



QAD Enterprise Applications 2009.1
Enterprise Edition

Installation Guide
QAD Enterprise Edition 2009.1 EE
Installation Guide for
Progress Database

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QAD 2009.1 Enterprise Edition
September 2009

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The background of the page is a grayscale image of several interlocking gears. The gears are of different sizes and are arranged in a way that they appear to be meshing together. The lighting is soft, creating a sense of depth and texture. The overall tone is professional and technical.

About This Guide

This guide covers the installation of QAD Enterprise Applications 2009.1 Enterprise Edition. This chapter provides an orientation to this guide and additional QAD resources available to you during the installation process.

Other QAD Documentation **2**

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Conventions **3**

This guide describes how to install, configure, and start QAD Enterprise Applications 2009.1 Enterprise Edition.

QAD 2009.1 Enterprise Edition is a complete enterprise solution that provides manufacturing, distribution, and financials modules. It also includes the data and security management features and integrates with QAD's many supporting and more specialized products.

This guide assumes you are a database administrator familiar with your enterprise's requirements and the QAD product line.

Other QAD Documentation

- For an overview of new features and software updates, see the *Release Notes*.
- For an overview of system features and instructions on navigating the user interface, see *User Guide: QAD User Interfaces*.
- For detailed information on using system features, refer to the relevant user guide.
- For technical details, refer to *Entity Diagrams* and *Database Definitions*.

For a complete list of QAD Documentation, visit the QAD Online Support Center at:

<http://support.qad.com/>

QAD Web Site

The QAD Web site provides a wide variety of information about the company and its products. You can access the Web site at:

<http://www.qad.com>

For users with a QAD Web account, product documentation is available for viewing or downloading from the QAD Online Support Center at:

<http://support.qad.com/>

You can register for a QAD Web account by accessing the Web site. Your customer ID number is required. Access to certain areas is dependent on the type of agreement you have with QAD.

Most user documentation is available in two formats:

- Portable document format (PDF) files can be downloaded from the QAD Web site to your computer. You can view and print them with the free Adobe Acrobat Reader.
- HTML files let you view user documentation through your Web browser and use search tools to easily locate topics of interest.

Conventions

Screen Illustrations

System functions are available in a feature-rich .NET-based graphical user interface (UI); a subset of functions can be used in a simplified character interface. Screenshots in the documentation are taken from both the QAD .NET UI and the character interface.

For complete keyboard command summaries for UI navigation, refer to the appropriate chapters of *User Guide: QAD User Interfaces*.

Typographic

This document uses the text or typographic conventions listed in the following table.

If you see:	It means:
monospaced text	A command or file name.
<i>italicized monospaced text</i>	A variable name for a value you enter as part of an operating system command; for example, <i>YourCDROMDir</i> .
indented command line	A long command that you enter as one line, although it appears in the text as two lines.
Note	Alerts the reader to exceptions or special conditions.
Important	Alerts the reader to critical information.
Warning	Used in situations where you can overwrite or corrupt data, unless you follow the instructions.

Installation Overview and System Requirements

This chapter describes the QAD Enterprise Edition installation process and provides system requirements and software prerequisites.

Installation Process Overview **6**

System Overview **7**

Sizing and Capacity Planning **7**

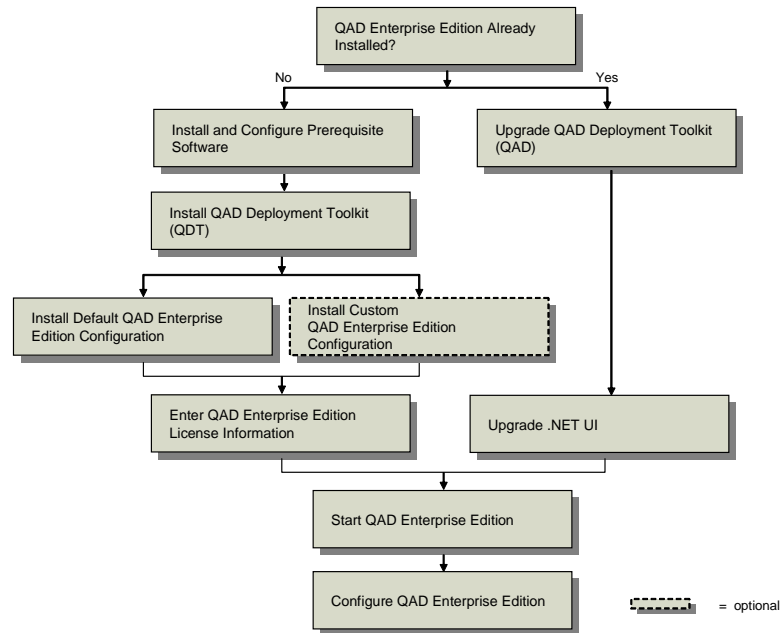
General Prerequisites **8**

Software and Hardware Prerequisites **8**

Installation Process Overview

QAD Enterprise Edition is installed with the QAD Deployment Toolkit (QDT). QDT automates much of the installation process on properly set-up systems. The following figure represents the overall flow of the installation process.

Fig. 1.1
QAD 2009.1
Enterprise Edition
Installation Process



The procedure for installing QAD Enterprise Edition is as follows:

- 1 Set up systems according to the hardware and software requirements defined in this chapter or with the assistance of QAD Global Services.
- 2 Install and launch QDT.
- 3 QDT reads the product image on the distribution media and displays a choice of products and components to install.
- 4 You select the appropriate products and components.

- 5 QDT automatically discovers system information, such as location of required software, by reading the previously set environment variables.
- 6 QDT installs and configures the selected products and components, using default configuration values generated during the auto-discovery process or your customized configuration values.
- 7 You start up a character-based user interface (CHUI) session to enter license information.
- 8 You launch your new Enterprise Edition installation and log in.
- 9 You complete any necessary post-deployment configuration.

System Overview

A QAD 2009.1 Enterprise Edition system is composed of:

- A Progress database server that contains QAD 2009.1 Enterprise Edition software
- A Progress Enterprise application server
- A Tomcat Web server
- Multiple client workstations (with QAD .NET User Interface software), as needed

Additionally, the Georgia Softworks Windows Telnet Server is required for Windows server implementations.

The database server, application server, and Web server are all installed on the same machine in a single-tier environment. The QAD .NET User Interface clients are installed on the machines that will access the QAD Enterprise Edition environment.

Sizing and Capacity Planning

The database server contains QAD Enterprise Edition and Progress server software, as well as your production data. Prior to starting an installation, estimate the eventual size of your production database and the demands placed on different components of the database so that you can lay out your disks appropriately.

QAD Enterprise Edition takes a minimum of 8 GB to install and configure the product as-is for one environment. And that does not include additional space for multiple languages to the databases, Warehousing, sizable changes to the production databases, or cloning environments.

For assistance with hardware sizing and capacity requirements planning, contact QAD Global Services.

General Prerequisites

The following general prerequisites apply:

- If you are a new Enterprise Edition customer, you must have a QAD 2009.1 Enterprise Edition DVD and the latest QDT and application patches from the QAD Download Center.
- You must have a valid QAD product license key for each module you have purchased to use QAD 2009.1 Enterprise Edition.
- The system administrator must be an experienced Progress database administrator who can manage Progress client processes.
- A 100 Mbps Ethernet or faster network is required to run QAD 2009.1 Enterprise Edition.

Software and Hardware Prerequisites

The following sections describe the software and hardware requirements for the prerequisite components of your QAD Enterprise Edition installation.

Important These components must be installed before beginning the installation of QAD Enterprise Edition.

Note Refer to the Progress documentation for the complete requirements for Progress components. When installing Progress components, always select a Complete installation, not a Typical or Custom installation.

UNIX Considerations

Installation Group and User

UNIX installations require a group called `qad` and a user called `mfg` on the database server. All installation and maintenance programs store pertinent information under the `mfg` user home directory. This enables QAD scripts to find data about installed products automatically and reliably and lets you maintain your system without logging on as root.

- 1 Create a group called `qad` with a group ID (gid) of 65535 with your UNIX system administration utility. (65535 is the user ID of the files on the QAD media.)
- 2 Create a user called `mfg` with a user ID of 65535.
 - a Assign the Korn shell to this user. All of the scripts delivered on QAD media use Korn shell (ksh) syntax.
 - b For the `mfg` user, set the `$HOME` environment to a user directory where working and temporary files can be written.
 - c Assign the standard umask of 022 to set permissions and security.

Environment Variables

Update the `mfg` user `.profile` to include the `DLC` and `PATH` variables. Set the variables as follows:

- `DLC`: Progress installation directory
- `JAVA_HOME`: Java directory location
- `CATALINA_HOME`: Tomcat installation directory
- `PATH`: To include `$DLC/bin`, `$JAVA_HOME/bin`, `$CATALINA_HOME/bin`

Depending on your flavor of UNIX, you may also need to set the following variables for the shared library path and ID library path:

- `SHLIB_PATH`
- `LD_LIBRARY_PATH`

Expat XML Parser (HP-UX Only)

If you are installing on an HP Platform running HP-UX, you must install a C library for parsing XML. The Expat XML Parser is a free, open-source project that provides this functionality.

The source code can be located on the project's SourceForge page at:

<http://expat.sourceforge.net/>

Precompiled depot files for HP are available at:

<http://hpux.connect.org.uk/hppd/hpux/Development/Tools/expat-2.0.1/>

Because of a limitation of the QAD Deployment Toolkit on HP ia64 (Itanium) platforms, depot files for both the Itanium 2 and PA-RISC 2.0 should be installed before installing QAD software.

Database Server

The following table lists the software and hardware requirements for the database server.

Table 1.1
Database Server
Requirements

Software	Hardware	Notes
<p>Progress OpenEdge 10.1C03, including the following:</p> <ul style="list-style-type: none"> • Latest Progress version-specific patches with a minimum patch of 10.1C03 • Enterprise DB Server for appropriate number of users • 4GL Development, one license • Progress Enterprise application server <p>Progress language-specific releases for each language in multi-language installation</p> <p>Java J2SE 5.0 or higher</p> <p>Web browser (Internet Explorer or Netscape)</p> <p>Operating system patches</p>	<p>4 GB free disk space for single-language installation.</p> <p>700 MB free disk space for each additional language.</p> <p>Operating system patches</p> <p>Approximately 10 GB free disk space for data structures. This estimate is based on a 5-7 GB production database.</p> <p>100 Mbps network card</p> <p>ISO 9660 CD-ROM or tape drive</p> <p>Two disk controller channels (minimum)</p> <p>Internet connection</p>	<p>Perform a Complete installation, not a Typical or Custom installation of Progress components.</p> <p>If Progress installs its own version of Java and it differs from the version required by the Web server (see below), do not remove the Progress-installed Java version when installing the Web server version.</p>

Application Server

The following table lists the software and hardware requirements for the application server.

Table 1.2
Application Server
Requirements

Software	Hardware	Notes
Progress OpenEdge 10.1C03, including the following: <ul style="list-style-type: none"> • Latest Progress version-specific patches with a minimum patch of 10.1C03 • Enterprise DB Server for appropriate number of users • 4GL Development, one license • Progress AdminServer. Java J2SE 5.0 or higher Operating system patches	4 GB free disk space for single-language installation 700 MB additional free disk space for each additional language	Perform a Complete installation, not a Typical or Custom installation of Progress components. If Progress installs its own version of Java and it differs from the version required by the Web server (see below), do not remove the Progress-installed Java version when installing the Web server version. Depending on your Progress release, you may be required to install Java before installing the Progress component. If so, use Java J2SE 5.0 or higher.

Web Server

The following table lists the software and hardware requirements for the web server.

Table 1.3
Web Server
Requirements

Software	Hardware	Notes
Tomcat 5.5.20 or higher Progress WebSpeed with sufficient WebSpeed agent licenses to support expected transaction volume Java J2SE 5.0 or higher	10 MB free disk space for Tomcat installation files 100 MB free disk space for WebSpeed 100 MB free disk space for QAD user interface client application	Tomcat 5.5.23 is included on the QAD Enterprise Edition installation media and contains relevant configuration information.

Installing the Web Server

Locate the Tomcat distribution contained in the `mfgpprouitc/zips` directory in the media. Using an unzip utility, unpack Tomcat to `$CATALINA_HOME` (see “Environment Variables” on page 9).

Ensure that the `mfg` user (see “Installation Group and User” on page 9) has permissions to read all files and folders in `$CATALINA_HOME`; can create and modify files in the `logs`, `webapps`, `temp`, and `work` subfolders; and can execute files in the `bin` subfolder.

QAD recommends that before installing Enterprise Edition, you become familiar with starting and stopping the Tomcat web server as well as connecting to the Tomcat manager.

Telnet Server (Windows Only)

The following table lists the software and hardware requirements for the telnet server.

Note The telnet server is required only for Windows-based QAD Enterprise Edition installations.

Software	Hardware	Notes
Georgia SoftWorks Telnet Server.	Refer to the Georgia SoftWorks documentation.	This software is provided on the QAD Enterprise Edition installation media.

Table 1.4
Telnet Server
Requirements

Installing the QAD Deployment Toolkit

The QAD Deployment Toolkit (QDT) is a streamlined, comprehensive set of tools for product installation and configuration. This chapter covers QDT installation, startup, and configuration.

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Overview

The QAD Deployment Toolkit (QDT) is used to install QAD Enterprise Edition and other QAD products. QDT streamlines the installation process by automatically finding system information (such as component locations) and modifying the QAD 2009.1 Enterprise Edition configuration profile appropriately without manual input.

With QDT, there are two options for installing QAD Enterprise Edition:

- Default Installation, which other than setting up connection information, uses the default configuration values without modification.
- Custom Installation, where in addition to setting up connection information, one or more of the default configuration values are modified.

QDT must be installed before QAD Enterprise Edition installation.

Note Before installing QDT and QAD Enterprise Edition, verify the environment variables for the prerequisite Java and Tomcat installations on your target system are set. See Chapter 1, “Installation Overview and System Requirements,” for more details on software requirements.

Installing QDT

QDT is installed from the application media shipped by QAD. For example, if you are installing QAD Enterprise Edition, you perform the QDT install from the installation media.

Note If you intend to view the QDT graphical user interface on a machine other than the machine on which QDT is installed, you must have a graphical environment with full X-Windows capability installed on that machine.

QAD recommends that you shut down any virus protection programs. This can significantly reduce the time required for installation and implementation.

Note The following conditions must be met or QDT will report errors during installation:

- The Progress OpenEdge Admin and Name Servers must be up and available, even if they are not initially providing app or webspeed servers and brokers.
- The Tomcat Connection Manager must be installed, but *not* running (this applies to installation and configuration).

To install QDT:

- 1 Mount the QAD application media and access the `install` directory.
- 2 Launch the installation using the appropriate file for your operating system. A command window displays informing you that you are installing QDT.

