HP Business Service Management

For the Windows and Linux Operating Systems

Software Version: 9.21

Planning Guide

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Chapter 1

Deployment Planning

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- "Using the Capacity Calculator" on page 9

Deployment Planning Checklist

Deploying HP Business Service Management (BSM) in an enterprise network environment is a process that requires resource planning, system architecture design, and a well-planned deployment strategy. The checklist below describes some of the basic issues that should be considered prior to installation. HP Software Professional Services offers consulting services to assist customers with BSM strategy, planning and deployment. For information, contact an HP representative.

Use this checklist to review the basic issues that your organization should consider when planning the BSM deployment.

✓	Step
	Analyze the IT processes and organizational structure and culture that can affect, or be affected by, the deployment.
	Map the customer environment.
	Analyze the organization's goals and identify the key IT-enabled business processes to achieve these goals.
	Identify the target users (those with a vested interest in the business processes), for example, executives, LOB managers, marketing managers, customer support personnel, support engineers, and so forth.
	Align the project with current performance management practices.
	Map the architecture of the monitored infrastructure, including identifying the processes, systems, system resources, and other infrastructure elements to monitor in each of the applications.
	Define the project deliverables, including setting expectations regarding measurements, features, the deployment scope, and maturity levels.
	Identify the appropriate HP Business Service Management functionality.
	Build a deployment roadmap.

✓	Step
	Define success criteria for the project.
	Define performance and availability objectives for each monitored business process.
	Define measurement types to be supported at each deployment stage.
	Form HP Business Service Management administration and operations team(s).
	Plan the practical aspects of the deployment, including system architecture and capacity planning using the capacity calculator; and database environment and security considerations, and so forth.

Deployment Planning Considerations

This section provides different information that may be useful while planning a BSM deployment. This section contains:

- "How to determine the hardware requirements that will satisfy the expected capacity?" below

- "How to determine which deployment type to choose (One-machine or distributed)?" below

- "How many BSM machines do I need?" on next page

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- "What specific hardware should I purchase?" on next page

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How to determine the hardware requirements that will satisfy the expected capacity?

Use the BSM 9 Deployments and Capacity Calculator for planning the BSM deployment. The calculator determines the required hardware profile per deployment type. When using the calculator, consider expected growth in the near future. For details, see "Using the Capacity Calculator" on page 9.

How to determine which deployment type to choose (One-machine or distributed)?

BSM can be installed either as a one-machine deployment or as a distributed deployment (Gateway and Data Processing Servers installed on separate machines). To choose the deployment type, consider the following:

- The hardware required for each type as reflected in the Deployments and Capacity Calculator results. For large capacities, the one-machine deployment might require a machine with a very

large RAM that will not be recommended/supported by your IT.

- One-machine deployment is more economic in terms of resources since many of the common components are deployed only once.

- In terms of best practices - both are recommended and supported.

How many BSM machines do I need?

- The basic BSM deployment consists of either one one-machine installation, or one Gateway (GW) installation and one Data Processing (DPS) installation.

- To increase availability and reliability of BSM, it is recommended to deploy at least one additional one-machine installation/GW+DPS installation pair. For more information, see "Benefits of a Multi-Server Deployment" on page 20.

- To scale the number of BSM concurrent users you can add additional Gateway machines (or additional one-machine installations).

- Do not inflate your BSM deployment by adding more machines than required. The number of TCP resources consumed per machine is correlated to the number of BSM machines in the deployment and is limited.

Should I deploy BSM on virtual machines?

BSM (GW and DPS installations, either as one-machine or as a distributed installation) can be deployed on virtual machines. For more information, see "HP Business Service Management on Virtual Platforms" in System Requirements and Support Matrixes.

If you plan to run a database server containing BSM databases on a virtual machine, check with your database vendor for their support policies and performance implications.

What specific hardware should I purchase?

BSM requires specific hardware profiles, but does not require specific brand.

