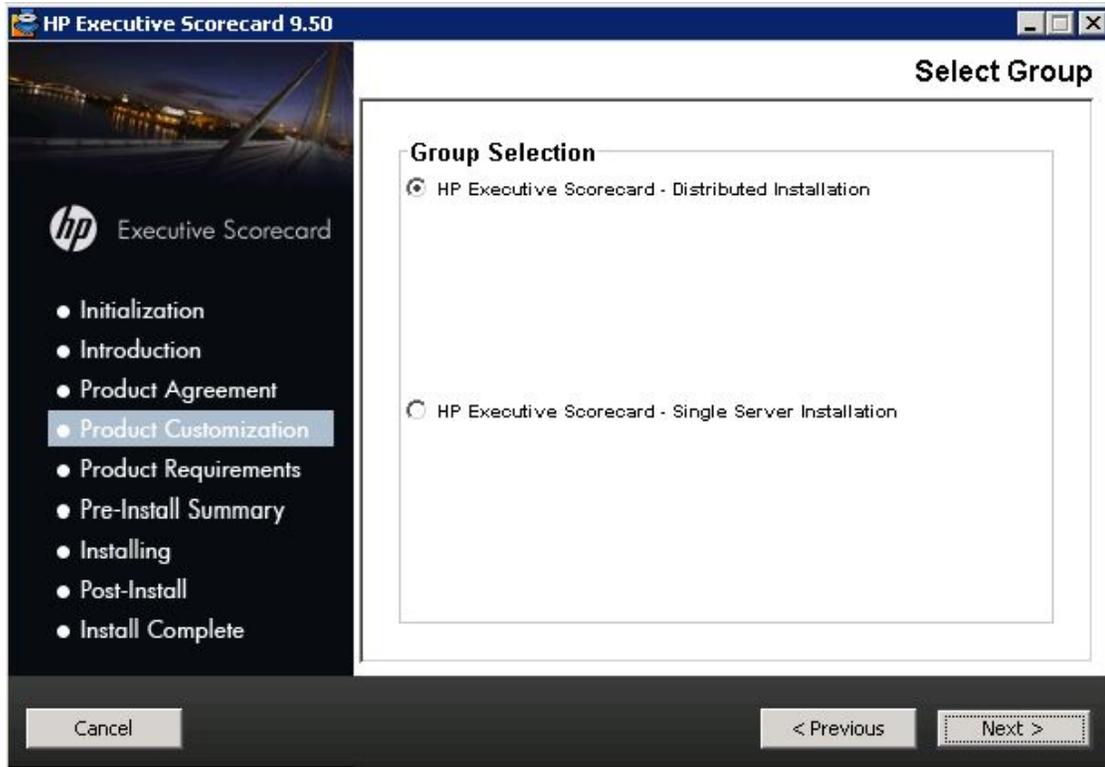


**Caution:** The CD/DVD must remain in the drive until you complete the Executive Scorecard Configuration Wizard.

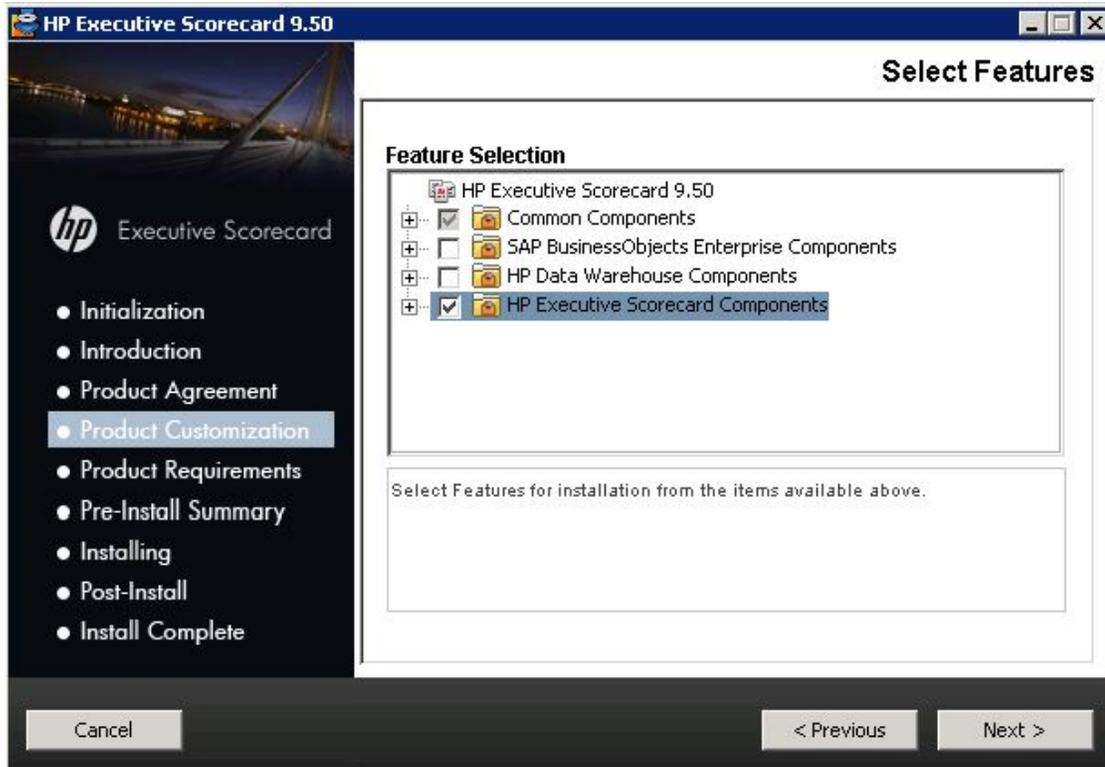
**Note:** If the installation wizard does not start automatically, extract all the files from the .ZIP file and run the file: **<DVD\_ROOT>\Windows\_Setup\HPXS\_9.50\_setup.exe.**

2. Follow the prompts until you get to the **Select Group** page.

