Installation Guide
QAD Customer Self Service (QAD CSS)

Installation Overview
Installing QAD CSS
Upgrading QAD CSS

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About This Guide

About QAD CSS

QAD Customer Self Service (QAD CSS) is a Web-based storefront application designed to work with QAD ERP. It lets you extend your QAD ERP system to the Web in support of either business-to-business (B2B) order entry or business-to-customer (B2C) order entry.

QAD CSS features include:

- Supports rapid integration and implementation, using a cost-effective approach and flexible Web technology
- Lets you easily model your own business processes without invasive code changes
- Style sheets that let you easily customize the user interface
- Lets your customers enter orders through a browser that updates QAD ERP in real time
- Lets your customers check their order status, credit history, and inventory levels
- Automatically generates e-mails based on rules that you define

During the product life cycle, QAD changed the name of the former MFG/PRO eB2.1 product to QAD Standard Edition, along with the release year; for example, QAD 2008 Standard Edition. Within the same year, additional releases are identified by a decimal number; for example, QAD 2008.1 Standard Edition. The Enterprise Financials version of the product is called QAD Enterprise Edition and follows the same convention for identifying the release year and specific version.

This document uses QAD ERP throughout to refer to those products, except in situations where it discusses a specific release.

Other QAD CSS Documentation

This guide includes instructions for installing QAD CSS on UNIX, Linux, and Windows platforms, as well as configuring the product to communicate with QAD ERP.

These instructions are for the QAD CSS system administrator who is installing the QAD CSS database and is familiar with the UNIX operating system, the Microsoft Windows operating system, Progress software, and networking as necessary. The system administrator should also be familiar with QAD ERP installation and administration.

For details on how to implement QAD CSS, see *Implementation Guide: QAD Customer Self Service*.

For details on how to use the product in day-to-day operations, see *Administration Guide: QAD Customer Self Service*.

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 QAD CSS users with a QAD Web account, product documentation is available for viewing or downloading at:

http://support.qad.com/

Important Before you start the installation, make sure you have the most recent version of this document.

You can register for a QAD Web account by accessing the Web site and clicking the Accounts link at the top of the screen. 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). PDF files can be downloaded from the QAD Web site to your computer. You can view them with the free Adobe Acrobat Reader. A link for downloading this program is also available on the QAD Web site.
- HTML. You can view user documentation through your Web browser. The documents include search tools for easily locating topics of interest.

Features also include an online solution database to help QAD CSS users answer questions about setting up and using the product. Additionally, the QAD Web site has information about training classes and other services that can help you learn about QAD CSS.

Conventions

Typographic Conventions

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.
`italicized monospaced text`	A variable name for a value you enter as part of an operating system command; for example, *`YourCDROMDir`*.
`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.

UNIX and Windows Conventions

This document supports the installation of QAD CSS for both UNIX and Windows platforms. Some steps are unique to a particular platform and are documented in separate sections and marked as UNIX or Windows only. In steps that are common to UNIX and Windows, UNIX file and path conventions are used when needed. If you are installing on the Windows platform, substitute the drive letter and path conventions for your operating system.

Chapter 1

Installation Overview

This chapter includes an overview of the QAD Customer Self Service (QAD CSS) product architecture and various deployment options. It then provides details needed to prepare for installation.

Configuration Overview

QAD CSS is designed as an *n*-tier application using Progress WebSpeed supported by several other technologies:

- HTML
- DHTML
- XML
- JavaScript
- Progress 4GL

See “Deployment Options” on page 7.

The product is constructed in multiple layers that can be deployed on different tiers—or platforms—based on client-server architecture and scalability requirements.

Each layer has specific responsibility for handling an aspect of QAD CSS functionality and is differentiated based on the functional services it provides and the technology used to create it. The layers are:

- User interface (UI) layer. This layer presents and collects information that interacts with the user interface. It is written using HTML, Progress SpeedScript, and JavaScript. The UI layer creates the main container for the QAD CSS application and works with the UI business rule layer to dynamically generate page content when requested.

  The UI layer ensures that the JavaScript and style sheets are included. In this context, JavaScript validates UI data entry. Additionally, the UI layer controls the overall placement of UI elements.

- UI business rule layer. This layer, written using WebSpeed, interacts with the UI layer and the application business rule layer (ABRL). It controls requests for data and data submission to the ABRL. It also controls dynamic creation of page content.

  The UI business rule layer includes three base components:

  - One that works with the UI layer to provide the base dynamic content
  - A component that provides the default customizable UI generations for the product registry
  - A UI extension component, where user modification to dynamic content takes place

- Application business rule layer (ABRL). The primary function of this layer, written in Progress 4GL, is to process data requests, as well as to perform QAD CSS business rule processing. It interacts with the UI business rules layer and data layer using a series of APIs that pass information and directives between the two layers. To satisfy these requests, the ABRL interacts with the data layer, adapter layer, and the QAD CSS database.
- Data layer. This layer provides a set of centralized procedures for retrieving and navigating through sets of records. The data layer also provides common procedures for updating the QAD ERP database that include the necessary change control processes required to maintain stateless applications.
- Adapter layer. This layer controls access to the QAD ERP database and code.

Figure 1.1 illustrates the QAD CSS layer architecture.

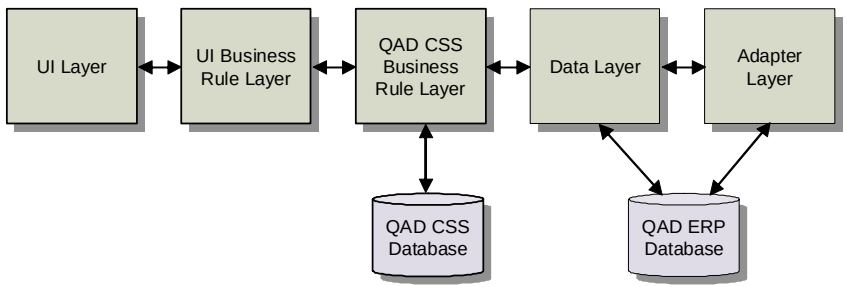


Fig. 1.1
QAD CSS Layer Architecture

Deployment Options

QAD CSS can be deployed in various configurations ranging from locally hosted to enterprise-wide options. In planning your deployment, you should consider these major factors:

- Your QAD ERP configuration.
- The Web server and its platform. QAD CSS can work with most major Web servers; supported operating systems include Windows, Sun Solaris, IBM AIX, HP-UX, Compaq UNIX Tru64, SCO UnixWare 7, and Linux.

- Progress WebSpeed. WebSpeed includes separate components to support single-machine or distributed implementation.
- QAD CSS. Based on such factors as performance, you can implement all the components of QAD CSS—static Web files, dynamic HTML, business rules, adapter rules, QAD CSS database—on a single machine, or spread them across several. When your environment includes a Progress AppServer, each QAD CSS component can reside on a different tier of the enterprise network.

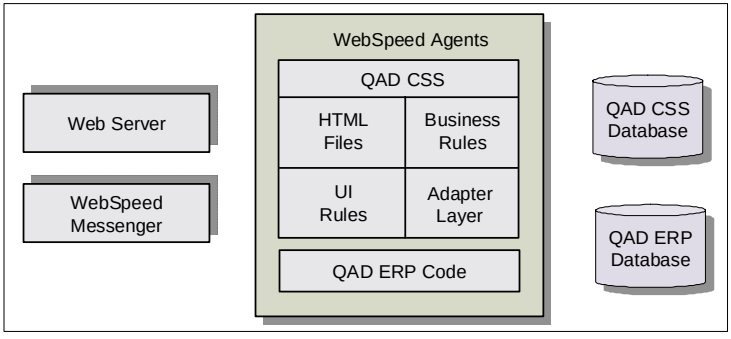
Deployment Examples

This installation guide assumes that you are installing all QAD CSS components on a single server. If you want to distribute components, this section also illustrates distributed deployment featuring Web server installation on a separate machine.

Simple Deployment

The simplest deployment of QAD CSS is to put all the components on the same server. This method is highly efficient, as well as easy to implement and maintain. However, it does not let you apply the kind of security typically required when users access an application over the Internet. For this reason, it is most often used to create development environments. Figure 1.2 illustrates an example of a simple deployment.

Fig. 1.2
Simple Deployment of QAD CSS



Distributed Deployment

A more common deployment involves separating the Web server from the rest of the product. It is still very efficient for low- to medium-load situations, and is also relatively easy to implement and maintain. Figure 1.3 illustrates an example of a distributed deployment.

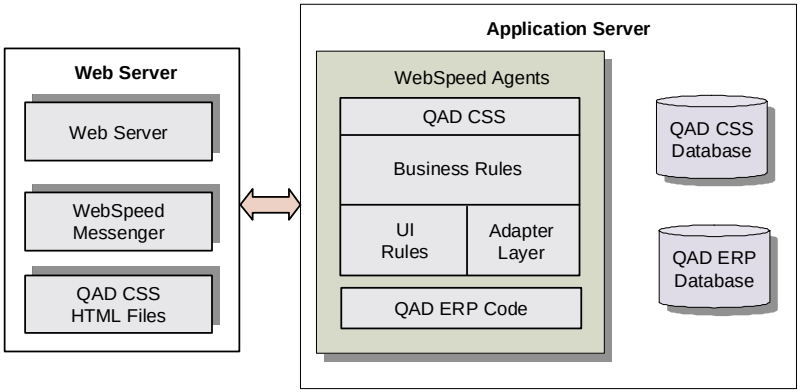


Fig. 1.3 Distributed Deployment of QAD CSS

Another common example of a distributed implementation is to have the production QAD ERP database on another platform. This offers more scalability, and—depending on the speed and network configuration of the database server—can improve performance. Figure 1.4 illustrates an example of this type of deployment.

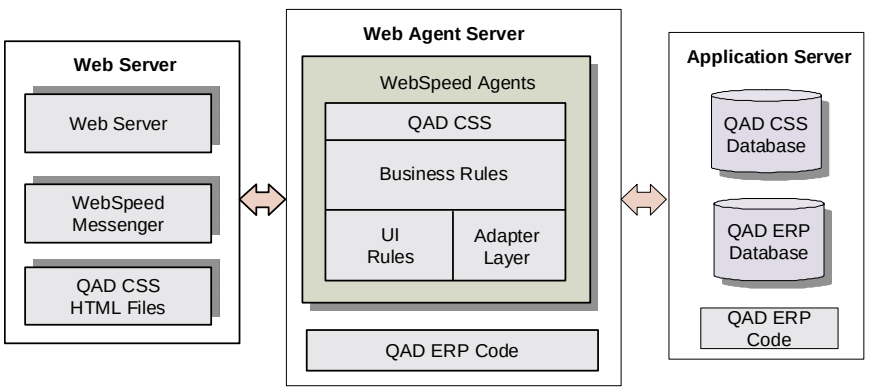


Fig. 1.4 Distributed Deployment of QAD CSS with Separate Database

Upgrading to a New Version

See “Upgrading QAD CSS” on page 69.

To convert to the current QAD CSS version from a prior version, you install the new QAD CSS code, update the existing database, configure the revised QAD CSS environment, and compile. If you are upgrading your QAD ERP version or Progress version at the same time, additional steps are required.

All instructions for upgrade are included in Chapter 3, “Upgrading QAD CSS,” on page 69. For upgrades, use Chapter 3 instead of Chapter 2.

Prerequisites

Hardware and Networking Requirements

Your system should meet the following basic requirements:

- Access to the Internet.
- Support for the TCP/IP and UDP protocols. The platforms that WebSpeed supports provide built-in support for these protocols.
- At least 150 MB of free space for the QAD CSS application.

Software Requirements

You should have the following software elements installed and configured before you install QAD CSS:

- MFG/PRO, version eB2.1 SP2 through SP4, QAD 2007, QAD 2007.1, QAD 2008 Standard, QAD 2008.1 Standard

  If you plan to use QAD CSS with QAD ERP and Trade Management (TrM), the following product combinations have been certified:

  - MFG/PRO eB2.1 SP2, TrM 2.7
  - MFG/PRO eB2 SP9, TrM 2.6

  For a TrM installation with MFG/PRO eB2.1 SP2, you must also download and install ECO P2YY. This patch is not needed if you are using MFG/PRO eB2.1 SP3 or MFG/PRO eB2 SP9.

- Progress 4GL, version 9.1D, 9.1E, or OpenEdge 10, including:
  - Latest Progress version-specific patches
  - Sufficient Progress licenses for your database deployment method
- Progress WebSpeed, version 3.1D, 3.1E, or above.

  Note If you are completing a multi-tier deployment, WebSpeed must be installed on the Web server. Alternatively, you can download and install the free WebSpeed Messenger.
- A Web server that supports one of the following interfaces:
  - ISAPI; for example, Microsoft Internet Information Server (IIS), version 3.x and 4.x
  - NSAPI; for example, Netscape Enterprise or Fast Track Server, Version 3.x
  - CGI 1.1; for example, Apache 2.0
- To use the browser-based editor in WebSpeed version 3.1C, Microsoft Internet Explorer version 5.0 or later or Netscape Navigator 4.5 or later.

Requirements for Credit Card Processing

If you plan to implement credit card processing, which is required for a B2C order-entry scenario, your Web server has additional requirements:

- Secure Sockets Layer (SSL) must be installed and implemented.
- The VeriSign client (PayFlow Pro) must be installed and configured.

These installations are not described in this document.

Preparing to Install

Before you begin the installation process, make sure you know and write down the information in Table 1.1.

Table 1.1 Installation Information

Item	Your Setting	Default Value
QAD CSS Install Directory		/qadcss
QAD CSS Database Directory		/qadcss/database
Web Server Host or IP Address		
Web Server Directory		
Web Server Port		
Progress Install Directory		

Important Make sure you identify a valid port for your Web server that is not being used by other applications.

Note References are made throughout this document to the Progress and WebSpeed documentation. Progress documentation is available online at:

http://www.progress.com/products/documentation/index.ssp

Installation Directories

Table 1.2 lists the directory naming convention used to reference locations that vary for each installation.

Table 1.2 Installation Directories

Directory Component	Description
CSSInstallDir	The root directory where QAD CSS is installed on your system
CSSDbDir	The directory location of the QAD CSS database
ProgressInstallDir	The root directory where Progress and WebSpeed are installed on your system
WebServerDir	The directory location of the Web server software

Table 1.3 lists the components included in the compressed files and summarizes their purpose.

Table 1.3 QAD CSS Components

Directory Component	Content Description
`database`	QAD CSS database.
`defs/eng`	English language data definition files and data files used to create the QAD CSS database.
`defs/xx`	Non-English language data files where *xx* refers to the two-letter QAD ERP language code.
`defs/upgrade`	Data and data definition files required for upgrading from previous versions of QAD CSS, in source release-specific subdirectories.
`demo`	Data you can use to add a sample catalog to illustrate the storefront.
`demo/defs.css`	QAD CSS data.
`demo/defs.qad`	QAD ERP data.
`demo/items`	Images for the catalog.
`mfgpro/eB2/SPx`	MFG/PRO eB2 service pack-specific directories for QAD ERP code changes required for credit-card processing.
`mfgpro/eB21/SPx`	MFG/PRO eB2.1 service pack-specific directories for QAD ERP code changes required for credit-card processing.
`qadcss`	Multiple subdirectories with core product files.
`qadcss/appstart.p`	Additional optional startup options.
`qadcss/`appstart.pf	Additional optional startup options.
`qadcss/Compme3.1.html`	Default compiler program.
`qadcss/qadcss.ini`	QAD CSS configuration file.
`qadcss/qadcss.pf`	Default start parameters for WebSpeed agents.
`qadcss/startcss.p`	Variable setup file.
`qadcss/systemunavailable.html`	Error file template for WebSpeed errors.
`qadcss/css`	Subdirectories with QAD CSS program files.
`qadcss/css/ad`	Administrative programs.
`qadcss/css/adr`	Administrative report programs.
`qadcss/css/br`	Browser programs.

Table 1.3 — *QAD CSS Components* — (Page 1 of 3)

Directory Component	Content Description
qadcss/css/ca	Feedback and FAQ programs.
qadcss/css/cc	Credit card programs.
qadcss/css/cl	License clearance programs.
qadcss/css/ext	Extend layer programs.
qadcss/css/he	Help maintenance programs.
qadcss/css/lg	Log-in programs and programs used to implement the B2C order module.
qadcss/css/lib	Common libraries.
qadcss/css/messages	Error message program for serious errors.
qadcss/css/mfg qadcss/css/qad	Programs that directly interface with QAD ERP database. /qad is for eB2, /mfg is for eB2.1 implementations.
qadcss/css/op	Order processing programs.
qadcss/css/opr	Order processing report programs.
qadcss/css/rep	Replication templates for populating items. **Note**: Catalog Load and Customer Load are the preferred methods for loading this data.
qadcss/css/sys	System programs and base report programs.
qadcss/css/tools	Utility programs.
qadcss/css/tt	Temp table definitions used with all programs.
qadcss/images	QAD CSS default images.
qadcss/images/eng	Images for the English language.
qadcss/images/*xx*	Images for non-English languages; *xx* refers to the QAD ERP language code.
qadcss/images/items	Images for items in the catalog. Initially empty.
qadcss/images/oe_icons	Images for action icons. Initially empty.
qadcss/logs	WebSpeed server logs. Empty when created.
qadcss/scripts	Java scripts used by QAD CSS.
qadcss/scripts/eng_msg	English-based JavaScript messages.
qadcss/scripts/*xx*_msg	JavaScripts for non-English languages where *xx* refers to the QAD ERP language code.
qadcss/scripts/menu	Menu JavaScripts.
qadcss/styles	Default cascading stylesheets used by QAD CSS.
qadcss/temp	QAD CSS temporary files. Empty when created.

Table 1.3 — *QAD CSS Components* — (Page 2 of 3)

Directory Component	Content Description
qadcss/temp/email	Used to process e-mail events.
qadcss/tools	Template and sample files.
qadcss/upload	Workspace for loading customers and catalogs during implementation.
qadcss/web	WebSpeed agent extension files.
qadcss/web/objects	WebSpeed files for Progress 9.1D, 9.1E, or OE10.
qadcss/web/objects.91c	WebSpeed files for Progress 9.1C.
utils_ms	Sample scripts for use on Windows systems.
utils_ux	Sample scripts for use on UNIX systems.

