



Interstage Business Process Manager Analytics V11.1



Installation Guide

Windows/Solaris/Linux

J2U3-0052-02(00)
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About this Manual

This document describes how to install Interstage Business Process Manager Analytics (hereafter abbreviated as "Interstage BPM Analytics").

Intended Audience

This manual is intended for use by system administrators. It assumes that the reader has a working knowledge of the following topics:

- Operating system administration
- Application server administration
- Database administration

This Manual Contains:

Chapter	Title	Description
1	System Configurations	Description of the typical system configurations for the installation of Interstage BPM Analytics.
2	System Requirements	Description of the minimum system requirements by platform.
3	Preparing for Installation	Description of system environments before installation.
4	Installing Interstage BPM Analytics Server	Instructions for installing Interstage BPM Analytics Server.
5	Installing Interstage BPM Analytics Studio	Instructions for installing Interstage BPM Analytics studio client.
6	Installing Sensor for remote systems	Instructions for installing Interstage BPM Analytics Sensors to remote systems.
7	Uninstalling Interstage BPM Analytics	Instructions for uninstalling Interstage BPM Analytics software.
8	Procedure for setup execution environment	Description of the procedure for setup execution environment.
A	Required Resources	Description of the resource requisition.
B	Required disk size for database	Description of the disk size requisition for database.
C	Customize parameters of System Tables	Description of the customize parameters of System Tables.

Typographical Conventions

The following conventions are used throughout this manual:

Example	Meaning
command	Text, which you are required to type at a command line, is identified by Courier font.
screen text	Text, which is visible in the user interface, is bold .
<i>Reference</i>	Reference material is in <i>italics</i> .
Parameter	A command parameter is identified by Courier font.

Reference Materials

The following reference materials for Interstage BPM Analytics are also available:

- *Release Notes*
- Contains an overview of Interstage BPM Analytics, and late-breaking information that did not make it into the main manuals.
- *Overview*
- Describes the Interstage BPM Analytics Architecture and features.

- *Dashboard / Output Guide*
- Explains how to use the Dashboard which shows Analytical data.
- *Administration Guide*
- Contains Administration tools and tips, Message references and Troubleshooting.
- *Analytics Studio Guide*
- Explains how to use the Analytics Studio to configure the parameters used to control Interstage BPM Analytics features.
- *Management Console Guide*
- Explains how to use Management Console and Management Commands to configure the core parameters, how to start/stop the Interstage BPM Analytics service and how to display the Interstage BPM Analytics status.

Abbreviations

The following abbreviations are used throughout this document:

Formal name	Abbreviation
Microsoft(R) Windows Server(TM) 2003, Standard Edition Microsoft(R) Windows Server(TM) 2003, Enterprise Edition Microsoft(R) Windows Server(TM) 2003 R2, Standard Edition Microsoft(R) Windows Server(TM) 2003 R2, Enterprise Edition	Windows Server
Microsoft(R) Windows Server(TM) 2003, Standard x64 Edition Microsoft(R) Windows Server(TM) 2003, Enterprise x64 Edition Microsoft(R) Windows Server(TM) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(TM) 2003 R2, Enterprise x64 Edition	Windows Server 2003(x64), or Windows Server 2003
Microsoft(R) Windows Server(R) 2008, Standard Edition Microsoft(R) Windows Server(R) 2008, Enterprise Edition Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise	Windows Server
Microsoft(R) Windows(R) XP Professional operating system Microsoft(R) Windows(R) XP Home Edition operating system	Windows XP, or Windows
Microsoft(R) Windows Vista(R) Business Microsoft(R) Windows Vista(R) Enterprise Microsoft(R) Windows Vista(R) Ultimate	Windows Vista, or Windows
Microsoft(R) Windows(R) 7 Home Premium Microsoft(R) Windows(R) 7 Professional Microsoft(R) Windows(R) 7 Ultimate	Windows 7, or Windows
Microsoft(R) Internet Information Server Microsoft(R) Internet Information Services	IIS
Microsoft(R) Internet Explorer 6.0 Microsoft(R) Internet Explorer 7.0 Microsoft(R) Internet Explorer 8.0	Internet Explorer
Microsoft(R) Excel	Excel
Solaris(TM) 10 operating system	Solaris 10, or Solaris
Red Hat Enterprise Linux AS Red Hat Enterprise Linux ES Red Hat Enterprise Linux 5	Linux
Interstage Application Server Enterprise Edition Interstage Application Server Standard-J Edition	Interstage Application Server
Interstage Studio Enterprise Edition Interstage Studio Standard-J Edition	Interstage Studio, or Studio

Formal name	Abbreviation
Interstage Business Process Manager	Interstage BPM, or IBPM
Interstage Business Process Manager Analytics	Interstage BPM Analytics, or IBPM Analytics
Oracle Database 10g Enterprise Edition R10.1.0/R10.2.0 Oracle Database 10g Standard Edition R10.1.0/R10.2.0 Oracle Database 10g Standard Edition One R10.1.0/R10.2.0	Oracle10g, or Oracle
Oracle Database 11g Enterprise Edition Oracle Database 11g Standard Edition Oracle Database 11g Standard Edition One Oracle Database 11g R2 Enterprise Edition Oracle Database 11g R2 Standard Edition Oracle Database 11g R2 Standard Edition One	Oracle11g, or Oracle
Microsoft SQL Server 2005 Standard Edition Microsoft SQL Server 2005 Enterprise Edition	SQL Server 2005, or SQL Server
Microsoft SQL Server 2008 Standard Edition Microsoft SQL Server 2008 Enterprise Editon	SQL Server 2008, or SQL Server

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Contents

Chapter 1 System Configurations.....	1
1.1 Minimum Configuration: All Systems on the same computer.....	1
1.2 Typical Configuration: Server and Client type.....	2
1.3 Sensor on a Remote Computer.....	2
Chapter 2 System Requirements.....	4
2.1 Hardware Requirements for Interstage BPM Analytics Server.....	4
2.2 Hardware Requirements for Interstage BPM Analytics Studio.....	4
2.3 Minimum Software Requirements.....	4
Chapter 3 Preparing for installation.....	5
Chapter 4 Installing Interstage BPM Analytics Server.....	7
4.1 Installation.....	7
4.1.1 Installation for Windows.....	7
4.1.2 Installation for Linux.....	8
4.1.3 Installation for Solaris.....	8
4.2 Deployment to an Application Server.....	8
4.2.1 Deployment to Interstage Application Server.....	8
4.2.2 Deployment to Weblogic.....	8
4.2.3 Deployment to WebSphere.....	9
4.2.4 Deployment to JBoss.....	10
4.3 Post-Installation Tasks.....	11
4.3.1 Security Provided by Folder Access Restrictions.....	11
4.3.2 Changing the Management Console Password.....	12
Chapter 5 Installing Interstage BPM Analytics Studio.....	13
Chapter 6 Installing Sensors for remote systems.....	14
6.1 Installation.....	14
6.1.1 Installation for Windows.....	15
Chapter 7 Uninstalling Interstage BPM Analytics.....	16
7.1 Tasks required before uninstalling.....	16
7.1.1 Undeploying Analytics Server.....	16
7.2 Uninstall from Windows.....	16
7.3 Uninstall from Linux.....	16
7.4 Uninstall from Solaris.....	16
7.5 Tasks required after uninstalling.....	17
7.5.1 Deleting the Interstage BPM Analytics Server Databases.....	17
Chapter 8 Procedure for setup execution environment.....	18
8.1 Setup / Configuration flowchart.....	18
8.2 Basic setup.....	19
8.2.1 Create workspace and users for the Interstage BPM Analytics Events DB.....	19
8.2.1.1 Oracle.....	20
8.2.1.2 SQL Server.....	21
8.2.1.3 DB2.....	22
8.2.2 Set up using the Interstage BPM Analytics Management Console.....	23
8.2.2.1 Set up JDBC driver at the Server.....	24
8.2.2.2 Create tables on RDB workspace.....	24
8.2.2.3 Configure Authentication type for the Dashboard.....	27
8.2.2.4 Register Interstage BPM Analytics Studio users who configure Interstage BPM Analytics parameters.....	27
8.2.2.5 Configure e-mail notification.....	28
8.3 Additional setup for the Interstage BPM link.....	28
8.3.1 Setup JDBC driver.....	28
8.3.2 Setup Model API.....	28

8.3.3 Other settings.....	29
8.4 Configure for the data monitoring.....	30
8.5 Configure for the process monitoring.....	32
8.5.1 Setup using Interstage BPM Studio.....	32
8.5.2 Setup using Interstage BPM Analytics Studio.....	33
8.6 Setup for Process Discovery (BPM-E) Integration.....	34
8.6.1 Overview of setup procedures.....	34
8.6.2 Install the Process Discovery (BPM-E).....	34
8.6.3 Configure the integration parameters on Interstage BPM Analytics.....	34
8.6.4 Configure the Integration parameters on Process Discovery (BPM-E).....	34
Appendix A Required Resources.....	36
A.1 Disk Space Required at Installation.....	36
A.2 Save Area for Monitoring Settings Data.....	36
A.3 Work Areas.....	36
A.3.1 Overview of Work Areas.....	36
A.3.2 Estimating the Sensor Work Area.....	37
A.3.3 Estimating the Server Work Area.....	40
Appendix B Required disk size for database.....	42
B.1 Summary of disk size (It is common in all data bases).....	42
B.2 Database size necessary for each operation pattern (It is common in all databases).....	42
B.2.1 Pattern 1 : monitoring of a small scale database.....	42
B.2.2 Pattern 2 : monitoring of a large scale database.....	43
B.2.3 Pattern 3 : monitoring of a small scale workflow system.....	43
B.2.4 Pattern 4 : monitoring of a large scale workflow system.....	44
Appendix C Customize parameters of System Tables.....	45
C.1 Using Oracle.....	45
C.1.1 Preparing the Events DB.....	45
C.2 Using SQL Server.....	46
C.2.1 Preparing the Events DB.....	46
C.3 Using DB2.....	46
C.3.1 Preparing the Events DB.....	46
C.4 Preparing the Archive DB.....	47

Chapter 1 System Configurations

Interstage BPM Analytics consists of a Server and Client tier as shown in the figure below.

There are 3 types of components to install in order to configure the Interstage BPM Analytics environment:

- Server components installation

Installs all the Interstage BPM Analytics Server components: Sensor, Interstage BPM Analytics Engine, Front Service and Management function for the Management Console.

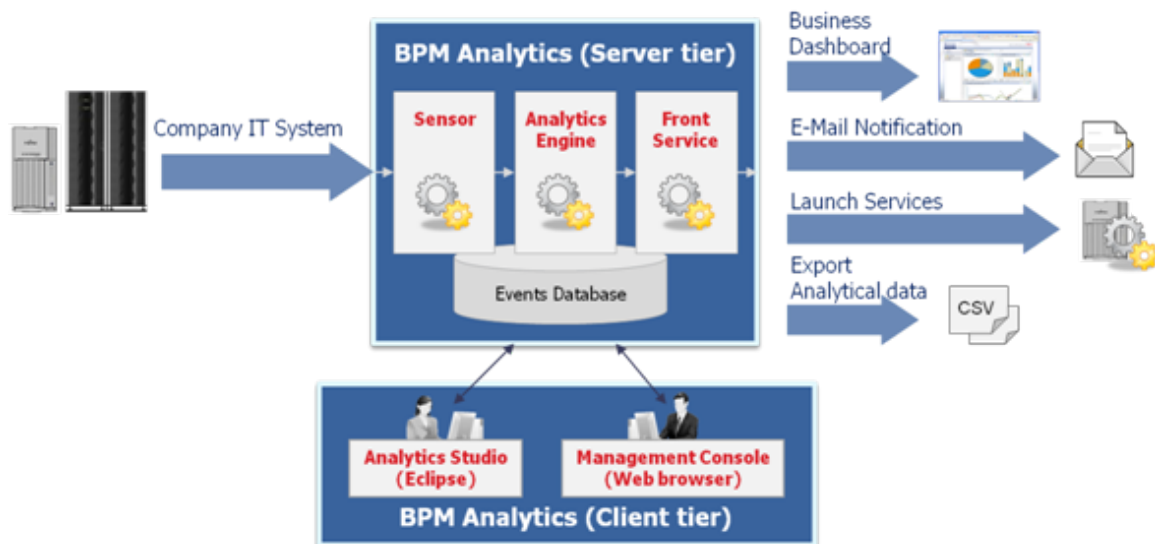
Interstage BPM Analytics Server runs on an Application Server.