3. On the **Select Group** page, select **HP Executive Scorecard - Distributed Installation**, and then click **Next**.

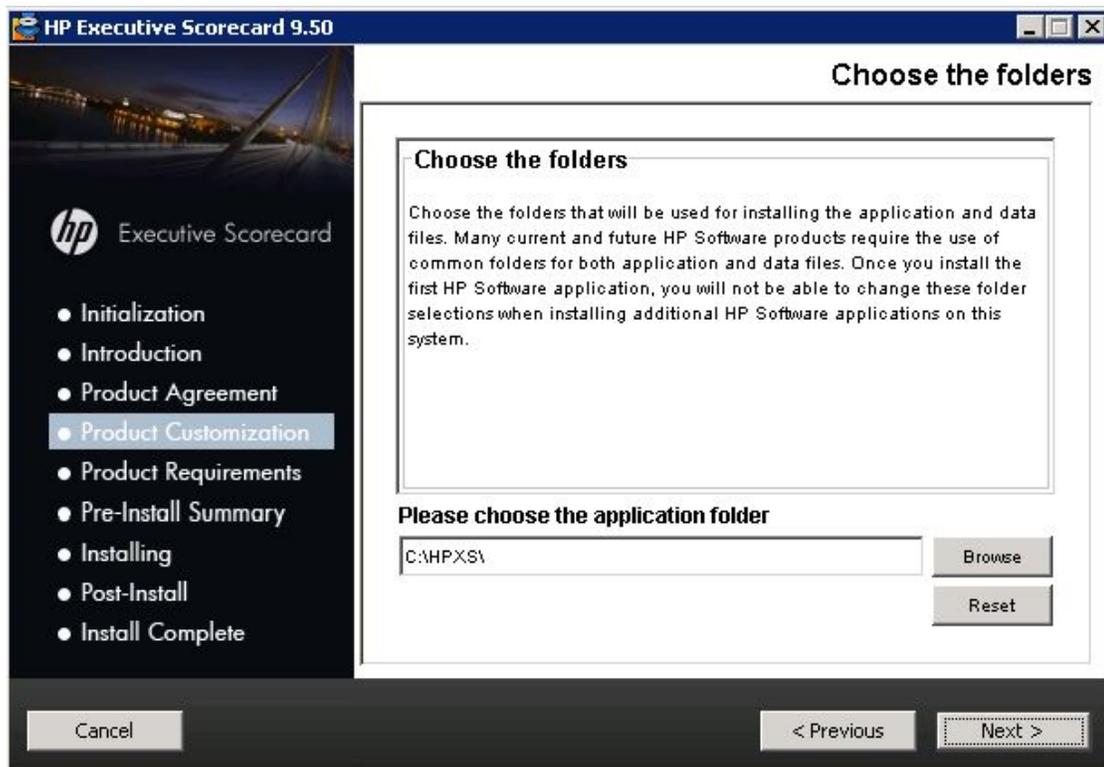


4. On the **Select Features** page, select the component you are installing on this server, and then click **Next**.



**Common Components** are automatically selected and installed with each component.

5. On the **Choose the folders** page, click **Next** to accept the default application directory, or **Browse** to navigate to and then select a new application directory location.