Table 1.3 — *QAD CSS Components* — (Page 3 of 3)

Chapter 2

Installing QAD CSS

Use the instructions in this chapter to install and configure QAD CSS on UNIX, Linux, or Windows platforms. If you are upgrading an existing QAD CSS installation to the latest release, use the instructions in Chapter 3 rather than these instructions.

Overview

Use the instructions in this chapter to install and configure QAD CSS on a UNIX, Linux, or Windows platform.

See *Implementation Guide: QAD Customer Self Service*.

Based on how you plan to use the product, you can adjust various configuration options after you begin using QAD CSS. After completing the installation and preliminary configuration process, test the new installation to verify that your QAD ERP environment communicates data correctly with QAD CSS.

Note QAD CSS is typically installed into your QAD ERP installation directory.

Set Permissions (UNIX only)

For UNIX installations, make sure the installation user has write and execute permissions for the target installation directories. QAD recommends creating a user `mfg` in the group `qad`. This should already have been done as part of the QAD ERP installation.

Running the Installation Script

1. Log on as a user that has permission to execute the installation script and update the installation directories.
2. On UNIX systems, mount the CD-ROM. On Windows, place the CD in a CD-ROM drive.

   Example UNIX commands are listed in Table 2.1.

Table 2.1 UNIX CD Drive Mount Commands

Hardware	Mount Command
Sun	`volcheck cdrom`
HP	`/etc/mount -F cdfs /dev/dsk/`*`YourCDDevice`*` /cdrom`
Digital	`mount -r -o noversion -t cdfs /dev/`*`YourCDDevice`*` /cdrom`
AIX	`smitty mountfs` Then select file system, directory, and file system type (`cdrfs`).

Hardware	Mount Command
Linux	`mount /dev/hdb /mnt/cdrom` Where `/hdb` could be `hdc` or `hdd` among other possibilities.
All others	Refer to your operating system documentation or vendor for requirements to mount a CD-ROM. You may be able to type `man mount` to determine the correct command.

Note Copying the distribution files from the CD to a temporary directory on disk can increase extraction speed.

3 Launch a command window and change directories to the `install` directory on the CD:

```
cd /install
```

4 Launch the installation script in that directory:

```
./install.ksh
```

For Windows, launch `install.exe`.

5 A welcome screen displays. Press Enter. Use Table 2.2 to enter the appropriate values for script execution.

Table 2.2
Install Script Steps

Step	User Values
License agreement	Yes
Install log file	Accept default or enter a new location and name
Create `instcss.ini`?	Yes
QAD CSS installation directory	Default is /`qadcss`
For what language?	Simplified Chinese (ch)
	Castilian Spanish (cs)
	Dutch (du)
	French (fr)
	German (ge)
	Italian (it)
	Japanese (jp)
	Latin Spanish (ls)
	Portuguese (po)
	Traditional Chinese (tw)
	English (eng)

Step	User Values
Install summary	Yes
File extraction	None
Progress directory	Your Progress install directory
Windows: icon folder name	Default is CSS 4.2.3
Script end	None

Note At the end of the script, the name and location of the installation log file display. Open the log file in a text editor to check for errors.

Creating the QAD CSS Database

QAD CSS includes the QAD installation, conversion, and configuration utility MFG/UTIL. Use this program to input several QAD CSS configuration values and to create and populate the `qadcss` database with necessary system data.

Set Up QAD CSS Environment Values

1. Launch MFG/UTIL from the *`CSSInstallDir`* using the following command:

   ```
   ./mfgutil
   ```

   For Windows, launch MFG/UTIL from the icon on the Start menu.

2. Select CSS Setup from the Configure CSS menu. Use the following screen and values to update your QAD CSS configuration.

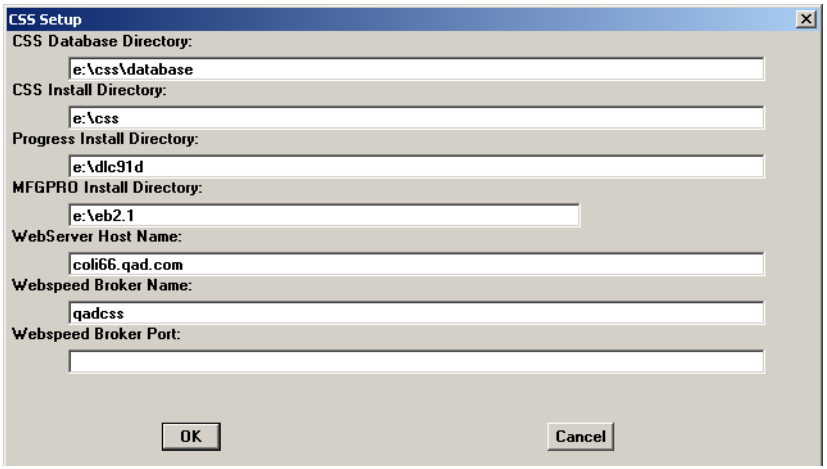


Fig. 2.1
CSS Setup Screen

Table 2.3
CSS Setup Fields

Field	Description
CSS Database Directory	This is *CSSInstallDir*`/database` by default.
CSS Install Directory	The *CSSInstallDir* defined during install.
Progress Install Directory	The Progress install directory as identified during the install.
MFG/PRO Install Directory	The *QADERPInstallDir* for the QAD ERP instance CSS will connect with.
WebServer Host Name	The server name or IP address of the Web server. This should also include a domain name. The `.qad.com` in the sample screen is the domain name.
WebSpeed Broker Name	The name of the broker you plan to use; this guide uses `qadcss` as an example.
WebSpeed Broker Port	Any available port.

3 Choose OK to save the changes.

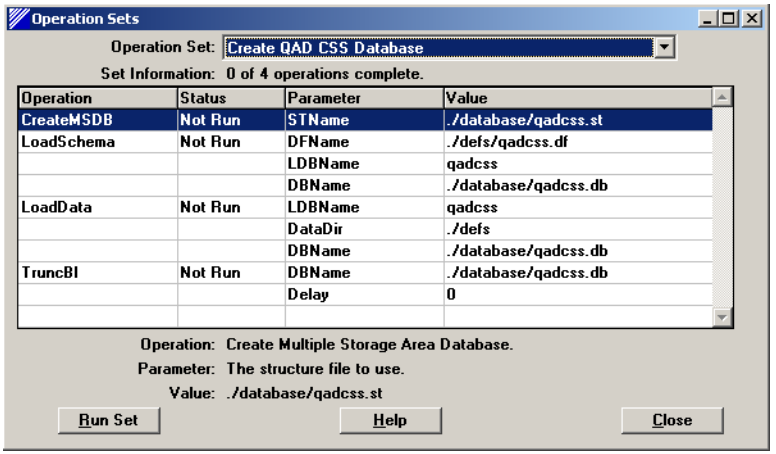
Create the QAD CSS Database

1 Remaining in MFG/UTIL, select CSS Guided Setup from the Configure CSS menu.

2 In the Operation Set drop-down list, select Create QAD CSS Database. The CSS Guided Setup steps display in the Operation screen.

3 Choose Run Set to start the set up.

Fig. 2.2
CSS Guided Setup Screen

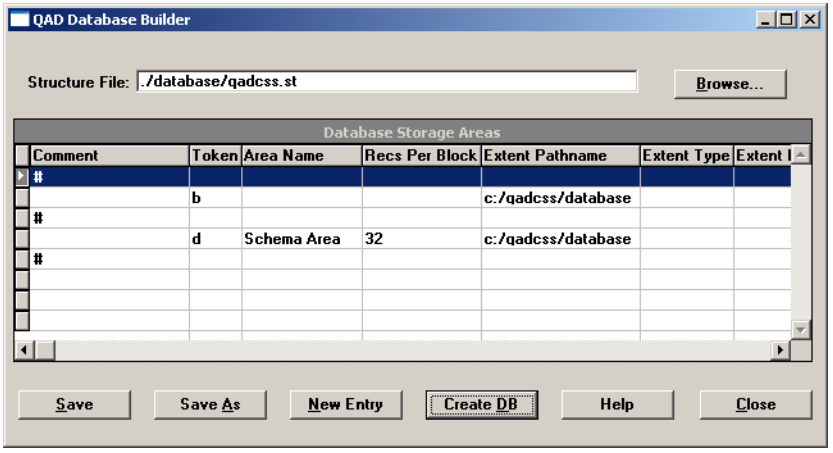


Note The CSS Guided Setup provides standardized steps and default values for QAD CSS database creation and the loading of schema and data. Choosing Run Set launches these steps for you. You may want to edit the default values as you proceed.

See the Progress *Database Administration Guide* for details.

4 The QAD Database Builder opens displaying the contents of `qadcss.st`. This is the `qadcss` database structure file. You can edit the structure file in this screen.

Fig. 2.3
qadcss Structure File



5 Choose Create DB to create the new database. You are then asked what database to copy to create the new database.

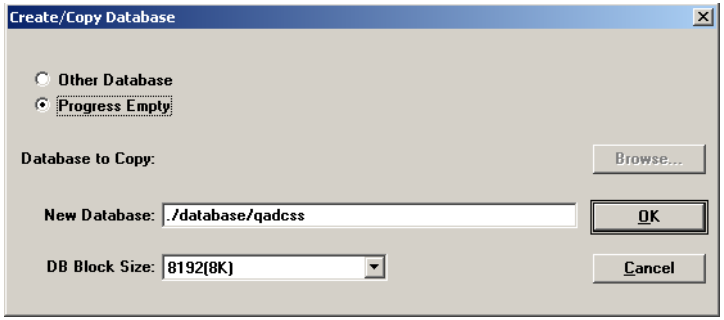


Fig. 2.4
Create/Copy the qadcss Database

6 The defaults are fine. The DB Block Size must be set to 8192(8K). Choose OK to create the database. A log window displays database creation progress. Choose Close to shut the log window and continue.

7 Once the database has been created, you are asked to connect to it.

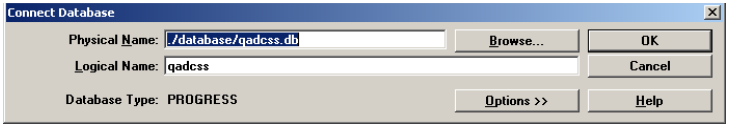


Fig. 2.5
Connect Database

8 Choose OK to connect. The Load Data Definitions screen displays.

Fig. 2.6
qadcss Load Data Definitions Screen

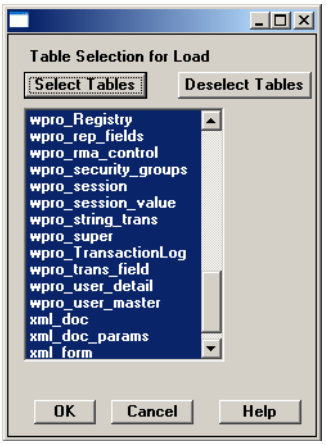
9 The correct file name and location appear by default. Choose OK. The schema loads and a log window displays the progress. Choose Close to shut the log window and continue.

10 Choose Close in the QAD Database Builder.

11 The Connect Database screen appears again. Choose OK to reconnect to the database.

12 The Table Selection for Load screen displays. Data files exist for each table displayed. The data contained in the files is system data QAD CSS requires for operation. To start the data loads, choose OK.

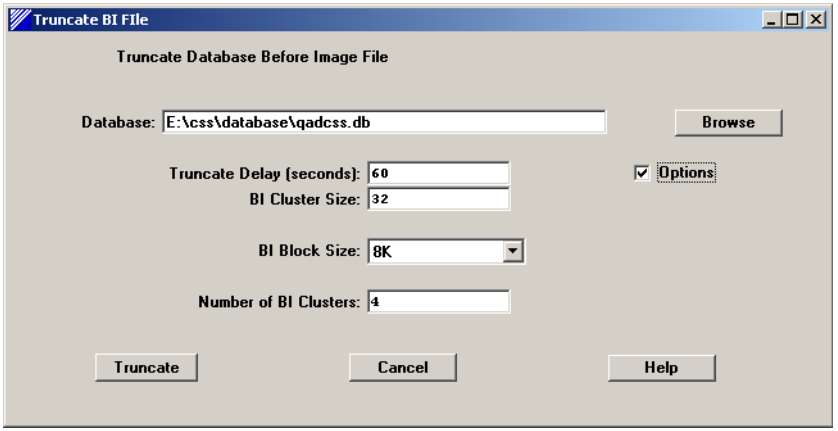
Fig. 2.7
qadcss Table Selection for Load



13 The Log Window shows load progress. Choose Close to continue.

14 The Truncate BI File screen displays with correct default values. Choose Truncate to continue.

Fig. 2.8
qadcss Truncate BI File Screen



15 Choose Close in the log window to continue. You return to the Guided Setup window with each operation marked as Done.

Load Sequence Values

One additional data file must be loaded, this time using Progress tools. The following instructions are for Windows tools. If you use a character interface, the instructions are the same with one exception: Progress calls the Data Administration tool in Windows the Data Dictionary in character.

1 From MFG/UTIL, select Progress Editor from the File menu.

2 In the Editor, choose Data Administration from the Tools menu.

3 In the Data Admin tool, select Connect from the Database menu. In the Connect Database screen, locate your `qadcss` database, and choose OK.

4 Select Sequences Current Values from the Load Data and Definitions submenu on the Admin menu.

Important In the Load Sequence Current Values, even if the correct file name `_seqvals.d` appears, use the Files button to correctly locate and select the file as shown.

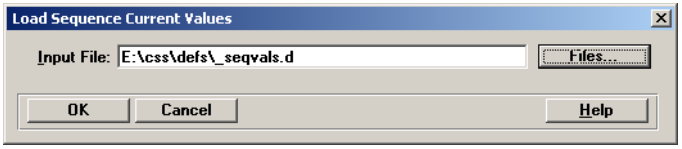


Fig. 2.9 Load Sequence Current Values Screen

5 Choose OK to complete the load.

6 After the load, select Disconnect from the Database menu. You are asked to confirm. Choose Yes to continue.

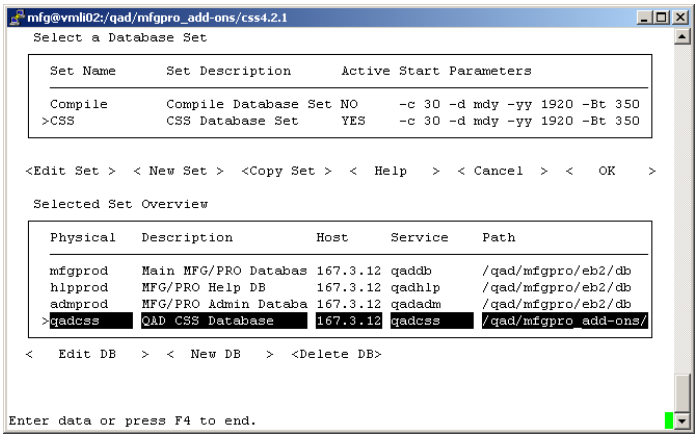
7 Exit the Admin tool and the Procedure Editor using the File|Exit menu options.

Generate Database Scripts

Use the following steps to generate scripts for starting and stopping QAD CSS and QAD ERP databases.

1. In MFG/UTIL, choose Database Set Maintenance from the Configure CSS menu.
2. In the Database Set Configuration screen, review the configurations of the qadcss database and QAD ERP databases in the CSS database set. Choose Edit DB to modify the configurations if necessary.

Fig. 2.10
Database Set Configuration



3. When finished, choose OK to save the settings.
4. Choose Generate Scripts from the Scripts menu.
5. In the Server Script Creation screen, select CSS database set and choose OK.

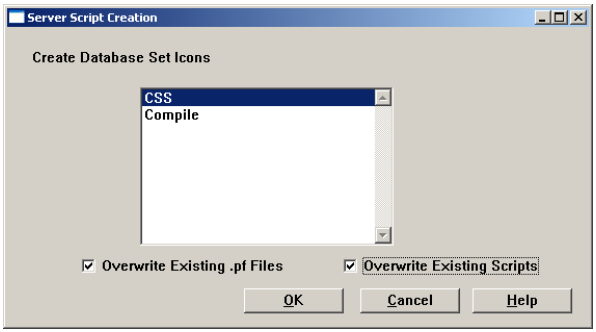


Fig. 2.11 Server Script Creation

6 When prompted to confirm, Choose Yes.

7 When script creation is complete, choose Close.

8 The `start.CSS` and `stop.CSS` server scripts file are generated.

Note You can also manually create the database scripts. Example scripts for starting and stopping databases are included in the following directories:

- `utils_ms`: utilities formatted for use with Windows
- `utils_ux`: utilities formatted for use with UNIX and Linux

Examples of database start and stop scripts include:

- `startdb`

```
DLC=ProgressInstallDir; export DLC;

$DLC/bin/proserve CSSDbDir/qadcss -L 1000 -B 5000
-S qadcssDB -N TCP;
```

- `stopdb`

```
DLC=ProgressInstallDir; export DLC;

$DLC/bin/proshut CSSDbDir/qadcss -by
```

If a TCP connection is used, QAD recommends that the port number be documented in the `services` file. This is usually `/etc/services` on UNIX systems, `C:\winnt\system32\drivers\etc\services` on Windows. See the server documentation for information.

See Chapter 5, “Starting Up and Shutting Down,” in the Progress *Database Administration Guide and Reference* for details.

The following are example entries in the `/etc/services` file:

```
#EXAMPLE ENTRY:
# <service_name>      <portnumber/protocol>  #<description>
qadcss                5660/tcp               # QAD CSS DB
mfgprod               5661/tcp               # QAD ERP Main DB
mfgadmin              5662/tcp               # QAD ERP Admin DB
mfghlp                5663/tcp               # QAD ERP Help DB
```

Starting the Database Server

The QAD CSS database needs to be run in multi-user mode to allow connections from multiple WebSpeed agents. Depending on the server configuration and Progress and WebSpeed versions used, a TCP connection to the database may be required.

Important Make sure you execute this sequence successfully. The QAD CSS database must be started before you continue with the installation procedure.

Start the Database on UNIX

Launch the database startup script you generated in previous steps.