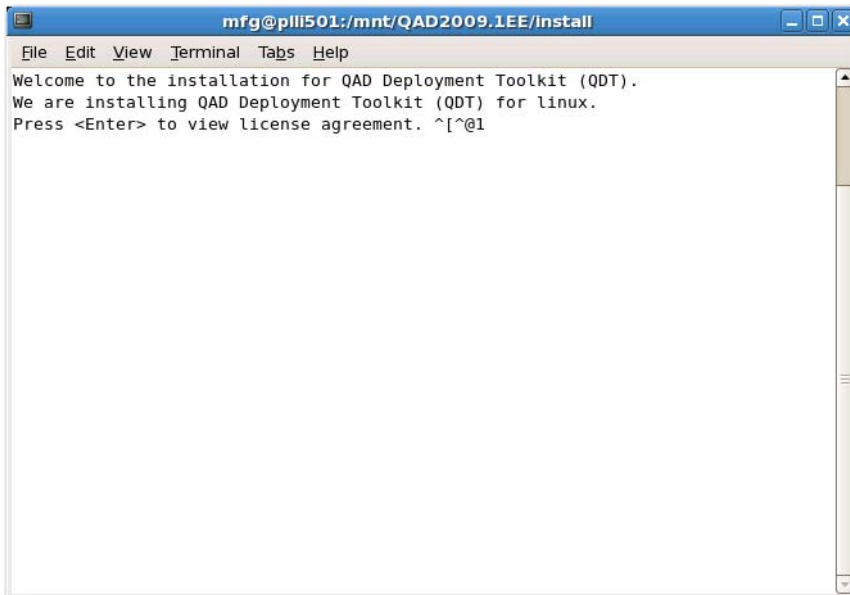
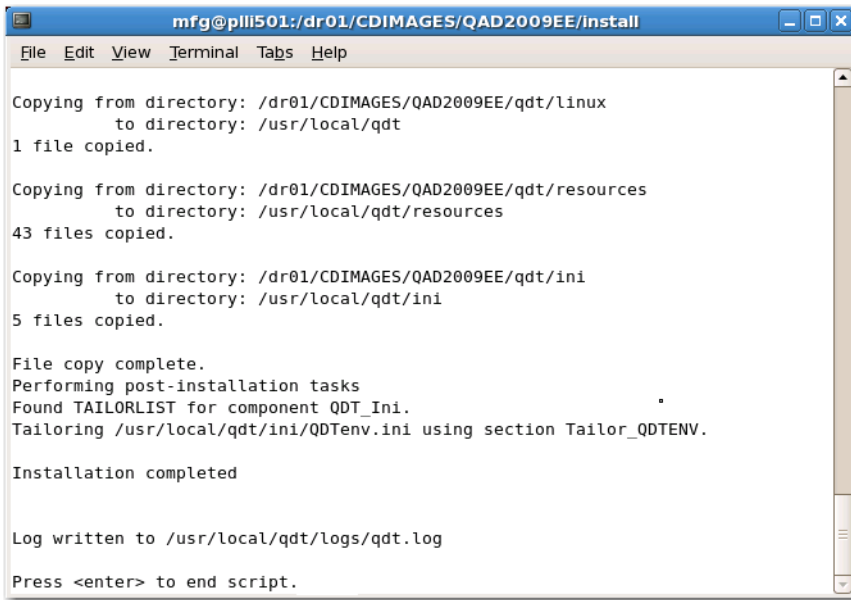


Fig. 2.1
Installation
Window for a
UNIX/Linux
Installation

- 3 The license agreement displays. Press the spacebar to advance through it or press `q` to continue the installation, skipping the agreement.
- 4 You are prompted to accept the agreement. Select `y` to continue, `n` to exit the installation.

- 5 You are prompted to enter the location where QDT is to be installed. On Windows, the default is `c:\qdt`. On Linux and UNIX, the default is `/usr/local/qdt`. Accept the default location or enter a different directory. Press Enter.
- 6 You are prompted to enter the location where to create the log directory. On Windows, the default is `c:\<target directory>\logs`. On Linux and UNIX, the default is `/<target directory>/logs`. Accept the default location or enter a different directory. Press Enter.
- 7 If the `logs` directory does not exist, you are prompted to create it.
- 8 You are prompted to enter the location where to install the QDT XML files. On Windows, the default is: `c:\<target directory>\xml`. On Linux and UNIX the default is `/<target directory>/xml`. Accept the default location or enter a different directory. Press Enter.
- 9 If the `xml` directory does not exist, you are prompted to confirm its creation.
- 10 On Windows, you are prompted for a folder name for the QDT shortcut. The default is QAD Deployment Toolkit. Accept the default location or enter a different directory. Press Enter.
- 11 You are prompted to continue with the install. If yes, press Enter.
- 12 The installation runs. A summary of the install displays.



```

mfg@plli501:/dr01/CDIMAGES/QAD2009EE/install
File Edit View Terminal Tabs Help

Copying from directory: /dr01/CDIMAGES/QAD2009EE/qdt/linux
to directory: /usr/local/qdt
1 file copied.

Copying from directory: /dr01/CDIMAGES/QAD2009EE/qdt/resources
to directory: /usr/local/qdt/resources
43 files copied.

Copying from directory: /dr01/CDIMAGES/QAD2009EE/qdt/ini
to directory: /usr/local/qdt/ini
5 files copied.

File copy complete.
Performing post-installation tasks
Found TAILORLIST for component QDT_Ini.
Tailoring /usr/local/qdt/ini/QDTenv.ini using section Tailor_QDTENV.

Installation completed

Log written to /usr/local/qdt/logs/qdt.log

Press <enter> to end script.

```

Fig. 2.2
Installation
Summary

- 13 Press Enter to exit the installation script.
- 14 You can verify that there were no errors during the installation by reading the log file.
On Windows, the default location of the log file is `c:\qdt\logs\qdt.log`. On Linux or UNIX, the default location is `/usr/local/qdt/logs/qdt.log`.
Look for any lines beginning with five stars (*****) or two stars (**). Five stars indicate QDT errors and two stars indicate Progress errors.

Starting QDT

To start QDT on Windows, select Start|All Programs|QAD Deployment Toolkit|Start QDT.

To start QDT on Linux or UNIX, run the appropriate installation script for your version in the `QDTHome` directory.

Example `./qadinst` or `./qadinst.ksh`

The QDT Deployment Toolkit displays. The toolkit contains information about the current host including the operating system and currently installed versions of Progress, Java, and Tomcat.

Fig. 2.3
QAD Deployment
Toolkit Main
Screen



QDT has two modules:

- Install

The Install function moves files from the product delivery media onto the target host drive. Within the Install module, you can select a Complete or Custom install. The default installation uses the default configuration values without modification to automatically install QAD 2009.1 Enterprise Edition. The Custom installation requires manual intervention to modify one or more of the default configuration values while installing QAD Enterprise Edition.

- Admin

Admin completes the installation process and provides tools for updating, configuring, and correcting the products installed by QDT. When the install is complete, the Admin function is used to create databases, compile application code, and create server start and stop scripts for the installed products.

Note If you are a user of previous versions of QAD applications, the Admin function is, to a large extent, what was formerly known as MFG/UTIL.

Important Although similar to MFG/UTIL, the process used with MFG/UTIL is not valid for this install. You should continue to read this guide for instructions.

Each of the functions is accessed by clicking a button on the QDT main screen.

To view information about the host machine where QDT is installed, select Edit|Preferences.

Configuring QDT

You may need to perform some additional actions to configure QDT. These include:

- Setting system defaults, including port settings
- Adding additional authorized users

Setting System Defaults

If the environment variables on your host machine have been previously set at the operating-system level, QDT automatically discovers and displays relevant system information on its main screen.

If system information is not displayed on the QDT main screen or incorrect information is displayed, you must set these system defaults through QDT's Set System Default function.

Important Port settings, such as Tomcat and Progress AdminServer ports, are automatically set to default values within QDT. If you are not using the default values for these ports or are installing multiple environments (which requires multiple environments of Tomcat), use QDT's Set System Default function to set the correct port values.

To set system defaults (including port settings):

- 1 On the QDT main screen, pull down the Edit menu and select Set System Defaults. The Set System Defaults screen displays.
- 2 Enter changes to the appropriate settings.
- 3 Select OK to close the screen and save the changes.

Adding Users

The person who initially installs QDT is the only person able to use it. All others will receive errors and cannot run the toolkit. To specify additional users to run QDT, do the following:

- 1 Click Admin on the QDT main screen. The QDT Admin screen displays.
- 2 Pull down the Edit menu and select User Maintenance. The User Maintenance screen displays.
- 3 Add the additional users.
- 4 Select OK to close the screen and add the users.

Note Authorized user information is stored in the `QDT_root/xml/users.xml` file. If you have many users to add, the file can be edited directly.

Next Steps

You now have a choice to use QDT to do a default install without modifying the default configuration values or a custom install in which you modify the default configuration values.

If you are performing a complete install, see “QAD Enterprise Edition Default Installation” on page 25 for a description of that process.

If you are performing a custom install, see “Installing a Custom QAD Enterprise Edition Configuration” on page 33 for a description of that process.



Chapter 3

QAD Enterprise Edition Default Installation

This chapter describes how to install QAD Enterprise Edition using default configuration settings.

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Overview

The QAD Deployment Toolkit (QDT) automatically finds the previously defined system information that is required to configure a QAD Enterprise Edition installation. In most cases, you can use this default information without modification to perform a default installation.

If you need to modify configuration information and perform a custom install, see Chapter 4, “Installing a Custom QAD Enterprise Edition Configuration,” for details on this process. Also, refer to that chapter if you need to install QAD Enterprise Edition in multiple environments or clone a QAD Enterprise Edition environment.

Note The default language setting for a default installation is US English. If you need to install additional languages, see Chapter 4, “Installing a Custom QAD Enterprise Edition Configuration,” for details on this process.

Initiating a Default Installation

Note Installation is performed using QDT. See Chapter 2, “Installing the QAD Deployment Toolkit,” for details on installing and starting QDT.

To install QAD Enterprise Edition with default configuration information:

- 1 Launch QDT.
- 2 On the QDT main screen, click Install. The install environment selection window displays.

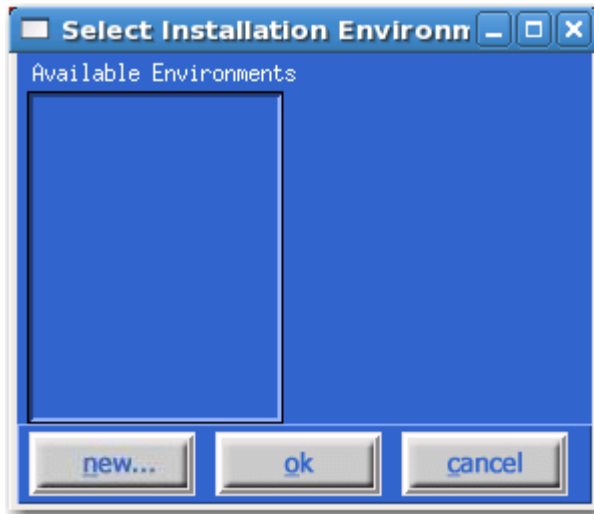


Fig. 3.1
Select Installation
Environment
Screen

- 3 Click New to display the Enter Environment Name screen. Use the environment name to segregate multiple environments installed on a single machine (for example, production and test). Accept the default environment name or enter a new name.
- 4 Click OK to close the screen and save the environment name.



Fig. 3.2
Enter Environment
Name Screen

- 5 Select under Available Environments the appropriate environment name. Click OK to close the screen and select the installation environment.

- 6 When the screen displays all products are selected. On Linux systems, be sure to select all products.

Note For QAD Enterprise Edition, the Web Applications Server, Database Server, and Applications Server components must all be installed at the same time during the initial installation. If you deselect any of these components now, you cannot select and install them at a later time.

You can customize the installation destination (QAD 2009.1 EE folder) by selecting Edit following this step.
- 7 Click Install to continue. The installation launches. A window displays the `install.log` file, which records the installation progress.
- 8 Review the `install.log` file to check for errors in the installation process.
- 9 When the installation completes successfully, click Close to exit.

Fig. 3.3
Completed Install
Process

```

QDT Log - /usr/local/qdt/logs/Install.log
08/13/2009 15:16:54 [mfq] Copying from directory: /mnt/QAD2009.1EE/mfgproap32
08/13/2009 15:16:54 [mfq] to directory: /usr/local/qad2009/fin
08/13/2009 15:16:54 [mfq] Expanding /mnt/QAD2009.1EE/mfgproap32/mfgproap32.zip
to /usr/local/qad2009/fin ...
08/13/2009 15:16:57 [mfq] 100 files extracted.
08/13/2009 15:16:58 [mfq] 200 files extracted.
08/13/2009 15:17:43 [mfq] 300 files extracted.
08/13/2009 15:17:43 [mfq] 400 files extracted.
08/13/2009 15:17:43 [mfq] 500 files extracted.
08/13/2009 15:17:44 [mfq] 600 files extracted.
08/13/2009 15:17:44 [mfq]
Extracted 602 files.
08/13/2009 15:17:44 [mfq] 41 files copied.
08/13/2009 15:17:44 [mfq] Processing UI CGI Executable
08/13/2009 15:17:44 [mfq] from ini file /mnt/QAD2009.1EE/products/mfgproui
ini...
08/13/2009 15:17:44 [mfq] Finished file copy.
Press <Close> to continue...
Close
  
```

Configuring a Default Installation

After QDT installs the QAD Enterprise Edition files on your server, you must configure the environment. Only the settings for the Connection Manager telnet user must be defined for a default installation.

To configure the QAD Enterprise Edition environment:

- 1 Return to the QDT main screen and click Admin. This action takes you to the QDT Administrator window.
- 2 Select the environment to configure under Product.

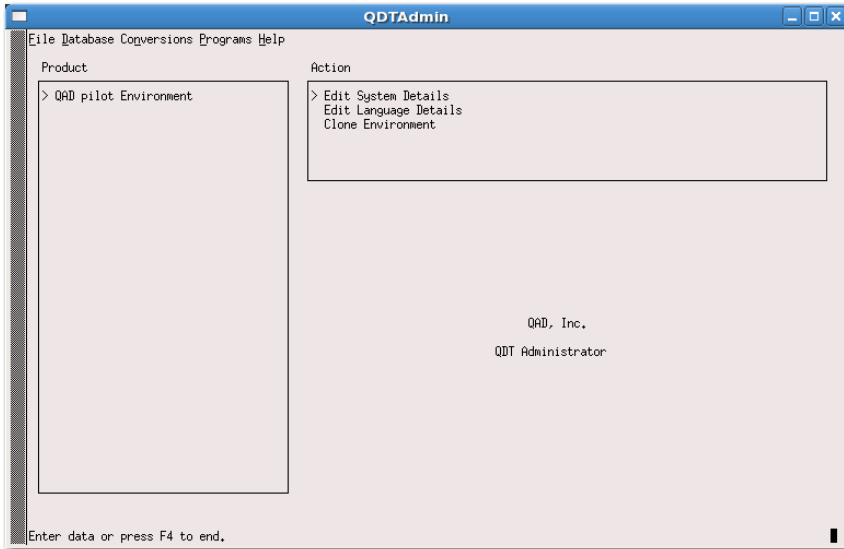
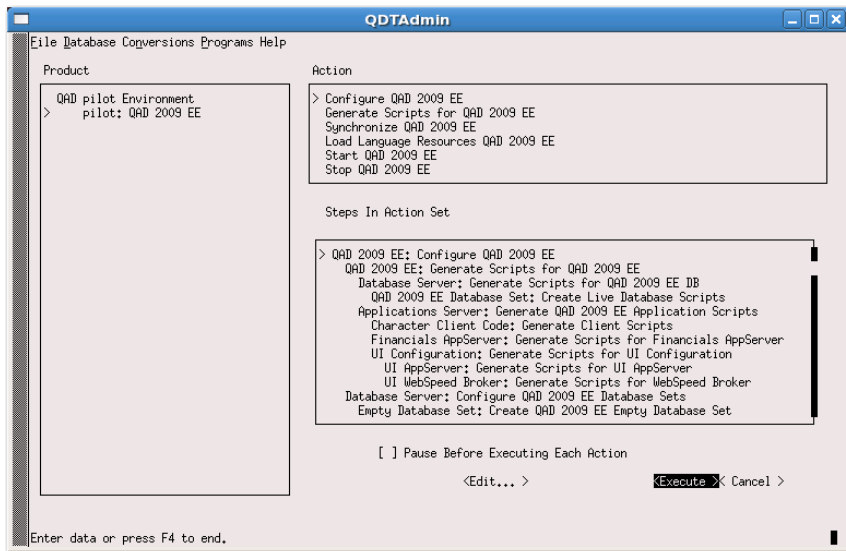


Fig. 3.4
QDT Admin

- 3 Select Configure QAD 2009.1 EE. The configuration steps appear in the Steps in Action Set pane.

Fig. 3.5
 Configure QAD EE
 Screen with Update
 UI Configuration
 Action Step



- 4 Select UI Configuration: Update UI Configuration under Steps in Action Set and press Enter. The Update UI Configuration screen displays.

The UI Configuration is used to create the connection manager telnet login script.

Note The user is an operating system user and must have privileges to run the `connmgr.<env>` script found under the `<qdt-install-dir>/envs/<env-name>/scripts/` folder.