- Client components installation

Installs Interstage BPM Analytics Studio. Interstage BPM Analytics Studio operates as an Eclipse plug-in.

- Sensor installation

Installs the Sensor component on to your existing IT system. Installation on a system other than the Interstage BPM Analytics Server is recommended if you wish to give priority to the performance of the Interstage BPM Analytics Server or extract Log files to Interstage BPM Analytics Server.



Interstage BPM Analytics requires the Events Database to manage the collected data and analyzed data. You have to set up the RDBMS to integrate with Interstage BPM Analytics. The types of RDBMS that can be used with Interstage BPM Analytics are described in the Release Notes.

The system configurations described in the next sections are typically used. The decision on which configuration to employ depends on your system's configuration.

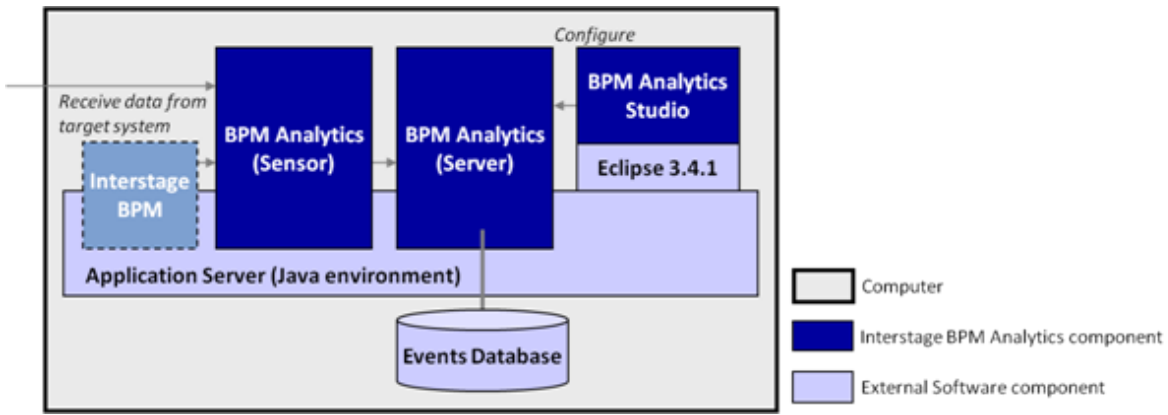
Note

Allocation of the Interstage BPM Analytics Server and the Events Database on separate systems has the advantage of enabling server load balancing, but the following points must be noted:

- The Interstage BPM Analytics Server does not operate correctly if the database system fails or if the network is disconnected.
- The synchronization of operations between the two systems needs to be considered.

1.1 Minimum Configuration: All Systems on the same computer

You can install the Server and Client on the same computer.

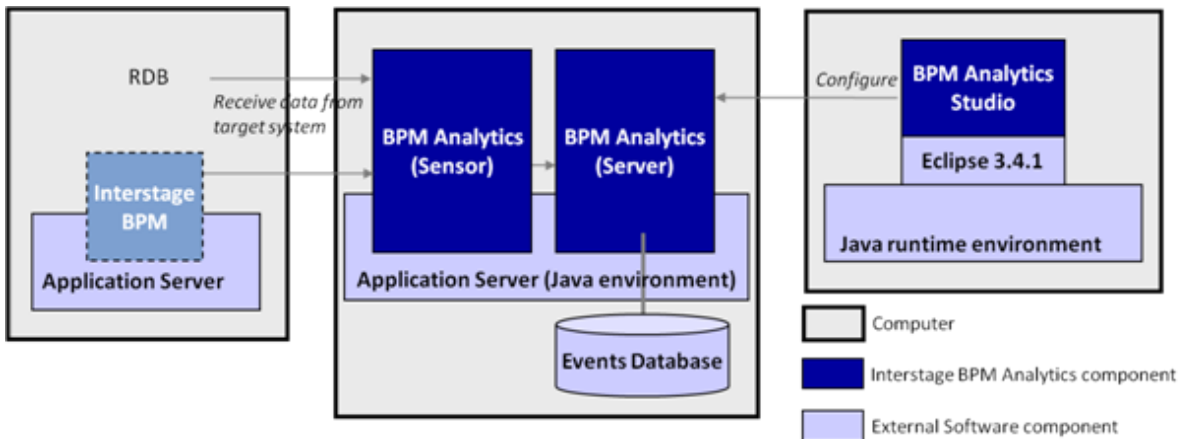


Point

The Sensor component is installed automatically during the Server component installation.

1.2 Typical Configuration: Server and Client type

This type of environment is the most typical for using Interstage BPM Analytics.

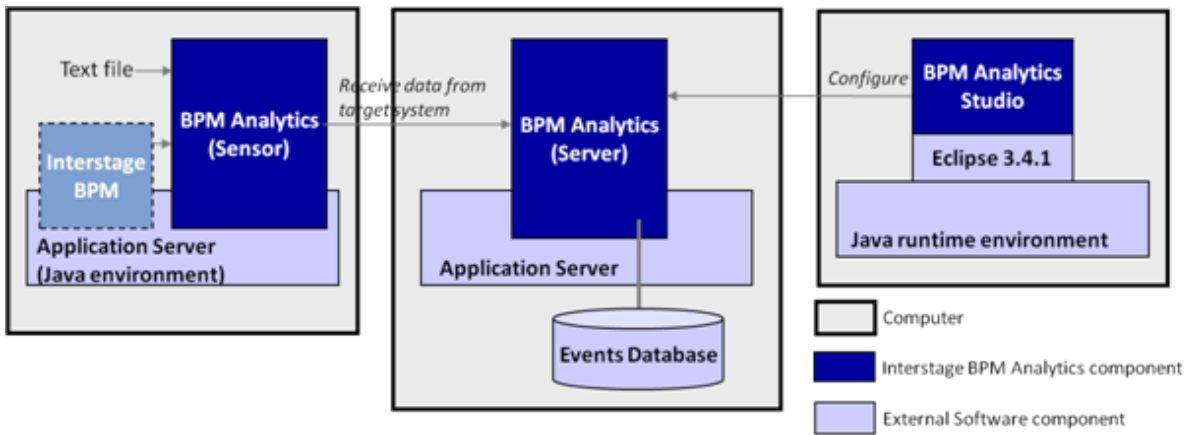


Point

The Sensor component is installed automatically during the Server component installation. The Sensor collects data from each target system using remote access such as JDBC or RMI.

1.3 Sensor on a Remote Computer

The following diagram shows a configuration where the Server and Sensors are installed on separate computers:



Point

The Sensor can be installed on a remote computer in the following situation:

The network between Interstage BPM Analytics (Server) and the Target system is not able to allow JDBC access. In this case Interstage BPM Analytics uses SOAP protocol.

Extracting a Text file from a remote computer.

Note

When the Interstage BPM is configured on the remote computer, the Console component of the Interstage BPM should be installed on the computer where the Analytics Server is installed.

Chapter 2 System Requirements

2.1 Hardware Requirements for Interstage BPM Analytics Server

Machine

Operating System	Machine
Windows	Fujitsu PRIMERGY or other Intel Architecture server
Solaris	Fujitsu PRIMEPOWER or other SPARC Architecture Solaris servers
Linux	Fujitsu PRIMERGY or other Intel Architecture server

Memory

Minimum: 1 GB

Recommended: 2 GB or more

Hard Drive

Recommended: 1 GB of free space for installation and during runtime

(Please refer to "[Appendix A Required Resources](#)" and "[Appendix B Required disk size for database](#)" for more detailed information and for the method to calculate the appropriate minimum free space size.)

2.2 Hardware Requirements for Interstage BPM Analytics Studio

Machine

Operating System	Machine
Windows	Fujitsu Lifebook or other Intel Architecture PC

Memory

Minimum: 512 KB

Recommended: 1 GB or more

Hard Drive

Recommended: 50 MB of free space for installation

2.3 Minimum Software Requirements

For software requirements, refer to the *Release Notes*.

Chapter 3 Preparing for installation

This chapter explains how to set up your environment before you install Interstage BPM Analytics.

Interstage BPM Analytics Server

Installation and setup of the following software must have already been completed prior to installation of the Interstage BPM Analytics Server:

- Application Server
 - Interstage Application Server, or
 - WebLogic, or
 - WebSphere, or
 - JBoss

- DBMS

A DBMS is used to manage the Interstage BPM Analytics' s management DB (called the Events Database).

- Oracle, or
- SQL Server, or
- DB2

- JDBC drivers

JDBC drivers are used for following purposes:

- to access the Interstage BPM Analytics' s management DB (called the Events Database) in which the extracted data and analysed results are stored.
- to access a remote system using a RDB sensor or a Interstage BPM sensor.

JDBC drivers are not included with the Interstage BPM Analytics product. These are delivered with several DBMS packages or from the database vendor' s Web site. You must choose the correct JDBC driver to install. Refer to the applicable database's User Manual for its JDBC driver installation details.

Interstage BPM Analytics Studio (Client)

Installation and setup of the following software must already be completed prior to installation of the Interstage BPM Analytics Studio (Client):

- Interstage Business Process Manager' s Studio function, or
- Eclipse 3.4.1 + GEF 3.4.1

Sensor on Remote system (if the Remote system has an Application Server)

Installation and setup of the following software must already be completed prior to installation of the Sensor on Remote system (if the Remote system has an Application Server):

- JDBC drivers (only for access to RDB or Interstage BPM)

JDBC drivers are not included with the Interstage BPM Analytics product. These are delivered with several DBMS packages or from the database vendor' s Web site. You must choose the correct JDBC driver to install. Refer to the applicable database's User Manual for its JDBC driver installation details.

Sensor on Remote system (no Application server environment)

In this environment, you can only use the Windows and Log File adapter.

Installation and setup of the following software must already be completed prior to installation of the Interstage BPM Analytics Server:

- JDK 5.0 or JRE 5.0

The JDK or JRE is provided by Sun Microsystems.

Refer to the following website for information concerning how to obtain these modules:

<http://java.sun.com/>

Chapter 4 Installing Interstage BPM Analytics Server

This section describes procedures for the installation and deployment of the Interstage BPM Analytics Server.

4.1 Installation

The following parameters apply to the installation process:

Parameters	Description
Installation Type	Select "Install Server component" on first installation screen.
Install directory	The default value is the "/ibpmm" directory on the System drive. For example: c:/ibpmm.
Workspace directory	The default value is the "/ibpmm_data" directory on the System drive. For example: c:/ibpmm_data.
Application Server Type	If Interstage Application Server is installed on your machine, the Analytics Installer will automatically select it and install Interstage BPM Analytics on the Interstage Application Server.
Java Home directory	If Interstage Application Server is installed on your machine, the Installer will automatically set the Java Home directory from Interstage Application Server's configuration.
FQDN or IP Address of Application Server	If Interstage Application Server is installed on your machine, the Installer will automatically set the FQDN or IP Address from Interstage Application Server's configuration. When you install on another Application Server, you must specify the correct FQDN or IP Address parameter for that particular server.
Port Number	If Interstage Application Server is installed on your machine, the Installer will automatically set the Port Number from Interstage Application Server's configuration. When you install on another Application Server, you must specify the correct Port Number parameter for that particular server.