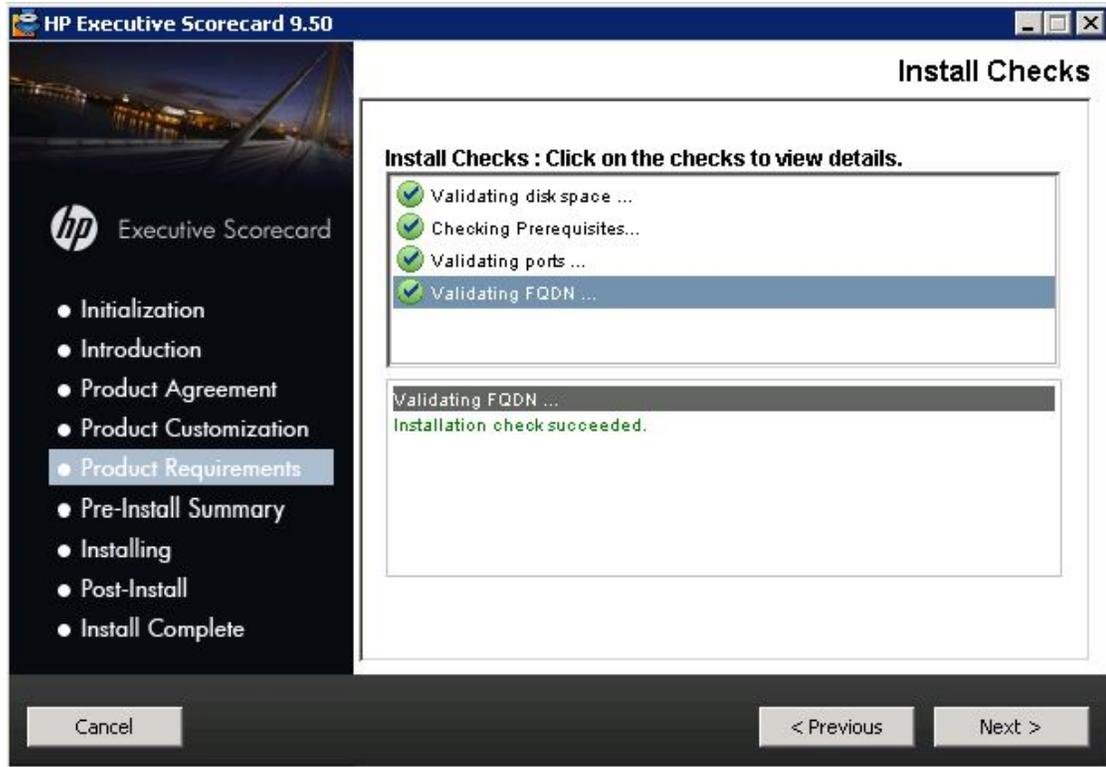


**Note:** If you enter a new application directory name, it can only contain the following characters: a-z,A-Z,0-9 and -\_". For example, a directory named **HP XS** is invalid.