How to choose your operating system? (Windows\Linux)

- If you are migrating from a previous version of BSM, see the BSM 9.1x Upgrade Guide for information about which migration paths are supported.

- Both operating systems are recommended and supported. For specific information regarding supported versions, see System Requirements and Support Matrixes.

How much disk space is required for the database schemas?

The required disk space for BSM schemas is influenced by many variables. For more information about the main considerations, see the BSM Database Guide.

Do I need a CMS, or is RTSM enough for my needs?

RTSM is designed to support BSM operational use cases only. For topology-based integrations between BSM and other HP centers, it is recommended to install a central CMDB instance that will serve as the CMS instead of integrating directly with the RTSM instance. For more information, see the RTSM Best Practices Guide.

Which web server to choose?

BSM supports both Microsoft IIS and Apache web servers. The Apache web server is bundled within the BSM installation, while the Microsoft IIS web server must be installed separately prior to

BSM installation. In terms of best practices, both are recommended and supported.

What disaster recovery aspects should I consider?

You can setup an additional BSM deployment that will act as a Disaster Recovery System. Such a deployment can be added at any given time on demand and does not have to be considered when planning your primary environment. For more information, see "Disaster Recovery" in the BSM Installation Guide.

What network aspects should I consider?

It is recommended that all BSM Servers are installed on the same network segment.

If BSM 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 effects to the BSM application and can result in performance and stability issues. We recommend that the network latency should be no more than 5 milliseconds, regardless of the number of hops.

Placing firewalls between BSM servers is not supported. If a firewall is active on any BSM server machine (GW or DPS), a channel must be left open to allow traffic between the BSM machines (GW and DPS).

Using the Capacity Calculator

The capacity calculator Excel spreadsheet should be used to determine the scope and size of your BSM deployment. You input the information regarding the scope of your deployment in terms of numbers of applications running, users, and expected data. The capacity calculator calculates the configuration of your deployment and the hardware requirements of each machine in the BSM deployment. This information can be uploaded automatically while running the Setup and Database Configuration utility or the Upgrade Wizard which are run after installing or upgrading BSM.

> **Note:** In a Linux environment, the capacity calculator Excel spreadsheet can be opened and edited using the Calc spreadsheet application of OpenOffice.org.

The capacity calculator Excel file includes the following sheets:

- **Deployment Calculator:** Use the Capacity Questionnaire to determine what applications and capacities you require. The results are displayed in the Output tables. Alternatively, you can use the Certified Deployments worksheet.

- **Certified Deployments.** You can use the one of the pre-defined certified deployments in the Certified Deployment worksheet that most closely resembles your needs. These certified deployments can be used as templates and can be modified to suit your needs.

- **Detailed Capacities.** Gives detailed data regarding the numbers used to calculate capacity levels of **Small**, **Medium**, **Large**, and **Extra Large** for each BSM application, users, metric data, and model size.

- **Level Override.** This sheet should be used only by very experienced BSM administrators. It enables the option to override the capacity levels calculated in the capacity calculator.

To use the capacity calculator:

1. Locate the Excel sheet named **BSM_9_Deployment_and_Capacities.xls** in your installation media. You can download the latest version from the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals). Search the web site for the term "capacity calculator".

2. In the **Deployment Calculator** sheet **Capacity Questionnaire** columns:

   - Select which applications you are running by selecting **Yes** or **No** as appropriate in the cells next to the name of each application.

   - Enter the required data for each application that you are running and for the number of **Logged in Users**.

     You can hover over each cell to read a tooltip description of the information required for each application.

3. After you enter your data, the **Output** tables on the right of the **Deployment Calculation** sheet automatically update to give you the required information regarding your deployment.

   - The **Output - Application/Level** table on the top right indicates the scope of your deployment, giving you sizing information. This includes users, size of your model, size of your expected metrics data, application status (on or off), and sizing for each application.

   - The **Output - Machine Requirements** table in the lower right indicates, for each installation type (one machine or distributed), the required memory in gigabytes and the number of CPU cores for each server installation.

