Installation Guide
QAD Business Process Management

70-3273-2.0
BPM 2.0
All QAD Enterprise Applications Standard Edition and Enterprise Edition, 2011 and later
September 2014

BPM_IG_v020.pdf/biw/biw

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BPM Installation Guide Change Summary

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

Date/Version	Description	Reference
September 2014/BPM 2.0	Numerous editorial changes	---
	Revised Installing BPM	page 22
	Revised Advanced Installation	page 28
	Revised Default BPM Installation Parameters	page 68
	Renamed BPM Developer Studio Installation and Workplace Setup appendix as Progress OpenEdge Developer Studio	page 79
	Revised Progress OpenEdge Developer Studio	page 79
	Revised Installing a Second BPM Instance	page 89
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 79
	Added new Installing a Second BPM Instance appendix	page 89
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 14
	Added parameters to the Deployment Worksheet	page 14
	Added parameters to Installing BPM	page 22
	Added parameters to Advanced Installation	page 28
	Added Modify Configurations for Second BPM Instance section	page 42
	Added parameters to the Default Parameters table	page 68
	Added QXO Configuration appendix	page 75
November 2012/BPM 1.1	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 43
	Added Patch Installation chapter	page 63
June 2012/BPM 1.0.1	Not applicable. First release of BPM Install Guide	---

Chapter 1

BPM Overview

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

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 Corticon: The third-party software that provides business rules deployment and execution.
- 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*.

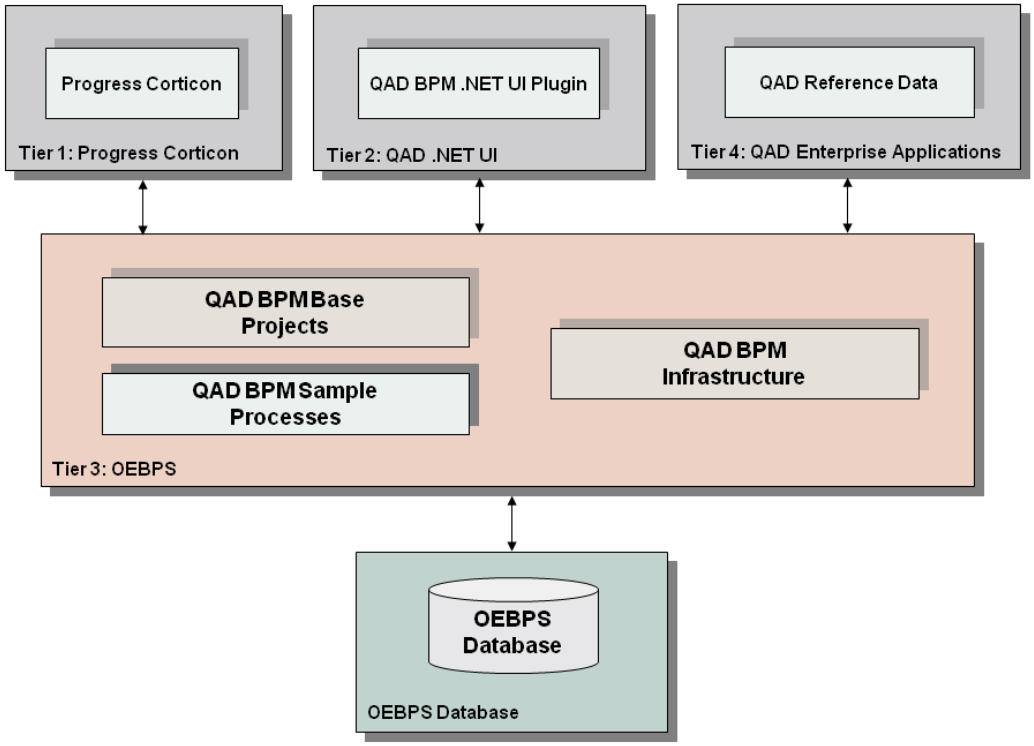
BPM Deployment

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 Progress Corticon, which provides business rules deployment and execution for business processes.
- Tier 2 consists of the QAD BPM .NET UI Plug-in, which provides BPM access in QAD Enterprise Applications.
- Tier 3 consists of the QAD BPM Infrastructure, QAD BPM Base Projects, and QAD BPM Sample Processes. You install these components on the same host.
- Tier 4 consists of QAD Reference Data, which provide labels and messages used in QAD BPM .NET UI Plug-in.

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

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

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).

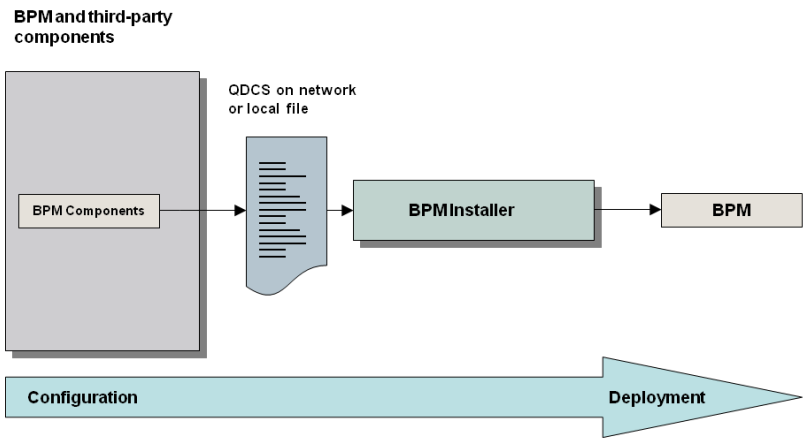
The QDCS is a repository that stores all of your deployment settings for QAD BPM and its supporting third-party applications (Tomcat, for example) in a single place. Typically, the QDCS is stored on a network for easy access, but it can also be stored in a portable file. The QDCS is populated using the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

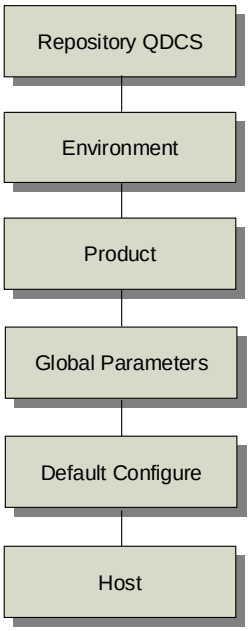
Installing QAD BPM using the QDCS has the following advantages:

- 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.
- Re-installations 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.

Chapter 2

System Requirements

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

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

QAD BPM requires that the following components be installed:

- Progress 11.3.2.011 (or higher hotfix) with Business Process Server
- QXtend 1.8 or higher

Third-Party Components

The following third-party software is required:

- Java JRE 7
- 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 operating systems:

- 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, run the BPM installer in Compatibility Mode. “Windows 8 Environment” on page 20 describes how to configure the BPM installer to use this mode.

Installation User Account

To avoid potential access problems, carefully select the user account you will use to install BPM and start the 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).

Chapter 3

Prerequisites

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

Overview

The BPM installation prerequisites consist of the following:

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

Obtain Progress Corticon License

A Progress Corticon license is required to install QAD BPM. The license is normally a jar file named `CcLicense.jar` which can be used for Corticon Server and Developer Studio. 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.qaddbsql]
        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 if database security is set up:

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

If you are prompted for a user name and password, database security is set up. You must 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
```

Verify Progress OpenEdge BPM Server

Make sure that the Progress OpenEdge BPM Server starts and stops correctly and the Portal Server works properly.

1. Start the EJB Server:

   ```
   cd $DLC/oebpm/jboss/bin
   nohup ./startEjbServer.sh > ejb.log &
   ```

2. Start the Portal Server:

   ```
   cd $DLC/oebpm/jboss/bin
   nohup ./startPortalServer.sh > portal.log &
   ```

3. Log in to Portal Server as an administrative user, go to the Administration tab, and make sure the status for BP Server and BPM Events is Running.

   Note The host name should not contain underscores ("_"). Otherwise, the OEBPM servers cannot start.

   For AIX, rename the file `$DLC/oebpm/jboss/lib/endorsed/stax-api.jar` to `stax-api.jar.bak`. The name change is necessary to ensure proper QAD BPM operation.

4. Verify the system admin e-mail. The OEBPM system admin e-mail must be set up correctly to send task notification e-mails. Check the following settings to make sure they contain a valid e-mail address:

   - Property oebps.admin.email.id in configuration `$DLC/oebpm/server/conf/oebps.conf`
   - Log in to Portal Server as an administrative user, go to the Administration tab, select System|Configuration|Email, and check the BP Server Email ID and System Admin Email ID.

   The system admin e-mails are picked up in the above sequence.

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 39.

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	
	QAD BPM Home Directory	
	Temporary Directory	
	Progress Directory	
	Tomcat Home Directory	
	Install .NET UI Plug-in	

Table 3.1 — *Deployment Worksheet* (Page 1 of 3)

Group	Description	Setting
QAD Enterprise Applications	Version	
	Service Pack	
	Host	
	Home Directory	
	QAD Environment Name	
	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	
Global QXtend Inbound	Host	
	Port	
	WebApp Name	
	Encode Password	
	ERP Receiver	
	QXO Receiver	
Global QXtend Outbound	Source Application	
Progress Corticon	Tomcat Host	
	Tomcat Port	
	Tomcat Admin Name	
	Tomcat Admin Password	
	WebApp Name	
	Admin Name	
	Admin Password	
	License Jar File	
.NET UI Server	Host	
	Port	
	Tomcat Home	
	WebApp Name	
	Configuration Name	

Table 3.1 — *Deployment Worksheet* (Page 2 of 3)

Group	Description	Setting
QAD Reference Data	Home Directory	

Table 3.1 — *Deployment Worksheet* (Page 3 of 3)

Chapter 4

Installing QAD BPM

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

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.

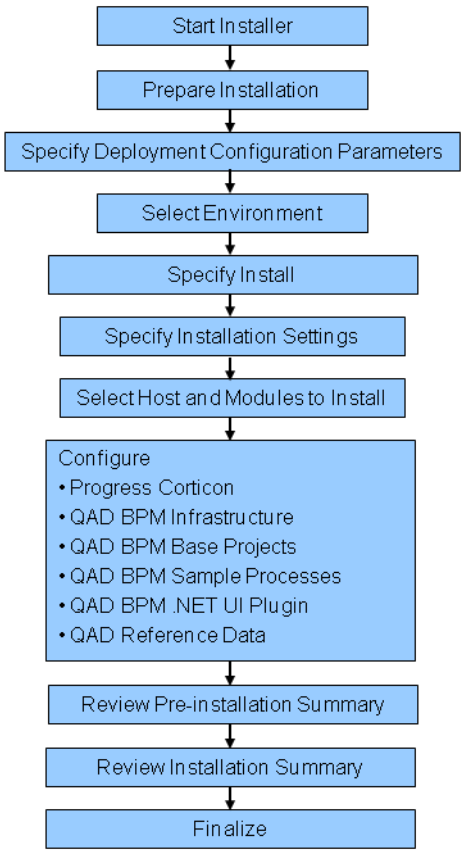
Installing QAD BPM in a GUI Environment

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. Change the owner and group of the Progress OpenEdge BPS and database directory.

   Progress OpenEdge is installed with root by default, so the BPM server cannot be stopped and started successfully with other users. If you want to start/stop BPM with a different user, you need to change the owner and group of Progress OpenEdge BPS directory and the corresponding database directory to the desired user and group. This is required to make sure that the permissions are correct. This is done using the following commands:

   ```
   chown -R <DLC>/oebpm <user>:<group>
   chown -R <DLC_WRK_DIR>/oebps <user>:<group>
   ```

4. Verify that you have the appropriate folder permissions to perform the install.
5. Verify that you have enough disk space for the destination directory (250 MB+), global temp directory (100 MB+, specified in the GUI configuration), and system temp directory or the directory that the environment variable `IATEMPDIR` (500 MB+) specifies.
6. If you are installing on a Linux/UNIX system, make sure the unzip utility is in the system path on the destination host.
7. 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
   ```

8. 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. The configuration is done as follows:

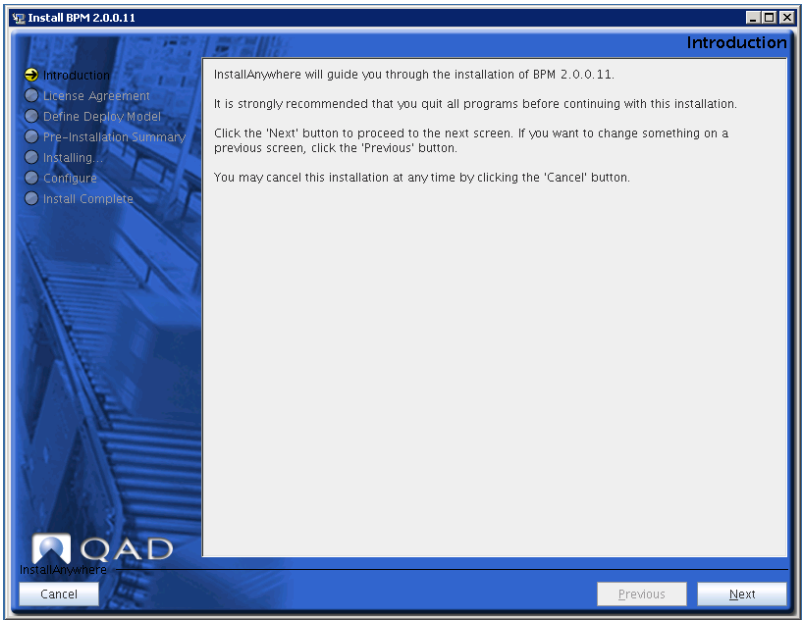
1. Right-click on `BPM.exe`.
2. Select Properties. The BPM Properties dialog box appears.
3. Click the Compatibility tab.
4. Select the “Run this program in compatibility mode for” check box.
5. Select Windows 7 from the drop-down menu.
6. Click OK. The BPM Properties dialog box closes.

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.