The following output is produced when the database is started using the sample `start.CSS` script:

```
./start.CSS

PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005
17:53:19 BROKER  0: Multi-user session begin. (333)
17:53:19 BROKER  0: Begin Physical Redo Phase at 320 . (5326)
17:53:20 BROKER  0: Physical Redo Phase Completed at blk 435 off
3894 upd 6970. (7161)
17:53:21 BROKER  0: Started for qadcssDB using TCP, pid 24729.
(5644)
```

Start the Database on Windows

Start the database servers on Windows in the Progress Explorer.

Depending on your specific Progress version, system configuration, and operating system, the Progress Explorer navigation and display layout may differ slightly from the following instructions. Refer to the Progress Explorer online help for detailed help.

1 Verify that the AdminServer process is running.

- If the software is located on a Windows server, open a command window and enter the following:

  ProgressInstallDir\bin\proadsv -query

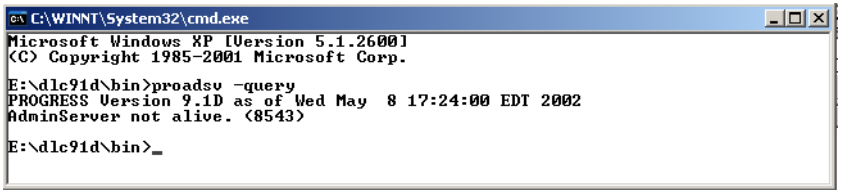


Fig. 2.12 Dead Admin Server Message

  If the AdminServer is not running, open Settings|Control Panel|Services from the Windows Start button. Then, select the AdminService for Progress 9.1 and click Start.

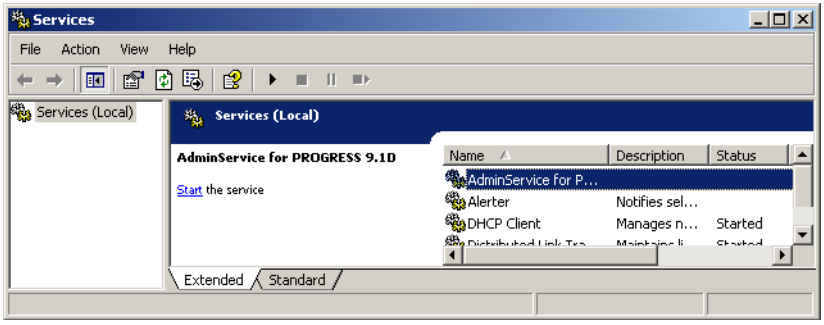


Fig. 2.13 Starting the Admin Server in the Windows Services Manager

- If the software is located on a UNIX server, run the following command on that server:

  ProgressInstallDir\bin\proadsv -query

If the AdminServer is not running, start it using the following command:

```
ProgressInstallDir\bin\proadsv -start
```

2 From the Windows Start menu, select Programs|Progress|Progress Explorer Tool.

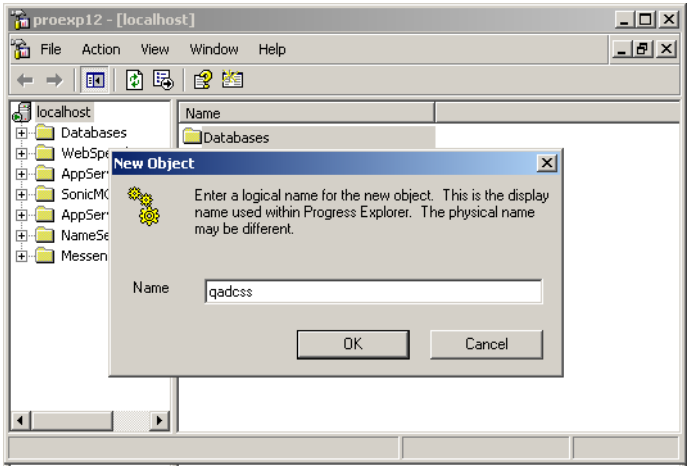
The localhost AdminServer and any others defined on your system display.

3 Verify that the correct AdminServer is on the list. (If the AdminServer is on the system from which you are running Progress Explorer, it is shown as localhost.) If the correct server is not on the list, consult the Progress documentation for instructions on adding a new server service.

4 Right-click the server where QAD CSS is installed and select Connect. Enter the user ID and password to administer the service; by default this is the user's log-in ID and blank.

5 Right-click Databases in the right window and select New. Enter the name for the database as `qadcss` and click OK.

Fig. 2.14
Adding the qadcss Database



6 Database Properties displays. Enter the complete path to the QAD CSS database in *`CSSDbDir`* and click OK.

Note The `.db` extension for the database file is not required.

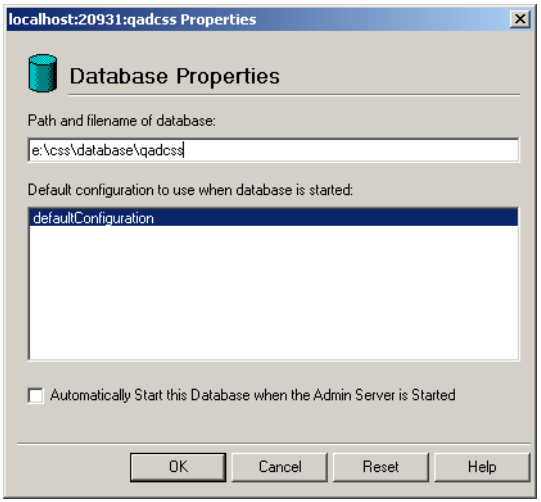


Fig. 2.15
Database Properties

7 In the left window, expand the service, the database just created, the configuration, and defaultConfiguration.

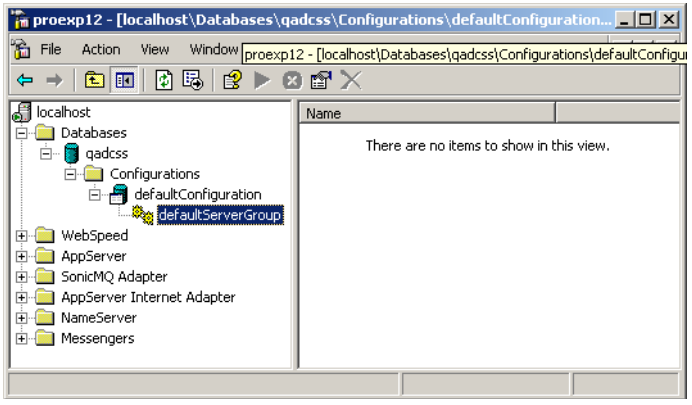
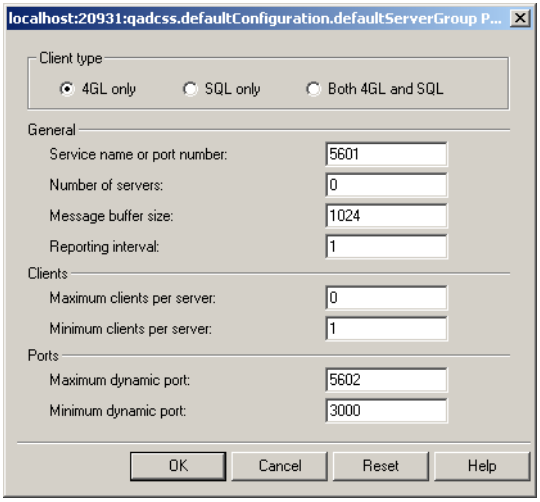


Fig. 2.16
Expanding Configuration Node

8 Right-click defaultServerGroup and choose Properties. In the dialog box:

- **a** Select 4GL Only.
- **b** Enter a free service port number in the Ports section. (If necessary, contact the system administrator for a number.)
- **c** Click OK.

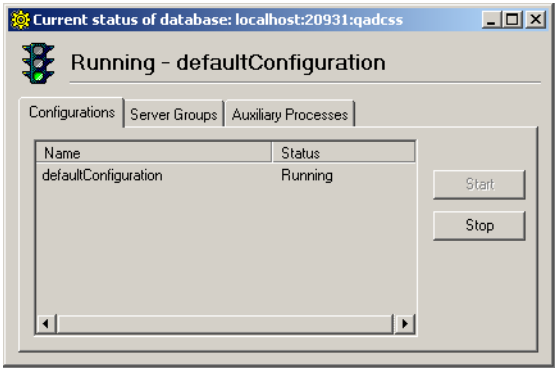
Fig. 2.17
Database Configuration Properties



9 Right-click the database name in the left window and choose Start.

10 Right-click the database again and choose Status. The database should be running.

Fig. 2.18
Database Running



Setting Up WebSpeed

This section describes how to create a new WebSpeed broker for QAD CSS. If you are installing on Windows, use the Progress Explorer. If you have a Windows machine network-connected to the Unix server, also use the Progress Explorer, since the method is easier and less error-prone.

For UNIX-only systems, follow the steps in “Set Up the WebSpeed Broker on UNIX” on page 39.

This procedure assumes you are installing all QAD CSS components on one server. In a multi-tier installation, you may need to install the WebSpeed messenger on the Web server.

See “Install and Configure WebSpeed Messenger” on page 48.

Note Information on other WebSpeed administrative utilities is included in “Administering WebSpeed” on page 54.

Set Up the WebSpeed Server on Windows

Additional Resource: Review the “Configuring WebSpeed on Windows” chapter in the Progress *WebSpeed Installation and Configuration Guide*.

This section provides instructions for setting up the WebSpeed Server instance using the Progress Explorer, which runs on Windows machines only. You can use these instructions to set up:

- A Windows server
- A UNIX server using a network-connected Windows machine

In the following instructions, use the Progress Explorer to modify the WebSpeed section of the `ubroker.properties` configuration file. This file is located in the `properties` subdirectory below the Progress installation directory.

1. Make sure the AdminServer is started.
2. Start the Progress Explorer from the Windows Start button. The Progress Explorer window displays.

3 If you are configuring a remote machine, use the following instructions to add an icon for the remote machine to the Progress Explorer. If you are configuring the Progress servers for this machine, use the localhost icon.

a Click on Progress Explorer and then select Action|Add Progress Server. The Server Properties window displays.

b Complete the General tab in the Server Properties window using the following table as a guide:

Field	Description
Server	Enter the machine name of the server you want to configure.
User	Enter the user name under which you want to log in to the remote machine. If you are configuring a remote UNIX machine, log in as a user with root-level permissions. If you are configuring a remote Windows machine, log in as a user with administrator permissions.
Password	Enter the password for the user that you are using to log in to the remote machine.

c Click OK to continue.

4 In the Progress Explorer window, right-click the server icon for the machine on which you want to configure the WebSpeed server instance. Choose Connect.

5 If you are configuring a remote machine, you are prompted for a user name and password. Use the same name and password that you specified in step 3.

The Progress Explorer connects to the AdminServer process running on the machine where you are configuring the WebSpeed instance. A connection is indicated by a green arrow in the machine icon.

Set Up the WebSpeed Broker

1 Once you have connected to the remote or localhost server machine, click on the server name. Several folders display. Right-click the WebSpeed folder and choose New.

2 In the New Object window, enter the name you want to use for the WebSpeed broker. The following instructions use `qadcss` as an example.

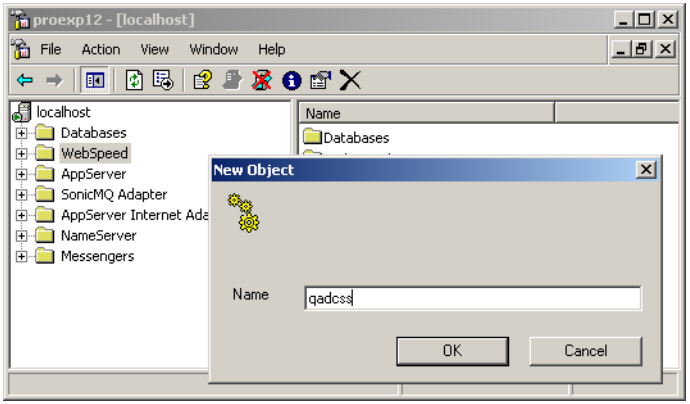


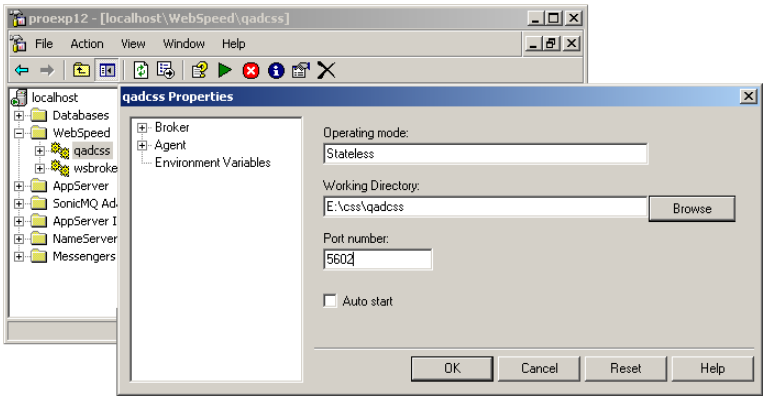
Fig. 2.19 Adding a WebSpeed Broker

When ready, click OK to continue.

3 Expand the WebSpeed directory; right-click the broker that was just created and choose Properties. A Properties dialog box displays.

- **a** For Working Directory, click Browse and select the *`CSSInstallDir`*`\qadcss` directory.
- **b** Enter a free port number (verified as available by the system administrator).
- **c** Leave the Operating Mode set to Stateless and Auto start set to No.

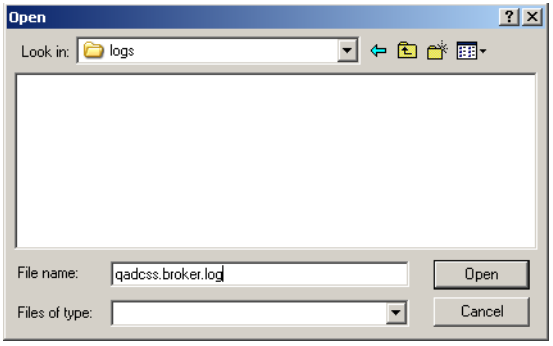
Fig. 2.20
WebSpeed Broker Properties



4 Still in the Properties screen, expand the Broker by clicking its name in the left side of the Properties window and select Logging Setting to display a new set of options:

a Click Browse to find the `logs` directory under the *`CSSInstallDir`*`\qadcss`. Select the `logs` directory and in the Open dialog box, enter the file name *`BrokerName`*`.broker.log`.

Fig. 2.21
Entering the Broker Log File Name



b Click Open.

c Choose Error Only in the Broker logging level drop-down list.

d Uncheck Append to broker log file.

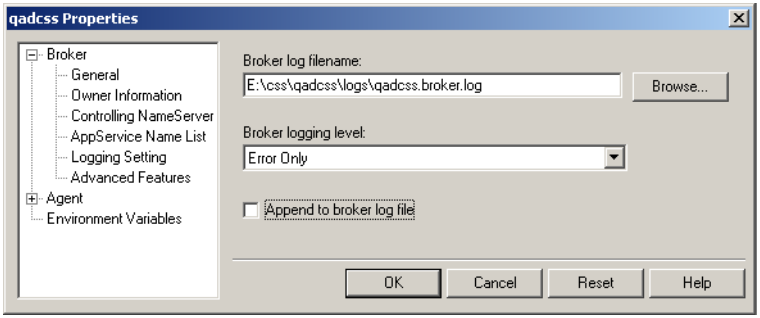


Fig. 2.22
Broker Log Settings

5 Remaining in Properties, if you are not using the NameServer, click ControllingNameServer under the Broker. In the NameServer properties, uncheck Register with NameServer.

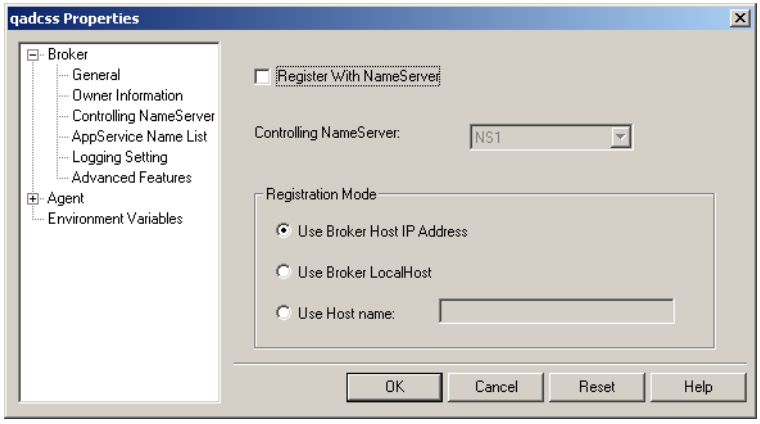
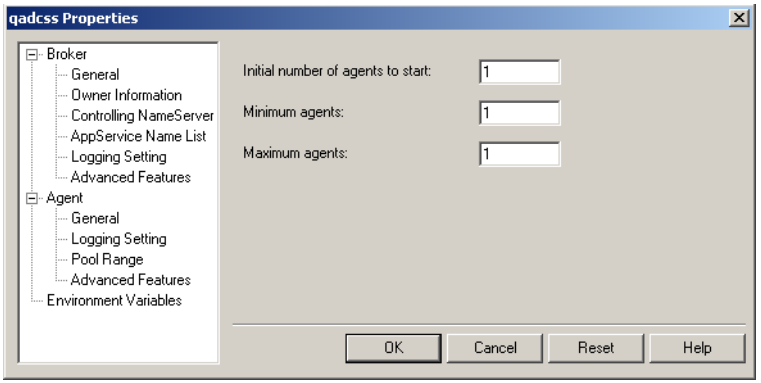


Fig. 2.23
Unregistering the NameServer

6 In Properties, expand Agent, select Logging Setting, and repeat step 4, specifying *`BrokerName`*`.server.log` as the file name.

