



Installation Guide

QAD Business Process

Management

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Change Summary

The following table summarizes significant differences between this document and previous versions.

Date/Version	Description	Reference
September 2013/BPM 1.3	Numerous editorial changes	---
	Documented Windows 8 considerations	page 9 page 20
	Added new BPM Developer Studio Installation and Workspace Setup appendix	page 77
	Added new Installing a Second BPM Instance appendix	page 99
April 2013/BPM 1.2	Rebranded for BPM 1.2	---
	Revised Verify Database Security Disabled section	page 13
	Added Shut Down Previous BPM Instance section	page 13
	Added parameters to the Deployment Worksheet	page 13
	Added parameters to Installing BPM	page 22
	Added parameters to Advanced Installation	page 26
	Added Modify Configurations for Second BPM Instance section	page 38
	Added parameters to the Default Parameters table	page 64
November 2012/BPM 1.1	Added QXO Configuration appendix	page 73
	Rebranded for BPM 1.1	---
	Numerous editorial changes	---
	Added Verify Database Security Disabled to prerequisites	page 13
	Added Verify QRA Version to prerequisites	page 13
	Documented SSL configuration	page 39
	Added Patch Installation chapter	page 59
June 2012/BPM 1.0.1	Not applicable. First release of BPM Install Guide	---

BPM Overview

This chapter describes basic topics related to QAD BPM deployment and installation.

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Introduction

This chapter provides an overview of BPM, BPM deployment, the QAD Deployment Configuration Service, and BPM installation.

BPM

Business Process Management (BPM) is a systematic approach for defining, measuring, and improving the efficiency of business processes within an enterprise. QAD's BPM solution is embedded in the QAD Enterprise Applications suite and allows you to visualize and execute these business processes from the .NET UI in an integrated fashion.

The product consists of three components:

- Progress OpenEdge BPM (OEBPM): The third-party platform that provides BPM functionality.
- QAD BPM Infrastructure: The QAD BPM artifacts that provide infrastructure support for QAD-specific implementation of BPM.
- QAD BPM Base Projects and Sample Processes: The base projects for application developers to create processes and sample processes for customers to start process customization.

For details about configuring and implementing QAD BPM, see *User Guide: QAD BPM*. For information about creating processes and customizing sample processes, see *Administration Guide: QAD BPM*.

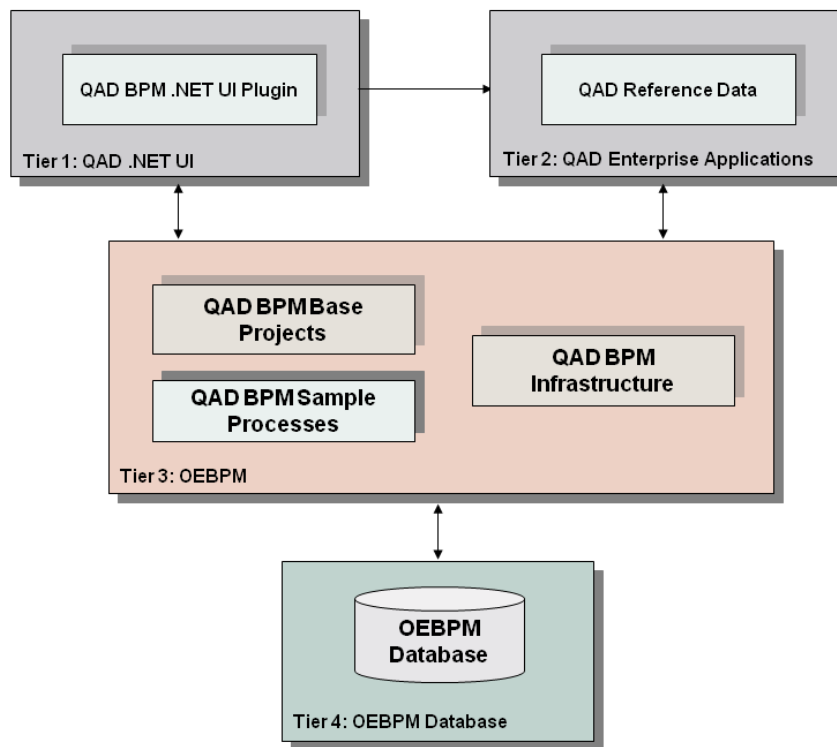
BPM Deployment

The QAD BPM application consists of several components. You can deploy these components in various ways on different hosts, platforms, and architectures.

BPM Deployment Tiers

Figure 1.1 shows the BPM deployment tiers and their relationships.

Fig. 1.1
QAD BPM Deployment Tiers



Note This deployment description uses tiers for explanatory purposes. While the grouping of components is significant, the numbering of the tiers is not.

The BPM deployment consists of four tiers:

- Tier 1 consists of QAD BPM .NET UI Plug-in, which provides BPM access in QAD Enterprise Applications.
- Tier 2 consists of QAD Reference Data, which provide labels and messages used in QAD BPM .NET UI Plug-in.
- Tier 3 consists of the OEBPM, QAD BPM Infrastructure, QAD BPM Base Projects, and QAD BPM Sample Processes. You install these components on the same host.
- Tier 4 consists of the OEBPM Database. This database contains everything related to BPM, such as deployed processes, created process instances, exported base projects, and sample processes, business objects, and so on.

The sequence for a single-host deployment is as follows:

- 1 OEBPM Database (tier 4).
- 2 OEBPM, QAD BPM Infrastructure, QAD BPM Base Projects, and QAD BPM Sample Processes (tier 3).
- 3 QAD BPM .NET UI Plug-in (tier 1).
- 4 QAD Reference Data (tier 2).

Deployment Options

You can deploy the various QAD Enterprise Applications and QAD BPM components in different configurations:

- On a single host in a unified (single-tier) deployment
- On multiple hosts in a distributed (multi-tier) deployment

In a single-host environment, all logical tiers are on the same host, and can therefore run at the same time. In a multiple-host environment, a host typically separates the logical tiers. You run the installer on each host involved in the installation.

QAD Deployment Configuration Service

When installing BPM, QAD recommends that you use the QAD Deployment Configuration Service (QDCS).

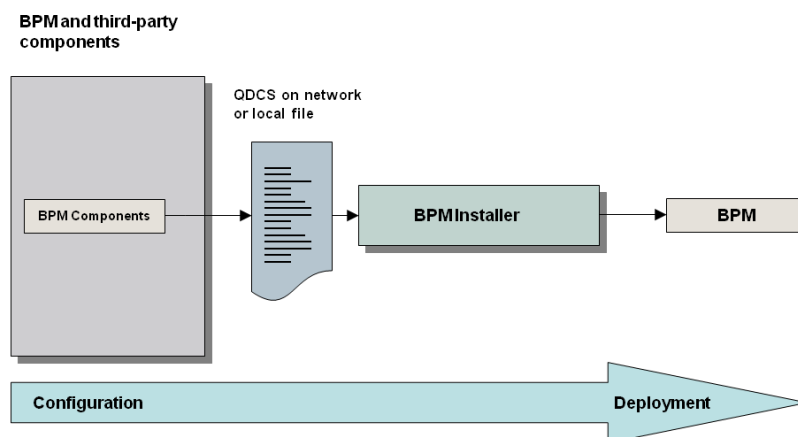
The QDCS is a repository that stores all of your deployment settings for QAD BPM and its supporting third-party applications (Tomcat, for example) in a single place. Typically, the QDCS is stored on a network for easy access, but it can also be stored in a portable file. The QDCS is populated using the GUI installer. Therefore, access to a GUI environment is a prerequisite.

Note If you are installing in a Linux or UNIX environment and X-Windows is not available, or you are installing QAD BPM in a character environment, you first run the installer on Windows to collect the installation information.

There is only one QDCS repository regardless of the number of environments and/or hosts you plan to use in your deployment. You only have to enter your deployment settings once into the QDCS for a particular configuration. The service can be reused later, for example, to move a QAD BPM deployment from a test environment into a production environment. See “QDCS Information Hierarchy” on page 5 for more information.

Figure 1.2 illustrates how the QDCS works. The diagram assumes that all the QAD BPM components and supporting third-party applications are being installed on the same host.

Fig. 1.2
QDCS Information Flow



An installation using the QDCS consists of the following actions:

- 1 Specify the location of the QDCS: network or local host.
- 2 Specify the configuration file name and the environment name for the installation.
- 3 For each module you select to install (Progress OpenEdge BPM or QAD BPM Infrastructure, for example), provide the deployment configuration settings required by the installer. These settings are stored in the QDCS.
- 4 After you provide all of the settings for the selected components, review the installation summary before proceeding with the installation. The information stored in the QDCS guides the automated installation.

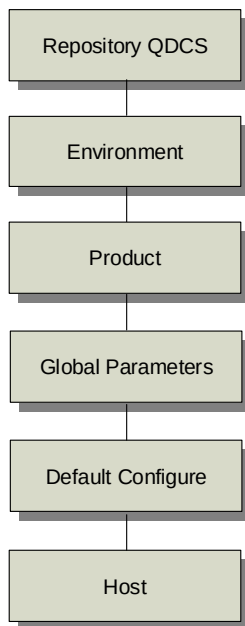
Installing QAD BPM using the QDCS has the following advantages:

- For QAD BPM components that share installation parameters (the location of the QAD Enterprise Applications, for example), the QDCS allows for the transfer of these settings between hosts. Using QDCS reduces the potential for error that is inherent with the manual entry of configuration information.
- The QDCS preserves deployment data across sessions. If the installation fails, you can resume the installation from the point where it stopped without having to reenter the settings.
- Reinstallations need no further input.

QDCS Information Hierarchy

The QDCS stores information in XML format in a hierarchy, as shown in Figure 1.3.

Fig. 1.3
QDCS Information Hierarchy



The repository QDCS hierarchy consists of the following elements:

- The repository QDCS element is at the top of the hierarchy. There is only one repository, regardless of the number of subordinate environments, products, and hosts.

- Typically, organizations have more than one environment. For example, your organization can have a test environment for verifying deployments and a production environment that accommodates the live system. The position of the environment element at the secondary level in the QDCS hierarchy allows for the easy movement of product and host deployments between environments.
- The hierarchy only contains three product elements. These elements are for QAD's BPM, QXtend, and Workflow Alerts products.
- Typically, there are several host elements. These elements enable the deployment of QAD BPM in various configurations. Each host usually contains one or more QAD BPM components based on the component dependencies and organizational deployment requirements.

BPM Installation

Installing and configuring QAD BPM requires several prerequisite programs. This guide describes the installation and configuration of the QAD BPM application on these programs.

Note See Chapter 2, “System Requirements,” on page 7 for additional information on requirements.

The steps are:

- 1 Install the prerequisite components.
- 2 Install QAD BPM using the installer.

System Requirements

This chapter provides the software, client, operating system, and other requirements for QAD BPM.

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Software Requirements 8

Client Requirements 8

Operating Systems 9

Installation User Account 9

Overview

This chapter provides the software, client, operating system, and other requirements for QAD BPM.

Note For the most current requirements information, see the Product Availability Guide on the QAD Online Support Center at:

<http://support.qad.com>

Software Requirements

This section describes the software required for QAD BPM installation, configuration, and use.

Unzip Utilities

The QAD Download Center provides product downloads as compressed ISO files in .zip or .7z format. The .7z format is used to overcome a limitation that prevents the zipping of files larger than 2 GB.

To unzip .7z files, use the free 7-Zip utility. Windows, Linux, and UNIX versions of this utility are available from:

<http://www.7-zip.org>

Unzipping the compressed product file using the appropriate utility yields an uncompressed ISO file.

BPM Requirements

- Progress 10.2B05 or higher
- QXtend 1.8 or higher

Third-Party Components

- Java JRE 6
- For Linux, Sun, and Windows versions:
<http://java.sun.com>
- For Hewlett-Packard systems:
<http://www.hp.com/products1/unix/java/index.html>
- For AIX systems:
<http://www.ibm.com/developerworks/java/jdk/aix/service.html>

Client Requirements

QAD BPM requires QAD Enterprise Applications .NET UI 2.9.3 or higher.

Operating Systems

QAD BPM supports the following platforms:

- Linux (Red Hat and SuSE)
- UNIX (HP-UX and IBM AIX)
- Windows (including 2002 Server, 2003 Server, 2008 Server, Windows 7, Windows 8, and 64-bit variants)

Note To install BPM on Windows 8 systems, you must run the BPM installer in Compatibility Mode. This is described in “Windows 8 Environment” on page 25.

Installation User Account

To avoid potential access permission problems, carefully select the user account used to install BPM and the start environment. An easy way to prevent these issues is to use an administrator (rather than root) account to perform the entire installation. This task includes starting Tomcat, installing BPM, performing post-install activities, and starting the whole environment (QAD Enterprise Applications and BPM).

Prerequisites

This section describes the prerequisites that you perform before QAD BPM installation.

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Set Up QAD Enterprise Application Database 12

Check Database Security 13

Verify QRA Version 13

Shut Down Previous BPM Instance 13

Complete Deployment Worksheet 13

Overview

The BPM installation prerequisites consist of the following:

- Downloading the Progress OpenEdge BPM Package
- Obtaining the Progress OpenEdge BPM license
- Setting up and starting the QAD Enterprise Application Database
- Verifying that QAD Enterprise Application Database security is disabled
- Verifying the QRA version
- Shutting down any previous BPM instances (if applicable)
- Completing the Deployment Worksheet

Download Progress OpenEdge BPM Package

Download the `PROGRESS_SAVVION_BPMSTUDIO_BUSINESSMANAGER_8.0.0.1_ALL.zip` Progress OpenEdge BPM package and the patch package `PROGRESS_SAVVION_BUSINESSMANAGER_8.0.0.6_ALL.zip` from Progress.

Then calculate the package's checksum using one of the following system tools:

- IBM AIX: `csum`
- Other Linux/UNIX: `md5sum`
- Windows: You can download a command line utility from <http://www.pc-tools.net/win32/md5sums/>.

The checksum (MD5) of the packages are `e2cfaa3cebb964ff294896d8df1b9494` and `3cfdba9cbae77f8f907faa7cc3f69671`, respectively. If the checksums are different, download the packages again.

Copy the packages to the directory specified as Package Path in “Progress OpenEdge BPM Panel:” on page 24. Do not extract the packages. Keep them as zip files.

Obtain Progress OpenEdge BPM License

A Progress OpenEdge BPM license is required to install QAD BPM. To obtain a license, contact Progress.

Set Up QAD Enterprise Application Database

QAD BPM requires that the QAD Enterprise Application Database (qaddb) SQL server is set up and running.

If DBMAN (QAD SE and QAD EE versions before 2011.1) does not manage the database, add the following script in your startup scripts:

```
$DLC/bin/_mprosrv <MFG_DB_DIR>/mfgprod -m3 -Ma 5 -Mpb 5 -ServerType
SQL -S <Port_or_Service_Name>
```

If DBMAN (QAD EE 2011.1 and later) manages the database, modify `$DLC/properties/conmgr.properties`, create a server group, and add the group name to “servergroups” of your main database configuration. The following is an example of the server group:

```
[servergroup.pilot-mfgprod.pilot-mfgprod.qadbsql]
configuration=pilot-mfgprod.pilot-mfgprod
displayname=qaddb
networkclientsupport=true
port=<Port Number>
type=sql
```

After the SQL server is set up correctly, restart the qaddb database using the corresponding scripts or the dbman command.

You can verify the connection to qaddb’s SQL server using the command:

```
sqlexp -H <DB_Host> -db <DB_Name> -S <Port_or_Service_Name>
```

Check Database Security

Use the following command to check whether the database security is set up:

```
mpro <qaddb path> -p dict
```

If you are prompted for a user name and password, the database security is set up, and you have to provide a user name and password for the database administrator and user account.

Verify QRA Version

For BPM to work properly, QRA 1.1.130 or higher is required. You can check the QRA version in `<MFG_HOME>/qra/version.qra`. If this file does not exist, you can extract it using the command:

```
$DLC/bin/prolib <MFG_HOME>/qra/qra.pl -extract version.qra
```

Shut Down Previous BPM Instance

If you want to install the second instance of BPM, shut down the previous BPM instance to install the new instance. You then perform some manual installation tasks described in Chapter 5, “Post-installation Tasks,” on page 35.

Complete Deployment Worksheet

QAD recommends that you use the following worksheet to record information such as server names and locations, port numbers, and other settings before you start an installation. You enter these settings during installation configuration. For details, see “Installing QAD BPM in a GUI Environment” on page 18.

Table 3.1
Deployment Worksheet

Group	Description	Setting
General Install Configuration	Use QDCS network service? (Y/N) (Go to Local parameter file name if not using network service)	
	QDCS Tomcat host	
	QDCS Tomcat port	
	QDCS WebApp name	
	QDCS Tomcat admin user	
	QDCS Tomcat admin password	
	Local parameter file name (if not using QDCS)	
	Install log file	
	Environment name	
Global	Host	
	SMTP Server	
	Temporary Directory	
	Progress Directory	
	Tomcat Home Directory	
QAD Enterprise Applications	Version	
	Service Pack	
	Host	
	Home Directory	
	Progress Directory	
	EA DB Directory	
	EA DB Physical Name	
	EA DB Use Service	
	EA DB Service	
	EA DB SQL Port	
	EA DB Security Enabled	
	EA DB Owner	
	EA DB SQL Admin Name	
	EA DB SQL Admin Password	
	EA DB SQL User Name	
	EA DB SQL Password	
	EA Admin DB Directory	
	EA Admin DB Physical Name	

Table 3.1 — Deployment Worksheet (Page 1 of 2)

Group	Description	Setting
Global QXtend Inbound	Host	
	Port	
	WebApp Name	
	Encode Password	
	ERP Receiver	
	QXO Receiver	
Global QXtend Outbound	Source Application	
Progress OpenEdge BPM	Progress Directory	
	Java Home	
	Package Path	
	License File	
	Parent Directory	
	Admin Name	
	Admin Password	
	Admin Email	
Progress OpenEdge BPM Database	Progress Directory	
	Admin Server Port	
	Database Home	
	Use DBMAN Utility	
	Update Conmgr Properties	
	Database Name	
	Database Port	
	Database Admin Name	
	Database Admin Password	
.NET UI Server	Host	
	Port	
	Tomcat Home	
	WebApp Name	
	Configuration Name	
QAD Reference Data		

Table 3.1 — Deployment Worksheet (Page 2 of 2)

Installing QAD BPM

This chapter describes how to install QAD BPM in a GUI or character environment.

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Installing QAD BPM in a Character Environment 33

Overview

The QAD BPM installation media contains the QAD BPM installer, which supports GUI and character-based installs.

The QAD BPM installation options are as follows:

- Install in a GUI environment using the QDCS.
- Install in a character environment using the QDCS. You first run the installer in a GUI environment to populate the QDCS with the required settings.

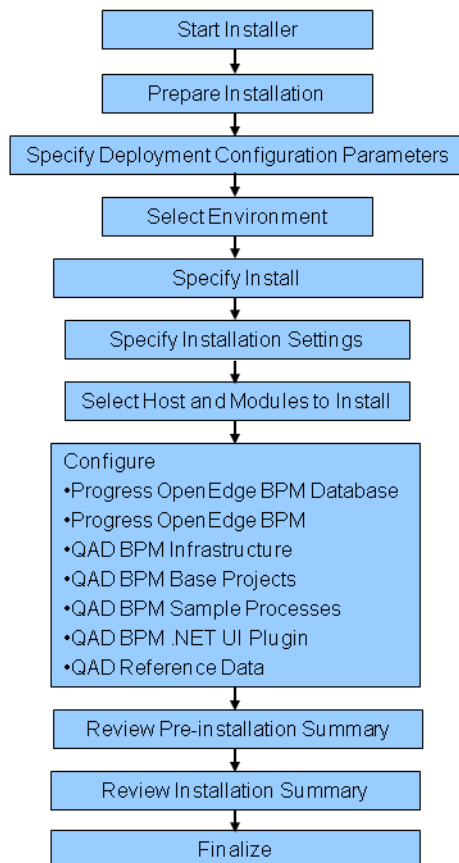
Installing QAD BPM in a GUI Environment

This section describes the installation of QAD BPM using the QDCS on the same host in a Windows GUI environment.

The following figure summarizes the QAD BPM installation workflow.

Note The following sequence applies when all components are installed on a single host. The deployment sequence can vary depending on your configuration.

Fig. 4.1
BPM Install Workflow



Prerequisites

Before installing QAD BPM, do the following:

- 1 QAD recommends that you shut down any virus protection programs.
- 2 Verify that Tomcat is running.
- 3 Verify that you have the appropriate folder permissions to perform the install.
- 4 Verify that you have enough disk space for the destination directory (3G+), global temp directory (5G+, specified in the GUI configuration), and system temp directory or the directory that the environment variable IATEMPDIR (3G+) specifies.
- 5 If you are installing on a Linux/UNIX system, make sure the unzip utility is in the system path on the destination host.
- 6 To use the GUI installer from an X-Windows session in a Linux/UNIX environment, set the DISPLAY variable using the following command:

```
export DISPLAY=HOST_NAME:0.0
```

For example:

```
export DISPLAY=plli13:0.0
```

- 7 If you are installing BPM from QAD physical product media, go to Start the Installer. Otherwise, download the ISO file from the QAD Download Center, unzip it using the appropriate utility (see “Unzip Utilities” on page 8), and go to Start the Installer.

Start the Installer

- 1 Insert the release media into the CD-ROM drive or mount the release media image on your file system.
- 2 Navigate to the executable files. The executable files for each environment type are located under Disk1/InstData/<env_type>/[No]VM/BPM.[bin|exe].