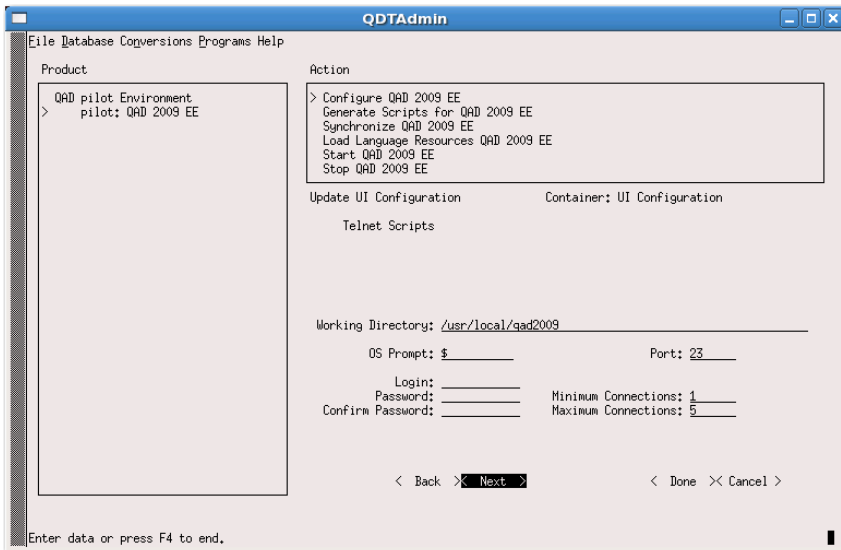


Fig. 3.6
Update UI
Configuration
Screen

- 5 Enter a valid login ID and password. Enter the password again to confirm it.
 - 6 Modify or accept the default values for the telnet port and minimum and maximum connections for the UI Connection Manager.
- Important** All values on this screen must be provided and be valid to proceed with configuration.
- 7 Select Done to close the screen and save the values.
 - 8 Select Execute to begin the configuration process. The system prompts you to confirm execution of the configuration process.
 - 9 Select Yes. You are prompted to clear the log. Enter yes. The configuration process begins. The installation script launches. A window displays the `qdtadmin.log` file, which records the configuration progress.

Note A message displays during full synchronization that says a default set of roles was not provided for the installation. Use of this capability is optional. The warning is for information purposes only and will not impact the system.

- 10** Review the `qdtadmin.log` file to check for errors in the configuration process.
- 11** When the configuration completes successfully, select Close to exit.

Next Steps

Proceed to Chapter 6, “Starting QAD Enterprise Edition,” for details on starting your QAD Enterprise Edition installation.

Installing a Custom QAD Enterprise Edition Configuration

This chapter describes how to install QAD Enterprise Edition using customized configuration settings, how to install the product in multiple environments, and how to clone an environment.

Overview **34**

Multiple Environments and Cloning **34**

Custom Installation **35**

Configuring a Custom Installation **36**

Next Steps **48**

Overview

The QAD Deployment Toolkit (QDT) automatically finds previously defined system information that is required to configure a QAD 2009.1 Enterprise Edition installation. In most cases, this default configuration information can be used without modification to perform a complete install, as described in Chapter 3, “QAD Enterprise Edition Default Installation,” in this guide.

Some situations require modification of default configuration data for a customized installation. This chapter describes how to perform a custom install.

All of the steps described in this chapter are optional.

Important When making modifications, be aware that it is possible to create configuration problems. Proceed with care.

Multiple Environments and Cloning

You can install QAD 2009.1 Enterprise Edition in multiple environments (for example, test and production environments). To do so, repeat the installation process described in this chapter for each environment. You need to use separate Tomcat Web server directories and ports for each environment using this option.

You can also clone an existing environment. Cloning an existing environment means creating a copy of it that contains its environment, system, and language details. With the cloning option, you can use the same Tomcat Web server directory and port as the original environment.

See “Cloning an Environment” on page 46 for more details.

Note If you install QAD Enterprise Edition in multiple environments or create clones of a QAD Enterprise Edition environment, you must perform the applicable configuration procedures in this chapter for each environment separately. You also must perform the applicable procedures in Chapter 6, “Starting QAD Enterprise Edition,” and Chapter 7, “Configure QAD Enterprise Edition,” separately for each environment separately.

Custom Installation

Note Installation is performed using QDT. See Chapter 2, “Installing the QAD Deployment Toolkit,” for details on installing and starting QDT.

To install QAD Enterprise Edition with default configuration information:

- 1 Launch QDT.
- 2 On the QDT main screen, click Install. The Select Installation Environment window displays.

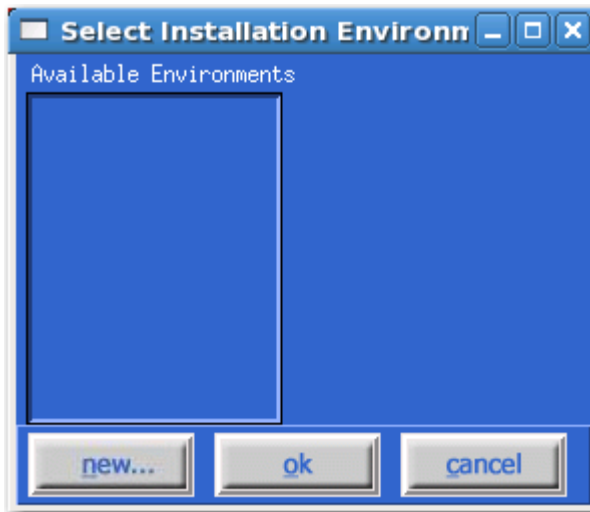


Fig. 4.1
Select Installation Environment

- 3 Select New to display the Enter Environment Name screen. Accept the default environment name or enter a new name.



Fig. 4.2
Enter Environment Name Screen

- 4 Select OK to close the screen and save the environment name.

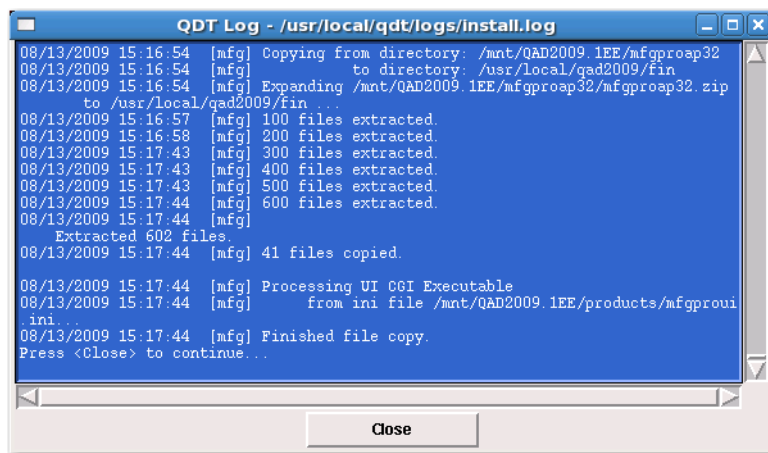
- 5 The list of available product components is read from the installation media and the product component selection tree displays.

Select which components you will deploy on the current host and modify the destination directory if you choose.

You can customize the installation (QAD 2009.1 EE folder) destination by selecting Edit following this step.

- 6 Click Install to continue. The installation launches. A window displays the `install.log` file, which provides the installation progress.
- 7 Review the `install.log` file to check for errors in the installation process.
- 8 When the installation completes successfully, click Close.

Fig. 4.3
Completed Install
Process



```

QDT Log - /usr/local/qdt/logs/install.log
08/13/2009 15:16:54 [mfg] Copying from directory: /mnt/QAD2009.1EE/mfgproap32
08/13/2009 15:16:54 [mfg] to directory: /usr/local/qad2009/fin
08/13/2009 15:16:54 [mfg] Expanding /mnt/QAD2009.1EE/mfgproap32/mfgproap32.zip
to /usr/local/qad2009/fin ...
08/13/2009 15:16:57 [mfg] 100 files extracted.
08/13/2009 15:16:58 [mfg] 200 files extracted.
08/13/2009 15:17:43 [mfg] 300 files extracted.
08/13/2009 15:17:43 [mfg] 400 files extracted.
08/13/2009 15:17:43 [mfg] 500 files extracted.
08/13/2009 15:17:44 [mfg] 600 files extracted.
08/13/2009 15:17:44 [mfg]
Extracted 602 files.
08/13/2009 15:17:44 [mfg] 41 files copied.

08/13/2009 15:17:44 [mfg] Processing UI CGI Executable
08/13/2009 15:17:44 [mfg] from ini file /mnt/QAD2009.1EE/products/mfgproai
ini...
08/13/2009 15:17:44 [mfg] Finished file copy.
Press <Close> to continue...

Close

```

Configuring a Custom Installation

After QDT installs the QAD Enterprise Edition files on your server, the environment must be configured.

To configure the QAD Enterprise Edition environment:

- 1 Return to the QDT main screen and click Admin. This action takes you to the QDT Administrator window.

You can navigate from pane to pane in this window using the Tab key and within a pane using the up and down arrow keys. Highlighted items are selected by double-clicking on the item or pressing Enter.

The screen has multiple panes that contain lists of configuration options. By highlighting and selecting these options, you can vary the level of detail presented in the lists.

- 2 The Product pane lists the available environments. Select the environment to configure.

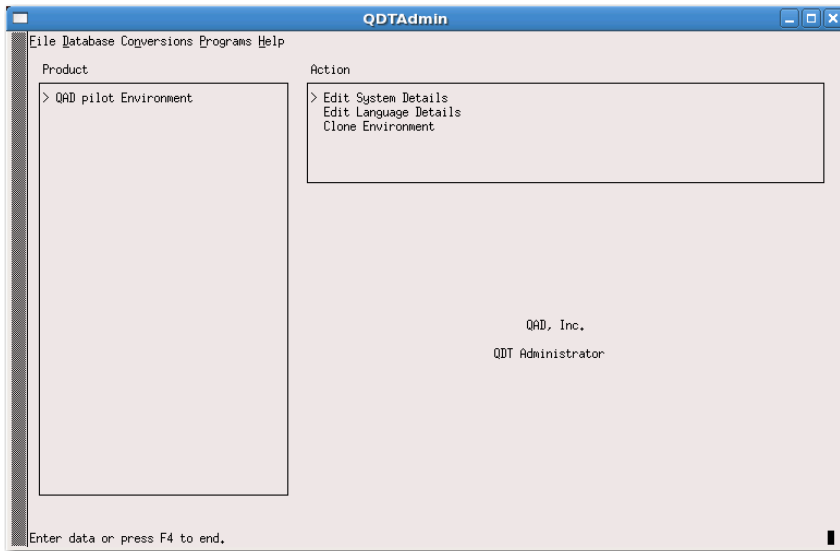


Fig. 4.4
QDT Admin

Each selection in the Product pane displays a corresponding list of items in the Action pane.

In the Action pane of the QDT Administrator window, you have the following options:

- Edit System Details

With this option, you can change the overall settings for your environment, including the Host ID, Host Name, Host URL, Log Directory, and Environments Directory. You can also modify settings for your Progress AdminServer, Java Runtime Environment, Progress NameServer, and Tomcat WebServer.

See “Editing System Details” on page 39 for more information about these options.

- Edit Language Details

With this option, you can install and configure the languages your QAD 2009.1 Enterprise Edition uses.

Note The default QAD 2009.1 Enterprise Edition language is US English. If you are using only US English in your installation, you do not need to install it. If you require languages other than US English, you must install them.

See “Editing Language Details” on page 39 for more information.

- Clone Environment

With this option, you can create a copy of the selected environment, including all its settings.

See “Cloning an Environment” on page 46 for more information.

Make a selection in the Action pane to display the Steps In Action Set pane. It lists the tasks that will be performed for the current Action pane selection.

Select an item in the Steps in Action pane, click Edit, and press Enter to display a screen that allows you to enter or modify parameters associated with the item.

You can perform a custom configuration by beginning at the top-level item in the Steps In Action list, clicking Edit, and using the Next button to step through each screen in sequence.

Select a second-level item from the list to step through all of the screens under that topic in sequence. Select a third-level indented item and you can only access that item.

Select Execute to configure the installation using the settings from all of the items in the Steps In Action Items list.

Editing System Details

The Editing System Details function allows you to specify the versions of prerequisite third-party software and its location on the system. Under normal circumstances, the system automatically gathers this information and nothing need be changed.

System details can be edited as a whole by highlighting the environment or individual components by highlighting the component. For example selecting QAD 2009.1 EE allows the editing of all system details sequentially. However highlighting `<env>:database server` will just edit database setting.

Editing Language Details

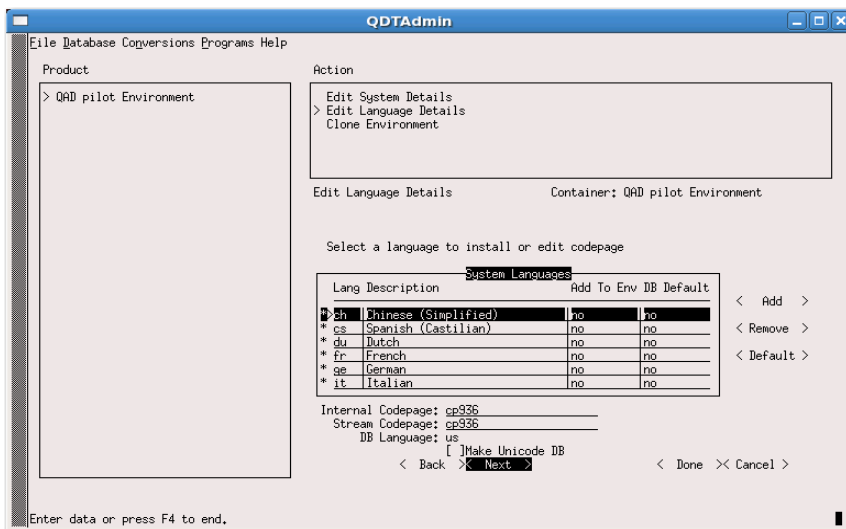
This screen allows you to add a language for this environment or change the code page for a language. The languages selected in this step are configured later during the database server creation step.

Note The default QAD Enterprise Edition language is US English. If you are using only US English in your installation, you do not need to install it. You can skip this section.

Note When selecting two or more languages that have conflicting code pages the system is automatically configured to a Unicode installation.

- 1 Select QAD *Environment Name* Environment under Product. In the Action pane, select Edit Language Details.
- 2 In the Steps In Action Set pane, select QAD Pilot Environment: Edit Language Details.
- 3 The Edit Language Details Screen appears. Select a language you want to add and select Add. The Add to Env and DB Default columns change from No to Yes.

Fig. 4.5
Edit Language
Details Screen



- 4 Modify the code page settings by entering the new information in the Internal Codepage or Stream Codepage fields.

Note Modifications to codepage settings should be limited. Unexpected behavior can result from incorrect modifications.
- 5 Repeat steps 2 and 3 for each language to add or modify.
- 6 To define a language as the default language for the QAD Enterprise Edition installation, select it and select Default.
- 7 Select Done to complete the changes.