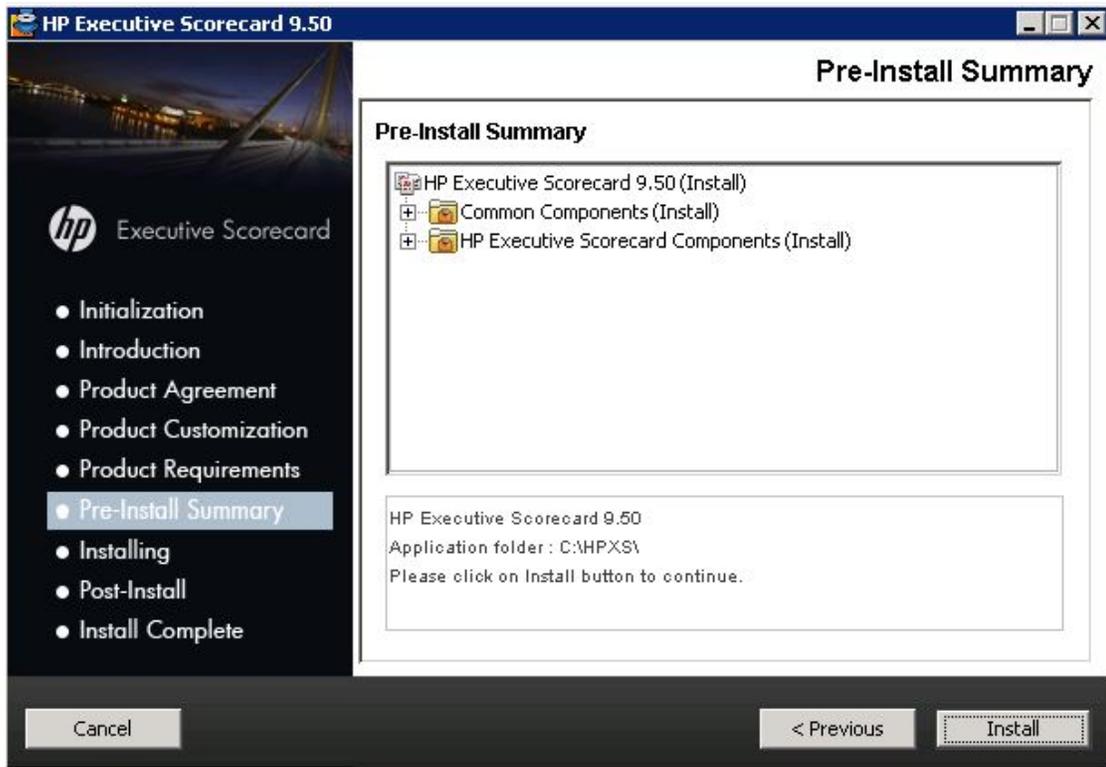
The wizard then runs a series of checks to validate system requirements.

If an installation check failed, you might be required to perform corrective action before you can run the installer. Certain checks can be corrected after a component has been installed.

6. On the **Install Checks** page, ensure that all the installation checks are successful, and click **Next**.



7. On the **Pre-Install Summary** page, verify that the components you wish to install are listed, and then click **Install**.



The file copying process starts. On completion, the Configuration Wizard begins.

# Post-Install Introduction Wizard Page

On the **Post-Install Introduction Wizard** page, click **Next**.

# Management Database - Configure Management Database Settings Page

On the **Management Database - Configure Management Database Settings** page, select **Connect to an existing one** and then click **Next**.

# Management Database - Configure Management Database Connectivity Settings Page

On the **Management Database - Configure Management Database Connectivity Settings** page, enter the following, and then click **Next**.

- XS supports only one Management database. The Management database cannot be changed after it has been defined.
- In a Production environment, make sure that the Management database and the Result database are installed on the same database server.

**Management Database - Configure Management Database Connectivity Settings**

Enter connectivity and authentication parameters for the MS SQL Server database:

\* Host name:

\* Port: <1433>

\* Database name:

**SQL Server authentication:**

\* Login Name:

\* Password:

<< Back   Next >>   Cancel

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the MS SQL Server hosting the Management database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b>. XS does not support dynamic ports.</p>
<b>Port &lt;1433&gt;</b>	<p>The port of the MS SQL server listener. The default port is 1433. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="#">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the Management database.</p> <p><b>Tip:</b> If needed, take note of the database name, as it may be needed when installing other components.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication:**

To work with the Data Warehouse, the user must have access to the SQLServer definition. Make sure that the permission has been assigned accordingly. For example, the SQL permission GRANT VIEW ANY DEFINITION TO public grants access to the SQL Server definition to everyone.

<b>UI Element</b>	<b>Description</b>
<b>Login Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password for the specified user.

# Management Database - Configuration Status Page

On the **Management Database - Configuration Status** page, verify that the Management database configuration was completed successfully, and then click **Next**.

# License Management - Load a License Page

On the **License Management - Load a License** page, if you connect to a valid Management database, the license file will automatically be defined. Click **Next**.

# Application Configuration - Configure Web Server Infrastructure Connectivity Page

On the **Application Configuration - Configure Web Server Infrastructure Connectivity** page, enter the following, and then click **Next**.