Note

The "Admin server functions (multi-server management functions)" cannot be used in an Interstage Application Server environment that runs Interstage BPM Analytics.

4.1.1 Installation for Windows

Installation Process for Windows

This section describes the process for installing the Interstage BPM Analytics Server on a Windows system.

1. Log in, with administrator authority, to the server where the Interstage BPM Analytics Server is to be installed.
2. Insert the "Interstage BPM Analytics 11.1" CD-ROM into the CD-ROM drive.
3. If the installation does not begin automatically, double click on "autorun.exe" in the root directory of the installation CD-ROM.
4. Click **Install** on the displayed screen.
5. On the [Installation type selection] screen, select "Install Server components", then click the **Next** button.

6. If Interstage Application Server is not installed, the installer displays a drop-down list of supported Application Servers. Select the appropriate Application Server for your environment. This drop-down selection list will not appear if Interstage Application Server is installed.
7. Follow the installation wizard's sequence of dialog boxes, entering your parameters to complete the installation.

4.1.2 Installation for Linux

Installation Process for Linux

This section describes the process for installing the Interstage BPM Analytics Server on a Linux system.

1. Log in to the system as root.
2. Insert the "Interstage BPM Analytics 11.0" CD-ROM into the CD-ROM drive.
3. Ensure that it is mounted on the following directory:

```
# cd /media/IBPM_ANALYTICS/
```
4. Execute installation script:

```
# /bin/sh install.sh
```
5. Follow the sequence of parameter confirmation messages to complete the installation.

4.1.3 Installation for Solaris

Installation Process for Solaris

This section describes the process for installing the Interstage BPM Analytics Server on a Solaris system.

1. Log in to the Solaris system as root.
2. Insert the "Interstage BPM Analytics 11.0" CD-ROM into the CD-ROM drive.
3. Ensure that it is mounted on the following directory:

```
# cd /cdrom/ibpm_analytics
```
4. Execute installation script:

```
# install.sh
```
5. Follow the sequence of parameter confirmation messages to complete the installation.

4.2 Deployment to an Application Server

4.2.1 Deployment to Interstage Application Server

No operation is required. The Interstage BPM Analytics server is automatically deployed to Interstage Application Server by its installer.

4.2.2 Deployment to Weblogic

Procedures for Deployment to WebLogic 10.3

1. Create the following directory and sub-directories on your machine. The exact path and directory names will depend on the operating system used:
On Windows:
C:/ibpmm/bpmm/ibpmm

On Linux or Solaris:

```
/var/opt/FJSVibpma/ibpmm
```

2. Extract the files from `ibpmm.war` into the `ibpmm` directory. Use the following Java command:

On Windows:

```
jar -xvf C:/ibpmm/bpmm/war/ibpmm.war
```

On Linux or Solaris:

```
jar -xvf /opt/FJSVibpma/war/ibpmm.war
```

3. Start the WebLogic server.
4. Start the Server Instance on which the Interstage BPM Analytics Server will be deployed.
5. Use the following procedure to deploy "ibpmm Web Application" to the WebLogic Server Instance:
 1. Login to "WebLogic Admin Server Console".
 2. `http://host1:7001/console/`
 3. Select "Deployments" from the "WebLogic Server Administration Console".
 4. Click the **Install** button from the "Deployments" menu on the WebLogic Server Administration console.
 5. Select Location "`C:/ibpmm/bpmm/ibpmm`" (Windows) or "`/var/opt/FJSVibpma/ibpmm`" (Linux or Solaris) and click **Next**.
If multiple target servers are available, select one of servers and click **Next**.
 6. Select "Install this deployment as an application" and click **Next**.
 7. Check that the Name is "ibpmm" and click the **Finish** button.
6. "Interstage BPM Analytics Servlet" will be started.



Note

Do not change the servlet context name "ibpmm".



Note

In order to use the Interstage BPM Console together with Interstage BPM Analytics in the same WebLogic domain, after deploying the Interstage BPM Analytics server check that WebLogic's security configuration in its `config.xml` file is still correct. This check is required because the deployment process may disrupt WebLogic's security configuration.

Refer to "7.6.5 Enabling Web Service Operations / Special WebLogic Server Configurations to Enable Web Service Operations" in "*Interstage BPM Server and Console Installation Guide (BEA WebLogic Server)*" for details.

4.2.3 Deployment to WebSphere

Procedures for Deployment to WebSphere 6.1

1. Login to the WebSphere Administrative Console.
2. Select Applications > Install New Application.
3. Click **Browse** and navigate to the location of the Interstage BPM Analytics server WAR file (`ibpmm.war`).

For example:

On Windows:

```
C:/ibpmm/bpmm/war/ibpmm.war
```

On Linux or Solaris:

/opt/FJSVibpma/war/ibpmm.war

4. Enter the context root (ibpmm) in the Context Root field.

Note: The context root must be "ibpmm".

5. Click **Next**.

A pop-up appears asking you to "Please Wait...". The Interstage BPM Analytics Server is being deployed. Please wait while it is being installed. This could take several minutes.

When the deployment has completed, the Step 1: **Select installation options** page will appear.

6. Accept all defaults and click **Next**.

Note: The Application Name must be ibpmm_war.

Step 2: The **Map modules to servers** page appears.

7. Select ibpmm and click **Next**.

Step 3: The Map virtual hosts for Web modules page appears.

8. Select ibpmm and click **Next**.

Step 4: the **Summary** appears.

9. Click **Finish** to complete the installation.

An installation status page appears along with a pop-up dialog asking you to "Please Wait...". Status messages will begin to appear. Please wait while the Interstage BPM Analytics Server is being deployed. This could take several minutes.

When the deployment has completed, the message "Application ibpmm_war installed successfully" appears.

10. Click the "Save directly to Master Configuration" link to save your changes.

The Interstage BPM Analytics Server will be saved as a new Web Application in the WebSphere Application Server. When saving is completed, the **Preparing for the application installation** page will re-appear.

11. Select Applications > Enterprise Applications.

A list of Enterprise Applications appears. ibpmm_war appears on the list with a red icon indicating that it has not been started.

12. Select ibpmm_war and click the **Start** button to start the Interstage BPM Analytics Server application.

A pop-up dialog asking you to "Please Wait..." appears. It could take a few minutes to start.

When the Interstage BPM Analytics Server has started, the Enterprise Applications page appears with a message informing you that the Interstage BPM Analytics Server has started.

4.2.4 Deployment to JBoss

Procedures for Deployment to JBoss Enterprise Application Platform 5.0

1. Create a directory on your machine in the JBoss Installation Directories. This will be your Interstage BPM Analytics Server deployment directory.

For example purposes, the following directory will be used:

On Windows:

<JBoss Installation Directory>/server/default/deploy/ibpmm.war

On Linux or Solaris:

<JBoss Installation Directory>/server/default/deploy/ibpmm.war

2. Change directory to your Interstage BPM Analytics Server deployment directory, and extract the files from ibpmm.war into the deployment directory.

Use the following Java command:

On Windows:


```
# cd <JBoss Installation Directory>/server/default/deploy/ibpmm.war
# jar -xvf C:/ibpmm/bpmm/war/ibpmm.war
On Linux or Solaris:
# cd <JBoss Installation Directory>/server/default/deploy/ibpmm.war
# jar -xvf /opt/FJSVibpma/war/ibpmm.war
```

3. Start the JBoss Application Server by using run.bat command (On Linux or Solaris, run.sh).

Note

1. If you start run.bat or run.sh, set the server IP address to JBoss settings to allow access. And set the IP addresses in which client software are running.
2. For example, you can use the argument, -b 0.0.0.0, if you allow all clients to access to JBoss.

Windows:

```
run.bat -b 0.0.0.0
```

Linux or Solaris:

```
run.sh -b 0.0.0.0
```

Note

If you want to use the same server configuration for IBPM server on the JBoss application server, the following Interstage BPM Analytics Server deployment directory should be used instead:

On Windows:

```
<JBoss Installation Directory>/server/ibpm/deploy/ibpmm.war
```

On Linux or Solaris:

```
<JBoss Installation Directory>/server/ibpm/deploy/ibpmm.war
```

And use runIBPM.bat command (On Linux or Solaris, runIBPM.sh) to start JBoss.

In addition, set the IP addresses to JBoss to allow accesses as well as run.bat.

4.3 Post-Installation Tasks

This section describes the tasks to be performed after installation.

4.3.1 Security Provided by Folder Access Restrictions

For security purposes, apply the following measures to the Interstage Application Server install folder and the product install folder.

Security Measures for the Interstage Application Server Install Folder

It is recommended that the access permission be changed so that unauthorized users are not permitted to access the folders and files under the Interstage Application Server install folder.

Refer to "Common Measures" in the "Interstage Application Server Security System Operator's Guide" for details.

The Interstage Application Server issetfoldersecurity command can be used to change the access permissions. Refer to "issetfoldersecurity" in the "Interstage Application Server Reference Manual (Commands)" for details of this command.

Security Measures for the Install Folder

If the access permissions need to be changed for the folders and files under the install folder, it is recommended that the permissions are changed using Windows functions.

Check the security status of the install folder using the **Properties** function in Windows Explorer. Take measures such as removing "Everyone" from the access permissions and assigning access permission to only specified users.

4.3.2 Changing the Management Console Password

For security purposes, it is recommended that you change the management console password from its initial value.

Refer to the "*Interstage Business Process Manager Analytics Management Console Guide*" for information on how to change the password.

Chapter 5 Installing Interstage BPM Analytics Studio

This section describes the client installation procedures. The client only runs in a Windows environment.

The following parameters apply to the installation process:

Parameters	Description
Installation Type	Please specify "Client" on first installation screen.
Install directory	Manuals are installed at this directory. The default value is "/ibpmm" directory on the System drive. For example: "C:/ibpmm"
Install Location of Analytics Studio Plug-in	Please specify the directory in which the Eclipse runtime is located. The default installation directory shown by the installer is determined by the following rules: If Interstage BPM Studio is installed on your machine, the Installer will automatically show its installed directory. <Interstage BPM root directory>\InterstageBPM_studio\bin ex) C:\Fujitsu\InterstageBPM_studio\bin If Interstage Studio is installed on your machine, the Installer will automatically show its installed directory. <Interstage root directory>\IDE\0902_WB34\eclipse ex) C:\Interstage\IDE\0902_WB34\eclipse If Eclipse is installed on your machine, the Installer will show a fixed directory "c:/eclipse". You should change this to point to the correct Eclipse installation directory.

Note

If the Java EE workbench is not installed on the Interstage Studio, Analytics Studio does not work.

The Java EE workbench must be installed on the Interstage Studio.

Point

If the integration with Interstage BPM and Interstage BPM Analytics is required, Interstage BPM Studio must be installed before the installation of Interstage BPM Analytics Studio.

Installation Process

1. Login, with administrator authority, to the server where Interstage BPM Analytics Studio is to be installed.
2. Insert the "Interstage BPM Analytics 11.1" CD-ROM into the CD-ROM drive.
3. Click [Install] on the automatically displayed screen.
4. On the [Installation type selection] screen, select "Install Client components", then click the **Next** button.
5. Complete the installation by entering your parameters into the installation wizard dialogs.