     Decide which Deployment Type (one machine or distributed) is applicable to your deployment.

4. Save the Excel file in a location that is accessible to the servers where you are installing BSM.

   You can now prepare the hardware environment and install BSM based on these recommendations.

To apply the capacity calculator data during installation:

When running the Setup and Database Configuration utility in the Server Deployment page, browse to the location where you saved the Capacity Calculator with your data. Upload the file, and the data from the Excel sheet automatically updates the fields in the wizard.

For details on using the utility, see "Setup and Database Configuration Utility" in the BSM Installation Guide.

Using the Capacity Calculator After Installation

After you have BSM installed, you may want to make changes to your deployment. You can add applications, change the number of logged in users or any of the other numbers related to running applications. You can edit your capacity calculator and determine if the scope of your deployment has changed.

You can upload the data from the updated capacity calculator's Excel file directly into the Server Deployment page in Platform Administration. This page enables you to update the information that you entered in the Server Deployment page while running the Setup and Database Configuration utility without having to run the wizard.

If you do not have the appropriate license for an application, the application does not appear in the list of available applications in the Server Deployment page, either during installation or in the

Platform Admin page. You can add licenses for applications after BSM is deployed in the License Management page in Platform Administration. After you add a license, you must go to the Server Deployment page to enable the application.

For details on updating a deployment, see "How to Update Your BSM Licenses, Applications, or Deployment Scope" in Platform Administration. For any changes to take effect while updating a deployment, you must restart BSM.
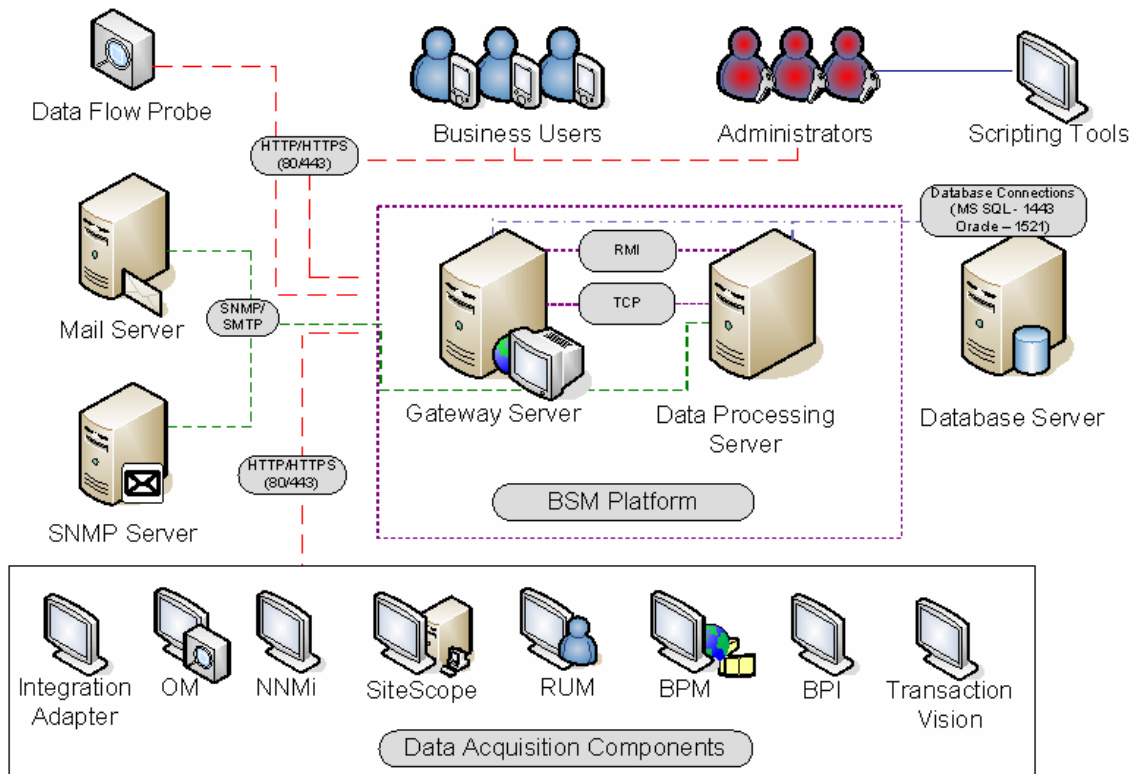
Chapter 2