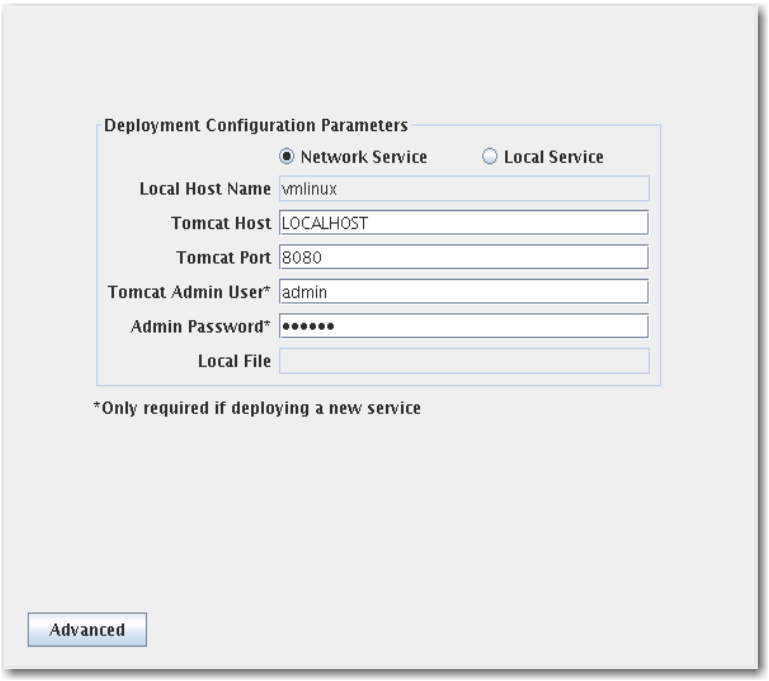
11 Accept the default location for the install log files (`C:\instlog`), or enter a different path.

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



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.

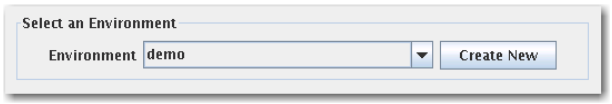
13 A pop-up window may display that says a QAD Deployment Configuration Service (QDCS) was not detected on a host. This message means that the QDCS is not deployed on the specified Tomcat server or the wrong server was specified. Click Yes if you want the installer to deploy the QDCS.

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



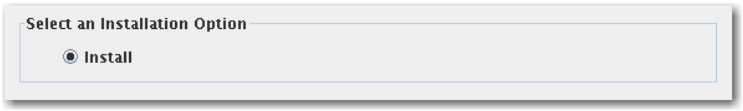
To create an environment, click Create New and enter the name of the environment you want to create in the Create New Environment pop-up window.

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

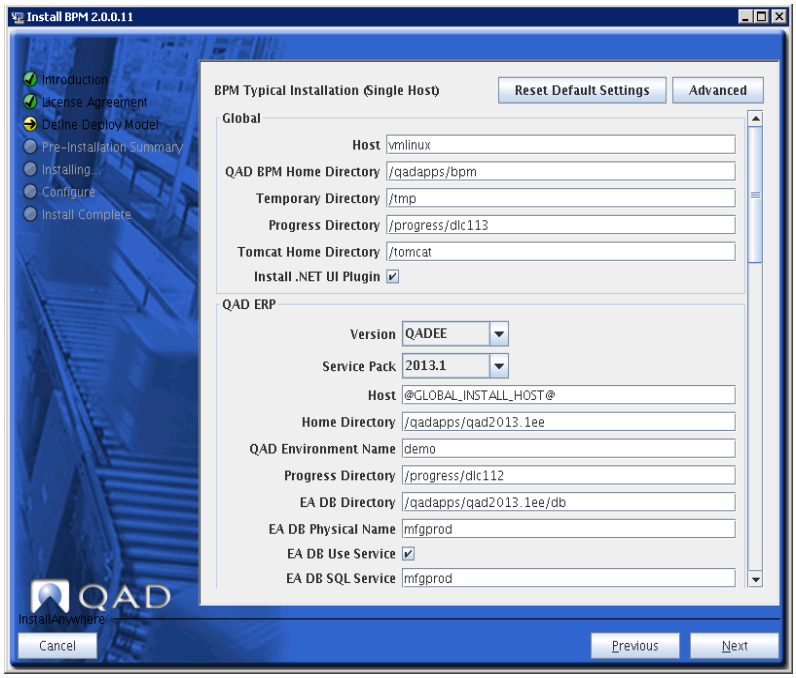


Installing BPM

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 68.

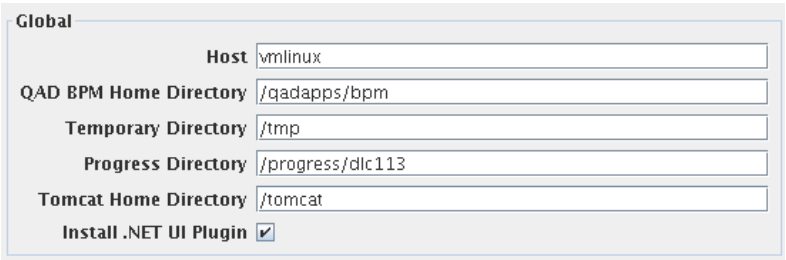
Fig. 4.6
BPM Installation Settings



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

Global Panel

Fig. 4.7
Global Panel



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

QAD BPM Home Directory. The QAD BPM directory where the scripts and repository are installed.

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

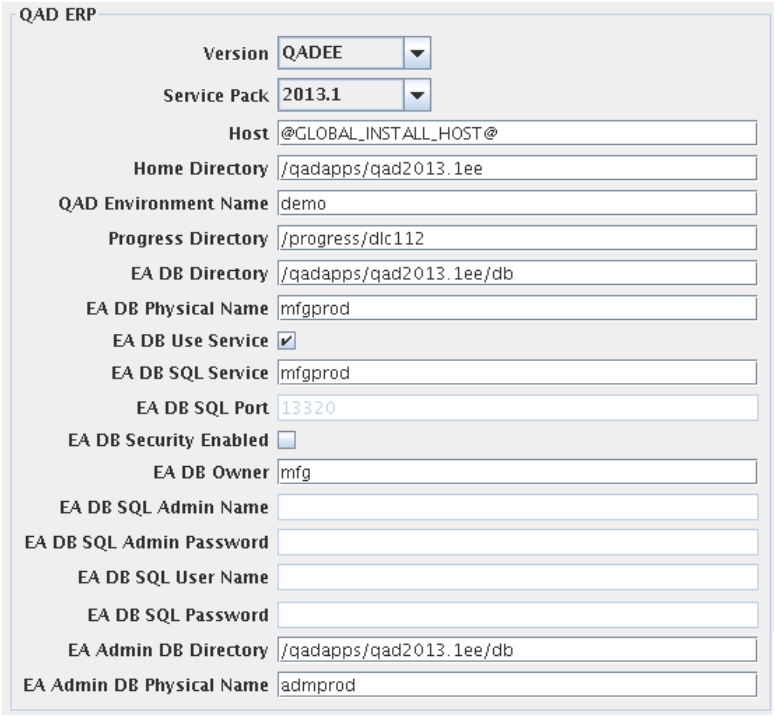
Progress Directory. The Progress OpenEdge installation directory. The OEBPM database, OEBPM, and QAD Enterprise Applications reference this directory as the default Progress directory.

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.

QAD ERP Panel

Fig. 4.8
QAD ERP 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.

QAD Environment Name. The environment name used to identify the current QAD environment. This value is used in the task notifications sent to users.

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.

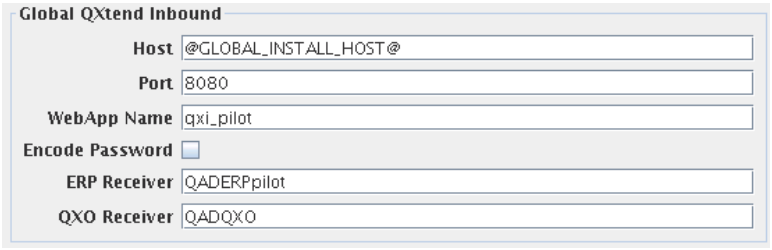
EA DB SQL Password. The SQL password to use to connect to the QAD Enterprise Applications database.

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

Fig. 4.9
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.

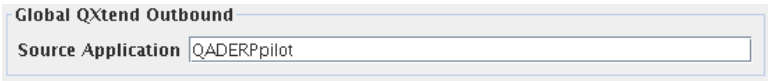
Encode Password. If QXtend requires encoded passwords, selecting this box allows QAD users to log in. If the setting `encodedPasswords=true` in `Tomcat/webapps/qxi/WEB-INF/conf/qxtendconfig.xml`, encoded passwords are needed.

ERP Receiver. The receiver name for QXtend Inbound.

QXO Receiver. The receiver name for QXtend Outbound.

Global QXtend Outbound Panel

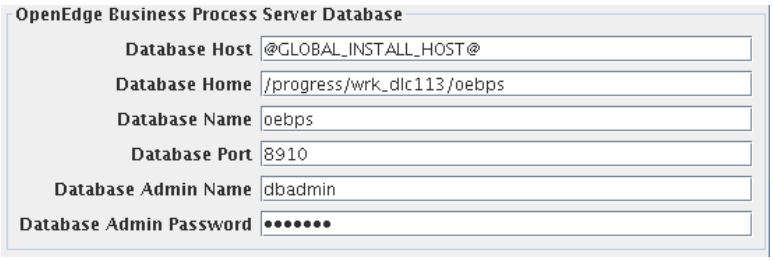
Fig. 4.10
Global QXtend Outbound Panel



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

OpenEdge Business Process Server Database Panel

Fig. 4.11
OpenEdge Business Process Server Database Panel



Database Host. The host where the OEBPS database is installed.

Database Home. The OEBPS database installation directory.

Database Name. The OEBPS database physical name.

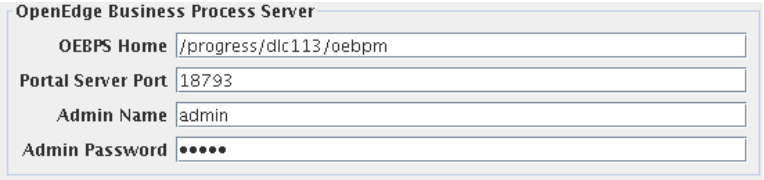
Database Port. The SQL port for the OEBPS database.

Database Admin Name. The OEBPS database administrator name.

Database Admin Password. The OEBPS database administrator password.

OpenEdge Business Process Server Panel

Fig. 4.12
OpenEdge Business Process Server Panel



OEBPS Home. The OEBPS installation directory.

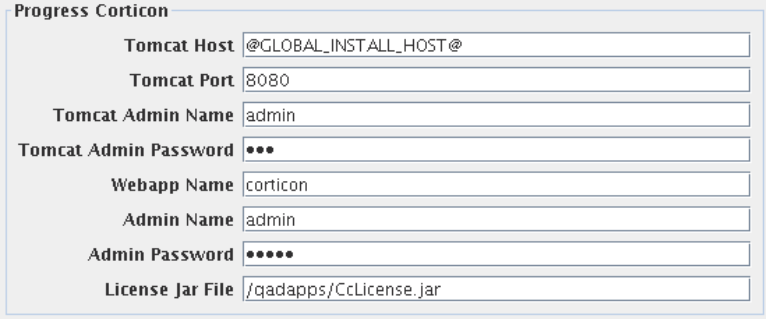
Portal Server Port. The port for the Portal Server.

Admin Name. The OEBPM administrator name.

Admin Password. The OEBPM administrator password.

Progress Corticon Panel

Fig. 4.13
Corticon Panel



Tomcat Host. The Tomcat host where Progress Corticon will be deployed.

Tomcat Port. The Tomcat port.

Tomcat Admin Name. The Tomcat admin.

Tomcat Admin Password. The Tomcat admin password.

Webapp Name. The webapp name for Progress Corticon.

Admin Name. The admin name for Progress Corticon.

Admin Password. The admin password for Progress Corticon.

License Jar File. The full path (including the file name) of the license jar file for Progress Corticon. If not specified, the file bundled in the QAD BPM installer is used, which may not be appropriate.

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 67.

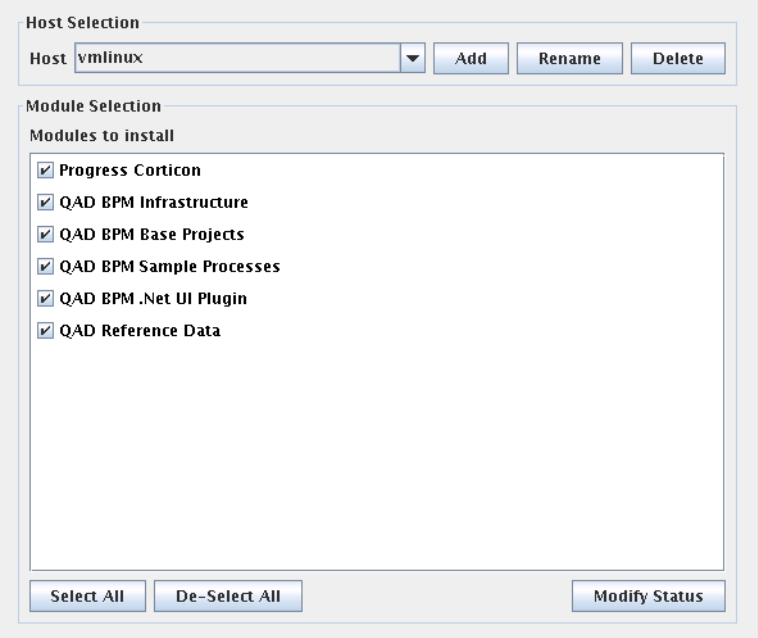
Advanced Installation allows you to individually enter the parameters to create a custom BPM configuration.