Chapter 6 Installing Sensors for remote systems

This section describes the sensor installation procedures where you want the sensor to operate on a separate machine from the Interstage BPM Analytics Server.

Before starting sensor installation, please make sure that installation of the Interstage BPM Analytics Server has been completed, and that the Interstage BPM Analytics Server has been started. The sensor communicates with the Interstage BPM Analytics Server to register itself.

There are two types of sensors: a sensor that runs as a Web application, and a text file sensor that runs as a Windows service (the Windows service edition text file sensor). The Windows service edition text file sensor can be used to collect text data from machines where an application server is not installed.

By default, if the Interstage Application Server is installed, the installer attempts to install a Web application sensor; otherwise the installer attempts to install a Windows service edition text file sensor.

You can change sensor types in the customizing dialog of the installer.



The installer automatically deploys a Web application sensor only to Interstage Application Server. The application server type cannot be selected to install it unlike Interstage BPM Analytics Server.

6.1 Installation

The following parameters apply to the installation process:

Parameters	Description
Installation Type	Select "Install Sensor component" on the first installation screen.
Sensor Type	"the Web application edition sensor (Servlet)" or "the Windows service edition text file sensor"
Install directory	The default value is the "/ibpmm" directory on the System drive. For example: c:/ibpmm.
Workspace directory	The default value is the "/ibpmm_data" directory on the System drive. For example: c:/ibpmm_data.
Java Home directory	If Interstage Application Server is installed on your machine, the Installer will automatically set the Java Home directory from Interstage Application Server's configuration.
FQDN or IP Address of Application Server	If Interstage Application Server is installed on your machine, the Installer will automatically set the FQDN or IP Address from Interstage Application Server's configuration. When you install on another Application Server, you must specify the correct FQDN or IP Address parameter for that particular server.
Port Number of Application Server	If Interstage Application Server is installed on your machine, the Installer will automatically set the Port Number from Interstage Application Server's configuration. When you install on another Application Server, you must specify the correct Port Number parameter for that particular server.

Parameters	Description
FQDN or IP Address of Analytics Server	Specify FQDN or IP Address of the Interstage BPM Analytics Server in order to register an Interstage BPM Analytics Sensor.
Port Number of Analytics Server	Specify port number of the Interstage BPM Analytics Server in order to register an Interstage BPM Analytics Sensor.

6.1.1 Installation for Windows

Installation Process for Windows

This section describes the process for installing the Interstage BPM Analytics Sensor on to a Windows system.

1. Log in, with administrator authority, to the server where the Sensor is to be installed.
2. Insert the "Interstage BPM Analytics 11.1" CD-ROM into the CD-ROM drive.
3. If the installation does not begin automatically, double click on "autorun.exe" in the root directory of the installation CD-ROM.
4. Click **Install** on the displayed screen.
5. On the [Installation type selection] screen, select "Install Sensor components", then click the **Next** button.
6. The installer displays [Analytics Server Settings] screen.
Enter the FQDN or IP Address and the Port Number of the Interstage BPM Analytics Server, then click the **Next** button.
7. If you want to customize the parameters, choose [Sensor Type] or [Application Server Type], then select the **Change** radio button on the [Check Installation settings] screen, then click the **Next** button.
8. Follow the sequence of installation wizard dialogs, entering your parameters to complete the installation.

Chapter 7 Uninstalling Interstage BPM Analytics

Use the following procedures to uninstall Interstage BPM Analytics:

7.1 Tasks required before uninstalling

This section describes the tasks required before uninstall of the Interstage BPM Analytics.

7.1.1 Undeploying Analytics Server

If you use WebLogic, WebSphere or JBoss as Application Server, undeploy the Analytics Server from it before uninstalling. After undeploying, delete the deployment directory of ibpmm.war if you created it when deploying.

7.2 Uninstall from Windows

1. Login, with administrator authority, to the machine on which you will be performing the uninstall.
2. In the Control Panel, double-click the [Add or remove programs] icon.
3. From the list of currently installed software, select the following program, then click the [Remove] button:
Interstage BPM Analytics
4. Follow the prompts in the confirmation dialog screen to complete the uninstall.

7.3 Uninstall from Linux

1. Login, with root privileges, to the machine on which you will be performing the uninstall..
2. Mount the CD-ROM to the system.
3. Move to following directory:
`# cd /media/IBPM_ANALYTICS/`
4. Execute the uninstall script:
`# /bin/sh uninstall.sh`
5. Follow the sequence of confirmation messages to complete the uninstall.

7.4 Uninstall from Solaris

1. Login, with root privileges, to the machine on which you will be performing the uninstall.
2. Mount the CD-ROM to the system:
3. Move to following directory.
`# cd /cdrom/ibpm_analytics`
4. Execute the uninstall script:
`# uninstall.sh`
5. Follow the sequence of confirmation messages to complete the uninstall.

To delete only the sensor:

If you want to uninstall a sensor that is installed on a machine other than the one on which Interstage BPM Analytics Server is installed, perform the uninstall procedures on Windows, then use the Interstage BPM Analytics Management Console to delete the applicable sensor. Note that it is not recommended to delete only the sensor if the sensor is installed on the same machine as the Interstage BPM Analytics Server.

7.5 Tasks required after uninstalling

This section describes the tasks required after Interstage BPM Analytics has been uninstalled.

7.5.1 Deleting the Interstage BPM Analytics Server Databases

Delete the following databases after the Interstage BPM Analytics Server has been uninstalled:

- Events database
- Analysis database

Deleting the Event Database

Delete each of the areas that were prepared when the Events database was created:

Database product	Special-purpose areas prepared
Oracle	Table space (table area)
SQL Server	Database
DB2	Table space

Perform the deletion procedures described in the applicable database manual.

Note

- When Oracle is used, check whether or not the table space is also used as the default table area by other users. If a table space that is used as a default table area by another user is deleted, an error will occur when that user creates a table.
- If the Events database was not created in a special-purpose area when it was constructed, the above areas cannot be deleted. In this case, if you want to delete the data, each of the tables generated by operations must be deleted individually.

Deleting the Analysis Database

Delete the areas prepared as special-purpose areas in the same way as for the Events database.

Note

If the analysis database was not created in a special-purpose area when it was constructed, the above areas cannot be deleted. In this case, if you want to delete the data, each of the tables generated by operations must be deleted individually.

Deleting Analytics Studio's workspace

Delete the following directory.

When using the Interstage BPM Studio:

[Interstage BPM Studio install directory]\workspace\Interstage BPM Analytics

When using Eclipse:

[Selected workspace]\Interstage BPM Analytics

Chapter 8 Procedure for setup execution environment

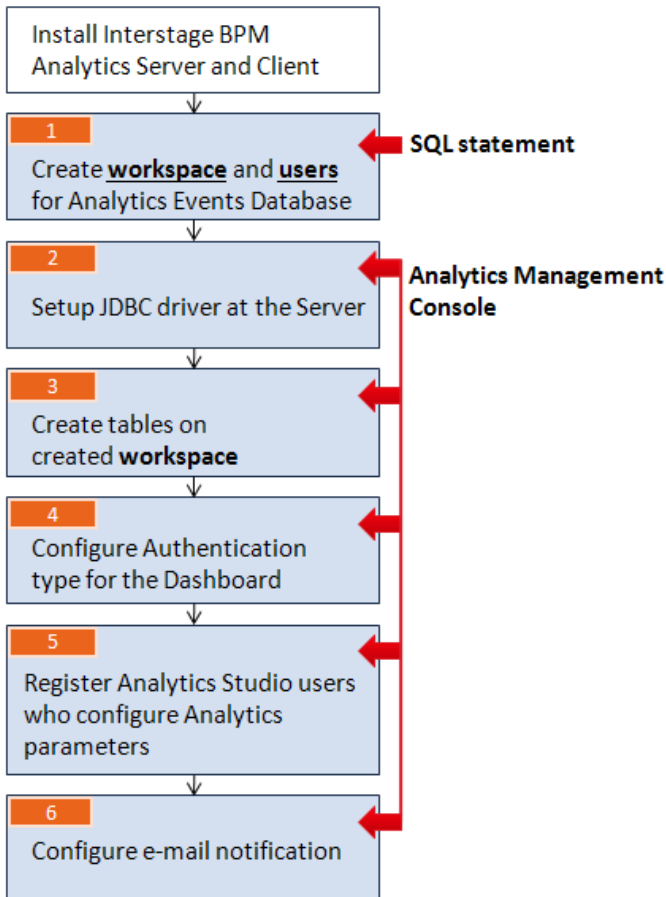
This chapter explains how to set up the execution environment after you have installed Interstage BPM Analytics.

8.1 Setup / Configuration flowchart

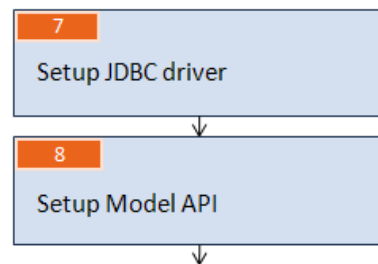
The overview of Setup / Configuration is shown below as some flowcharts.

Interstage BPM Analytics Server setup

Basic setup



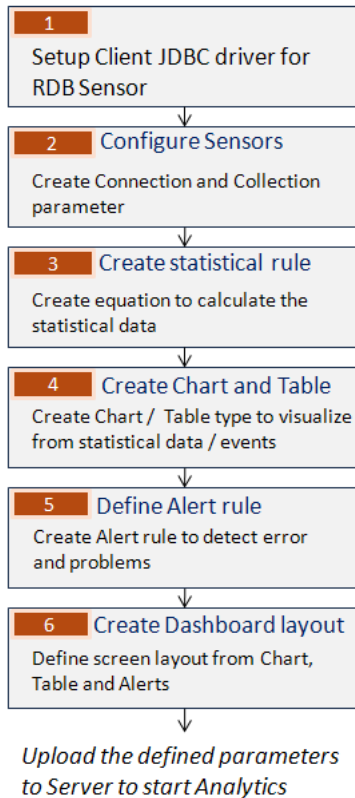
Additional setup for the Interstage BPM link



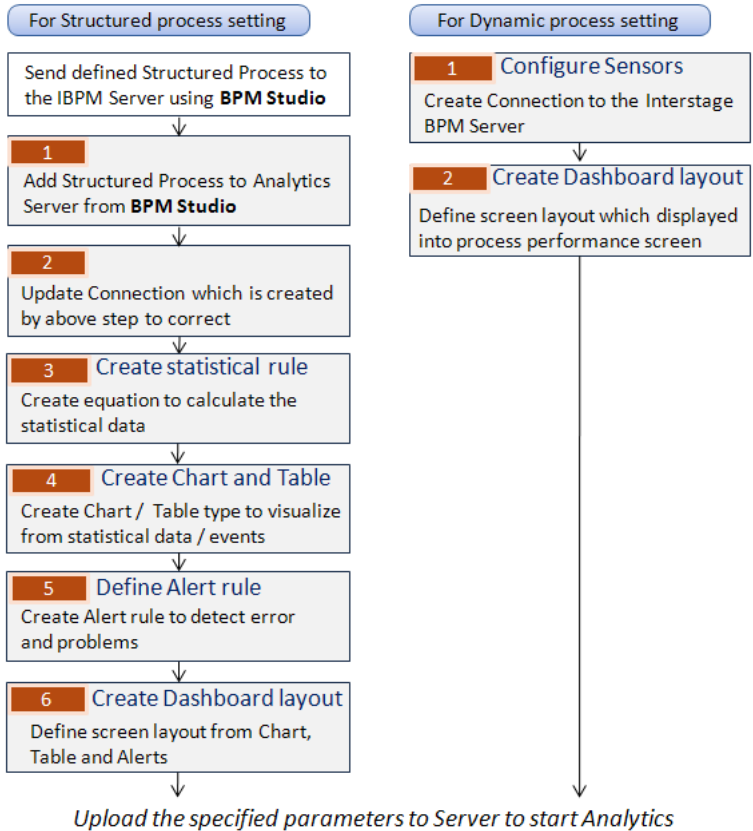
Next step:
Configure for the data monitoring(BAM) and process monitoring with Analytics Studio

Monitoring setup using Interstage BPM Analytics Studio

For the data monitoring (BAM)



For the process monitoring with Interstage BPM



8.2 Basic setup

8.2.1 Create workspace and users for the Interstage BPM Analytics Events DB

This section explains how to create workspace and users for the Events Database (DB) (or Archive DB).