7 Click Pool Range under the Agent section. Set each value to 1 and click OK.

Fig. 2.24
Pool Range Settings



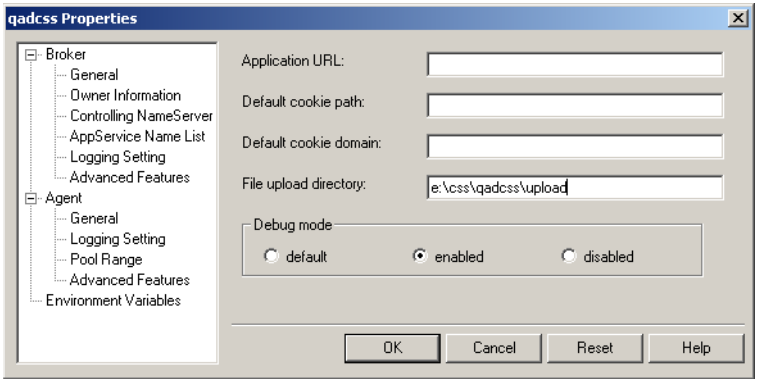
See “Register Your Serial Number” on page 64.

Note After you register your QAD CSS clearance code, return to this section and update the pool settings based on the licensed number of agents.

8 In the Properties screen, select Advanced Features under Agent, and enter the File Upload Directory. The path should be:

`CSSInstallDir``\qadcss\upload`

Fig. 2.25
Entering the File Upload Directory



9 Choose OK to complete the configuration.

10 Choose File|Exit to exit the Explorer tool.

Set Up the WebSpeed Broker on UNIX

The next step generates a WebSpeed broker for your QAD CSS implementation. This broker maintains the connection between your QAD CSS and QAD ERP applications. The broker definition is added to the Progress `ubroker.properties` file. The first step is to generate a sample broker definition that you can edit and append to the original file.

1 In MFG/UTIL, select Generate Sample ubroker.properties File from the Configure CSS menu. The generate screen displays.

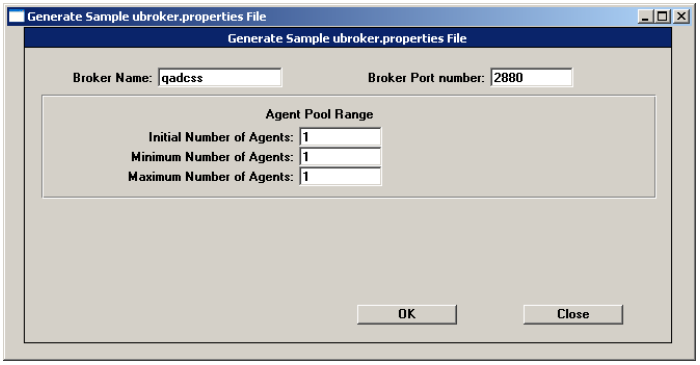


Fig. 2.26 Sample ubroker Screen

2 Accept the defaults except for the broker port number. Enter a valid port number that is not in use.

Note Leave the agents all set to 1. Later, after implementation, you will need to reset these to the number of agents needed for your production environment.

3 Choose OK to generate the sample. A message displays showing the path and file name for the sample file. The file is written to:

`CSSInstallDir``\qadcss-ubroker.properties`

The file should look something like the following:

```
[UBroker.WS.qadcss]
    appserviceNameList=qadcss
    brokerLogFile=CSSInstallDir\qadcss\logs\qadcss.broker.log
    srvrLogFile=CSSInstallDir\qadcss\logs\qadcss.server.log
    description=qadcss
    environment=qadcss
    controllingNameServer=NS1
    portNumber=3601
    PROPATH=CSSInstallDir\qadcss
    uuid=6fcd1c8e29b18fd3:55af5:ff79d89dd3:-8000
    workDir=CSSInstallDir\qadcss
    fileUploadDirectory=CSSInstallDir\qadcss\upload
    defaultService=0
    groupName=
    initialSrvrInstance=1
    maxSrvrInstance=1
    minSrvrInstance=1
    srvrAppMode=Development
    srvrDebug=Disabled
    srvrLoggingLevel=1
    srvrLogAppend=0
    brkrLogAppend=0
    brkrLoggingLevel=1
    userName=
    srvrStartupParam=-p web\objects\web-disp.p -weblogerror
    -pf CSSInstallDir\qadcss\qadcss.pf
    #
```

4 The original `ubroker.properties` file is located in your *`ProgressInstallDir`*`\properties`. Make a backup of the original and open the original.

5 Cut and paste or copy the sample text into the original `ubroker.properties` file on the line following the `[UBroker.WS]` definition.

Note For a multi-tier installation, two additional lines are needed. Add these at the end of the file:

```
RegistrationMode=Register-HostName
hostname=IPAddressofBrokerServer
```

6 Save your changes.

7 After updating the `ubroker.properties` file, restart your NameServer using the following commands.

```
nsman -i NS1 -stop

nsman -i NS1 -start
```

Configuring QAD CSS

Use these procedures to update the QAD CSS startup files; then verify that the modified files work correctly.

Modify WebSpeed Startup Files

This section describes how to modify the following WebSpeed program files to support QAD CSS:

- `web-disp.p`
- `web-util.p`

For reference, example files are provided in:

- *`CSSInstallDir`*`/qadcss/web/objects` for Progress 9.1D and 9.1E
- *`CSSInstallDir`*`/qadcss/web/objects.91C` for Progress 9.1C

Important Do not use an example file. Instead, update the files you copy from your WebSpeed implementation. This ensures that you have updated the latest version of the file if there have been other changes to it, such as a Progress service pack.

The content of the files has changed between Progress 9.1C and 9.1D. These instructions assume you are editing the files associated with 9.1D. If you are working with 9.1C, make exactly the same changes, but the file context may be slightly different.

Tip
Search for QAD CSS in the sample files to find where changes are needed.

Follow these steps to update the WebSpeed programs:

1. Copy the existing `web-disp.p` and `web-util.p` files located in the *`ProgressInstallDir`*`/src/web/objects` directory to the *`CSSInstallDir`*`/qadcss/web/objects` directory.
2. Make the following modifications to `web-disp.p` and `web-util.p` in *`CSSInstallDir`*`/qadcss/web/objects`. The changes are marked with QAD CSS MODIFICATION. Refer to the sample files if needed.

Important Do not modify the files in the Progress installation directory.

web-disp.p Modifications

```
{ src/web/method/cgiarray.i NEW } /* standard WS cgiarray.i: vars */
{ src/web/method/tagmap.i   NEW } /* standtagmap.i: TT tagmap */
{ src/web/method/webutils.i NEW }

/* Dummy variable for logical assign. */
DEFINE VARIABLE lDummy AS LOGICAL NO-UNDO.

/************* QAD CSS MODIFICATION   ***************************/
/**/ { css/lib/lib_sys_globalui.i new global }
/**/ { css/lib/lib_startex.i }
/************* QAD CSS MODIFICATION END ************************/
```

```
IF lStateAware THEN
  {&MANUAL-WSEU-INCREMENT}

/************* QAD CSS MODIFICATION   ***************************/
/**/ IF NOT startex ("qadcss.ini",yes) THEN WAIT-FOR WEB-NOTIFY OF
DEFAULT-WINDOW EXCLUSIVE-WEB-USER.
/************* QAD CSS MODIFICATION END ************************/

/* Wait for a web-request to come in */
WAIT-FOR-BLOCK:
```

web-util.p Modifications

```
&GLOBAL-DEFINE WEB-UTIL_P TRUE /* lets proto.i know where to find
functions */

{ src/web/method/cgidefs.i  } /* Basic CGI variables */
{ src/web/method/cgiarray.i } /* Extended CGI array variables */
{ src/web/method/tagmap.i   } /* Tagmap Temp-Table definition */

/************* QAD CSS MODIFICATION   ***************************/
/**/ DEFINE STREAM myrptstream.
/**/ DEFINE VARIABLE sttime AS INTEGER NO-UNDO.
/**/ DEFINE VARIABLE edtime AS INTEGER NO-UNDO.
/**/ DEFINE VARIABLE vhClean AS HANDLE NO-UNDO.
/**/ DEFINE VARIABLE vhFind  AS HANDLE NO-UNDO.
/**/ DEFINE VARIABLE isQADDBUp AS LOGICAL NO-UNDO.
/**/ OUTPUT STREAM myrptstream TO logs/runtime.log.
/**/ PUT STREAM myrptstream UNFORMATTED "LOG OPENED " TODAY SKIP.
/**/ OUTPUT STREAM myrptstream CLOSE.
/************* QAD CSS MODIFICATION END ************************/
```

```
EXECUTE-BLOCK:
 DO ON ERROR  UNDO EXECUTE-BLOCK, LEAVE EXECUTE-BLOCK
    ON ENDKEY UNDO EXECUTE-BLOCK, LEAVE EXECUTE-BLOCK
    ON STOP   UNDO EXECUTE-BLOCK, LEAVE EXECUTE-BLOCK
    ON QUIT                     , LEAVE EXECUTE-BLOCK:

/************* QAD CSS MODIFICATION   ************************/
/**/     DELETE WIDGET-POOL "exDataPool" NO-ERROR.
/**/     CREATE WIDGET-POOL "exDataPool" PERSISTENT.
/**/     ASSIGN sttime = etime.
/************* QAD CSS MODIFICATION END **********************/

/* Assumes state-aware support is on. Run run-web-object in
       web/objects/stateaware.p. */
/************* QAD CSS MODIFICATION   ************************/
/** Check whether "qaddb" database is connected, **************/
/** If it is not connected, kill standard CSS adapter super
procedures.*/
/**/
/**/ assign isQADDBUp = connected("qaddb") NO-ERROR.
/**/ if not isQADDBUp then do:
/**/ run unloadStandardAdapters NO-ERROR.
/**/ end.
/************* QAD CSS MODIFICATION END ************************/
    IF glStateAware THEN RUN SUPER (pcFileName).
     ELSE RUN VALUE(pcFilename) NO-ERROR.

/************* QAD CSS MODIFICATION   ************************/
/**/ ASSIGN edtime = etime.
/**/ OUTPUT STREAM myrptstream TO logs/runtime.log APPEND.
/**/ PUT STREAM myrptstream UNFORMATTED pcFileName " "
string((edtime - sttime) / 1000) SKIP.
/**/  OUTPUT STREAM myrptstream CLOSE.
/************* QAD CSS MODIFICATION END **********************/

    END.

/* Did the code run okay? Also trap for compiler error here,
/*since some code may run a program directly without running it
/*through run-web-object */
```

Update QAD CSS Setup Files

Edit the following QAD CSS files to make them specific to your installation:

- `qadcss.pf`
- `qadcss.ini`

Update qadcss.pf

Verify the QAD CSS startup parameter file `qadcss.pf` in *`CSSInstallDir`*`/qadcss`. It should point to the directory where the system creates temporary Progress files using the `-T` parameter. For example:

`CSSInstallDir``/qadcss/temp`

Also verify that the `-rereadnolock` parameter is set. This parameter instructs the system to read values directly from database tables rather than from stored memory. This ensures that various WebSpeed agents get the most current value when data changes. The `.pf` file should look similar to the following:

```
-TB 16
-TM 16
-rereadnolock
-rand 2
-T ./temp
-B 5000
-h 20
-c 30
-D 250
-nb 200
-s 256
-Bt 100
```

Update qadcss.ini

QAD CSS gets its database connections and PROPATH settings from a file called `qadcss.ini`. You must modify the `qadcss.ini` file to point to the correct QAD ERP databases and source code.

Note An easy way to do this is to locate the `.pf` file currently being used to log in to QAD ERP and copy the database connection statements from it to the `qadcss.ini` file.

Follow these steps to update this file:

1. Make a backup copy of the existing `qadcss.ini` file located in *`CSSInstallDir`*`/qadcss`.
2. Modify the database connections in the `qadcss.ini` file.

   Note Be sure that the first database listed is the qaddb database, and use the logical database names shown in the following example for eB2.1.

```
Database Connections  # Do not edit or remove this line.
#All database connection entries should be after this line.
-db /mfgsvr/db/eb21qad.db  -ld qaddb
-db /mfgsvr/db/eb21adm.db  -ld qadadm
-db /mfgsvr/db/eb21help.db -ld qadhelp

-db e:\qadcss\database\qadcss.db -ld qadcss
```

3 Modify the PROPATH in the `qadcss.ini` file for the version of QAD ERP you are using. This sample is for MFG/PRO eB2.1:

```
# Allow Multi Propath Entry
# All Propath entries should be after this line.
Propath   # Do not edit or remove this line.

# QAD MFG/PRO eb21 PROPATH

./
./css/mfg/eb21
./css/mfg
./css
/QADERPnstallDir/
/QADERPInstallDir/char
/QADERPInstallDir/char/us
/QADERPInstallDir/char/triggers
/QADERPInstallDir/char/xrc
/QADERPInstallDir/char/src
/QADERPInstallDir/bbi
```

Important For eB2, the required QAD CSS paths are:

```
./
./css/qad
./css/qad/qad.eb2
./css
```

If you install patches or make customizations, you should update the PROPATH to include these directories before the `qadcss` and `qadcss/css` directories.

Important Only certified QAD CSS professionals should change the product name or product version. QAD CSS may not function properly if the product name or product version entries are modified.

Test the Setup

After completing the configuration, stop and restart the QAD CSS service to make sure it works correctly.

1. Restart the QAD CSS service (in this document, qadcss) by running the stop script then the start script on UNIX systems or using Progress Explorer in Windows.

   Note View the *BrokerName.*`server.log` file in the */CSSInstallDir/*`qadcss/logs` directory to determine the startup status. Note any errors logged that prevented proper startup and correct the problem. If the broker started correctly, the following message displays:

   ```
   lib/lib_sys_adapter1.p
   ```

2. Check the *CSSInstallDir*`/qadcss/temp` directory to see if any files were generated. If so, review the most recent files with extensions `.log` and `.log.erp` to verify that log-in was successful.

Setting Up Web Servers

Each Web server may have different requirements. This section includes some steps for configuring the Apache Tomcat server and Microsoft's Internet Information Server (IIS). In addition, it includes steps for installing and configuring the WebSpeed Messenger, which is needed in a two-tier deployment.

In a multi-tier deployment, the `/images`, `/scripts`, and `/styles` directories located in *CSSInstallDir*`/qadcss` are moved to a directory on the Web server. You need to create an alias for this directory.

Important In a production environment, do not alias the full *CSSInstallDir* directory because this could create a serious security risk by making the entire source code freely available on the Web.

Set Up a Virtual Directory for Apache

Follow these steps to allow the system to access QAD CSS using an Apache Web server:

1. Locate the `httpd.conf` file in the *`WebServerDir`*`/conf` directory.
2. Locate the following section in this file:

```
Alias /icons/ "WebServerDir/icons"

<Directory "WebServerDir/icons">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

3. Add the following lines after the code section displayed in the previous step:

```
Alias /qadcss/ "CSSWebDir/"

<Directory "CSSWebDir">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

   Note In this example, *`CSSWebDir`* is a directory containing just the images, scripts, and styles.

4. Restart Apache for your changes to take effect.

Set Up a Virtual Directory for IIS

Follow these steps to allow the system to access QAD CSS using Microsoft's Internet Information Server (IIS):

1. From the Windows Start menu, select Settings|Control Panel.
2. Select Administrative Tools and then Internet Services Manager.
3. Right-click Default Web Site and choose New Virtual Directory.
4. Enter an alias name to access this Web virtual directory. Use the same naming conventions as for naming a directory; for example, qadcss.
5. Enter the path to the directory that contains the `/images`, `/scripts`, and `/styles` subdirectories.

Install and Configure WebSpeed Messenger

If you do not have a full WebSpeed installation on your Web server in a multi-tier installation, you must download and install the WebSpeed Messenger to the Web server's `cgi` directory or a directory with executable permissions for scripts and executables.

The WebSpeed Messenger provides communication links between the Web server and the WebSpeed server when the Web server resides on a different server than the WebSpeed broker and agents.

Installation

Use the following steps to download and install the appropriate WebSpeed Messenger files:

1. Download the WebSpeed Messenger executable from the Progress Web site.

   http://www.progress.com/esd/index.ssp

   Make sure you download the executable for your specific server. Additionally, download any related documentation.

2. Review the documentation provided on the download page for additional installation or server requirements information.

3. Install the WebSpeed Messenger using the installation instructions provided on the download page. Note the installation directory; during the configuration steps, you edit and copy several files in this directory.

Configure the WebSpeed Messenger

These steps assume you are configuring WebSpeed on a UNIX system. If you are installing on a Windows server, these steps also apply; the relative paths are the same. The only exception is that Windows requires the `cgiip.exe` executable instead of the `wspd_cgi.ksh` executable.

1. If your Web server is running on a UNIX server, go to the */WebSpeedInstallDir/*`properties` directory. Find `msngrs.properties`, make a copy of this file, and rename the copy `ubroker.properties`.

2. For both Windows and UNIX servers, using a text editor, open the `ubroker.properties` file in */WebSpeedInstallDir/*`properties`.

3. Find the `[NameServer.NS1]` section and add the following parameters:

```
location=remote
hostName=DataBaseServerName
```

4. Find the `[WebSpeed.Messengers.CGIIP]` section. Depending on the OS where your Web server is installed, add the following parameters; use `wspd_cgi.ksh` for UNIX or `cgiip.exe` for Windows.

```
msngrExecFile=@{Startup\DLC}\bin\wspd_cgi.ksh
    AllowMsngrCmds=1
    Host=DataBaseServerName
    Port=NameServerPortOnDBServer
    registerNameServer=1
```

5. Verify your edits and save the file.

6. Copy the WebSpeed executable from the `/dlc/bin` directory on the application server to the `cgi` directory or a directory with executable permissions for scripts and executables on the Web server.
   - For UNIX servers, copy `wspd_cgi.sh`. In the target directory, rename the file to `wspd_cgi.ksh`.
   - For Windows servers, copy the `cgiip.exe` file.

7 Go to the *ProgressInstallDir*`/properties` subdirectory on the database server. Using a text editor, open the `ubroker.properties` file for editing. Find the `[WebSpeed.Messengers.CGIIP]` section and add the following parameters:

UNIX server

```
AllowMsngrCmds=0
certStorePath=@{Startup/DLC}/certs/
controllingNameServer=YourNameServer
```

Windows server

```
AllowMsngrCmds=0
certStorePath=@{Startup\DLC}\certs\
controllingNameServer=YourNameServer
```

Verifying QAD CSS Setup

Use the procedures in this section to verify that the modifications to the setup files have been done correctly.