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

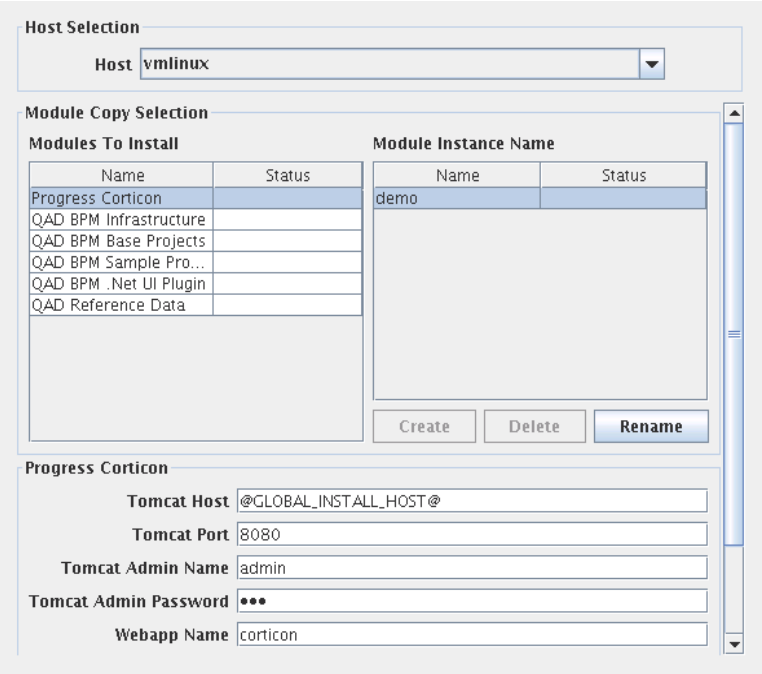
Fig. 4.14
Choose the Host and Install Set



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. 4.15
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.

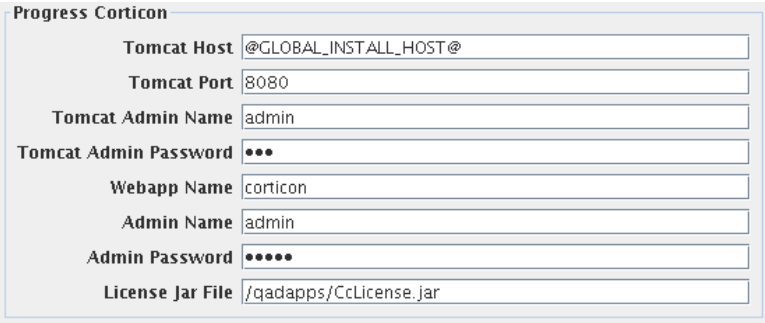
You cannot select a different component until you have entered all of the required information for the currently selected component.

Note Enter information in the fields highlighted in orange.

Configure Corticon Panel

6 Complete the following fields in the Progress Corticon panel:

Fig. 4.16
Corticon Panel



Tomcat Host. The Tomcat host where Progress Corticon will be deployed.

Tomcat Port. The Tomcat port.

Tomcat Admin Name. The Tomcat admin.

Tomcat Admin Password. The Tomcat admin password.

Webapp Name. The webapp name for Progress Corticon.

Admin Name. The admin name for Progress Corticon.

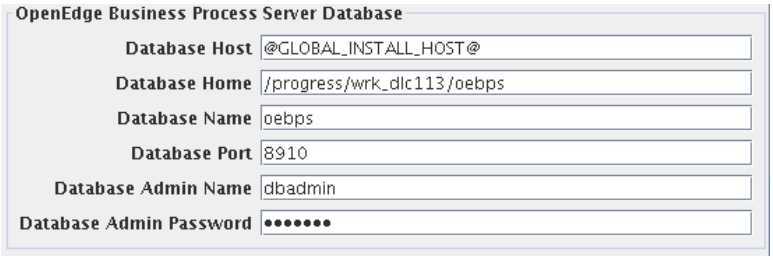
Admin Password. The admin password for Progress Corticon.

License Jar File. The full path (including the file name) of the Progress Corticon license jar file. If not specified, the file bundled in the QAD BPM installer is used, which may not be appropriate.

Configure QAD BPM Infrastructure

7 Complete the required fields in the Configure OpenEdge Business Process Server Database panel:

Fig. 4.17
OpenEdge Business Process Server Database Panel



Database Host. The host for the OEBPS database.

Database Home. The OEBPS database installation directory.

Database Name. The OEBPS database physical name.

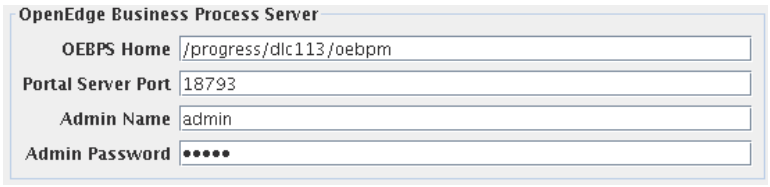
Database Port. The SQL port for the OEBPS database.

Database Admin Name. The OEBPS database administrator name.

Database Admin Password. The OEBPS database administrator password.

OpenEdge Business Process Server Panel

Fig. 4.18
OpenEdge Business Process Server Panel



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

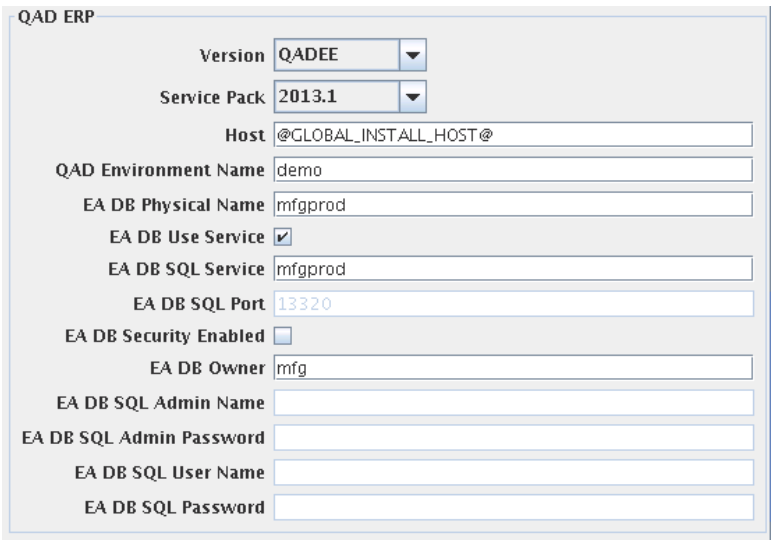
Portal Server Port. The port for the Portal Server

Admin Name. The OEBPM administrator name.

Admin Password. The OEBPM administrator password.

8 In the QAD ERP panel, complete the required fields.

Fig. 4.19
QAD ERP Panel



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.

QAD Environment Name. The name used to specify the current QAD environment. This value is used in task notifications sent to users.

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.

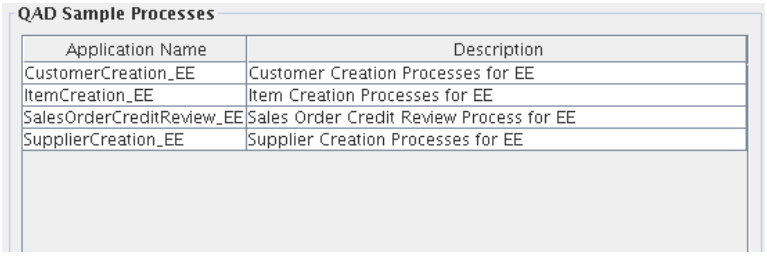
Configure QAD BPM Base Projects

There are no configuration options for this module.

Configure QAD BPM Sample Processes

9 Select the sample processes to export.

Fig. 4.20
QAD Sample Processes Panel

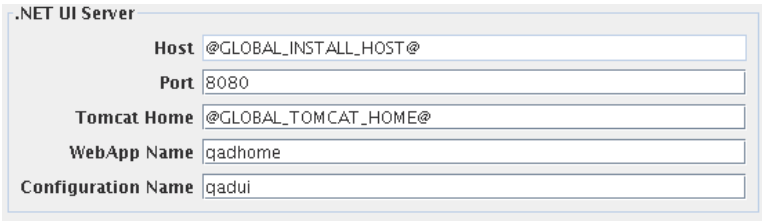


This panel shows a list of bundled business processes. After installation, you can find the bundled business process packages in `<QAD_BPM_HOME>/repository/bpm_package/` and install or deploy them with the BPM Package and Deployment Utility. For more information, refer to “QAD BPM Package and Deployment” in *Administration Guide: QAD BPM*.

Configure QAD BPM .NET UI Plugin

10 In the .NET UI Server panel, complete the required fields.

Fig. 4.21
.NET UI Server Panel



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.

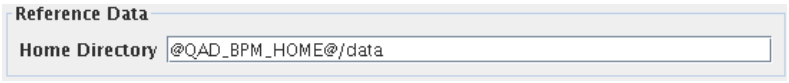
WebApp Name. The .NET UI server WebApp name.

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

Configure QAD Reference Data

11 In the Reference Data panel, complete the required field.

Fig. 4.22
Reference Data Panel



Home Directory. The directory where the reference data will be installed.

12 In the QAD ERP panel, complete the required fields.

Fig. 4.23
QAD ERP Panel

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.

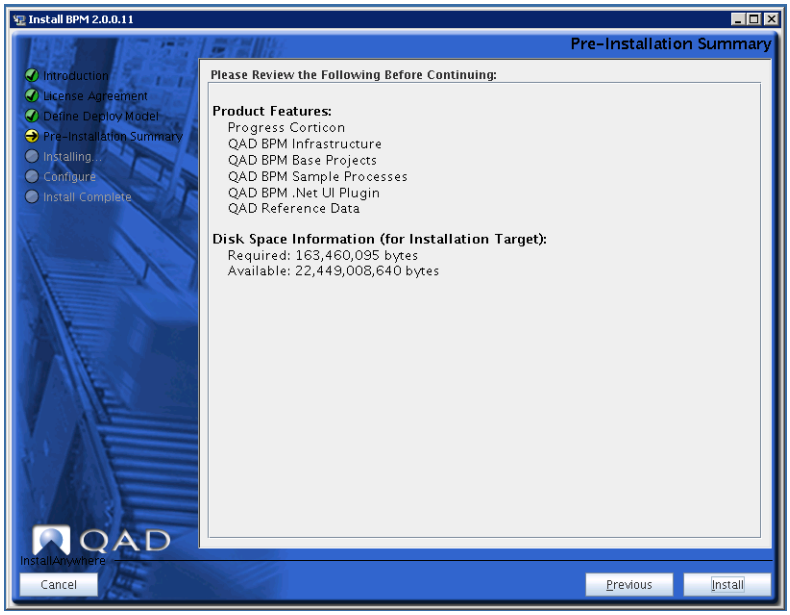
13 If you have entered all of the parameter settings for the required components, click Next.

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. 4.24
Pre-installation Summary



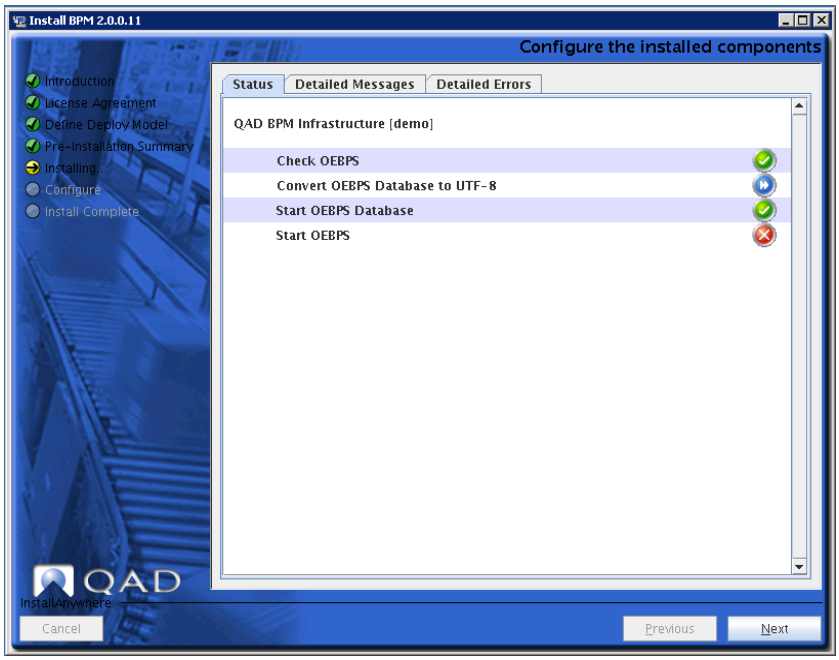
Review the information and click Install to continue with the installation.

Note If the installer encounters an error, it pauses, allowing you to correct the problem. See Appendix B, “Process Control,” on page 71 for more information. If you have difficulty resolving a problem, see Chapter 6, “Troubleshooting QAD BPM Installs,” on page 53.

When the install finishes, review the installation summary.

Review the Installation Summary

Fig. 4.25
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 53.

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 71 for more information. If you have difficulty resolving a problem, see Chapter 6, “Troubleshooting QAD BPM Installs,” on page 53.

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, click Done.

To finalize an installation, see Chapter 5, “Post-installation Tasks,” on page 39.

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 71 for more information. If you have difficulty resolving a problem, see Chapter 6, “Troubleshooting QAD BPM Installs,” on page 53.

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

24 Restart the Tomcat AppServer and start QAD Enterprise Applications.

Chapter 5

Post-installation Tasks

This chapter describes BPM post-installation tasks.

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 the SQLWidth attribute of the qaddb fields and widen them as needed. 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 as-is 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 QAD BPM Data Home (for example, `/qadapps/bpm/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 QAD SE or QAD EE 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. 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 8).

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

f. If you loaded the Customer Creation or Supplier Creation process for QAD EE and QXtend 1.8.4, 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 75 for information on what to configure for a specific sample process.

   a. Extract `<QAD_BPM_HOME>/qxtend/bundle/qxo/bpm-qxo-ee.zip` to a directory `<Temp_Dir>`.

   b. Copy all of the files in the `<Temp_Dir>/data/boXML` directory to the `boXML` directory of the QXtend Outbound Server installation directory.

   c. Load the required Business Objects and Profiles in QXO. See "Importing Business Objects and Profiles" in *User Guide: QXtend* for more information.

   d. Enable the corresponding event types, register the BO with the message publisher, and register the profiles with the BPM subscriber.

   e. Deploy queries to QXI from specific profiles and add them to the Outbound receiver.

   f. 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 75 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 OEBPS portal.
3. Grant user permissions to access Instance Manager (All Processes browse).

