



QAD Enterprise Applications
Standard & Enterprise Edition

Training Guide
QAD .NET UI Administration

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QAD Inc.

100 Innovation Place
Santa Barbara, California 93108
Phone (805) 566-6000
<http://www.qad.com>

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About This Course

Course Description

This course provides a technical and functional overview of the architecture and use of QAD's .NET UI Application Shell.

The course includes information on:

- The architecture of QAD's interface tools
- Deployment options for the QAD .NET UI
- Administration of the QAD .NET UI
- Tuning and troubleshooting the installation
- Navigation, browses, and process maps.

Objective

Learn how to administer and troubleshoot both the Enterprise (EE) and Standard (SE) editions of QAD Enterprise Applications. In addition, students will be able to use browses and process maps effectively.

Audience

- Implementation consultants
- System administrators

Prerequisites

- Progress 4GL knowledge
- Data model basics
- Knowledge of QAD Application architecture concepts
- Familiarity with Enterprise (EE) and Standard (SE) editions of QAD Enterprise Applications

Course Credit and Scheduling

This course is designed to be taught in three days.

Virtual Environment Information

The hands-on exercises in this book can be used with the “Standard Edition r01 - Training” environment, in the “Training” workspace.

Chapter 1

Terminology and Components

Chapter Objectives

Chapter Objectives

- The objective of this chapter is to describe terminology and installation components that apply to QAD .NET UI.

Benefits

Benefits

- You will be familiar with terminology and components used in QAD .NET UI architecture and installation.

Training Flow

Training Flow

- **Terminology and Components**
- QAD .NET UI Administration
- Multiple Systems
- Performance Tuning
- Troubleshooting
- Customizing Browsers
- Menu and Browse Collections
- Process Maps
- Configurable Screens

Overview

Overview

- Network Terminology
- Web Terminology
- Java Terminology
- .NET Terminology

Network Terminology

Network Terminology

- Intranet: A private network inside a company
- Internet: A system of linked networks that are worldwide in scope
- Extranet: A network that allows a company to share information with other businesses and customers

Network Terminology

- LAN: Local Area Network. A network of computers that span a relatively small area
- WAN: Wide Area Network. A network that spans a larger area and comprised of two or more LANs
- TCP/IP: Transmission Control Protocol / Internet Protocol
- HTTP: Hypertext Transmission Protocol

Web Terminology

- # Web Terminology
- HTML: Hypertext Markup Language
 - URL: Uniform Resource Locator
 - HTML Documents: ASCII Files containing HTML which the web server sends to the browser
 - CGI: Common Gateway Interface

JAVA Terminology

Java Terminology

- JAR File: Java Archive File. A zip file that contains an optional META-INF directory
- JVM: Java Virtual Machine. Enables cross-platform delivery
- JDK/JSDK: Java Development Kit (required by Tomcat)

Tomcat Terminology

- # **Tomcat Terminology**
- Servlet: Simple, consistent mechanism for extending the functionality of a Web Server
 - JSP: JavaServer Pages; technology to rapidly develop and easily maintain information-rich, dynamic web pages
 - XML: eXtensible Markup Language
 - XSLT: Transforms XML to another format and allows manipulation of Elements, Attributes & Data

.NET Terminology

- ### .NET Terminology
- .NET: Microsoft software for connecting information, people, systems, and devices. .NET provides XML-based interoperability and is being incorporated across Microsoft clients, servers, services, and tools.
 - .NET Framework: An integral Windows component that enables building and running the next generation of software applications and Web services.
 - ADO.NET
 - Key for integrating .NET with Progress
 - A set of classes used to wrap data and data services
 - XML Web Services
 - .NET Remoting
 - Passes data back and forth to OpenEdge AppServer
 - In memory database

.NET Terminology

- ProDataSet
 - An OpenEdge in-memory data store
 - Maps directly to an ADO.NET DataSet allowing us to:
 - Design a .NET interface in terms of .NET DataSets
 - Pass data back and forth to OpenEdge AppServer

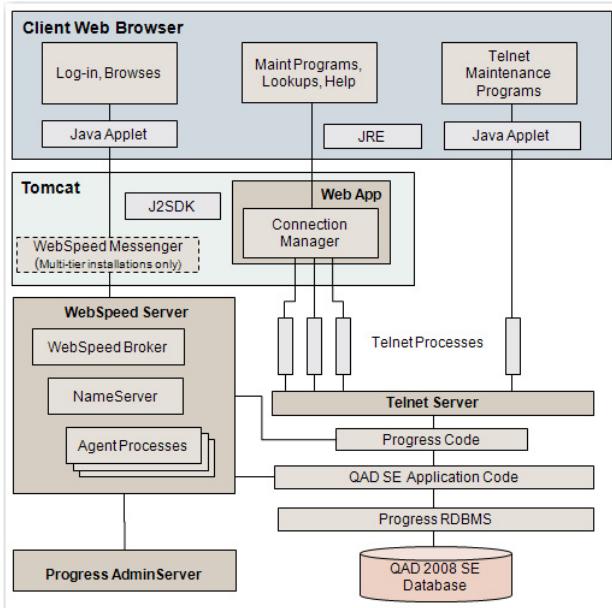
Components

Overview

- .NET UI Architecture
 - Tomcat
 - Connection Manager
 - Progress AppServer
 - Progress WebSpeed
 - Telnet Server
 - .NET UI Client
- .NET UI Technology Overview

.NET UI Architecture

.NET UI Architecture

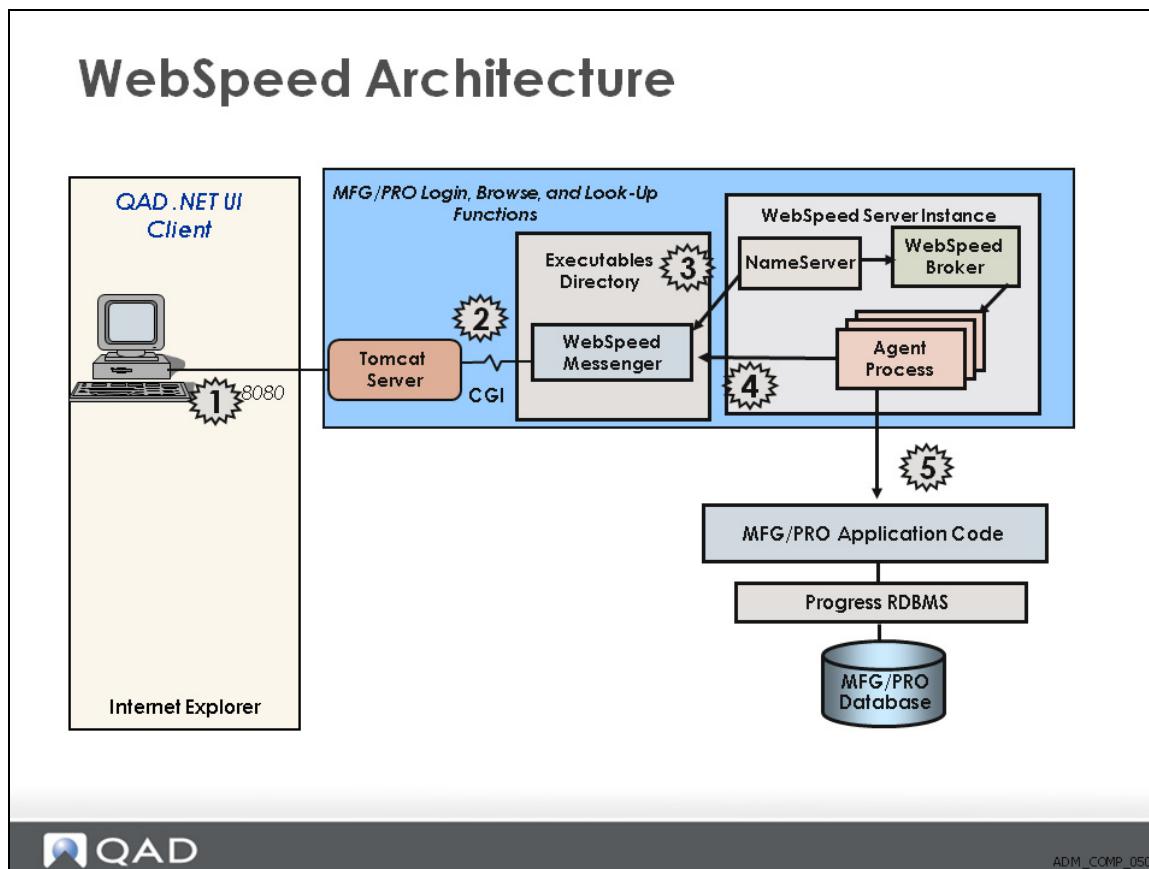


Webspeed

What is WebSpeed?

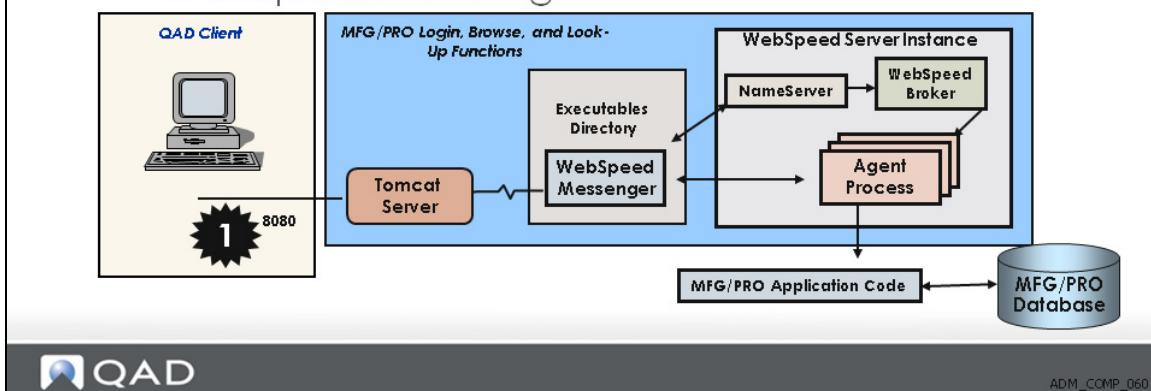
- WebSpeed is a Progress development and deployment environment that enables users to build robust, data-driven Internet Transaction Programs (ITP) for the intranet or Internet
- Enables you to create Web Objects (application modules) that map data to and from static HTML documents using the WebSpeed Workshop and WebSpeed 4GL
- Enables you to deploy your HTML pages and Web Objects to a run-time environment using the WebSpeed Transaction Server