Understanding the Platform and Components

This chapter includes:

- "Platform Architecture Diagram" below

- "BSM Servers" on next page

- "BSM Database Server" on page 14

- "BSM Data Sources" on page 15

- "Additional Proprietary Components" on page 17

- "Third-Party Components" on page 17

- "Bus Communication Among BSM Components" on page 18

Platform Architecture Diagram

The diagram below illustrates the general BSM platform architecture and the communication protocols used among the components.

BSM Servers

The BSM platform consists of proprietary servers and components, data sources, scripting tools, and third-party servers, such as database and mail servers, that you set up in the enterprise network environment. This chapter provides an overview of the BSM platform and components.

BSM is powered by a set of servers that are responsible for running the applications, facilitating system management, data handling, reporting, and alerting. You install the following BSM servers on one or more Microsoft Windows or Linux machines in your enterprise network environment:

- **BSM Gateway Server.** Responsible for running BSM applications, producing reports, operating the administration areas, receiving data samples from the data collectors and distributing this data to the relevant BSM components, and supporting the bus. To work with BSM, the Gateway server machine must run a Web server.

- **BSM Data Processing Server**. Responsible for aggregating data, running the Business Logic Engine, and controlling the RTSM service.

You can install the BSM servers according to a number of different deployment strategies. Distributed deployments, in which multiple server machines are installed, can benefit from various high availability and load balancing options. For details on the recommended deployment strategies, see "Deployment Configurations" on page 19. For details on high availability and load balancing options, see "Load Balancing and High Availability" on page 19.

Notes and Best Practices for Server Deployment

Note the following when deploying BSM servers:

- Access to the BSM server machine must be available, either through HTTP or HTTPS, from any standard Internet or intranet connection.

- The BSM servers should be on dedicated machines and should not run other applications.

- BSM servers should not be installed on machines on which other HP products are installed.

- Installing BSM 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 BSM servers with HP SiteScope or HP Operations Manager agent has been tested and is supported.

- Oracle Java 7 is copied onto the machine during server installation as part of the BSM installation.

- If BSM 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 ms, regardless of the number of hops. For more information, contact HP Software Support.

- All BSM servers, as well as the database servers, must be installed in the same time zone, with the same daylight savings time configuration, and be set to the same time.

- If your BSM database server is using an SQL Server platform, make sure the Compatibility Level database setting is set to reflect the version of SQL that you are using in each of the 9.1x

database schemas. For example if you are using SQL SERVER 2005, the compatibility level should be 90.

- BSM does not support setting the time zone to half hour time zones relative to GMT, for example, GMT+6:30 Indian. This may cause problems during data aggregation, which is performed on the hour.

Web Servers

To work with BSM, the Gateway server(s) must run a Web server. In Linux environments, you must use the Apache HTTP Server. In Windows environments, you can select between:

- Microsoft Internet Information Server (IIS). If you plan to run BSM on IIS, you should install the IIS prior to BSM installation. During BSM server installation, the IIS settings are automatically configured to work with BSM.

> **Note:**
>
> - When using the IIS Web Server, BSM only supports the IIS default application pool.
>
> - If you are installing on Windows 2008 and using IIS 7, you must create the appropriate roles for the IIS. For details, see "Working with the Web Server" in the BSM Installation Guide.

- **Apache HTTP Server.** A version of the Apache HTTP server is installed during BSM server installation. It has been adapted by HP for BSM. If you plan to use BSM with the Apache HTTP Server, you select the Apache HTTP Server during installation.