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, "Progress OpenEdge Developer Studio," on page 79 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 89. 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

Using 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 OEBPS 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 jbosscert -keystore
$SSL_DIR/test.keystore -trustcacerts -file $SSL_DIR/jbosscert.crt
```

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

```
test.keystore
jbosskey.crt
jbosskey.key
jbosskey.pem
jbosskey.srl
jbosscert.csr
jbosscert.crt
```

BPM Server Side

Modify Progress Savvion JBoss Configuration

1. Modify `<OEBPS_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 `<OEBPS_HOME>/jboss/server/portalServer/deploy/jbossweb.sar /server.xml`, uncomment the SSL connector and change the port from `18002` to `8445`.

3. In the `<OEBPS_HOME>/jboss/server/ejbServer/deploy/jbossweb.sar /server.xml` file, uncomment the SSL connector and change the port from `16002` to `8444`.

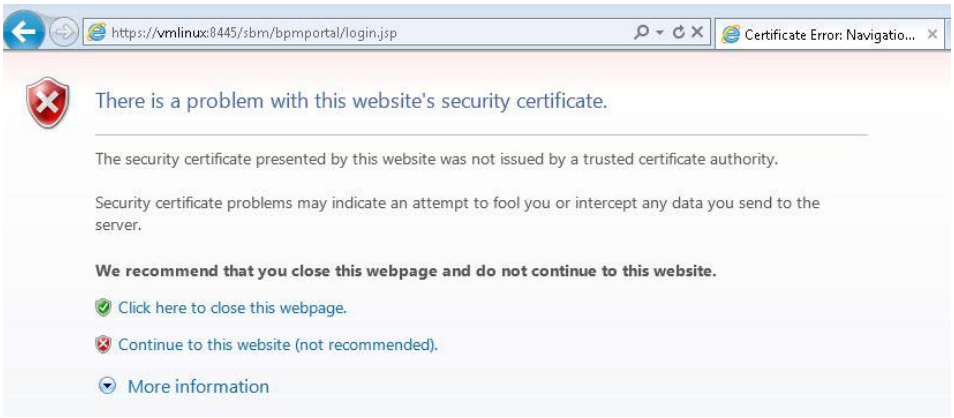
4. Restart the BPM server.

BPM Client Side

Retrieve Trusted Certificate

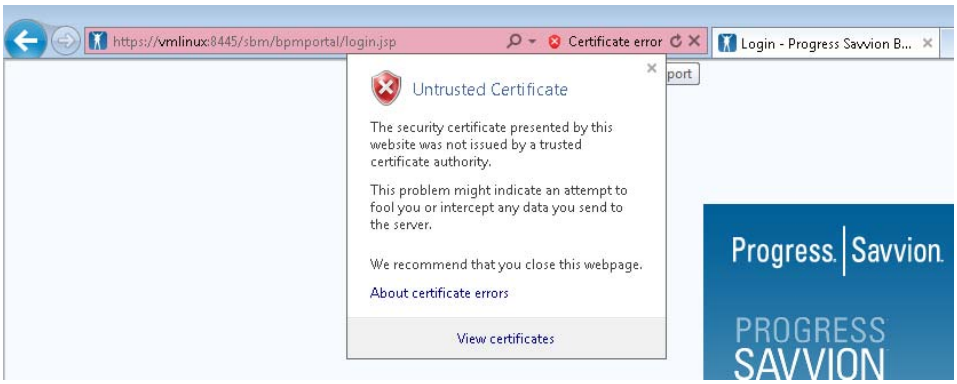
1. Go to `https://<BPM_Host>:8445/sbm/bpmportal/login.jsp`. The page shown in Figure 5.1 appears.

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

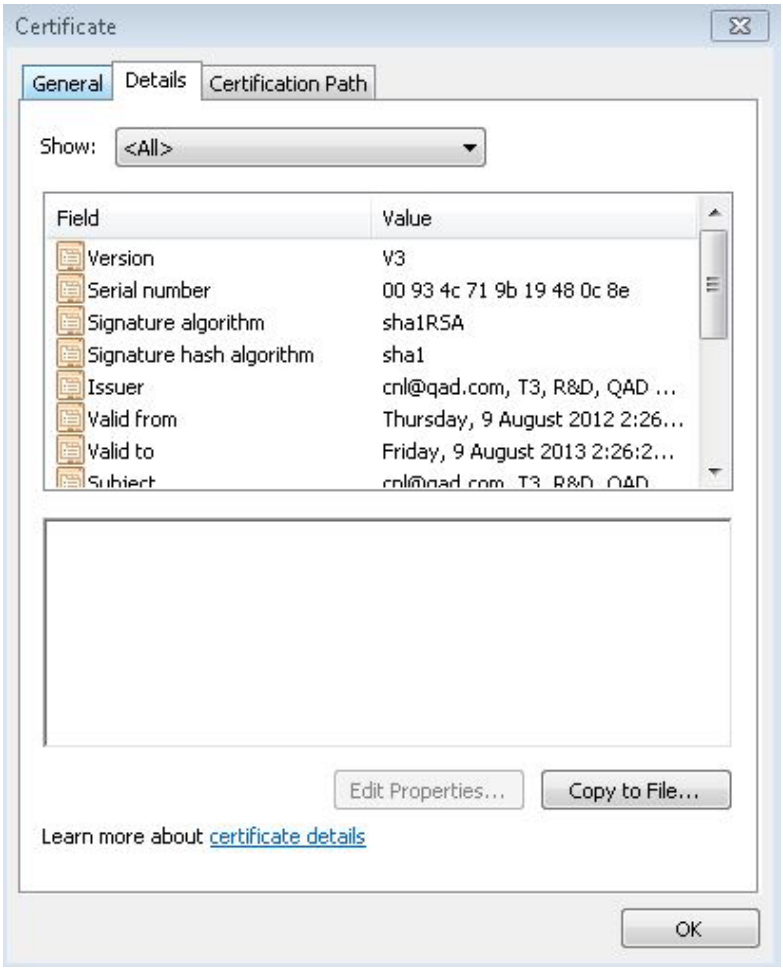


3 Click the Certificate error, then View certificates. The Certificate dialog box appears.

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

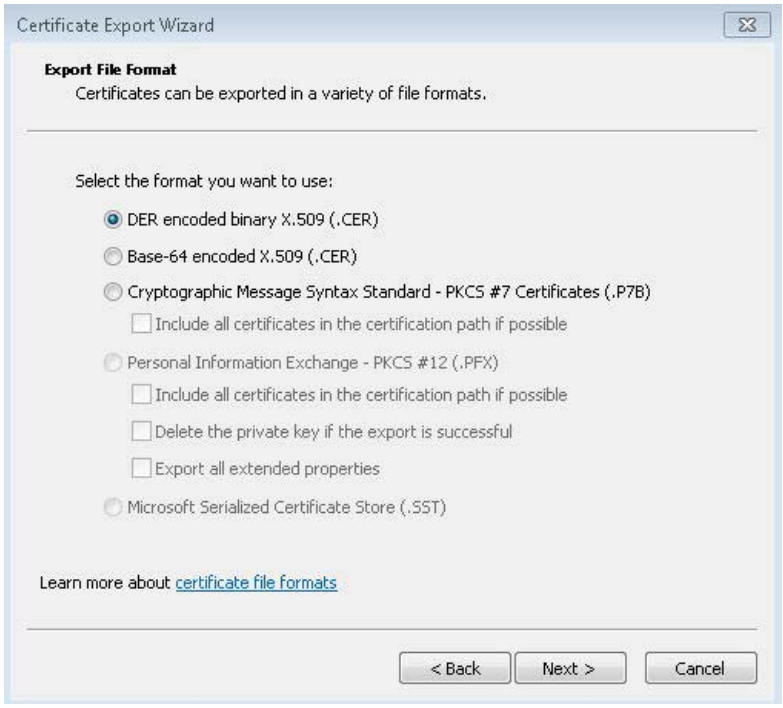
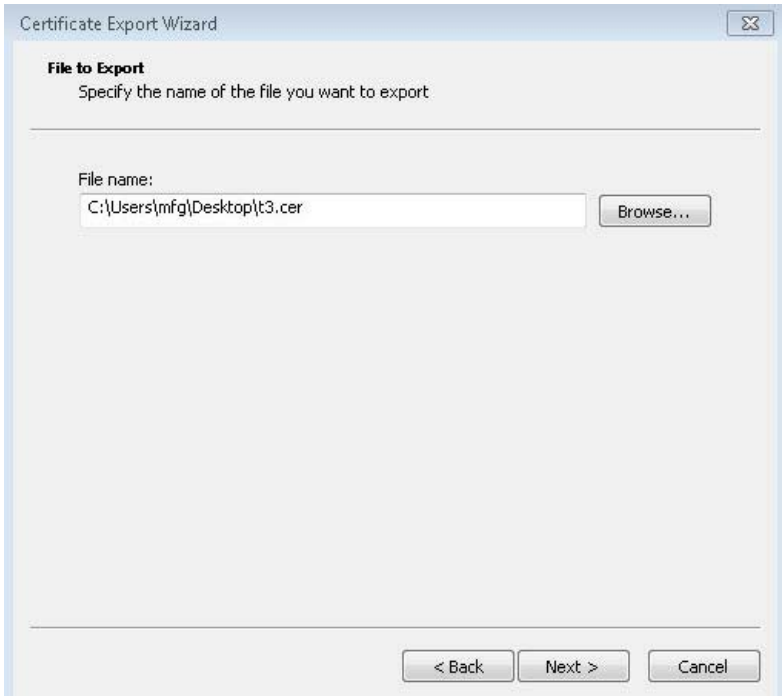


Fig. 5.6
Certificate Export Wizard Dialog Box - File to Export

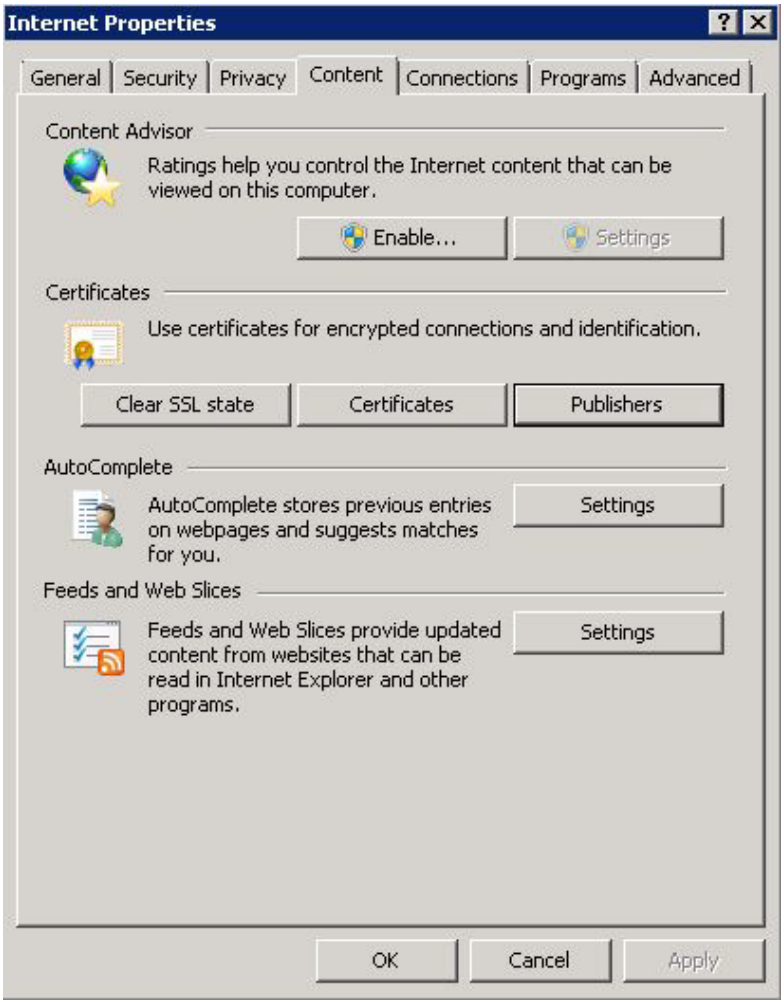


Import Trusted Certificate to .NET UI or Browsers (IE)

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

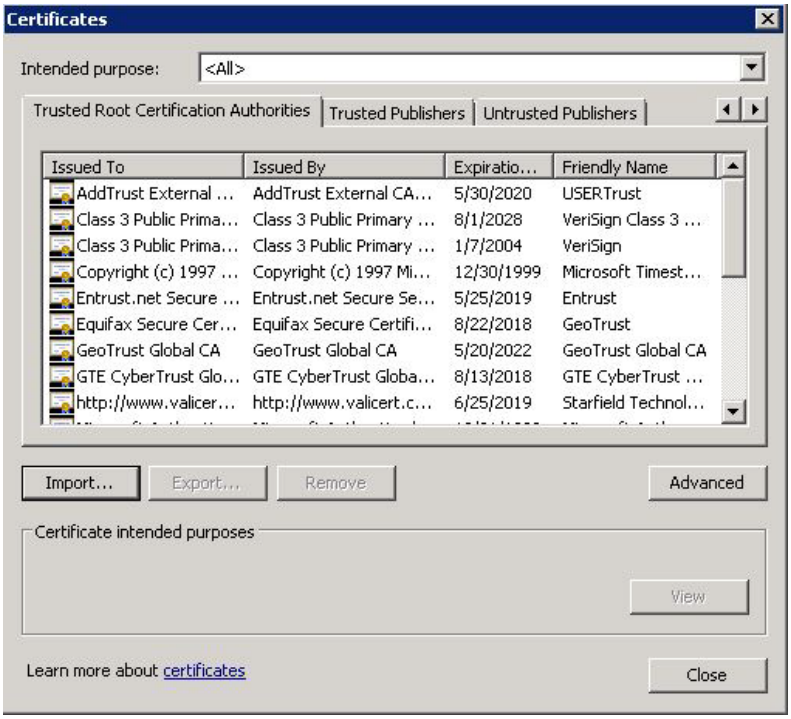
2 Select the Content tab and click Publishers.

Fig. 5.7
Internet Properties Dialog Box



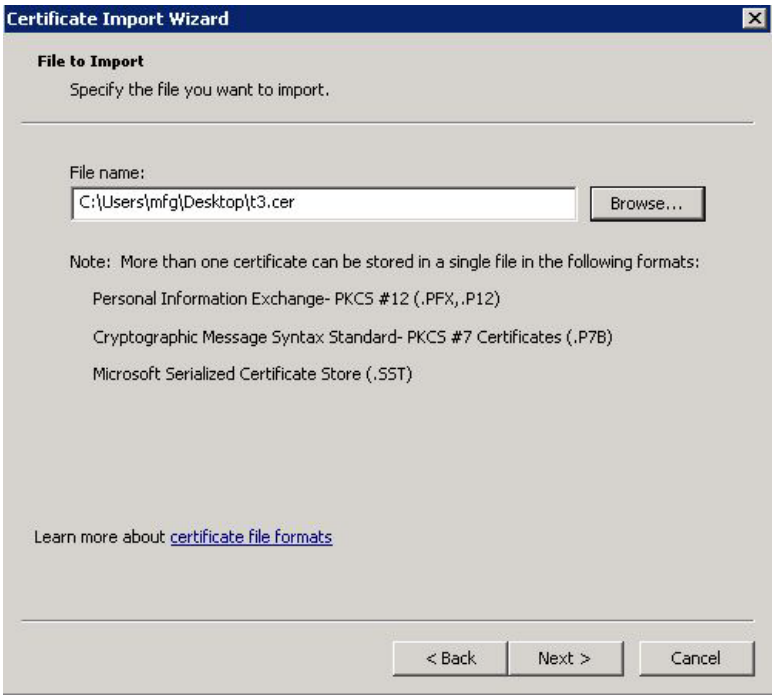
3 The Certificates dialog box appears. Select the Trusted Root Certification Authorities tab and click Import.

Fig. 5.8
Certificates Dialog Box



4 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 `<OEBPS_HOME>/server/ebmsapps/qadbpm.properties` to enable HTTPS connections:

```
qxtend.qxi.qdoc.web.service.url=
https://<QXtend_Tomcat_Host>:8443/<QXI_Webapp>
/services/QdocWebService
```

Chapter 6

Troubleshooting QAD BPM Installs

This section describes how to resolve QAD BPM installation problems.

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

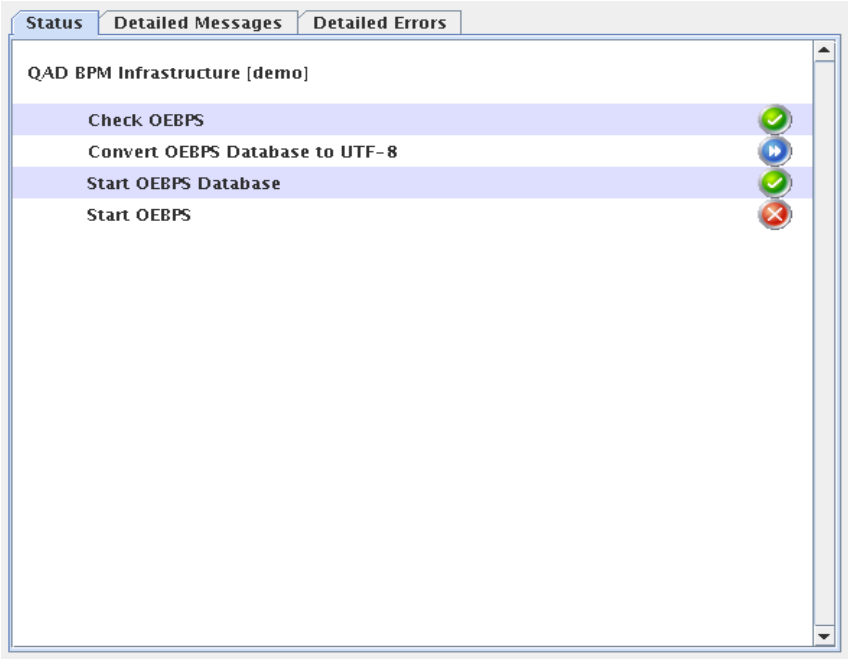
All system messages generated during installation are recorded in the install log.

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

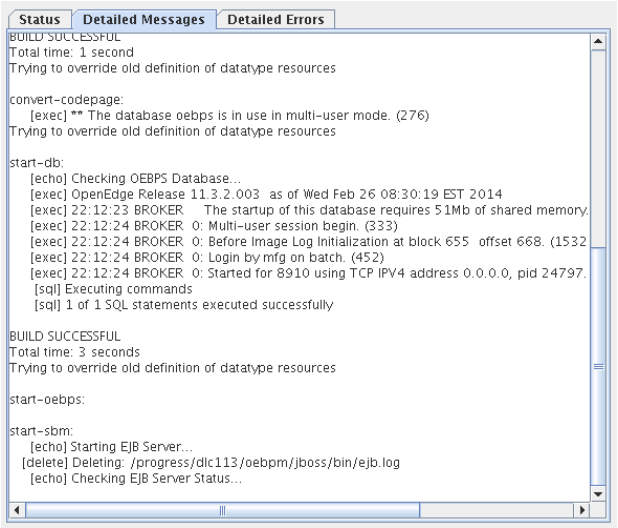


Status information also displays for substeps performed during the installation or upgrade. This information allows you to easily identify problems. Installation of the Progress OpenEdge BPM database and QAD BPM base projects consists of several substeps (Check OEBPM Database Parameters, Create Database 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. The file is named `BPM-InstallLog-<Timestamp>.txt` and should be the latest file if there is more than one file.

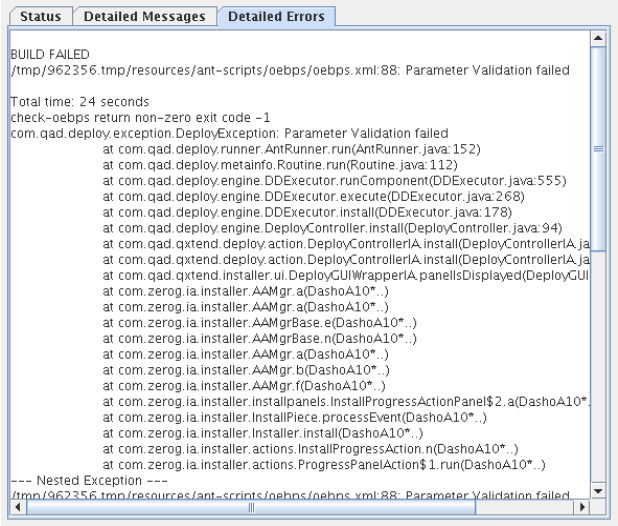
Fig. 6.2
Installation Detailed Messages Screen



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 71.

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="2013-08-28 22:38:06 -0700"> 1
    <product name="BPM" version="2.0.0" servicePack="IR"> 2
      <global>
        <parameters>
          ...
        </parameters>
      </global>
      <defaultconfig moduleStatus="Incomplete"/>
      <host hostname="vmlinux"> 3
        <component name="QAD BPM Infrastructure" copy="demo">
          <parameters/>
          <install status="Incomplete" moduleStatus="Incomplete"> 5
            <routines>
              <routine name="check-oebps" status="Done" breakpoint="true"/>
              <routine name="convert-oebps-db-codepage" status="Skipped" breakpoint="false"/>
              <routine name="start-db" status="Error" breakpoint="true"/>
              <routine name="start-oebps" status="Error" breakpoint="true"/>
              <routine name="install-qad-patch" status="Done"/> 4
              ...
            </routines>
            <reminders/>
          </install>
        </component>
        <component name="QAD Reference Data" copy="demo">
          <parameters>
            ...
          </parameters>
          <install status="Complete" moduleStatus="Complete">
            <routines>
              ...
            </routines>
            <reminders/>
          </install>
        </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 71). 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 56). 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 Corticon [demo]
==========================================
```

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

```
check-oebps:
        [echo] Checking OEBPS Home...
        [echo] Checking GLOBAL_INSTALL_HOST vmlinux...
        [echo] Checking OEBPS...
        [echo] Checking OEBPS Database...
        [echo] Checking MFG_HOST vmlinux...
        [echo] Checking INBOUND_TOMCAT vmlinux...
```

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

```
BUILD SUCCESSFUL
Total time: 3 seconds
```

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

```
BUILD FAILED
/tmp/962356.tmp/resources/ant-scripts/oebps/oebps.xml:88: Parameter
Validation failed
Total time: 24 seconds
check-oebps return non-zero exit code -1
com.qad.deploy.exception.DeployException: 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 system temp directory or the directory specified by environment variable `IATEMPDIR` (3G+).

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 59 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.

Chapter 7

Patch Installation

This section describes how to install a QAD BPM patch.

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

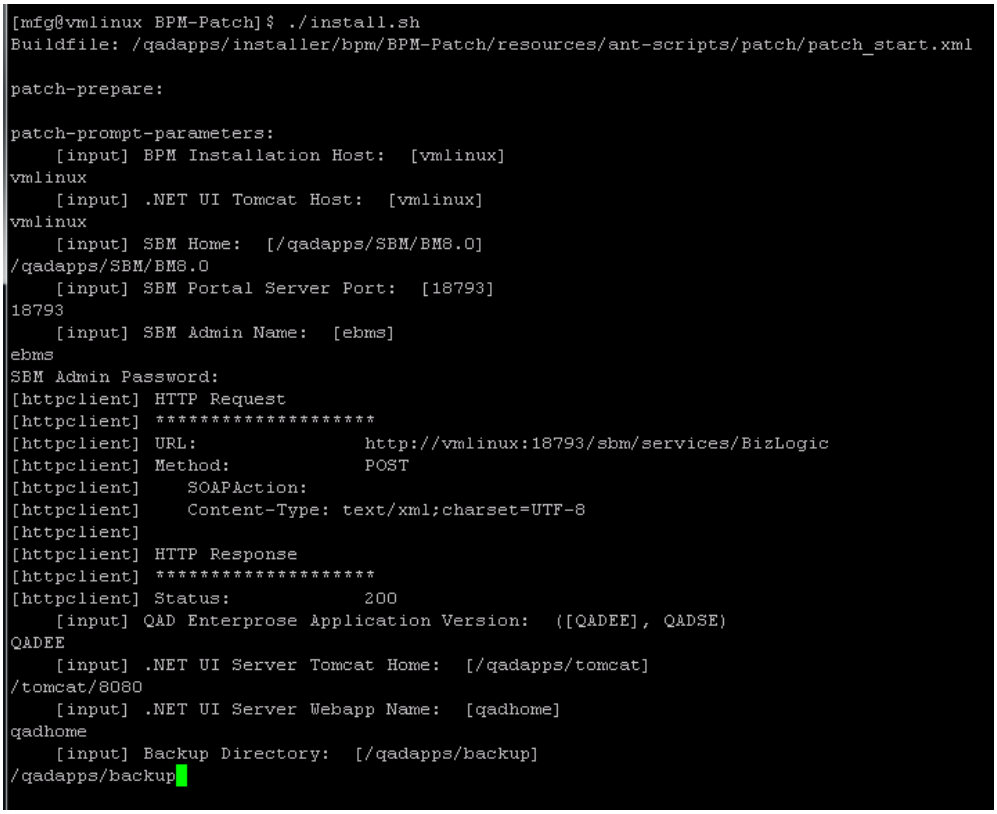
When you install the patch, the patch installer backs up the files that will be overwritten in the original BPM installation, and then installs the changes. If the installation fails, the patch installer tries to use the backup files to restore the system to its original state.

After unzipping the patch package, you will have a `BPM-Patch` directory called `$PATCH_HOME`. The directory has two files for you to 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



4 After prompting for the Backup Directory parameter, 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.

Appendix A

Typical Installation Parameters

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

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 `QAD_BPM_DATA_HOME`:

```
QAD_BPM_DATA_HOME = @QAD_BPM_HOME@/data
QAD_BPM_HOME = @GLOBAL_DLC@/oebpm
GLOBAL_DLC = /progress/dlc113
```

The result is:

```
QAD_BPM_DATA_HOME = /progress/dlc113/oebpm/data
```

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 3)

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_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	
Global	MFG_DB_OWNER	EA Database Owner	

Table A.1
Default BPM Installation Parameters (Page 2 of 3)

Module	Parameter Name	Description	Default Value
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 Corticon	CORTICON_TOMCAT_HOST	Tomcat Host	@GLOBAL_INSTALL_HOST@
Progress Corticon	CORTICON_TOMCAT_PORT	Tomcat Port	8080
Progress Corticon	CORTICON_TOMCAT_ADMIN_ NAME	Tomcat Admin Name	
Progress Corticon	CORTICON_TOMCAT_ADMIN_ PASSWORD	Tomcat Admin Password	
Progress Corticon	CORTICON_WEBAPP_NAME	Webapp Name	corticon

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

Module	Parameter Name	Description	Default Value
Progress Corticon	CORTICON_ADMIN_NAME	Admin Name	
Progress Corticon	CORTICON_ADMIN_PASSWORD	Admin Password	
Progress Corticon	CORTICON_LICENSE_FILE	License Jar File	
Progress Business Process Server Database	OEBPS_DB_ADMIN_NAME	DB Admin Name	admin
Progress Business Process Server Database	OEBPS_DB_ADMIN_PASSWORD	DB Admin Password	
Progress OpenEdge BPM Database	OEBPS_DB_HOME	DB Home	
Progress Business Process Server Database	OEBPS_DB_PHY	DB Name	oebps
Progress Business Process Server Database	OEBPS_DB_PORT	DB Port	8910
Progress Business Process Server	JBOSS_PORTAL_SERVER_PORT	Portal Server HTTP Port	18793
Progress Business Process Server	OEBPS_ADMIN_NAME	Admin Name	admin
Progress Business Process Server	OEBPS_ADMIN_PASSWORD	Admin Password	
Progress Business Process Server	OEBPS_HOME	Home Directory	@GLOBAL_DLC@/oebpm
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 Plug-in 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

Appendix B

Process Control

This appendix describes BPM installation process control.

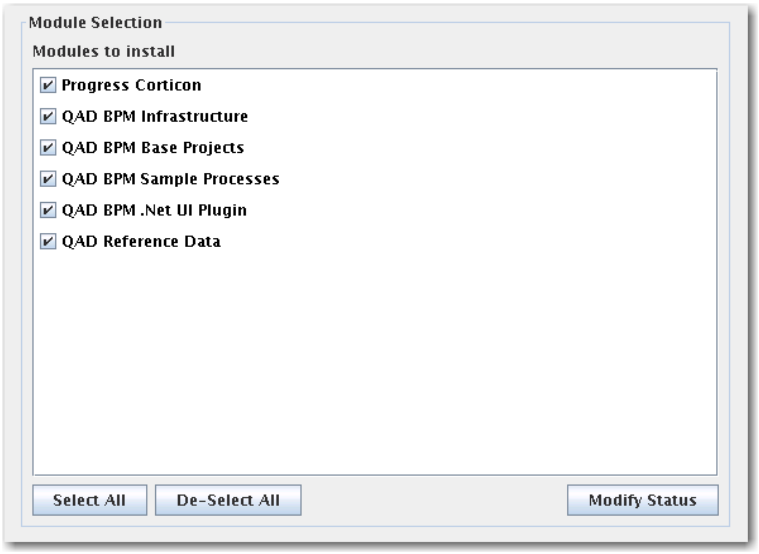
Overview

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

Using Process Control

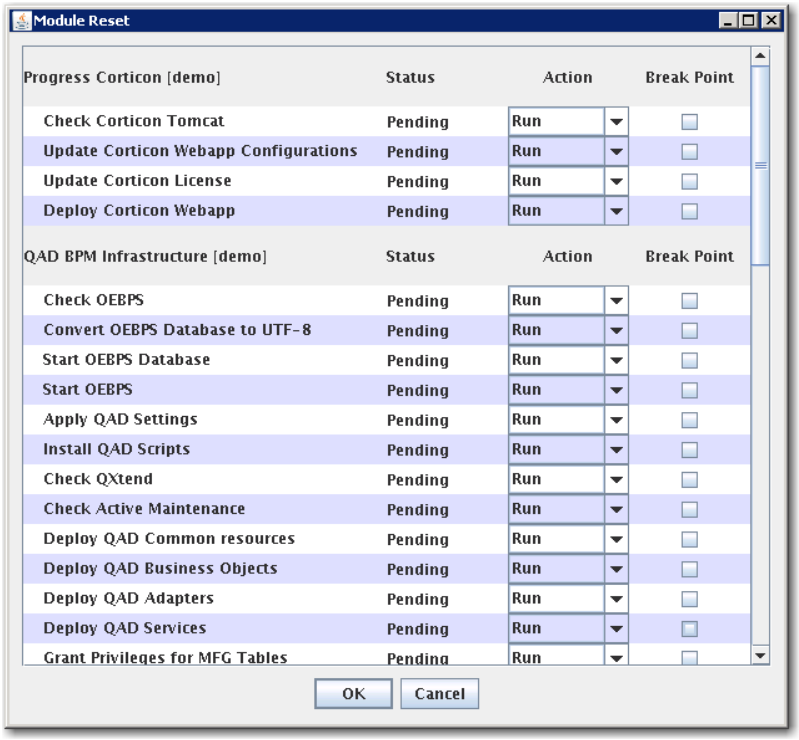
Click the Modify Status button on the Module Selection Screen.

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.

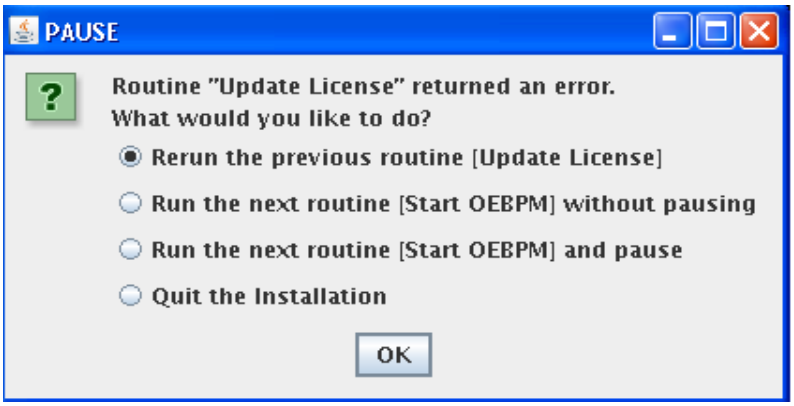
If the installer encounters an error while running, it pauses, allowing you to fix environment problems on the fly. For example, if Tomcat is not running when the installer tries to deploy the servlets, the installer pauses. You can investigate using the log file (refer to "Reading the Installation Log" on page 58), 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.

Appendix C

QXtend Configuration for Sample Processes

This appendix describes how to configure QXO for sample processes.

Overview

This appendix describes how to configure QXO for sample processes.

Required Business Objects and Profiles

The BPM sample processes in QAD Enterprise Edition require the following business objects and profiles.

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_2	Yes
	ItemReplacement	ItemReplacement_EE_2	Yes
	QADERPSalesOrderLine	SalesOrderDetail_EE_2	Yes
	EngChangeItemDetail	EngChangeItemDetail_EE_2	Yes
	WorkOrder	WorkOrder_EE_1	Yes
	WorkOrderDetail	WorkOrderDetail_EE_1	Yes
	KanbanItemActive	KanbanItemActive_EE_2	Yes
	PurchaseOrderDetail	PurchaseOrderDetail_EE_1	Yes
	RepetProductionSched	RepetProductionSched_EE_2	Yes
Supplier	BCreditor	Creditor_EE_2	No
	LogisticsAccountingCtrl		Yes
	SupplierConsignmentCtrl		Yes
	SupplierPerformanceCtrl		Yes
Customer	BDebtor	Debtor_EE_2	No
	ServiceSupportCtrl		Yes
	CustomerConsignmentCtrl		Yes
SalesOrder	SalesOrder	SalesOrder_EE_2	Yes
	Debtor	DebtorCredit_EE_2	Yes
	DomainCustomerSharedSet	DomainCustSharedSet_EE_2	Yes

The BPM sample processes in QAD Standard Edition require the following business objects and profiles.

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_2	Yes
	QADERPSalesOrderLine	SalesOrderDetail_SE_1	Yes
	EngChangeItemDetail	EngChangeItemDetail_SE_2	Yes
	WorkOrder	WorkOrder_SE_1	Yes
	WorkOrderDetail	WorkOrderDetail_SE_1	Yes
	KanbanItemActive	KanbanItemActive_SE_2	Yes
	PurchaseOrderDetail	PurchaseOrderDetail_SE_1	Yes
	RepetProductionSched	RepetProductionSched_SE_2	Yes
Supplier	Supplier	Supplier_SE_2	Yes
	LogisticsAccountingCtrl		Yes
	SupplierConsignmentCtrl		Yes
	SupplierPerformanceCtrl		Yes
Customer	Customer	Customer_SE_2	No
	ServiceSupportCtrl		Yes
	CustomerConsignmentCtrl		Yes
SalesOrder	SalesOrder	SalesOrder_SE_2	Yes
	Customer	CustomerCredit_SE_2	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_2
- BCreditor/Creditor_EE_2
- BDebtor/Debtor_EE_2
- SalesOrder/SalesOrder_EE_2

For QAD Standard Edition:

- ItemEngineeringChange/Item_SE_2
- Supplier/Supplier_SE_2
- Customer/Customer_SE_2
- SalesOrder/SalesOrder_SE_2

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
	maintainSalesOrderCredit	ERP3_1

Table C.4
QDocs for SE

Sample Processes	QDoc Name	QDoc Version
Item	maintainItemData	eB21_4
SalesOrder	maintainCustomer	eB2_2
	maintainSalesOrderCredit	eB_2

Appendix D

Progress OpenEdge Developer Studio

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

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 Progress OpenEdge Developer Studio

To perform BPM development, the Progress OpenEdge Developer Studio must be installed. For more information, refer to the *Progress Installation Guide*.

Set Up Studio Workspace

Introduction

This section describes the procedure for creating and configuring a Progress OpenEdge 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.

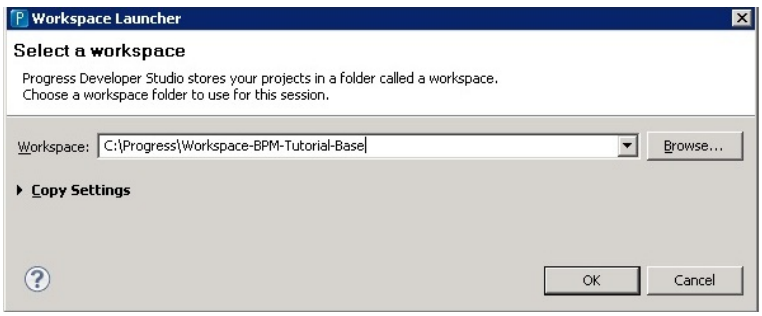
While the screen shots included in this procedure show a QAD BPM environment installed with QAD Enterprise Edition (EE), some of the displays are different for Standard Edition (SE). In particular, the names of artifacts such as Business Objects and project often include the string "_SE", rather than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

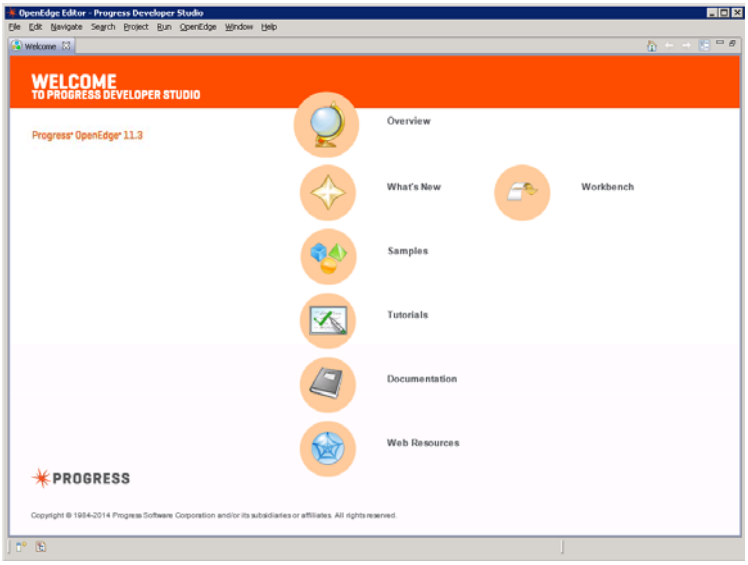
1. After starting Developer Studio from the Windows Start menu or a shortcut, run the File| Switch Workspace|Other command from the Eclipse menu bar.
2. Enter the path name of the new QAD BPM workspace. Press OK.

Fig. D.1
Select Workspace Location



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

Fig. D.2
Welcome Screen

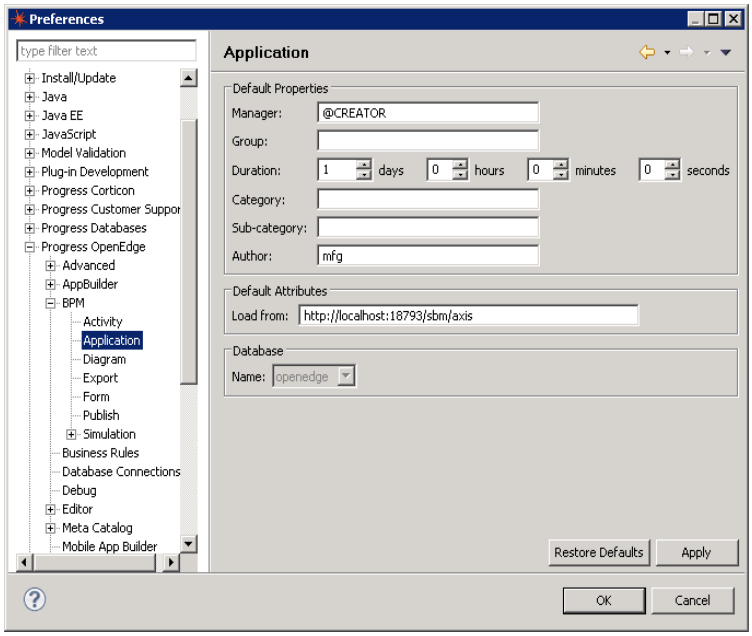


Configure Workspace Preferences

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

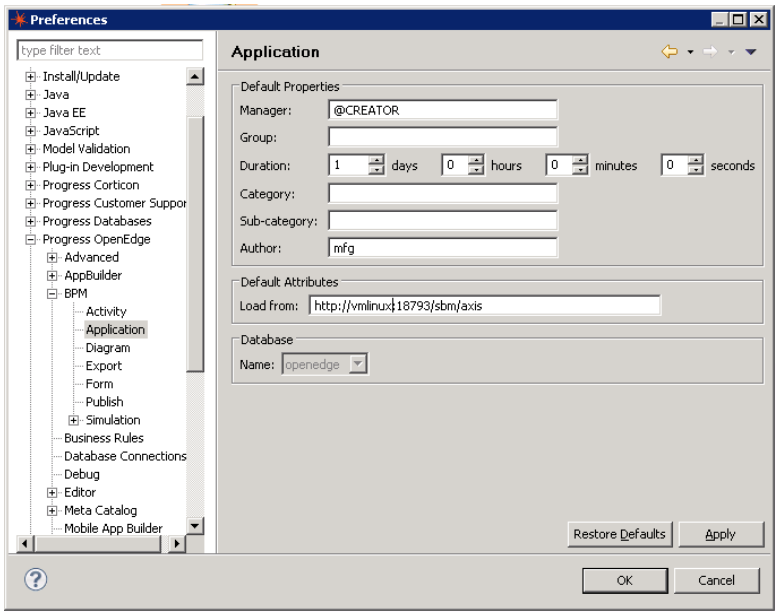
1 Run the Window|Preferences command from the Eclipse menu bar. Expand the Progress OpenEdge node and its child nodes and select the Progress OpenEdge - Application node.

Fig. D.3
Application Preferences



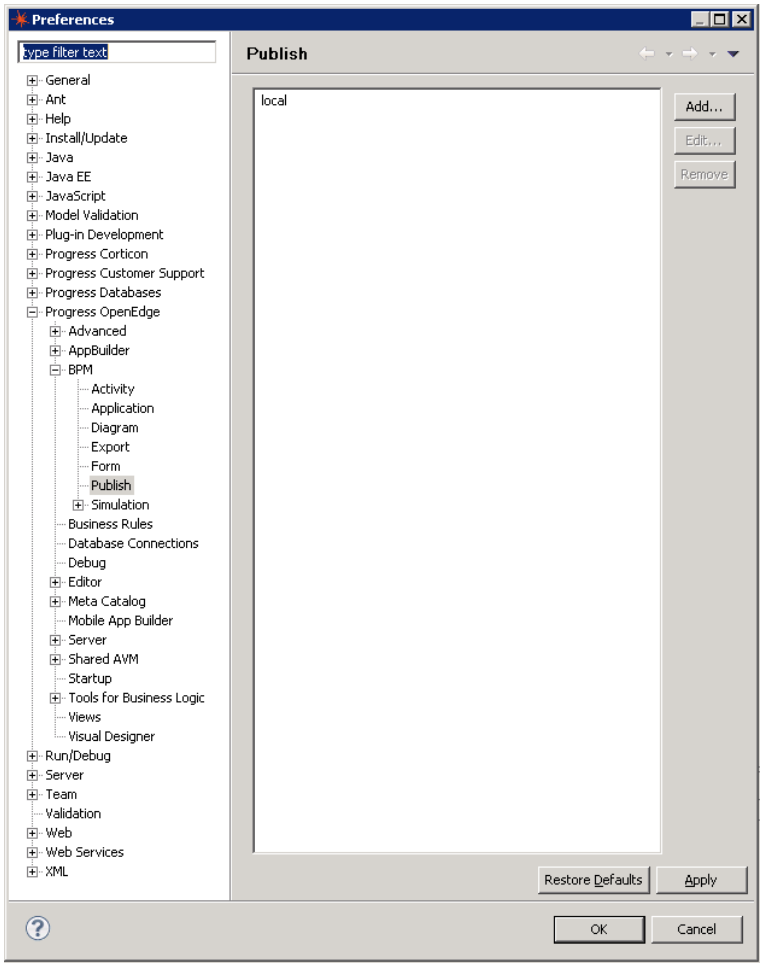
2 Change the Load From field to reference the correct host name and port. Select the OpenEdge option in the Name field. Press Apply to save the change.

Fig. D.4
Application Preferences



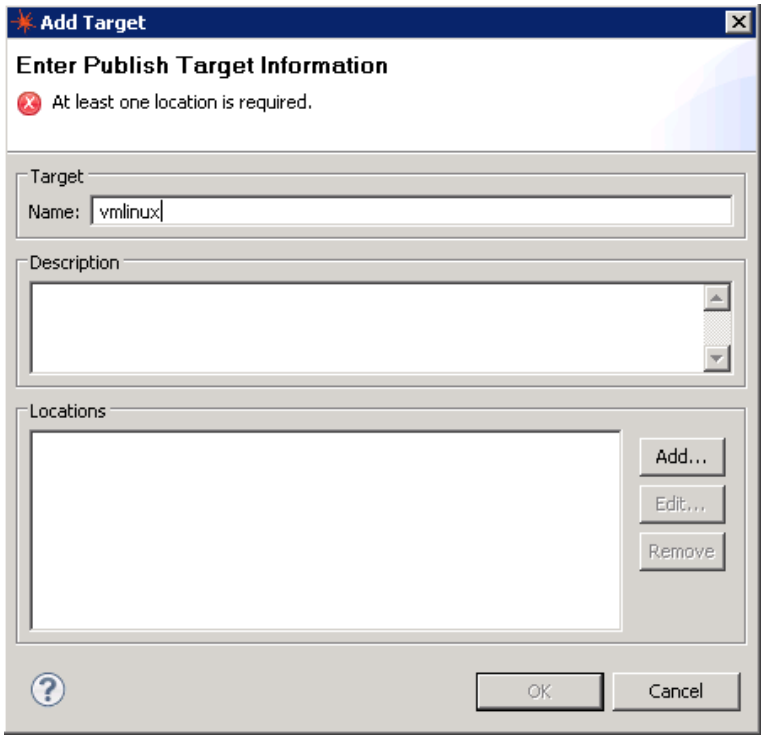
3 Select the Progress OpenEdge - BPM - Publish node.

Fig. D.5
Publish Preferences



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.

Fig. D.6
Publish Target

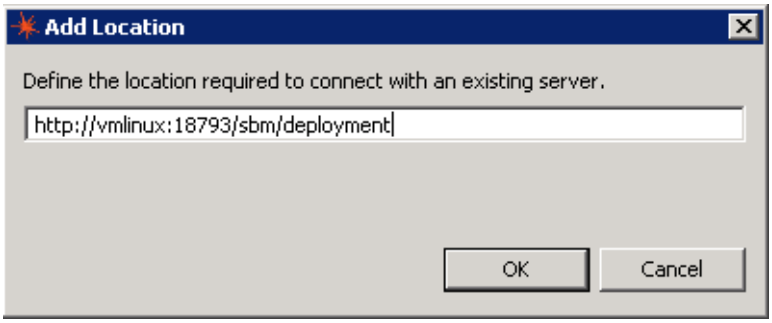


5 Press Add in the Locations panel and enter a connection URL of the form:

`http://<host>:<port>/sbm/deployment`

Where `<host>` is the host on which the server resides and `<port>` is the number of the HTTP port specified during QAD BPM installation.

Fig. D.7
Server Location



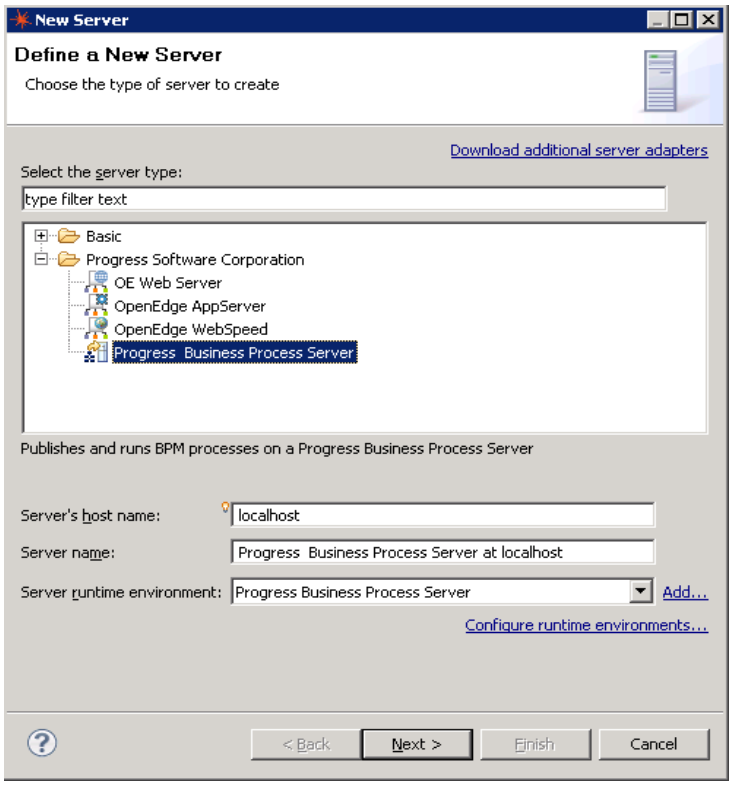
6 Press OK in the Add Location window and Add Target window. Press Apply in the Preferences window to save the change.

Define BPM Server Connection

The Developer Studio allows you to conveniently and automatically publish BPM projects and business processes to a BPM server. This feature is useful for synchronizing the workspace with remote development environments during business process implementation. To use this feature, you must create a BPM server object.

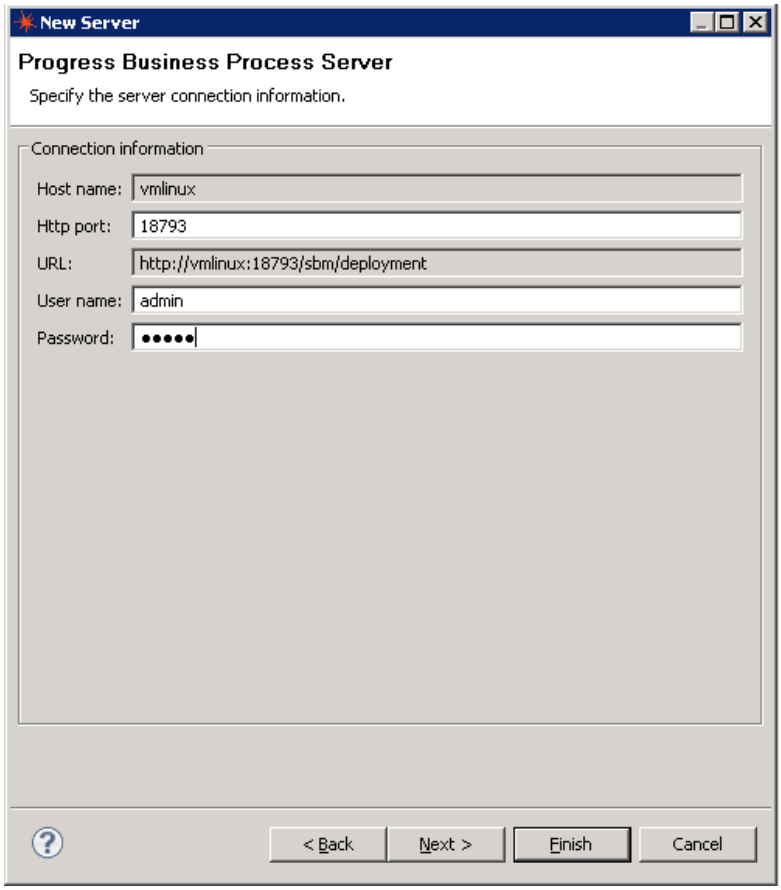