Webspeed Architecture



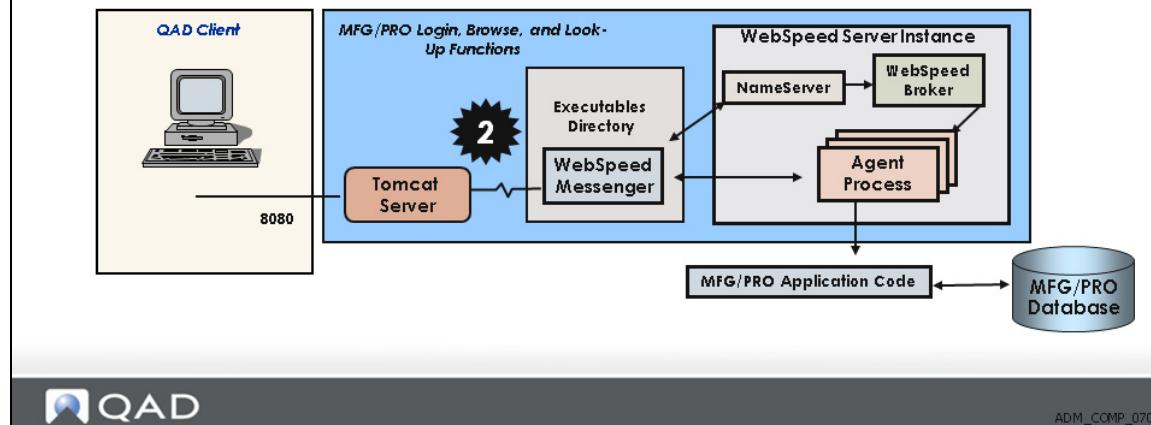
WebSpeed Architecture

- Connection 1
 - Network Connection between the browser and the Tomcat server. Default server port is 8080
 - Tomcat server and WebSpeed messenger must be on the same machine
 - Tomcat server communicates with the WebSpeed messenger



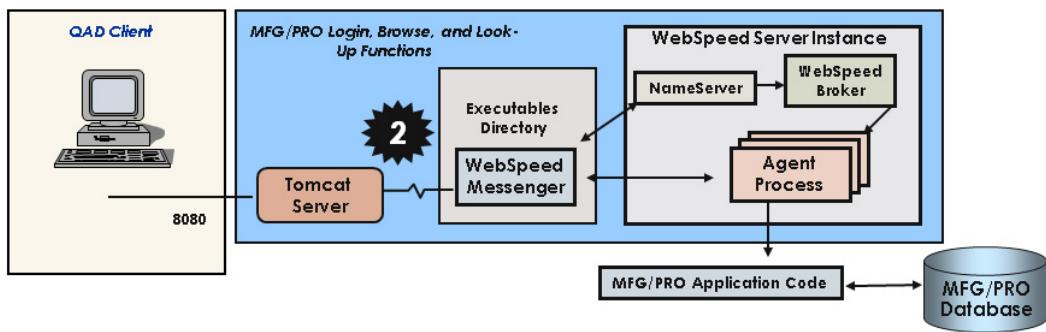
WebSpeed Architecture

- Connection 2
 - Tomcat server connection to the WebSpeed messenger
 - Uses script programs stored on the Tomcat server to communicate with the messenger
 - Messenger is a PROGRESS .exe file that takes a PROGRESS Web Object procedure (.w) as input and sends back an HTML page as output



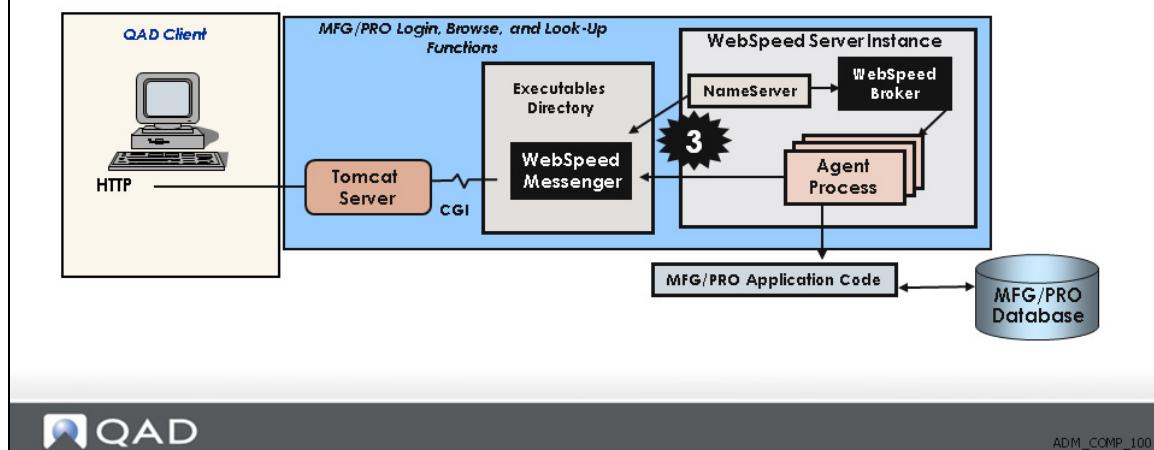
WebSpeed Architecture

- After processing, the agent returns its HTML output to the messenger for transfer back to the web server and finally to the browser



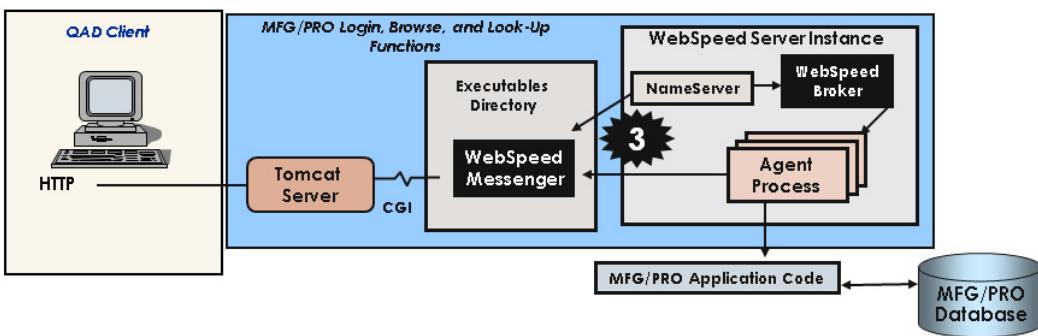
WebSpeed Architecture

- Connection 3
- Network connection between the messenger and the transaction broker
- Defined by the hostname and port defined in the ubroker.properties file



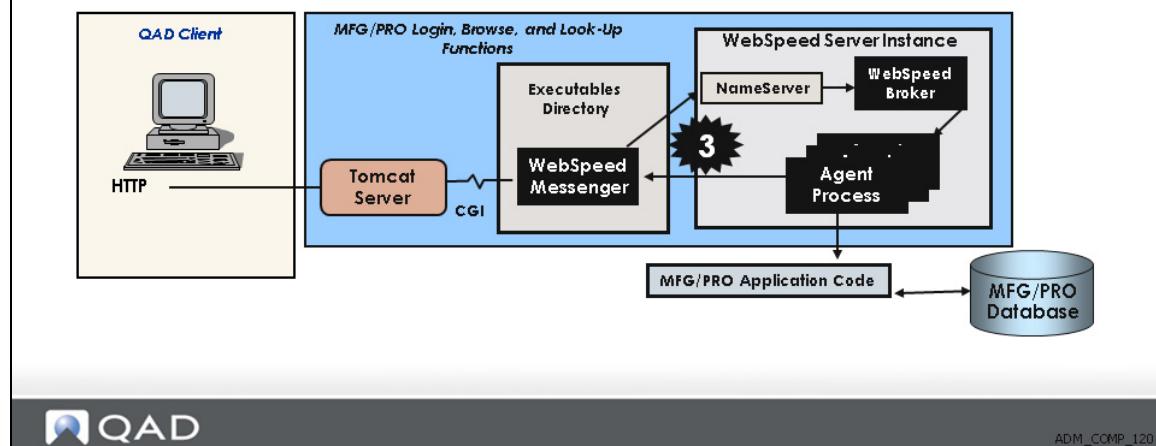
WebSpeed Architecture

- WebSpeed Transaction Broker is responsible for:
 - Receiving requests from the messenger on availability of an agent to service the web object
 - Replying to the messenger with the ID and port of the available agent
 - Spawning a new agent if none available and not at the limit



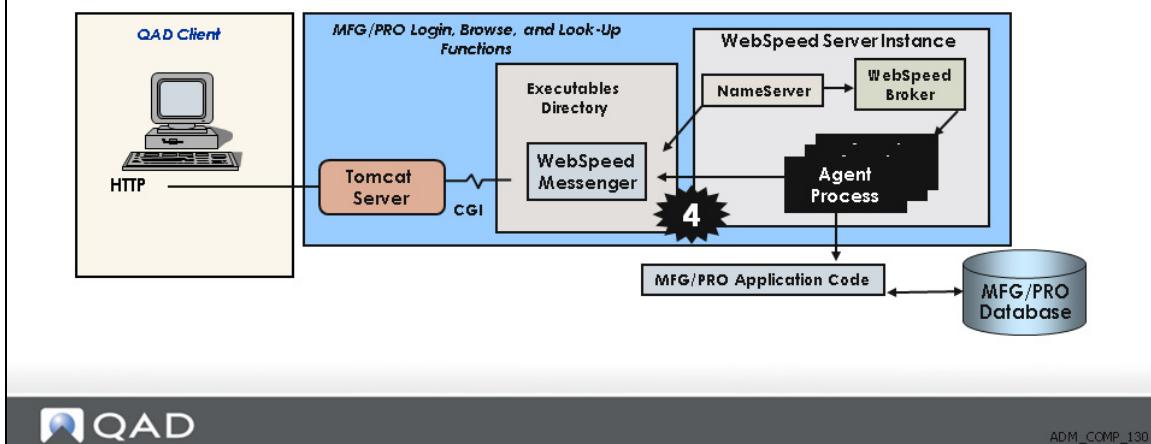
WebSpeed Architecture

- The WebSpeed broker will assign an agent
 - If at the limit, sends message to messenger that no agents are available
 - Provides the status and states of running agents
 - STARTING, AVAILABLE, LOCKED, BUSY