Note If you choose to copy the files from the release media, ensure that the directory structure remains the same, including the folder called Disk 1. If the structure is changed, the installer does not run. The directory structure is as follows:

```
<CD MEDIA>
+Disk1
+InstData
-Resource1.zip
-MediaId.properties
+{environment type}
+NoVM
  BPM.[bin|exe]
+VM
  BPM.[bin|exe]
```

Windows 8 Environment

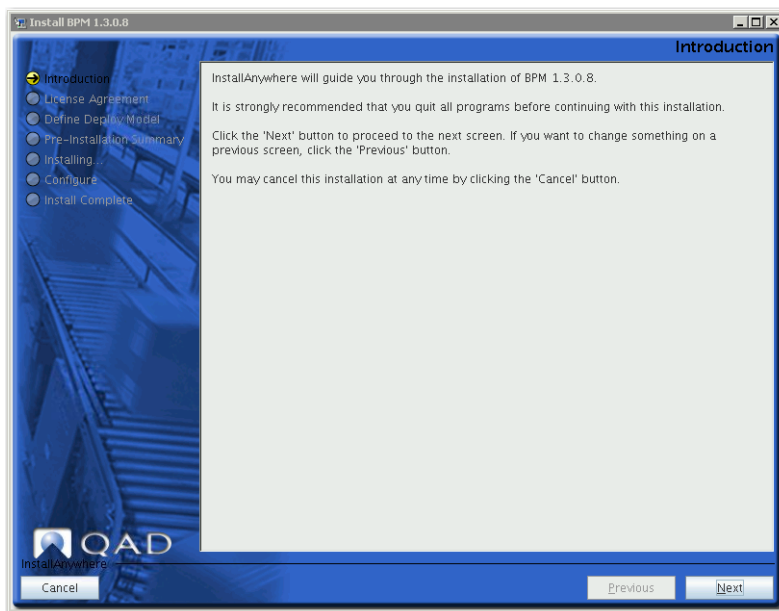
To install BPM on Windows 8 systems, you must configure the BPM installer to use Compatibility Mode. This is done as follows:

- 1 Right-click BPM.exe.
- 2 Select Properties. The BPM Properties dialog box appears.
- 3 Click the Compatibility tab.
- 4 Select the “Run this program in compatibility mode for” check box.
- 5 Select Windows 7 from the drop-down menu.
- 6 Click OK. The BPM Properties dialog box closes.

Prepare the Installation

- 7 If you have downloaded the installer, double-click BPM.exe.
The installer is extracted and the Introduction screen displays.

Fig. 4.2
Introduction Screen



- 8 Click Next. The License Agreement screen displays.
- 9 Scroll to the end of the license agreement.
- 10 Select the “I accept the terms of the License Agreement” option, then click Next.
Note The option to accept the license agreement is only enabled when you scroll to the bottom of the agreement.
The Log File Directory screen displays.
- 11 Accept the default location for the install log files (C:\inst log), or enter a different path.

12 Click Next. The QAD Deployment Configuration Service screen displays.

Specify Deployment Configuration Parameters

For details about the QDCS, see “QAD Deployment Configuration Service” on page 4.

Fig. 4.3
Specify Deployment Configuration Parameters

Deployment Configuration Parameters

☒ Network Service ☐ Local Service

Local Host Name: vwctrix45

Tomcat Host: LOCALHOST

Tomcat Port: 8080

Tomcat Admin User*: admin

Admin Password*: •••••

Local File:

*Only required if deploying a new service

Advanced

Network Service. Select this option to use a QDCS on your network.

Note Tomcat must be installed and running to use Network Service. If you have an existing deployment service, you must create a new service.

Local Service. Select this option to use a QDCS file on your local machine. Selecting this option disables all fields except Local File.

Local Host Name. This field displays the name of the current machine (read-only).

Tomcat Host. Enter the Tomcat server name (for Network Service only).

Tomcat Port. Enter the Tomcat port number (for Network Service only).

Tomcat Admin User. Enter the user name for the Tomcat manager role (for Network Service only).

Admin Password. Enter the password of the user with the manager role (for Network Service only).

Local File. Enter the file name on the local machine containing the parameter settings (for Local Service only).

Advanced. Click this button to display a dialog box that allows you to specify the name of a new QDCS.

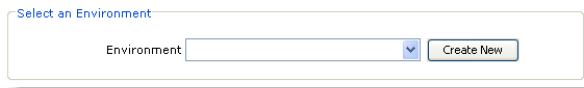
13 A pop-up window may display that says a QAD Deployment Configuration Service (QDCS) was not detected on a host. This message means that the QDCS is not deployed on the specified Tomcat server or the wrong server was specified. Click Yes if you want the installer to deploy the QDCS.

14 Click Next. The Environment Selection screen displays.

Select Environment

15 In the Select an Environment panel, specify the environment to use.

Fig. 4.4
Select an Environment



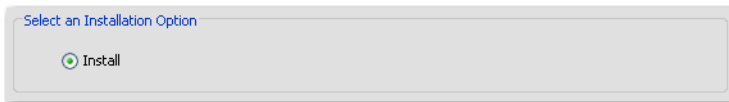
To create an environment, click Create New and enter the name of the environment you want to create in the Create New Environment pop-up window.

16 Click Next. The Select an Installation Option screen displays.

Specify Install

Install is currently the only option available and is selected by default. Click Next.

Fig. 4.5
Specify Install



Installing BPM

BPM Installation Settings

BPM installation involves the automatic or manual population of fields on one or more screens. During installation, hovering over a field label displays the corresponding parameter name. Likewise, hovering over the field displays the fully resolved parameter as a tool tip. For more information on dynamic parameter referencing, see “Tokens” on page 64.

Fig. 4.6
BPM Installation Settings

BPM Typical Installation (Single Host) **Reset Default Settings** **Advanced**

Global

Host: qadrh

SMTP Server: smtp.qad.com

Temporary Directory: /dr01/tmp

Progress Directory: /dr01/progress/dlc

Tomcat Home Directory: /dr01/tomcat/8080

Install .NET UI Plugin: ☒

MFG

Version: QADEE

Service Pack: 2011

Host: @GLOBAL_INSTALL_HOST@

Home Directory: /dr01/qadapps/qad2011ee

Progress Directory: @GLOBAL_DLC@

EA DB Directory: @MFG_HOME@/db

EA DB Physical Name: mfgprod

EA DB Use Service: ☐

EA DB SQL Service:

EA DB SQL Port: 8898

- 1 Enter the necessary information in the BPM Typical Installation (Single Host) screen.

Global Panel:

Host. The name of the host where QAD BPM will be installed.

SMTP Server. The name of the SMTP server to use to send notification e-mails.

Temporary Directory. The temporary directory to use when installing QAD BPM. The directory needs at least 5 GB of disk space.

Progress Directory. The Progress OpenEdge installation directory. The OEBPM database, OEBPM, and QAD Enterprise Applications reference this directory as the default Progress directory.

Tomcat Home Directory. The Tomcat home directory

Install .NET UI Plugin. Selecting this check box installs the .NET UI Plug-in. It is selected by default for typical installations.

MFG Panel:

Version. The QAD Enterprise Applications version.

Service Pack. The currently installed QAD Enterprise Applications service pack level.

Host. The name of the host where QAD Enterprise Applications is installed.

Home Directory. The QAD Enterprise Applications installation directory.

Progress Directory. The Progress OpenEdge installation directory that QAD Enterprise Applications uses.

EA DB Directory. The directory containing the QAD Enterprise Applications database.

EA DB Physical Name. The physical name of the QAD Enterprise Applications main database.

EA DB Use Service. Whether to use the service name for the QAD Enterprise Applications main database.

EA DB SQL Service. The service name of the QAD Enterprise Applications database service.

EA DB SQL Port. The SQL port for the QAD Enterprise Applications database service.

EA DB Security Enabled. Whether QAD Enterprise Applications database security is enabled.

EA DB Owner. The user name of the QAD Enterprise Applications database owner. The user is the OS-level system user who created all of the databases. This user may not be the same as the current owner if the owner was changed.

EA DB SQL Admin Name. The admin name to use to connect to the QAD Enterprise Applications database.

EA DB SQL Admin Password. The admin password to use to connect to the QAD Enterprise Applications database.

EA DB SQL User Name. The SQL user name to use to connect to the QAD Enterprise Applications database.

EA DB SQL Password. The SQL password to use to connect to the QAD Enterprise Applications database.

EA Admin DB Directory. The directory containing the QAD Enterprise Applications admin database.

EA Admin Physical Name. The physical name of the QAD Enterprise Applications admin database.

Global QXtend Inbound Panel:

Host. The name of the host where QXtend Inbound is installed.

Port. The port number for QXtend Inbound.

WebApp Name. The WebApp name of QXtend Inbound.

Encode Password. If QXtend requires encoded passwords, selecting this box allows QAD users to log in. If the setting `encodedPasswords=true` in `Tomcat/webapps/qxi/WEB-INF/conf/qxtendconfig.xml`, encoded passwords are needed.

ERP Receiver. The receiver name for QXtend Inbound.

QXO Receiver. The receiver name for QXtend Outbound.

Global QXtend Outbound Panel:

Source Application. The source application that the query service work steps use in the business processes.

Progress OpenEdge BPM Panel:

Progress Directory. The Progress OpenEdge installation directory that Progress OpenEdge BPM uses.

Java Home. The home directory of Java that starts OEBPM.

Package Path. The OEBPM package directory.

License File. The full path of the OEBPM XML license file, including the file name.

Parent Directory. The parent directory of the OEBPM installation.

OEBPM Home. The OEBPM installation directory. This field is automatically populated and cannot be edited.

Admin Name. The OEBPM administrator name.

Admin Password. The OEBPM administrator password.

Admin Email. The OEBPM administrator e-mail address.

Progress OpenEdge BPM Database:

Progress Directory. The Progress OpenEdge installation directory that the OEBPM database uses.

Admin Server Port. The port of the Progress AdminServer.

Database Home. The OEBPM database installation directory.

Use DBMAN Utility. Whether to use DBMAN to manage the BPM database. This feature is only enabled beginning with QAD Enterprise Applications EE 2011.1.

Update Conmgr Properties. Whether to automatically update the `conmgr.properties` file. This option is only enabled if Use DBMAN Utility is selected.

Database Name. The OEBPM database physical name.

Database Port. The SQL port for the OEBPM database.

Database Admin Name. The OEBPM database administrator name.

Database Admin Password. The OEBPM database administrator password.

2 BPM provides two installation methods: Typical and Advanced.

Typical Installation is a simplified install process that automatically fills the BPM installer fields with parameters for a default installation. For detailed information regarding default installation parameters, see Appendix A, “Typical Installation Parameters,” on page 63.

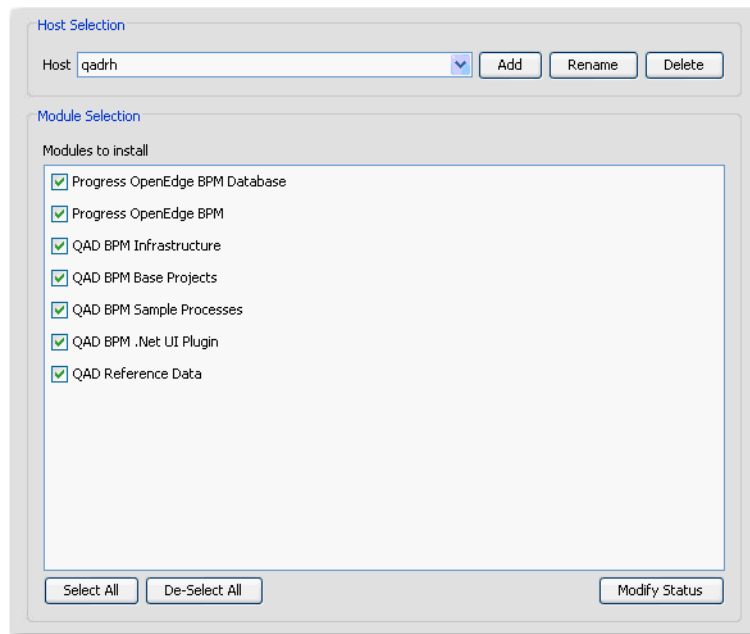
Advanced Installation allows you to individually enter the parameters to create a custom BPM configuration.

To ensure that the configurations are correct, the BPM installer forces you to go to Advanced Installation. In Advanced Installation, you review or change each component configuration by clicking the Advanced or Next button.

Advanced Installation

Select the Host and Modules to Install

Fig. 4.7
Choose the Host and Install Set

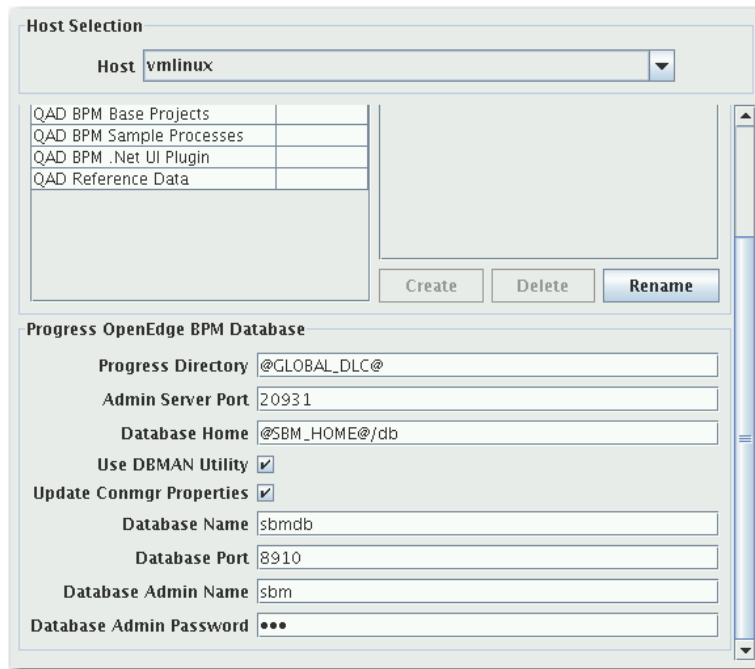


- 1 Enter the host on which to install the components in the Host Selection panel.
- 2 Use the Add and Delete buttons to create and delete hosts as required.
- 3 In the Module Selection panel, select the components to install on the specified host.

Note Under each environment (“QDCS Information Hierarchy” on page 5), you can select each component once across all hosts that make up the configuration.

- 4 Click Next to display the Module Copy Selection screen.

Fig. 4.8
Module Copy Selection



The component list on the left shows the components available for installation. The Status column on the right indicates the installation status of each component. The first time the installer is run, the Status column is blank. After installation, the Status column shows Incomplete if the component was not installed successfully or Complete if it was installed successfully.

5 For each selected component, do the following as required:

- a** Create, rename, or delete instances.

Note New instances are enabled only for the QAD BPM .NET UI Plug-in. This functionality allows you to configure against multiple QAD Enterprise Applications configurations.

- b** Assign the required components to an instance. Select a component's check box if the instance it goes into is highlighted.
- c** For each selected component for that instance, enter all of the required parameter settings, as described in the following sections.

You cannot select a different component until you have entered all of the required information for the currently selected component.

Note Enter information in the fields highlighted in orange.

Configure Progress OpenEdge BPM Database

6 Complete the required fields in the Configure Progress OpenEdge BPM Database panel:

Progress Directory. The Progress OpenEdge installation directory that the OEBPM database uses.

Admin Server Port. The port of the Progress AdminServer.

Database Home. The OEBPM database installation directory.

Use DBMAN Utility. Whether to use DBMAN to manage the BPM database. This feature is only enabled beginning with QAD Enterprise Applications EE 2011.1.

Update Conmgr Properties. Whether to update the file `conmgr.properties` automatically. This option is only enabled if Use DBMAN Utility is selected.

Database Name. The physical name of OEBPM database.

Database Port. The SQL port for the OEBPM database.

Database Admin Name. The OEBPM database administrator name.

Database Admin Password. The OEBPM database administrator password.

Configure Progress OpenEdge BPM

- 7 In the Progress OpenEdge BPM panel, complete the required fields.

Progress Directory. The Progress OpenEdge installation directory that Progress OpenEdge BPM uses.

Java Home. The Java home directory for starting OEBPM.

Package Path. The OEBPM package directory.

License File. The full path of the OEBPM XML license file, including the file name.

Parent Directory. The OEBPM installation parent directory.

OEBPM Home. The OEBPM installation directory. The field is automatically populated and cannot be edited.

Admin Name. The OEBPM administrator name.

Admin Password. The OEBPM administrator password.

Admin Email. The OEBPM administrator e-mail address.

- 8 In the JBoss Panel, complete the required fields.

Portal HTTP Port. The Portal Server HTTP port.

EJB JNDI Port. The EJB Server JNDI port.

Remote Ant Port. The port for the remote Ant.

EJB HTTP Port. The EJB Server HTTP port.

EJB HTTPS Port. The EJB Server HTTPS port.

EJB WebService Port. The EJB Server WebService port.

EJB Naming RMI Port. The EJB Naming RMI port.

Portal HTTPS Port. The Portal Server HTTPS port.

Portal JNDI Port. The Portal Server JNDI port.

Portal WebService Port. The Portal Server WebService port.

Portal RMI Naming Port. The Portal Server Naming RMI port.

Min Pool Size. The minimum size of the database connection pool.

Max Pool Size. The maximum size of the database connection pool.

Configure QAD BPM Infrastructure

- 9 In the MFG panel, complete the required fields.

Version. The QAD Enterprise Applications version.

Service Pack. The currently installed QAD Enterprise Applications service pack level.

Host. The name of the host to receive the QAD BPM installation.

EA DB Physical Name. The physical name of the QAD Enterprise Applications main database.

EA DB Use Service. Whether to use the service for the QAD Enterprise Applications main database.

EA DB SQL Service. The name of the QAD Enterprise Applications database service.

EA DB SQL Port. The SQL port for the QAD Enterprise Applications database service.

EA DB Security Enabled. Whether the security of the QAD Enterprise Applications database is enabled.

EA DB Owner. The user name of the QAD Enterprise Applications database owner. The user is the OS-level system user who created all of the databases. This user may not be the same as the current owner if the owner was changed.

EA DB SQL Admin Name. The admin name to use to connect to the QAD Enterprise Applications database.

EA DB SQL Admin Password. The admin password to use to connect to the QAD Enterprise Applications database.

EA DB SQL User Name. The SQL user name to use to connect to the QAD Enterprise Applications database.

EA DB SQL Password. The SQL password to use to connect to the QAD Enterprise Applications database.

Configure QAD BPM Base Projects

There are no configuration options for this module.

Configure QAD BPM Sample Processes

- 10 Select the sample processes to export.

Configure QAD BPM .NET UI Plugin

- 11** In the .NET UI Server panel, complete the required fields.

Host. You cannot edit this field. It is automatically populated with the host name where the QAD BPM .NET UI Plugin is installed.

Port. The Tomcat port for the .NET UI server.

Tomcat Home. The Tomcat directory to contain the .NET UI server installation.

WebApp Name. The .NET UI server WebApp name.

Configuration Name. The name of the .NET UI configuration.

Configure QAD Reference Data

- 12** In the MFG panel, complete the required fields.

Version. The QAD Enterprise Applications version.

Service Pack. The currently installed QAD Enterprise Applications service pack level.

Host. The name of the QAD Enterprise Applications install host.

Home Directory. The QAD Enterprise Applications installation directory.

Progress Directory. The Progress OpenEdge installation directory that QAD Enterprise Applications uses.

EA DB Directory. The directory containing the QAD Enterprise Applications database.

EA DB Physical Name. The physical name of the QAD Enterprise Applications main database.

EA Admin DB Directory. The directory containing the QAD Enterprise Applications admin database.

EA Admin DB Physical Name. The password for connecting to the QAD Enterprise Applications database.

- 13** If you have entered all of the parameter settings for the required components, click Next.

Review the Pre-installation Summary

The Pre-installation Summary screen lists the components selected for installation and provides disk space information.

Note If no components were selected for installation on the current host, a message appears. Move to each host used in the installation and point to the configuration you created.

Fig. 4.9
Pre-installation Summary



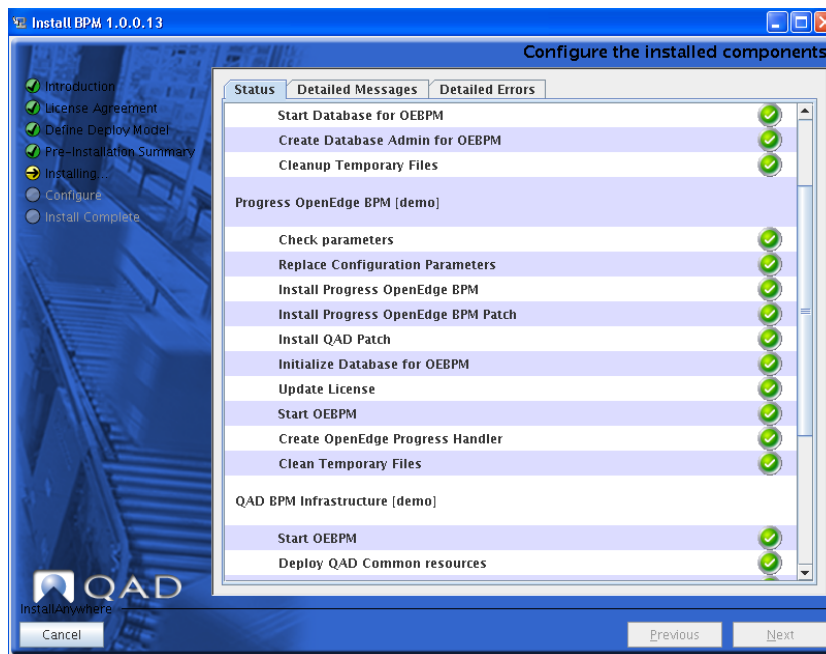
Review the information and click Install to continue with the installation.

Note If the installer encounters an error, it pauses, allowing you to correct the problem. See Appendix B, “Process Control,” on page 69 for more information. If you have difficulty resolving a problem, see Chapter 6, “Troubleshooting QAD BPM Installs,” on page 49.

When the install finishes, review the installation summary.

Review the Installation Summary

Fig. 4.10
Install Status Screen



- 1 Use the Status screen to review the results of the install.
- 2 A red cross symbol indicates that an error occurred. If one or more red crosses are displayed, see Chapter 6, “Troubleshooting QAD BPM Installs,” on page 49.