Edit System Details Process

To edit the system details, use the following steps:

- 1 Select QAD *Environment Name* Environment under Product. In the Action pane, select Edit System Details.
- 2 Select Edit System Details in the Steps In Action Set pane.
- 3 For each of the following screens, review the information, make any required entries or changes and select Next:
 - Edit Database Location - Database Server

- Edit Database Properties - Empty Main Database
- Edit Structure File Information - Empty Main Database
- Edit Schema File Information - Empty Main Database
- Edit BI Truncation Parameters - Empty Main Database
- Edit Database Properties - Empty Single R-code Parameters
- Edit Structure File information - Empty Single R-code Database
- Edit Schema File Information - Empty Single R-code Database
- Edit Data Load Options - Empty Single R-code Database
- BI Truncation Parameters - Empty Single R-code Database
- Edit Database Properties - Empty Admin Database
- Edit Structure File Information - Empty Admin Database
- Edit Schema File Information - Empty DB Database
- Edit BI Truncation Parameters - Empty Admin Database
- Edit Database Properties - Empty Help DB
- Edit Structure File Information - Empty Help Database
- Edit Schema File information - Empty Help Database
- Edit BI Truncation Parameters - Empty Help Database
- Edit Database Properties - Live Main Database
- Edit Structure File Information - Live Main Database
- Edit Data Load Options - Live Main Database
- Edit BI Truncation Parameters - Live Main Database
- Edit Database Properties - Live Admin Database
- Edit Structure File Information - Live Admin Database
- Edit Data Load Options - Live Admin Database
- Edit BI Truncation Parameters - Live Admin Database
- Edit Database Properties - Live Help Database
- Edit Structure File Information - Live Help Database
- Edit BI Truncation Parameters - Live Help Database
- Compiler Settings - Character Client Code
- AppServer UBroker Properties - Financials AppServer
- Build UI Configuration

- AppServer UBroker Properties - UI AppServer
- WebSpeed UBroker Properties
- Update UI Configuration

Note Update UI Configuration is the only mandatory task.

- 4 If you have no further configuration changes, select Execute. The system prompts you to confirm execution of the configuration process.
- 5 Select Yes. The configuration process begins. The installation script launches. A window displays the `qdtadmin.log` file, which records the configuration progress.

Note A message displays during full synchronization that says a default set of roles was not provided for the installation. Use of this capability is optional. The warning is for information purposes only and will not impact the system.
- 6 Review the `qdtadmin.log` file to check for errors in the configuration process.
- 7 When the configuration completes successfully, select Close to exit.
- 8 If you have no further configuration changes, select Execute. The system prompts you to confirm execution of the configuration process.
- 9 Select Yes. The configuration process begins. The installation script launches. A window displays the `qdtadmin.log` file, which records the configuration progress.
- 10 Review the `qdtadmin.log` file to check for errors in the configuration process.
- 11 When the configuration completes successfully, select Close to exit.

Configuring Databases

There are four QAD Enterprise Edition databases:

- Main
- Single R-Code
- Admin
- Help

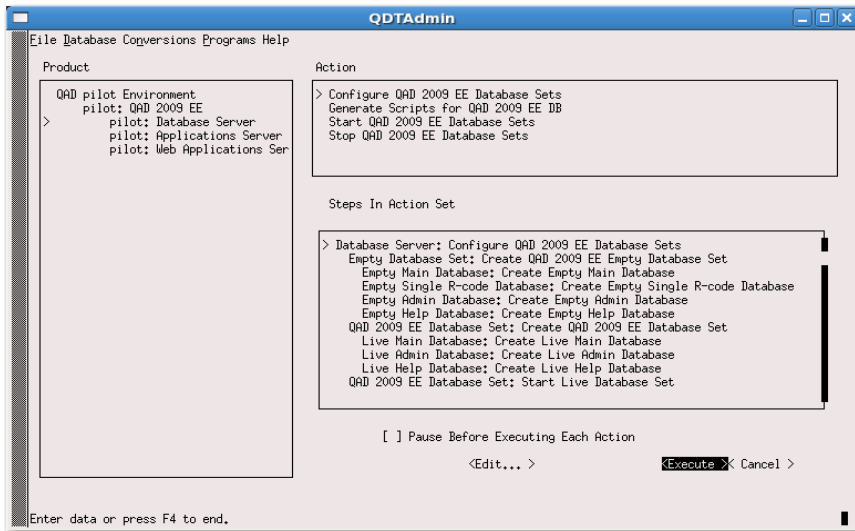


Fig. 4.6
Configure QAD EE
Database Action
Steps

If **Pause Before Executing Each Action** is selected, the system will wait after each action is performed. This is mainly used for creating a restore point for conversion and is covered in more detail in the conversions guide.

Warning When renaming a database, do not exceed the Progress database name size limit of 11 characters. Also, database names must begin with an alphabetic character and can contain only alphanumeric characters.

Editing Structure File Information

The Structure File Record Detail screen lets you edit the Storage Area Path and the Extent Size for fixed-length extents.

- Use the Extent Pathname to distribute your database onto drives to maximize performance and optimize disk access.
- Use the Extent Size on fixed-length extents to control the size of each storage area. (This field does not appear for variable-length extents.)

Note Most storage areas consist of two extents—one fixed length, the other variable length to allow for growth. Also, for performance reasons, the goal is to keep all of the data in fixed database extents. QAD Global Services can assist with optimizing the structure file configuration.

Warning Do not edit the Comment line in a storage area. This converts the storage area definition to a comment and nullifies the storage area. To add a comment to the file, select a comment line (#) from the Database Storage Area's selection list and press Enter.

Warning Do not change the storage Area Name. This name matches the Area definition in the data definition files (.dfl) for the database. When Progress encounters data files without defined storage areas, it creates them in the system storage area, which is also used to maintain the structure of the database.

The first configuration screen is Edit Structure File Information. The structure file defines how the database will be created on disk—the storage areas, their sizes, locations, and whether they are fixed or not.

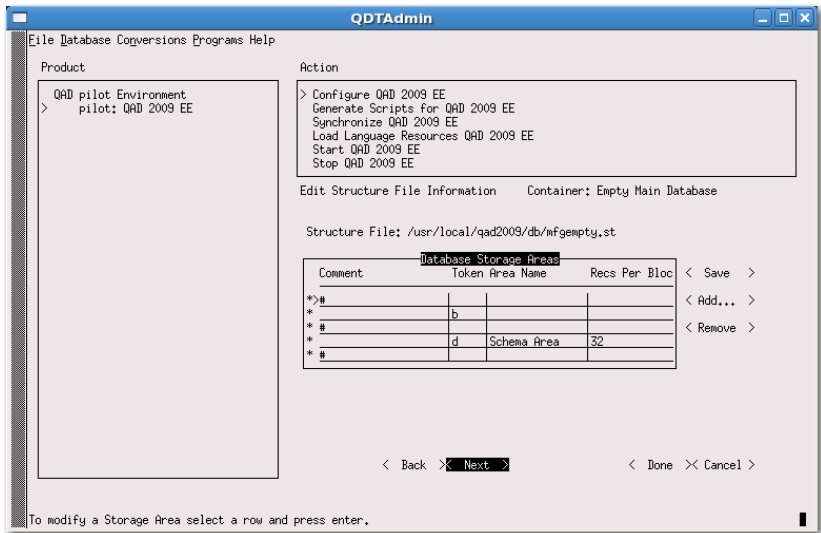
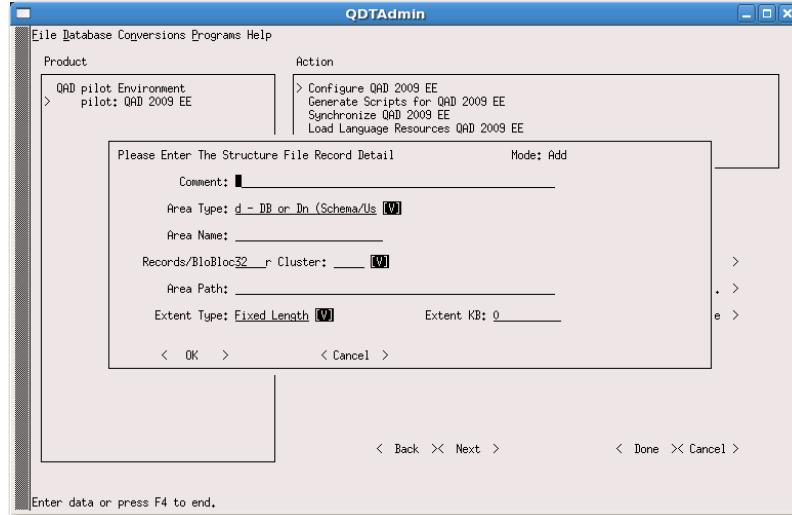


Fig. 4.7
Edit Structure File
Information Screen

This screen allows you to scroll through the Progress structure file line-by-line and make modifications. You can add lines by selecting Add or edit the content of any line by selecting the line so that the line detail displays.

The second screen is the Edit Structure File Detail Screen. It is used to specify additional parameters.

Fig. 4.8
Edit Structure File
Detail Screen



Editing Data Load Options

Note Not all databases have data load options. If this is the case, the Edit Data Load Options screen does not display.

The data load options are database-specific. Other databases, such as admin, have different paths and most do not require an object identifier (OID) value.

Cloning an Environment

You can create a copy of a QAD Enterprise Edition environment with its complete configuration information using the cloning function.

To clone an environment, do the following:

- 1 Select *QAD Environment Name* Environment under Product.
- 2 In the Action pane, select Clone Environment.

The environment being cloned can be configured or not configured. The cloning process will not configure the new environment. It will be in a state similar to the default environment immediately after a new install.

- 3 The Steps In Action Set pane displays. Select Edit.
- 4 The Clone Environment pane appears. Use this pane to enter the values for the new environment while observing the following rules:
 - The destination environment name cannot already exist or be blank.
 - The UI configuration cannot already exist or be blank.
 - The target environment directory cannot be the same as the source or be blank.
 - The target environment directory must not exist or be empty.
 - The target database directory cannot be the same as the source or be blank.
 - The target database directory must not exist or be empty.
- 5 When the values are correct, select Next or Done. The values are checked and a dialog appears if any errors are encountered.
- 6 If you have no further configuration changes, select Execute to clone the environment. The system prompts you to confirm execution of all of the steps for the cloning process.
- 7 Accept the default (Yes). The system prompts you to clear the log.
- 8 Enter Yes. The cloning process begins. A window displays the `qdtadmin.log` file, which records the cloning progress.
Please note that the cloning process will take a while.
- 9 Review the `qdtadmin.log` file to check for errors in the cloning process.
- 10 When the cloning completes successfully, select Close to exit.
- 11 Follow the configuration steps in this chapter or in Chapter 3, “QAD Enterprise Edition Default Installation,” for the cloned environment.

Note A custom or default installation is possible from this point.

Next Steps

Proceed to Chapter 6, “Starting QAD Enterprise Edition,” for details on starting your QAD Enterprise Edition installation.

Note If you have installed QAD Enterprise Edition in multiple environments or created clones of a QAD 2009.1 Enterprise Edition environment, you must perform the applicable procedures in Chapter 6, “Starting QAD Enterprise Edition,” and Chapter 7, “Configure QAD Enterprise Edition,” separately for each environment.

The background of the page is a grayscale image of several interlocking gears. The gears are arranged in a way that they appear to be meshing together, with some in sharp focus and others blurred in the background. The lighting creates highlights and shadows on the teeth of the gears, giving them a three-dimensional appearance.

Chapter 5

Upgrading QAD Enterprise Edition

This section describes how to upgrade the .NET UI component of an existing Enterprise Edition installation.

Overview **50**

Upgrading an Installation **50**

Overview

Beginning with the QAD 2009.1 Enterprise Edition, the .NET UI component of previous releases can be easily upgraded using the installer's upgrade feature.

Upgrading an Installation

Note Installation is performed using QDT. See “Installing the QAD Deployment Toolkit” on page 15 for details on installing and starting QDT.

To upgrade to the .NET UI component, do the following:

- 1 Shut down the existing environment.
- 2 Go to the `<media install>/qdt/envs/<env>/scripts` directory.
- 3 Run the `checkqadfin<env>.*`, `checkqadui_AS<env>.*`, and `checkqadui_WS<env>.*` scripts to verify the environment has shut down.
- 4 Go to the media's install directory and run install.
- 5 Specify the existing SP4 installation directory as the target directory for the installation.
- 6 The QDT installer should note that QDT is already present in the directory and validate the version to replace.
- 7 Accept the default log and XML locations offered. They are the same as the previous installation.
- 8 Use the default folder name that appears. It should be the same as the previous installation.
- 9 Review the displayed installation summary and then proceed.
- 10 After the file copy completes, press Enter to end the script.
- 11 Go to the QDT installation directory and launch QDT.
- 12 Go to Help|About and verify that QDT was updated.

- 13 Choose Edit/Installation Media Location and select the location of the SP5 media just used for the update.
- 14 Click Install.
- 15 Select the environment to update and click OK (Figure 5.1).

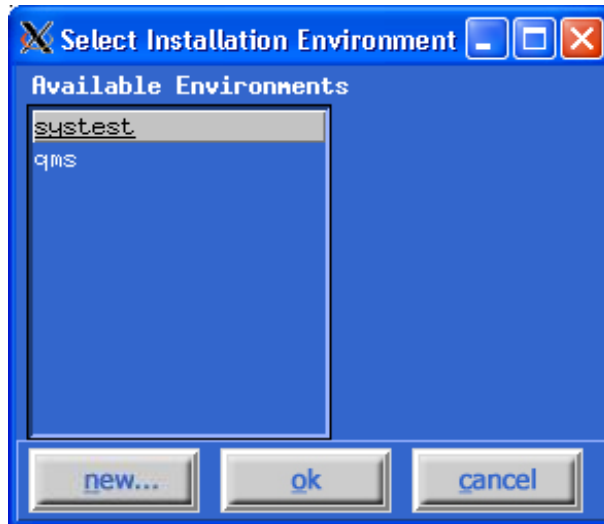
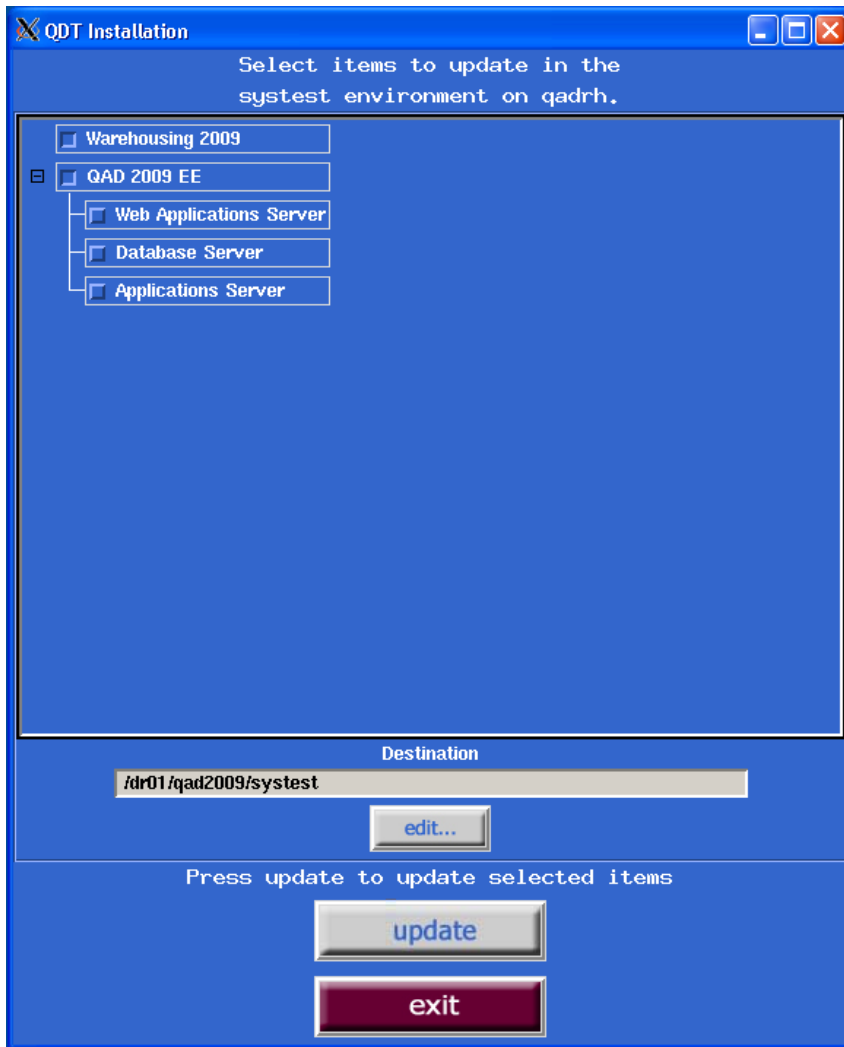


Fig. 5.1
Select Installation
Environment
Screen

- 16 Check the Web Applications Server box followed by the Update button (Figure 5.2).