**Note:** The settings were configured during the installation of DWH, and the time zone cannot be changed.

**Data related configuration area:**

UI Element	Description
<b>Time Zone</b>	The Data Warehouse time zone used when consolidating the data extracted from the data sources.  You cannot modify it after it has been defined as it impacts the calculations.

**Web Server Configuration area:**

UI Element	Description
<b>HTTP port</b>	<p>The port of the HTTP listener. The default port is 80. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note: Note:</b></p> <ul style="list-style-type: none"> <li>• If you want to use the default HTTP port in the Executive Scorecard installation, you must ensure that port 80 is not in use by another process.</li> <li>• Do not use the Tomcat port to install BOE.</li> </ul>
<b>HTTPS port</b>	<p>The port of the HTTPS listener. The default port is 443. For more information about ports, see the Support Matrix document available from the <a href="http://h20230.www2.hp.com/selfsolve/manuals">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> Do not use the Tomcat port to install BOE.</p>

**BusinessObjects Enterprise area**

UI Element	Description
<b>SSO Shared secret</b>	Enter the SSO shared secret. The password is pre-filled automatically if you connect to a valid Management Database.
<b>Confirm SSO Shared secret</b>	Confirmation of the SSO shared secret. The password is pre-filled automatically if you connect to a valid Management Database.

# Application Configuration - Configure Infrastructure Connectivity Page (2)

On the **Application Configuration - Configure Infrastructure Connectivity** page, enter the connectivity and authentication parameters for glassfish and then click **Next**.

**Application Configuration - Configure Infrastructure Connectivity** ?

Enter glassfish admin console authentication parameters:

\* Admin user name:

\* Admin password:

\* Confirm Admin password:

<< Back   Next >>   Cancel

UI Element	Description
<b>Administrator user name</b>	<p>The user name for the glassfish.</p> <p>Use this user to log on to glassfish.</p>
<b>Administrator password</b>	<p>The password for the administrator.</p> <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>The following characters: a-z, A-Z, 0-9, _ (underscore) are supported.</li> <li>The password cannot contain the word: administrator.</li> <li>The password must be at least 6 characters in length, and must contain a combination of two of the following; upper case, lower case, numbers and punctuation.</li> </ul> <p>The password is case-sensitive.</p> <ul style="list-style-type: none"> <li>The password can be changed by the Administrator. In such a case, the relevant password setting should be changed accordingly.</li> </ul> </div>
<b>Confirm Administrator password</b>	<p>Confirmation of the administrator password.</p>

# Application Configuration - Configure Target Database Settings Page

On the **Application Configuration -Configure Target Database Settings** page, select **Connect to an existing database**, and then click **Next**.

# Application Configuration - Configure Target Database Connectivity Settings Page

On the **Application Configuration - Configure Target Database Connectivity Settings** page, enter the following, and then click **Next**.

**Application Configuration - Configure Target Database Connectivity Settings** ?

Enter connectivity and authentication parameters for the Target MS SQL Server database:

\* Host name:

\* Port: <1433>

\* Database name:

**SQL Server authentication:**

\* Login Name:

\* Password:

<< Back   Next >>   Cancel

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the MS SQL server hosting the target database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b>. XS does not support dynamic ports.</p>
<b>Port &lt;1433&gt;</b>	<p>The port of the MS SQL server listener. The default port is 1433. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="#">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the target database.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication area:**

UI Element	Description
<b>Login Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password for the specified logon that creates the Target database.

# Application Configuration - Periods Page

On the **Application Configuration - Periods** page, enter the following, and then click **Next**.

**Application Configuration - Periods**

Enter the date range for the data to be processed.  
Note: The date range can be extended later.

**Period Dimension**

First Year:

Last Year:

First fiscal month of the year:

<< Back   Next >>   Cancel

UI Element	Description
<b>First Year</b>	<p>The first year in the period dimension is the first year used when automatically populating Data Warehouse tables with yearly, quarterly, monthly, weekly and daily records. Change the First Year value by clicking the up or down arrows.</p> <p><b>Note:</b> The First Year can be changed later in the Executive Scorecard Admin application, followed by running the <code>dw_period_dim_generator</code> utility.</p> <p>For more information, see <b>Change the Data Warehouse Period dimensions</b> in the <i>IT Executive Scorecard Administrator Guide</i>.</p>
<b>Last Year</b>	<p>The last year in the period dimension is the last year used when automatically populating Data Warehouse tables with yearly, quarterly, monthly, weekly and daily records. Change the Last Year value by clicking the up or down arrows.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The Last Year must not be lower than the current year.</li> <li>• The Last Year can be changed later in the Executive Scorecard Admin application, followed by running the <code>dw_period_dim_generator</code> utility.</li> </ul> <p>For more information see <b>Change the Data Warehouse Period dimensions</b> in the <i>IT Executive Scorecard Administrator Guide</i>.</p>
<b>First fiscal month of the year</b>	<p>The first fiscal month of the year in your organization.</p>