If the installer encounters an error, a dialog box displays. You can select the Detailed Messages and Detailed Errors tabs for details to help you diagnose or fix the problem. You then choose the appropriate action to continue or quit the installation. See Appendix B, “Process Control,” on page 69 for more information. If you have difficulty resolving a problem, see Chapter 6, “Troubleshooting QAD BPM Installs,” on page 49.

If only green check marks or green check marks and one or more blue double arrows are displayed, the install was successful. Click Next.

- 3 The Install Complete screen appears.
Depending on your previous selections, the installer may display a reminder that describes post-installation work you must perform. Note the information for further reference.
When you are finished, press Done.

To finalize an installation, see Chapter 5, “Post-installation Tasks,” on page 35.

Installing QAD BPM in a Character Environment

The following procedure describes how to install QAD BPM in a character environment. It assumes that you are using Windows.

- 1 Verify that Tomcat is running.
- 2 Verify that you have the necessary permissions to access the relevant folders.
- 3 Run the GUI installer to populate the QDCS with the required parameter settings.
- 4 Specify an environment and host, select the components to install, and specify the required parameters.
Note For information about the QDCS, see “QAD Deployment Configuration Service” on page 4.
- 5 Move to the host you created in step 4.
- 6 Mount the release media.
- 7 Choose Start|All Programs|Accessories|Command Prompt to open a command window.
- 8 Navigate to the `InstData` directory on the release media.
- 9 Navigate to the appropriate directory for your environment. For example, if you are in a Linux environment, navigate to the Linux directory.
- 10 Navigate to the VM directory.
- 11 Start the executable by entering one of the following commands:
 - On Windows: `BPM.exe -i console`
 - On AIX, Linux, or HP-UX: `sh ./BPM.bin -i console`
- 12 During installation, some extra messages or warnings display. You can ignore the following messages:
 - JVM information
 - “ChooseBundledVMs: Unable to locate the VMPack Directory”
 - “RepositoryManager: Trying fallback repository location...”
 - “Retrying Installables deferred in pass 0, Deferral retries done because: There were no deferrals in the last pass.”
- 13 The Introduction displays. Press Enter to continue. The first page of the License Agreement text displays.
- 14 Press Enter to move through and read the pages.
- 15 On the final page of the License Agreement, press Y to accept the terms, and then press Enter. The Log File Directory text displays.
- 16 Press Enter to accept the default location of the log file directory, or enter a different directory.
- 17 Select the Parameter Service type. Enter Y for network (the default) or N for local file.

18 Get User Input displays. These settings permit the use of the settings you defined using the QDCS in the GUI installer.

19 Enter the following:

- Tomcat host name
- Tomcat port number
- WebApp name
- Local parameter settings file name
- Environment name

Note All of the above entries are case-sensitive.

20 Select install.

21 The list of components being installed displays. Review the list and press Enter to continue. The installation begins. The installer uses the parameter settings stored in the QDCS.

22 The Install Complete screen appears.

Note If the installer encounters an error, it pauses, allowing you to correct the problem. See Appendix B, “Process Control,” on page 69 for more information. If you have difficulty resolving a problem, see Chapter 6, “Troubleshooting QAD BPM Installs,” on page 49.

23 After reviewing the results of the install, press Enter.

24 Restart the Tomcat AppServer and start QAD Enterprise Applications.

Post-installation Tasks

This chapter describes BPM post-installation tasks.

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Configure BPM 38

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Overview

Following BPM installation, you perform the following tasks:

- Configure MFG
- Configure older SE releases (if applicable)
- Load translated labels and messages
- Configure QXtend
- Configure BPM
- Install the BPM Developer Studio and set up the workspace (optional)
- Modify configurations for second BPM instance (if applicable)
- Configure .NET UI
- Configure SSL support (optional)

Configure MFG

Check and widen the SQLWidth attribute of qaddb fields. The following fields in particular are most at risk: usrg_mstr.usrg_group_name (8 characters), usrg_mstr.usrg_group_desc (24 characters), and udd_det.udd_groups (128 characters).

You can use the Progress tool `$DLC/bin/dbtool` to check if qaddb contains fields that have too much data, and if so, to fix them. The tool is documented in the Progress Database Administration PDF. To use the tool, do the following:

- 1 Run:
`$DLC/bin/dbtool <path_to_qaddb_file> 2>dbtool.out`
- 2 Select option 1.
- 3 Answer the questions about how to connect, which tables, and so on.
- 4 Review the report written to `dbtool.out` and search for occurrences of the string `***` to find SQLWidth violations.
- 5 Change the SQLWidth of `usrg_mstr` and/or `udd_det` fields where violations exist using the Data Dictionary or by rerunning `dbtool` with option 2 instead of 1.

Configure Older SE Releases

Older SE releases cannot use BPM sample processes off-the-shelf because the code base lacks the in-line business event publishing logic that the samples expect in the QXO configuration. Depending on the SE service pack level, a code merge may be required that includes code from the following patches:

- P6GT (2008.1 SE)
- Q22F (2009 SE)

Contact QAD Services or Support to obtain these patches. For information about how to add in-line triggers, refer to “Inline Triggers” in *Appendix B, Parameter Data*, in *User Guide: QAD QXtend*.

Alternatively, if the code merge is too messy due to customizations, you can enable the database trigger instead of the in-line triggers.

Load Translated Labels and Messages

Translated labels and messages are installed to the data directory of the parent directory of SBM Home (for example, /qadapps/SBM/data). You can load the labels from `lbl_mstr.d` and messages from `msg_mstr.d` in the corresponding language directory for your language.

Configure QXtend

To configure QXtend, do the following:

- 1 Ensure that authentication is disabled on the QXI receiver.
- 2 Ensure that the QADSE or QADEE source application is added to QXO; eB2.1 is not supported.
- 3 Enable QXO in menu option QXtend Outbound Control (36.16.19).
- 4 Verify that the QAD maintenance license is present in menu option License Registration (36.16.10.1).
- 5 Add a BPM subscriber on QXO

If you want to use sample processes, you must configure QXtend for the sample processes. If you are using QXtend 1.8.4 or higher, you can import the QXI and QXO configuration bundle for BPM (do steps 6 and 7, and ignore step 8). If you are using an earlier version of QXtend, you must manually configure QXtend (ignore steps 6 and 7, but do step f).

- 6 Import the QXI bundle.
 - a Go to `TOMCAT_HOME/webapps/<qxi>/WEB-INF/scripts`.
 - b `mkdir ../import`
 - c `cp <BPM_basedir>/qxtend/bundle/qxi/* ../import`
 - d If necessary, modify the mapping file `../import/bpm-qxi-<ee|se>.mapping.xml`.
 - e Execute the command:
`./qxifgbundle.sh -i bpm-qxi-<ee|se>.zip -d <process_name>_qxi-<ee|se>.xml`
- 7 Import the QXO bundle.
 - a Go to `<QXO_Server>/scripts`.
 - b `mkdir ../import`
 - c `cp <BPM_basedir>/qxtend/bundle/qxo/* ../import`
 - d If necessary, modify the mapping file `../import/bpm-qxo-<ee|se>.mapping.xml`.

- e Execute the command:


```
./qxocfgbundle.sh -i bpm-qxo-<ee|se>.zip -d
<process_name>_qxo_<ee|se>.xml
```
 - f If you loaded the Customer Creation or Supplier Creation process for QADEE, go to BO BDebotr or BCreditor and make the BO listen to the event types.
- 8 Manually configure QXtend for the sample processes. Refer to Appendix C, “QXtend Configuration for Sample Processes,” on page 73 for information on what to configure for a specific sample process.
- a Copy all of the files in the \$SBM_PARENT_DIR/qxo/boXML directory to the boXML directory of the QXtend Outbound Server installation directory.
 - b Load the required Business Objects and Profiles in QXO. See “Importing Business Objects and Profiles” in *User Guide: QXtend* for more information.
 - c Enable the corresponding event types, register the BO with the message publisher, and register the profiles with the BPM subscriber.
 - d Deploy queries to QXI from specific profiles and add them to the Outbound receiver.
 - e Optionally (depending on what process you will use), make sure that the applicable QDocs are added to the receiver.

See Appendix C, “QXtend Configuration for Sample Processes,” on page 73 for more information about QXO configuration for sample processes.

Configure BPM

- 1 Populate the QAD user/group information that BPM uses (for example, e-mail addresses).
- 2 Verify that you can access QAD users from the BPM portal.
- 3 Grant user permissions to access Instance Manager (All Processes browse), BRMS portal.
- 4 Verify that you can access the BPM repository from the BPM Studio workspace and validate the repository contents.

Install BPM Developer Studio and Set Up the Workspace

If you are a BPM application developer or system administrator, or you want to verify the BPM installation, refer to Appendix D, “BPM Developer Studio Installation and Workspace Setup,” on page 77 for details about how to install the BPM developer studio and set up the studio workspace.

Modify Configurations for Second BPM Instance

If you are installing the second BPM instance, and want to run both instances simultaneously, refer to Appendix E, “Installing a Second BPM Instance,” on page 99. After the modification, restart the instance that you modified.

Configure .NET UI

- 1 Install the latest cumulative patch package for your .NET UI version; some .NET UI bug fixes affect BPM use.
- 2 Install the browse collections in SE environments.
- 3 Validate that the BPM browses work.
- 4 Assign the role qadadmin to the BPM admin user who requires access to the All Tasks Browse, All Processes Browse, All Tasks History Browse, and the All Process History Browse.

Configure SSL Support

The use of SSL is optional. To enable SSL support for BPM, complete the following steps:

- 1 Prepare Key Store and Trusted Certificate.
- 2 On the BPM server side, modify the Progress Savvion JBoss configuration.
- 3 On the BPM client side (browser, .NET UI, and QXO subscriber), do the following:
 - a Retrieve the Trusted Certificate.
 - b Import the Trusted Certificate to the .NET UI or browsers (IE).
 - c Modify the BPM configuration in the .NET UI.
 - d Modify the QXO BPM subscriber configuration.
- 4 Enable SSL support for QXtend:
 - a Enable SSL support for QXtend Tomcat.
 - b Modify the QAD BPM configuration.

Prepare Key Store and Trusted Certificate

Go to the directory where the resulting files are generated. For example, assume that all of the resulting files are in the \$SSL_DIR directory.

```
$ cd $SSL_DIR
$ openssl genrsa -out jbosskey.key 1024
$ openssl req -out jbosskey.crt -new -key jbosskey.key -x509 -days 365
$ cat jbosskey.key jbosskey.crt > jbosskey.pem
$ $JAVA_HOME/bin/keytool -import -alias jbosskey -keystore
$SSL_DIR/test.keystore -trustcacerts -file $SSL_DIR/jbosskey.crt
$ $JAVA_HOME/bin/keytool -genkey -alias jbosscert -keyalg RSA -
keystore $SSL_DIR/test.keystore
$ $JAVA_HOME/bin/keytool -certreq -alias jbosscert -keyalg RSA -file
$SSL_DIR/jbosscert.csr -keystore $SSL_DIR/test.keystore
$ openssl x509 -in jbosscert.csr -out $SSL_DIR/jbosscert.crt -req -
days 365 -CA $SSL_DIR/jbosskey.pem -Cacreateserial
```

```
$ $JAVA_HOME/bin/keytool -import -alias jboss-cert -keystore
$SSL_DIR/test.keystore -trustcacerts -file $SSL_DIR/jboss-cert.crt
```

Finally, the following files are generated in \$SSL_DIR:

```
test.keystore
jbosskey.crt
jbosskey.key
jbosskey.pem
jbosskey.srl
jboss-cert.csr
jboss-cert.crt
```

BPM Server Side

Modify Progress Savvion JBoss Configuration

- 1 Modify <SBM_HOME>/jboss/bin/jbossrun.sh (which the EJB and Portal servers share) to specify the trustStore:

```
# Setup JBoss specific properties
JAVA_OPTS="-Dprogram.name=$PROGNAME $JAVA_OPTS -Djavax.net.ssl.trustStore=
$SSL_DIR/test.keystore"
```

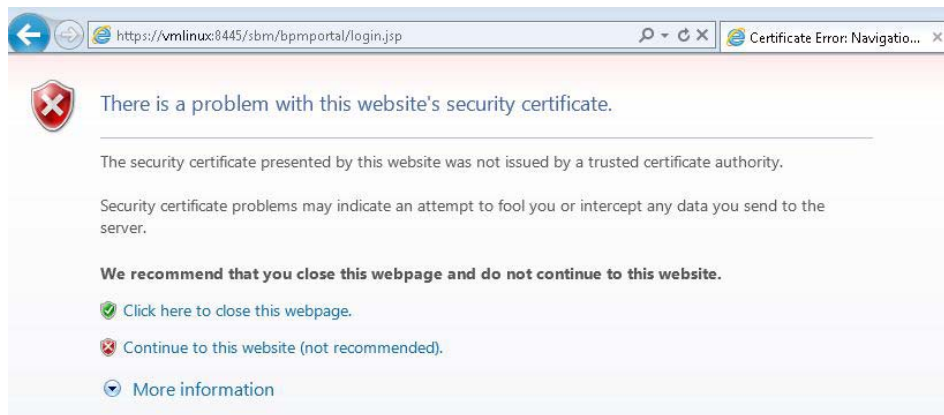
- 2 In <SBM_HOME>/jboss/server/portalServer/deploy/jbossweb.sar /server.xml, uncomment the SSL connector and change the port from 18002 to 8445.
- 3 In the <SBM_HOME>/jboss/server/ejbServer/deploy/jbossweb.sar /server.xml file, uncomment the SSL connector and change the port from 16002 to 8444.
- 4 Restart the BPM server.

BPM Client Side

Retrieve Trusted Certificate

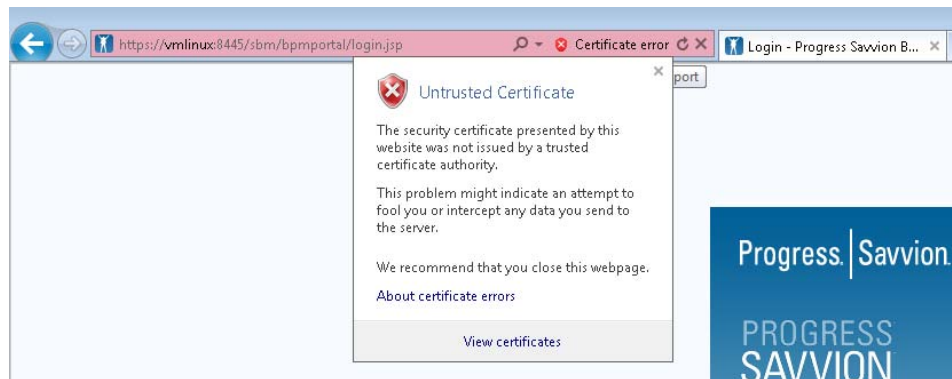
- 1 Go to https://<BPM_Host>:8445/sbm/bpmportal/login.jsp. The page shown in Figure 5.1 appears.

Fig. 5.1
Security Certificate Problem Message



- 2 Click “Continue to this webpage.” The BPM Portal login page appears.

Fig. 5.2
BPM Portal Login Page



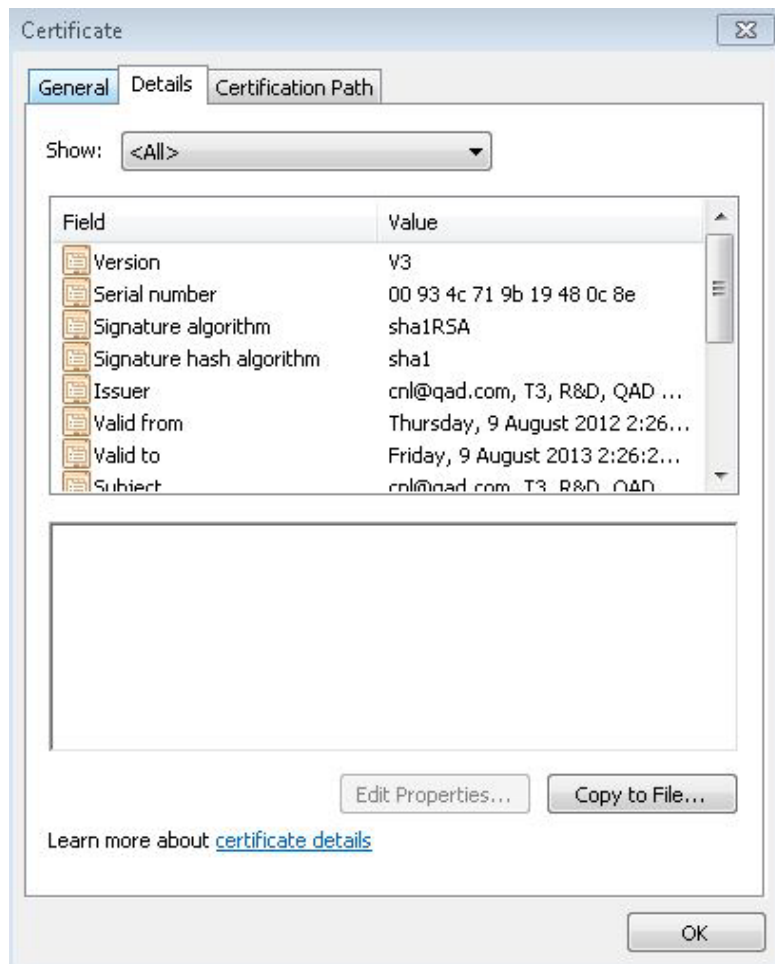
- 3 Click the Certificate error followed by View certificates. The Certificate dialog box appears.

Fig. 5.3
Certificate Dialog Box



- 4 Select the Certification Path tab, select the root certificate which is T3 (jbosskey), and click the View Certificate button. The Certificate dialog box for the T3 certificate appears.

Fig. 5.4
Certificate Dialog Box



- 5 Select the Details tab and click Copy to File. The Certificate Export Wizard dialog box appears. Follow the directions in the wizard to export the T3 certificate to a file.

Fig. 5.5
Certificate Export Wizard Dialog Box - Export File Format

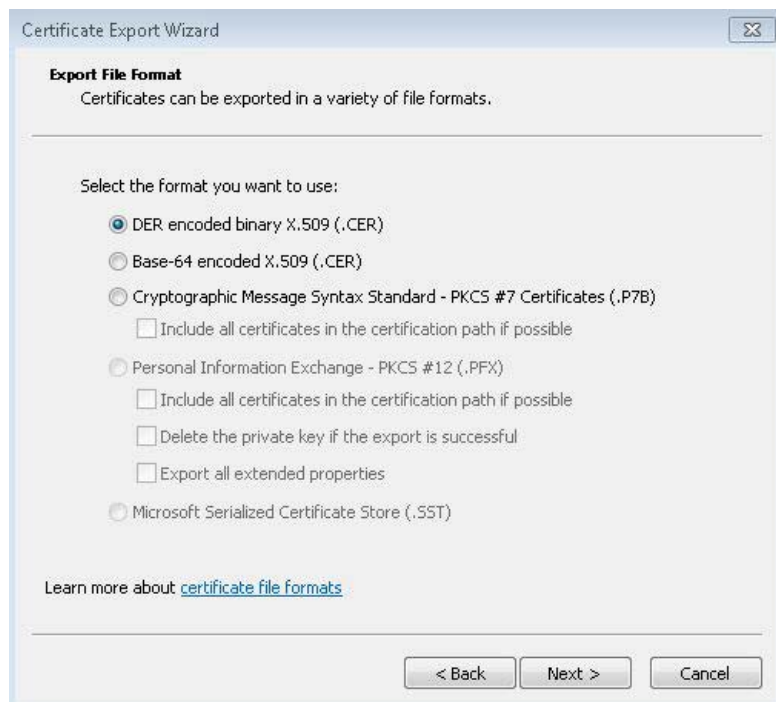
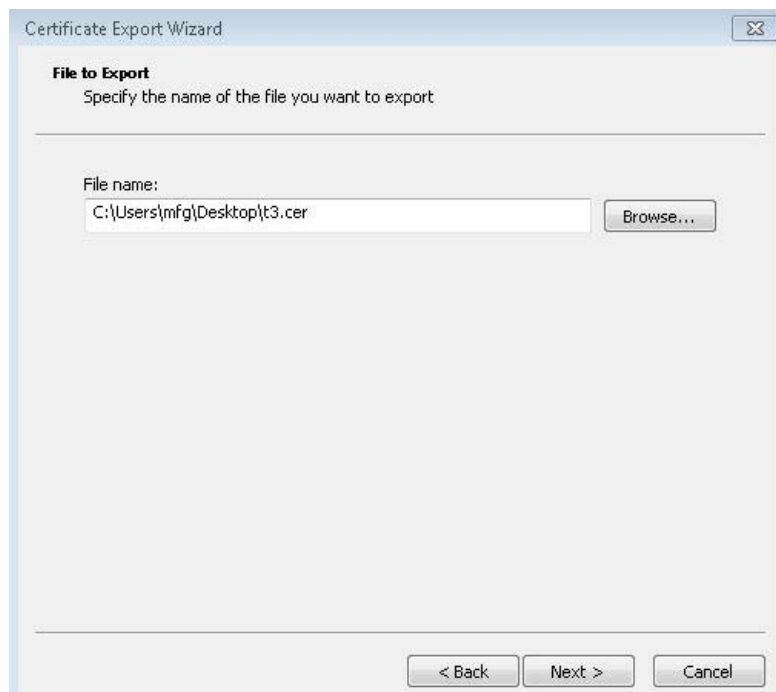


Fig. 5.6
Certificate Export Wizard Dialog Box - File to Export



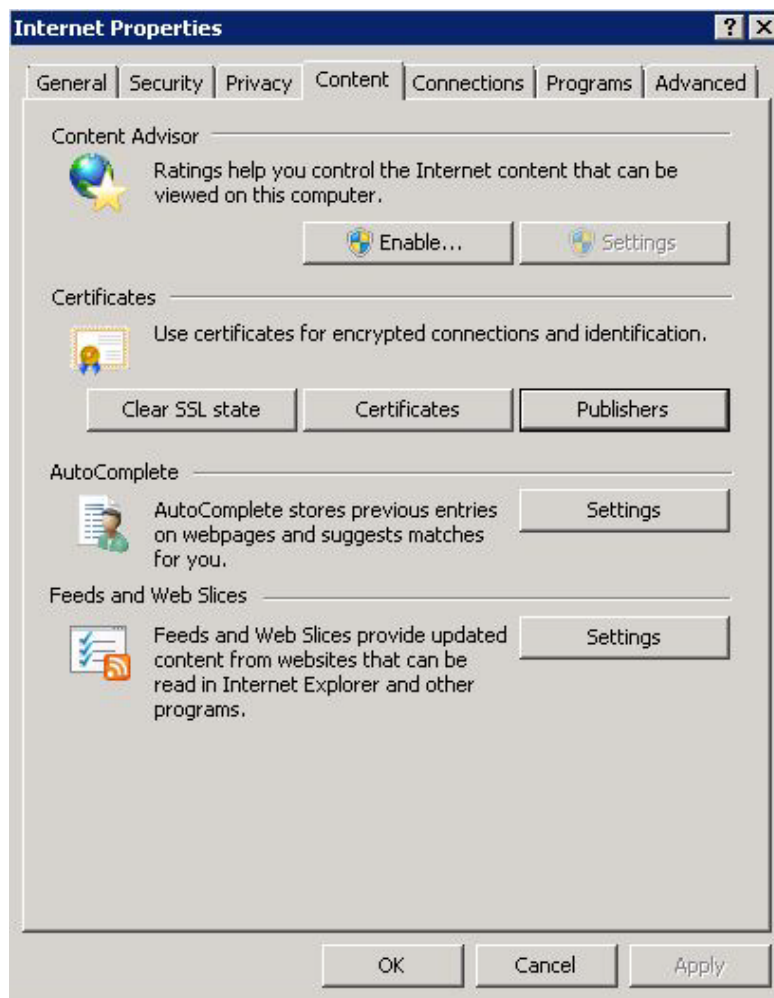
Import Trusted Certificate to .NET UI or Browsers (IE)

- 1 In the .NET UI, select Tools|Internet Properties; in IE, select Tools|Internet Options.