Start the Broker

When any modifications are made to either `web-disp.p` or `qadcss.ini`, the QAD CSS WebSpeed broker must be restarted.

Starting the Broker in Windows

In Windows environments, you can use Progress Explorer to stop and restart the broker. Right-click the QAD CSS service name under the WebSpeed subdirectory and choose the appropriate command.

1 Right-click the broker name in the left window and choose Start.

The startup process may take several minutes.

2 Right-click the broker name again and choose Status.

a On the Summary tab, confirm that the Broker Status is Active.

b On the Details tab, confirm that State is Available for all agents.

Starting the Broker in UNIX

Figure 2.27 illustrates the command and display sequence for restarting the WebSpeed broker in UNIX. The commands to start or restart the broker are based on those in the furnished example scripts, located in *CSSInstallDir*/utils_ux. In the example, they have been copied to *CSSInstallDir*.

See “Configuring QAD CSS” on page 41.

The WebSpeed broker may need some time to start. Monitor the startup process by performing a query. Check the server log for this WebSpeed environment for appropriate startup messages.

Note The WebSpeed agent must have a state of Available in order to continue with the installation.

Fig. 2.27
Sample Verification Process

```
CSSInstallDir# ./stop brokername
PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005

Connecting to Progress AdminServer using
rmi://localhost:20931/Chimera (8280)
Searching for brokerName (8288)
Connecting to brokerName (8276)
Shut down brokerName (8277)

CSSInstallDir# ./start brokername
PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005

Connecting to Progress AdminServer using
rmi://localhost:20931/Chimera (8280)
Searching for brokerName (8288)
Connecting to brokerName (8276)
Starting brokerName.  Check status. (8296)

CSSInstallDir#
CSSInstallDir# ./status brokername
PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005

Connecting to Progress AdminServer using
rmi://localhost:20931/Chimera (8280)
Searching for brokerName (8288)
Connecting to brokerName (8276)

Broker Name                    : brokerName
Operating Mode                 : Stateless
Broker Status                  : ACTIVE
Broker Port                    : brokerPort
Broker PID                     : 2740
Active Agents                  : 1
Busy Agents                    : 0
Locked Agents                  : 0
Active Agents                  : 1
Active Clients (now, peak)     : (0, 0)
Client Queue Depth (cur, max)  : (0, 0)
Total Requests                 : 0
Rq Wait (max, avg)             : (0 ms, 0 ms)
Rq Duration (max, avg)         : (0 ms, 0 ms)

PID   State     Port  nRq    nRcvd  nSent  Started    Last Change
02680 AVAILABLE 03202 000000 000000 000000 [start]  [last change]
```

Verify Database Connection

Use the following steps to access the WebSpeed Workshop and confirm that the databases are connected.

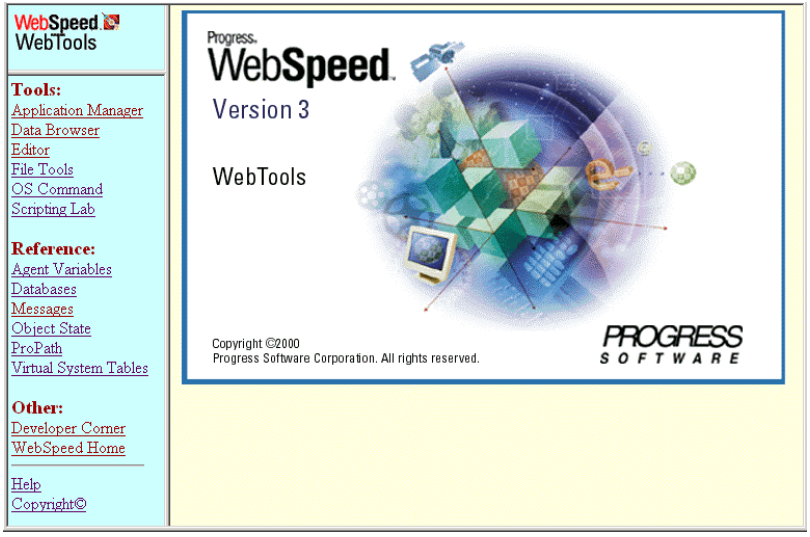
1 Using a Web browser, go to the WebSpeed Workshop by entering the following URL:

http://*webServer/webServerScriptsDirectory*/wspd_cgi.sh/WService=*brokerName*/workshop

Note The *webServerScriptsDirectory* is typically your Web server `/cgi-bin` directory.

Note In Windows environments, `cgiip.exe` is typically specified rather than `wspd_cgi.sh`.

A screen similar to the following should display.



2 Click the Databases link from the menu.

A drop-down list displays the connected databases.

Important The QAD CSS and QAD ERP database must be connected in order to continue with the installation.

Verify PROPATH

Because you must update the PROPATH as part of the configuration process, you should use WebSpeed Workshop to validate your changes.

1. From the WebSpeed Workshop, click the ProPath menu item.

   The resulting screen displays the WebSpeed PROPATH.

See "Update qadcss.ini" on page 44.

2. Confirm that these values match the entries in the `qadcss.ini` file.

Administering WebSpeed

To help ease the task of WebSpeed/QAD CSS administration, the installation CD provides example scripts, demonstrating how to start, stop, and monitor the WebSpeed brokers and AdminServer. The files are in the following directories:

- `utils_ms`: utilities formatted for use with Windows
- `utils_ux`: utilities formatted for use with UNIX and Linux

Example scripts include:

- `startadm`

  ```
  DLC=ProgressInstallDir; export DLC
  $DLC/bin/proadsv -start
  ```

- `start`

  ```
  DLC=ProgressInstallDir; export DLC
  $DLC/bin/wtbman -i brokerName -start
  ```

- `stop`

  ```
  DLC=ProgressInstallDir; export DLC
  $DLC/bin/wtbman -i brokerName -stop
  ```

- `status`

  ```
  DLC=ProgressInstallDir; export DLC
  $DLC/bin/wtbman -i brokerName -query
  ```

For more information on testing a WebSpeed configuration, see Chapter 8.13, "Testing Your Configuration," in the Progress *WebSpeed Installation and Configuration Guide*.

For more information on `proadsv` or `wtbman`, see Chapter 8.2.3, "WebSpeed Command-Line Utilities," in the Progress *WebSpeed Installation and Configuration Guide*.

Generating a WebSpeed Error File

You now create a text file that redirects WebSpeed errors to a URL.

When the QAD ERP server has gone down for some reason, QAD CSS can still be used as a stand-alone product. However, when a buyer attempts to check-out, a message will appear that the system is currently unavailable. The text file substitutes a user-friendly message that the system is unavailable for the WebSpeed error that would normally display.

These steps create a text file, `wsCusErr.txt` in the QAD CSS install directory. After the text file is created, you must manually move it to the working directory used by the Progress CGI script.

1. Launch MFG/UTIL.
2. Select Generate WebSpeed Custom Error File from the Configure CSS menu. Use the following screen and values to create the custom error message.

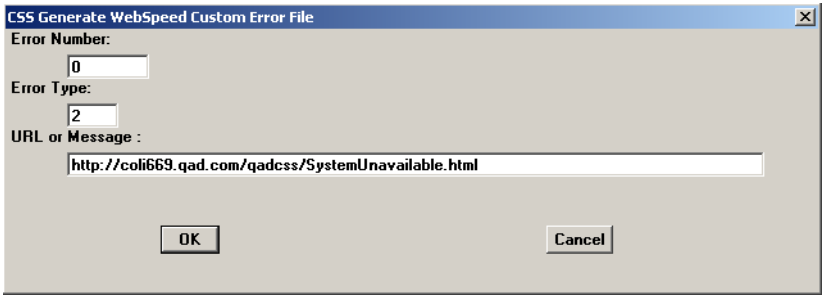


Fig. 2.28 Generating a Custom WebSpeed Error File

Leave the Error Number set to 0 and the Error Type set to 2. The URL should contain the QAD CSS host name and domain (coli669.qad.com in the example), the QAD CSS install directory (`qadcss`), and the `SystemUnavailable.html` page. This should all default in.

Note The host name and domain can include the Web server port number as well, as in coli669.qad.com:9999.

3. Choose OK to save your changes. The file is saved to your QAD CSS install directory.

4. Copy or move the file to your Progress work directory (WRKDIR); for example, `c:\wrk` in Windows or `/dlc/wrk` on UNIX.

Compiling QAD CSS Source Code

Follow these steps to compile the QAD CSS source code from the WebSpeed Workshop:

1. Using a Web browser, go to the WebSpeed Workshop by entering the following URL:

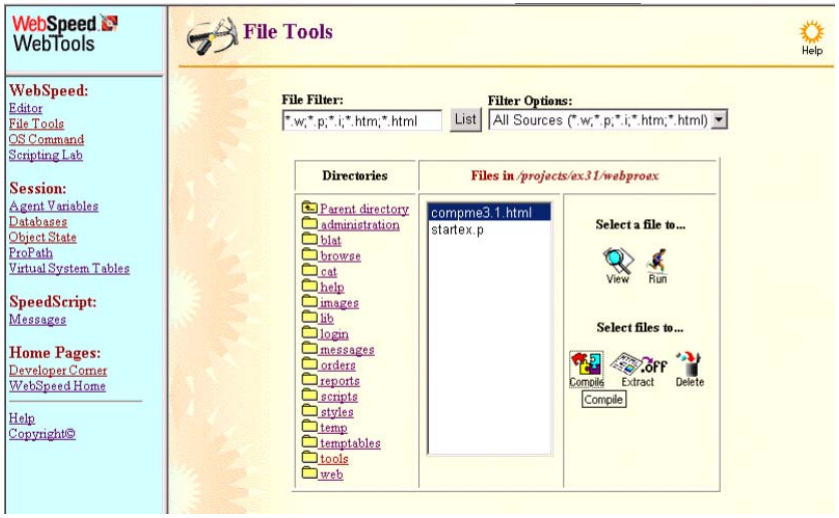
   http://*`webServer/webServerScriptsDirectory`*/wspd_cgi.sh/WService=*`brokerName`*/workshop

   Note The *`webServerScriptsDirectory`* is typically your Web server `/cgi-bin` directory.

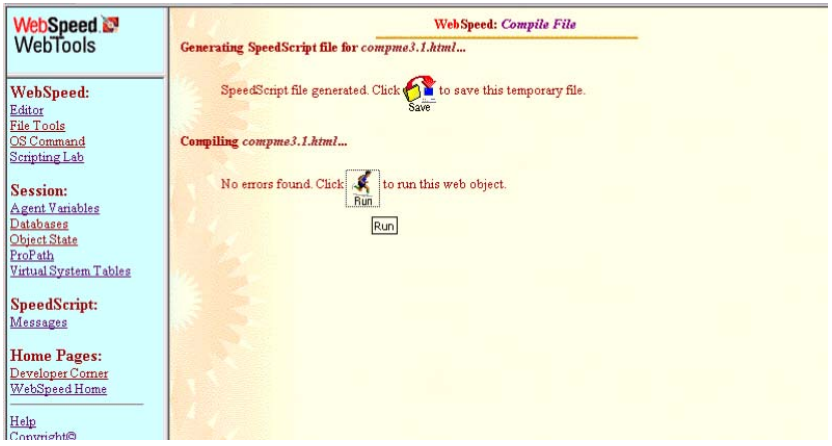
   Note In Windows environments, `cgiip.exe` is typically specified rather than `wspd_cgi.sh`.

2. Select File Tools from the menu on the left.

3. Compile `compme3.1.html` in the WebSpeed Workshop.



4 Run `compme3.1.html` from the post-compilation dialog.



5 In Filter, enter `.html`. Highlight all files to be recompiled and click Compile.

Note Do not compile the `.html` files in the `tools` directory, such as `rp_rpt_template.html`. These files are intended to be used as samples for creating your own programs and contain code that may cause compile errors.

Typically, you compile the `.html` files only. When you are ready to move to a production environment, you can also compile the program files (`.p`). However, since these are loaded persistently, compiling them does not improve performance significantly.

The compilation process may take a few minutes.

6 Compile the two .w files in *`CSSInstallDir`*`/qadcss/css/cl/`. In Filter, enter .w. Highlight all files to be recompiled and click Compile.

Setting Up QXtend Inbound

1 Make sure QXtend is correctly installed.

Note For detailed information about installing and configuring QXtend Inbound, see *Technical Reference: QAD QXtend*.

2 Log in to QXtend Manager.

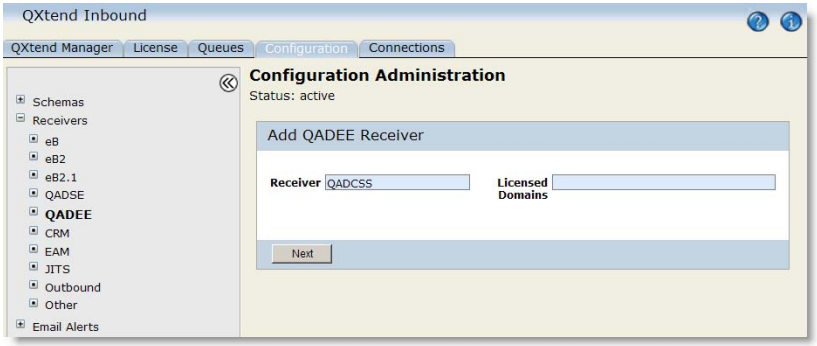
3 Go to Configuration Manager and create a QADEE receiver for QAD CSS.

a In Configuration Manager, click QADEE under Receivers.

b In the Configuration Administration pane, click Add.

c Select Continue Configuration update without suspending QXtend Inbound and click Submit.

d Enter a receiver name and leave Licensed Domains blank; then click Next.



e From the Standard APIs list, select the following record and then click Done.

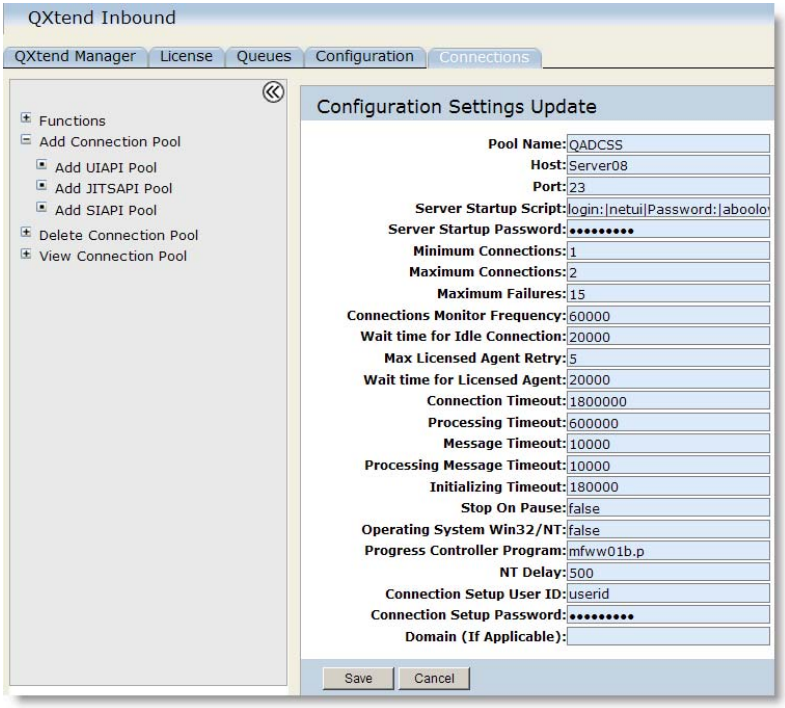
QdocName	XML Syntax	Version	Route	Procedure	Event
maintainCustomerData	Qdoc 1.1	ERP3_1	UI API Adapter	adcsmt.p	adcsmt-ERP3_1.xml

f A summary page is displayed. The receiver has been successfully added.

4 Go to Connection Pool Manager and create a UIAPI connection pool for the receiver just created.

a In Connection Pool Manager, click Add UIAPI Pool under Add Connection Pool.

b Enter the appropriate configuration settings and click Save. For detailed field descriptions, see *Technical Reference: QAD QXtend*.



Completing Installation Setup

This section describes other tasks required to complete the installation and configuration of QAD CSS. Use these instructions to:

- Set up directory paths to support a number of administrative functions.
- Set up system and order control maintenance features.

Set QAD CSS Directory Paths

See the "System Control Maintenance" section in *Administration Guide: QAD Customer Self Service* for more information.

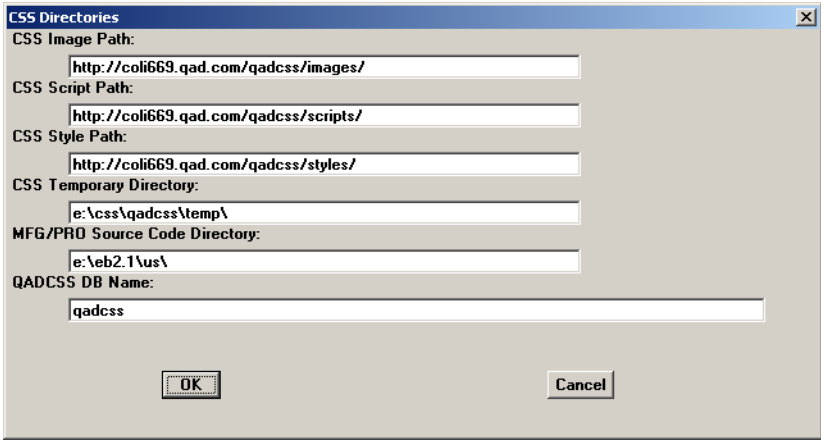
Before you can access the QAD CSS database, you must verify your system variables. Later, these variables can be changed from administrative functions on the QAD CSS menu.

Use MFG/UTIL to set up paths for several images, scripts, and styles directories.

Note If you did not exit from Progress Explorer in step 10 on page 38, do so now; otherwise, the connect will fail.

1. Start MFG/UTIL and choose Progress Data Dictionary from the Database menu to connect to your QAD CSS database.
2. In MFG/UTIL choose Configure CSS|Set Directory Paths.