For information on setting up the Web server to work with BSM, see "Working with the Web Server" in the BSM Installation Guide.

BSM Database Server

BSM requires the following types of databases/user schemas, which you set up on either Microsoft SQL Server or Oracle Server:

- **Management database.** For storage of system-wide and management-related metadata for the BSM environment.

- **RTSM.** For storage of configuration information as configuration items (CIs) that is gathered from the various BSM and third-party applications and tools, or created/configured by BSM users. This information is used when building BSM views.

- **RTSM history database.** For storage of changes, over time, of the RTSM configuration items (CIs). This information can be viewed in the form of CI changes as well as snapshots.

- **Business Process Insight database.** For storage of the Business Process Models created using the Business Process Insight Modeler. For details on the Business Process Insight database, see "BPI Server Database Requirements" in the Business Process Insight Server Administration Guide.

- **Event database.** For storage of events and OMi topology synchronization.

- **Profile database(s).** For storage of raw and aggregated measurement data obtained from the BSM data collectors. Only one profile database is required, but more can be installed if

necessary.

- **Analytics Database(s).** For storage of SHA metrics raw and aggregated data. Each Microsoft SQL Server database or Oracle user schema can host up to 1,000,000 metrics. You can create up to five SQL Server databases or Oracle user schemas. You can create SHA databases manually or by using the Manage Analytics Database page, accessible from **Admin > Platform > Setup and Maintenance**.

Part of the process of deploying BSM servers requires connecting to these databases. If you are installing BSM for the first time, you can manually create these databases directly on the database server(s) before server installation, or you can allow BSM to create the databases for you, using the Setup and Database Configuration utility.

For detailed information on deploying the database servers in your system for use with BSM, and creating the databases/user schemas manually, see the BSM Database Guide.

The procedure for setting database parameters is described in "Server Deployment and Setting Database Parameters" in the BSM Installation Guide.

> **Note:** If you need to verify the integrity of the databases, you can run the database schema verification. For details, see Appendix D, "Database Schema Verification" in the BSM Database Guide.

BSM Data Sources

BSM data sources are responsible for collecting performance and event data from various points throughout the infrastructure, as well as from external locations, and feeding it into a central repository. The data is used to monitor and analyze events and the performance of business applications and IT infrastructure and alert staff to performance and threshold breaches. Some data collectors can also report the topology that they are monitoring to BSM.

Data Collectors

Data collectors are installed and administered separately. Downloading and running data collectors require separate licensing. Each data collector can be downloaded from the BSM Downloads page, accessed from Platform Administration (**Admin > Platform** > **Setup and Maintenance** > **Downloads**). For details, see "Downloads Overview" in Platform Administration.

You can install the following data collectors on machines in your enterprise network environment or at remote locations:

- **Business Process Monitor (BPM).** Emulates the end-user experience by running transactions (virtual business processes) and collecting availability and response time data.

- **SiteScope.** Collects key performance measurements and reports topology on a wide range of back-end infrastructure components, including Web, application, database, and firewall servers.

- **Real User Monitor (RUM).** Measures the end-user experience of real users from a network/server perspective by monitoring real user traffic and collecting network and server performance data in real time.

- **Business Process Insight (BPI).** Provides visibility into the health and performance of the

business processes that are running over IT infrastructure to enable assessment of the business impact of delays or blockages in processes due to an IT performance problem.

- **TransactionVision.** Measures the health, performance and business impact of enterprise transactions and provides reporting on transaction activity.

- **Service Health Analyzer.** Provides predictive events, so that issues can be identified and processed before the full impact is felt by the business.

Note: HP Diagnostics is licensed and installed separately and can act as a data collector for BSM.

After the data collectors are installed and configured, you further define their settings in End User Management Administration (**Admin** > **End User Management**) and System Availability Management Administration (**Admin** > **System Availability Management**). End User Management Administration enables you to centrally manage your monitoring environment for Business Process Monitor and Real User Monitor. System Availability Management enables you to access hosted instances of SiteScope. Business Process Insight and TransactionVision each have their own administration areas (**Admin** > **Business Process Insight** and **Admin** > **Transaction Management**).