- 2 Select the Content tab and click Publishers.

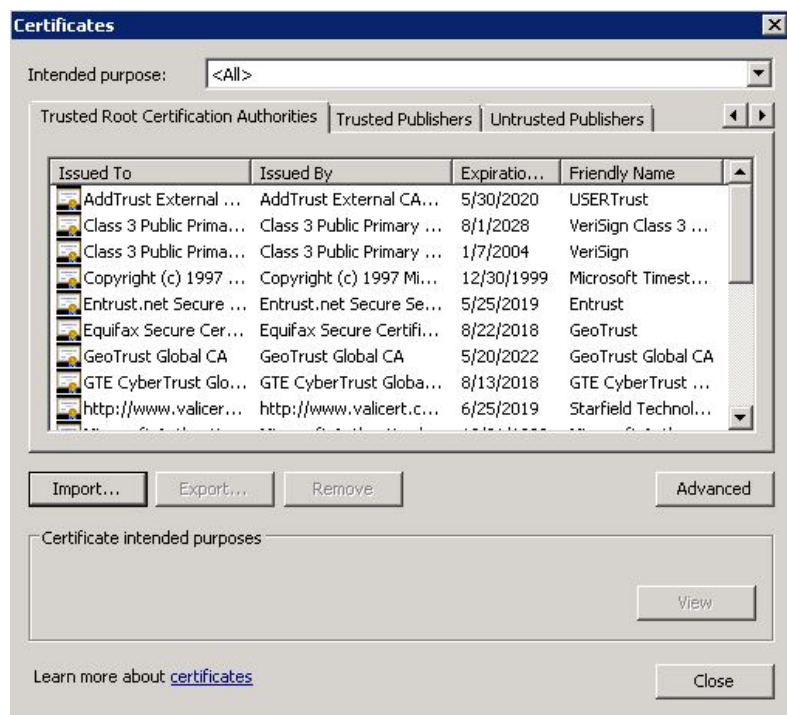
Fig. 5.7

Internet Properties Dialog Box



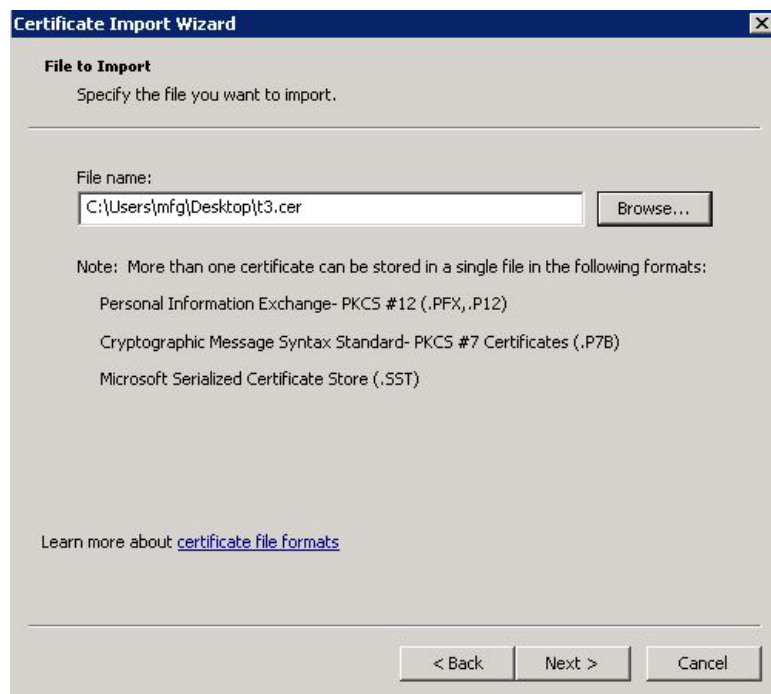
- 3 The Certificates dialog box appears. Select the Trusted Root Certification Authorities tab and click Import.

Fig. 5.8
Certificates Dialog Box



- Follow the directions in the Certificate Import Wizard to import the T3 certificate file exported in the previous steps.

Fig. 5.9
Certificate Import Wizard



Modify BPM Configuration in .NET UI

Change the value of element BpmServerPort in `<NET_UI_Tomcat_Home>/webapps/qadhome/configurations/qadui/client-session.xml` to 8445:

```
<Bpm>
  <BpmServerProtocol>https</BpmServerProtocol>
  <BpmServerHost>BPM_Host_Name</BpmServerHost>
  <BpmServerPort>8445</BpmServerPort>
  <BpmServerWebContext>sbm</BpmServerWebContext>
</Bpm>
```

Modify QXO BPM Subscriber Configuration

- 1 Execute the following command to import the jbosskey(T3) certificate into QXtend Progress:
`$ $DLC/bin/certutil -import $SSL_DIR/jbosskey.crt`
- 2 In the QXO Configuration, modify the BPM subscriber, and change SSL to true.

Enable SSL Support for QXtend

QXtend Server Side

Refer to *Installation Guide: QXtend* for more details about how to enable SSL support for QXtend.

Modify QAD BPM Configuration

Modify `<SBM_HOME>/ebmsapps/qxtend.properties` to enable HTTPS connections:

```
qxtend.url=https://<QXtend Tomcat Host>:8443/<QXI Webapp>
/services/QdocWebService
```


Troubleshooting QAD BPM Installs

This section describes how to resolve QAD BPM installation problems.

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Diagnosing the Problem 50

Environment Issues and Common Mistakes 55

Known Issues 57

Overview

This section describes how to resolve issues encountered during or after BPM installation.

Diagnosing the Problem

If you see any exceptions in the console when executing the installer in console mode, look at the exceptions carefully, correct the problem, and restart the installer.

The Installation Summary screen displays three types of information about the installation:

- Status
- Detailed Messages
- Detailed Errors

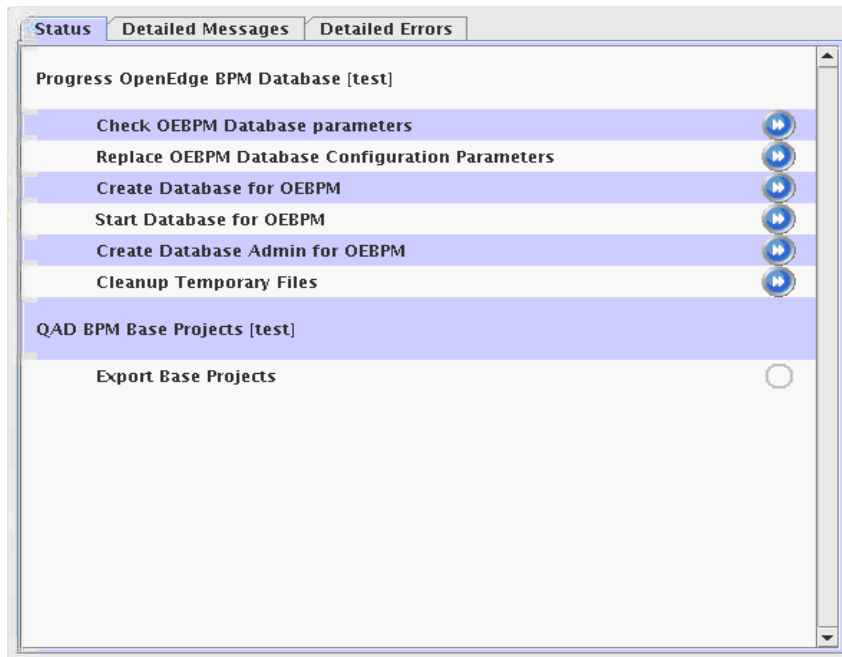
All system messages generated during installation are recorded in the install log.

Status

The Status screen uses colored symbols to indicate the status of each component:

- A green check mark indicates that the operation was completed successfully (success status).
- A red cross indicates that non-fatal and fatal errors occurred (failure status).
- A blue double arrow identifies a task you can skip (previously completed or irrelevant).

Fig. 6.1
Installation Status Screen

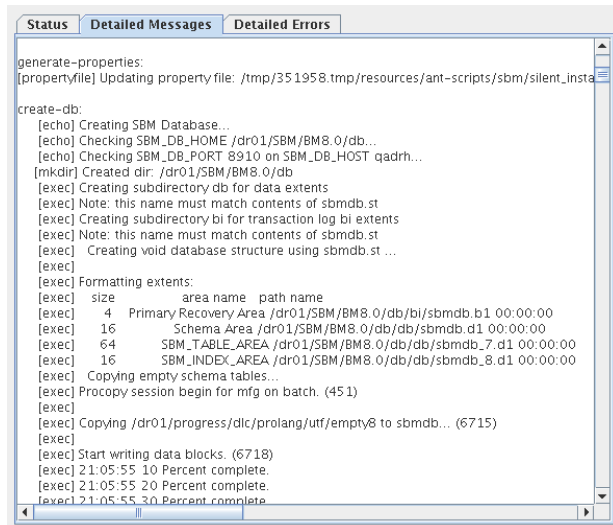


Status information also displays for substeps performed during the installation or upgrade. This information allows you to easily identify problems. Installation of the Progress OpenEdge BPM database and QAD BPM base projects consists of several substeps (Check OEBPM Database Parameters, Create Database for OEBPM, and so on). A status displays for each of these substeps.

Detailed Messages

The Detailed Messages screen displays a record of all status messages generated during the installation. All of the displayed messages are logged in the install log file.

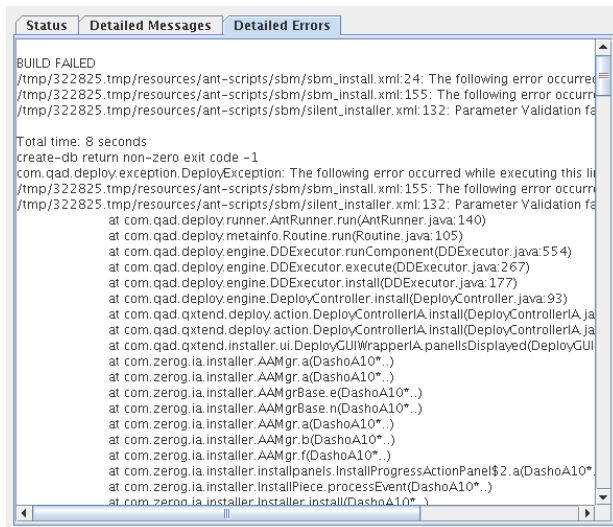
Fig. 6.2
Installation Detailed Messages Screen



Detailed Errors

The Detailed Errors screen shows a log of any fatal system errors noted during the installation. These messages indicate a serious issue with the system (for example, a corrupted Java or Progress executable). Some of these errors are recorded in the log file.

Fig. 6.3
Installation Detailed Errors Screen



Checking repository.xml

The installer keeps the installation configuration and status of all install-related tasks in the `install repository.xml` file.

Note Do not manually modify this file. Instead, modify it through the GUI installer (see “Installing QAD BPM in a GUI Environment” on page 18). You can also modify the status of routines and therefore modules. For more information, see Appendix B, “Process Control,” on page 69.

The `repository.xml` file can give you a high-level view of the results of an install, particularly when doing a console install, which presents less information.

Figure 6.4 shows the contents of a typical `repository.xml` file.

Fig. 6.4
repository.xml File

```
<?xml version="1.0" encoding="UTF-8"?>

<repository>
  <environment name="demo" createDate="2012-03-01 19:13:48 -0800"> 1
    <product name="BPM" version="1.0.0" servicePack="IR"> 2
      <global>
        ...
      </global>
      <defaultconfig/>
      <host hostname="qadrh"> 3
        <component name="QAD BPM .Net UI Plugin" copy="demo">
          <install status="Complete" moduleStatus="Complete">
            ...
          </install>
          <parameters>
            ...
          </parameters>
        </component>
        <component name="Progress OpenEdge BPM" copy="demo">
          <install status="Incomplete" moduleStatus="Incomplete"> 5
            <routines>
              <routine name="check-params" status="Done"/> 4
              <routine name="replace-token" status="Error" breakpoint="false"/>
              <routine name="install-sbm" status="Done"/>
              <routine name="install-patch" status="Done"/>
              <routine name="install-qad-patch" status="Done"/>
              <routine name="init-db" status="Done"/>
              <routine name="update-license" status="Error" breakpoint="false"/>
              <routine name="start-sbm" status="Pending" breakpoint="false"/>
              <routine name="create-oe-handler" status="Done"/>
              <routine name="clean" status="Done"/>
            </routines>
            <reminders/>
          </install>
          <parameters>
            ...
          </parameters>
        </component>
      </host>
    </product>
  </environment>
</repository>
```

A repository.xml file has the following features:

- 1** Environment: The name attribute is the environment set during the installation.
- 2** Product: There can be more than one product in the environment. Verify that the name and version match the targeted install.
- 3** Host: There can be multiple hosts in an installation. Verify that this host is the correct host.
- 4** Routine: These entries are granular tasks that the installer performs. A group of routines makes up a component. Routines can have a status of Done, Skipped, Error, or Pending.
- 5** Component: The component node is the parent to the status and the parameters. Check the component name and proceed to observe the install or upgrade nodes.
 - a** Status: The status of that particular component instance (indicated with the copy attribute). It can be:
 - Complete if all routines are Done
 - Forced Complete if any routine is marked as Skipped

- Incomplete if any routine is marked as Pending or Error
- b** **ModuleStatus:** The status of all the instances of a component. If there are three instances (indicated by copy), all three need a status of Complete or Forced Complete before the ModuleStatus is marked as Complete.

Checking the status of a component (more specifically a routine) leads you to the installation step that failed. The installation log is therefore easier to navigate because you know what to look for.

The `repository.xml` file is located under the `data` directory in the `QADDeployService` servlet in the `tomcat/webapps` directory. If you are using a local file, `repository.xml` is in the location specified during the install.

Reading the Installation Log

The BPM installation log, named `BPM-InstallLog-<TimeStamp>.log`, resides in the configured directory that was chosen when running the installer. The log file captures all of the standard output from the JVM during the install. If you are running the GUI installer, this file is the same as the Detailed Messages tab.

If an error occurred, you can read the log file during or after the install. If the pause occurred during installation, you can look at the file without exiting the installer (see Appendix B, “Process Control,” on page 69). In some cases, you can fix the issue and rerun the routine that failed.

If the installation process completed with a non-fatal error, you can identify the error by looking in the `repository.xml` file (see “Checking repository.xml” on page 52). To find the problem, look for the component that owns the failed routine. Then search the log file for the beginning of that component by finding the name and square brackets containing the instance:

```
Progress OpenEdge BPM [demo]
=====
```

The failed routine has a corresponding ant task with a name similar to that of the routine. For example:

```
install-sbm:
[echo] Checking SBM database...
[sql] Executing commands
[sql] 1 of 1 SQL statements executed successfully
[echo] Checking SBM_HOME /dr01/SBM/BM8.0...
[echo] Checking package 8.0.0.1...
```

If the routine is successful, you see a message similar to the following:

```
BUILD SUCCESSFUL
Total time: 8 minutes 1 second
```

If the routine is unsuccessful, you see a message similar to the following:

```
BUILD FAILED
/tmp/375018.tmp/resources/ant-scripts/sbm/sbm_install.xml:63: The
following error occurred while executing this line:
/tmp/375018.tmp/resources/ant-scripts/sbm/sbm_install.xml:155: The
following error occurred while executing this line:
/tmp/375018.tmp/resources/ant-scripts/sbm/silent_installer.xml:423:
Parameter Validation failed
```

The failure message includes a Java stack trace for the error. Since stack traces are sometimes hard to understand, QAD provides Helpful Hints when the installer pauses for an error.

Reading the steps around the error can provide clues regarding its cause.

Environment Issues and Common Mistakes

This section describes problems that can occur during BPM installation. For more detailed information regarding potential installation issues, visit the QAD KnowledgeBase or contact QAD support.

No Java Virtual Machine Found

If you run NoVM Installers, and see the message “No Java virtual machine could be found from your PATH environment variable,” it means that no JVM of Java 6 was found in PATH. Java 6 is required to install and run QAD BPM, and it must be the first JVM in environment variable PATH. For example, assume that Java 6 is installed in /usr/java/java6. You can add it to PATH using the command:

```
PATH=/usr/java/java6/bin:$PATH;export PATH
```

Insufficient Disk Space

If this error occurs in the console or in the installation log, verify that you have enough disk space for the following:

- SBM home directory (3G+)
- Global temp directory (5G+, specified in the GUI configuration)
- System temp directory or the directory specified by environment variable IATEMPDIR (3G+)

If this error happens during Progress OpenEdge BPM installation, you must:

- Delete the directory <GLOBAL_TMP_DIR>/ .sbm.install.tmp/8.0.0.1 in case the Progress OpenEdge BPM package is not extracted completely. The <GLOBAL_TMP_DIR> value is specified in the BPM configuration.
- Delete the <SBM_HOME> directory, but do not delete the OEBPM database directory if the OEBPM database is installed in a child directory of <SBM_HOME> (for example, <SBM_HOME>/db is the default value).
- Change the status of routines for module Progress OpenEdge BPM to Rerun in the GUI configuration.
- Restart the installer in console mode.

Missing Unzip Utilities

You must place the unzip utilities in the system path for the installer to be able to use them to extract resources. If this error happens when installing Progress OpenEdge BPM, use the steps listed in “No Java Virtual Machine Found” on page 55 to add the directory of the unzip utility to the system path.

No X11 DISPLAY variable was set

This error appears when you try to run the install in a console without GUI capability. To run the installer in console mode, add the `-i console` option to the command.

Unable to Deploy

If the Web Applications do not deploy properly, Tomcat may have failed to fully start during the installation. Verify that the Tomcat server is fully operational (a good test is to access the Manager application in your browser). If it is running, but produces out-of-memory exceptions, you can increase the maximum and default Tomcat heap size (`-Xmx` and `-Xms`). See your operating system documentation.

Cannot Connect to Database

The install log reports this problem as an error code 14. This error probably means that the installer is attempting to connect to a database that is not running (if it is trying to connect using client-server or shared-memory mode). It could also mean that the installer is trying to connect to the database in single-user mode, but it cannot connect because the database is already in use.

If the install log reports error messages like “SYSTEM ERROR: Shared memory access permission denied (1136)”, log in as the user who created the database, restart the installer, and continue with the installation.

No Features to Install on This Host

The following message can appear during BPM installation:

The information stored in the QAD Deployment Configuration Service indicates that there are no features to install on this host (xxx). If this is unexpected, you may wish to re-run the installer on a Windows or X-Platform and update the configuration. If this is correct, then continue the installer on the next host. The installer will now exit.

This message indicates that there are no installs to do on the machine on which you are running the install. You can continue the install on the servers you are using.

This message can display for a number of reasons:

- When you first run the installer on a PC in a multi-tier install, it builds the QAD Deployment Service (QADDeployService.V1), interrogates the user for configuration values (data gathering), and checks if it should also deploy on the same PC. Generally, the answer is no because you are just building the configuration data through a GUI interface, but you plan to deploy the components on a different server or servers. In this case, you can safely ignore the message and proceed.
- During `BPM.bin -i console`, you were prompted for an environment to install and entered an invalid environment name. Most likely, when you ran the installer, you provided an environment name like Test, Prod, and so on. If your answer was not valid, the installer looks in the `respository.xml` file for an environment tag called *<what you entered>*. The tag is missing, resulting in “nothing to install on this host.” If you forgot your environment name, you can check the `respository.xml` file for the name you provided. You can also run a GUI installer and observe the option at the environment selection screen. Then rerun the installer.

- To determine if an incorrect host name was entered, compare xxx from the error message with the result of `hostname` or equivalent command in a console window. When using the BPM installer, always use the shortened host name (do not include the domain).

IATEMPDIR Space

The installer must self-extract several files before it can run. This requirement can cause an error before the installer finishes loading, particularly when using the bundled Java VM. This error occurs because there is insufficient space in the default extract location. To resolve this problem, you can set the environment variable `IATEMPDIR` to a storage area with sufficient space.