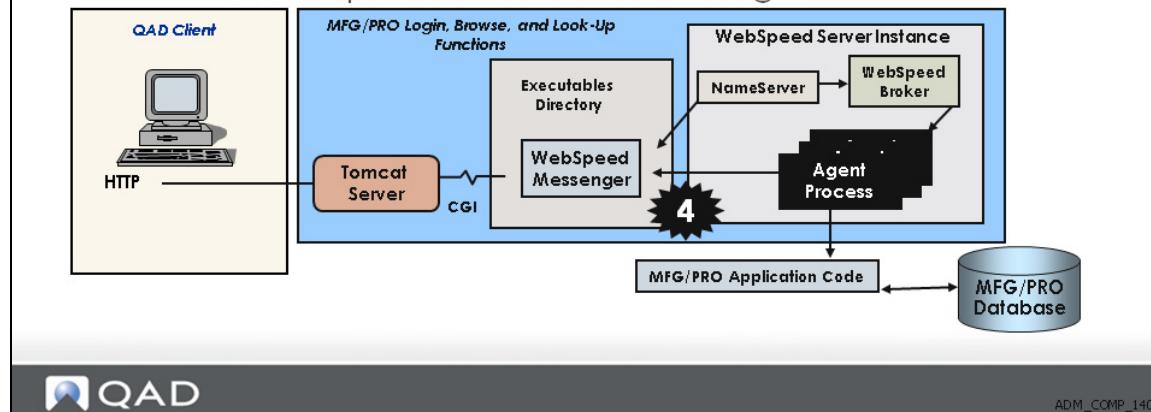
WebSpeed Architecture

- Connection 4:
 - Network connection between the WebSpeed transaction agents and web server
 - Defined by the hostname and port defined in the ubroker.properties file



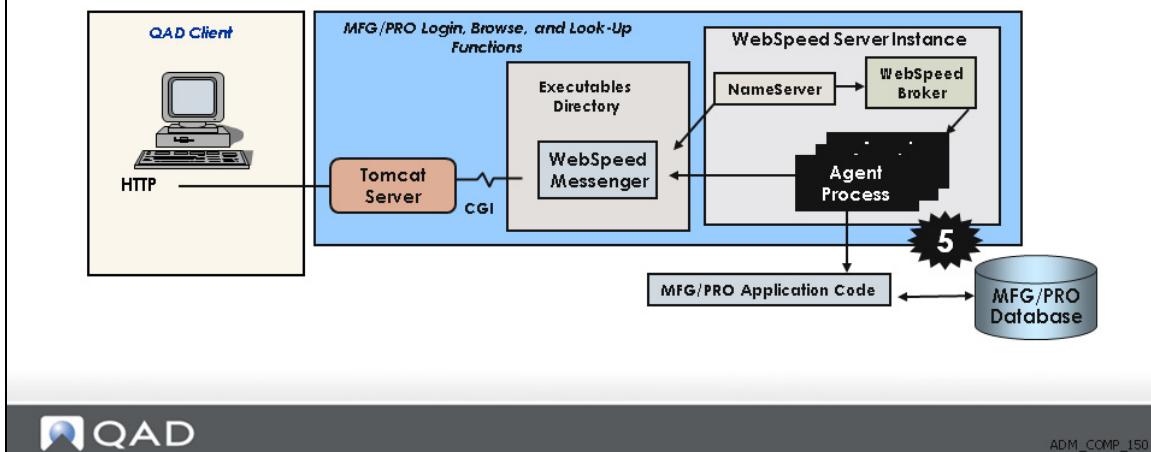
WebSpeed Architecture

- WebSpeed Transaction Agent:
 - A Progress client (_progres) with modifications to work with WebSpeed
 - Agents accept requests from the messenger in the form of a URL, parse the URL for the name of the web object to execute, and then run it
 - Passes output back to the messenger



WebSpeed Architecture

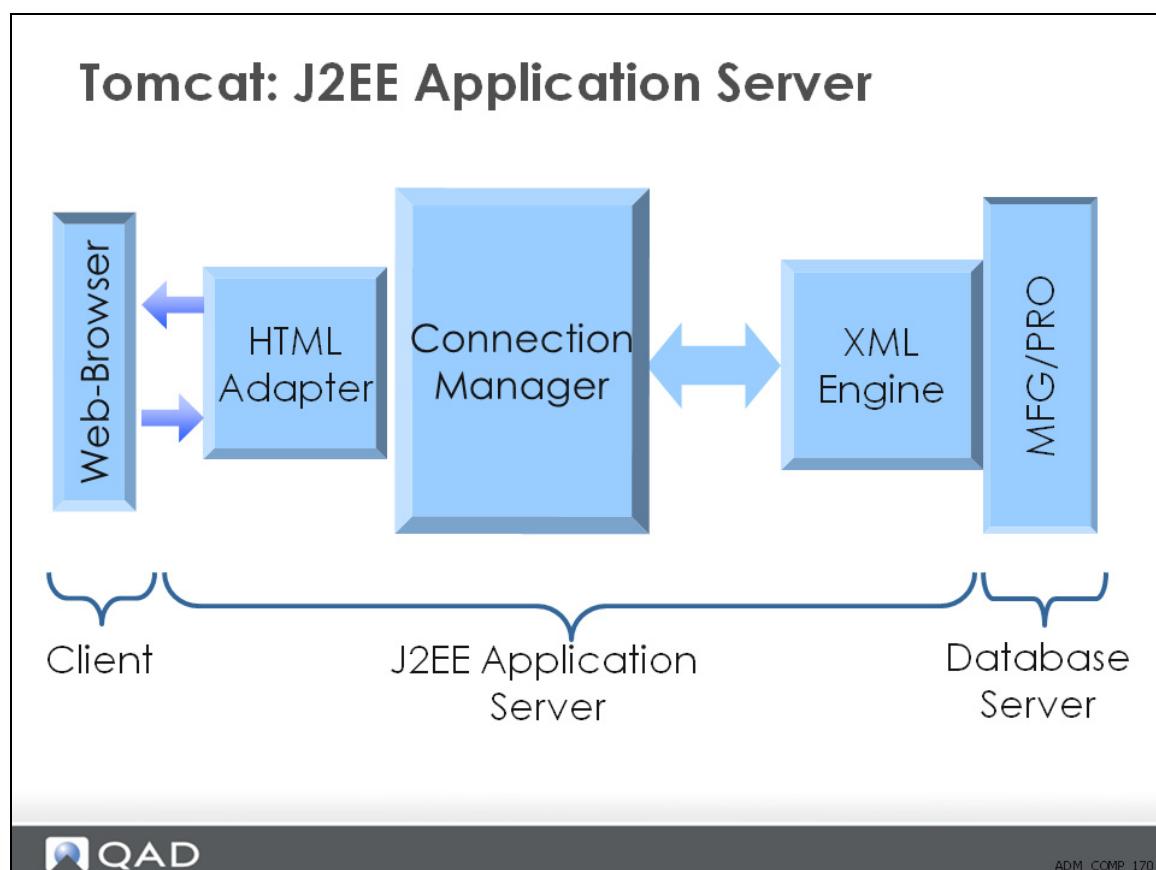
- Connection 5:
 - Connection between agents and the database
 - The WebSpeed Agents can connect to the databases in either Client/Server or shared memory mode



Progress AppServer

Progress AppServer

- Executes OpenEdge 4GL Procedures that can be called by Progress, Java and .NET

Tomcat J2EE Application Server

Tomcat

Tomcat

- Java-based web application container
- Runs servlet in JSP

Tomcat Directories

- ### Tomcat Directories
- Key subdirectories
 - /bin – administration scripts
 - startup.sh
 - shutdown.sh
 - /logs – log files directory
 - catalina.out
 - /conf – configuration files directory
 - server.xml
 - /webapps – web applications directory
 - Location of .NET UI directories and files

Tomcat Directories

- Startup and shutdown scripts
 - For Tomcat Server
 - Set JAVA_HOME environment variable
 - Uses Administration port
- Log files
 - catalina.out
 - Helpful for resolving Tomcat issues

Tomcat Directories

- Key .NET UI directories and files
 - TomcatInstallDir/webapps/<.NET UI Install>
 - /applet <location of multinet.jar>
 - /pronav <files for Process Editor>
 - /uiconfig <location of configurable screens>
 - TomcatInstallDir/webapps/qadhome

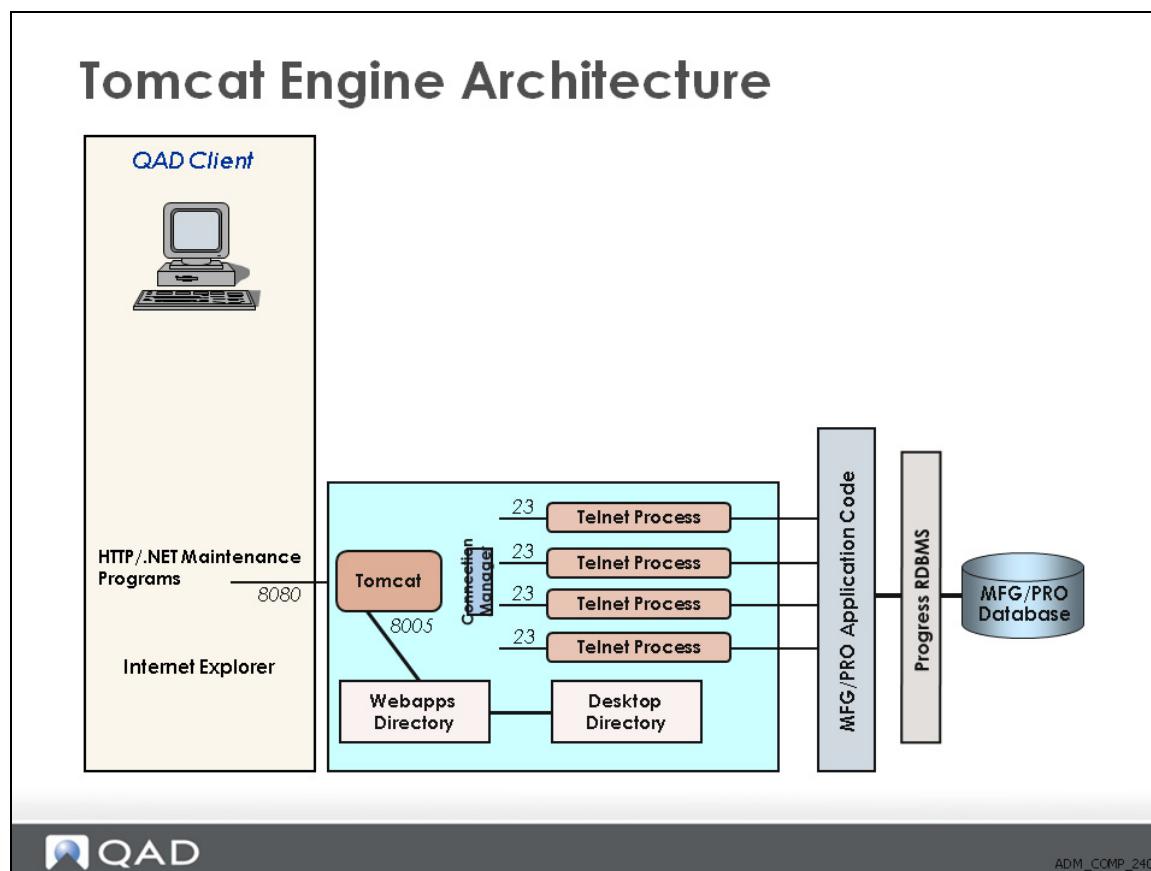
Tomcat Directories

- Key .NET UI directories and files
 - TomcatInstallDir/webapps/<.NET UI Install>
 - /WEB-INF
 - /conf <configuration files for .NET UI components>
 - /cgi <WebSpeed Messenger and other executables>
 - /log <log files for .NET UI>
 - /WEB-INF/conf
 - connectionManagerConfig.xml
 - Stores configuration values for the connection manager
 - Edit via the Connection Manager
 - process-config.xml
 - Stores values for the Process Editor