Fig. 5.2
Selecting Items to
Update



- 17 The installation of the selected components begins. When the file copy finishes (Figure 5.3), click Close.

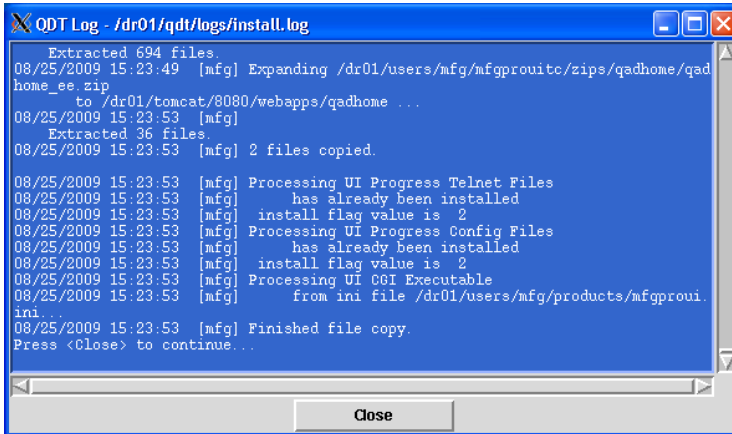


Fig. 5.3
Completed
Upgrade Process

- 18 Click Admin on the main QDT screen.
- 19 Select Start QAD 2009 EE in the Action pane.
- 20 Select Execute to start the databases and AppServers.
- 21 A prompt asks if you want to execute all steps listed for QAD 2009 EE. Select Yes.
- 22 A prompt asks if you want to clear the log. Accept the default (No).
- 23 Select Close.
- 24 When the operation finishes, click Close to close the log window and return to the Action pane.
- 25 Select Configure QAD 2009 EE in the Action pane.
- 26 Select the UI Configuration: Create UI Configuration in the Action Set pane and select Reset.
The Reset feature allows you to reset a step or steps in a previously configured Action Set.
- 27 A prompt asks if you want to reset all operations listed for Create UI Configuration. Click Yes to continue.
- 28 Select Close when the operation finishes.

- 29** Note that the Create UI Configuration is no longer marked complete and can be run again. Select Create UI Configuration in the Product pane.
- 30** Select Create UI Configuration in the Action pane. Again, note that the operations are no longer marked complete.
- 31** Select Execute to recreate the updated UI configuration.
- 32** Select Close to close the log pane. Note that the UI Configuration is again marked as complete in the Action pane.



Chapter 6

Starting QAD Enterprise Edition

This chapter describes how to start the product.

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Next Steps 58

Starting QAD Enterprise Edition

The applications server build creates launch scripts for UNIX and Linux or icons and Start menu links for Windows.

Test your startup scripts with the following steps. You can use these same steps on a regular basis to start Progress database servers and character clients.

Note Before installing the Warehousing Product, it is imperative that the end user exit completely from the QDT Toolkit. The necessary prerequisites for the Warehousing product will not be updated in the QDT XML files until the end user exits from QDT. This is a known issue and will be fixed in a later release of the QDT Toolkit.

UNIX and Linux Installations

To start QAD Enterprise Edition:

- 1 Change to the `QDT/envs/EnvironmentName/scripts` directory and launch the server script:

```
./start.EnvironmentName
```

Note If you have just completed the installation and configuration process, the environment is running and you do not need to perform this step.

- 2 Start a character client session:

```
./client.EnvironmentName
```

Note If more than one language is installed you will have a `./client-lang.EnvironmentName` script (for example, `client-us.pilot`).

- 3 To start only the databases:

```
Start.Environment_Name
```

To start all database, WebSpeed, and appserver processes:

```
Startenv.Environment_Name
```

Note You do not need to start any of the processes if you have already completed configuration of QAD Enterprise Edition. They automatically start during the configuration process.

Windows Installations

To start QAD Enterprise Edition, select Enterprise Edition from the Start menu. QAD Enterprise Edition starts.

Registering QAD Enterprise Edition

You must register your QAD Enterprise Edition license the first time you log in. These steps require that you have the license code sheet included with your release media.

Note Registration must be completed with the character-based user interface (CHUI).

To register QAD Enterprise Edition:

- 1 Launch the character client by pointing to:

```
<qdt-inst>/<envs>/<environment_name>/scripts  
/client-lang.EnvironmentName
```

- 2 At the Sign On screen, enter MFG and press Enter. Leave the password field blank. You are then logged in to the default system domain.
- 3 In the License Details screen, select Register.
- 4 In the Registered Products screen, select Add.
- 5 In the Add Product screen, complete the License Code fields by entering the codes from the license code sheet included with your release media. Select OK.
- 6 When the Registered Products screen reappears, select OK. Your license code and details display in the License Detail screen.
- 7 Select OK at the License Detail screen. You are returned to the operating system. To begin a session, restart QAD 2009.1 Enterprise Edition and log in.

Loading Online Help

You can load online help data at any time after you create your databases.

To load online help:

- 1 From the QAD Enterprise Edition Main Menu, open Field Help Load (36.4.13.14).
- 2 In the Language field, enter the QAD Enterprise Edition language code for the help that you are loading, and press Enter.
- 3 Skip to Field Help Load File, leaving all other fields blank, and enter the two-letter language code directory followed by the name of the help file, which is always `fieldhlp.fhd`. For example, for US English, enter `db/us/fieldhlp.fhd`.
- 4 Accept the default values in all other fields.
- 5 Select Go to begin the load process.
As the load proceeds, the number of records that have been read and loaded displays at the bottom of the screen.
- 6 Load help for any other languages in your environment, using the appropriate language code and help file.

Exiting QAD Enterprise Edition

To exit QAD Enterprise Edition, select End on the QAD Enterprise Edition Main Menu.

Backing Up the Database

At this point you should do a complete backup of the entire database and directory structure.

Next Steps

Proceed to Chapter 7, “Configure QAD Enterprise Edition,” for information regarding completing the installation.

Configure QAD Enterprise Edition

This section describes activities to perform after completing an installation to ensure that the application is ready for use.

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Set Up SSH **66**

Install QAD .NET UI Client **68**

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Configure Application Daemons **73**

Set Up the Reporting Service **74**

Overview

This chapter describes how to complete the following tasks:

- Prepare Telnet UI Connection Scripts
- Set Up SSH
- Configure Application Daemons
- Set Up the Reporting Service

Prepare Telnet UI Connection Scripts

QDT creates scripts used by Connection Manager for managing the back-end telnet connections that support the QAD .NET UI. However, you must also define telnet scripts within the application for running terminal sessions within the QAD .NET UI. In addition, the QAD .NET UI reads the port value defined in this program to determine which port to use to connect to the server for terminal programs.

Configure these settings in User Option Telnet Maintenance (36.4.14) by completing the following tasks:

- Specify telnet server settings
- Define the login sequence
- Configure the telnet connection settings
- Verify the script login sequence

Specify Telnet Server Settings

Use the following instructions to configure telnet server settings:

- 1 Log in to your QAD EE application and access User Option Telnet Maintenance, (36.4.14, mgusrmt.p).
- 2 In the User ID field, enter * to specify a generic record and select Go.

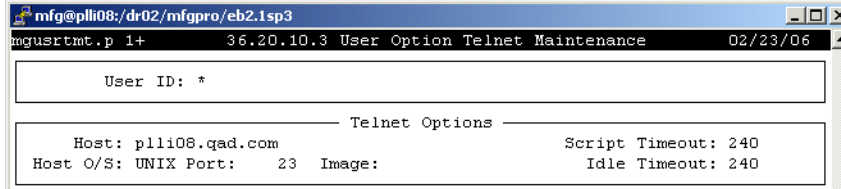


Fig. 7.1
User Option Telnet
Maintenance,
Telnet Options

- Use the following descriptions to complete the Telnet Options fields.

Host. Enter the fully qualified machine name or IP address of the telnet server. The script uses this information to establish the telnet connection.

Host O/S. Enter UNIX for UNIX systems. Enter NT for Windows systems.

Port. Enter the port number for the telnet server. The default value is 23, the value normally used unless you plan to use SSH. In this case, the port value is 22.

Image. Leave this field blank; it currently has no purpose.

Script Timeout. Enter the number of seconds (1-999) the system waits for the telnet login script to execute. Exceeding this value displays a time-out message and closes the session.

Idle Timeout. Enter the number of seconds (1-999) the system waits after a telnet session begins for a program to execute.

Note Idle timeout is not used in the QAD .NET UI.

② See “Set Up SSH” on page 66.

- Select Go to continue.

Define the Login Sequence Script Lines

For the system to log in to and begin a session on the telnet server, you must provide the sequence of telnet server login prompts and responses. The last value in the sequence specifies the telnet script created by QDT.

The name of the script generated by QDT is `telnet-lang.Environment_name` or `telnet.Environment_name`.

You do not receive `telnet-lang.Environment_name` scripts if all the languages installed are the same codepage (for example, if you installed us, fr, and ge).

Following the instructions is a set of sample script values for Windows and UNIX systems.

Important In the QAD .NET UI, the login sequence must be specified, but the values are ignored. In terminal mode, the user's QAD .NET UI user ID and password must exactly match the UNIX user ID and password.

When defining paths for scripts used in the QAD .NET UI, avoid using relative paths since each user's access may be different.

To define the login sequence script lines:

- 1 Specify the telnet login sequence number in the Script Lines frame. For each telnet command, enter a sequence number beginning with 1, and select Go.

- 2 In the next frame, enter the following:

Script Pattern. Enter the prompt generated by the telnet server when a telnet login occurs. The values in this field must be identical to the prompts the telnet server displays when users log in.

Script Value. Enter the response to the telnet login prompt defined in Script Pattern.

Script Status. Optionally enter a description of the prompt and response (for example, Logging In).

If tracing is enabled and the Java console displayed, the description in the Script Status field displays in the Java console on the client when an error occurs during the execution of the prompt and response. You can use these descriptions as an aid in troubleshooting telnet session issues.

Note When you enter a password as a script value, only blanks display. When you select Go at the end of the sequence, you are prompted to confirm the password.

- 3 Select Go after entering the sequence values. You return to the Sequence field to enter the next sequence number and values.

- 4 After entering the final sequence, select Go to return to the Sequence field. Then select End to move to the Telnet Connections fields.

Configure Telnet Connection Settings

Once you configure and verify your telnet login sequence, access the Telnet Connections frame and specify telnet connection settings. These settings define the maximum and minimum number of telnet connections available to the associated user.

Note These settings apply to telnet and HTML maintenance programs in QAD .NET UI; they are ignored in the QAD .NET UI. The maximum number of open connections in the QAD .NET UI is determined by the `MaximumDesktopsPerWorkspace` setting in `qaduiConfig.xml`, which is located in:

`TomcatInstallDir/webapps/qadhome/client/plugins/mfgpro`

Recommended settings are 10 or more for Maximum; 1 for Minimum.

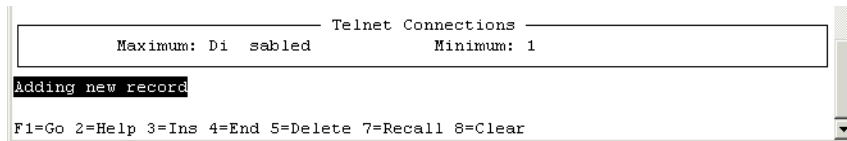


Fig. 7.2
Telnet Connections

Maximum. This value specifies:

- The maximum number of concurrent embedded telnet screen connections this user can have open per session.
- The maximum number of detached windows running HTML programs allowed for the user. If a specific record does not exist for a user with this setting defined, that user can continue opening detached windows until the maximum number of sessions allowed for the entire pool is reached.

This setting applies separately to HTML telnet sessions and standard telnet sessions in the QAD .NET UI. For example, if Maximum Telnet Settings is 5, a user can have five HTML maintenance programs running and five telnet programs running in one QAD .NET UI session before an error displays.

Note Max Web Connections in User Option Telnet Maintenance determines the maximum number of concurrent browses. The valid values are:

- Unlimited: The associated user can have an unlimited number of concurrent telnet connections open.
- Disabled: The associated user cannot log in through QAD .NET UI. Until you create a login script to initiate telnet sessions for this user, you cannot set this field to any value other than Disabled.
- Any value between 1 and 99.

Minimum. Enter a value between 0 and 9 to indicate the minimum number of telnet connections to be available to the associated user at all times.

Set this value to the number of telnet programs the user is likely to run simultaneously. Specifying a value here can dramatically reduce the wait time for these programs to display in the QAD .NET UI. However, setting this value too high depletes system resources.

QAD recommends that you set Minimum to 0 (zero) for most users, including the generic user—defined with an asterisk (*). If users access QAD .NET UI telnet maintenance programs extensively, set Minimum to 2.

- 5 Select Go to save the record.

Sample Scripts

Review the following sample login scripts to become familiar with the configuration process. Then create your login sequence based on your environment. For reference purposes, record your scripts in the table provided. View the field help for additional field-specific details.

Note Windows login scripts typically include the login domain. Domain names should adhere to the Internet Engineering Task Force (IETF) published standards. For more information, refer to document RFC1035 found at the following URL:

<http://ietf.org/rfc/rfc1035.txt?number=1035>

Table 7.1 illustrates sample script lines for a Windows system.

Seq	Script Pattern	Script Value	Script Status	Notes
1	login:	user1	Logging In	This ID must correspond to a local user account on the Windows server.
2	password:	pswd	Supply Password	Enter the password assigned to the user ID specified in step 1.
3	domain:	domain1	Supply Domain	Enter your Windows telnet server's domain, if required.
4	>	c:\telnet\user1	Start GTNTS as user1	Enter the user- or group-specific directory below the telnet directory.
5	>	telnet-us-Prod.bat	Launching script to connect to Prod	This is the telnet script generated by QDT.

Table 7.1
Sample Windows Script Values

Table 7.2 illustrates sample script lines for a UNIX system. Record your login script values in Table 7.3.

Seq	Script Pattern	Script Value	Script Status	Notes
1	login:	user1	Logging In	This ID must correspond to a local user account on the UNIX server.
2	Password:	pswd	Supply Password	Enter the password assigned to the user ID specified in step 1.
3	\$	cd /qad/EE/	Accessing DBServer Dir	Change directories to the database server administration directory. Depending on how you set up your UNIX telnet environment, the response you enter varies. For example, for maximum security, you might enter a command to change to a restricted shell before changing to the directory containing the telnet script.
4	\$./telnet-us.Prod	Launching script to connect to Prod	Launch the telnet connection script.

Table 7.2
Sample UNIX Script Values

Use Table 7.3 to record your telnet server login information.

Table 7.3
Telnet Login Script
Information

Seq	Script Pattern	Script Value	Script Status
1			
2			
3			
4			
5			

Your completed table for the telnet script should be similar to Table 7.4.

Table 7.4
Sample Telnet
Login Script for
UNIX/Linux

Seq	Script Pattern	Script Value	Script Status
1	Login	<i>UserID</i>	Logging in
2	Password	<i>UserPassword</i>	Supply the password
3	\$	cd /qad/EE/	Accessing DBServer Dir
4	\$./telnet-us.Prod	Launching Prod telnet connect script

Verify the Login Sequence

To verify the login sequence, attempt to log in to the telnet server from a remote machine. Use the login sequence you configured in the application. After the telnet connection script launches, you should receive a blank telnet screen.

Set Up SSH

Note Currently, this is only supported for US English and UNIX servers.

For terminal mode display, you can use SSH rather than standard telnet. SSH (or Secure SHell) is a protocol for creating a secure connection between a QAD .NET UI client and the server.

The safeguards provided by SSH include:

- User authentication and key exchange
- Negotiate encryption, compression, and message integrity verification.
- All data is encrypted using a symmetric key algorithm and verified against a keyed-hash message authentication code (HMAC).

To set up SSH, follow these steps:

- 1 Download `granados200.tar.gz` from the following link to a temporary directory:

<http://www.routrek.co.jp/en/product/varaterm>

Note This file is not included with QAD software because of export laws regarding encryption.