Fig. 2.29
Set Directory Paths Screen



3. Accept the defaults or enter corrected values for the CSS paths.

Image Path. The virtual directory on the Web server where the QAD CSS images reside. For example, this directory can be defined as:

- An absolute URL, such as http://www.server.com/qadcss/images/
- A relative URL, such as /qadcss/images/

Script Path. The virtual directory on the Web server where the QAD CSS JavaScript files reside. For example, this directory can be defined as:

- An absolute URL, such as http://www.server.com/qadcss/scripts/
- A relative URL, such as /qadcss/scripts/

Style Path. The virtual directory on the Web server where the QAD CSS HTML style sheets reside. For example, this directory can be defined as:

- An absolute URL, such as http://www.server.com/qadcss/styles/
- A relative URL, such as /qadcss/styles/

Temporary Directory. The directory identified in your `qadcss.pf` file by the `-T` parameter.

MFG/PRO Source Code Directory. The location of QAD ERP compiled code.

QADCSS DB Name. The QAD CSS database name. No extension is required.

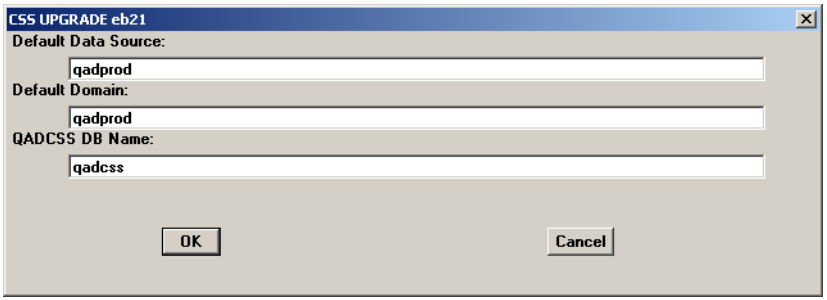
Choose OK to save any changes and write the directories to WebSpeed.

Set the Default Data Source

If you are implementing QAD CSS with Standard Edition (or eB2.1), you must define a default data source in order to allow the initial system user to log in to the system.

1. If you exited MFG/UTIL in the previous step or are not already connected to your QAD CSS database, start MFG/UTIL and choose Progress Data Dictionary from the Database menu to connect.
2. In MFG/UTIL, choose Assign Default Data Source|Domain from the Configure CSS menu.

Fig. 2.30
Defining the Default Data Source



3 Enter a valid domain from your eB2.1 installation and enter an equivalent data source for QAD CSS.

4 Choose OK to save the changes.

Configure Settings in QAD CSS

Use this section to configure a number of settings within the QAD CSS application.

1 Restart the WebSpeed agents.

2 Using a Web browser, enter the following URL to connect to the log-in page of QAD CSS:

http://*webServer/webServerScriptsDirectory*/wspd_cgi.sh/WService=*brokerName*/lg/lg_login.html

Note In Windows environments, `cgiip.exe` is typically specified rather than `wspd_cgi.sh`.

3 To log in, specify the default user ID and password, `demo` and `demoex`, respectively. At log-in, you will be prompted to change the password for user `demo`.

Update System Control Settings

1 From the menu, select Administration|System Control|System Control.

2 Review the options to determine which should be changed to optimally configure the QAD CSS application. Initially, you can accept all defaults. However, note the following fields:

- Temp Directory should reflect the appropriate path to the `/temp` directory that will be used by the application.
- Select Extend to ERP to enable communication with the QAD ERP database.
- Enter the correct QAD CSS receiver name and URL for communicating data to QAD ERP through QXtend Inbound. For example, if the receiver name is css_rev, set the receiver URL as the QDoc Web Service configured in QXtend, such as follows:

  ```
  http://167.3.129.36:8080/qxi1.6/services/
  QdocWebService
  ```

Update Registry Settings

Use System Registry Maintenance to specify a user ID and password that let QAD CSS access QAD ERP.

1 From the menu, select Adminstration|System Registry Maintenance.

2 Update these registry values used when logging in to QAD ERP:

- QADUser, by default mfg
- QADUPasswd, by default blank
- QADUDomain, by default blank (required for eB2.1 only)

a Enter QADUser in the Search for field and click Search.

b Click the QADUser key to display the Detail Registry Editor.

c By default, this field is set to mfg. If this is not a valid user in the QAD ERP system you will be accessing, change it now.

d Repeat these steps for QADUPasswd to secure this user with a password.

Important You must also set up the same user ID with the same password in QAD ERP User Maintenance (36.3.18, 36.3.1 in eB2.1). Make sure that you have a process in place to update the password for this user within the expiration date, if this security feature is being enforced. If the password prompt displays during log-in, the integration to fail.

e Repeat again for QADUDomain, entering the default data source set up in “Set the Default Data Source” on page 61.

See *Implementation Guide*: *QAD Customer Self Service*.

The system registry also includes numerous other settings that control how you use QAD CSS.

3 Update the value for the directory where JavaScript messages are stored.

a Enter js in the Search for field and click Search.

b Click the jsmsgDir key to display the Detail Registry Editor.

c Change the Key Value to *`CSSInstallDir`*`/qadcss/scripts`.

Note In a multi-tier installation, when the Web server is a Windows server and the application server is on UNIX or Linux, you need to specify the `scripts` directory on the Web server.

d Click Save, then click Home.

Generate Messages

1 From the menu, choose Administration|Messages|Error Message.

2 Click the Generate button on the left side. This will compile a JavaScript file containing messages required by the system.

Note During use of the application, you need to do this whenever you add a new message of type JS or support for a new language.

3 Click Home to return to the main menu.

Register Your Serial Number

1 Choose Administration|System Control|QAD CSS Clearance Code.

2 Enter the customer name as it appears on the license page included in your product package.

3 Enter the serial number as it appears on the license page.

4 Click submit. You are redirected to a secure server URL for registering your product. Depending on how your browser is configured, you may see several messages about security.

5 Click Yes to accept the terms of the license agreement.

6 The QAD CSS Clearance Code screen redisplays with information about your license, including the number of WebSpeed agents and the QAD CSS modules. Click Update to accept this information.

7 Leave QAD CSS running; you will return to the menu in the next procedure.

Update QAD ERP for Credit Card Processing

If you plan to implement credit-card processing, you must update your QAD ERP installation with several programs and data files. The required files are included on the QAD CSS installation media in QAD ERP version and service pack-specific directories. For example, if you are using MFG/PRO eB2 SP9, use the files in *CSSInstallDir*/MFGPRO/eB2/SP9.

Note Make sure JRE 1.4 or later is installed before applying the patch. JRE can be downloaded from www.java.com.

For complete details on implementing credit-card processing, see the chapter on B2C order processing in *Implementation Guide: QAD Customer Self Service.*

To implement these changes, follow the steps to compile programs and load data files; then update the VeriSign initialization file.

Compile Programs and Load Data

1 Locate the files for your QAD ERP release and service pack on the CD.

2 Copy the files to your *QADERPInstallDir*.

3 Compile the updated program files:

   a Create a text file named `csscomp.wrk`. It should contain a listing of the `.p` files you copied.

   b Start MFG/UTIL and use the `csscomp.wrk` compile list to compile the new files into destination directory *QADERPInstallDir*`\xrc`.

c Move the following compiled files into their correct directories.

Move	To
`gpccvs.r`	*`QADERPInstallDir`*`/us/gp`
`ncpm.r`	*`QADERPInstallDir`*`/us/nc`
`soivccpy.r,sososl.r, soipst1.r,soccmt.r,sosoba.r`	*`QADERPInstallDir`*`/us/so`
`rcshwbc2.r`	*`QADERPInstallDir`*`/us/rc`

4 Load updated data files:

a When the compile completes, choose Database|Load Data into Database.

b Connect to the admin database and choose OK. Locate the two data files you copied from the QAD CSS CD: `lbl_mstr.d` and `lbld_det.d`.

c When the tables display, make sure both are selected and choose OK. Press spacebar to close the window when the load completes and exit MFG/UTIL.

Configure the VeriSign Initialization File

QAD ERP reads settings you define in the VeriSign initialization file (`verisign.ini`) to determine how to handle credit card transactions during invoice post. This file must be located in the QAD ERP PROPATH. Similar settings are defined in QAD CSS in Credit Card Vendor Code Maintenance.

Important You must ensure that the settings in the two places are the same or errors may occur while processing credit card orders.

Here is a sample `verisign.ini` file.

```
[Verisign]
VendorHost=pilot-payflowpro.paypal.com
VendorPort=443
TimeOut=30
Partner=VeriSign
Vendor=QADCSS
User=QADCSS
Password=123
VendorUrl=/transaction
CssJarHome=/qad/mfgpro/93/csu/cust/payflowpro/linux
JavaRunnableWithPath=/users/johndoe/jdk1.6.0_10/bin/java
```

Use the following field descriptions to specify values appropriate for your system:

VendorHost. Use pilot-payflowpro.paypal.com for the test environment, and payflowpro.paypal.com for the production environment.

VendorPort. Specify the port number supplied by Verisign, typically 443. This is used by the API when transactions are sent to be authorized.

Partner. Specify VeriSign.

Vendor. Verisign user account and password after the equal sign = of the Vendor, User and Password respectively.

User. Specify the user name that identifies you to your credit card processing company. This is typically the same as Vendor.

Password. Specify the secure password associated with the user previously entered. This is the password required for transmitting credit card transactions.

CSSJarHome. Specify the path to the PayPal processing program jar file.

JavaRunnableWithPath. Enter the full path of the Java executable file from the JRE installation.

Update the CSS system registry as follows:

Module	Override	Key	Key Value
sys	No	JavaPath	Change the value of the registry key JavaPath to the path of the JRE java executable. Do not include the last path separator (/ for Linux and \ for Windows). If JRE is installed under */usr/jdk1.6.0_10*, then the value of the registry should be `/usr/jdk1.6.0_10/bin`.

Modify the existing Credit Card Vendor record by accessing Credit Card Module|Credit Card Vendor Maintenance in CSS and making the following changes:

- Change Partner Host Name to pilot-payflow.paypal.com for the test environment or payflow.paypal.com for the production environment.

Change Path to a Processing Program directory. The default is: *CSSInstallDir*`/qadcss/tools`.

Final Steps

After you have successfully completed the installation and verified the setup, you complete these final steps in your production environment.

In Progress Explorer, update agent properties for the QAD CSS broker:

1. Click Advanced Features under the Agent section. Set the debug mode to disabled and click OK.
2. Click Pool Range under the Agent section. Set the value based on the licensed number of agents you have registered and click OK.
3. Complete QAD CSS implementation using *Implementation Guide: QAD Customer Self Service*.

Chapter 3

Upgrading QAD CSS

Use the instructions in this chapter to upgrade from previous QAD CSS releases (4.1.3, 4.1.3.1, 4.1.4, and 4.2) to 4.2.3 on UNIX, Linux, or Windows platforms.

Overview

Use the instructions in this chapter to upgrade from previous QAD CSS releases (4.1.3, 4.1.3.1, 4.1.4, 4.2, and 4.2.2) to 4.2.3 on UNIX, Linux, or Windows platforms.

The steps required to upgrade QAD CSS are:

- Install the new media to your QAD CSS server.

  These instructions assume that you are installing to a new location and not overwriting your existing QAD CSS system. After upgrading and testing the new QAD CSS version, you can switch over to your production system.
- Convert the old database.

  The upgrade method supports an in-place conversion of your existing QAD CSS database. You copy it to the 4.2.3 installation directory before executing the conversion.
- Verify the QAD CSS setup.
- Generate a WebSpeed error file; you must generate a new one to reflect the current installation path.
- Compile the QAD CSS code.
- Complete setup by defining QAD CSS directories and settings and optionally setting up QAD ERP for credit card processing based on your business requirements.

If you upgraded your Progress or WebSpeed version you will also:

- Modify your WebSpeed setup.
- Configure QAD CSS.

Installing New QAD CSS Media

Complete these steps to install the new QAD CSS media.

1. Log on as a user that has permission to execute the installation script and update the installation directories.
2. On UNIX systems, mount the CD-ROM. On Windows, place the CD in a CD-ROM drive.

Example UNIX commands are listed in Table 3.1.

Table 3.1 UNIX CD Drive Mount Commands

Hardware	Mount Command
Sun	`volcheck cdrom`
HP	`/etc/mount -F cdfs /dev/dsk/`*`YourCDDevice`*` /cdrom`
Digital	`mount -r -o noversion -t cdfs /dev/`*`YourCDDevice`*` /cdrom`
AIX	`smitty mountfs` Then select file system, directory, and file system type (`cdrfs`).
Linux	`mount /dev/hdb /mnt/cdrom` Where `/hdb` could be `hdc` or `hdd` among other possibilities.
All others	Refer to your operating system documentation or vendor for requirements to mount a CD-ROM. You may be able to type `man mount` to determine the correct command.

Note Copying the distribution files from the CD to a temporary directory on disk can increase extraction speed.

3 Launch a command window and change directories to the `install` directory on the CD:

```
cd /install
```

4 Launch the installation script in that directory:

```
./install.ksh
```

For Windows, launch `install.exe`.

5 A welcome screen displays. Press Enter. Use Table 3.2 to enter the appropriate values for script execution.

Table 3.2 Install Script Steps

Step	User Values
License agreement	Yes
Install log file	Accept default or enter a new location and name
QAD CSS installation directory	Default is `/qadcss`; typically, this should not be the same location as your existing QAD CSS files
For what language?	Simplified Chinese (ch) Castilian Spanish (cs) Dutch (du)

Step	User Values
	French (fr)
	German (ge)
	Italian (it)
	Japanese (jp)
	Latin Spanish (ls)
	Portuguese (po)
	Traditional Chinese (tw)
	English (eng)
Install summary	Yes
File extraction	None
Progress directory	Your Progress install directory
Windows: icon folder name	Default is CSS 4.2.3
Script end	None

Note At the end of the script, the name and location of the installation log file display. Open the log file in a text editor to check for errors.

Setting Up QAD CSS Environment Values

Before beginning the conversion, you must define some environment variables required by MFG/UTIL.

1. Launch MFG/UTIL from the *`CSSInstallDir`* using the following command:

   ```
   ./mfgutil
   ```

   For Windows, launch MFG/UTIL from the icon on the Start menu.

2. Select CSS Setup from the Configure CSS menu. Use the following screen and values to update your QAD CSS configuration.

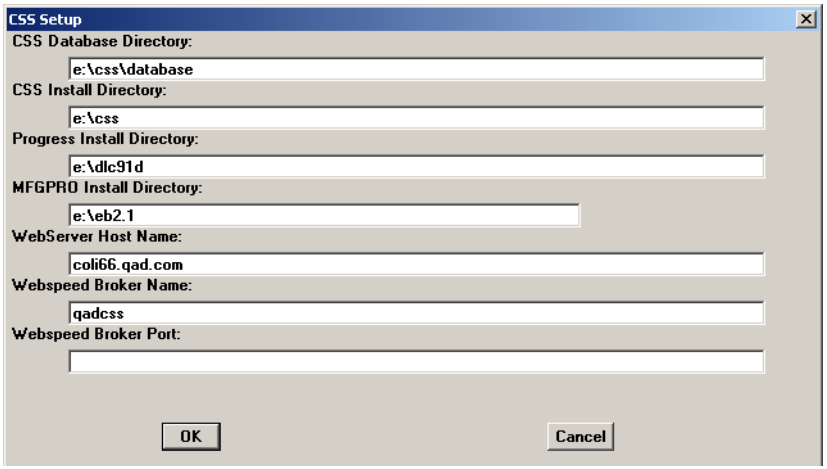


Fig. 3.1
CSS Setup Screen

Table 3.3
CSS Setup Fields

Field	Description
CSS Database Directory	This is *`CSSInstallDir`*`/database` by default.
CSS Install Directory	The *`CSSInstallDir`* defined during install.
Progress Install Directory	The Progress install directory as identified during the install.
MFG/PRO Install Directory	The *`QADERPInstallDir`* for the QAD ERP instance CSS will connect with.
WebServer Host Name	The server name or IP address of the Web server. This should also include a domain name. The `.qad.com` in the sample screen is the domain name.
WebSpeed Broker Name	The name of the broker you plan to use; this guide uses `qadcss` as an example. **Important**: To preserve your previous installation of QAD CSS, make sure you specify a different broker name.
WebSpeed Broker Port	Any available port.

3 Choose OK to save the changes.

Converting the Database

The database conversion is completed using a set of options on the Upgrade CSS menu in MFG/UTIL.

Conversion Overview

Completing the conversion involves the following activities, represented by options on the MFG/UTIL Upgrade CSS menu:

1. Copy your existing QAD CSS database to the 4.2.3 installation directory.
2. Run a script that dumps the data from your existing database and updates it for schema changes introduced in QAD CSS 4.2.3.
3. If you are upgrading from a previous QAD CSS version other than 4.2.3, load an incremental schema file containing definitions of new QAD CSS tables and existing table modifications.
4. Load the data that was dumped in step 2 into the updated tables.
5. Update the version to reflect the QAD CSS 4.2.3 release.
6. QAD CSS 4.2 introduced enhanced security for program pages and associated child pages. To implement this feature, run another option that builds the security information based on the menu structure in your database.
7. If you are using QAD CSS with Standard Edition (or eB2.1), specify a default domain for initial log in.

Note The option Dump Data from Database on the Upgrade CSS menu is currently not required since the data is dumped automatically during the first step.

Running the Conversion

Use the following procedure to convert your existing QAD CSS database.

Fig. 3.2 Converting Database

1. Copy the database to be upgraded from its existing location to the /`database` directory under your QAD CSS 4.2.3 installation.
   a. Change your current directory to *`CSSInstallDir`*.
   b. Use `procopy` to copy your previous version database to:
      `CSSInstallDir``/database/qadcss`
2. Start MFG/UTIL and choose Convert CSS from the Upgrade CSS menu.
   a. In the CSS Upgrade Original Version window, enter the original QAD CSS version number you are upgrading from; for example, 4.1.3.
   b. In the Connect Database screen, connect to the existing CSS database to be converted (the one copied in step 1). The log window displays showing a successful connection.
   c. The system performs CSS data conversion and dumps all the `.d` files in the *`CSSInstallDir`*`/convdata` directory. When this is complete, choose Close to continue.