The database that is used to store Interstage BPM Analytics events is called the Events DB. Another database, called the Archive DB, is used to move event data out of the Events DB to reduce the amount of data stored in it.



Note

Prepare dedicated database areas for the Events DB (and the Archive DB). If this operation is stopped before completing, delete the relevant database areas in their entirety.

(It is not possible to delete individually the tables used by Interstage BPM Analytics.)

It is necessary that separate dedicated areas be allocated for the Events DB and the Archive DB.

Database types

In order to create the Events DB, any of the following database systems can be used:

- Oracle10g/11g
- SQL Server 2005/2008

- DB2 UDB V9

Refer to the relevant database manuals for installation instructions.

The following table shows the areas that are used with each database product.

Database product	Dedicated area
Oracle	Tablespace
SQL Server	Database
DB2 UDB	Tablespace

Database users

Interstage BPM Analytics requires dedicated users for creating database tables and accessing the databases.

(In the case of the Archive DB, you must use a schema and user which are different from the schema and user used for the Events DB.)

Database users must have permission to execute the following SQL statements:

- CREATE TABLE
- ALTER TABLE
- CREATE SQQUENCE
- DROP TABLE
- CREATE INDEX
- DROP INDEX
- INSERT
- UPDATE
- DELETE
- SELECT

Refer to the relevant database manuals for instructions on creating database users with the correct permissions.

The following sections of this guide explain the procedures for creating tablespace in the work area and creating users for each database product.

8.2.1.1 Oracle

Creating a tablespace

Create a dedicated database that will be used as the Events DB. The tablespace can be given any name. Refer to the Oracle manual for details on creating an Oracle tablespace.

When the sample script is used, the initial size of the tablespace must be at least 60 MB. Refer to [Appendix B Required disk size for database](#) for details on the tablespace size that will be needed for actual operation.

Creating a user

Create a user that will be used by the Interstage BPM Analytics Server to access the Events DB.

Any name can be specified as the user name. Specify the tablespace created above in "Creating a tablespace" as the default tablespace of the user. Specify "UNLIMITED" as the privilege to expand the tablespace area.

The following example shows the SQL statement that would be used to specify the user name "EVENTUSER", the password "BPMM" and the tablespace name "USERS".

```
CREATE USER EVENTUSER IDENTIFIED BY BPMM QUOTA UNLIMITED ON USERS DEFAULT TABLESPACE USERS ;
```

Grant the user created above the following privileges, which are required for monitoring:

Privileges	Remarks
CREATE SESSION	System privileges
Privileges for expanding the area of the tablespace	"UNLIMITED TABLESPACE" system privilege, or area restriction specification in the "QUOTA" clause of the "CREATE USER" or "ALTER USER" statement (Specify "UNLIMITED" or an area size limitation)
CREATE TABLE	System privileges
CREATE SEQUENCE	System privileges

Refer to the Oracle manual for details on each privilege. A sample script is provided for creating the above user and assigning privileges. Edit the following script to suit the environment in which it will be used:

On Windows:

```
[Installation directory]\bpm\dbscripts\oracle\bpm-user-oracle.sql  
(C:\ibpmm\ibpmm\dbscripts\)
```

On Linux or Solaris:

```
[Installation directory]/dbscripts/oracle/bpm-user-oracle.sql  
(/opt/FJSVibpma/dbscripts/)
```

Refer to the Oracle manual for details on creating a database user.

8.2.1.2 SQL Server

Creating a tablespace

The following tools are used to create a database:

```
SQL Server Management Studio
```

Specify "SQL_Latin1_General_CP1_CS_AS " as the collating sequence when creating a database.

Refer to the SQL Server manual for details on creating an SQL Server database and the [Appendix B Required disk size for database](#) for details on estimating database sizes.

Creating a user

Create a database user and set a login ID for the Interstage BPM Analytics Server to access the database created in "Creating a database" above. There are no special restrictions on the names that can be specified as a login ID.

Use the following tools. Refer to the SQL Server manual for details on creating a database user.

```
SQL Server Management Studio
```

Select SQL Server authentication mode as the database user authentication method (the default setting is Windows authentication mode) and set a password.

Give the newly created database user the following privileges:

Required privileges
CONNECT
CREATE TABLE (for database)
CONTROL

Specify the user created above in "Creating a user" as the owner of the user's default schema. Refer to the SQL Server manual for details on each privilege.

A schema must be created after a user has been created. When creating the schema, set the user created above as the schema owner. Also set this schema as the default schema of the user.

8.2.1.3 DB2

Creating a tablespace

Create two tablespaces by using Control Center.

Tablespace name	Type	Page size
Any name	REGULAR	8K
	SYSTEM TEMPORARY	8K

Refer to the DB2 manual for details.



Note

The tablespace created as the default at creation of tablespace cannot be used due to a lack of page size. Use a tablespace with a page size greater than 8K.

Refer to [Appendix B Required disk size for database](#) for details on estimating database sizes.

Creating a user

Create a user that will be used by the Interstage BPM Analytics Server to access the Events DB. Refer to the DB2 manual for details on creating a user.

Grant the user created above the following privileges, which are required for monitoring:

Object	Privileges
Database	CONNECT
	CREATETAB
Tablespace	USE
Schema	CREATEIN
Privileges for expanding the area of the tablespace	"UNLIMITED TABLESPACE" system privilege, or area restriction specification in the "QUOTA" clause of the "CREATE USER" or "ALTER USER" statement (Specify "UNLIMITED" or an area size limitation)

Object	Privileges
CREATE TABLE	System privileges

Refer to the DB2 manual for details on each privilege.

Creating a schema

Create a schema for the Interstage BPM Analytics Server to access the Events DB. Refer to the DB2 manual for details on creating a schema. After creating a schema, confirm that the required privileges are given for the user created above.

If the name of the created schema differs from the name of a user who has access to the Events DB, then specify the following JDBC URL parameter explicitly as default schema for JDBC URL.

```
currentSchema = SCHEMA_NAME;
```

Specify the name of the created schema for *SCHEMA_NAME*.

Refer to the DB2 manual for details on specifying a parameter of JDBC URL.

8.2.2 Set up using the Interstage BPM Analytics Management Console

This section explains the procedures performed in using the Interstage BPM Analytics Management Console:

- Set up the JDBC driver on the Interstage BPM Analytics Server to use the Events DB
- Create tables in the RDB workspace
- Configure the Authentication method for the Dashboard
- Register Interstage BPM Analytics Studio users who can configure Interstage BPM Analytics parameters
- Configure e-mail notification

Logging onto the Management Console

Log on to the Interstage BPM Analytics Management Console using a Web browser.

The default password is “bpm”.

You can access the Interstage BPM Analytics Management Console directly from the Windowsstart menu as follows

```
Programs > Interstage Business Process Manager Analytics > Management Console
```

Or, enter the following URL in the address bar of a Web browser directly:

```
http://[Host]:[Port]/ibpmm/BPMAdminTool.do
```

Host:

Specify the host name or IP address of the machine in which the Interstage BPM Analytics Server is installed.

Port:

Specify the port number used by the Web server. If omitted, the default value of 80 will be used. The default port number for WebLogic environment is 40330.

For more detail in this section, refer to “*Interstage Business Process Manager Analytics Management Console Guide*”.

Information

If you want to change the password to log on to the Management Console, execute following operations:

```
IBPM Analytics > Set password
```

In this display, set the new administration password.

8.2.2.1 Set up JDBC driver at the Server

JDBC Drivers are necessary in order to set up the management database. (If you have already set up the drivers during the installation, you do not need to do so again.)

Install the JDBC driver into the server environment

Refer to the relevant database manual and/or the JDBC manual for details on installing the JDBC driver for the database concerned.

Set the JDBC driver

Using the Interstage BPM Analytics Management Console, set the JDBC driver on the server that hosts the Java servlet.

Execute following operations:

For using the Events DB

```
IBPM Analytics > System > Database Management > Event DB
```

For using the RDB sensor

```
IBPM Analytics > System > JAR File Management
```

In this display, add the JDBC driver file(s) into the database environment, and then restart the J2EE-based container in the Application Server.

Database type	Name of JDBC drivers
Oracle	ojdbc14.jar or ojdbc5.jar
SQL Server	sqljdbc.jar
DB2	db2jcc.jar db2jcc_license_cu.jar

8.2.2.2 Create tables on RDB workspace

The tables required by Interstage BPM Analytics are automatically created by following procedure.

Before creating tables in the RDB workspace, you will need to have set the database connection information in advance.

Setting the database connection information

Set the following connection information:

- Events DB connection information (Required)
- Archive DB connection information (Required only when using an Archive DB)

Events DB (Required)

Execute following operations:

IBPM Analytics > System > Database Management > Event DB

Parameter	Events DB connection
JDBC Driver	Required Select the item to be used from the drop-down menu.
JDBC Connection URL	Required
Table Space Name	Set this parameter when using Oracle.
User name	Required
Password	Required Always select the Set password check box.

Archive DB (when an Archive DB is used)

Execute following operations:

IBPM Analytics > System > Database Management > Archive DB

Parameter	Archive DB connection
JDBC Driver	Required Select the same objects that were selected for Events DB Connection Information.
JDBC Connection URL	Required
Table Space Name	Set this parameter when using Oracle.
User name	Required
Password	Required Always select the Set password check box.

After this operation, click the **Modify** button.

The indicated User must have the appropriate privileges in order to access the schemas and database.

If not, grant the user these privileges before creating the tables.

Creating tables in the RDB workspace

Execute following operations:

In this display, click the **Create Table** button in Events DB.

After that, confirm the status changes to “Created”.

(Apply the same operation in the Archive DB, if needed.)

Refer to [Appendix B Required disk size for database](#) for more information about the parameter values required to create a system table.



Information

It explains the parameter values for the Database tables that are automatically created from the Management Console.

Parameter Values for Oracle

Create location

Parameter	Description
Tablespace name	The tablespace name specified in the Management Console. If this is omitted, the default tablespace name for the user will be used.
Schema	The user name specified by the database connection information.

Parameter values that are set automatically for table

Parameter	Default Value for Oracle	Value specified in a script
Data block size	8192 bytes	Not specified
First extent size	5 data blocks	10M
Second extent size	5 data blocks	10M
Increasing rate compared to the immediately preceding extent	50%	Not specified
PCTUSER	This parameter is ignored if automatic segment space management for the tablespace has been turned on. (*1)	20%
PCTFREE	10%	10%

*1: Automatic segment space management for tablespaces is turned on by default.