Java Memory

If you experience out-of-memory errors during installation before the installer finishes initializing, do the following:

- 1 Create a directory called `bin` under `$HOME` as user `mfg`.
- 2 Create a file named `java` under the `bin` directory and add the following parameters in the file:
 - `- /opt/java1.5/bin/java -verbose -Djava.awt.headless=true -XX:HeapDumpOnOutOfMemoryError -client`
 - `-Xms1024M -Xmx2048M $@`
 - `-XX:PermSize=512M`
 - `-XX:MaxPermSize=512M`
 - Set `JAVA_HOME` to `$HOME/bin`.
 - Add `$HOME/bin` in the beginning of the `PATH`.

The installer should now be able to complete the installation process.

Known Issues

Installer Menu Items Difficult to Select

Starting the BPM Installer UI in X-Windows while using X-Windows clients (such as `xterm`) can make installer UI menu items difficult to select.

This behavior is a known environment-related issue with the Java X-Windows component. To work around it, use the Up and Down keys to make a selection.

Patch Installation

This section describes how to install a QAD BPM patch.

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Patch Installation 60

Multiple Host Installation 61

Overview

QAD provides stand-alone BPM patch packages for bug fixes or minor enhancements. Such patch packages are always cumulative, which means that if you install a new patch package, it includes all of the changes from the previous packages.

For example, if you initially installed BPM 1.1.0 (the final build is 1.1.0.13 for this release), and you installed one patch with version 1.1.0.14, you are now going to install patch 1.1.0.18. The patch package 1.1.0.18 includes everything from 1.1.0.14 to 1.1.0.17.

You can only install the patch package against the corresponding release and patches. For example, BPM Patch 1.1.0.15 can be installed against BPM 1.1.0, but it cannot be installed against BPM 1.2.0 or BPM 1.0.1. The patch installer enforces this rule.

Patch Installation

When you install the patch, the patch installer backs up the files that will be overwritten in the original BPM installation, and then installs the changes. If the installation fails, the patch installer tries to use the backup files to restore the system to its original state.

After unzipping the patch package, you will have a BPM-Patch directory called `$PATCH_HOME`. It has two files you review before the installation. `PatchContents.txt` lists all of the changes in this patch, like bug fixes and minor enhancements. `InstallNotes.txt` lists additional steps to perform after the standard installation.

Use the following steps to start a standard patch installation:

- 1 Change the directory to `$PATCH_HOME`.
- 2 Execute `install.sh` or `install.cmd` depending to your platform.
- 3 You are prompted for several parameters. Enter the correct values. For example:

Fig. 7.1
Patch Prompts

```
[mfg@vmlinux BPM-Patch]$ ./install.sh
Buildfile: /qadapps/installer/bpm/BPM-Patch/resources/ant-scripts/patch/patch_start.xml

patch-prepare:

patch-prompt-parameters:
  [input] BPM Installation Host: [vmlinux]
vmlinux
  [input] .NET UI Tomcat Host: [vmlinux]
vmlinux
  [input] SBM Home: [/qadapps/SBM/BMS.0]
/qadapps/SBM/BMS.0
  [input] SBM Portal Server Port: [18793]
18793
  [input] SBM Admin Name: [ebms]
ebms
SBM Admin Password:
[httpclient] HTTP Request
[httpclient] *****
[httpclient] URL: http://vmlinux:18793/sbm/services/BizLogic
[httpclient] Method: POST
[httpclient] SOAPAction:
[httpclient] Content-Type: text/xml; charset=UTF-8
[httpclient]
[httpclient] HTTP Response
[httpclient] *****
[httpclient] Status: 200
  [input] QAD Enterprise Application Version: ([QADEE], QADSE)
QADEE
  [input] .NET UI Server Tomcat Home: [/qadapps/tomcat]
/tomcat/8080
  [input] .NET UI Server Webapp Name: [qadhome]
qadhome
  [input] Backup Directory: [/qadapps/backup]
/qadapps/backup
```

- 4 After prompting for the parameter “Backup Directory,” the installer starts the installation. As mentioned above, the installer performs a backup and then the actual installation.
- 5 If something goes wrong during the installation, you are prompted to restore the system to its original state.
If the installation is successful, and there are no further steps in `InstallNotes.txt`, your BPM server is ready.
- 6 Follow any additional steps listed in `InstallNotes.txt`.
- 7 Restart the BPM server.

Multiple Host Installation

If you deployed BPM across multiple hosts (for example, BPM on host1, BPM Database on host2, and .NET UI Tomcat Server on host3), run the patch installer on each to finish the installation. The patch installation currently only involves hosts on which BPM and the BPM .NET UI Plug-in are installed.

When executing the patch installer, provide correct host names for the parameters BPM Installation Host and .NET UI Tomcat Host. You are also prompted for other parameters according to your current host.

In the example, you input host1 for BPM Installation Host and host3 for .NET UI Tomcat Host on each host on which you run the patch installer. The patch installer determines which modules to install on each host according to the values you provide and the current host name. For example, on host1, the BPM .NET UI Plug-in module is not installed. On host3, only the BPM .NET UI Plug-in module is installed.

The other parts of the patch installation are the same as a standard patch installation.

Typical Installation Parameters

This appendix describes the typical parameters provided for basic BPM installations.

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Tokens 64

Parameters 64

Overview

BPM provides a simplified installation process using a default BPM configuration bundled with the product to automatically populate the various installer fields.

Tokens

Tokens enable you to dynamically reference parameters from other fields. You can use any parameter name as a token by surrounding the parameter name in @ symbols. The tokens also work recursively.

For example, to resolve SBM_DB_HOME:

```
SBM_DB_HOME = @SBM_HOME@/db
SBM_HOME = @SBM_PARENT_DIR@/BM8.0
SBM_PARENT_DIR = /dr01/SBM
```

The result is:

```
SBM_DB_HOME = /dr01/SBM/BM8.0/db
```

Values are stored as tokens in the repository and resolved at runtime during configuration in the UI, or at runtime as ant properties.

Note During configuration, hovering over a field label displays the corresponding parameter name. If you hover over the field itself, the fully resolved parameter appears as a tool tip.

Parameters

The following table describes the parameters provided with the default BPM configuration.

Table A.1
Default BPM Installation Parameters (Page 1 of 4)

Module	Parameter Name	Description	Default Value
Global	GLOBAL_DLC	Global Progress Directory	
Global	GLOBAL_INSTALL_HOST	Host where BPM is installed	Current host running the installer
Global	GLOBAL_SMTP_SERVER	Global SMTP Server	
Global	GLOBAL_TMP_DIR	Global Temporary Directory	
Global	GLOBAL_TOMCAT_HOME	Global Tomcat Home Directory	
Global	MFG_ADMIN_DIR	EA Admin DB Directory	
Global	MFG_ADMIN_PHY	EA Admin DB Name	admprod
Global	MFG_DB_ADMIN_NAME	EA DB Admin Name	
Global	MFG_DB_ADMIN_PASSWORD	EA DB Admin Password	

Table A.1
Default BPM Installation Parameters (Page 2 of 4)

Module	Parameter Name	Description	Default Value
Global	MFG_DB_OWNER	EA Database Owner	
Global	MFG_DB_PASSWORD	EA DB SQL User Password	
Global	MFG_DB_USERNAME	EA DB SQL User Name	
Global	MFG_DB_PORT	EA DB SQL Port	
Global	MFG_DB_DIR	EA Database Directory	
Global	MFG_DB_PHY	EA DB Name	mfgprod
Global	MFG_DB_SECURITY_ENABLED	EA DB Security Enabled	false
Global	MFG_DB_SERVICE	EA DB Service Name	
Global	MFG_DB_USE_SERVICE	Whether to use EA DB Service	true
Global	MFG_HOME	EA Home Directory	
Global	MFG_HOST	Host where EA is installed	@GLOBAL_INSTALL_HOST@
Global	MFG_SP	EA Service Pack	QADSE
Global	MFG_VERSION	EA Version	2007
Global	MFGPRO_DLC	EA Progress Directory	@GLOBAL_DLC@
Global	INBOUND_QXO_RECEIVER	QXO Receiver for QXtend Inbound	QADQXO
Global	INBOUND_RECEIVER	ERP Receiver for QXtend Inbound	QADERP
Global	INBOUND_TOMCAT_PORT	QXtend Inbound Servlet Port	8080
Global	INBOUND_TOMCAT_HOST	QXtend Inbound Servlet Host	@GLOBAL_INSTALL_HOST@
Global	INBOUND_WEBAPP_NAM	QXtend Inbound WebApp Name	qxi
Global	INSTALL_NET_UI_PLUGIN	Whether to install .NET UI Plug-in	true
Global	OUTBOUND_SOURCE_APPLICATION	Source Application	QADERP
Progress OpenEdge BPM Database	SBM_DB_ADMIN_NAME	DB Admin Name	sbm
Progress OpenEdge BPM Database	SBM_DB_ADMIN_PASSWORD	DB Admin Password	

Table A.1
Default BPM Installation Parameters (Page 3 of 4)

Module	Parameter Name	Description	Default Value
Progress OpenEdge BPM Database	SBM_DB_DLC	DB Progress Directory	@GLOBAL_DLC@
Progress OpenEdge BPM Database	SBM_DB_DLC_ADMIN_SERVER_PORT	Admin Server Port	20931
Progress OpenEdge BPM Database	SBM_DB_HOME	DB Home	@SBM_HOME@/db
Progress OpenEdge BPM Database	SBM_DB_USE_DBMAN	Use DBMAN Utility	false
Progress OpenEdge BPM Database	SBM_DB_UPDATE_CONMGR	Update Conmgr Properties	true, if enabled
Progress OpenEdge BPM Database	SBM_DB_PHY	DB Name	sbmdb
Progress OpenEdge BPM Database	SBM_DB_PORT	DB Port	8910
Progress OpenEdge BPM	JBOSS_ADMIN_NAME	JBoss Admin Name	guest
Progress OpenEdge BPM	JBOSS_ADMIN_PASSWORD	JBoss Admin Password	guest
Progress OpenEdge BPM	JBOSS_EJB_SERVER_HTTP_PORT	EJB Server HTTP Port	16001
Progress OpenEdge BPM	JBOSS_EJB_SERVER_HTTPS_PORT	EJB Server HTTPS port	16002
Progress OpenEdge BPM	JBOSS_EJB_SERVER_NAMING_RMI_PORT	EJB Naming RMI port	16005
Progress OpenEdge BPM	JBOSS_EJB_SERVER_PORT	EJB Server JNDI Port	16003
Progress OpenEdge BPM	JBOSS_EJB_SERVER_WEBSERVICE_PORT EJB	Server WebService port	16004
Progress OpenEdge BPM	JBOSS_MAX_POOL_SIZE	Maximum Database Connection Pool Size	20
Progress OpenEdge BPM	JBOSS_MIN_POOL_SIZE	Minimum Database Connection Pool Size	5
Progress OpenEdge BPM	JBOSS_PORTAL_SERVER_HTTPS_PORT	Portal Server HTTPS Port	18002
Progress OpenEdge BPM	JBOSS_PORTAL_SERVER_NAMING_PORT	Portal Server JNDI Port	18003

Table A.1
Default BPM Installation Parameters (Page 4 of 4)

Module	Parameter Name	Description	Default Value
Progress OpenEdge BPM	JBOSS_PORTAL_SERVER_NAMING_RMI_PORT	Portal Server Naming RMI Port	18005
Progress OpenEdge BPM	JBOSS_PORTAL_SERVER_PORT	Portal Server HTTP Port	18793
Progress OpenEdge BPM	JBOSS_PORTAL_SERVER_WEBSERVICE_PORT	Portal Server WebService Port	18004
Progress OpenEdge BPM	JBOSS_REMOTE_ANT_PORT	Remote Ant Port	14005
Progress OpenEdge BPM	SBM_ADMIN_NAME	Admin Name	ebms
Progress OpenEdge BPM	SBM_ADMIN_PASSWORD	Admin Password	
Progress OpenEdge BPM	SBM_ADMIN_EMAIL	Admin Email	
Progress OpenEdge BPM	SBM_DLC	Progress Directory for OEBPM	@SBM_DB_DLC@
Progress OpenEdge BPM	SBM_HOME	Home Directory	@SBM_PARENT_DIR@/BM8.0
Progress OpenEdge BPM	SBM_JAVA_HOME	Java Home	
Progress OpenEdge BPM	SBM_LICENSE_LOCATION	Full path of the License file including the file name	
Progress OpenEdge BPM	SBM_PACKAGE_PATH	OEBPM Package Path	
Progress OpenEdge BPM	SBM_PARENT_DIR	OEBPM Parent Directory	
QAD BPM Sample Processes	SELECTED_PROCESSES	Selected Sample Processes	
QAD BPM .NET UI Plug-in	NET_UI_CONFIG_NAME	.NET UI Configuration Name	qadui
QAD BPM .NET UI Plug-in	NET_UI_SERVER_TOMCAT_HOST	Tomcat Host for .NET UI Server	Where the QAD BPM .NET UI Plugin is installed
QAD BPM .NET UI Plug-in	NET_UI_SERVER_TOMCAT_HOST	Tomcat Port for .NET UI Server	8080
QAD BPM .NET UI Plug-in	NET_UI_SERVER_TOMCAT_HOME	Tomcat Home for .NET UI Server	@GLOBAL_TOMCAT_HOME@
QAD BPM .NET UI Plug-in	NET_UI_SERVER_WEBAPP_NAME	WebApp Name for .NET UI Server	qadhome

Process Control

This appendix describes BPM installation process control.

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Using Process Control 70

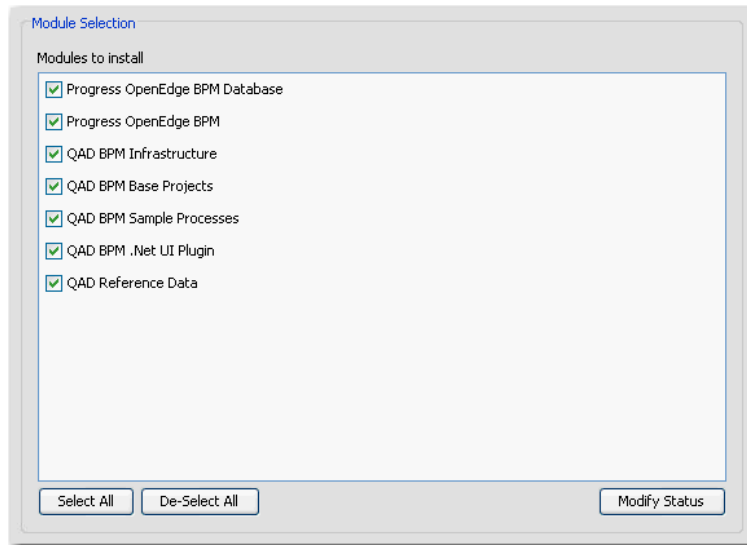
Overview

Process Control can enhance BPM installation by providing a higher level of control over the installation process.

Using Process Control

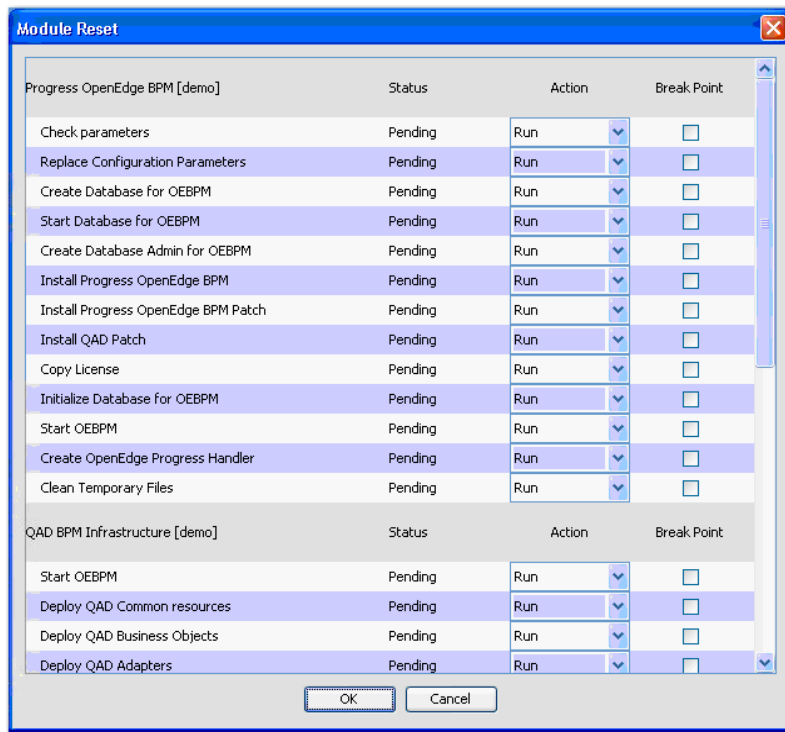
Click the Modify Status button on the Module Selection Screen.

Fig. B.1
Module Selection Screen



The Modify Status pop-up appears.

Fig. B.2
Modify Status Pop-up



Changing the action via the selection lists enables you to run, rerun, or skip each of the routines. This feature allows you to skip tasks that were run in previous installs (such as adding the Tomcat users) or to rerun a specific routine (such as compiling the adapter).

Note All routines are included for a reason. Skipping a routine could result in an incomplete or nonfunctional installation. Only skip routines that you are sure are not needed.

Selecting a routine's breakpoint check box pauses the installer before it runs the routine. This feature allows you to pay particular attention to that part of the install.

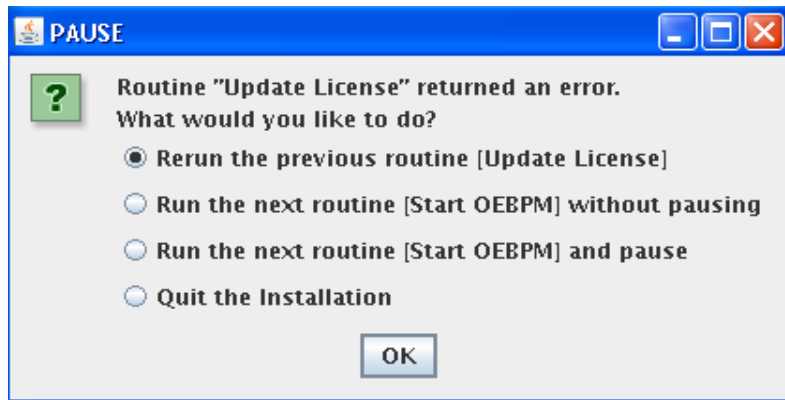
If the installer encounters an error while running, it pauses, allowing you to fix environment problems on the fly. For example, if Tomcat is not running when the installer tries to deploy the servlets, the installer pauses. You can investigate using the log file (refer to "Reading the Installation Log" on page 54), see that Tomcat was not started, and start it. The installation continues as if nothing had happened.

Fig. B.3
Console Prompt After an Error

```
-----
PAUSE
-----
Routine "Update License" returned an error.
What would you like to do?
  1- Rerun the previous routine [Update License]
  2- Run the next routine [Start OEBPM] without pausing
  3- Run the next routine [Start OEBPM] and pause
  4- Quit the Installation

Enter your selection: █
```

Fig. B.4
GUI Prompt After an Error



You cannot correct configuration errors in the repository file. For instance, if you provide the wrong license file, you cannot add it once the installation starts and rerun the routine after it fails. Rerun the installer and let it pick up the new value.

In summary, do the following when errors occur:

- To correct the parameters, quit the installer, fix the configuration, and rerun the installer.
- For environment issues such as incorrect permissions or the database failing to start, you can fix the issue and resume the installer by selecting “Rerun the previous routine.”
- In rare situations, the installer hangs and does nothing. You can kill the process (typically by pressing Ctrl+c for the console installer), identify the issue, fix it, and rerun the installer.

QXtend Configuration for Sample Processes

This appendix describes how to configure QXO for sample processes.

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Required Business Objects and Profiles 74

Register Business Objects and Profiles 75

Activate Event Types 75

QDocs in QXI 76

Overview

This appendix describes how to configure QXO for sample processes.

Required Business Objects and Profiles

The following business objects and profiles are required by BPM sample processes in QAD Enterprise Edition.

Table C.1
Business Objects and Profiles Required by BPM Sample Processes in EE

Sample Processes	Business Objects	Profiles	Deploy Query
Item	ItemEngineeringChange	Item_EE_1	Yes
	ItemReplacement	ItemReplacement_EE_1	Yes
	QADERPSalesOrderLine	SalesOrderDetail_EE_1	Yes
	EngChangeItemDetail	EngChangeItemDetail_EE_1	Yes
	WorkOrder	WorkOrder_EE_1	Yes
	WorkOrderDetail	WorkOrderDetail_EE_1	Yes
	KanbanItemActive	KanbanItemActive_EE_1	Yes
	PurchaseOrderDetail	PurchaseOrderDetail_EE_1	Yes
	RepetProductionSched	RepetProductionSched_EE_1	Yes
Supplier	BCreditor	Creditor_EE_1	No
	LogisticsAccountingCtrl		Yes
	SupplierConsignmentCtrl		Yes
	SupplierPerformanceCtrl		Yes
Customer	BDebtor	Debtor_EE_1	No
	ServiceSupportCtrl		Yes
	CustomerConsignmentCtrl		Yes
SalesOrder	SalesOrder	SalesOrder_EE_1	Yes
	Debtor	DebtorCredit_EE_1	Yes
	DomainCustomerSharedSet	DomainCustSharedSet_EE_1	Yes

The following business objects and profiles are required by BPM sample processes in QAD Standard Edition.

Table C.2
Business Objects and Profiles Required by BPM Sample Processes in SE

Sample Processes	Business Objects	Profiles	Deploy Query
Item	ItemEngineeringChange	Item_SE_1	Yes
	QADERSalesOrderLine	SalesOrderDetail_SE_1	Yes
	EngChangeItemDetail	EngChangeItemDetail_SE_1	Yes
	WorkOrder	WorkOrder_SE_1	Yes
	WorkOrderDetail	WorkOrderDetail_SE_1	Yes
	KanbanItemActive	KanbanItemActive_SE_1	Yes
	PurchaseOrderDetail	PurchaseOrderDetail_SE_1	Yes
	RepetProductionSched	RepetProductionSched_SE_1	Yes
Supplier	Supplier	Supplier_SE_1	Yes
	LogisticsAccountingCtrl		Yes
	SupplierConsignmentCtrl		Yes
	SupplierPerformanceCtrl		Yes
Customer	Customer	Customer_SE_1	No
	ServiceSupportCtrl		Yes
	CustomerConsignmentCtrl		Yes
SalesOrder	SalesOrder	SalesOrder_SE_1	Yes
	Customer	CustomerCredit_SE_1	Yes

Register Business Objects and Profiles

Register the following profiles with the BPM subscriber. Also, register the business objects with the Message Publisher.