3 Choose Load Database Schema (`.df`) File from the Upgrade CSS menu. In the Connect Database screen, connect to your QAD CSS database.

   a In the Load Data Definition screen, use the Browse button to locate the appropriate `.df` file in the subdirectory with the name of the QAD CSS release you are upgrading from:

      `CSSInstallDir``/defs/upgrade/`*`SourceCSSVersion`*

      The file name is also based on your source QAD CSS version; for example, if you are upgrading from QAD CSS 4.1.3, choose:

      `CSSInstallDir``/defs/upgrade/4.1.3/delta413_421.df`

   b When you have selected the correct file, click OK. The system loads the new schema into the database.

   c When the load is complete, choose Close to continue.

   The system loads updated data into the database. You need to select one or more `.df` files from their corresponding folders. For example, to upgrade from 4.1.3, you should load the following files in the order in which they are listed:

   - *`CSSInstallDir`*`/defs/upgrade/4.1.3/delta413_421.df`
   - *`CSSInstallDir`*`/defs/upgrade/4.2.1/delta421_422.df`
   - *`CSSInstallDir`*`/defs/upgrade/4.2.2/delta422_423.df`

   Repeat the Load Data Definition steps until all the `.df` files are loaded.

4 Choose Load Data into Database from the Upgrade CSS menu.

   a In the Connect Database screen, connect to your CSS database.

   b In the Load Data Contents screen, use the Browse button to locate the *`CSSInstallDir`*`/convdata` directory and choose OK.

5 Choose Update Product and Version from the Upgrade CSS menu.

a Enter the correct version name and database name. The version name for the current version is `ex 4.2.3`. The database is the QAD CSS database name located in:

`CSSInstallDir``/database`

Fig. 3.3 Updating the Product Version

b The Log Window displays and shows progress. Choose Close to continue.

Note When updating licensing records, it is possible that errors regarding duplicate records may display. You can safely ignore these records.

6 If you are upgrading from QAD CSS 4.2, 4.2.1, or 4.2.2, skip to step 7.

Upon completion, choose Build Security Tree from the Upgrade CSS menu.

a In the Connect Database screen, connect to your QAD CSS database.

b The system builds a security tree for all the CSS modules. When this is complete, choose Close.

7 If you are using Standard Edition (or eB2.1), you must define a QAD CSS data source and a related and valid QAD ERP domain in order to connect to QAD ERP.

a Choose Assign Default Data Source/Domain from the Configure CSS menu.

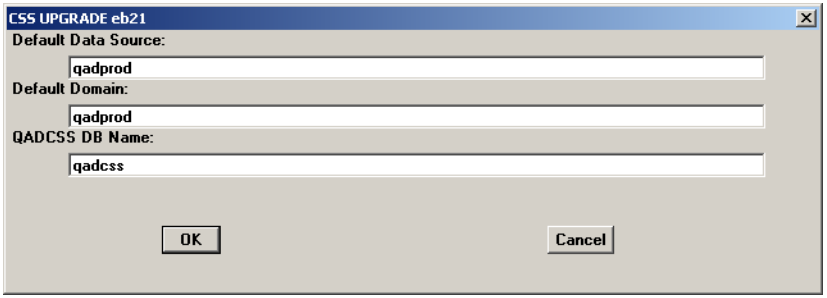


Fig. 3.4 Defining the Default Data Source

b Enter a valid domain from your eB2.1 installation and enter an equivalent data source for QAD CSS.

c Choose OK to save the changes.

8 Choose File|View Log to view the MFG/UTIL log file and ensure that the conversion completed successfully.

Starting the Database Server

The QAD CSS database needs to be run in multi-user mode to allow connections from multiple WebSpeed agents. Depending on the server configuration and Progress and WebSpeed versions used, a TCP connection to the database may be required.

Important Make sure you execute this sequence successfully. The QAD CSS database must be started before you continue with the installation procedure.

Example scripts for starting and stopping databases are included in the following directories:

- `utils_ms`: utilities formatted for use with Windows
- `utils_ux`: utilities formatted for use with UNIX and Linux

If a TCP connection is used, QAD recommends that the port number be documented in the `services` file. This is usually `/etc/services` on UNIX systems, `C:\winnt\system32\drivers\etc\services` on Windows. See the server documentation for information.

The following is an example entry in the `/etc/services` file:

```
#EXAMPLE ENTRY:
# <service_name>      <portnumber/protocol>  #<description>
qadcssDB              5661/tcp               # QAD CSS DB
```

Start the Database on UNIX

Examples of database start and stop scripts include:

- `startdb`

  DLC=*ProgressInstallDir*; export DLC;

  $DLC/bin/proserve *CSSDbDir*/qadcss -L 1000 -B 5000 -S qadcssDB -N TCP;

- `stopdb`

  DLC=*ProgressInstallDir*; export DLC;

  $DLC/bin/proshut *CSSDbDir*/qadcss -by

The following illustrates the output produced when the database is started using the sample `startdb` script.

```
./startdb

PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005
17:53:19 BROKER  0: Multi-user session begin. (333)
17:53:19 BROKER  0: Begin Physical Redo Phase at 320 . (5326)
17:53:20 BROKER  0: Physical Redo Phase Completed at blk 435 off
3894 upd 6970. (7161)
17:53:21 BROKER  0: Started for qadcssDB using TCP, pid 24729.
(5644)
```

See Chapter 5, “Starting Up and Shutting Down,” in the Progress *Database Administration Guide and Reference* for details.

Start the Database on Windows

Start the database servers on Windows in the Progress Explorer.

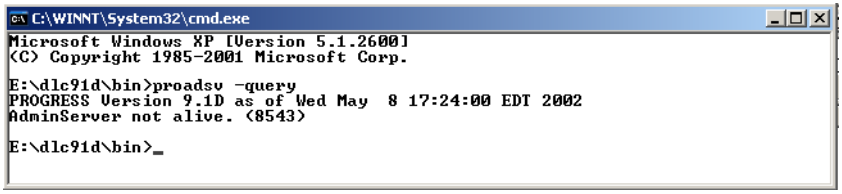
Depending on your specific Progress version, system configuration, and operating system, the Progress Explorer navigation and display layout may differ slightly from the following instructions. Refer to the Progress Explorer online help for detailed help.

1 Verify that the AdminServer process is running.

- If the software is located on a Windows server, open a command window and enter the following:

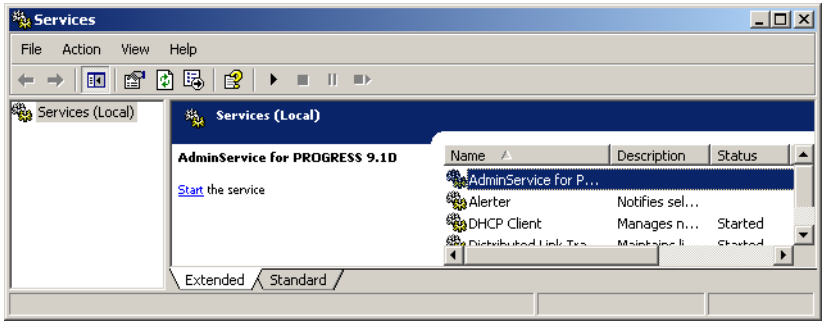
  ProgressInstallDir\bin\proadsv -query

Fig. 3.5
Dead Admin Server Message



If the AdminServer is not running, open Settings|Control Panel| Services from the Windows Start button. Then, select the AdminService for Progress 9.1 and click Start.

Fig. 3.6
Starting the Admin Server in the Windows Services Manager



- If the software is located on a UNIX server, run the following command on that server:

  ProgressInstallDir\bin\proadsv -query

If the AdminServer is not running, start it using the following command:

```
ProgressInstallDir\bin\proadsv -start
```

2 From the Windows Start menu, select Programs|Progress|Progress Explorer Tool.

The localhost AdminServer and any others defined on your system display.

3 Verify that the correct AdminServer is on the list. (If the AdminServer is on the system from which you are running Progress Explorer, it is shown as localhost.) If the correct server is not on the list, consult the Progress documentation for instructions on adding a new server service.

4 Right-click the server where QAD CSS is installed and select Connect. Enter the user ID and password to administer the service; by default this is the user's log-in ID and blank.

5 Right-click Databases in the right window and select New. Enter the name for the database as `qadcss` and click OK.

Note If you have installed a previous version of QAD CSS on this server, you can use the existing database entry. In this case, instead of creating a new entry, right-click the existing qadcss entry and display the properties to ensure that they are correct.

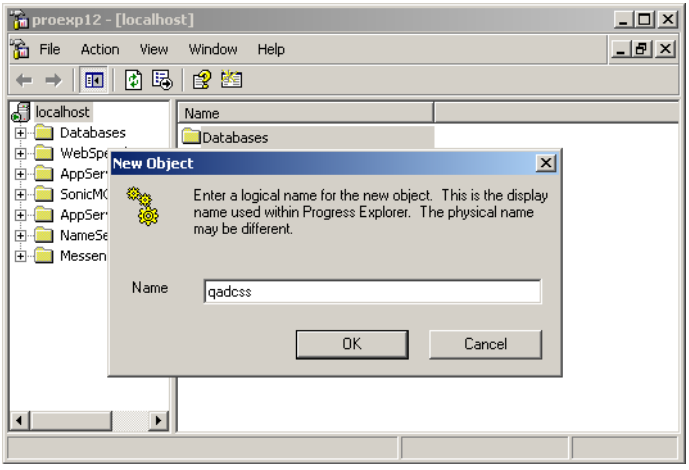
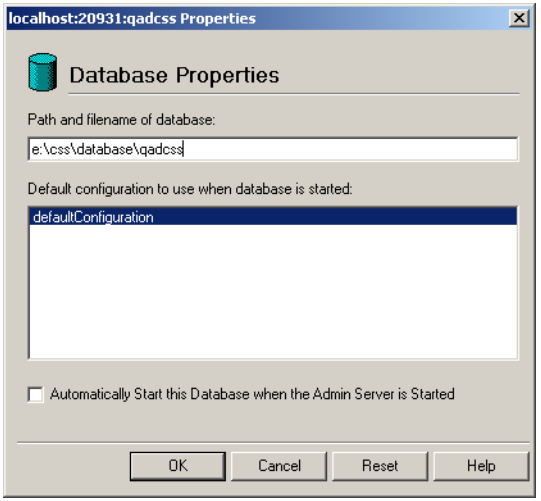


Fig. 3.7
Adding the qadcss Database

6 Database Properties displays. Enter the complete path to the QAD CSS database in *CSSDbDir* and click OK.

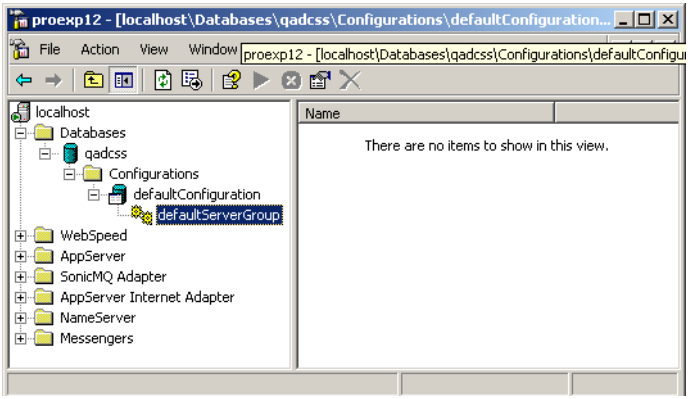
Note The .db extension for the database file is not required.

Fig. 3.8
Database Properties



7 In the left window, expand the service, the database just created, the configuration, and defaultConfiguration.

Fig. 3.9
Expanding Configuration Node



8 Right-click defaultServerGroup and choose Properties. In the dialog box:

a Select 4GL Only.

b Enter a free service port number in the Ports section. (If necessary, contact the system administrator for a number.)

c Click OK.

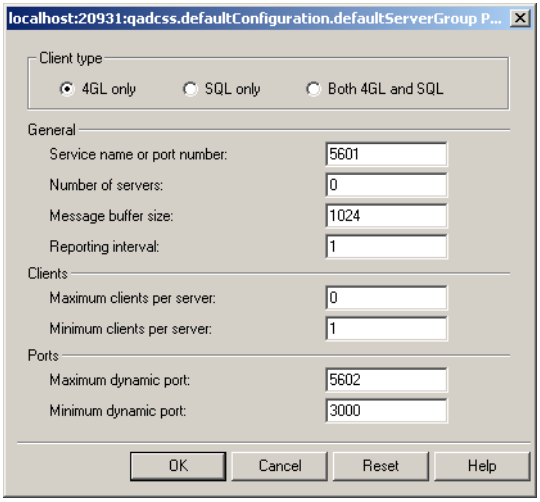


Fig. 3.10 Database Configuration Properties

9 Right-click the database name in the left window and choose Start.

10 Right-click the database again and choose Status. The database should be running.

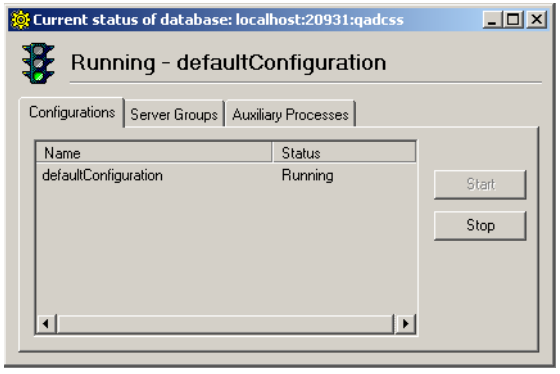


Fig. 3.11 Database Running

Modifying the QAD CSS Setup

If you also upgraded your Progress or WebSpeed version as part of your QAD CSS migration, you will need to tailor the configuration of these products for QAD CSS. Follow the instructions in “Installing QAD CSS” under:

- “Setting Up WebSpeed” on page 33
- “Configuring QAD CSS” on page 41

For more information on using the sample WebSpeed scripts supplied with QAD CSS, see “Administering WebSpeed” on page 54.

Verifying QAD CSS Setup

Use the procedures in this section to verify that the modifications to the setup files have been done correctly.

Start the Broker

When any modifications are made to either `web-disp.p` or `qadcss.ini`, the QAD CSS WebSpeed broker must be restarted.

Starting the Broker in Windows

In Windows environments, you can use Progress Explorer to stop and restart the broker. Right-click the QAD CSS service name under the WebSpeed subdirectory and choose the appropriate command.

1. Right-click the broker name in the left window and choose Start.

   The startup process may take several minutes.

2. Right-click the broker name again and choose Status.

   a. On the Summary tab, confirm that the Broker Status is Active.

   b. On the Details tab, confirm that State is Available for all agents.

Starting the Broker in UNIX

Figure 3.12 illustrates the command and display sequence for restarting the WebSpeed broker in UNIX. The commands to start or restart the broker are based on those in the furnished example scripts, located in *CSSInstallDir*/utils_ux. In the example, they have been copied to *CSSInstallDir*.

The WebSpeed broker may need some time to start. Monitor the startup process by performing a query. Check the server log for this WebSpeed environment for appropriate startup messages.

Note The WebSpeed agent must have a state of Available in order to continue with the installation.

Fig. 3.12
Sample Verification Process

```
CSSInstallDir# ./stop brokername
PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005

Connecting to Progress AdminServer using
rmi://localhost:20931/Chimera (8280)
Searching for brokerName (8288)
Connecting to brokerName (8276)
Shut down brokerName (8277)

CSSInstallDir# ./start brokername
PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005

Connecting to Progress AdminServer using
rmi://localhost:20931/Chimera (8280)
Searching for brokerName (8288)
Connecting to brokerName (8276)
Starting brokerName. Check status. (8296)

CSSInstallDir#
CSSInstallDir# ./status brokername
PROGRESS Version 9.1C as of Thu Jun 7 10:03:59 EDT 2005

Connecting to Progress AdminServer using
rmi://localhost:20931/Chimera (8280)
Searching for brokerName (8288)
Connecting to brokerName (8276)

Broker Name                    : brokerName
Operating Mode                 : Stateless
Broker Status                  : ACTIVE
Broker Port                    : brokerPort
Broker PID                     : 2740
Active Agents                  : 1
Busy Agents                    : 0
Locked Agents                  : 0
Active Agents                  : 1
Active Clients (now, peak)     : (0, 0)
Client Queue Depth (cur, max)  : (0, 0)
Total Requests                 : 0
Rq Wait (max, avg)             : (0 ms, 0 ms)
Rq Duration (max, avg)         : (0 ms, 0 ms)

PID   State     Port  nRq    nRcvd  nSent  Started    Last Change
02680 AVAILABLE 03202 000000 000000 000000 [start]  [last change]
```

Verify Database Connection

Use the following steps to access the WebSpeed Workshop and confirm that the databases are connected.

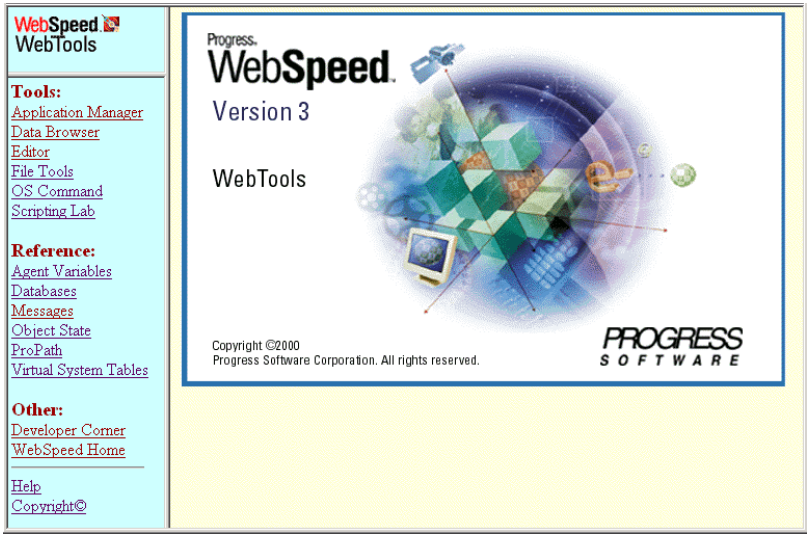
1 Using a Web browser, go to the WebSpeed Workshop by entering the following URL:

http://*webServer/webServerScriptsDirectory*/wspd_cgi.sh/WService=*brokerName*/workshop

Note The *webServerScriptsDirectory* is typically your Web server `/cgi-bin` directory.