Parameter values that are set automatically for indexes

Parameter	Default Value for Oracle	Value specified in a script
Data block size	8192 bytes	Not specified
First extent size	5 data blocks	10M
Second extent size	5 data blocks	10M
Increasing rate compared to the immediately preceding extent	50%	Not specified
PCTUSER	This parameter is ignored if automatic segment space management for the tablespace has been turned on. (*1)	Not specified
PCTFREE	10%	Not specified

*1: Automatic segment space management for tablespaces is turned on by default.

Parameter Values for SQL Server

Creation location

Parameter	Description
Database space	The parameter information is stored in the data file specified for the database specified in the JDBC URL.
Schema	The default schema specified for the JDBC connection user is used. (This will be "dbo" unless it is changed.)

Parameter values that are set automatically for table

Parameter	Default Value for Oracle	Value specified in a script
Storage structure	Heap structure	Not specified
Page length for the data part	8K (cannot be changed)	Not specified

Parameter values that are set automatically for indexes

Parameter	Default Value for Oracle	Value specified in a script
Storage structure	Heap structure	Not specified
Page length for the data part	8K (cannot be changed)	Not specified

Parameter Values for DB2

Creation location

Parameter	Description
Tablespace name	The table space under which the tables are created is automatically selected by DB2. Refer to the DB2 manual for details.
Schema	The default schema specified for the JDBC connection user is used. It is able to specify it explicitly by specifying the JDBC URL property.

The properties related to the page size of tables and indexes depend on the setting of the using table space.

8.2.2.3 Configure Authentication type for the Dashboard

Modify the authentication type for the Dashboard using the following operations, if required.

```
IBPM Analytics > System > Dashboard Authentication
```

In this display, select the item to be used from the drop-down menu, and click the **Modify** button.

After this operation, restart the Interstage BPM Analytics Server to apply the changes.



This procedure is not required if the user accepts the default authentication type.

8.2.2.4 Register Interstage BPM Analytics Studio users who configure Interstage BPM Analytics parameters

At least one Interstage BPM Analytics Studio user is required to configure Interstage BPM Analytics parameters.

The default user is registered in advance with the name “bpm” and the default user’s password is “bpm”.

Create new Interstage BPM Analytics Studio users by the following operations, if needed:

```
IBPM Analytics > System > Analytics Studio Authentication > Create a New User
```

In this display, enter the parameters (User ID, Password, Description) and click the **Create** button.

After that, confirm the User ID that was just created using the following operations:

```
IBPM Analytics > System > Analytics Studio Authentication > User List
```

8.2.2.5 Configure e-mail notification

Set the Mail parameters for notifying from Analytics Server, if needed:

```
IBPM Analytics > System > Mail > SMTP Server  
IBPM Analytics > System > Mail > SMTP Authentication  
IBPM Analytics > System > Mail > POP before SMTP Authentication
```

8.3 Additional setup for the Interstage BPM link

For the Interstage BPM link, you need to set up following procedure in addition to basic setup.

- Setup JDBC driver
- Setup Model API
- Other Settings

8.3.1 Setup JDBC driver

You need to set up JDBC drivers corresponding to database used on Interstage BPM.

See the [8.2.2.1 Set up JDBC driver at the Server](#) for details about this set up.

8.3.2 Setup Model API

In order to refer information of Interstage BPM by using the Model API, the Analytics Server requires Interstage BPM Client settings.

(The Model API is an application interface for controlling the Interstage BPM.)

Model API Client Settings

See the *Interstage BPM Developers Guide*. In particular, following chapters should be checked:

- When the Interstage BPM is configured on a local computer:
 - 4.1.1 Specify Configuration Setting for Interstage Application Server (Local)
 - 4.1.3 Specifying Configuration Settings for WebSphere Application Server for developing Standalone Applications (Local)
 - 4.1.4 Specifying Configuration Settings for WebSphere Application Server for Deploying Client J2EE Application (Local)
 - 4.1.7 Specifying Configuration Settings for WebLogic
 - 4.1.8 Specifying Configuration Settings for JBoss
- When the Interstage BPM is configured on a remote computer:
 - 4.1.2 Specify Configuration Setting for Interstage Application Server (Remote)

- 4.1.5 Specifying Configuration Settings for WebSphere Application Server for developing Standalone Applications (Remote)
- 4.1.6 Specifying Configuration Settings for WebSphere Application Server for Deploying Client J2EE Application (Remote)
- 4.1.7 Specifying Configuration Settings for WebLogic
- 4.1.8 Specifying Configuration Settings for JBoss

The Settings of the java archive files using Interstage BPM Analytics Management Console

The following java archive file should be set:

- iFlow.jar

On Windows:

<Interstage BPM Server Installation Directory>/client/lib/iFlow.jar

On Linux or Solaris:

/var/opt/FJSVibpm/client/lib/iFlow.jar



Note

When Interstage Application Server is used with the Interstage BPM, the setting of the following java archive file is also required:

- fujitsu-ibpm-engine-ejb_jar_client.jar

On Windows:

<Interstage Application Server Installation Directory>/J2EE/var/deployment/ijserver/<Work Unit Name of the Interstage BPM Server>/distribute/fujitsu-ibpm-engine.ear/fujitsu-ibpm-engine-ejb_jar_client.jar/fujitsu-ibpm-engine-ejb_jar_client.jar

On Linux or Solaris:

/var/opt/FJSVj2ee/deployment/ijserver/<Work Unit Name of the Interstage BPM Server>/distribute/fujitsu-ibpm-engine.ear/ fujitsu-ibpm-engine-ejb_jar_client.jar/fujitsu-ibpm-engine-ejb_jar_client.jar

1. Log onto the Analytics Management Console

```
Programs > Interstage Business Process Manager Analytics > Management Console
```

2. Set the jar files

```
BPM Analytics > System > JAR File Management
```

In this display, add jar files (iflow.jar and fujitsu-ibpm-engine-ejb_jar_client.jar), and restart the based J2EE container on the Application Server.

8.3.3 Other settings

Configuration parameters of the Interstage BPM

When linking to the Interstage BPM, the Interstage BPM's "SendAnalyticsEvents" configuration parameter must be set to "true".

In order to configure this parameter, refer to the following chapter of the *Interstage BPM Administration Guide*:

- 3.6 Configuring Interstage BPM for Interstage Analytics



Note

When you add the new Tenant, the initial value of this configuration parameter is "false".

Manually change this parameter setting to "true".

Interstage BPM Console Integration

In order to display the dashboard for process monitoring, the Interstage BPM Console is used.

For configuring this environment, refer to the chapters of the *Interstage Business Process Manager Server and Console Installation Guide* that correspond to the type of Application Server that is installed:

- Interstage BPM Server and Console Installation Guide (Interstage Application Server)
 - 7.5.2 Configuring Interstage BPM Console to work with Interstage Analytics
- Interstage BPM Server and Console Installation Guide (JBoss Application Server)
 - 7.5.2 Configuring Interstage BPM Console to work with Interstage Analytics
- Interstage BPM Server and Console Installation Guide (BEA WebLogic Server)
 - 7.6.2 Configuring Interstage BPM Console to work with Interstage Analytics
- Interstage BPM Server and Console Installation Guide (WebSphere Application Server)
 - 7.5.2 Configuring Interstage BPM Console to work with Interstage Analytics

Application Server setting (for Interstage Application Server only)

JMS Settings

Use the Interstage Management Console to confirm that the "JMS Settings" is set to "Yes".

The procedure for confirming this setting is as follows:

```
Interstage > Interstage Application Server > System > Update System Settings > Detailed Settings >
Event Service Settings ( or JMS Settings)
```

If the setting is currently "No", change it to "Yes".

Naming Service Settings for Remote Host

If the Interstage BPM Server is configured on a Remote Computer, use the Interstage Management Console to set the Remote Server Hostname.

The procedure for making this setting is as follows:

```
Interstage > Interstage Application Server > System > Update System Settings > Detailed Settings >
Naming Service Settings
```

8.4 Configure for the data monitoring

This section explains following procedures performed using Interstage BPM Analytics Studio:

- Setup the JDBC driver at the Client when an RDB sensor is used
- Configure Sensors
- Create statistical rules
- Create Charts and Tables
- Create Alert rules
- Create Dashboard layouts
- Upload the specified parameters to the Analytics server

The Interstage BPM Analytics Studio has two editing modes:

- Single-user mode
- Multi-user mode

The extent and operation of the editing lock, and conditions that enable other users to edit, are as follows:

	Single-user mode	Multi-user mode
Coverage of editing lock	All Interstage BPM Analytics definitions	Individual Interstage BPM Analytics definition
How to edit by other user	- Releasing the editing lock for all Interstage BPM Analytics definitions that are held by the current editing user.	- Releasing the editing lock for individual Interstage BPM Analytics definitions that are held by the current editing user.

See the "Chapter2 Using Analytics Studio > 2.2 Analytics Studio Workbench > Edit Mode button" in the *Interstage Business Process Manager Analytics Studio Guide* for detail.

Installing the Interstage BPM Analytics Client

You need to install the Interstage BPM Analytics client.

See the *Interstage BPM Analytics Installation Guide* for detail.

And, you also need to install the Adobe Flash Player 10.0.12 or later.

Setup Client JDBC driver for RDB Sensor

In order to use RDB sensors, you need to set up the JDBC drivers.

(If you have already set up the drivers during the installation, you do not need to do so again.)

Install the JDBC driver in the client environment.

Refer to the relevant database manual and/or the JDBC manual for details on installing the JDBC driver for the database concerned.

Set the JDBC driver on the Interstage BPM Analytics Studio.

Set the JDBC driver into the database environment on the Interstage BPM Analytics Studio using the import external module function.

See the "Chapter2 Using Analytics Studio > 2.2 Analytics Studio Workbench > Configuration/Launch button" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

Configure Sensors

In this part, you configure sensors which you intend to use to bring data into the Events Database.

See the "Chapter 4 Interstage BPM Analytics Wizards > 4.1 Connection Wizard" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

Create statistical rule

In this part, you create statistical rules for doing calculations on the data in the Events Database.

See the "Chapter 4 Interstage BPM Analytics Wizards > 4.2 Statistical data Wizard" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

Create Chart and Table

In this part, you create Chart and Tables.

See the "Chapter 4 Interstage BPM Analytics Wizards > 4.3 Chart Wizard" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

Create Alert rule

In this part, you create the Alert rules.

See the "Chapter 4 Interstage BPM Analytics Wizards > 4.4 Alerts and Action Wizard" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

Create Dashboard layout

In this part, you create the Dashboard layouts for presentation of the data, alerts, etc..

See the "Chapter 4 Interstage BPM Analytics Wizards > 4.5 Presentation Wizard" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

Upload the specified parameters to the Interstage BPM Analytic server

After executing these procedures, upload the specified parameters to the Interstage BPM Analytics Server.

See the "Chapter 2 Using Analytics Studio > 2.2 Analytics Studio Workbench > Upload to Server button" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

When new Event Collection parameters and Event Processing parameters are included, you need to restart the Interstage BPM Analytics Server.

If you use the Interstage BPM Analytics Studio with its default settings, the Interstage BPM Analytics server will be automatically restarted after uploading new parameters from Interstage BPM Analytics Studio.

To restart the Interstage BPM Analytics server manually, see the *Interstage Business Process Manager Analytics Management Console Guide*.

8.5 Configure for the process monitoring

This section explains how to configure process monitoring using the Interstage BPM.

There are two process types for monitoring:

- Structured Process
- Dynamic Process

8.5.1 Setup using Interstage BPM Studio

This section explains how to configure the process monitoring sensor using Interstage BPM Studio.



.....
When the Dynamic Process is monitored, the setup using BPM Studio is not required because the Dynamic Process has no pre-defined process.
.....