Using Tomcat

- ### Using Tomcat
- Set JAVA_HOME environment variable
 - Startup Tomcat (startup.sh)
 - Verify Tomcat Server is up
(<http://server:8080>)
 - Shutdown Tomcat (shutdown.sh) as needed
 - See catalina.out for error messages

Tomcat Engine Architecture



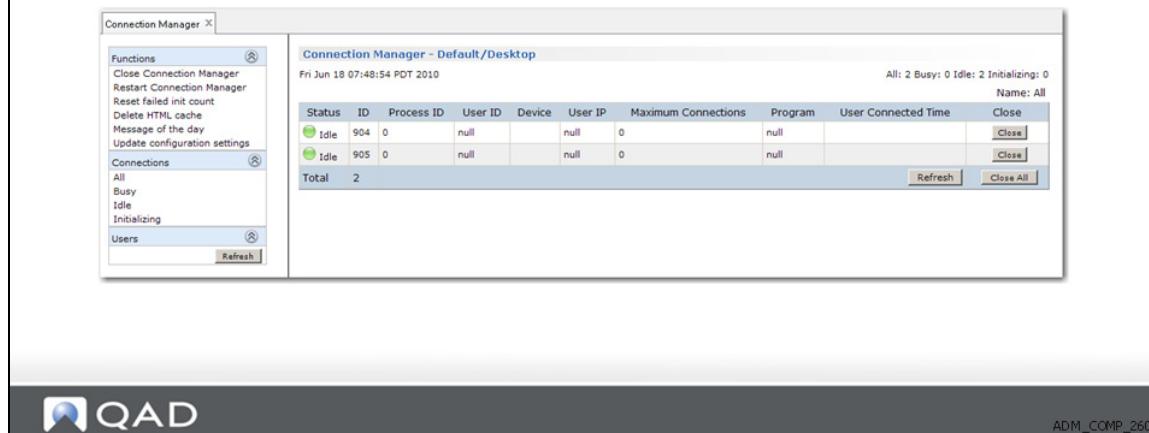
Connection Manager

Connection Manager

- Use to update configuration settings
- View a log file of Connection Manager actions
- Monitor connections in the connections pool
- Monitor users and close user sessions
- Configure Connection Manager before you start a .NET UI client session

Connection Manager

- Manage pool of Telnet connections
- Functions
- Connections
- Users



The Connection Manager controls the pool of telnet sessions used for HTML-based maintenance programs, lookups, reports, and inquiries. The Connection Manager lets you:

- Close, start, and reset Connection Manager.
- Update configuration settings.
- View a log file of Connection Manager actions.
- Monitor connections in the connection pool.
- Monitor users and close user sessions, if needed.

Once Connection Manager is configured, you can start a .NET UI client session.

Configuration Settings

- # Configuration Settings
- Update as necessary
 - Host: The machine name or IP address of the telnet server
 - Port: The port number for the telnet server.
Usually set to 23

The screenshot shows a configuration dialog box titled "Configuration Parameters". It contains the following settings:

Host:	localhost
Port:	23
Startup Script:	login: asbeta Password: \$PASSWD \$/tom
Server Startup Password:	*****
Minimum Connections:	2
Maximum Connections:	20
Maximum Failures:	15
Connections Monitor Frequency:	60000
Wait time for Idle Connection:	20000
Connection Timeout:	1800000
Processing Timeout:	2000
Initializing Timeout:	180000
Operating System Win32/NT:	false
Wait Time:	2000

At the bottom right of the dialog is a "Save" button.



ADM_COMP_270

Close Connection Manager. Terminates all active connections. Any data being processed by active UI sessions is lost. Any processes begun by active sessions are terminated.

Restart Connection Manager. Shuts down and restarts Connection Manager. This option has the same effect as Close Connection Manager, but also restarts it after complete shutdown.

Reset failed init count. Resets the initialization failed counter. The system maintains a count of the number of times Connection Manager unsuccessfully attempts to start a session. When this counter reaches the maximum number, as indicated in Maximum Failures on the Connection Manager configuration page, it stops further automatic attempts to start the session.

This number is automatically reset when a successful connection is made.

Delete HTML cache. This option clears all cached maintenance screens. Removing the cache is required whenever updates are made to screen elements—such as adding lookups to a field—to ensure that the new screen information is read by the system.

Message of the day. Select this option to set up a brief message that displays in the header of the main page each time a user logs in. A screen displays where you can enter up to 80 characters of message text. Use the message to alert users of upcoming system maintenance, other updates, or other business needs. You can specify how long the message displays.

Update configuration settings. Displays the Configuration Settings Update page , which is used to set up and configure the Connection Manager options.

Monitoring Connections and Users

Monitor Connections and Users

- Displays connection status
- Click Refresh to update
- View currently logged in users
- Click the user ID to view user information
- Click Close to close a user session

Connection Manager - Default/Desktop									
Fri Jun 18 08:09:27 PDT 2010									
All: 2 Busy: 0 Idle: 2 Initializing: 0									
Name: All									
Status	ID	Process ID	User ID	Device	User IP	Maximum Connections	Program	User Connected Time	Close
Idle	906	0	null		null	0	null		<input type="button" value="Close"/>
Idle	907	0	null		null	0	null		<input type="button" value="Close"/>
Total	2								<input type="button" value="Refresh"/> <input type="button" value="Close All"/>



ADM_COMP_280

- Initializing. The session is starting and is not available for use.
- Idle. The session is active and available for the next user request.
- Busy. The session is executing a user request.
- Pause. The session is waiting for a response from the user; for example, the user may need to press the spacebar to continue.
- Processing. The session is actively updating the Progress database and database records are locked.
- Force Disconnect. This is a temporary state that occurs when the administrator closes an initializing session.
- Disconnected. This is a temporary state that occurs when idle sessions are closed.

Click a User ID to see information related to that user, including the following: Status, ID, Process ID, User ID, Device, User IP, Maximum Connections, Program, and User Connected Time.

Click Refresh to update the display.

Click Close to close a user session. This might be needed if a user has locked a database record and left their session running.

.NET UI Client

.NET UI Client

- Runs in the Microsoft .NET framework
- Server components are installed during the .NET UI install
- Brief automated installation on client

Exercises and Knowledge Check

- 1** What is the default port number for the Tomcat server?
- 2** You must install the Tomcat server and WebSpeed Messenger on the same machine. True or False?
- 3** The hostname and port number of the connection between WebSpeed Messenger and transaction broker is contained in which properties file?
- 4** .NET UI files and directories are contained in which directory?
- 5** The `web-inf` directory contains configurationh files, WebSpeed Messenger and other executables, and log files. True or False ?
- 6** What is the command for starting Tomcat?

Chapter 2

QAD .NET UI Administration

Chapter Objectives

Chapter Objectives

- The objective of this chapter is to describe different administration features and functions.

Benefits**Benefits**

- You will have an overview of release and service pack installations, be able to edit the client-session.xml file, and to identify and use different session monitors and logs.

Training Flow

Training Flow

- 
- Terminology and Components
 - **QAD .NET UI Administration**
 - Multiple Systems
 - Performance Tuning
 - Troubleshooting
 - Customizing Browsers
 - Menu and Browse Collections
 - Process Maps
 - Configurable Screens

Overview

Overview

- .NET UI Administration
 - Installation of New Release
 - Installation of an MFG/PRO Service Pack
 - Client session configuration file: client-session.xml
 - Applying System-Wide Settings
 - Excluding MFG/PRO Menus in .NET UI
 - Set Session Configuration
- Session Monitoring
- Adding Custom Menus

QAD .NET UI Administration

.NET UI Administration

- Installation of new release
 - Review Release Notes and Errata
 - Clear Tomcat cache
 - .NET UI client automatically checks for new version
- Installation of an MFG/PRO service pack
 - May overwrite newer MFGUTIL files
 - Re-install may be needed to place back updated MFGUTIL files

.NET UI Administration

- Client Session Configuration File:
 - client-session.xml
 - Located on the server in <Tomcat Install>/webapps/qadhome/configurations/qaduiConfig>/client-session.xml
 - Contains configuration for NameServer, AppServer and WebSpeed broker names and ports

.NET UI Administration

- Client Session Configuration File:
 - client-session.xml

```
<?xml version="1.0" encoding="utf-8" ?>
<Configuration>
  <ConnectionProtocol>AppServer</ConnectionProtocol>
  <ConnectionSecureProtocol>AppServer</ConnectionSecureProtocol>
  <ConnectionHost>qaddemo.qad.com</ConnectionHost>
  <ConnectionPort>5162</ConnectionPort>
  <ConnectionService>qaddemo_AS</ConnectionService>
  <ConnectionSecureService>qaddemo_AS</ConnectionSecureService>
  <ConnectionSecureHost>qaddemo.qad.com</ConnectionSecureHost>
  <ConnectionSecurePort>5162</ConnectionSecurePort>
  <DesktopProtocol>http</DesktopProtocol>
  <DesktopHost>qaddemo.qad.com</DesktopHost>
  <DesktopPort>8080</DesktopPort>
  <DesktopService>qaddemo</DesktopService>
  <DesktopAPI>shell.jsp</DesktopAPI>
  <DesktopAsWebBrowser>false</DesktopAsWebBrowser>
  <WebSpeedService>qaddemo_WS</WebSpeedService>
  <WebSpeedPath>cgi-bin/wspd_cgi.ksh/WService</WebSpeedPath>
  <WebSpeedProgram>com/qad/desktop/interface/wsep1.p</WebSpeedProgram>
```