# Executive Scorecard - Configure Executive Scorecard Database Page

1. On the **Data Warehouse - Configuration Status** page, ensure that all the Data Warehouse components were successfully configured, and then click **Next**.
2. On the **Executive Scorecard - Configure Executive Scorecard database** page, select **Create a new Executive Scorecard database** , and then click **Next**.

# Executive Scorecard - Executive Scorecard MS SQL Settings Page

On the **Executive Scorecard - Executive Scorecard MS SQL Settings** page, enter the information, and then click **Next**.

**Note:** In a Production environment, make sure that the Management database and the Result database are installed on the same database server.

**Executive Scorecard - Executive Scorecard MS SQL Settings** ?

Enter the Executive Scorecard database configuration parameters:

- \* Host name:
- \* Port: <1433>
- \* Database name:

**SQL Server authentication:**

- \* User name:
- \* Password:

<< Back   Next >>   Cancel

UI Element	Description
<b>Host name</b>	<p>The fully qualified domain name (FQDN) or IP address of the server hosting the Executive Scorecard database.</p> <p>The Result database will be installed on the same instance as the Management database.</p> <p><b>Note:</b> If you work with the Named Instance feature, format Host Name as follows: <b>&lt;host_name&gt;\&lt;instance_name&gt;</b>. XS does not support dynamic ports.</p>
<b>Port</b>	<p>The port of the MS SQL server listener. The default port is 1433. Change this value to connect to a non-default database instance on the server.</p> <p>For more information about ports, see the Support Matrix document available from the <a href="#">Support Site</a> (<a href="http://h20230.www2.hp.com/selfsolve/manuals">http://h20230.www2.hp.com/selfsolve/manuals</a> or from the Installation DVD).</p> <p><b>Note:</b> If you work with the Named Instance feature, you can omit the port number (it is automatically detected during the installation). XS does not support dynamic ports.</p>
<b>Database name</b>	<p>The name of the Executive Scorecard database.</p> <p>For an installation, use the database naming convention. For details, see "<a href="#">Database Naming Conventions</a>" on page 319.</p>

**SQL Server authentication:**

UI Element	Description
<b>User Name</b>	The MS SQL logon name used to create or connect to the database. The user must have the administrator permissions.
<b>Password</b>	The password for the specified logon.

# Executive Scorecard - Executive Scorecard Database Configuration Status Page

On the **Executive Scorecard - Executive Scorecard Database Configuration Status** page, verify that the Executive Scorecard database was created successfully, and then click **Next** to install Executive Scorecard.

# Executive Scorecard - Executive Scorecard Summary Page

On the **Executive Scorecard - Executive Scorecard Summary** page, ensure that the Executive Scorecard configuration was completed successfully, and then click **Next**.

# Financial Planning Analysis - Installing FPA Page

On the **Financial Planning and Analysis - Installing FPA** page, click **Next** to install IT Financial Management.

# Financial Planning Analysis - Summary Page

On the **Financial Planning and Analysis - Summary** page, ensure that the Configuration Wizard completed successfully, and then click **Finish**.

# Summary Page

On the **Summary** page, verify that the operations completed successfully, and then click **Next**.

## Installation Last Steps

**???? needs to be fixed ???**

The installation last steps are:

"Install "Access Database Engine 2010 64bit" on the DWH server" below

"The installation of Executive Scorecard is complete" below

Install "Access Database Engine 2010 64bit" on the DWH server

Installing the Access Database Engine 2010 64 bit is mandatory.

Install the access engine as follows:

1. Download **Microsoft Access Database Engine 2010 Redistributable** from the Microsoft official website:  
<http://www.microsoft.com/en-us/download/details.aspx?id=13255>

This download installs a set of components that facilitates the transfer of data between existing Microsoft Office files such as Microsoft Office Access 2010 (\*.mdb and \*.accdb) files and Microsoft Office Excel 2010 (\*.xls, \*.xlsx, and \*.xlsb) files to other data sources such as Microsoft SQL Server.