For QAD Enterprise Edition:

- ItemEngineeringChange/Item_EE_1
- BCreditor/Creditor_EE_1
- BDebtor/Debtor_EE_1
- SalesOrder/SalesOrder_EE_1

For QAD Standard Edition:

- ItemEngineeringChange/Item_SE_1
- Supplier/Supplier_SE_1
- Customer/Customer_SE_1
- SalesOrder/SalesOrder_SE_1

Activate Event Types

Activate the following event types.

For QAD Enterprise Edition:

- ecd_det (BO: ItemEngineeringChange)
- ItemDataMaintenance (BO: ItemEngineeringChange)
- ItemMaintenance (BO: ItemEngineeringChange)
- SalesOrderMaintenance (BO: SalesOrder)
- Create (BO: BCreditor, BDebtor)
- Modify (BO: BCreditor, BDebtor)
- Delete (BO: BCreditor, BDebtor)

For QAD Standard Edition:

- ecd_det (BO: ItemEngineeringChange)
- ItemDataMaintenance (BO: ItemEngineeringChange)
- ItemMaintenance (BO: ItemEngineeringChange)
- SalesOrderMaintenance (BO: SalesOrder)
- SupplierMaintenance (Supplier)
- CustomerMaintenance (Customer)

QDocs in QXI

The following tables list the QDocs for EE and SE.

Table C.3
QDocs for EE

Sample Processes	QDoc Name	QDoc Version
Item	maintainItemData	ERP3_2
SalesOrder	bdebtor	ERP3_1
	ERP3_1	ERP3_1

Table C.4
QDocs for SE

Sample Processes	QDoc Name	QDoc Version
Item	maintainItemData	eB21_4
SalesOrder	maintainCustomer	eB_2
	maintainSalesOrderCredit	eB_2

BPM Developer Studio Installation and Workspace Setup

This appendix describes how to install the BPM Developer Studio and set up the workspace.

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Install BPM Studio 78

Setup Studio Workspace 79

Overview

The BPM Studio installation package is the same package used for BPM server installation. It installs the BPM Developer Studio and BPM server (Business Manager). However, since the BPM server is not needed, it is removed after BPM installation. QAD recommends that you only install BPM Studio on Windows.

Install BPM Studio

To install the BPM Studio installation package, do the following:

- 1 Extract the package
PROGRESS_SAVVION_BPMSTUDIO_BUSINESSMANAGER_8.0.0.1_ALL.zip.
- 2 Execute `install.cmd`.
- 3 Choose your language and click OK.
- 4 Click Next eight times.
- 5 Provide the user name/password for BusinessManager Admin Credentials (this is not important).
- 6 Click Next six times.
- 7 Select OpenEdge 11.0 for Database Selection.
- 8 Click Next twice.
- 9 Provide the user name/password for Database Credentials (this is not important).
- 10 Click Next.
- 11 Select “No, I do not want to verify” for Verify Database Connection.
- 12 Click Next twice.
- 13 Clear “Launch FirstSteps Console after installation.”
- 14 Click Next.
- 15 Click Install.
- 16 After the successful installation, click Uninstall from Start|Progress|SBM 8.0.
- 17 New Developer Studio patches are available. Download the package and follow the instructions to install the patch.

Set Up Studio Workspace

Introduction

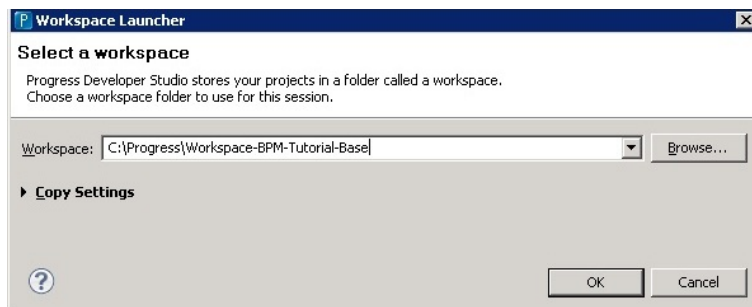
This section describes the procedure for creating and configuring a BPM Developer Studio workspace for developing and publishing business processes using QAD BPM. While a default workspace is automatically created when Developer Studio is installed, QAD recommends that you create one or more separate workspaces for use with QAD BPM. You then populate the workspace with QAD BPM sample process templates and other objects.

While the screen shots included in this procedure show a QAD BPM environment installed with QAD Enterprise Edition (EE), some of the displays are different for Standard Edition (SE). In particular, the names of artifacts such as Business Objects and project often include the string “_SE”, rather than the string “_EE” shown in this procedure.

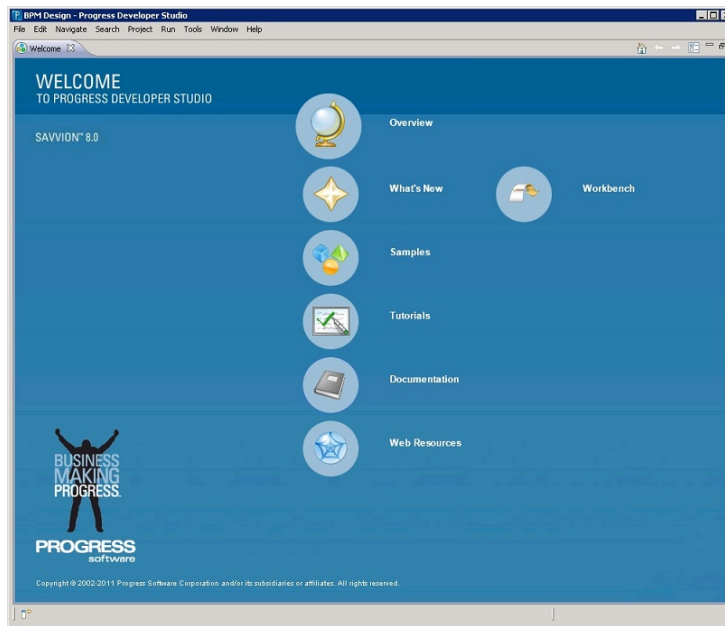
The workspace created in this procedure is used in other tutorials to develop and deploy QAD BPM business processes.

Create Eclipse Workspace

- 1 After starting Developer Studio from the Windows Start menu or a shortcut, run the File|Switch Workspace|Other command from the Eclipse menu bar. Enter the path name of the new QAD BPM workspace. Press OK.



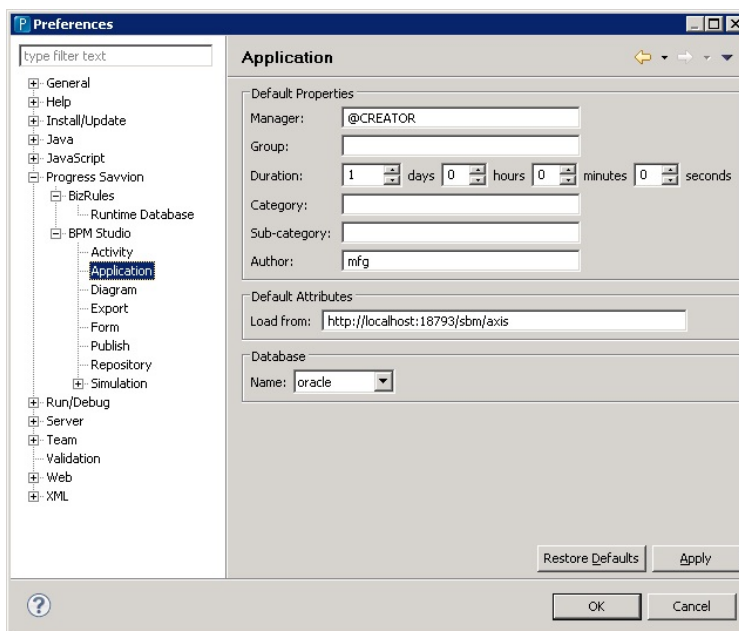
- 2 After the workspace is created, press the Workbench icon from the Welcome screen to go to the new workspace.



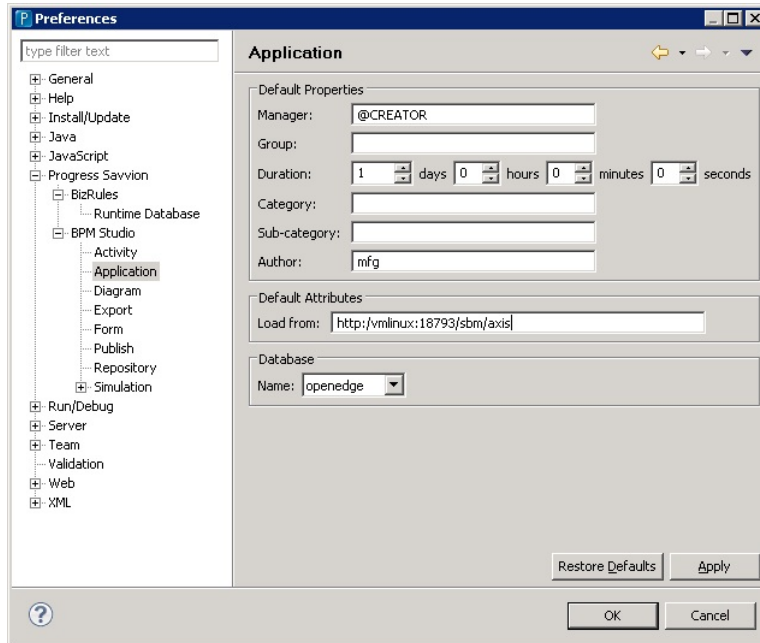
Configure Workspace Preferences

Before using the new workspace, you set its BPM-related preferences in order to connect to the BPM server and database, when necessary.

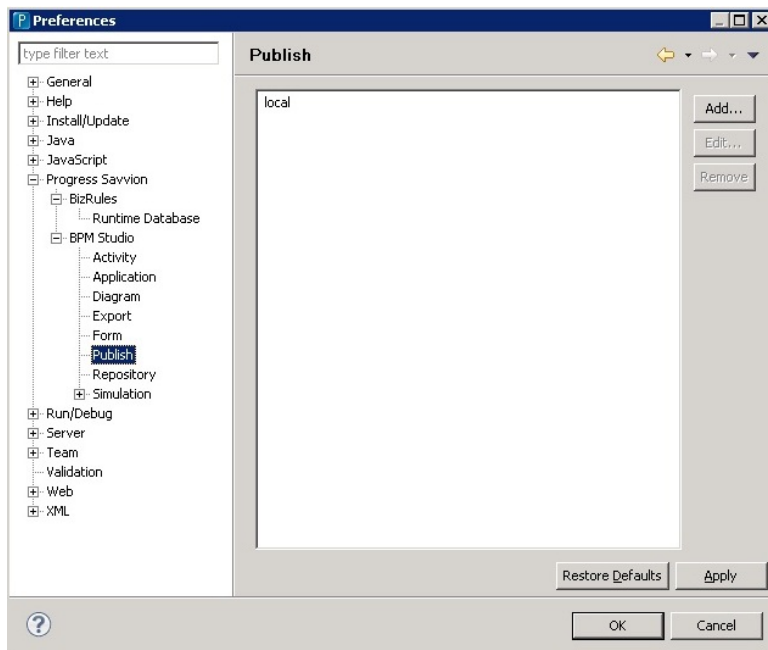
- 1 Run the Window|Preferences command from the Eclipse menu bar. Expand the Progress Savvion node and its child nodes, selecting the Progress Savvion - BPM Studio - Application node.



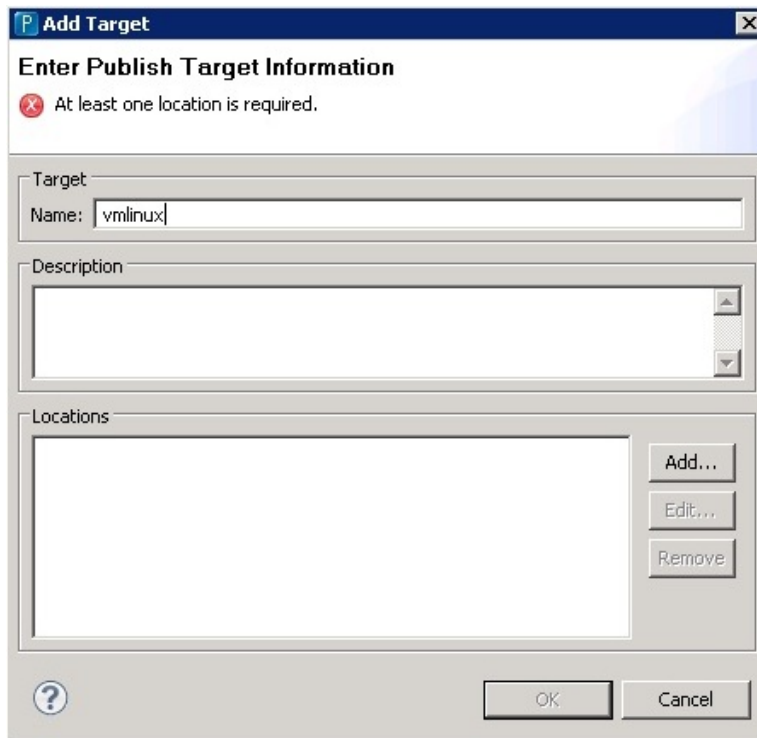
- 2 Change the Load From field to reference the correct host name and port. Select the OpenEdge option in the Name field. Press Apply to save the change.



- 3 Select the Progress Savvion - BPM Studio - Publish node.



- 4 Press Add, and enter a name for the connection to the BPM server. In many cases, it is convenient to specify the host name on which the server resides.



Add Target

Enter Publish Target Information

At least one location is required.

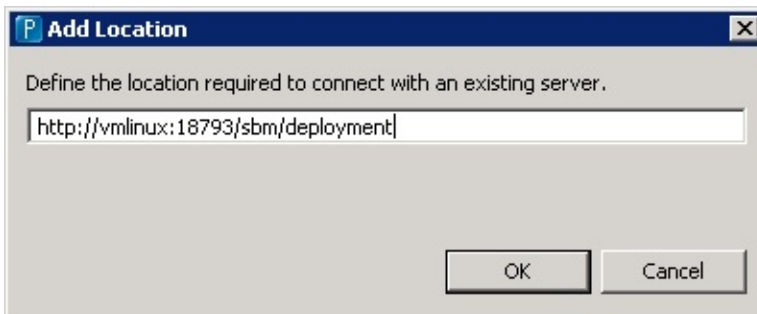
Target

Name:

Description

Locations

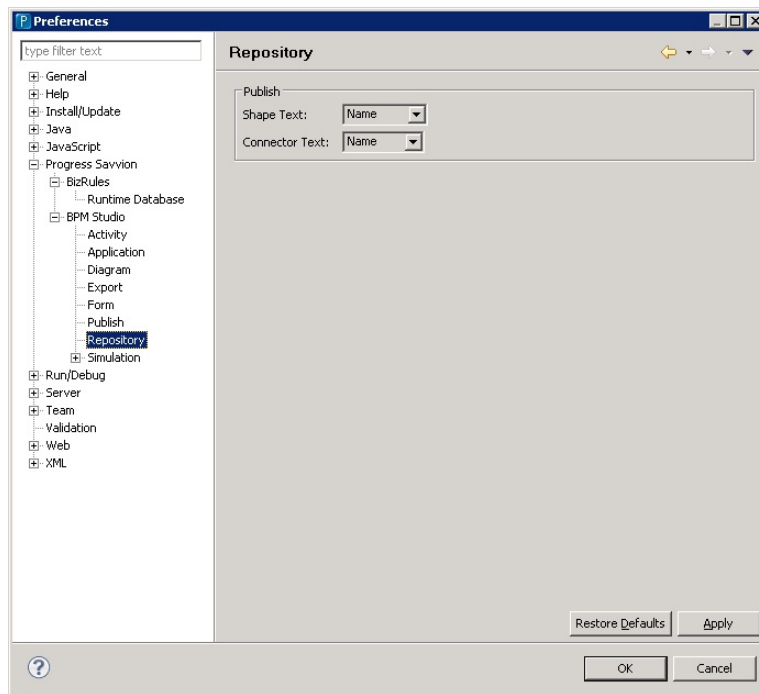
- 5 Press Add in the Locations panel, and enter a connection URL of the form: `http://<host>:<port>/sbm/deployment`, where *<host>* is the host on which the server resides and *<port>* is the port number of the HTTP port specified during the QAD BPM installation.



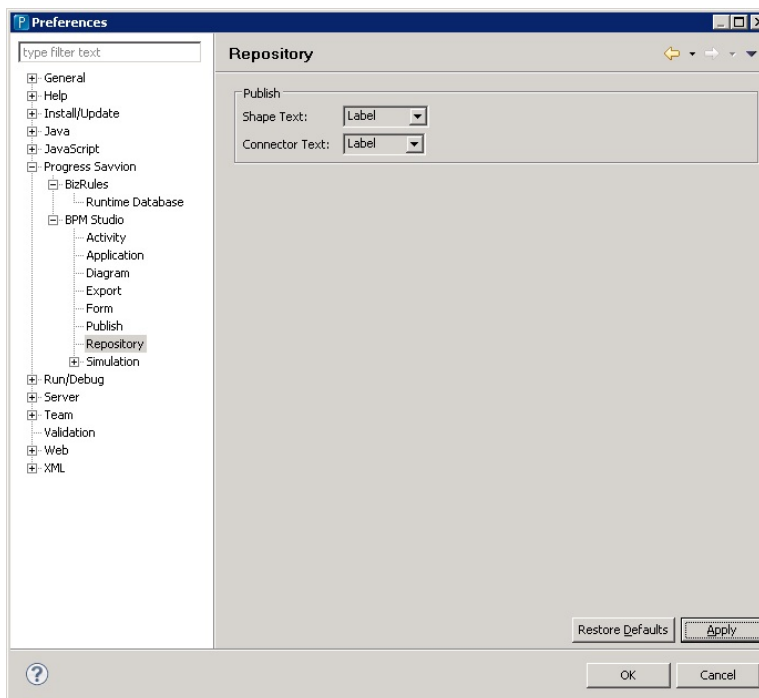
Add Location

Define the location required to connect with an existing server.

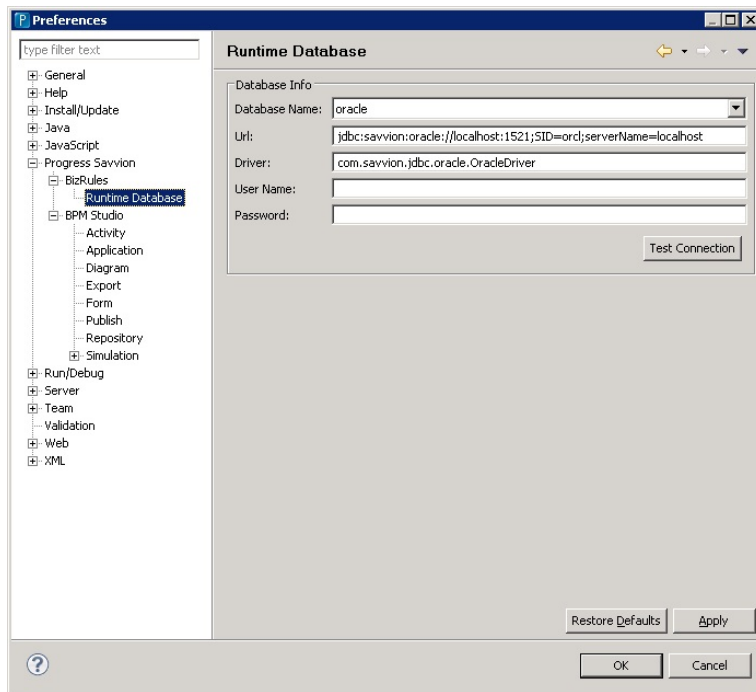
- 6 Press OK in the Add Location window and Add Target window. Press Apply in the Preferences window to save the change.
- 7 Select the Progress Savvion - BPM Studio - Repository node.



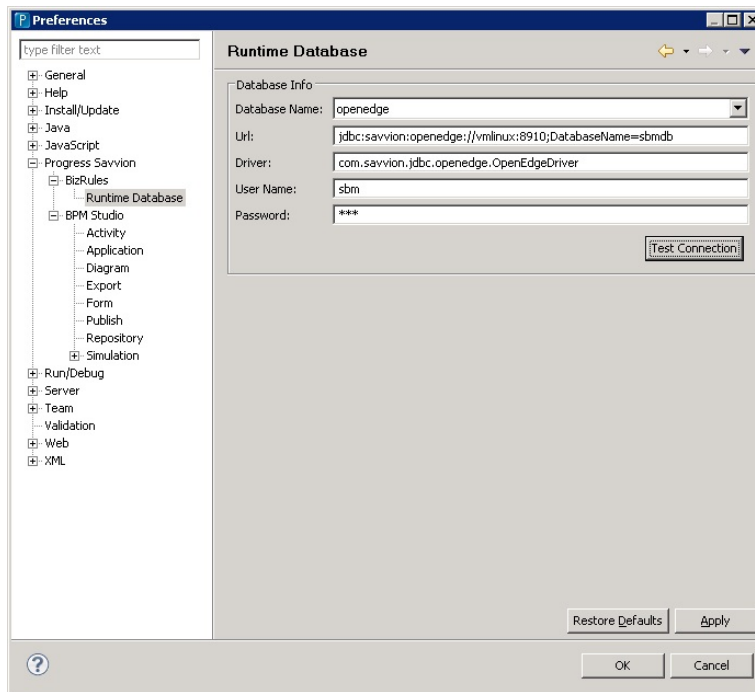
- 8 Change the Shape Text and Connector Text fields to the Label option, and press Apply to save the changes. This option improves the display quality when rendering business process diagrams from the BPM portal.