- 2 Extract `Routrek.granados.dll` from the archive using `gunzip` and `tar`. You must use version 2.0.0.0 of the DLL signed by Routrek Networks or SSH will not work.

The `gunzip` and `tar` programs are UNIX utilities. The commands follow. Some WinZip versions support `*.tar.gz` files.

- a Create `granados200.tar`:

```
gunzip granados200.tar.gz
```

- b Extract the tar archive:

```
tar -xf granados200.tar
```

The DLL file will be located in the temporary directory's `/bin` directory.

- 3 Copy the DLL to `TomcatInstallDir/webapps/qadhome`. This is the default location.
- 4 Open `qaduiConfig.xml` in `TomcatInstallDir/webapps/qadhome/client/configs` where `qaduiConfig` is your QAD UI configuration name.

Note The client session file defines the client session characteristics of the QAD .NET UI. By default, the file is located in:

```
TomcatInstallDir/webapps/qadhome/configurations/default/client-session.xml
```

In the following step, the elements you must edit in `client-session.xml` include `<SshProviderUrl>` and `<TerminalProtocol>`.

5 Make the following changes:

a Update the location of the DLL file:

```
<add key="SshProviderUrl" value="{HomeServer}/
Routrek.granados.dll" />
```

`{HomeServer}` is automatically replaced with the `HomeServer` configuration value defined at installation time. All `{<variable>}` references are resolved against other configuration keys. If no key is found, the string is not replaced.

b Change the terminal protocol entry from telnet to SSH1 or SSH2. SSH2 is preferred because it is more secure.

```
<add key="TerminalProtocol" value="SSH2" />
```

6 Save the configuration file.

7 Repeat these steps for `default.xml` in the same directory.

8 In User Option Telnet Maintenance (36.4.14), change the port from 23 to 22. This is the default port for SSH.

Install QAD .NET UI Client

Important Refer to the *QAD .NET UI Release Notes* and *QAD User Interfaces User Guide* for complete information about the QAD .NET UI client.

The following steps describe how to install and start up the QAD .NET User Interface (UI) client on workstations that will connect to the QAD 2009.1 Enterprise Edition installation and how to point that client to the installation.

Before installing the QAD .NET UI, be certain you have completed the installation and configuration of QAD Enterprise Edition.

Note When installing the QAD .NET UI client on Windows Vista, all users must install it as an Administrator user. In Windows Vista, a user must right-click the Internet Explorer icon, and select Run as Administrator.

To install and use the QAD .NET UI client:

- 1 Open an Internet Explorer 5.5 Service Pack 2 or higher browser.
- 2 Enter the following URL and press Enter:

```
http://<your-  
servername.domain.com:tomcatport>/qadhome
```

Example `http://p11i32.qad.com:8080/qadhome`

- Note** If connecting to a URL with secure HTTP (`https://`), be aware that Microsoft introduced changes in how Internet Explorer 7 (IE7) connects with secure HTTP compared to how Internet Explorer 6 (IE6) connects with secure HTTP. For your default browser and the QAD .NET UI to display data, your default browser must be configured to accept the secure HTTP security certificate. The steps for accepting a security certificate vary depending on whether you are using IE6 or IE7. Contact your system administrator for details.
- 3 The installation screen displays and the installation starts automatically. If it does not, click the Install link on the displayed page.
 - 4 If you have already installed the QAD .NET UI, the installation program prompts you to modify, repair, or remove it.
Note If you have previously installed the QAD .NET UI client and want to determine the URL that you installed it from, select Help | View Configuration and enter homeserver in the Search field.
 - 5 If the install detects Macrovision is not installed on your system, you are prompted to confirm this portion of the installation.
 - 6 Select Install to continue.
 - 7 InstallShield starts and displays a security warning. To continue the install, select “I understand the security risk”; and select Next.
 - 8 InstallShield sets up the installation environment.

- 9 On completion, you are prompted to create launch icons on your desktop and under Programs on the Start menu. Select the desired options and select Install.
- 10 The installation begins. A progress screen displays.
- 11 When the client installation is complete, a confirmation screen displays. Select Finish.
- 12 If the client installation includes QAD .NET UI plug-in updates, you are prompted to accept the updates. Select OK.
- 13 To launch the client, select the QAD Applications icon or menu item under Programs on the Start menu.
The login screen displays.

Adding Languages to an Existing Configuration

Use the following procedure to add languages to an existing QAD Enterprise Edition configuration.

- 1 Select the environment to update from the Product panel and then Select Edit Language Details.

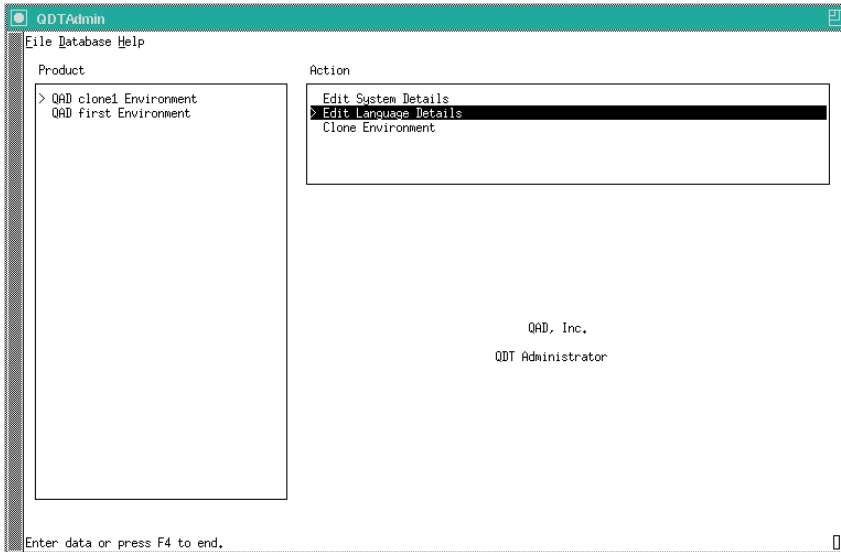


Fig. 7.3
Select Edit Language Details

Only languages that are compatible with the existing database language are displayed.

- 2 Add the desired languages and select Done.

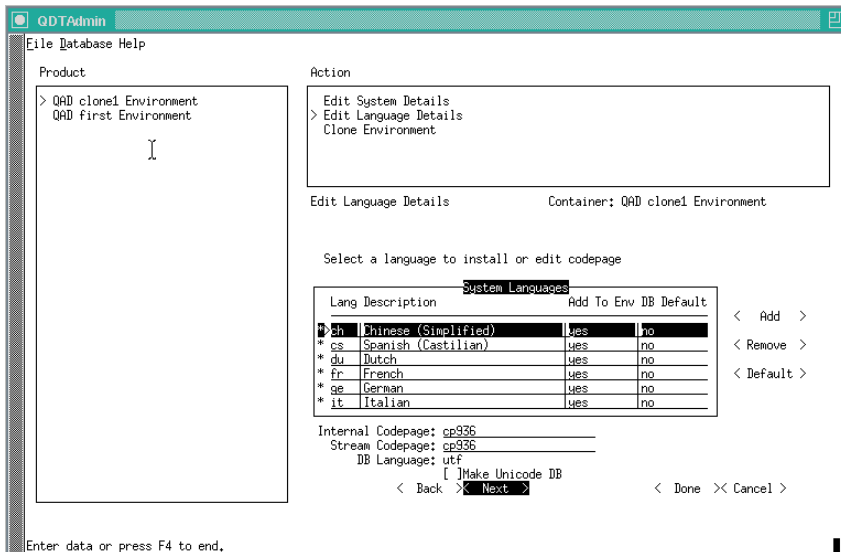
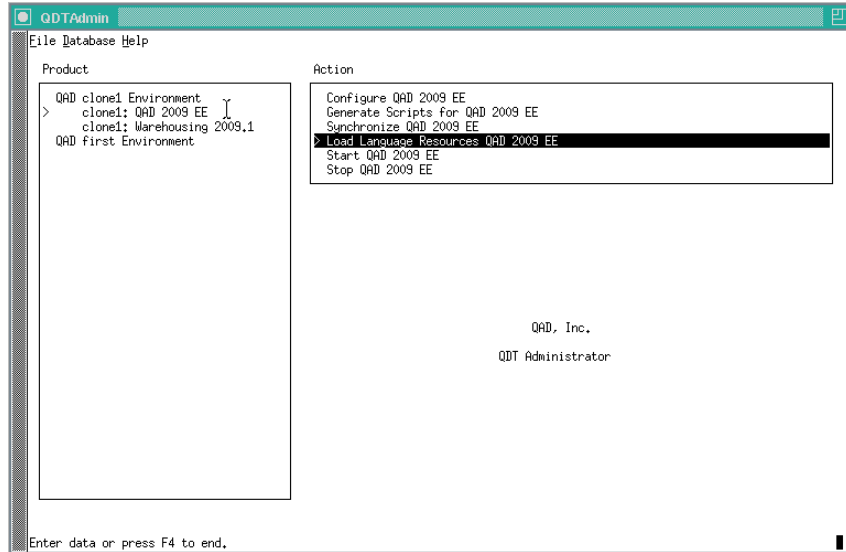


Fig. 7.4
Adding Languages

- 3 When the process completes, select Close.
- 4 Next, load the new languages by executing the Load Language Resources QAD 2009 EE option.

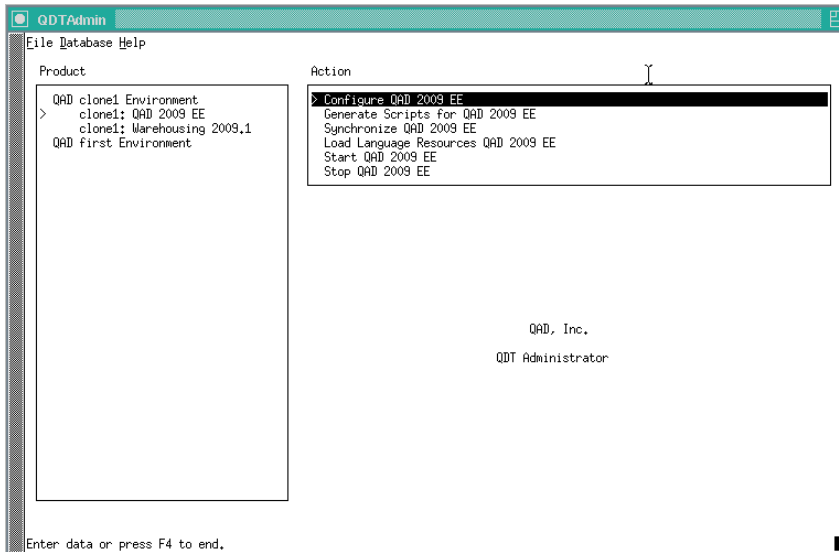
Fig. 7.5
Loading New Languages



This loads the necessary default data for the selected languages.

- 5 When the process completes, select Close.
- 6 After the new language data has been added, the UI configuration must be updated. Select Configure QAD 2009 EE.

Fig. 7.6
Updating the UI
Configuration



Notice that specific UI configuration listings no longer say “complete.”

- 7 Select Execute to rebuild the necessary UI components on the Server. This will not impact reinstalling the UI client.

Configure Application Daemons

The QAD Financials module requires that several daemons be configured and running. Daemons are server-based processes that run background tasks. They can run on the same application server as the QAD Financials or you can specify a different AppServer for each daemon.

Some daemon processes must be running to ensure the integrity of the application; others are optional depending on which parts of the application you are using. You should ensure that the required processes are configured to start when the database starts. You can start multiple instances of a daemon if the workload requires this.

The system has the following daemons:

Table 7.5
System Daemons

Daemon	Required	Comment
Balance	After GL Implemented	Updates the supplier and customer balances and history for invoice changes. If unprocessed records exist, the supplier and customer balances may be inaccurate.
Budget	After GL Implemented	Allocates postings to budgets and allocations. Only needed if these are used.
Cross-Company	After GL Implemented	Processes automatic cross-company postings that cannot be performed manually.
Event	No	Publishes events, required for integration with QXtend.
History	After GL Implemented	Populates the database with condensed GL transaction data and updates GL and SAF balances for each period.
Replication	Yes	Makes domain shared set data available to the operational functions and replicates the data to the appropriate operational domain.
Report	No	Only if submitting Financial reports in batch.
Scan	No	Only if importing scanned documents.
Time Out	No	Only if the Time Out setting is defined in Security Control (36.3.24).
XML	No	Only if you are importing data from XML files.

For detailed information about setting up and monitoring daemon activity, see the *QAD System Administration User Guide*.

Set Up the Reporting Service

This section contains information to assist you in installing, configuring, and troubleshooting the QAD Reporting Service. QAD Enterprise Edition uses this service to distribute financial reports to application users. The QAD Reporting Service must be installed on a Windows computer.

If your users want to submit batch jobs to generate Financials reports, you must install and configure the QAD Reporting Service. This service invokes a Crystal Reports generator to create reports.

The server reporting service must run on a Windows Server machine. The service needs to connect to the Financials AppServer (`qadfin<env-name>`). It does this by obtaining the AppServer URL from the configuration for the environment held under QAD Home. After connecting to the AppServer, the AppServer spawns a reporting service daemon that connects back to the Windows Reporting Service using the configuration in the following configuration file:

```
c:\program files\qad\QAD.CBFReportingService\
QAD.CBFReportingService.exe.config
```

The setup steps required are:

- Determine if Microsoft .NET Framework Version 2.0 is installed.
- Download and install the reporting service.
- Configure it for your environment.
- Test to ensure that the service is working correctly.

Prerequisites

The QAD Reporting Service depends on Microsoft .NET Framework Version 2.0. This product is automatically distributed with Microsoft Vista, but must be installed on earlier Windows versions.

- 1 To determine if the framework is installed, run the Add or Remove Programs control panel applet and look for an entry for any of the following:
 - Microsoft .NET Framework 2.0
 - Microsoft .NET Framework 2.0 Service Pack 1
 - Microsoft .NET Framework 3.0
 - Microsoft .NET Framework 3.5
- 2 If an acceptable version of the framework is not installed, one must be installed on the target computer before running the QAD Reporting Service installer.

Go to the following URL to start the framework download:

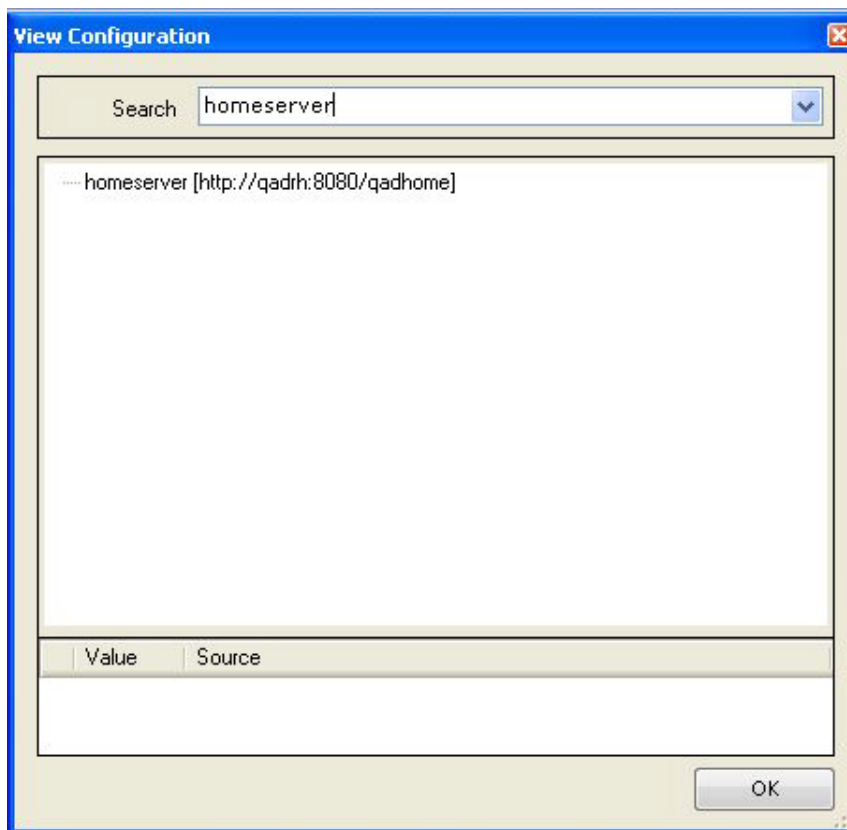
```
http://www.microsoft.com/downloads/details.aspx?familyid=0856eachb-4362-4b0d-8edd-aab15c5e04f5&displaylang=en
```

Installation

The Reporting Service is installed with an installer hosted by the QAD Applications Home Server.