1 Ensure that the BPM Design perspective is displayed by running Window|Open Perspective|BPM Design from the Eclipse menu bar. Select the Servers tab in the lower frame of the screen, which is initially empty. Right-click on the blank canvas to the New|Server command. Select the Progress SBM Server node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

Fig. D.8
New BP Server



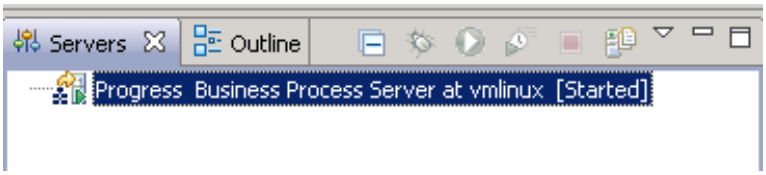
2 Enter the name of the host on which the BPM server resides in the Server's host name field. Press Next.

Fig. D.9
New Server



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 publishing any projects to the BPM server.

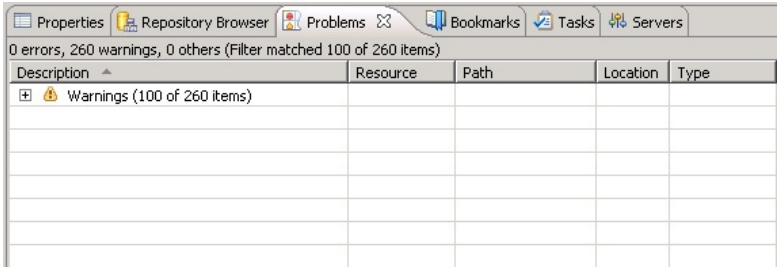
Fig. D.10
Servers



Import QAD BPM Base and Sample Process

You can import the QAD BPM Base package to finish setting up the workspace. You can also import bundled sample process packages into your workspace with the BPM Meta Utility to start your development. For more information, refer to *Administration Guide: QAD BPM*.

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



The workspace is now populated and ready for use.

Appendix E

Installing a Second BPM Instance

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

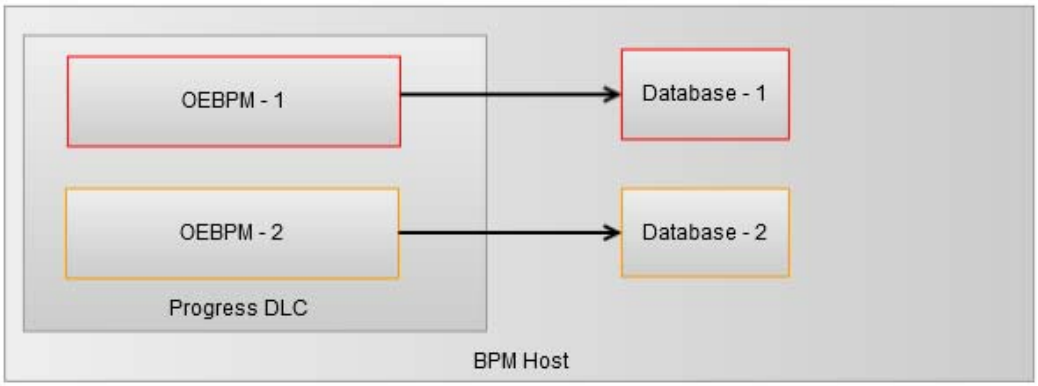
Overview

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, you can easily meet this requirement 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.

Installing Multiple BPM Instances on OpenEdge 11.3

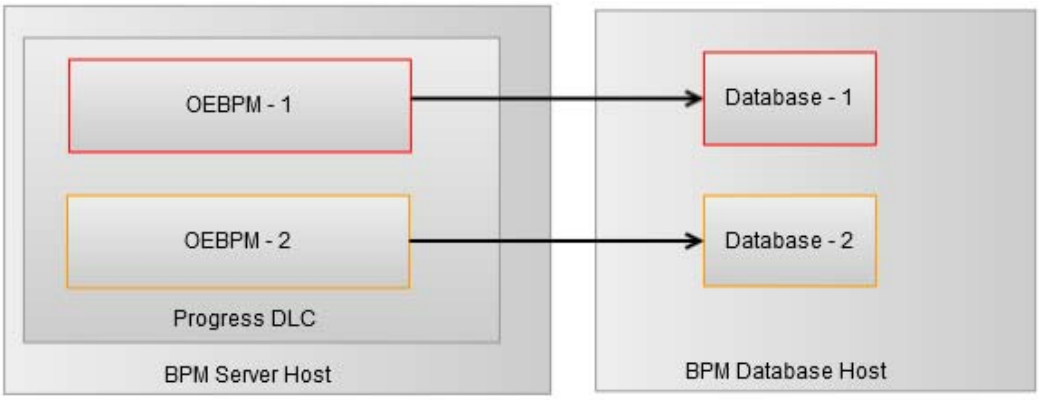
The following diagram shows the deployment of multiple OEBPM database and server instances on the same host.

Fig. 7.2
Multiple OEBPM Database and Server Instances on the Same Host



The following diagram shows the deployment of multiple OEBPM database and server instances on different hosts.

Fig. 7.3
Multiple OEBPM Database and Server Instances on a Different Host



In both situations, the OEBPM server is created inside the original Progress installation directory, and the database can be created anywhere in the file system.

Tools

The following tools are necessary to create new BPM instances:

- The database creation script is bundled with Progress installation to create new OEBPM database instances.
- The MultiBPServer Tool provided by Progress is used to create new OEBPM instances.

New Instance Creation Steps

Create New BPM Instance

1. Shut down the original BPM instance (`$DLC/oebpm`).
2. Download and extract the MultiBPServer tool. You will get a directory named `MultiBPServer`.
3. Change directory to `MultiBPServer`.
4. Specify parameters in `bin/setenv.sh`:
   - `JAVA_HOME`: The Java home to execute the MultiBPServer tool
5. Specify parameters in `conf/multibpenvironment.properties`, making sure that the ports are not occupied.

The values for BPSERVER_INSTANCES and all ports should be comma separated and identical in number, which means that you can create more than one instance at the same time.

Table 7.1
Parameters for New BPM Instance (Page 1 of 7)

Property Name	Description	Original Value/Port	Service Name	Binding Name	File Path
DLC	DLC of the original OEBPM installation				
BPSERVER_INSTANCES	New OEBPM instances names				
EJB Server					
EJB_HTTPS_PORT	JBoss Web HTTPS connector socket	16002	jboss.web:service=WebServer	HttpsConnector	<JBoss Home>/server/ejbServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml <JBoss Home>/server/ejbServer/deploy/jbossweb.sar/server.xml
EJB_HTTP_PORT	JBoss Web HTTP connector socket; also drives the values for the HTTPS and AJP sockets	16001	jboss.web:service=WebServer		<JBoss Home>/server/ejbServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml <JBoss Home>/server/ejbServer/deploy/jbossweb.sar/server.xml server/conf/oebpsjndi.properties
EJB_JNDI_PORT	Listening socket for the Naming service	16003	jboss:service=Naming	Port	<JBoss Home>/server/ejbServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml server/conf/oebpsjndi.properties
JBOSS_EJB_NAMING_RMI_PORT	Socket Naming service used to receive RMI requests from the client proxies	16005	jboss:service=Naming		<JBoss Home>/server/ejbServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JBOSS_EJB_WEBSERVICE_PORT	Socket for dynamic class and resource loading	16004	jboss:service=WebService		<JBoss Home>/server/ejbServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
REMOTE_ANT_PORT	Remote ant server	14005			server/conf/oebpsjndi.properties
JMX_CONNECTOR_PORT	RMI/JRMP socket for connecting to the JMX MBeanServer	51090	jboss.remoting:service=JMXConnectorServer,protocol=rmi	Port	<JBoss Home>/server/ejbServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml

Table 7.1
Parameters for New BPM Instance (Page 2 of 7)

Property Name	Description	Original Value/Port	Service Name	Binding Name	File Path
HAJNDI_PORT	Listening socket for the HA-JNDI service	51100	jboss:service=HAJNDI	Port	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
HAJNDI_RMI_PORT	Socket the HA-JNDI service uses to receive RMI requests from client proxies	51101	jboss:service=HAJNDI	RmiPort	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
HAJNDI_AUTODISCOVERY _PORT	Multicast socket on which HA-JNDI listens for auto-discovery requests from clients	51102	jboss:service=HAJNDI	AutoDiscovery	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
SNMP_ADAPTOR_PORT	Socket for the SNMP adaptor MBean	51161	jboss.jmx:name=SnmpAgent,service= snmp,type=adaptor		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
SNMP_AGENT_PORT	Socket for the SNMP trap receiver	51162	jboss.jmx:name=SnmpAgent,service= trapd,type=logger		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
CORBA_ORB_PORT	IIOP socket for the Corba ORB	53528	jboss:service=CorbaORB		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
UNIFIED_INVOKER_ CONNECTOR_PORT	Socket for the JBoss Remoting Connector used by UnifiedInvoker	54446	UnifiedInvokerConnector		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JRMP_HA_PORT	Socket for the high availability version of the legacy RMI/JRMP invoker	54447	jboss:service=invoker,type=jrmpha		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
POOLED_HA_PORT	Socket for the high availability version of the legacy Pooled invoker	54448	jboss:service=invoker,type=pooledha		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JBM_CONNECTOR_PORT	Socket for JBoss Messaging 1.x	54457	jboss.messaging:service= Connector,transport=bisocket		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml

Table 7.1
Parameters for New BPM Instance (Page 3 of 7)

Property Name	Description	Original Value/Port	Service Name	Binding Name	File Path
RECOVERYMANAGER_PORT	Socket for the JBossTS Recovery Manager	54712	TransactionManager	recoveryManager	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JBOSSTS_MANAGER_PORT	Socket for the JBossTS Transaction Status Manager	54713	TransactionManager	transactionStatus Manager	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
SOCKET_PROCESS_ID_PORT	Socket used to provide the unique process ID for JBossTS. The address configuration is ignored; will always use localhost/127.0.0.1	54714	TransactionManager	socketProcessId	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JRMP_RMI_PORT	Socket for the legacy RMI/JRMP invoker	54444	jboss:service=invoker,type=jrmp		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JBM2_NETTY_PORT	Socket for JBoss Messaging 2.x	55445	JBM2	netty-port	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JBM2_NETTY_SSL_PORT	SSL socket for JBoss Messaging 2.x	55446	JBM2	netty-ssl-port	<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
CONNECTOR_PORTAJP	AJP connector	58009			<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml <JBoss Home>/server/ejbServer /deploy/jbossweb.sar/server.xml
REMOTING_SERVER_PORT	Socket for the JBoss Remoting Connector used by UnifiedInvoker on a multi-home server				<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml. This is commented out.