You can deploy monitors, configure eventing and alert schemes, and manage and organize your monitor environment all from within the BSM platform.

Data from HP Software Applications and Integrations

BSM has the ability to integrate with BTO products, with applications that are part of BSM, and with external applications.

These integrations enable the flow of data from application to application as well as the flow of events from the applications to BSM and to its Operations Management component, depending on the applications. You can drill down from BSM to some of the relevant applications.

The primary integrations with BSM are as follows:

• BSM - Operations Manager

• BSM - Service Manager

• BSM - Network Node Manager i (NNMi)

• BSM - SiteScope

• BSM - Operations Orchestration (OO)

• BSM - Release Control (RC)

• BSM - Diagnostics

You can find detailed information about supported integrations in the BSM section of the Integrations tab, in the HP Software Integrations site.

Additional Proprietary Components

BSM administrators deploy the Discovery Probe to enable the Discovery process, which aids in modeling the IT world. In addition, administrators use HP scripting tools to create the scripts that are used by Business Process Monitor to collect data for monitored applications.

Data Flow Probe

The Data Flow Probe enables you to collect data about your IT infrastructure resources and their interdependencies. This process discovers resources such as applications, databases, network devices, servers, and so on. The Data Flow Probe is the main component responsible for receiving discovery tasks from the server, dispatching them to the IT components, and sending the results back to the RTSM through the server. For details on the discovery process and Data Flow Probe deployment, see Data Flow Management.

Scripting Tools

BSM scripting tools enable you to record the end-user actions that represent the key business transactions whose performance you want to monitor using Business Process Monitor. You save the transactions in recorded scripts. The table below describes the scripting tools that are available. For additional information on Business Process Monitor scripting tools, including script recording tips, see VuGen Recording Tips in the BSM Application Administration Guide.

HP Virtual User Generator (VuGen)

Enables you to record scripts for a large variety of protocols. This is the recommended tool for recording Business Process Monitor scripts. You download VuGen from the Downloads page, accessed from the Setup and Maintenance tab in Platform Administration. For details on using VuGen, see the HP Virtual User Generator documentation. For information on using HP LoadRunner scripts in BSM, contact HP Software Support.

QuickTest Professional (for use with Windows-based Business Process Monitor only)

Enables you to record scripts for Web-based applications that include Java applets and ActiveX. For details on using QuickTest Professional, refer to the documentation installed with the product.

Third-Party Components

- **Database Server.** BSM requires connection to a database server. The database server is used to store:

  - System-wide and management-related data, which includes administrative settings and customer-configured information

  - Profile data, which includes data collector settings and collected metrics

  - Configuration item (CI) data, which includes the CIs used to model your IT infrastructure and the relationships between them.

  For more information on using database servers in BSM, see the BSM Database Guide.

- **Mail Server.** The mail server is used to send alerts and scheduled reports to designated recipients.

- **SNMP Server.** A connection to an SNMP server may be implemented to receive SNMP traps sent by the HP Business Service Management alerting mechanism.

- **SiteScope Integration Monitors.** BSM supports integration of data from third-party systems via SiteScope Integration Monitors, and to third-party systems, using BSM APIs. For more information on SiteScope Integration Monitors, see the Integration Monitors section in Using SiteScope in the SiteScope Help.

Bus Communication Among BSM Components

A bus is a virtual communications channel between BSM servers.

The following functionality is provided by the Bus:

- **High availability for communication between the Gateway and Data Processing servers.**

  The bus uses a JMS-based messaging system for communication between the servers. A broker process on each server receives and delivers messages between the servers. Bus clustering allows multiple brokers to detect dropped server connections and to reconnect without data loss.