- 9 Select the Progress Savvion - BizRules - Runtime Database node.



- 10 Select the OpenEdge option in the Database Name field. Set the Url field to a JDBC connection URL of the form:
`"jdbc:savvion:openedge://<host>:<port>;DatabaseName=sbmdb"`, where `<host>` is the host on which the BPM database resides and `<port>` is the port number of its Progress SQL broker specified during the QAD BPM installation. You must specify a port number, not a service name, in this field. Enter the SQL User Name and Password values to connect to the BPM database, also specified during the QAD BPM installation. Press Apply to save the changes.



- 11 Press Test Connection to verify that the information is correct. The BPM database must have been started to complete this operation. Press OK.

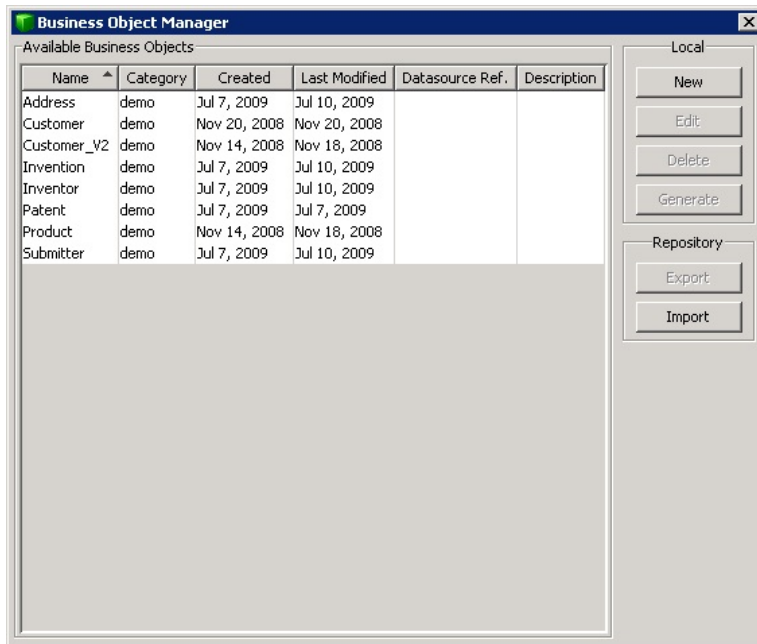


Import QAD Business Objects

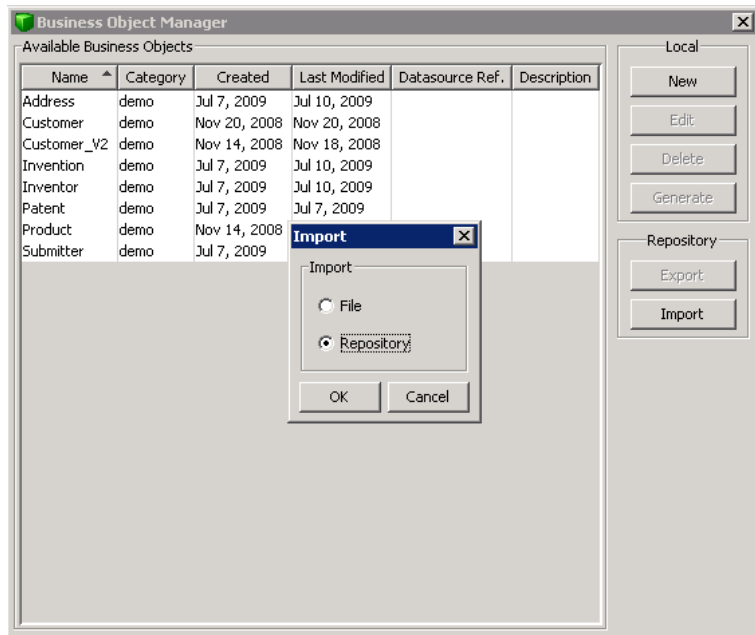
Most of the business processes supported in QAD BPM are designed around a complex business document or object made up of many data elements, such as an item, customer, or sales order. In fact, a key objective of most business processes is to manage some portion of the life cycle of such business objects (for example, the creation of a supplier or the confirmation-review of a sales order). Therefore, QAD provides various predefined Business Object types in the BPM environment corresponding to similar objects from the database of QAD Enterprise Applications. Through built-in integration provided with QAD BPM, data from the application modules is shared with the BPM environment through these Business Objects. Before the QAD sample

projects and models can be used, the Business Object types that they support must be imported into the Process Modeler workspace from the BPM repository that was populated at QAD BPM installation.

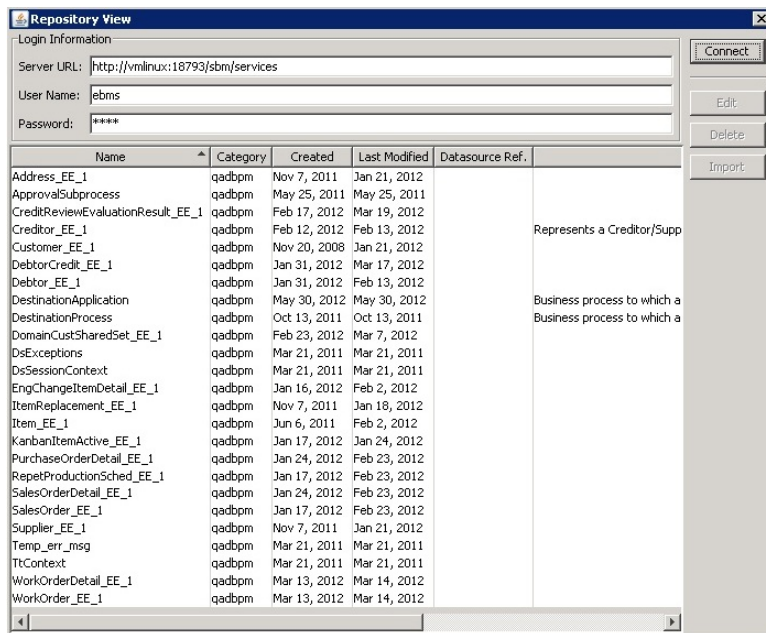
- 1 Run Tools|Business Objects from the Eclipse menu bar. Sample Progress business objects may already be present in the workspace.



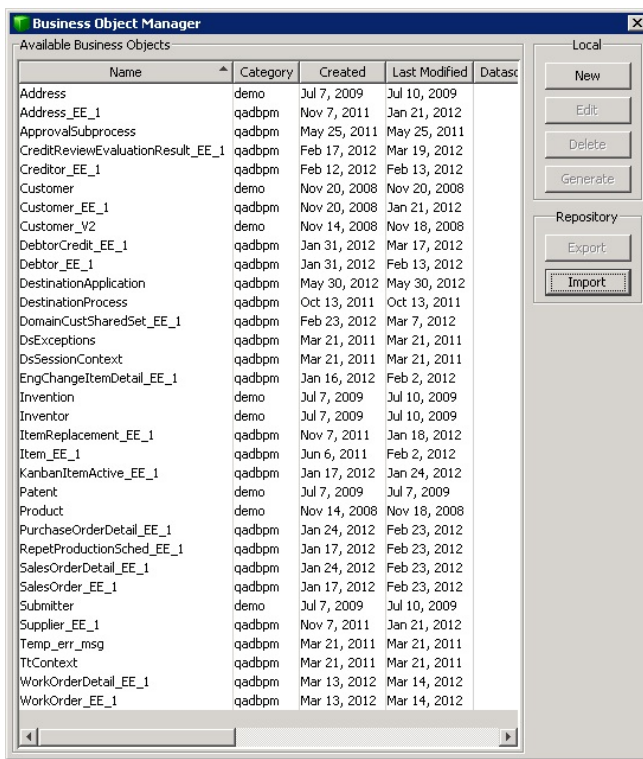
- 2 Press Import and select the Repository option.



- 3 Enter the correct Server URL and the User Name and Password of the BPM Admin user specified during QAD BPM installation. Press Connect. The QAD business objects stored in the repository are displayed with the category qadbpm.



- 4 Select all of the business object types. Press Import. The QAD business object types display in the Business Object Manager window.

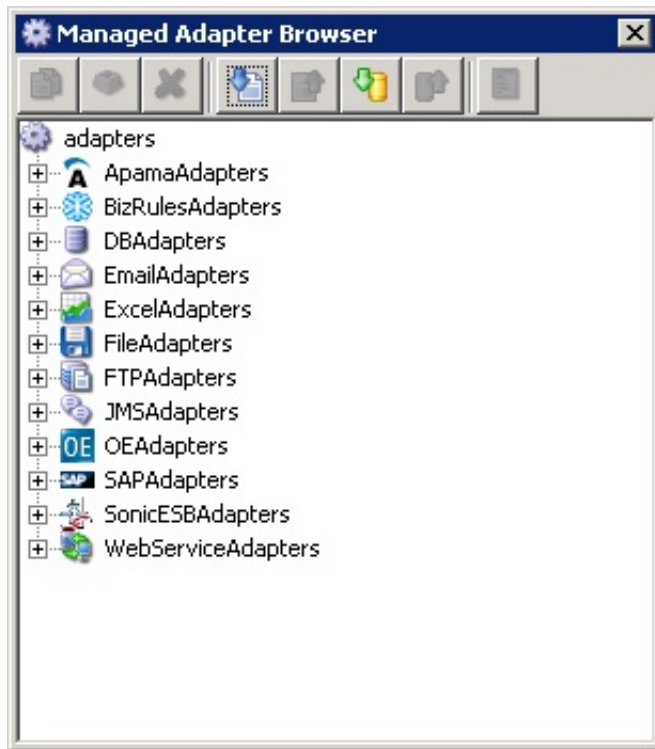


- 5 Close the window to exit the Business Object Manager tool.

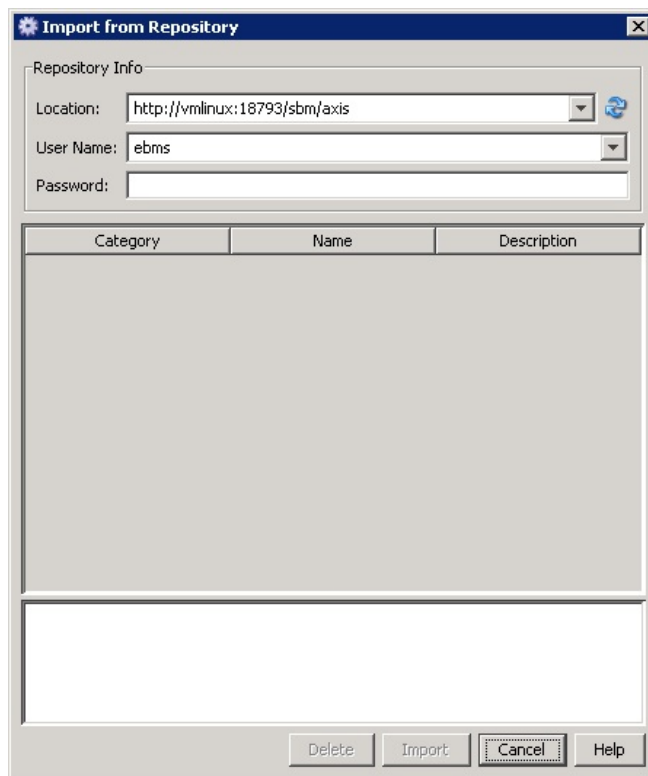
Import QAD Managed Adapter

In order to modify or extend the QAD sample business processes to call QAD Enterprise Applications APIs or retrieve data from the QXtend Query Service, the QDoc Managed Adapters must reside in the workspace. They can be imported from the BPM repository that was populated at QAD BPM installation.

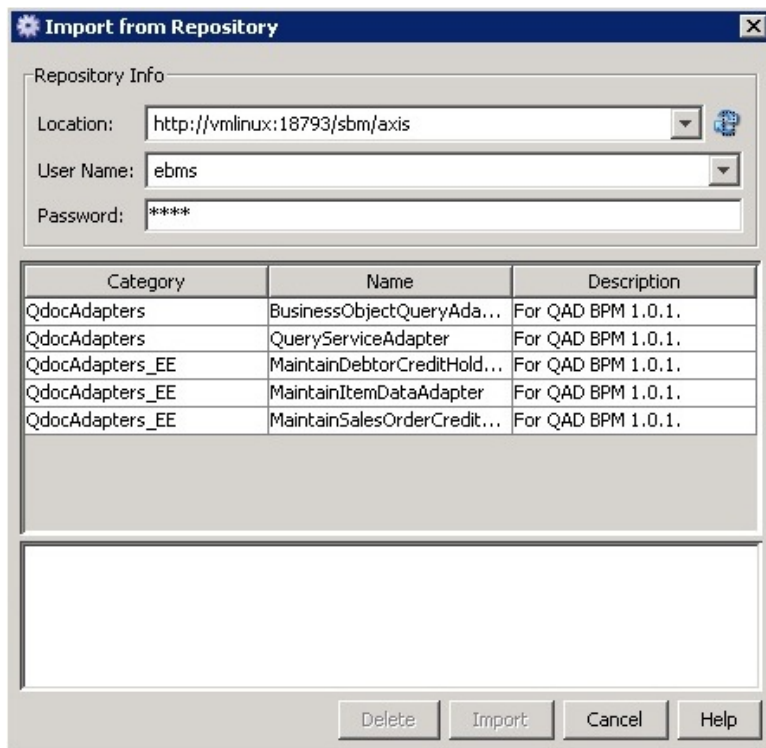
- 1 Run Tools|Managed Adapters from the Eclipse menu bar. Several managed adapters that Progress provides are already present in the workspace.



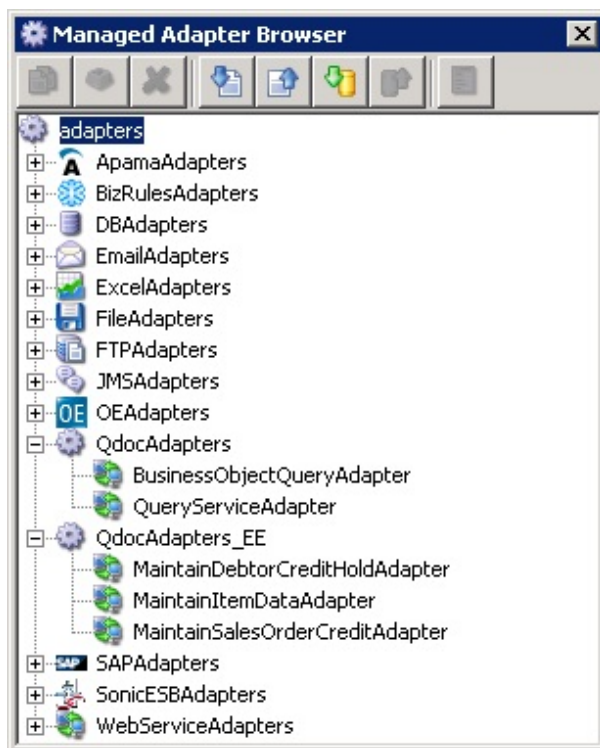
- 2 Press the Import from repository button  in the toolbar.



- 3 Enter the correct URL in the Location field and the User Name and Password of the BPM Admin user specified during QAD BPM installation. The QDoc Managed Adapters stored in the repository are displayed in several “QDocAdapters*” categories.



- 4 Select all of the QDoc Managed Adapters. Press Import. The managed adapter displays in the Managed Adapter Browser window.

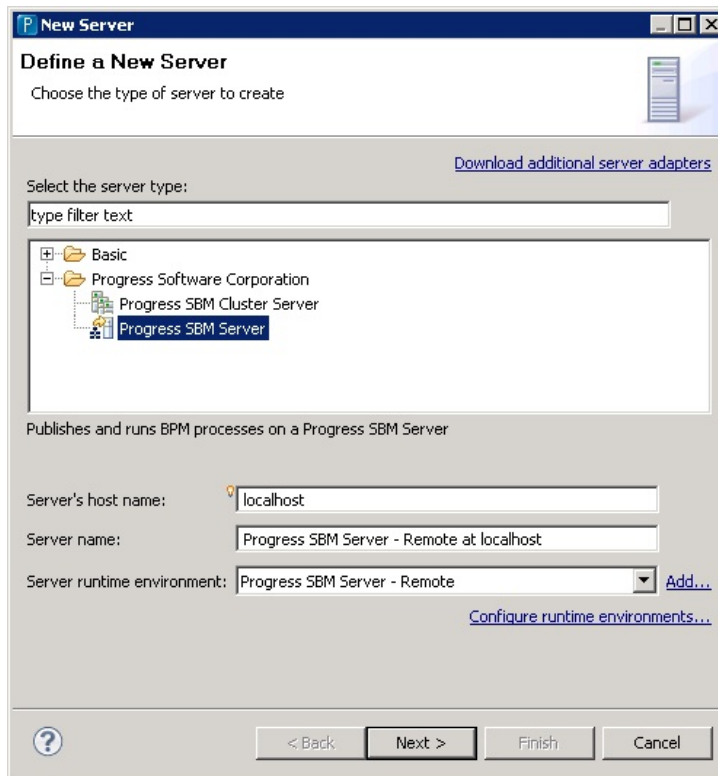


- 5 Close the window to exit the Managed Adapters tool.

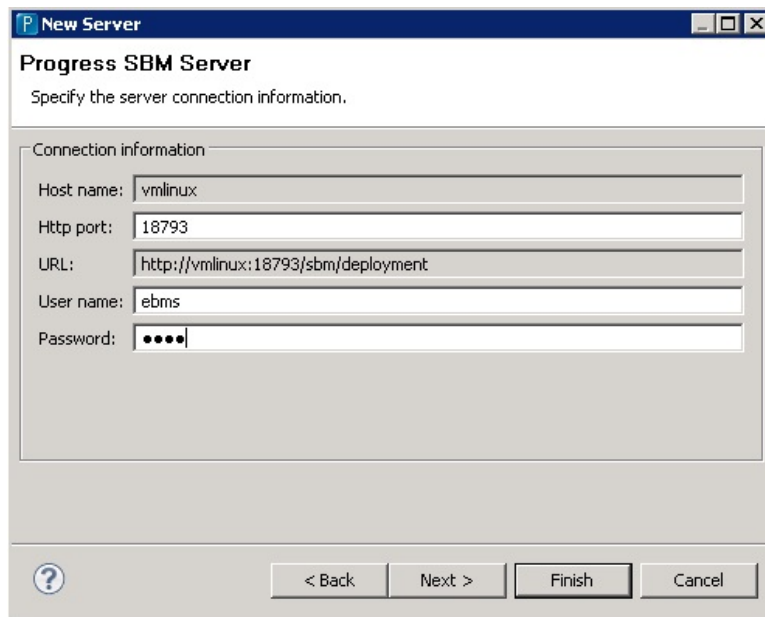
Define BPM Server Connection

The Developer Studio allows BPM projects and business processes to be published to a BPM server conveniently and even automatically when updated, if desired. This feature can be useful for synchronizing the workspace with remote development environments during business process implementation. To support the feature, a BPM server object must be created.

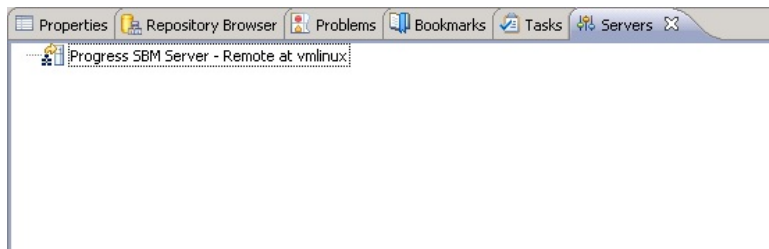
- 1 Ensure that the BPM Design perspective is displayed by running Window|Open Perspective|BPM Design from the Eclipse menu bar. Select the Servers tab in the lower frame of the screen, which is initially empty. Right-click on the blank canvas to the New|Server command. Select the Progress SBM Server node under the Progress Software Corporation node.



- 2 Enter the name of the host on which the BPM server resides in the Server's host name field. Press Next.



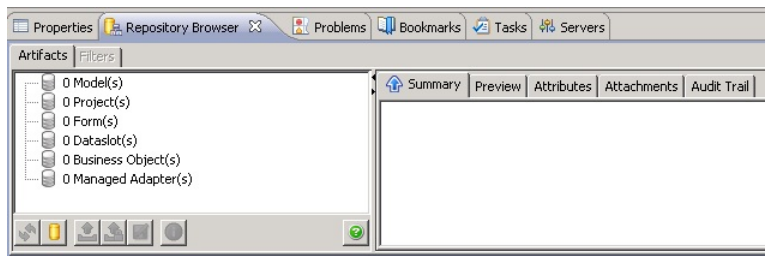
- 3 Enter the HTTP port number of the BPM server in the Http port field. Enter the User name and Password of the BPM Admin user. These values were specified during QAD BPM installation. Press Finish to create the Server object without yet publishing any projects to the BPM server.



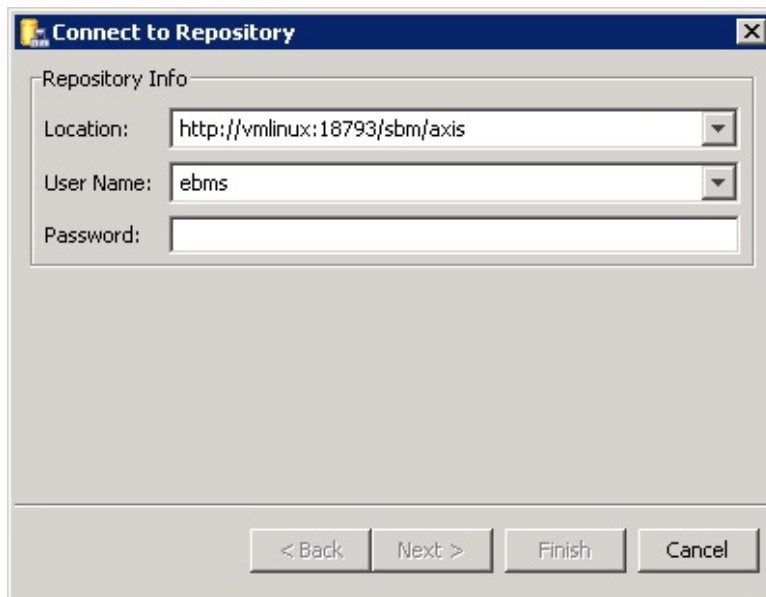
Check Out QAD Sample Projects

The QAD sample projects and the business processes they contain are the starting point for business process development in QAD BPM. They were stored in the BPM repository during QAD BPM installation and must be checked into the workspace to be used.