Execute the following procedures in order:

1. Set up the connection to the Interstage BPM Console
2. Send the monitored target process to the Interstage BPM Server
3. Execute "Add Analytics setting" on the monitored target process

When executing this procedure, the wizard for setting the sensor of the process monitoring starts.

See the "BPM Studio Integration" in the *Interstage Business Process Manager Analytics Studio Guide* for details.

8.5.2 Setup using Interstage BPM Analytics Studio

This section explains the set up procedures using Interstage BPM Analytics Studio:

Configure Sensors

After setting up the monitored target process using BPM Studio, the sensor definition is created automatically.

On the other hand, the sensor definition for the Dynamic Process is created only one by default setting.

(All monitored events of the Dynamic Process are collected by this unique sensor definition.)

After that, you need to update the connection setting for the Interstage BPM link.

The required settings parameters are as follows.

Parameter	Explanation of setting value
IBPM System basic information	
Server host name	Specify the IBPM Server name Confirm the Server host name by accessing the following URL using management account: http://<HostName>:<Port>/fujitsu-ibpm-config-webapp/IBPMConfigServlet
Console host name	This parameter can be omitted. This parameter is for using in the future as the IBPM Console's IP address or computer name which is registered in DNS.
Tenant ID	Set the Tenant ID only if the Tenant of the event collection target is uniquely determined. Events from all Tenants are collected if this parameter is not specified. Confirm the available Tenant ID by accessing the following console URL: http://<HostName>:<Port>/console/TenantManager.page
Super user name / Password	Enter the Super user name and Password. Super user name and password are set by the IBPM Deployment tool during installation.
IBPM DB type	From the drop-down list, pick the type of IBPM DB.
Naming service vender	From the drop-down list, pick the Naming service vender as a type of Application Server
JDBC connection configuration	
JDBC connection URL	Enter the JDBC connection URL corresponding to the database used by the IBPM.
User name / Password	Enter the User name and Password that are required to access the IBPM database. The user name and password are set in the IBPM Deployment tool as an IBPM Database User during installation.
Connection setting for maintenance	
JMS Connection URL	Enter the JMS Connection URL. An example of the setting value for each application server is as follows: - <HOST_NAME> (Interstage) - iiop://<HOST_NAME> (WebSphere) - t3://<HOST>:49950 (WebLogic) - jnp://<HOST>:1099 (JBOSS)
Naming Service Connection URL	Enter the Naming Service Connection URL (This setting may be same as JMS Connection URL)
User / Password	Enter the User name and Password for JMS connection if needed

Other settings

For process monitoring, following additional procedures are also required.

Structured Process

- Create statistical rule
- Create Chart and Table
- Create Alert rule
- Create Dashboard layout

Dynamic Process

- Create Dashboard layouts

In case of monitoring of the Dynamic Process, define the screen layout which displayed into the process performance screen only.

These procedures are explained in the prior section. See the [8.4 Configure for the data monitoring](#).

8.6 Setup for Process Discovery (BPM-E) Integration

This section explains how to set up Process Discovery (BPM-E) Integration.

Refer this section only in case integrating the Process Discovery (BPM-E) with Interstage BPM Analytics.

8.6.1 Overview of setup procedures

Following procedures are required for Process Discovery (BPM-E) Integration.

1. Install the Process Discovery (BPM-E).
2. Configure the integration parameters on Interstage BPM Analytics.
3. Configure the Integration parameters on Process Discovery (BPM-E).

8.6.2 Install the Process Discovery (BPM-E)

See the "2.2 Installation" in the *Process Discovery (BPM-E) Event Extraction Tool Operation Guide* for details.

8.6.3 Configure the integration parameters on Interstage BPM Analytics

Following integration parameters are required to configure in order to integrate with Process Discovery (BPM-E)

- URL for launching the Web flow viewer on the Process Discovery (BPM-E).
- Scheduling parameter for outputting the integration data (History CSV).
- Directory of CSV output
- Preservation type of integration data

See the "5.7 Process Discovery" in the *Management Console Guide* for details.

8.6.4 Configure the Integration parameters on Process Discovery (BPM-E)

Configure the collecting schedule parameter on the Process Discovery (BPM-E) engine using configuration tool of Process Discovery (BPM-E).

Following parameters are required to configure using web console.

- Analytics data storage folder
- BPM-E CSV storage folder

- Interval time for extracting Analytics data

See the "3 Event extraction" in the *Process Discovery (BPM-E) Event Extraction Tool Operation Guide* for details.

And, configuration for BPM-E web flow viewer is required.

See the "2.3 Configuration for BPM-E web flow viewer in the *Process Discovery (BPM-E) Event Extraction Tool Operation Guide* for details.

That completes the set up of the Interstage BPM Analytics execution environment.

Appendix A Required Resources

This appendix describes the resources required and how to estimate these resources.

A.1 Disk Space Required at Installation

The following table shows the free space required at the time of installation.

Functions being installed	Free space required for installation
Server function	105MB
Client function	45MB
Sensor function	15MB
Windows service edition text file sensor	10MB

A.2 Save Area for Monitoring Settings Data

The following table shows the amount of free space required as a save area for the monitoring settings data managed by the Analytics Server.

Save area for monitoring settings data	Required free space
On the Analytics Server	10MB

A.3 Work Areas

This section describes how to estimate the work areas specified during installation of the Analytics Server and the sensor.

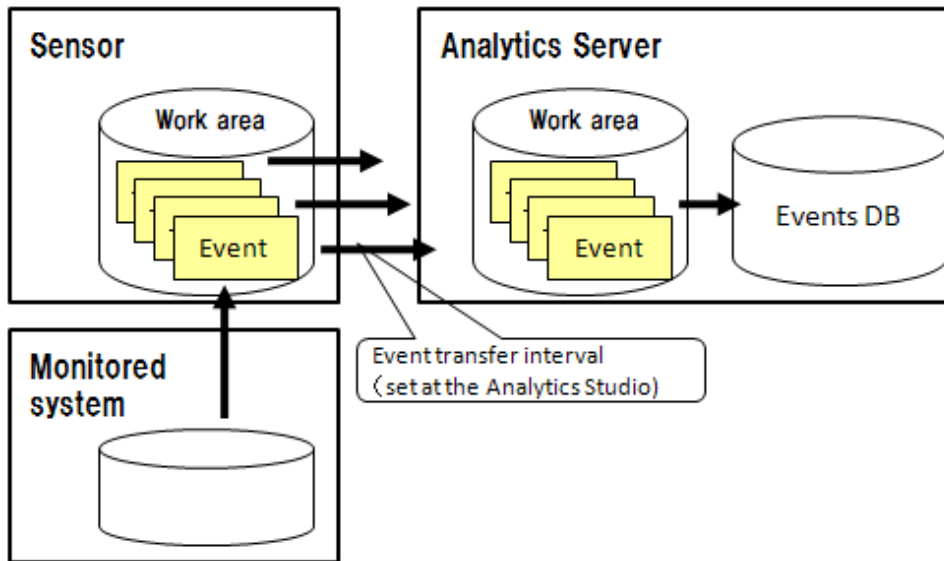
A.3.1 Overview of Work Areas

The work areas are for the temporary storage of events collected by the sensor and for holding settings information. They are not databases.

When the sensor transfers events to the Analytics Server, it transfers multiple events together. This reduces processing costs between the sensor and the Analytics Server, thereby improving performance. To achieve this, the sensor collects events, and transfers them at fixed intervals. This interval is called the "Event transfer interval", and is set from the monitor designer.

The server side receives event notifications from the sensor and stores them in the event database. Events database storage is asynchronous to reception of the event notification from the sensor. Therefore, after the notification, events are written to the work area as pooled events until they are able to be stored in the events database. When the processing to store the events in the events database is attempted, the events are then deleted.

If the processing to store the pooled events in the event database fails, the events may be output to the work area as error files, where they remain until they are successfully reregistered manually.



Work area sizes

The sections below explain the work area sizes.

- If the Analytics Server and the sensor run on the same machine:
Allocate the work area size to be the total size of the estimates for the "sensor work area" and the "server work area".
- If the Analytics Server and the sensor run on separate machines:
Allocate the "sensor work area" estimated size as the work area on the machine where the sensor is installed.
Allocate the "server work area" estimated size as the work area on the machine where the Analytics Server is installed.

A.3.2 Estimating the Sensor Work Area

Use the following formula to calculate the size of the work area:

$$\text{Required area size} = \text{Total of the work area sizes required for one event transfer interval from each sensor}$$

Work area size required for one event transfer interval

Use the following formula to calculate the work area size required for one event transfer interval:

$$\text{Work area size required for one event transfer interval} = \text{average number of events} * \text{event transfer interval} * \text{average event size} * 1.5$$

1.5: Safety coefficient (since collection is also performed during transfer, a value with a margin for error must be estimated.)

Average number of events

This is the average number of events collected by the sensor in one minute. This value is used as the "total of the average number of events collected for the task per minute".

Use the following formula to calculate the average number of events collected for the task per minute:

$$\text{Average number of events collected for the task per minute} = \text{number of events collected from one execution} / \text{execution interval (minutes)}$$

Event transfer interval

This is the interval at which pooled events are transferred from the sensor to the Analytics Server. The event transfer interval is set separately for each sensor from the Analytics Designer. The unit is "minutes".

Average event size

This is the area used by one pooled event.

The data type of attributes must be taken into account when calculating the average event size.

The following table shows the attribute length for each data type:

Data type	Attribute length (bytes) (data length + appended information)
Character string	Length of character string data in UTF-8 encoding + 50
Integer	Depends on the number of digits in the value + 50
Real number	Depends on the value + 50
Boolean	50
Date and time	80
Date	60
Time	60

Example of calculating the required area size

An example of calculating the required area size is shown below.

Average event size

Use the following formula to calculate the average event size

$\text{Average event size} = \text{Task name} (*1) + \text{event name} (*1) + \text{total of average attribute length of each attribute} + 270$ (bytes)

*1: Length in UTF-8 encoding

This example assumes the following attributes:

Attribute	Length
Task name	36 bytes
Event name	36 bytes
Average attribute length of character string type attribute A	150 bytes
Average attribute length of character string type attribute B	200 bytes
Average attribute length of character string type attribute C	250 bytes
Average attribute length of integer type attribute D	60 bytes
Average attribute length of integer type attribute E	60 bytes
Average attribute length of date and time type attribute F	60 bytes
Attribute name length	Uniformly 30 bytes

The formula is as follows:

Average event size
 = Task name (36) + event name (36) + total of each attribute length (attribute name length (30) * 6 + 780) + 270
 = 1302 bytes \approx 1.31 Kbyte

Average number of events

The average number of events that the sensor collects each minute is the total of the average number of events collected for the task each minute. In this example, the following tasks are set for Sensor A:

Task	Execution schedule	Average number of items collected	Average number of events collected per minute
Task A	Collected at 2 minute intervals	Average of 100 items collected each time	50 events
Task B	Collected at 5 minute intervals	Average of 50 items collected each time	10 events
Task C	Collected at 4 minute intervals	Average of 80 items collected each time	30 events

The average number of events that the sensor collects each minute is as follows:

Average number of events
 = 50 + 10 + 30
 = 90 (events)

Work area size required for one event transfer interval

The following table shows the requirements for various transfer intervals:

Event transfer interval	Formula	Required work area size
2 minutes	Average number of events (90) * transfer interval (2) * average size (1.31) * safety coefficient (1.5) = 353.7	About 354 (Kbytes)
5 minutes	Average number of events (90) * transfer interval (5) * average size (1.31) * safety coefficient (1.5) = 884.35	About 885 (Kbytes)
60 minutes	Average number of events (90) * transfer interval (60) * average size (1.31) * safety coefficient (1.5) = 10611	About 10.4 (Mbytes)
8 hours	Average number of events (90) * transfer interval (8 * 60) * average size (1.31) * safety coefficient (1.5) = 84888	About 82.9 (Mbytes)
24 hours	Average number of events (90) * transfer interval (24 * 60) * average size (1.31) * safety coefficient (1.5) = 254664	About 248.7 (M bytes)

Example of calculation assuming operation when communication with the server is not possible

In the above example, it is assumed that server operations are stopped for one hour for maintenance, from 2 am to 3 am. In this case, the area used by sensor A (event transfer interval: 2 minutes) for pooled events at night is as follows:

Size of required work area (354 Kbyte) * server stopped duration (1 * 60)
= 21240 (Kbyte) = approx 2.1 (Mbyte)

Note

If the Analytics Server is stopped for a long time, also stop the sensor. If only the sensor is running, events are pooled in the work area directory and an area shortage may occur.