Note In Windows environments, `cgiip.exe` is typically specified rather than `wspd_cgi.sh`.

A screen similar to the following should display.



2 Click the Databases link from the menu.

A drop-down list displays the connected databases.

Important The QAD CSS and QAD ERP database must be connected in order to continue with the installation.

Verify PROPATH

Because you must update the PROPATH as part of the configuration process, you should use WebSpeed Workshop to validate your changes.

1 From the WebSpeed Workshop, click the ProPath menu item.

The resulting screen displays the WebSpeed PROPATH.

2 Confirm that these values match the entries in the `qadcss.ini` file.

See “Update qadcss.ini” on page 44.

Generating a WebSpeed Error File

You now create a text file that redirects WebSpeed errors to a URL.

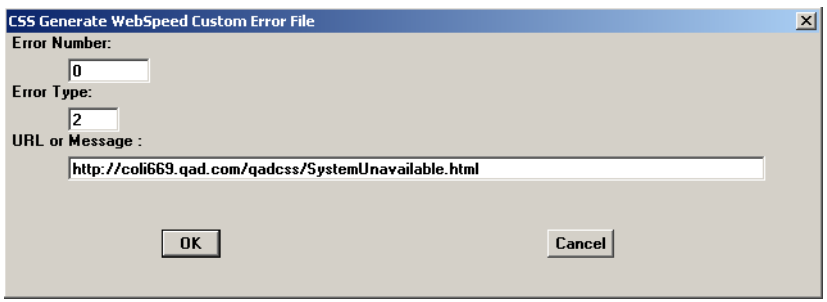
When the QAD ERP server has gone down for some reason, QAD CSS can still be used as a stand-alone product. However, when a buyer attempts to check-out, a message will appear that the system is currently unavailable. The text file substitutes a user-friendly message that the system is unavailable for the WebSpeed error that would normally display.

These steps create a text file, `wsCusErr.txt` in the QAD CSS install directory. After the text file is created, you must manually move it to the working directory used by the Progress CGI script.

1 Launch MFG/UTIL.

2 Choose Generate WebSpeed Custom Error File from the Configure CSS menu. Use the following screen and values to create the custom error message.

Fig. 3.13 Generating a Custom WebSpeed Error File



Leave the Error Number set to 0 and the Error Type set to 2. The URL should contain the QAD CSS host name and domain (coli669.qad.com in the example), the QAD CSS install directory (`qadcss`), and the `SystemUnavailable.html` page. This should all default in.

Note The host name and domain can include the Web server port number as well, as in coli669.qad.com:9999.

3 Choose OK to save your changes. The file is saved to your QAD CSS install directory.

4 Copy or move the file to your Progress work directory (WRKDIR); for example, `c:\wrk` in Windows or `/tmp` on UNIX.

Compiling QAD CSS Source Code

Follow these steps to compile the QAD CSS source code from the WebSpeed Workshop:

1 Using a Web browser, go to the WebSpeed Workshop by entering the following URL:

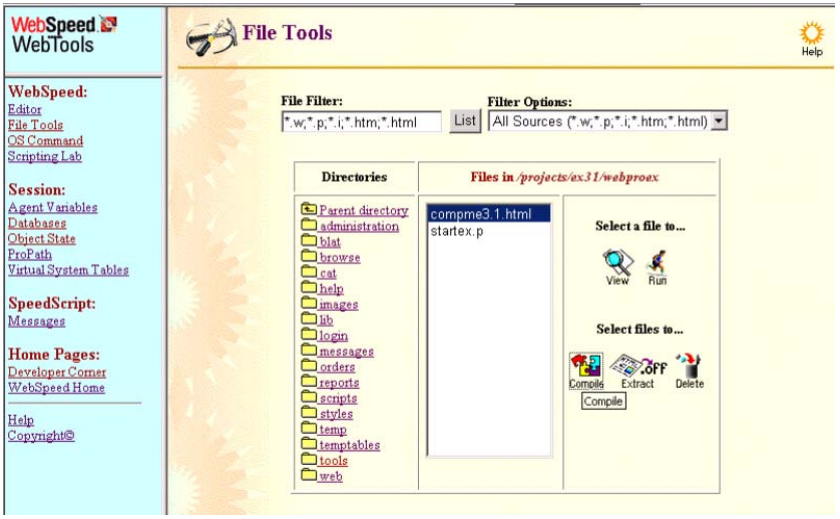
http://*`webServer/webServerScriptsDirectory`*/wspd_cgi.sh/WService=*`brokerName`*/workshop

Note The *`webServerScriptsDirectory`* is typically your Web server `/cgi-bin` directory.

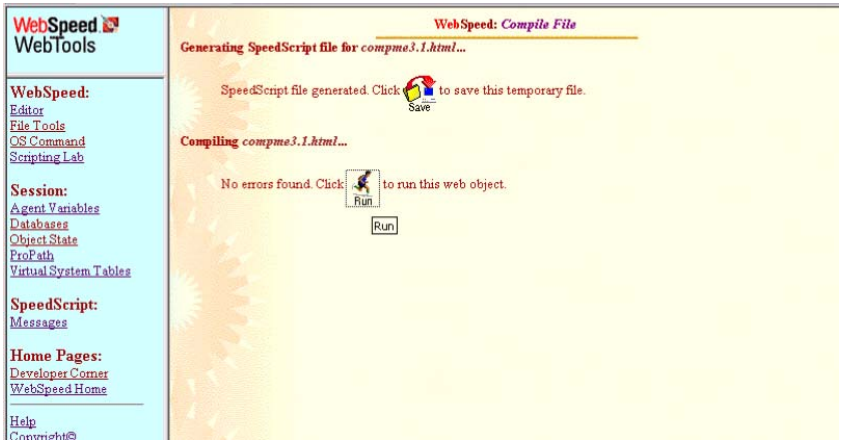
Note In Windows environments, `cgiip.exe` is typically specified rather than `wspd_cgi.sh`.

2 Choose File Tools from the menu on the left.

3 Compile `compme3.1.html` in the WebSpeed Workshop.



4 Run `compme3.1.html` from the post-compilation dialog.



5 In Filter, enter `.html`. Highlight all files to be recompiled and click Compile.

Note Do not compile the `.html` files in the `tools` directory, such as `rp_rpt_template.html`. These files are intended to be used as samples for creating your own programs and contain code that may cause compile errors.

Typically, you compile the `.html` files only. When you are ready to move to a production environment, you can also compile the program files (`.p`). However, since these are loaded persistently, compiling them does not improve performance significantly.

The compilation process may take a few minutes.

6 Compile the two `.w` files in *`CSSInstallDir`*`/qadcss/css/cl/`. In Filter, enter `.w`. Highlight all files to be recompiled and click Compile.

Completing Conversion Setup

This section describes other tasks required to complete the installation and setup of QAD CSS. Use these instructions to:

- Set up directory paths to support a number of administrative functions.
- Set up system and order control maintenance features.

Set QAD CSS Directory Paths

Before you access the QAD CSS database, verify the system variables from your previous install. No changes should be required unless you have upgraded your QAD ERP version, or have reconfigured your QAD CSS installation.

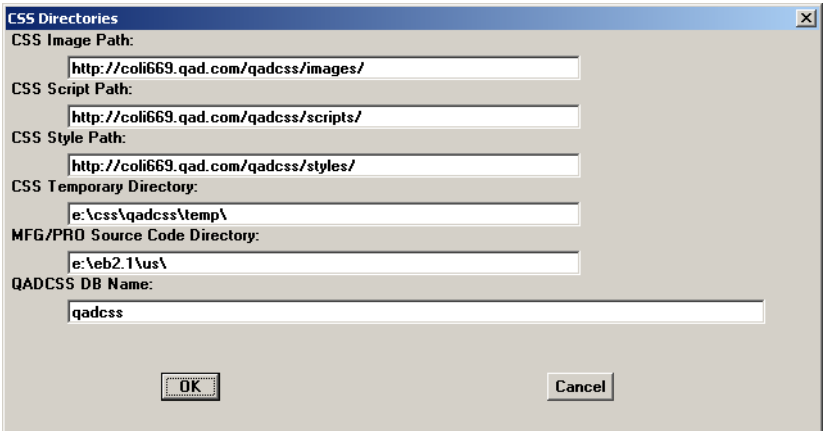
Note These variables can also be changed from administrative functions on the QAD CSS menu.

See the “System Control Maintenance” section in *Administration Guide: QAD Customer Self Service* for more information.

1 Start MFG/UTIL and choose Progress Data Dictionary from the Database menu to connect to your QAD CSS database.

2 In MFG/UTIL choose Configure CSS|Setup Directory Paths.

Fig. 3.14
Set Directory Paths Screen



3 Accept the defaults or enter corrected values for:

Image Path. The virtual directory on the Web server where the QAD CSS images reside. For example, this directory can be defined as:

- An absolute URL, such as http://www.server.com/qadcss/images/
- A relative URL, such as /qadcss/images/

Script Path. The virtual directory on the Web server where the QAD CSS JavaScript files reside. For example, this directory can be defined as:

- An absolute URL, such as http://www.server.com/qadcss/scripts/
- A relative URL, such as /qadcss/scripts/

Style Path. The virtual directory on the Web server where the QAD CSS HTML style sheets reside. For example, this directory can be defined as:

- An absolute URL, such as http://www.server.com/qadcss/styles/
- A relative URL, such as /qadcss/styles/

Temporary Directory. The directory identified in your `qadcss.pf` file by the `-T` parameter.

MFG/PRO Source Code Directory. The location of QAD ERP compiled code.

QADCSS DB Name. The QAD CSS database name. No extension is required.

Choose OK to save any changes and write the directories to WebSpeed.

Configure Settings in QAD CSS

Use this section to configure a number of settings within the QAD CSS application.

1. Restart the WebSpeed agents.
2. Using a Web browser, enter the following URL to connect to the log-in page of QAD CSS:

   http://*webServer/webServerScriptsDirectory*/wspd_cgi.sh/WService=*brokerName*/lg/lg_login.html

   Note In Windows environments, `cgiip.exe` is typically specified rather than `wspd_cgi.sh`.
3. To log in, specify the default user ID and password, `demo` and `demoex`, respectively. . At log-in, you will be prompted to change the password for user `demo`.

Update System Control Settings

1. From the menu, choose Administration|System Control|System Control.
2. Review the other options to determine which should be changed to optimally configure the QAD CSS application. Initially, you can accept all defaults. However, note the following fields:
   - Temp Directory should reflect the appropriate path to the `/temp` directory that will be used by the application.
   - Extend to ERP should not be selected until QAD ERP setup is complete.
3. If you are converting from QAD CSS 4.1.3.1 to QAD CSS 4.2.3, you must enter 4.2.3 in the QAD CSS Release Level field to manually update the CSS release level; then click Update.

Update Registry Settings

Updating the registry settings is only required if you upgraded your QAD ERP version to eB2.1.

Use System Registry Maintenance to specify a user ID and password that let QAD CSS access QAD ERP.

1. From the menu, choose Adminstration|System Registry Maintenance.
2. Update registry values used when logging in to QAD ERP:
   - QADUser, by default mfg
   - QADUPasswd, by default blank
   - QADUDomain, by default blank (required for eB2.1 only)

   a. Enter QADUser in the Search for field and click Search.

   b. Click the QADUser key to display the Detail Registry Editor.

   c. By default, this field is set to mfg. If this is not a valid user in the QAD ERP system you will be accessing, change it now.

   d. Repeat these steps for QADUPasswd to secure this user with a password.

   Important You must also set up the same user ID with the same password in QAD ERP User Maintenance (36.3.18, 36.3.1 in eB2.1). Make sure that you have a process in place to update the password for this user within the expiration date, if this security feature is being enforced. If the password prompt displays during log-in, the integration to fail.

   e. Repeat again for QADUDomain, entering the default data source set up during the conversion steps in “Converting the Database” on page 74.

The system registry also includes numerous other settings that control how you use QAD CSS.

See *Implementation Guide*: *QAD Customer Self Service*.

3 Update the value for the directory where JavaScript messages are stored.

   a Enter js in the Search for field and click Search.

   b Click the jsmsgDir key to display the Detail Registry Editor.

   c Change the Key Value to *CSSInstallDir*/qadcss/scripts.

   Note In a multi-tier installation, when the Web server is a Windows server and the application server is on UNIX or Linux, you need to specify the `scripts` directory on the Web server.

   d Click Save, then click Home.

Generate Messages

Generating messages is required for all conversions.

1 From the menu, choose Administration|Messages|Error Message.

2 Click the Generate button on the left side. This will compile a JavaScript file containing messages required by the system.

   Note During use of the application, you need to do this whenever you add a new message of type JS or support for a new language.

3 Click Home to return to the main menu.

Register Your Serial Number

Registering your serial number is required for all conversions.

1 Choose Administration|System Control|QAD CSS Clearance Code.

2 Enter the customer name as it appears on the license page included in your product package.

3 Enter the serial number as it appears on the license page.

4 Click submit. You are redirected to a secure server URL for registering your product. Depending on how your browser is configured, you may see several messages about security.

5 Click Yes to accept the terms of the license agreement.

6 The QAD CSS Clearance Code screen redisplays with information about your license, including the number of WebSpeed agents and the QAD CSS modules. Click Update to accept this information.

7 Leave QAD CSS running; you will return to the menu in the next procedure.

Update QAD ERP for Credit Card Processing

If you plan to implement credit-card processing, you must update your QAD ERP installation with several programs and data files.

Note If you implemented credit card processing previously, a number of changes have been made in later releases. For complete details on implementing credit-card processing, see the chapter on B2C order processing in *Implementation Guide: QAD Customer Self Service*.

Note Make sure JRE 1.4 or later is installed before applying the patch. JRE can be downloaded from www.java.com.

The required files are included on the QAD CSS installation media in QAD ERP version and service pack-specific directories. For example, if you are using MFG/PRO eB2 SP9, use the files in *`CSSInstallDir`*`/MFGPRO/eB2/SP9`.

To implement these changes, follow the steps to compile programs and load data files; then update the VeriSign initialization file.

Compile Programs and Load Data

1 Locate the files for your QAD ERP release and service pack on the CD.

2 Copy the files to your *`QADERPInstallDir`*.

3 Compile the updated program files:

   a Create a text file named `csscomp.wrk`. It should contain a listing of the `.p` files you copied.

   b Start MFG/UTIL and use the `csscomp.wrk` compile list to compile the new files into destination directory *`QADERPInstallDir`*`\xrc`.

c Move the following compiled files into their correct directories.

Move	To
gpccvs.r	*QADERPInstallDir*/us/gp
ncpm.r	*QADERPInstallDir*/us/nc
soivccpy.r,sososl.r, soipst1.r,soccmt.r,sosoba.r	*QADERPInstallDir*/us/so
rcshwbc2.r	*QADERPInstallDir*/us/rc

4 Load updated data files:

a When the compile completes, choose Database|Load Data into Database.

b Connect to the admin database and choose OK. Locate the two data files you copied from the QAD CSS CD: `lbl_mstr.d` and `lbld_det.d`.

When the tables display, make sure both are selected and choose OK. Press spacebar to close the window when the load completes and exit MFG/UTIL.

Configure the VeriSign Initialization File

QAD ERP reads settings you define in the VeriSign initialization file (`verisign.ini`) to determine how to handle credit card transactions during invoice post. This file must be located in the QAD ERP PROPATH. Similar settings are defined in QAD CSS in Credit Card Vendor Code Maintenance.

See *Implementation Guide: QAD Customer Self Service*.

Important You must ensure that the settings in the two places are the same or errors may occur while processing credit card orders.

The content of `verisign.ini` is shown here. Use the following field descriptions to specify values appropriate for your system.

```
[Verisign]
VendorHost=pilot-payflowpro.paypal.com
VendorPort=443
TimeOut=30
Partner=VeriSign
Vendor=<Vendor>
User=<User>
Password=<Password>
VendorUrl=/transaction
```

```
CssJarHome=<CssJarHome>
JavaRunnableWithPath=<JavaRunnableWithPath>
```

VendorHost. Use pilot-payflowpro.paypal.com for the test environment, and payflowpro.paypal.com for the production environment.

VendorPort. Specify the port number supplied by Verisign, typically 443. This is used by the API when transactions are sent to be authorized.

Partner. Specify VeriSign.

Vendor. Verisign user account and password after the equal sign = of the Vendor, User and Password respectively.

User. Specify the user name that identifies you to your credit card processing company. This is typically the same as Vendor.

Password. Specify the secure password associated with the user previously entered. This is the password required for transmitting credit card transactions.

CSSJarHome. Use *`CSSInstallDir`*`/qadcss/tools`.

JavaRunnableWithPath. Enter the full path of the Java executable file from the JRE installation. For example, if the JRE version is 1.6.10 and it is installed under`/usr/jdk1.6.0_10/`, the value in this field is `/usr/jdk1.6.0_10/bin/java`.

Update the CSS system registry as follows:

Module	Override	Key	Key Value
sys	No	JavaPath	Change the value of the registry key JavaPath to the path of the JRE java executable. Do not include the last path separator (/ for Linux and \ for Windows). If JRE is installed under /usr/jdk1.6.0_10, then the value of the registry should be `/usr/jdk1.6.0_10/bin`.:

Modify the existing Credit Card Vendor record by accessing Credit Card Module|Credit Card Vendor Maintenance in CSS and making the following changes:

- Change Partner Host Name to pilot-payflow.paypal.com for the test environment or payflow.paypal.com for the production environment.

- Change Path to a Processing Program directory *CSSInstallDir*`/qadcss/tools`.

Final Steps

After you have successfully completed the installation and verified the setup, you complete these final steps in your production environment.

In Progress Explorer, update agent properties for the QAD CSS broker:

1. Click Advanced Features under the Agent section. Set the debug mode to disabled and click OK.
2. Click Pool Range under the Agent section. Set the value based on the licensed number of agents you have registered and click OK.
3. Complete QAD CSS implementation using *Implementation Guide: QAD Customer Self Service*.

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