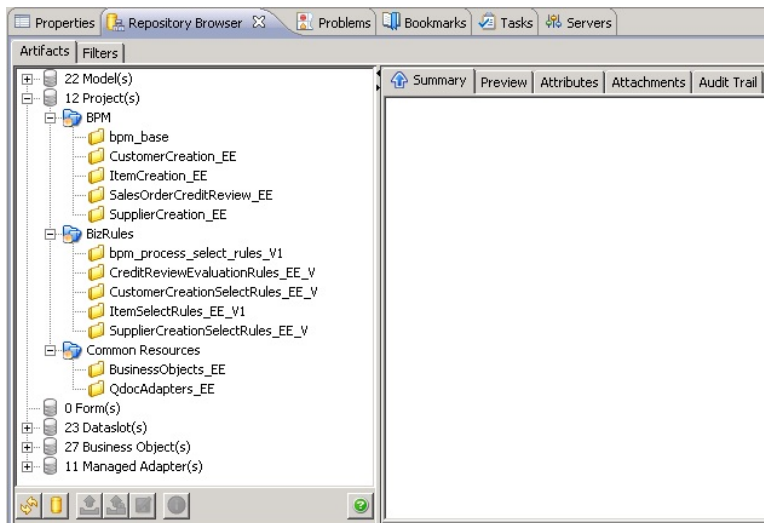
- 1 Before checking out any projects, uncheck the Project|Build Automatically option from the Eclipse tool bar. This step significantly speeds up the check out procedure. Otherwise, Studio attempts to rebuild the entire workspace as each project is checked out.
- 2 Ensure that the BPM Design perspective is displayed by running Window|Open Perspective|BPM Design from the Eclipse menu bar. Select the Repository Browser tab in the lower frame of the screen. Because Studio is not yet connected to a BPM repository, no artifacts are displayed.



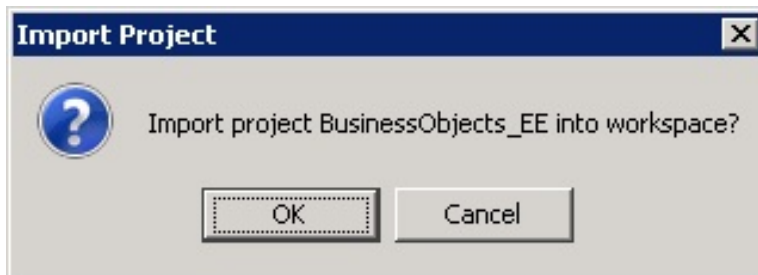
- 3 Press the Connect button  at the bottom of the view.



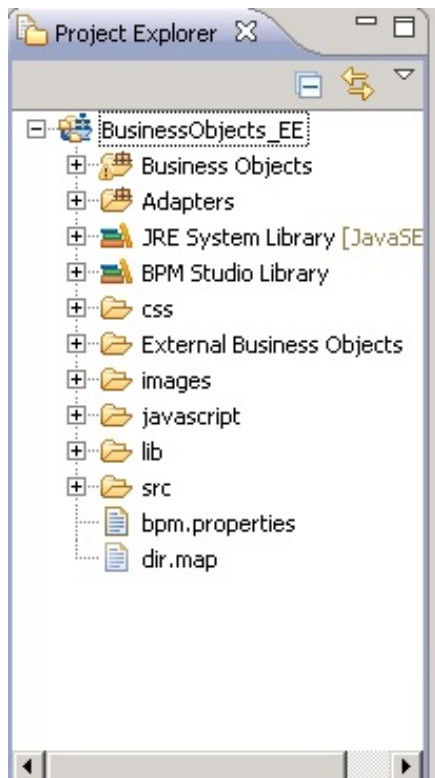
- 4 Enter the correct URL in the Location field and the User Name and Password of the BPM Admin user specified during QAD BPM installation. Press Finish to connect to the repository. Expand the Project(s) node and its child nodes in the Repository Browser tab to display the sample projects by category.



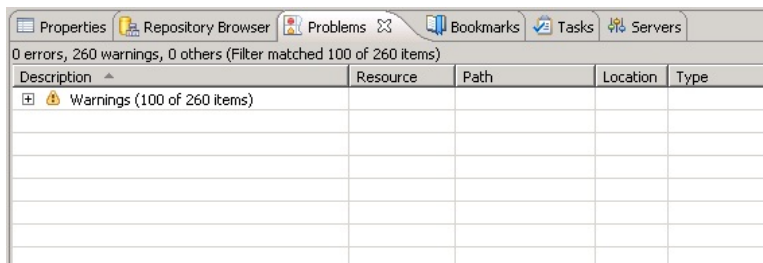
- 5 Right-click the BusinessObjects* project shown in Common Resources and select the Checkout operation. Press OK to import it. Because other sample projects reference and depend on the business objects, it is best to import this project first.



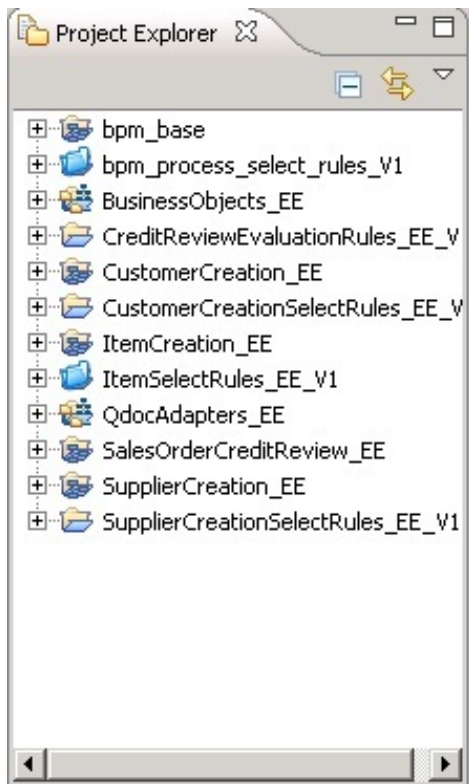
- 6 The imported project is displayed in the Project Explorer view on the left side of the window.



- 7 Select the BusinessObjects* project folder in the Project Explorer view and right-click to the Build Project command. Building the Business Object classes now can prevent build errors later in this procedure when other projects that depend on the business objects are checked out. After building the project, select the Problems tab at the bottom of the screen to confirm that at most warnings, not errors, are displayed.



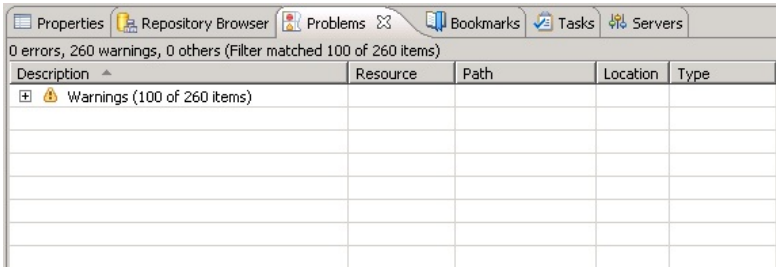
- 8 Select each of the other projects displayed in the Repository Browser view in turn, right-clicking to the Checkout option and pressing OK to import them. After completing this operation for each project, they are displayed in the Project Explorer view.



- 9 The current version of the bpm_base project contains a process template that is not functional and should be deleted. Expand the bpm_base project folder in the Project Explorer View, and select the child node approval_subprocess_base_V2 with the Process icon  . Right-click to the Delete command to delete this business process and all of its folders.



- 10 Select each of the projects in the Project Explorer view in turn, right-clicking to the Build Project command. After building all of the projects, view the Problems tab to confirm that no build errors were found.



At this point, the workspace is populated and ready for use. It also shows that the BPM artifacts were successfully installed to the repository.

Installing a Second BPM Instance

This section describes how to install a second BPM instance on a server.

Overview 100

Configuring the Installation Repository 100

Install QAD BPM Instance 102

Post Installation Configuration 102

Overview

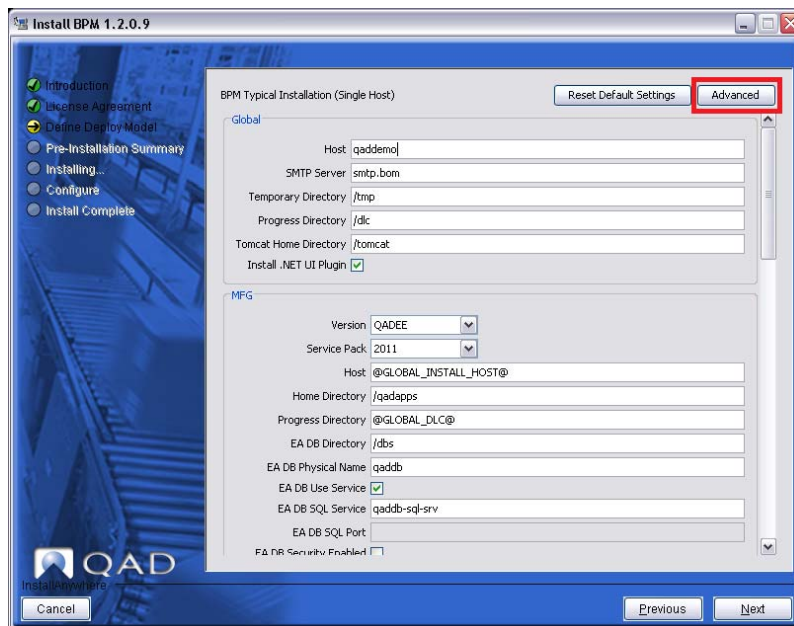
The ability to have multiple instances of QAD BPM running on a single physical server is a common requirement, especially for development and test environments. For applications like QXtend and the QAD .NET UI, this is easily achieved by deploying multiple instances of the Web application to Tomcat. Unfortunately, this is not the case for QAD BPM, and a physical JBoss installation and the related BPM servers are required for each installed instance. This appendix guides you through the installation process.

Configuring the Installation Repository

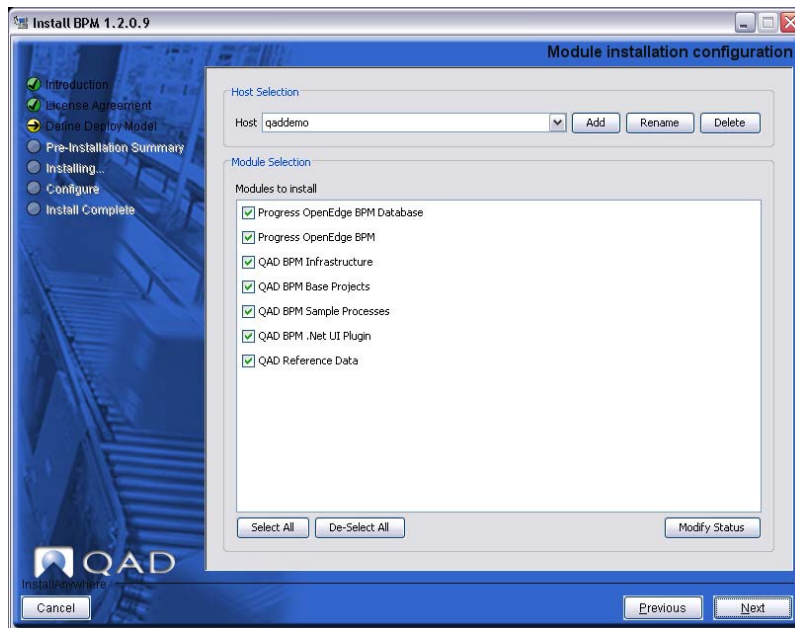
The initial installation of QAD BPM follows the same pattern that is used for the installation of QAD QXtend. First, you must configure the installation parameters. These parameters are captured in an XML repository file that is used to drive the installation of the QAD BPM components on the target host machines. When creating the installation configuration information for an environment that will have multiple instances, you must define the port numbers that are going to be assigned to the EJB and Portal servers to be installed. However, the repository XML settings only cover some of the required port configuration changes.

Note For the purpose of this appendix, the assumption is that the repository is being configured using the GUI installation application.

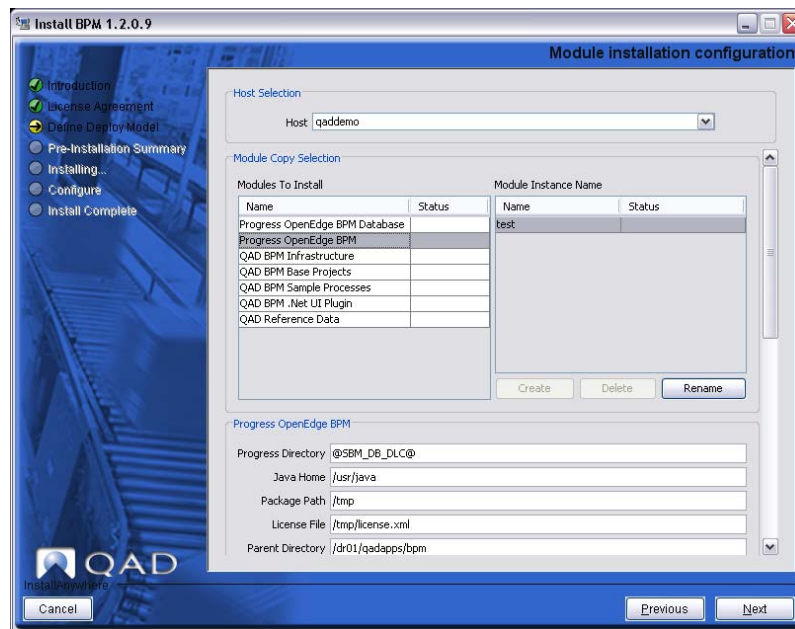
- 1 Start the QAD BPM Windows Installer and configure the Repository for the target host.
- 2 Once all of the parameters are provided, press the Advanced button.



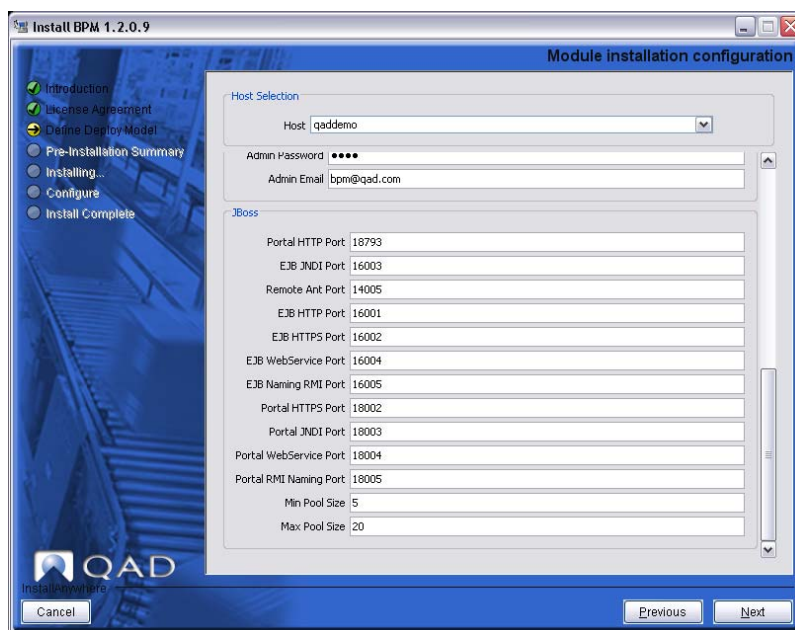
- 3 In the next screen, press Next to move to the next section of the installer.



- 4 Press Next to show the Advanced details for each component.
- 5 Select the Progress OpenEdge BPM component to view and set the EJB and Portal Server ports.



- 6 Scroll down to see the list of port numbers that can be configured.



- 7 Identify port numbers that are not in use on the target host and set the appropriate values.

Install QAD BPM Instance

Once the repository information for the QAD BPM installation is completed, the next task is to complete the installation of the QAD BPM software.

Important Before running the BPM installation on the target server, ensure that none of the existing QAD BPM instances are running. If instances are running, they may cause the installation to fail.

Execute the QAD BPM installation on the target server. Once the installation is complete, there is more work to do. As mentioned earlier, the installer only modifies a portion of the ports that are used by the JBoss BPM servers.

The next section takes you through the process of modifying all of the ports used by the QAD BPM JBoss servers.

Post Installation Configuration

The Advanced mode in the QAD BPM installation allows the user to configure some of the ports that are used by JBoss during the installation. However, a number of ports must be configured manually after the QAD BPM has been successfully installed. Additional configuration is required for both the EJB and Portal JBoss servers. The following sections outline the ports that need to be changed. For additional information, refer to pages 159-160, “Configuring JBoss ports” of *Installation Guide: Progress Savvion Business Manager 8.0*.

Stop the newly installed QAD BPM instance so that you can make the configuration changes.

Additional EJB Server Ports to Configure

The EJB Server ports that need to be changed are located in the <BPM-BASEDIR>/BM8.0/jboss/server/ejbServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml file. The following table lists the ports that need to be changed.

Table E.1
EJB Server Ports (Page 1 of 2)

Service Name	Binding Name	Description	Port	New Port
jboss.remoting;service=JMXConnectorServer,protocol=rmi	Port	RMI/JRMP socket for connecting to the JMX MBeanServer	51090	
jboss:service=HAJNDI	Port	The listening socket for the HA-JNDI service	51100	
jboss:service=HAJNDI	RmiPort	Socket HA-JNDI service uses to receive RMI requests from client proxies	51101	
jboss:service=HAJNDI	AutoDiscovery	Multicast socket on which HA-JNDI listens for auto-discovery requests from clients	51102	
jboss.jmx:name=SnpAgent,service=snmp,type=adaptor		Socket for the SNMP adaptor MBean	51161	
jboss.jmx:name=SnpAgent,service=trapd,type=logger		Socket for the SNMP trap receiver	51162	
jboss:service=CorbaORB		IIOP socket for the Corba ORB	53528	
UnifiedInvokerConnector		Remoting Connector	54446	
jboss:service=invoker,type=jmpha		Socket for high availability version of the legacy RMI/JRMP invoker	54447	
jboss:service=invoker,type=pooledha		Socket for high availability version of the legacy Pooled invoker	54448	
jboss.messaging:service=Connector,transport=bisocket		Socket for JBoss Messaging 1.x	54457	
TransactionManager	recoveryManager	Socket for JBossTS Recovery Manager	54712	
TransactionManager	transactionStatusManager	Socket for JBossTS Transaction Status Manager	54713	
TransactionManager	socketProcessId	Socket used to provide unique process id for JBossTS. The address configuration is ignored; will always use localhost/127.0.0.1	54714	

Table E.1
EJB Server Ports (Page 2 of 2)

Service Name	Binding Name	Description	Port	New Port
jboss:service=invoker,type=jrmp		Socket for the legacy RMI/JRMP invoker	54444	
jboss:service=invoker,type=pooled		Socket for the legacy Pooled invoker	54445	
JBM2	netty-port	Socket for JBoss Messaging 2.x	55445	
JBM2	netty-ssl-port	SSL socket for JBoss Messaging 2.x	55446	

Additional Portal Server Ports to Configure

The Portal Server ports that need to be changed are located in the <BPM-BASEDIR>/BM8.0/jboss/server/potalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml file. The following table shows the ports that need to be changed.

Table E.2
Additional Portal Server Ports (Page 1 of 2)

Service Name	Binding Name	Description	Port	New Port
jboss.remoting;service=JMXConnectorServer,protocol=rmi	Port	RMI/JRMP socket for connecting to the JMX MBeanServer	61090	
jboss:service=HAJNDI	Port	The listening socket for the HA-JNDI service	61100	
jboss:service=HAJNDI	RmiPort	Socket HA-JNDI service uses to receive RMI requests from client proxies	61101	
jboss:service=HAJNDI	AutoDiscovery	Multicast socket on which HA-JNDI listens for auto-discovery requests from clients	61102	
jboss.jmx:name=SnmpAgent,service=snmp,type=adaptor		Socket for the SNMP adaptor MBean	61161	
jboss.jmx:name=SnmpAgent,service=trapd,type=logger		Socket for the SNMP trap receiver	61162	
jboss:service=CorbaORB		IIOP socket for the Corba ORB	63528	
UnifiedInvokerConnector		Remoting Connector	64446	
jboss:service=invoker,type=jrmpaha		Socket for high availability version of the legacy RMI/JRMP invoker	64447	

Table E.2
Additional Portal Server Ports (Page 2 of 2)

Service Name	Binding Name	Description	Port	New Port
jboss:service=invoker,type=pooledha		Socket for high availability version of the legacy Pooled invoker	64448	
jboss.messaging;service=Connector,transport=bisocket		Socket for JBoss Messaging 1.x	64457	
TransactionManager	recoveryManager	Socket for JBossTS Recovery Manager	64712	
TransactionManager	transactionStatusManager	Socket for JBossTS Transaction Status Manager	64713	
TransactionManager	socketProcessId	Socket used to provide unique process id for JBossTS. The address configuration is ignored; will always use localhost/127.0.0.1	64714	
jboss:service=invoker,type=jrmp		Socket for the legacy RMI/JRMP invoker	64444	
jboss:service=invoker,type=pooled		Socket for the legacy Pooled invoker	64445	
JBM2	netty-port	Socket for JBoss Messaging 2.x	65445	
JBM2	netty-ssl-port	SSL socket for JBoss Messaging 2.x	65446	

Once all of the port numbers have been changed in the XML configuration files, it is now safe to start QAD BPM.

- 1 Ensure that any previously installed QAD BPM instances start and function normally.
- 2 Once the all previous instances are running, start the newly installed QAD BPM instance.
- 3 Verify that the new QAD BPM instance is installed and operating as expected.

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