A.3.3 Estimating the Server Work Area

Event notifications from the sensor are implemented in accordance with the event transfer interval of each sensor. Therefore, use the following formula to calculate the size for the work area.

Required area size = sum of maximum event capacity * safety coefficient

Maximum event capacity

The maximum event capacity indicates the maximum case of "number of events notified * average event size". This value can be calculated by adding together the value for each sensor.

Safety coefficient

The safety coefficient takes into account the possibility of subsequent events being notified before all the previously notified events are stored. Therefore, a safety coefficient value of 2 or more is recommended

Example of calculating the required area size

The required work area size can be calculated by multiplying the total amount of space used for events at each of the sensors by the safety coefficient. Refer to Section A.3.2, "[A.3.2 Estimating the Sensor Work Area](#)", for the formula to calculate the amount of space used for events at the sensor.

If the maximum event capacity of each sensor is 2.1 Mbyte, during the assumed night stopped time, and if there are 4 sensors, the required area size is as follows:

Required area size
= Total of maximum event capacity for events notified by each sensor (2.1 Mbyte * 4) * safety coefficient (2)
= 16.8 (Mbyte) = approx 17 (Mbyte)

Example of calculating an estimate if an error is assumed

An example of calculating an estimate when the following types of error are assumed is described below:

- Data value error (for example, the maximum length of a character string in a database column is exceeded, or similar)
- Event definition does not exist (was deleted, different event name was notified, etc.)

Normally, these cases do not occur, but if an "Event definition does not exist" error does occur, pooled events continue to accumulate until the task is ended in order to resolve the error. It is recommended that you prepare an amount of free space that takes into account the amount of time until the task is ended to resolve the error.

If the definition was accidentally deleted for an event collected by a sensor, and if the error continues for one day, the following area is required:

Required area size

= Work area size required for one event transfer interval (354 Kbyte) * duration of error (24 * 60)/event transfer interval (2)

= 254880 (Kbyte) = approx 249 (Mbyte)

Appendix B Required disk size for database

Appendix A explains the disk size which is required for the Interstage BPM Analytics database.

When you want to know the approximate size required for a database, refer to 'B.1'. When you want to clarify the required size of the database, refer 'B.2'.

B.1 Summary of disk size (It is common in all data bases)

This paragraph indicates the required size for a database in the following business environment:

example

Target systems	Database (2 tables) + Workflow (10 flows)
Alert rules	10 rules
Statistic rules	10 rules
Data incidence	100 events a day
Data maintenance period	3 years (600,000 events)

Required disk size : 10 - 50GB

B.2 Database size necessary for each operation pattern (It is common in all databases)

This paragraph indicates size necessary for each operation pattern.

B.2.1 Pattern 1 : monitoring of a small scale database

Target systems	Database (1 table)
Data incidence	1000 events a day
Data maintenance period	1 year (365,000 events)
Alert rules	10 rules (assumed alert rate: 0.1%, non escalation)
Statistic rules	1 rule
Frequency of execution a statistic rule	one time a day
Number of sections	3
Number of commodities	100
Average number of business data	5
Average number of statistic data	5

[monitoring policy]

Delete from analyze database when one year passes.

Data maintenance period of statistics event is one year.

Required disk size: 5 - 6GB (If the data maintenance period is 3 years: 5 - 8GB)

B.2.2 Pattern 2 : monitoring of a large scale database

Target systems	Database (5 table)
Data incidence	300,000 events a day
Data maintenance period	3 years (100,000,000 events)
Alert rules	10 rules (assumed alert rate: 0.5%, action rate to occurred alerts: 10%)
Statistic rules	5 rules
Frequency of execution a statistic rule	two times a day
Number of sections	10
Number of commodity division *	100 (number of commodities: 10,000)
Average number of business data	20
Average number of statistic data	5

[monitoring policy]

Delete from analyze database when half a year passes.

Data maintenance period of statistics event is 3 years.

Required disk size: 5 - 10GB

Required disk size (when * is 1000): 40 - 50GB

Required disk size (when * is 10000): 150 - 200GB

B.2.3 Pattern 3 : monitoring of a small scale workflow system

Target systems	workflow (2 flows)
Number of process	100 a day
Data maintenance period	1 year
Alert rules	10 rules (assumed alert rate: 0.5%, non escalation)
Number of activitys	10
Average number of attributes	5

[monitoring policy]

Data maintenance period of statistics event is one year.

Required disk size: 5 - 6GB (If the data maintenance period is 3 years : 5 - 8GB)

B.2.4 Pattern 4 : monitoring of a large scale workflow system

Target systems	workflow (10 flows)
Number of process	10,000 a day
Data maintenance period	3 year
Alert rules	20 rules
Number of activitys	20
Number of applications	2
Average number of attributes	20 (assumed alert rate: 0.5%, action rate to occurred alerts: 10%)

[monitoring policy]

Data maintenance period of statistics event is 3 year.

Required disk size: 500 - 700GB

Appendix C Customize parameters of System Tables

Appendix A explains the disk size which is required for the Interstage BPM Analytics database.

This appendix explains the way to customize the parameters of the database.

Table creation scripts are installed in the following folder:

On Windows:

```
[Installation directory]/bpmm/dbscripts/oracle/bpm-user-oracle.sql  
(C:/ibpmm/ibpmm/dbscripts/)
```

On Linux or Solaris:

```
[Installation directory]/dbscripts/oracle/bpm-user-oracle.sql  
(/opt/FJSVibpma/dbscripts/)
```

C.1 Using Oracle

C.1.1 Preparing the Events DB

To create a table in the Events DB, execute the relevant sample script, see below.

Tables must be created in the default schema of the user that the Analytics Server uses to access the database. Log on to the database as the user created previously in "Creating a user" and execute the sample script.

The sample script uses the tablespace name "USERS". Before executing the script, open the script in a text editor and edit the tablespace name to be the same name as was previously specified in "Creating a tablespace".

Sample script (bpm-schema-oracle.sql)

To change the tablespace name or size, modify the underlined portions of the following sample script for each table and index.

```
-- Event DB table creation script for Oracle  
--  
--Adjust the TABLESPACE specification and the data area size as necessary.  
-- COPYRIGHT FUJITSU LIMITED 2009  
  
CREATE TABLE B_Version (  
 ) TABLESPACE USERS(*1);  
  
CREATE TABLE B_IdHolder (  
 ) TABLESPACE USERS(*1);  
  
CREATE TABLE B_Alert (  
 ) TABLESPACE USERS(*1) PCTFREE 10 PCTUSED 20 STORAGE(INITIAL 10M(*2) NEXT 10M(*3));  
  
CREATE TABLE B_EscResult (  
 ) TABLESPACE USERS(*1) PCTFREE 10 PCTUSED 20 STORAGE(INITIAL 10M(*2) NEXT 10M(*3));  
  
CREATE UNIQUE INDEX B_Alert_key1 ON B_Alert (AlertId) TABLESPACE USERS(*1);  
CREATE INDEX B_Alert_key2 ON B_Alert (RuleId) TABLESPACE USERS(*1);  
  
CREATE UNIQUE INDEX B_EscResult_Key1 ON B_EscResult (Id) TABLESPACE USERS(*1);  
CREATE INDEX B_EscResult_Key2 ON B_EscResult (AlertId) TABLESPACE USERS(*1);  
  
INSERT INTO B_Version(Version, CreationTime, LastUpdateTime)  
  VALUES('9.0.0.0', CURRENT_TIMESTAMP, CURRENT_TIMESTAMP);  
  
COMMIT;
```

- *1: Tablespace name
- *2: Default tablespace size
- *3: Extended tablespace size

C.2 Using SQL Server

C.2.1 Preparing the Events DB

For SQL Server 2005 / 2008

Use SQL Server Management Studio to create tables within the Events DB as described in the following procedure.

Create tables as the same user previously created in the “Creating a user” section.

1. Start SQL Server Management Studio.
2. Select **Open** from the **File** menu and then open the file named "bpm-schema-sqlserver.sql".
3. Connect to the database engine by entering the server name and authentication information in the **Connect to Database Engine** window.
4. Select the database from which tables in the Events database will be created.
5. Select **Run** from the **Query** menu to execute the table creation process. Then, the message “**Command terminated normally**” displays.
6. Select **Object Explorer** from the **View** menu and verify that a table has been created.

C.3 Using DB2

C.3.1 Preparing the Events DB

This section explains the procedure used to create tables in the work area of the Events DB.

Executing scripts

Use the Command Editor to create tables within the Events DB as described in the following procedure. Those tables are created under the default schema of a DB2 connection user.

1. Start Command Editor.
Specify “; (semicolon)” as the end of statement for Command Editor.
2. Specify the database into which you want to create the tables in Event DB.
3. Select the **Open** in **Selected** menu, and then open “bpm-schema-db2.sql”.
4. Specify the **Execute** in **Selected** menu, create the tables.
“DB20000I The SQL command completed successfully.” will be displayed.
5. Confirm the tables created using Control Center.

Editing Scripts (Optional)

Edit the script if you change the schema or the tablespace under which the tables are created.

- Changing the schema

To change the schema, add the statement with an underline at the beginning of the script. Specify the name of schema for **SCHEMA_NAME**.

```
-- Script of the table creation
--
-- COPYRIGHT FUJITSU LIMITED 2009
```

```
SET CURRENT SCHEMA = SCHEMA_NAME
```

- Changing the tablespace

To change the tablespace, add the underlined statements to the end of each “CREATE” statement. Specify the name of the tablespace for **TABLE_SPACE_NAME**.

```
- Script of the table creation on the Event DB for DB2
-- COPYRIGHT FUJITSU LIMITED 2009

CREATE TABLE B_Version (
) IN TABLE_SPACE_NAME;

CREATE TABLE B_IdHolder (
) IN TABLE_SPACE_NAME;

CREATE TABLE B_Alert (
) IN TABLE_SPACE_NAME;

CREATE TABLE B_EscResult (
) IN TABLE_SPACE_NAME;

CREATE TABLE B_WFTendency (
) IN TABLE_SPACE_NAME;

CREATE TABLE B_WFSituation(
) IN TABLE_SPACE_NAME;

CREATE TABLE B_Process (
) IN TABLE_SPACE_NAME;

CREATE TABLE B_Activity (
) IN TABLE_SPACE_NAME;

CREATE TABLE B_ActivityEntity(
) IN TABLE_SPACE_NAME;

CREATE TABLE B_ActionEvent(
) IN TABLE_SPACE_NAME;

CREATE TABLE B_ActionHistory (
) IN TABLE_SPACE_NAME;
```

C.4 Preparing the Archive DB

For archive DB, imitate the sample script of the events DB.



Do not use the same schema and user for both the Events DB and Archive DB.