JAVA Terminology

.NET UI Administration

- Setting Browse Record Threshold in client-session.xml

```
<MaximumBrowseRecordsToCount>50000</MaximumBrowseRecordsToCount>
<MaximumBrowseRecordsToDownload>50000</MaximumBrowseRecordsToDownload>
<BrowseRecordsForPrintWarning>10000</BrowseRecordsForPrintWarning>
<BrowseRecordsForExcelWarning>10000</BrowseRecordsForExcelWarning>
<ChartElementsForChartWarning>100</ChartElementsForChartWarning>
```

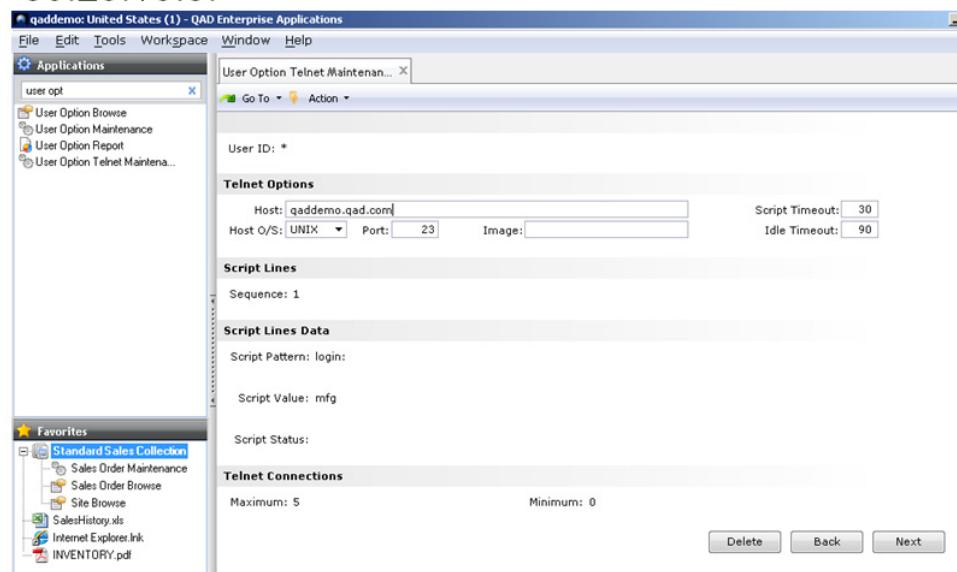
Telnet Screen Settings

Embedded Telnet Screen Settings

- Using SSH for embedded telnet screens:
 - Download Routrek.granados.dll
 - <SshProviderUrl>\${HomeServer}/Routrek.granados.dll</SshProviderUrl>
 - Choose SSH2 instead of telnet
 - <TerminalProtocol>telnet</TerminalProtocol>
- Changing the login method for embedded telnet screens:
 - <add key="TerminalAuthentication" value="ScriptUser" />
 - ScriptUser: The user defined in 36.20.10.3 will be used for telnet login
 - SchellUser: The user defined in MFG/PRO will be used for telnet login
 - PromptUser: The user will get prompted for telnet login when using embedded telnet screen

Embedded Telnet Screen Settings

- Embedded telnet screen login is defined in 36.20.10.3:



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System-Wide Settings and Menus

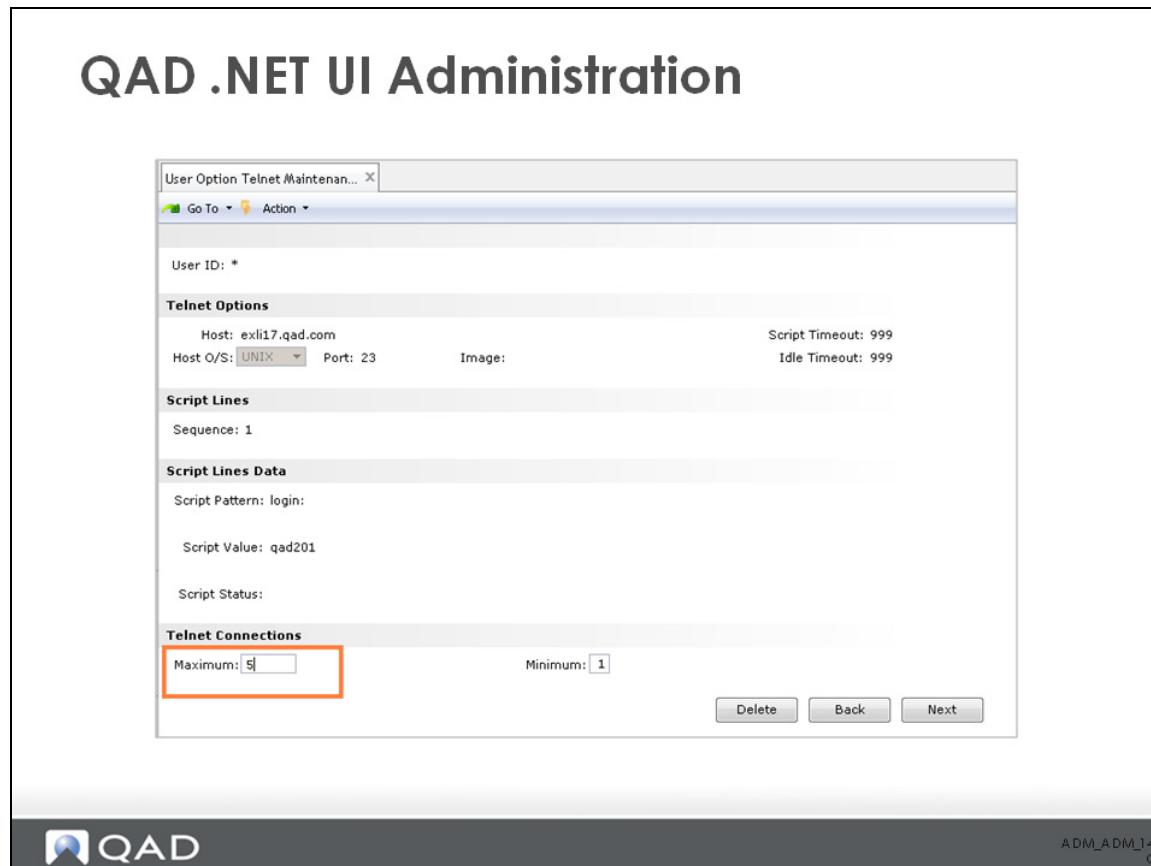
QAD .NET UI Administration

- Applying system-wide settings
 - Set in ./webapps/qadhome/configurations/default/client-bootstrap.xml
 - Examples: Log level, log file location
- Adding menus in .NET UI
 - Set in ./webapps/qadhome/configurations/qadui.cfg/menus/plugin-menu.xml

Session Configuration

QAD .NET UI Administration

- Set session configuration
 - Can set maximum number of forms each user can open
 - Setting it too high can impact performance
 - Set in User Option Telnet Maintenance



Use the Script Timeout field to enter the maximum number of seconds (between 1 and 999) the system allows for all the Telnet log-in script lines to execute.

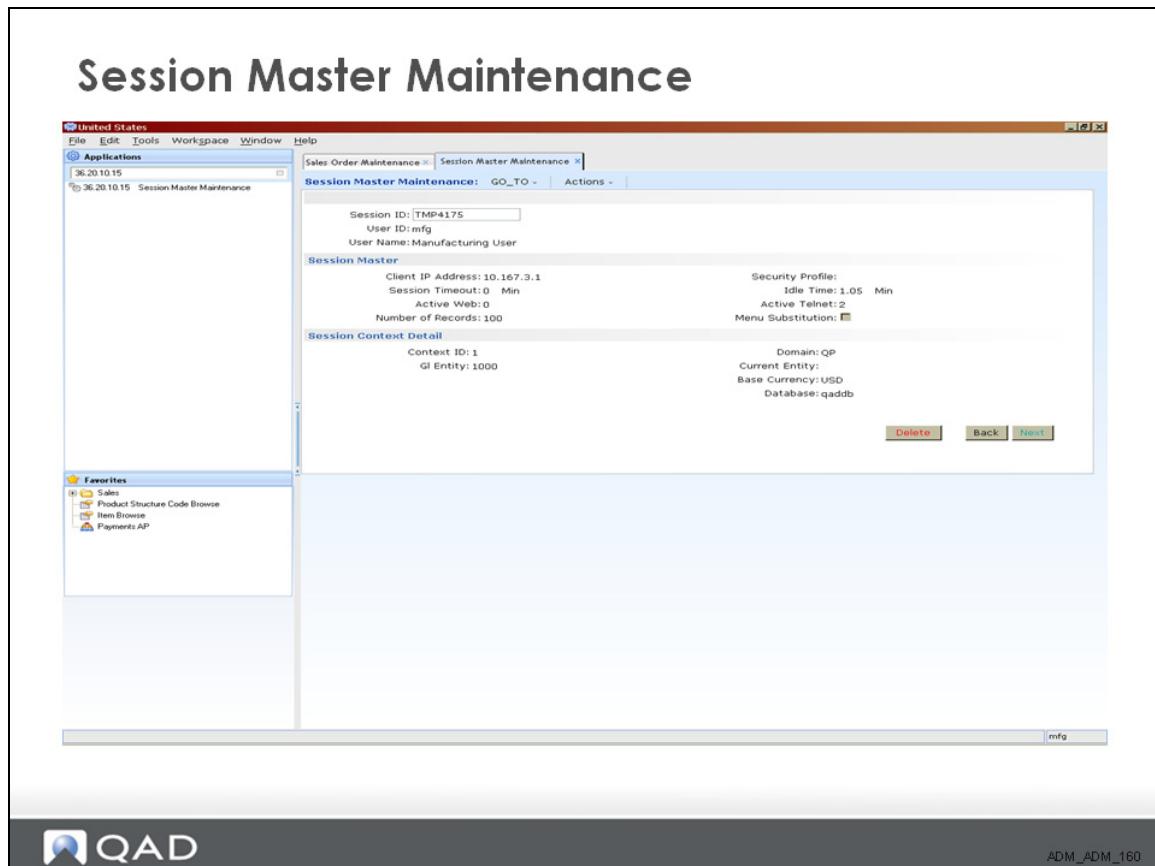
If this value is exceeded, a time-out message displays and the session closes.

The Idle Timeout value is the number of seconds (between 1-999) for which the system waits after a user successfully logs into a Telnet session and before they choose an MFG/PRO program to execute.