- **Transfer of monitoring data.**

  Data collectors send raw monitoring data via HTTP/HTTPS protocol to the Gateway Server. The Gateway Server formats the raw data and sends it to the Data Processing Server via the Bus. In the event that the Online BLE is experiencing downtime, the bus preserves the data until the Online BLE is again operational, thus guaranteeing that the Alert Engine has all of the data to perform its calculations on. Service Health uses the online BLE to listen to the Bus, and Service Level Management uses the offline BLE to listen to the Bus. Both applications display the formatted data to the user.

- **Transfer of alerts.**

  Each Data Processing Server can generate alerts as a result of the data aggregation process. These alerts are sent through the bus to the Alerts Engine and on to the user's e-mail, pager, or SMS.

Chapter 3

Deployment Configurations

This chapter includes:

- "Best Practices" below
- "One-Machine Deployment" below
- "Distributed Deployment" below
- "Load Balancing and High Availability" below
- "APM Starter Deployment" on page 21

Best Practices

We recommend installing BSM behind a load balancer or reverse proxy. This enables additional security options and can simplify disaster recovery and upgrade procedures.

It is highly recommended to use the capacity calculator to determine the scope of your deployment and the required hardware profile of each machine in your installation. For details, see "Using the Capacity Calculator" on page 9.

One-Machine Deployment

A one-machine deployment has the Gateway Server and Data Processing Server installed on the same machine.

A one-machine deployment can be used for many installations scenarios as long as the machine has the required hardware to handle the capacity.

To choose a one-machine deployment, select the **Typical** setup type in the BSM installation wizard.
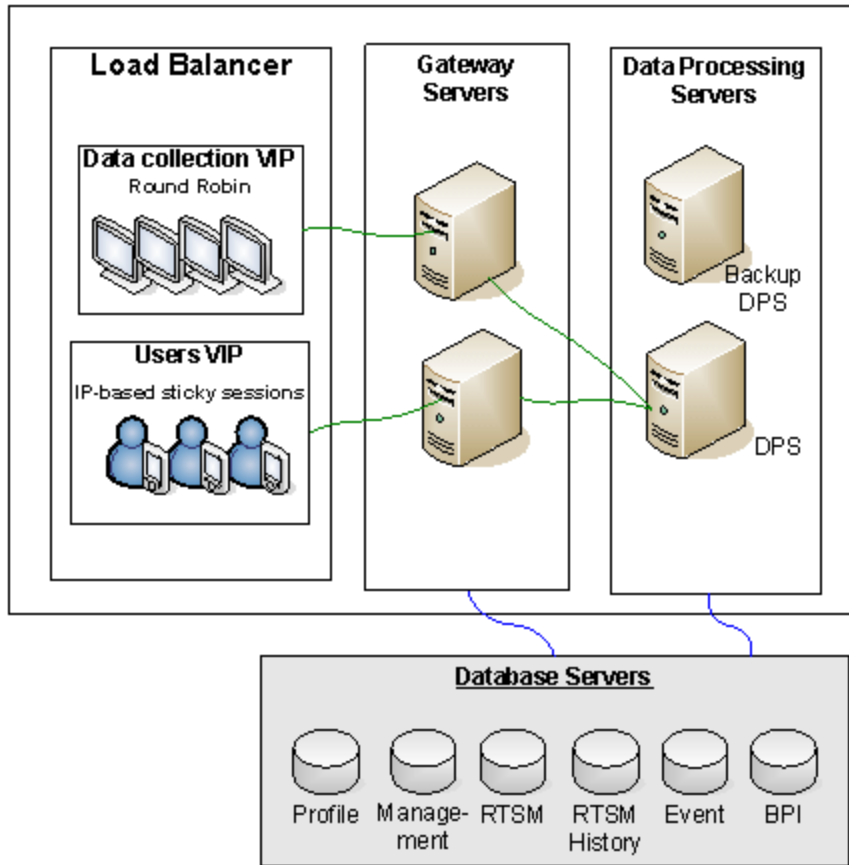
Distributed Deployment

A distributed deployment is when one instance of a Gateway Server is installed on one machine and the Data Processing Server is installed on a second machine.