POOLED_INVOKER_PORT	Socket for the legacy pooled invoker	54445	jboss:service=invoker,type=pooled		<JBoss Home>/server/ejbServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
Portal Server					

Table 7.1
Parameters for New BPM Instance (Page 4 of 7)

Property Name	Description	Original Value/Port	Service Name	Binding Name	File Path
WEB_HTTPS_PORT	JBoss Web HTTPS connector socket	18002	jboss.web:service=WebServer	HttpsConnector	<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml jboss/server/portalServer/deploy/jbossweb.sar/server.xml server/conf/oebpsjndi.properties
WEB_HTTP_PORT	JBoss Web HTTP connector socket; also drives the values for the HTTPS and AJP sockets	18793	jboss.web:service=WebServer		jboss/webapps/deploy/sbm.war/WEB-INF/classes/properties/UDDIBrowser*.properties <JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml jboss/server/portalServer/deploy/jbossweb.sar/server.xml server/conf/pmr.conf server/conf/oebpsjndi.properties server/conf/bpmworkflow.conf server/conf/designer.conf server/conf/properties/UDDIBrowser*.properties server/conf/resources/designer/DesignerDeployment.xml server/conf/oebps.conf server/conf/webservice.conf server/ant/ant.properties
WEB_JNDI_PORT	Listening socket for the Naming service	18003	jboss:service=Naming	Port	jboss/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml server/conf/oebpsjndi.properties

Table 7.1
Parameters for New BPM Instance (Page 5 of 7)

Property Name	Description	Original Value/Port	Service Name	Binding Name	File Path
JBOSS_WEB_NAMING_RMI _PORT	Socket Naming service used to receive RMI requests from client proxies	18005	jboss:service=Naming		<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
JBOSS_WEB_WEBSERVICE _PORT	Socket for dynamic class and resource loading	18004	jboss:service=WebService		<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_JMX_CONNECTOR_PORT	RMI/JRMP socket for connecting to the JMX MBeanServer	61090	jboss.remoting:service= JMXConnectorServer,protocol=rmi	Port	<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_HAJNDI_PORT	Listening socket for the HA-JNDI service	61100	jboss:service=HAJNDI	Port	<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_HAJNDI_RMI_PORT	Socket the HA-JNDI service uses to receive RMI requests from client proxies	61101	jboss:service=HAJNDI	RmiPort	<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_HAJNDI_AUTODISCOVERY _PORT	Multicast socket on which HA-JNDI listens for auto-discovery requests from clients	61102	jboss:service=HAJNDI	AutoDiscovery	<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_SNMP_ADAPTOR_PORT	Socket for the SNMP adaptor MBean	61161	jboss.jmx:name=SnmpAgent,service= snmp,type=adaptor		<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_SNMP_AGENT_PORT	Socket for the SNMP trap receiver	61162	jboss.jmx:name=SnmpAgent,service= trapd,type=logger		<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_CORBA_ORB_PORT	IIOP socket for the Corba ORB	63528	jboss:service=CorbaORB		<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_UNIFIED_INVOKER _CONNECTOR_PORT	Socket for the JBoss Remoting Connector used by UnifiedInvoker	64446	UnifiedInvokerConnector		<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_JRMP_HA_PORT	Socket for the high availability version of the legacy RMI/JRMP invoker	64447	jboss:service=invoker,type=jrmpha		<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml

Table 7.1
Parameters for New BPM Instance (Page 6 of 7)

Property Name	Description	Original Value/Port	Service Name	Binding Name	File Path
WEB_POOLED_HA_PORT	Socket for the high availability version of the legacy Pooled invoker	64448	jboss:service=invoker,type=pooledha		<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_JBM_CONNECTOR_PORT	Socket for JBoss Messaging 1.x	64457	jboss.messaging:service=Connector,transport=bisocket		<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_RECOVERYMANAGER_PORT	Socket for the JBossTS Recovery Manager	64712	TransactionManager	recoveryManager	<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_JBOSSTS_MANAGER_PORT	Socket for the JBossTS Transaction Status Manager	66713	TransactionManager	transactionStatusManager	<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_SOCKET_PROCESS_ID_PORT	Socket used to provide the unique process ID for JBossTS. The address configuration is ignored; will always use localhost/127.0.0.1	64714	TransactionManager	socketProcessId	<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_JRMP_RMI_PORT	Socket for the legacy RMI/JRMP invoker	64444	jboss:service=invoker,type=jrmp		<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_POOLED_INVOKER_PORT	Socket for the legacy pooled invoker	64445	jboss:service=invoker,type=pooled		<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_JBM2_NETTY_PORT	Socket for JBoss Messaging 2.x	65445	JBM2	netty-port	<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_JBM2_NETTY_SSL_PORT	SSL socket for JBoss Messaging 2.x	65446	JBM2	netty-ssl-port	<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml
WEB_REM1_SERVER_PORT	Socket for the JBoss Remoting Connector used by UnifiedInvoker on a multi-home server				<JBoss Home>/server/portalServer/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml This is commented out.

Table 7.1
Parameters for New BPM Instance (Page 7 of 7)

Property Name	Description	Original Value/Port	Service Name	Binding Name	File Path
WEB_CONNECTOR_PORTAJP	AJP 1.3 connector	68009			<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml jboss/server/portalServer/deploy/jbossweb.sar/server.xml
WEB_REMOTING_SERVER_PORT	Socket for the JBoss Remoting Connector used by UnifiedInvoker on a multi-home server				<JBoss Home>/server/portalServer /conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml. This is commented out.
Database					
DB_NAME	New database name				
DB_PORT	New database port				
DB_SERVER	New database server				
DB_USER	New database admin user				
OE_ENCRYPTED_PASSWORD	Encrypted new database admin password	OEBPM_HOME/server/bin/encrypt.sh <PASSSWORD>			

6 Create a new OEBPM instance:

   a `cd bin`

   b `./createBPServer.sh`

Create New Database

1 Specify the following parameters in `$DLC/install/bpsdb/setenv.[cmd|sh]` : (with root). The parameters must be the same as those specified in last step.

   - `DB_DIR`: The new database directory
   - `DB_NAME`: The new database name
   - `DB_PORT`: The new database SQL port
   - `SBM_HOME`: The new OEBPM server home directory. For example, "`/progress/dlc113/<New_OEBPM_Server>/server`". This parameter is used to call `<New_OEBPM_Server>/server/bin/setupOEBPS.sh` to create the database schema.
   - `DB_USER`: The new database admin user
   - `DB_PASSWORD`: The new database admin password in clear text

2 Create the new database as mfg or another normal user:

   a `cd $DLC/install/bpsdb/`

   b `./create_proddb_v6.[bat|sh]`

   You may see errors like "`Cannot find or open file /progress/dlc113/<New Instance>/server/bin/oebps1.db, errno = 2. (43)`". These messages are caused by an issue with the tool and can be ignored.

3 Shut down the database before installing QAD BPM.

QAD BPM Installation

Install QAD BPM with all new parameters following the standard installation instructions.

Product Information Resources

QAD offers a number of online resources to help you get more information about using QAD products.

QAD Forums (community.qad.com)
Ask questions and share information with other members of the user community, including QAD experts.

QAD Knowledgebase (knowledgebase.qad.com)*
Search for answers, tips, or solutions related to any QAD product or topic.

QAD Document Library (www.qad.com/documentlibrary)
Get browser-based access to user guides, release notes, training guides, and so on; use powerful search features to find the document you want, then read online, or download and print PDF.

QAD Learning Center (learning.qad.com)*
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