Session Monitoring

Session Monitoring

- Session Master Maintenance – 36.20.10.15
 - No maintenance done in this screen
 - Can be used to delete defunct users
 - Specifies a system generated session ID
- Connection Manager
 - Monitor which users are accessing system/programs
 - View status of connection pools
- Heartbeat Monitor
 - Configure load balancer device or create script that monitors the Connection Manager through heartbeat pages
- User Count Log file
 - Logs user, program executed and time of execution
 - Located in ./webapps/<qaduicfg>/WEB_INF/logs/usercount.log



Connection Manager

Connection Manager

The screenshot shows the QAD .NET UI Connection Manager application. The main window title is "Connection Manager - Default/Desktop". It displays a table of connections with columns: Status, ID, Process ID, User ID, Device, User IP, Maximum Connections, Program, User Connected Time, and Close. There are two entries: one "Initializing" and one "Busy". The "Busy" entry has details: ID 5, Process ID 7853, User ID mfg, Device /dev/pts/1, User IP 10.167.3.1, 99, Program soso.mpt, User Connected Time Thu Apr 26 20:30:55 PDT 2007, and Close button. Below the table are "Refresh" and "Close All" buttons.

The left sidebar includes a "Menu Search" field, a "Favorites" section with links to Sales, Product Structure, Item Browse, and Payments AP, and a "Applications" tree view with categories like Distribution, Manufacturing, Sales, Customer Services, Master Data, Custom, Supply Chain, Administration, and sub-options like Browse Collection, Tomcat Manager, Process Manager, Simplified Screens, Process Admin, and Process Editor.

A "Sales Order Maintenance" window is open in the foreground, showing Order #10001. It displays the Sold-To and Ship-To sections, both listing "Colossal Conglomerates LTD" as the recipient. The Sold-To section includes address details: Suite 1000 Colossal Building, Colossal Industrial Park, Evanston, IL, 090876, United States of America. The Ship-To section includes address details: Suite 1000 Colossal Building, Colossal Industrial Park, Evanston, IL, 090876, United States of America. The window also contains detailed order information such as Order Date, Line Pricing, Confirmed, Required Date, Manual, Site, Currency, Taxable, Promise Date, Channel, Project, Fixed Price, Due Date, Credit Terms, Perform Date, Pricing Date, Purchase Order, and Browsing Order.

HeartBeat Monitor

- ### Heartbeat Monitor
- `status.jsp` — returns a status message containing the number of agents that are All / Idle / Init / Busy.
 - `idle.jsp` — returns a page containing the number of idle connections
 - `busy.jsp` — returns a page containing the number of busy connections
 - `init.jsp` — returns a page containing the number of initializing connections

User Count Log File

User Count Log File

```
2007-11-11 06:26:47,554 apisource=AppShell at=s d=QP ip=10.167.3.1 s=TMP6 sid=TM  
P6 t=li u=mfg  
2007-11-11 06:35:58,879 a=sobr009.p apisource=AppShell at=s d=QP s=TMP6 sid=TMP6  
t=ai u=mfg  
2007-11-11 06:36:00,643 a=sobr009.p apisource=AppShell at=s d=QP s=TMP6 sid=TMP6  
t=ao u=mfg  
2007-11-11 06:36:10,355 a=mgdbiq.p apisource=AppShell at=s d=QP s=TMP6 sid=TMP6  
t=ai u=mfg  
2007-11-11 06:36:42,728 a=mgdbiq.p apisource=AppShell at=s d=QP s=TMP6 sid=TMP6  
t=ao u=mfg  
2007-11-11 06:37:32,866 apisource=AppShell at=s d=QP s=TMP6 sid=TMP6 t=lo u=mfg  
2007-11-11 06:37:36,817 apisource=AppShell at=s d=QP ip=10.167.3.1 s=TMP9 sid=TM  
P6 t=li u=mfg  
2007-11-11 06:39:50,038 a=sosomt.p apisource=AppShell at=s d=QP s=TMP9 sid=TMP6  
t=ai u=mfg  
2007-11-11 06:40:15,754 a=sosomt.p apisource=AppShell at=s d=QP s=TMP9 sid=TMP6  
t=ao u=mfg  
2007-11-11 06:40:16,120 apisource=AppShell at=s d=QP s=TMP9 sid=TMP6 t=lo u=mfg  
2007-11-11 06:40:49,743 servletcontextpath=%2Fdr01%2Ftomcat%2Fwebapps%2Fqaddemo%  
2F t=webappstop
```

Adding Custom Menus

- ### Adding Custom Menus
- Must be created within an existing Menu or Menu Group
 - Multiple ways to create new menus, depending on release
 - **Example:** in Menu System Maintenance, add menu 88.1 under new menu group called "My Custom Menu Group":
 1. Create an entry for A.9. Assign a label (ex. My Custom Programs) and execute procedure of "A.9"
 2. Create an entry for A.9.88. Assign a label (ex. Custom Sales Orders) and execute procedure of "88"
 3. Create an entry for 0.88. Assign a label (ex. Custom Sales Orders) and execute procedure of "88"
 4. Create an entry for 88.1. Assign a label (ex. Custom Sales Order Maintenance) and execute procedure with the program name (for example: xxsomt.p).

Exercises and Knowledge Check

- 1** What information is contained in the `client-session.xml` file?
- 2** You define user telnet options in which menu?
- 3** What settings are contained in the `client-bootstrap.xml` file?
- 4** What effect on user navigation does the Maximum field in User Option Telnet Maintenance have?
- 5** What menu do you use to delete defunct users?
- 6** What is the purpose of Heartbeat Monitor?

Chapter 3

Multiple Systems

Chapter Objectives

Chapter Objectives

- The objective of this chapter is to look at aspects of running multiple database instances in different environments.

Benefits

Benefits

- You will be aware of the different issues relating to running multiple database instances.

Training Flow

Training Flow

- Terminology and Components
- QAD .NET UI Administration
- **Multiple Systems**
- Performance Tuning
- Troubleshooting
- Customizing Browsers
- Menu and Browse Collections
- Process Maps
- Configurable Screens

Overview

Overview

- Multiple DB: Independent Environment
- Multiple DB: Single Environment
- Multi-Language Environments

Multiple Databases: Independent Environment

Multiple DB: Independent Environment

- Why?
 - Production, development, training
 - Independent environments
- Considerations
 - Different code streams
 - Different startup parameters
 - Administrative differences

Install Review List**.NET UI Install Review List**

- MFG/PRO character environment
 - Database parameters
 - Data
 - Application code
- WebSpeed
 - Broker
- AppServer
 - Broker

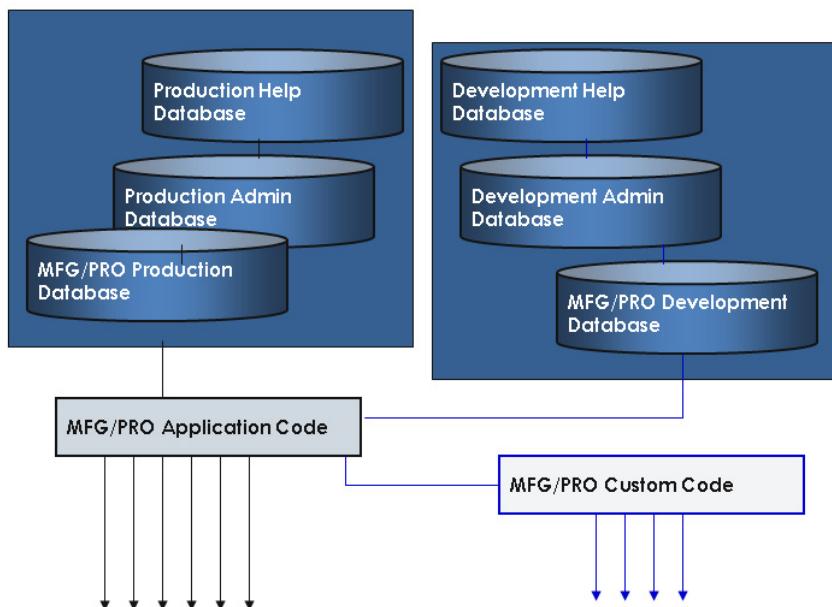
.NET UI Install Review List (cont.)

- Tomcat
 - WebApplication
- .NET UI
 - Progress Code
 - Configuration

Database Differences

Multiple DB Differences: Independent

Different databases, code, data,...



Multiple DB Differences: Independent

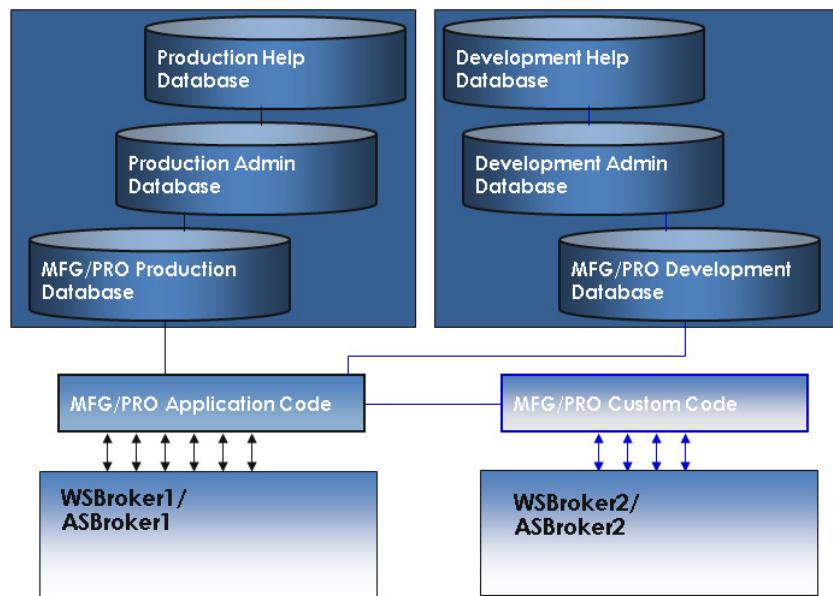
Differences

- Databases
 - Names
 - Ports
 - Startup parameters
- MFG/PRO application code
- Data

What does this affect?