2. Click **Start > Run** and enter **CMD**. In the CMD window, enter:  
**AccessDatabaseEngine\_x64.exe /passive** and press **Enter**.

The installation of Executive Scorecard is complete

You can now launch the XS application by clicking **All Programs > HP executive Scorecard > HP executive Scorecard** in the Start menu.

**Note:** If you have set a proxy server for your browser and the XS application server FQDN cannot be resolved in the proxy server, disable the proxy server settings.

You must then perform further configuration on the data sources and content packs, as well as run the relevant ETLs to get data in the Executive Scorecard application. For more information on configuring Data Warehouse, see the *IT Executive Scorecard Administrator Guide*.

**Note:** Details about the configuration you just performed are summarized in the Executive Scorecard application, in the ADMIN tab under the Data Warehouse option.

# Uninstall IT Executive Scorecard

**???? needs to be fixed ???**

Uninstall Executive Scorecard components as follows:

- On the task bar of each server with an Executive Scorecard component, click **Start > All Programs > HP Executive Scorecard > Administration > Uninstall HP Executive Scorecard**.

This performs the un-installation procedure as follows:

- a. The installed component and all patches and content packs.
- b. The Web Server service on the Data Warehouse and Executive Scorecard servers.
- c. All files created in the installation process.
- d. SAP BusinessObjects Enterprise, and SAP BusinessObjects Data Services.

**Note:** The HPXS directory may remain after performing the uninstall of IT Business Analytics 9.50. If it does, remove it manually.

- Uninstall the SAP® Business Objects BI Platform and the SAP® Business Objects Data Services from the **Control Panel > Programs > Programs and Features**.
- Remove the register entries in **\HKEY\_LOCAL\_MACHINE\SOFTWARE\SAP BusinessObjects**.
- After you perform an uninstall operation, you must delete both the SAP BusinessObjects Enterprise and the SAP BusinessObjects Data Services directories.
- Restart the server.

# License information

The HP ITSM Enterprise Suite provides a simple license package that provides an sufficient number of licenses for a complete service management solution. The information regarding the individual product numbers that comprise the ITSM Enterprise Suite is described in the following sections.

## **Service Manager**

The ITSM Enterprise Suite includes 100 named users for the Foundation, Help Desk Module, Request Management Module, Service Level Management Module and HP IT Change Management Suite. Additionally, each user of the SM Enterprise Suite entitles either 1000 end user self-service (ESS) licenses for the named users of the Catalog Module. Also included are named users for the Knowledge Management Module and either 1000 KM ESS user licenses for the named user. A total of one Service Manager Server is also included in the bundle. One user LTU- license each of the popular Connect-It Connectors for LDAP, E-Mail and Database comes with the suite. Finally, the ITSM Enterprise Suite includes a total of 100 Smart Analytics named users.

## **Asset Manager**

The ITSM Enterprise Suite SKU includes 10 HP Asset Manager Enterprise Suite Named User for the Asset Manager Portfolio, Asset Manager Contracts, Asset Manager Procurement, Asset Manager Software Asset Management, Asset Manager Financial Management modules.

## **IT Business Analytics**

The ITSM Enterprise Suite SKU includes 2 Named User, and 10 casual named users.

## **HP Operations Bridge Suite Premium Edition**

The ITSM Enterprise Suite SKU includes 10 (500 Nodes) Operations Bridge Suite licenses.

# ITSM Enterprise Suite file list

File	File Name
<b>Operations Manager i 10.01</b>	
Readme about HP OMi 10.01 installation	HP_OMi_10.01_ReadMeFirst.htm
Customer Letter for HP OMi 10.00	Customer_Letter_OMi_10.00.pdf
HP OMi 10.01 installation for Linux	HP_OMi_10.01_for_Linux.zip
HP OMi 10.01 installation for Windows	HP_OMi_10.01_for_Windows.zip
Data Flow Probe installation	HP_OMi_10.01_DataFlowProbe.zip
HP BSM Connector 10.00 installation for Windows and Linux	HP_BSM_Connector_10.00.zip