- 1 The location of the QAD Applications Home Server can be displayed from the QAD Applications Client by choosing View Configuration from the Help menu in the client and entering “homeserver” in the search text box.

Fig. 7.7
QAD Applications
Home Server



- 2 From the Windows server where you will install the QAD Reporting Service, use Internet Explorer to connect to the setup:

```
<HomeServer>/installations/reportingservice/2009  
/install.htm
```

- 3 Click on the Install button.

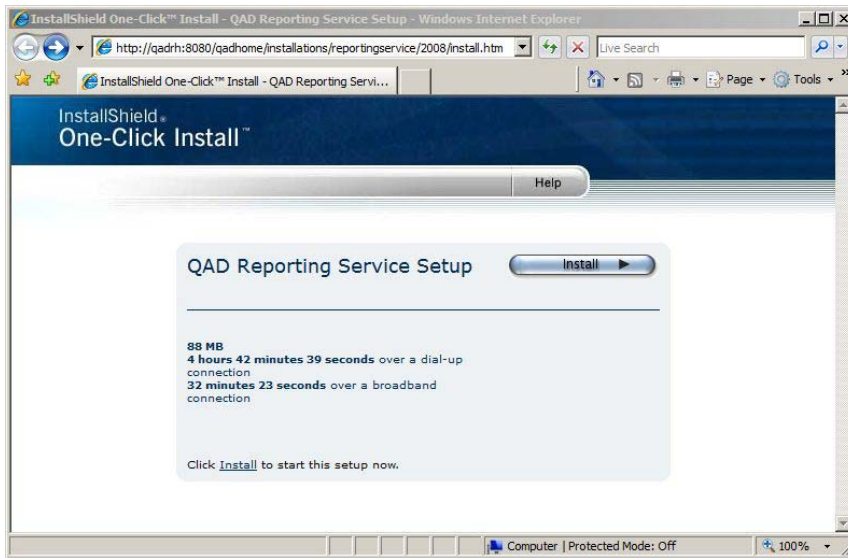


Fig. 7.8
QAD Reporting
Service Installation

- 4 You may get the following security dialog box depending on how Internet Explorer is configured.

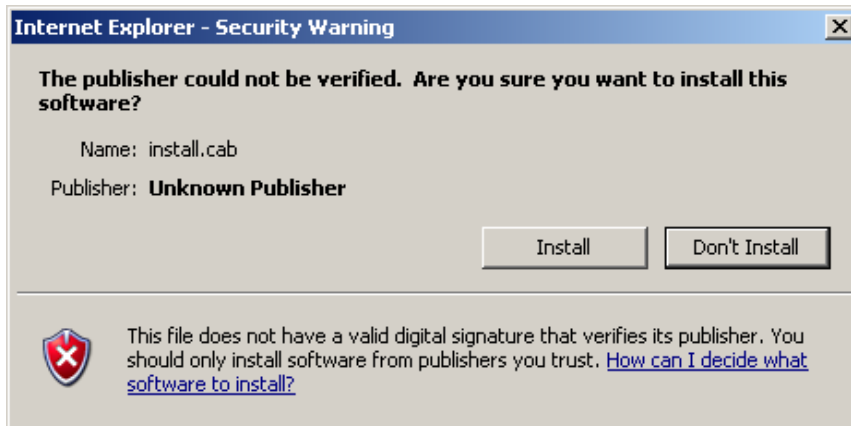


Fig. 7.9
Internet Explorer
Security Warning

If you see this screen, choose Install to continue to the next screen.

Fig. 7.10
InstallShield
Wizard



5 Click Next.

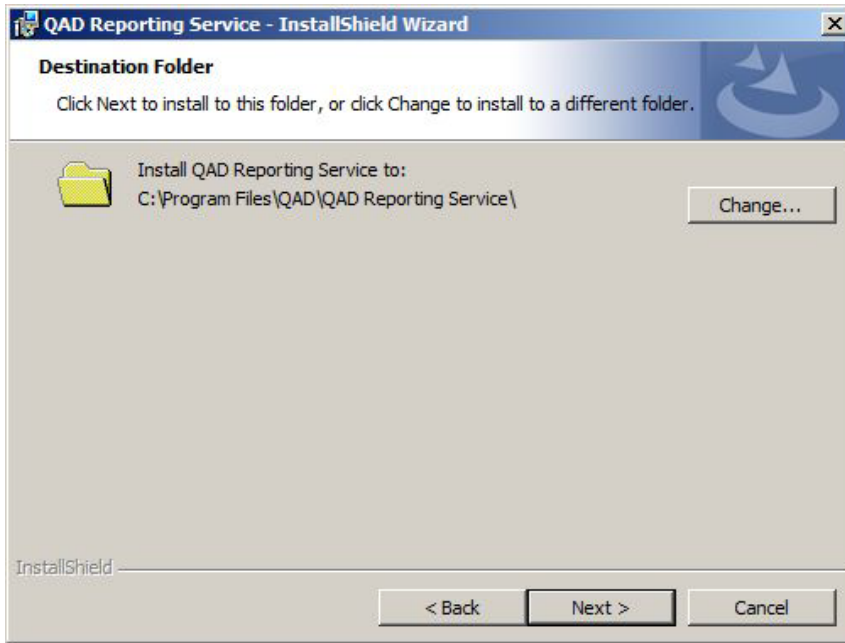


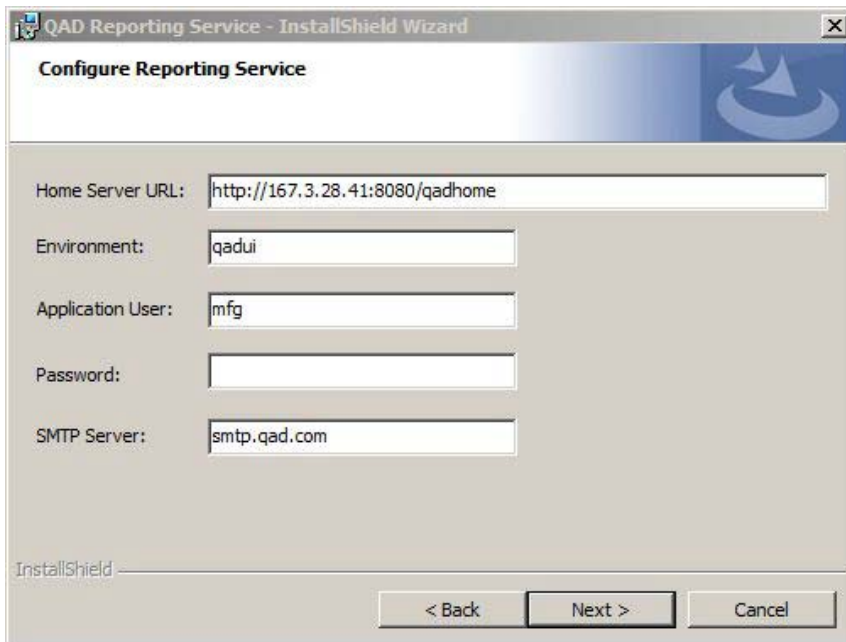
Fig. 7.11
Destination Folder Selection

6 Click Next and provide the following configuration information:

Parameter	Description
Home Server URL	The URL to the QAD Applications Home Server as described above.
Environment	The name of the Home Server environment for which this instance will provide reporting services. The environment name displays in the title of the QAD Applications Client. It is the value to the left of the colon (:).
Application User	The QAD user account the service will use to connect to other QAD services.
Password	The password associated with the application user account.
SMTP Server	The IP address or hostname of a server supporting the Simple Mail Transfer Protocol on port 25

Table 7.6
Reporting Service Configuration Settings

Fig. 7.12
Configure Reporting Service Screen



7 Click Next.

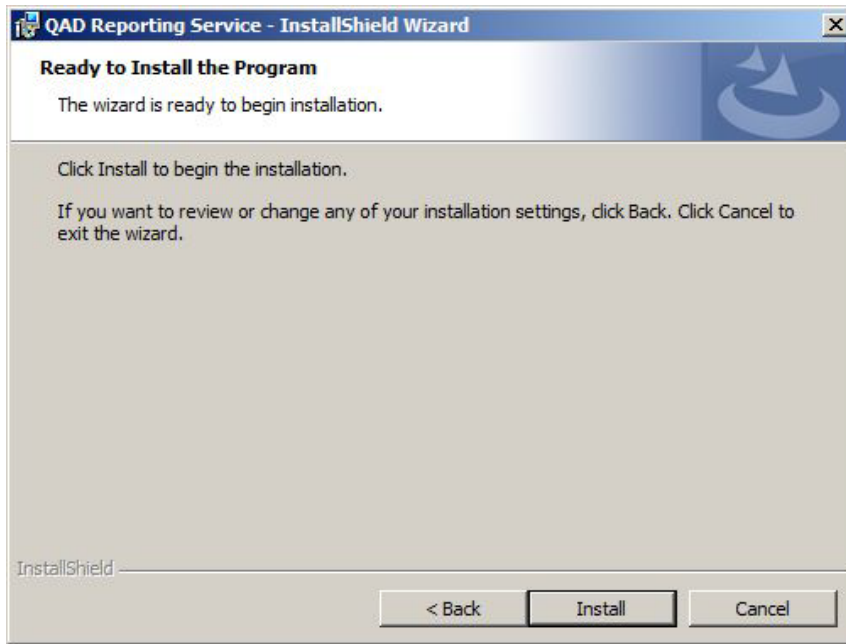
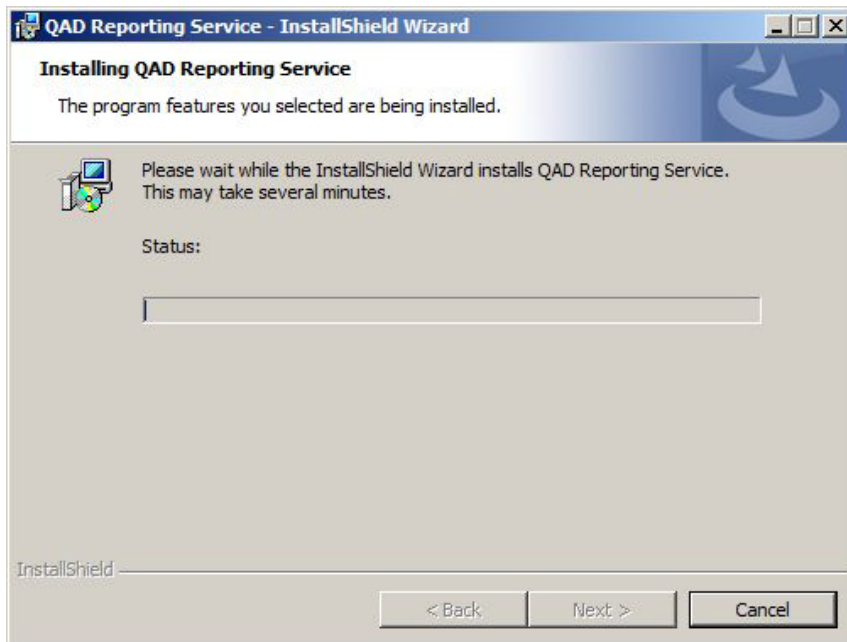


Fig. 7.13
Installation Prompt

- 8 Click Install.

Fig. 7.14
Installation
Progress Screen



9 Click Finish.

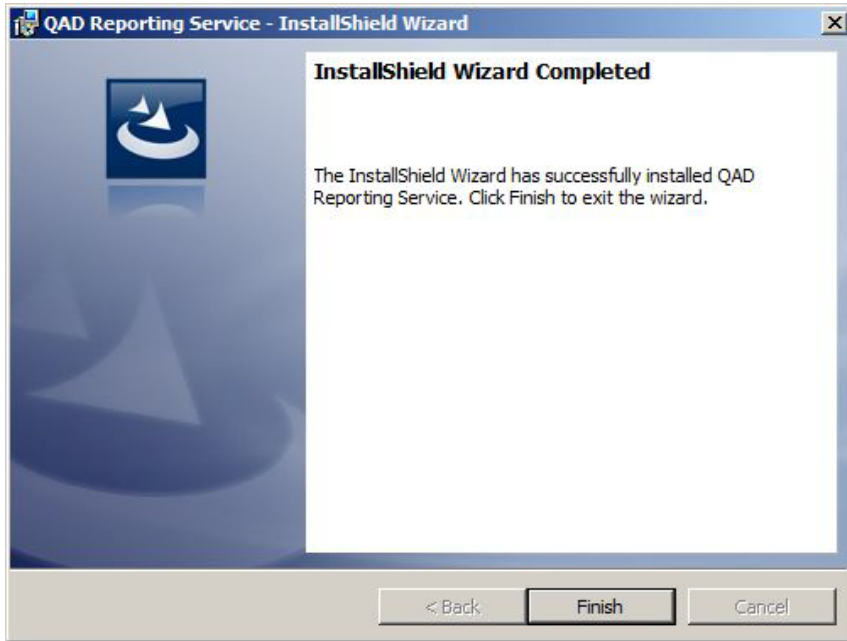


Fig. 7.15
Installation
Completed Screen

The installer configures the Reporting Service as a Windows Service named “QAD Reporting Service” running on TCP/IP port 4331 and creates shortcuts to start, stop, and monitor the service.



Fig. 7.16
Reporting Service
Shortcuts

Configuration

QAD Reporting Service

The configuration values defined during the installation may be changed at any time by editing the file:

```
<ReportingService>\service\  
QAD.CBFReportingService.exe.config
```

<ReportingService> is the location where the service was installed, which defaults to:

```
C:\Program Files\QAD\QAD Reporting Service
```

To change the configuration value, do the following:

- 1 Edit the Reporting Service configuration file.
- 2 Save the changes.
- 3 Stop and restart the service using the shortcuts created by the installer or the Windows Services application.

Application Server

The application server manages a pool of report daemons (background processes) that send financials reports to the QAD Reporting Service for distribution. By default, the application server is configured with an empty pool. To support sending reports through the QAD Reporting Service, the number of instances in the pool must be set to a number greater than 0.

To increase the number of report daemon instances in the pool, do the following:

- 1 Start a QAD Applications Client that is connected to the same Home Server and environment as the QAD Reporting service being configured.
- 2 Run the program Report Daemon Configure.
- 3 Change the number of instances from 0 to 1.
- 4 Save the changes.

Testing

To test the Reporting Service, use the following steps:

- 1 Start a QAD Applications Client that is connected to the Home Server and environment for which the QAD Reporting service you are testing provides reporting services.
- 2 In the client, select the menu item corresponding to a financials report (for example, a GL Transaction Report).
- 3 At the bottom of the report, click the down arrow associated with the Server Output Processing section to expand the section.
- 4 Enter a suitable e-mail address and subject for the test.