- Parameter file
 - Telnet file
 - Tomcat file
- Propath
 - WebSpeed broker
 - AppServer broker
 - .NET UI build

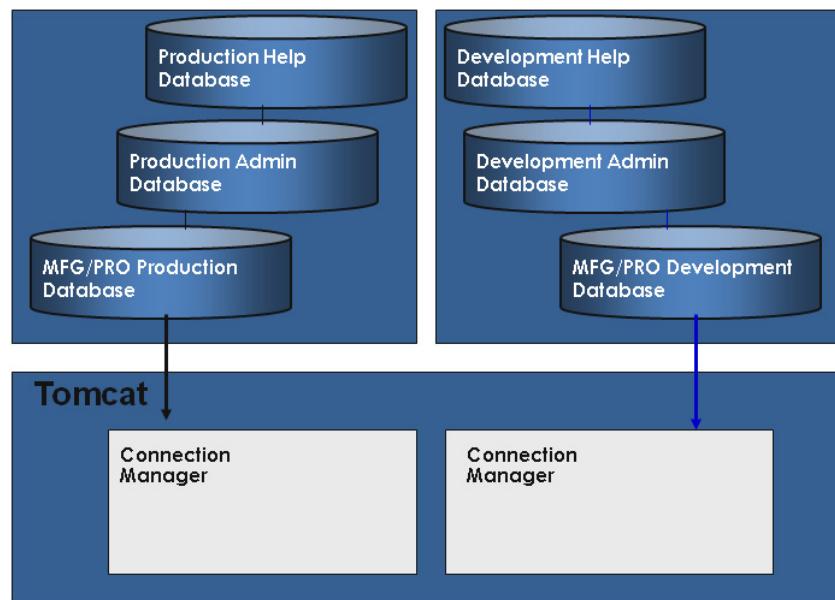
Multiple DB – WebSpeed & AppServer: Independent Different brokers



Multiple DB – WebSpeed and AppServer: Independent

- Differences
 - WebSpeed Brokers
 - Names
 - Ports
 - Agents/port ranges
 - AppServer Brokers
 - Names
 - Ports
 - Agents/port ranges

Multiple DB – Tomcat: Independent



Multiple DB – Tomcat: Independent

- No requirement for additional Tomcat servers
- Considerations for additional Tomcat servers
 - Resources (CPU, memory)
 - Administration (starting and stopping)
- Requires a separate .NET UI webapp
 - Different names
 - Different telnet script files
 - Different configuration files

.NET UI Considerations

.NET UI

- Managed by separate client config files in
<Tomcat
Install>/webapps/qadhome/configurations>
- Each .NET UI installation points to one
qadhome server through configuration file:

```
C:\Program Files\QAD\QAD Enterprise Applications  
2007.1\container\QAD.Client.exe.config  
<configuration>  
<appSettings>  
<!-- An HTTP URI to a server that provides backend  
services for the application. -->  
<add key="HomeServer"  
value="http://qaddemo:8080/qadhome" />
```
- Users choose .NET UI instance upon login

.NET UI

- Possible to have multiple icons that point to multiple qadhome servers



1. Install multiple instances of .NET UI

Example:

C:\...\Production\QAD\...
C:\...\Test\QAD\...

2. Configure shortcut to use batch file to replace configuration file corresponding to desired environment prior to launching

Example:

The Production icon batch file will copy
Production.QAD.Client.exe.config to QAD.Client.exe.config

Exercises and Knowledge Check

- 1 Consider and list the setup and configuration issues involved in running a multiple database .NET UI environment.

Chapter 4

Performance Tuning

Chapter Objectives

Chapter Objectives

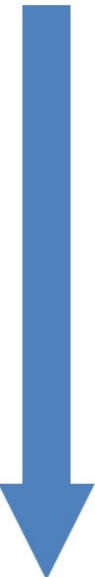
- The objective of this chapter is to describe the different performance tuning techniques you can apply to the installation.

Benefits**Benefits**

- You will be able to use memory allocation and database tuning techniques, and to identify optimum client settings and UNIX performance commands.

Training Flow

Training Flow

- 
- Terminology and Components
 - QAD .NET UI Administration
 - Multiple Systems
 - **Performance Tuning**
 - Troubleshooting
 - Customizing Browsers
 - Menu and Browse Collections
 - Process Maps
 - Configurable Screens

Overview

Overview

- Tomcat considerations
- Database
- Clients
- UNIX tools
- Kernel considerations

Tomcat Memory Allocations

Tomcat

- Memory allocations (Java options)
 - server: Tells java to run optimized for server side
 - Xms256m: Sets initial heap size (this example sets it to 256 MB)
 - Xmx256m: Sets maximum heap size (this example sets it to 256 MB)
 - Set via CATALINA_OPTS environment variable
 - `export CATALINA_OPTS="-server -Xms256m -Xmx256m"`

Database Tuning

Database

- Standard Database tuning ...
- Make sure to set the `-n` parameter
 - This sets the maximum number of connections a database can have
 - This value should exceed:
Max WebSpeed agents + Max AppServer agents + Max tomcat agents + Max character connect + Max telnet connects
- 36.20.10.3 (Telnet Maint)
 - Max value = Maximum number of telnet connections a user can have **and** Maximum number of active HTML maint programs a user can have
 - Min value = Number of idle telnet connections a client will have.
 - **RECOMMEND SETTING THIS VALUE TO “0”**

Client Considerations

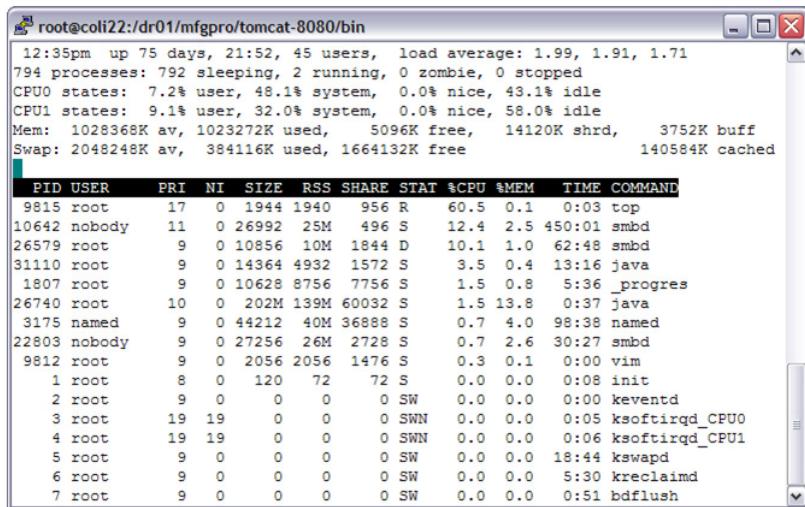
Clients

- HTML Rendering is CPU-intensive
- A P400 PC will see its processor peg at 100% with each page rendering
- Recommend at least a 1.6 GHz
- Recommend double the OS required memory
- Recommend 1GB of hard disk space

UNIX Tools

UNIX Tools

- Top



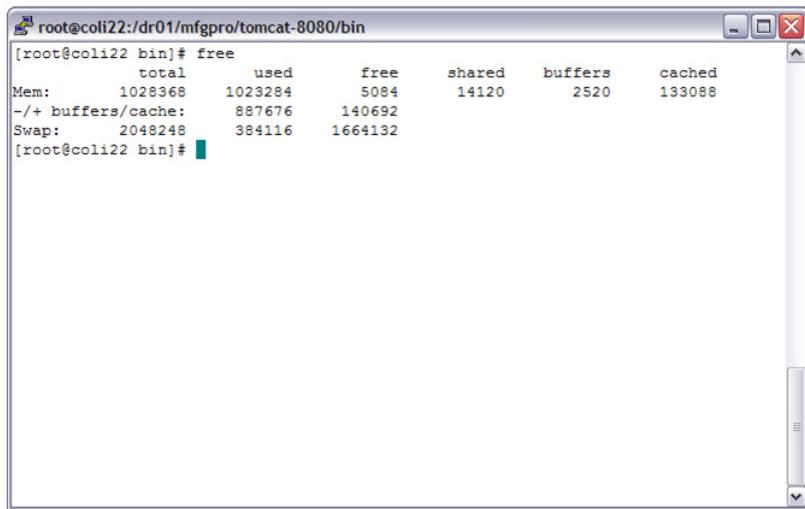
root@coll22:/dr01/mfgpro/tomcat-8080/bin

```
12:35pm up 75 days, 21:52, 45 users, load average: 1.99, 1.91, 1.71
794 processes: 792 sleeping, 2 running, 0 zombie, 0 stopped
CPU0 states: 7.2% user, 48.1% system, 0.0% nice, 43.1% idle
CPU1 states: 9.1% user, 32.0% system, 0.0% nice, 58.0% idle
Mem: 1028368K av, 1023272K used, 5096K free, 14120K shrd, 3752K buff
Swap: 2048248K av, 384116K used, 1664132K free 140584K cached

PID USER PRI NI SIZE RSS SHARE STAT %CPU %MEM TIME COMMAND
9815 root 17 0 1944 1940 956 R 60.5 0.1 0:03 top
10642 nobody 11 0 26992 25M 496 S 12.4 2.5 450:01 smbd
26579 root 9 0 10856 10M 1844 D 10.1 1.0 62:48 smbd
31110 root 9 0 14364 4932 1572 S 3.5 0.4 13:16 java
1807 root 9 0 10628 8756 7756 S 1.5 0.8 5:36 _progress
26740 root 10 0 202M 139M 60032 S 1.5 13.8 0:37 java
3175 named 9 0 44212 40M 36888 S 0.7 4.0 98:38 named
22803 nobody 9 0 27256 26M 2728 S 0.7 2.6 30:27 smbd
9812 root 9 0 2056 2056 1476 S 0.3 0.1 0:00 vim
1 root 8 0 120 72 72 S 0.0 0.0 0:08 init
2 root 9 0 0 0 0 SW 0.0 0.0 0:00 keventd
3 root 19 19 0 0 0 SWN 0.0 0.0 0:05 ksoftirqd_CPU0
4 root 19 19 0 0 0 SWN 0.0 0.0 0:06 ksoftirqd_CPU1
5 root 9 0 0 0 0 SW 0.0 0.0 18:44 kswapd
6 root 9 0 0 0 0 SW 0.0 0.0 5:30 kreclaimd
7 root 9 0 0 0 0 SW 0.0 0.0 0:51 bdflush
```

UNIX Tools

- Check memory with free



A screenshot of a terminal window titled "root@coli22:dr01/mfgpro/tomcat-8080/bin". The window displays the output of the "free" command. The output shows memory usage statistics:

	total	used	free	shared	buffers	cached
Mem:	1028368	1023284	5084	14120	2520	133088
-/+ buffers/cache:		887676	140692			
Swap:	2048248	384116	1664132			

Other UNIX Tools

- lsof
 - Lists open files on system
 - A way of tracking down process associated with a port
- ipcs: Provides information on ipc facilities
- who: Shows who is logged into system
- ps -elf
 - Shows active processes
 - Will want to redirect to file for viewing
 - Will want to pipe it to a grep command for filtering

Kernel Considerations

Kernel Considerations

- Maximum number of open files
- Maximum number of telnet connections
- Terminal type
- Java threading