File	File Name
HP OMi 10.01 Virtual Appliance	HP_OMi_10.01_VirtualAppliance.ova
HP OMi 10.01 Virtual Appliance signature file	HP_OMi_10.01_VirtualAppliance.ova.sig
HP OMi 10.01 Virtual Appliance technical description	HP_OMi_10.01_VirtualAppliance.pdf
<b>SiteScope 11.30</b>	
Software, HP SiteScope 11.30 for Windows 64bit	T8354-15015.zip
Software, HP SiteScope 11.30 for Linux 64bit	T8354-15016.zip
<b>HP Operations Agent 11.14</b>	
HP Operations Agent v11.14	TC097-15040.iso
<b>Service Health Reporter 9.40</b>	

File	File Name
Reassembly Instructions SHR 9.40- Windows	HPSHR_940_Reassembly_Win.pdf
Reassembly Instructions SHR 9.40-Linux	HPSHR_940_Reassembly_Lin.pdf
HP SHR 9.40 for Windows 1 of 3	HPSHR_940_Win64.part1
HP SHR 9.40 for Windows 2 of 3	HPSHR_940_Win64.part2
HP SHR 9.40 for Windows 3 of 3	HPSHR_940_Win64.part3
HP SHR 9.40 for Linux 1 of 3	HPSHR_940_Lin64.part1
HP SHR 9.40 for Linux 2 of 3	HPSHR_940_Lin64.part2
HP SHR 9.40 for Linux 3 of 3	HPSHR_940_Lin64.part3
<b>Service Manager 9.40</b>	
Software, HP Service Manager 9.40 #1	T5001-15076.iso

File	File Name
Software, HP Service Manager 9.40 #2	T5001-15077.iso
Software, HP Service Manager 9.40 #3	T5001-15078.iso
Software, HP Service Manager 9.40 Multi- Language	T5001-15079.iso
Software, SC Auto Applications v 4.03	T4581-15004.iso
Software, Release Control v 9.2 media	T9770-15008.iso
Software, HP UCMDB/UD 10.20 Windows MLU	TF236-15009.iso
Software, HP UCMDB/UD 10.20 Linux MLU	TF236-15010.iso

File	File Name
Software, HP UCMDB/CM 10.20 Windows MLU	TF236-15011.iso
Software, HP UCMDB/CM 10.20 Linux MLU	TF236-15012.iso
Software, Connect-It 9.60 English	T4500-15030.iso
<b>Asset Manager 9.50</b>	
Software, HP AM 9.50 English	AssetManager-9.50-English.zip)
Software, SAP BusinessObjects Enterprise For AM	AssetManager-CRS-9.50.zip
Software, SAP Crystal Reports Designer For AM	AssetManager-CRD-9.50.zip
Software, Connect-It 9.60 English	T4500-15030.iso

File	File Name
Software, HP UCMDB/UD 10.20 Windows MLU	TF236-15009.iso
Software, HP UCMDB/UD 10.20 Linux MLU	TF236-15010.iso
Software, HP UCMDB/CM 10.20 Windows MLU	TF236-15011.iso
Software, HP UCMDB/CM 10.20 Linux MLU	TF236-15012.iso
<b>IT Business Analytics 9.50</b>	<p><b>Formerly IT Executive ScoreCard</b></p> <p><b>Note:</b> IT Business Analytics 9.50 was previously known as IT Executive ScoreCard 9.50. The media for IT Business Analytics retains the previous name, IT Executive ScoreCard. Should newly mastered versions of the media be produced, the name change will be implemented then.</p>
Batch file, IT Executive Scorecard 9.50 reassemble	IT_Executive_Scorecard_9.50_reassemble_TB812-15014.zip

File	File Name
Software, HP IT Executive Scorecard 9.50 Part 1 of 3	HP_IT_Executive_Scorecard_9.50_Part_1_of_3_TB812-15013.zip.001
Software, HP IT Executive Scorecard 9.50 Part 2 of 3	HP_IT_Executive_Scorecard_9.50_Part_2_of_3_TB812-15013.zip.002
Software, HP IT Executive Scorecard 9.50 Part 3 of 3	HP_IT_Executive_Scorecard_9.50_Part_3_of_3_TB812-15013.zip.003
Readme, HP IT Executive Scorecard 9.50	TB812-88011.pdf

# Glossary

**M**

**My Term**

My definition

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# Send Documentation Feedback

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**Feedback on ITSM Enterprise Suite Deployment Guide (ITSM Enterprise Suite 2015)**

Just add your feedback to the email and click send.

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We appreciate your feedback!