Fig. 7.17
Server Output
Processing
Configuration

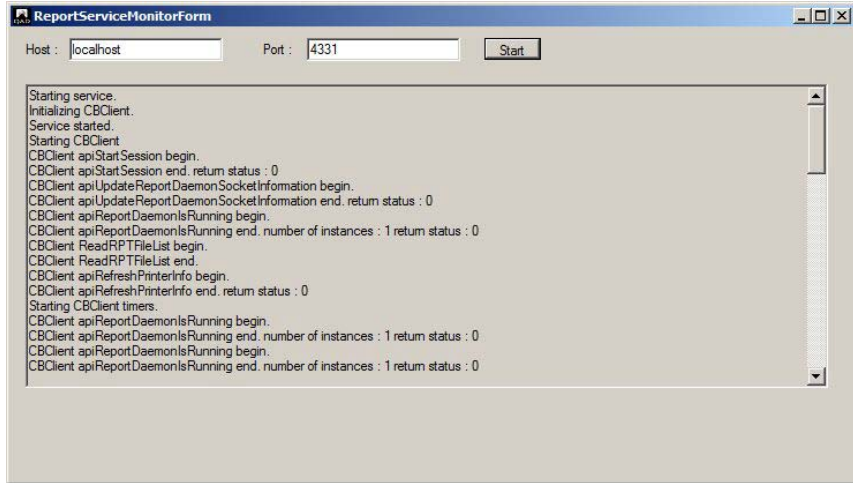
- 5 Click Execute to send the report to the configured e-mail account using the QAD Reporting Service.

Monitoring

The QAD Reporting Service is distributed with a utility to monitor the service. To start the utility, do the following:

- 1 Click on the Monitor Service shortcut created by the installer.
- 2 Type localhost into the Host textbox.
- 3 Click on the Start button to begin monitoring the local service.

Fig. 7.18
Reporting Service Monitor



QAD Reporting Service Does Not Start

The QAD Reporting Service is designed to run as an unattended Windows Service. To determine if the service is running, check the entry for the QAD Reporting Service in the Windows Services application.

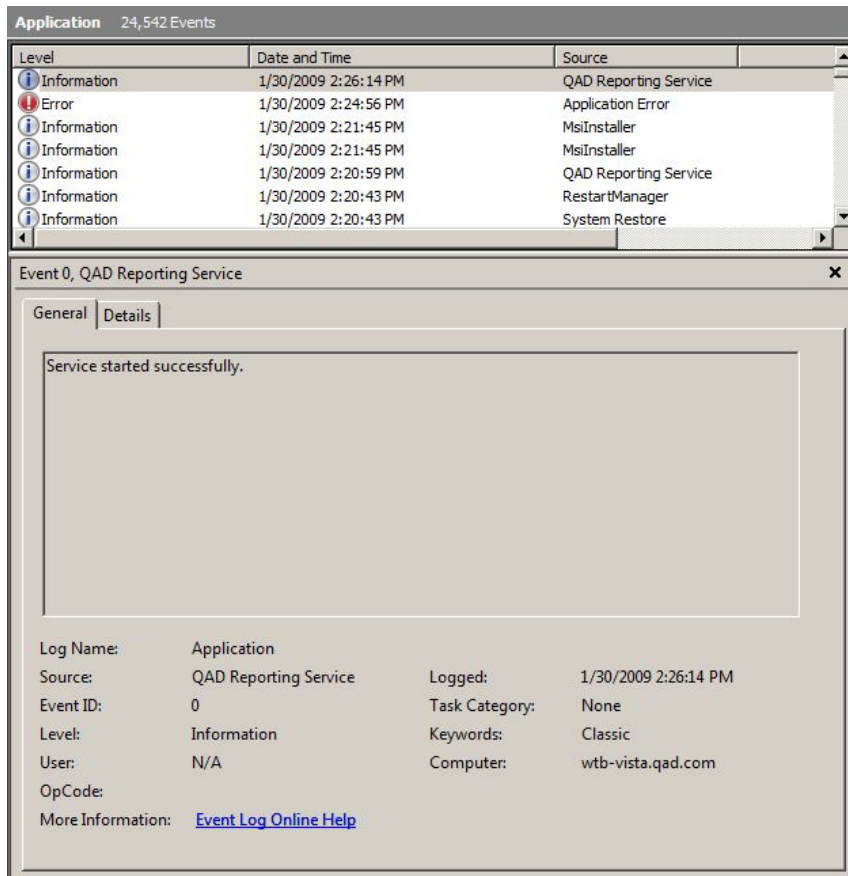
Note Press the function key F5 within the Windows Services application to ensure that you are presented with up-to-date information.

Fig. 7.19
Windows Service Entry for Reporting Service



Errors that occur while running the service are written to the Windows Event Log, which can be viewed with the Windows Event Viewer.

Fig. 7.20
Windows Event
Log



The service can be run as a stand-alone console application to bypass the Windows service layer while testing. To run the QAD Reporting Service from the console, start a command prompt and do the following:

- 1 `cd <ReportingService>\service`
- 2 `QAD.CBFReportingService.exe -configfile
QAD.CBFReportingService.exe.config -noservice`

To stop the service, use CTRL+C.

QAD Reporting Service is Not Communicating with the Application Server

One way to determine if the reporting service is communicating with the application server is to attempt to send a test report (as described in “Testing” on page 85). If you receive the warning message (QADFC-610), it indicates that the reporting service and the application server are unable to communicate. After a period of time (usually five minutes or less), you can review the Windows Event Log on the server where the QAD Reporting Service is installed for a more detailed explanation of the failure.

QAD Reporting Service to Application Server

The QAD Reporting Service will obtain the address of the application server from the configuration associated with the Home Server environment with which it is associated. In a typical deployment, an XML document specifies this configuration:

```
<HomeServer>/configurations/<Environment>/client-session.xml
```

In this document, the following fragment defines the address of the application server:

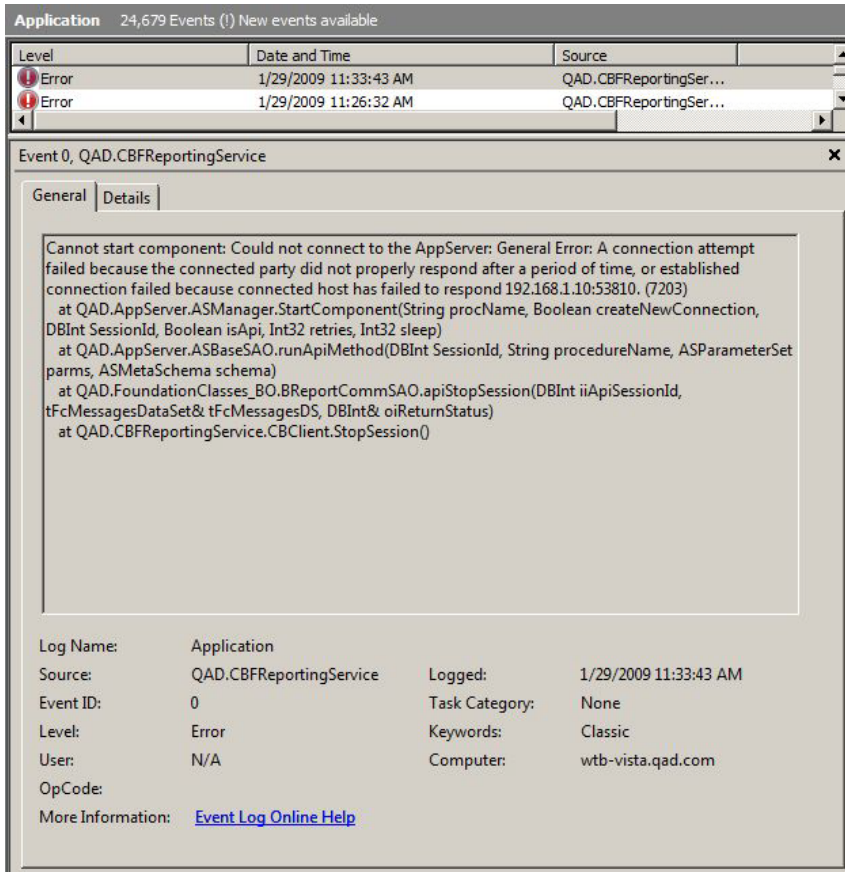
Example:

```
<qad.appserver url=
  "appserver://qadrh:5162/qadfinqad2009"/>
```

Note If a host name is specified (for example, `qadrh`) instead of an IP address, the Windows server where the QAD Reporting Service is installed must be able to resolve the host name.

In some network deployments, the Progress Name Server may return an IP address that cannot be routed.

Fig. 7.21
Progress Server
Error Listings



As a test, you can change the configuration to bypass the Progress Name Server using a direct connection to the application server.

Example:

```
<qad.appserver url=
"appserverdc://167.3.28.41:53810/qadfinqad2009"/>
```

Application Server to QAD Reporting Service

By default, the QAD Reporting Service is configured to send the name of the Windows server to the application server. The host where the application server is installed must be capable of resolving this name, or the QAD Reporting Service must be configured to send its IP address. To

send the IP address rather than the host name, edit the QAD Reporting Service configuration file (as described in “Configuration” on page 84), setting the value of the key `ExternalHostName` to the IP address of the Windows server. Then stop and start the service to activate the change.

Example:

```
<add key="ExternalHostName" value="167.3.215.50"></add>
```

Reporting Service Cannot Connect to SMTP Server

If the SMTP server is identified by a host name, the Windows server where the QAD Reporting service is installed must be capable of resolving the host name, and the SMTP server must be listening on TCP/IP port 25.

Note Many anti-virus programs block TCP/IP port 25 to protect against malicious programs that use e-mail as part of their attack strategy. McAfee, for example, blocks Port 25 for all processes, except those specified in a configurable list of exclusions. Programs that work like McAfee can be configured with the process name `QAD.CBFReportingService.exe` to allow the mail to be sent.

Invalid E-mail Addresses

If a report request contains an invalid sender (From) or recipient (To) address, the detailed error is logged in the Windows Event Log. The application server is informed that the request failed and this failure may be reviewed from the QAD Applications Client using the program Report Daemon Monitor.

Note The sender e-mail address is the e-mail address associated with the user account that is executing or scheduling the report. The e-mail address for a user account is specified with the program User Maintenance.

Glossary

Before-Image (BI) File. A Progress database file containing roll-backward recovery information. Progress employs a mandatory recovery technique called roll-backward recovery. Any time a transaction is called against a database, a snapshot of the data is recorded before alteration. The snapshot is held in the before-image file. If a transaction is aborted, Progress returns the database record to the before-image snapshot.

Client Directory. The target directory specified during the installation of the QAD 2009.1 Enterprise Edition clients. This directory contains all of the compiled QAD 2009.1 Enterprise Edition code (r-code), as well as master copies of all configuration files. For remote clients, this directory is typically located on a Application Server. For character clients, this directory is typically located on the database server.

Client Machine or Client PC. The machine in a client/server configuration, often a PC, that runs the client session.

Client Session. An executable running an application that accesses a server running a database. Progress, regardless of the hardware platform, uses a client process and a server process.

Client/Server. The configuration in which a client session runs on a separate machine from the database server process.

Client/Server Connection. A connection in which a client session runs on a separate machine from the database server process. When using a client/server connection, the database host and service name parameters must be defined for both the client and server views of a database. Additionally, these parameters must also be defined in the `Services` files on the server and client machines.

Code Page. A table that describes the character set for a particular spoken language. It is used by the operating system to properly display and print the language. The code page defines 256 characters based on a single byte's 256 possible bit combinations. For most code pages, the first 128 characters conform to the ASCII standard.

Conversion. Refers to the transition from one numbered release to the next, such as version eB2.1 to QAD 2009.1 Enterprise Edition. Conversions involve program fixes and, in some cases, major schema changes.

Data Definition File. A file containing the database table, field, and index definitions that make up the schema of a specific QAD 2009.1 Enterprise Edition database. Has a `.df` extension.

Database Definitions. Characteristics of the database schema, including field names, table names, validation expressions, labels, initial values, and others.

Database Server. Can refer to the Progress software task that supports multi-user access to a database or the machine on which the database is located.

Database Set. A set of databases that form a logical group. QDT uses the concept of database sets to generate server and client startup and shutdown scripts and icons. The standard QAD 2009.1 Enterprise Edition database set consists of a main database and additional support databases.

Database Structure File. A file that defines the structure of a Progress database. A database structure file contains the definition of each storage area and the extents within those storage areas that make up the database. A database structure file has a `.st` extension.

Default System Data. The data that initially populates the menu, messages, printers, language code, and other default data files.

Empty Database. The initial Progress database defined by the database structure file, but without data.

Extent. Physical units of a database that provide the ability to split the database across multiple physical disks or logical volumes. Extents contain blocks of database objects. There are two types of extents: fixed- and variable-length.

Fixed-Length Extent. An extent with a fixed size. Fixed-length extents let you control the size of the extents within a storage area and to plan and manage hardware resources such as disk space.

GL. General Ledger.

Help Database. A database that contains all of the field and procedure help as well as the source code cross-reference data. You can use a single help database in multiple database sets.

Host Name. The name of the machine where a database is located.

Local Client. A client process running on the same machine as the database process.

This allows the client session to communicate directly with the database rather than over the network. This type of connection greatly increases system performance. By default, QAD 2009.1 Enterprise Edition character clients are local clients.

Log File. A file created each time QDT completes a series of tasks. You can view log files in QDT or in any text editor.

Logical Database Name. The database name used to compile programs. When the program executes, the logical database name must correspond to the logical database name of a connected database. The QAD 2009.1 Enterprise Edition logical database names are: `qadddb` for main databases, `qadhelp` for help databases, and `qadadm` for administration databases. The logical database name remains the same even when the physical database name changes. For example, you could make a copy of your production database for training purposes. In this case, while the physical name of the database changes, say from `prod.db` to `train.db`, the logical name of `qadddb` remains the same.

Main Database. The database that contains the bulk of the transaction data for a given environment. Sometimes referred to as the `qadddb` database. Together with an Admin database and a Help database makes up a normal database set.

Network File System (NFS). A client/server application that lets a user view and optionally store and update files on a remote computer as though the files were on the user's own computer.

Object ID (OID). A means of uniquely identifying a database record. In QAD 2009.1 Enterprise Edition, OIDs are decimal values based on a date/time stamp and sequence number on the left of the decimal. The right side of the decimal is a registration value based on the OID Generator Code specified in Database Control (36.24.1).

Physical Database Name. The name you have given the database schema area file (extension .db).

QAD Enterprise Edition Installation Directory. The target directory specified during the installation of the QAD Enterprise Edition database server media. This directory is located on the database server machine and contains all of the database-related files for an QAD Enterprise Edition environment.

QAD Deployment Toolkit (QDT). QAD's installation, conversion, and deployment tool.

R-code. A term used to describe QAD 2009.1 Enterprise Edition compiled code, derived from the .r file extension.

Schema. The definition of a database including the tables it contains, the fields within the tables, indexes, and views. In addition to database definitions, QAD 2009.1 Enterprise Edition schema contain items such as validation expressions and messages.

Schema Trigger. Progress .p procedures added through the Data Dictionary to the database schema. Schema triggers always execute when a specified event occurs.

Server. This term identifies a software process and hardware. The definition depends on the context. The most common uses are: 1) to designate the Progress process spawned by `_mprosrv` to control multi-user access to a database; 2) a machine that enables client connections to a shared resource.

Single-User Mode. A client connection mode that allows only a single user to connect to a database. Single-user mode is invoked using the `-1` startup parameter in the client startup script or parameter file.

Startup Parameter. A Progress parameter used when a database server is started or when a client connection is made to a database.

Storage Area. The largest physical unit of a Progress database. Storage areas provide control over the location of database objects such as tables and indexes within a database. Each storage area includes one or more extents.

Striped Disk Arrays. Method of distributing a file system over multiple storage disks. Striping increases the file system data rate (bytes transferred per second) and I/O rate (I/O requests per second).

Support Database. A QAD Enterprise Edition on Progress database that contains system or user data. The default support databases provided with QAD Enterprise Edition are help and administration. Help databases can be shared among database sets. You can create new support databases by copying the empty databases `hlpempty` and `admempty`.

Two-Phase Commit. A Progress feature that ensures transactions that update two or more databases occur consistently. During the first phase, Progress verifies that the databases are available for update. During the second phase,

Progress commits the transaction and updates the databases. For more information, see the *Progress Database Administration Guide and Reference*.

Variable-Length Extent. An extent without a pre-defined length. Variable-length extents continue to grow until they use all of the free space on the disk or reach a maximum size of 2 GB.

Windows Application Server. A server that enables multiple client machines to share common files and directories. QAD recommends storing QAD Enterprise Edition Windows code on a Application Server to enable centralized administration of the code and client configurations.