To set up a distributed deployment, specify the server type you want to install on each machine while running the installation wizard. You can install these servers in any order.

Load Balancing and High Availability

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.

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The diagram below illustrates load balancing and high availability for a distributed deployment but the same configuration can be used if the Gateway Server and the Data Processing Server have been installed on one machine.

Note: Data Processing Servers can run concurrently with additional Data Processing Servers as long as the same service is not being run concurrently on more than one machine.

Benefits of a Multi-Server Deployment

Deploying multiple servers for BSM for either a one-machine deployment or a distributed deployment gives you the following benefits:

- Provides scaling solutions for your BSM system.

- Multiple Gateway Servers can be placed behind a load balancer to divide load and improve system performance. For details on load balancing, see "Load Balancing for the Gateway Server" in the BSM Installation Guide.

- Backup machines for the BSM servers allow high availability options to be used to improve system availability and reliability. For details on high availability, see "High Availability" in the BSM Installation Guide.

Deploying Multiple Servers

When deploying multiple BSM servers, you must perform the following steps:

- At the end of the server installation process, use the Setup and Database Configuration utility to establish connectivity between the server and the databases. You must specify the same database and connection parameters for each BSM server (whether the servers are at the same location or geographically separated). For details on using the Setup and Database Configuration utility, see the BSM Installation Guide.

- After installing BSM servers, point BSM data collectors (Business Process Monitor, SiteScope, Real User Monitor, TransactionVision, Business Process Insight) to the server or load balancer with which they must communicate to perform their work. For details, see "Configuring HP Business Service Management Data Collectors in a Distributed Environment" in the BSM Installation Guide.

- Ensure that the Gateway servers are accessible from any standard Internet or intranet connection, either through HTTP or HTTPS.

- Ensure that each server has a user account with administrative rights to the database servers.

- Create a common temporary directory to hold the temporary images created by the Gateway Servers when generating scheduled reports. For details, see "How to Modify the Location and Expiration of Temporary Image Files" in Platform Administration.

Notes and Limitations

If BSM servers, including the database servers, are installed on multiple network segments, it is highly recommended to minimize the number of hops and the latency between the servers. Network-induced latency may adversely affect 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.

Because BSM uses Remote Method Invocation (RMI) calls between servers, placing firewalls between BSM servers is not supported.

APM Starter Deployment

The APM Starter deployment allows you to access the core functionality of BSM while using the minimum hardware. This can later be ramped up to increase performance and capacity.

APM Starter includes the following APM components: BSM one-machine server, RTSM, SiteScope and BPM deployed on the same virtual machine. More components and applications can be included at a later date. For details, speak to HP Software Support.

> **Note:** If you anticipate that you will require greater capacity or performance within less than a year, we recommend that you plan the deployment according these requirements and not use the APM Starter deployment.

Installation Notes

Installing an APM starter deployment is similar to most BSM installations and follows the main installation workflow. For details, see the BSM Installation Guide. However, there are some differences:

- When installing the data collectors, install BPM first.

- When installing SiteScope, change the port to 8090.

System Capacity

The APM Starter deployment was tested to measure operating capacity. This section demonstrates the results of these tests.

Machine Details

Operating System	Windows
CPU cores	4
Memory	16 GB
Database	MS SQL 2008 EE SP2

Capacity

Product Area	Item	Item Type	Capacity
RTSM Capacity	CIs and relationships	Model	10000
	Active TQLs	Model	150
Users	Logged In Users	Users	25
	Service Health Users	Users	10
	Defined Users	Users	150
SLM	SLAs	SLM	10
	Total CIs	SLM	2000
BPM	Applications	MetricData	20
	Transactions	MetricData	100
	Locations	MetricData	5
	Trx-Loc Combinations	MetricData	150
	Max EPS	MetricData	1
SiteScope	Monitors	SAM	1000
	Measurements	SAM	4000
	Monitored CIs (Hosts + Software Elements	SAM	150
	Max EPS	SAM	50