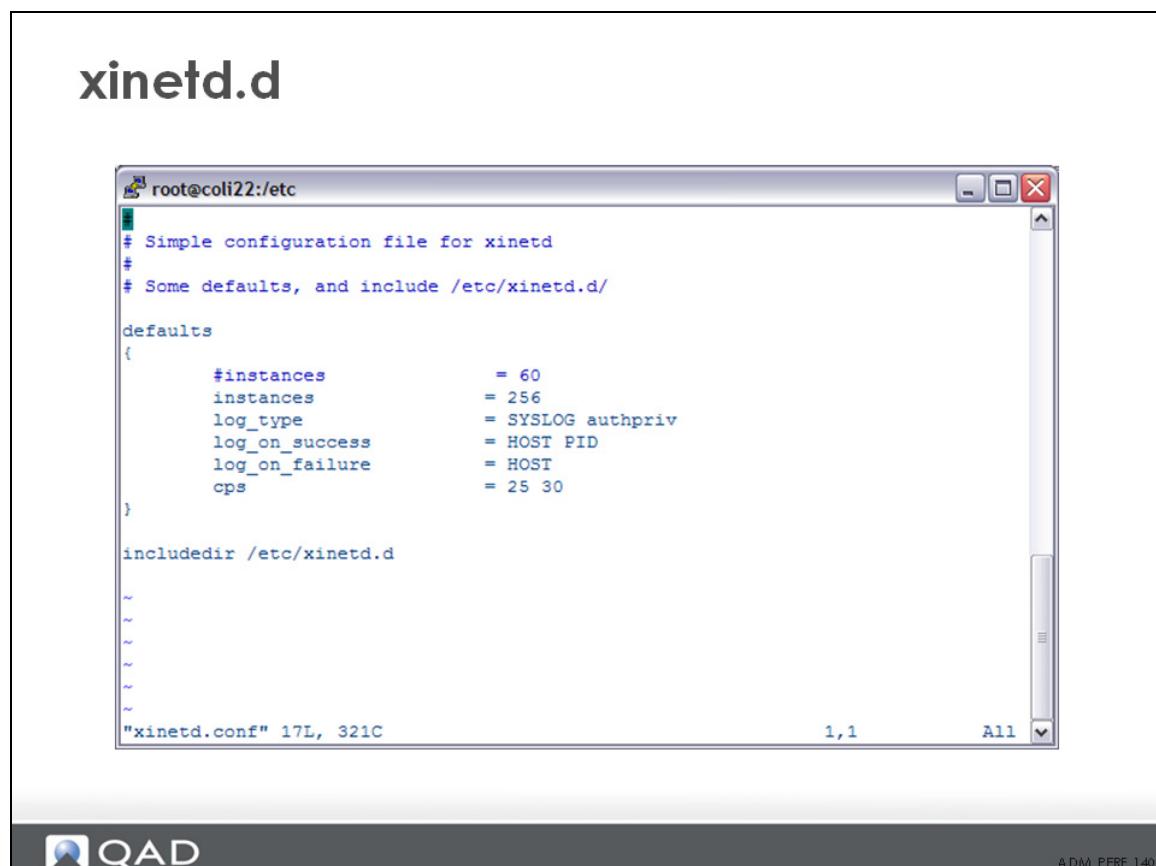
Maximum File Size

Increase Maximum File Size



ADM_PERF_130

xinetd.d



The screenshot shows a terminal window titled "root@coli22:/etc" displaying the contents of the xinetd.conf configuration file. The file includes default settings and a directive to include other configuration files from /etc/xinetd.d.

```
# Simple configuration file for xinetd
#
# Some defaults, and include /etc/xinetd.d/

defaults
{
    instances          = 60
    instances          = 256
    log_type           = SYSLOG authpriv
    log_on_success     = HOST PID
    log_on_failure     = HOST
    cps                = 25 30
}

includedir /etc/xinetd.d

~
~
~
~
~
~

"xinetd.conf" 17L, 321C
```

1,1 All

Additional Resources

Additional Resources

- QAD .NET UI Deployment Guide



ADM_PERF_150

Exercises and Knowledge Check

- 1** What is the purpose of the `-n` parameter?
- 2** What is the purpose of the `lsof` and `ps -elf` UNIX commands?
- 3** What is the function of the `xinetd.d` program?

Chapter 5

Troubleshooting

Chapter Objectives

Chapter Objectives

- The objective of this chapter is to describe troubleshooting techniques, commands and logs for the QAD .NET UI.

Benefits**Benefits**

- You will be able to identify basic troubleshooting techniques based on standard startup sequence types, possible test points and database connections, troubleshooting commands for servers, and system logs.

Training Flow

Training Flow

- 
- Terminology and Components
 - QAD .NET UI Administration
 - Multiple Systems
 - Performance Tuning
 - **Troubleshooting**
 - Customizing Browsers
 - Menu and Browse Collections
 - Process Maps
 - Configurable Screens

Overview

Troubleshooting

- Troubleshooting basics
- Startup sequence
- Test points
- Logs
- Some tools
- Troubleshooting labs

Troubleshooting Basics

- Everyone will develop their own troubleshooting techniques
- QAD .NET UI is not a diagnostic tool, it is an application. However:
 - It can be used to gather important troubleshooting indications
 - Can you log on?
 - Can you run browsers?
 - Can you run HTTP Maintenance programs?
 - Can you run Telnet Maintenance programs?
 - Do the URL links work?
 - Are the screens correctly rendered?
 - Do the SE programs run in a character client?
- Develop a list of test points

Startup Sequence**.NET UI Startup Sequence**

- The startup sequence is important to a point
 1. The database servers must be started before the other Desktop components
 2. Admin Server and Name Server
 3. WebSpeed Brokers: Will require restart if the databases are bounced
 4. AppServer Brokers: Will require restart if the databases are bounced
 5. Tomcat
 6. Connection Manager: Will also require restart if the databases are bounced

Test Points

Troubleshooting Test Points

- Possible test points
 - Databases
 - Admin Server – Name Server
 - WebSpeed/AppServer brokers, agents, and messengers
 - Tomcat Server
 - Connection Manager
 - Correct operation of both telnet scripts
 - User Option Telnet Maintenance Telnet Script
 - Connection Manager Telnet Script
 - Then – what does the client do or not do
 - Login?
 - Run browsers?
 - Run HTTP Maintenance?
 - Run Telnet Maintenance
 - Are the screens rendered correctly?

Database Connections

- ### Database Connections
- Are all the necessary databases running?
 - Are there a reasonable number of database connections?
 - Use a sanity check to account for the number of database connections
 - Connections for the WebSpeed brokers
 - Connections for the AppServer brokers
 - Connections for each Connection Manager instance
 - Connections for Telnet Maintenance
 - Connections for any character users
 - Connections for batch processes
 - Have the databases been bounced?

PROMON

Check the Databases

- Use PROMON
 - How many users are logged on?
 - Does the number match the configuration?
 - Does the -n accommodate enough logins on all of the databases?
 - Are there users from all WebSpeed Brokers?

```

Rec Lock Waits    0 %    BI Buf Waits    0 %    AI Buf Waits
Writes by APW     0 %    Writes by BIW     0 %    Writes by AIW
Buffer Hits      99 %
DB Size          158 MB
FR chain         0 bloc
Shared Memory    8960 K
0 Servers, 17 Users (17)

Enter your selection: 8
usr   pid   time of login   user id   tty Limbo?
6    386 Mon Sep 16 14:27:03 2002 dtremote /dev/pts/12
7    4285 Fri Sep 13 08:40:28 2002 root      batch
8    388 Mon Sep 16 14:27:03 2002 dtremote /dev/pts/15
9    387 Mon Sep 16 14:27:03 2002 dtremote /dev/pts/13
10   389 Mon Sep 16 14:27:03 2002 dtremote /dev/pts/14
11   4390 Fri Sep 13 08:41:18 2002 root      batch
12   394 Mon Sep 16 14:27:04 2002 dtremote /dev/pts/16
13   436 Mon Sep 16 14:27:14 2002 dtremote /dev/pts/17
15   4593 Fri Sep 13 08:44:34 2002 dt2       /dev/pts/3
16   4592 Fri Sep 13 08:44:34 2002 dt2       /dev/pts/2
17   4857 Fri Sep 13 08:45:34 2002 dt2       /dev/pts/6
18   4879 Fri Sep 13 08:45:34 2002 dt2       /dev/pts/5
19   4878 Fri Sep 13 08:45:34 2002 dt2       /dev/pts/9
20   4882 Fri Sep 13 08:45:35 2002 dt2       /dev/pts/7

RETURN - repeat, U - con
  
```



ADM_TSH_100

PROMON is a Progress command that displays server, configuration, and user information.

Admin and Name Servers

Test the Admin and Name Servers

- Test the Admin Server

```
proadsv -query
```

```
(root) /apps/progress/91d/bin $ proadsv -query
PROGRESS Version 9.1D as of Wed May  8 16:47:54 EDT 2002
AdminServer is alive. (8545)
(root) /apps/progress/91d/bin $
```

- Test the Name Server

```
nsman -name NS1 -query
```

```
(root) /apps/progress/91d/bin $ nsman -name NS1 -query
PROGRESS Version 9.1D as of Wed May  8 16:47:54 EDT 2002

Connecting to Progress AdminServer using rmi://localhost:20931/Chimera (8280)
Searching for NS1 (8288)
Connecting to NS1 (8276)

NameServer NS1 running on Host plli01.qad.com Port 5162 Timeout 30 seconds.
Application Service
```

WebSpeed Brokers

Test the WebSpeed Broker(s)

- Test the broker and agents

```
wtbman -name qaddemo_WS -query
```

```
root@qaddemo:/dr01/tomcat/webapps/qadhome/client/configs
Connecting to Progress AdminServer using rmi://localhost:20931/Chimera (6280)
Searching for qaddemo_WS (8288)
Connecting to qaddemo_WS (8276)

Broker Name : qaddemo_WS
Operating Mode : Stateless
Broker Status : ACTIVE
Broker Port : 4160
Broker PID : 2382
Active Agents : 1
Busy Agents : 0
Locked Agents : 0
Available Agents : 1
Active Clients (now, peak) : (0, 1)
Client Queue Depth (cur, max) : (0, 0)
Total Requests : 13
Rq Wait (max, avg) : (1 ms, 0 ms)
Rq Duration (max, avg) : (8 ms, 1 ms)

PID State Port nRq nRcvd nSent Started Last Change
02416 AVAILABLE 04173 000006 000006 000006 Jul 31, 2006 20:50 Jul 31, 2006 22:16

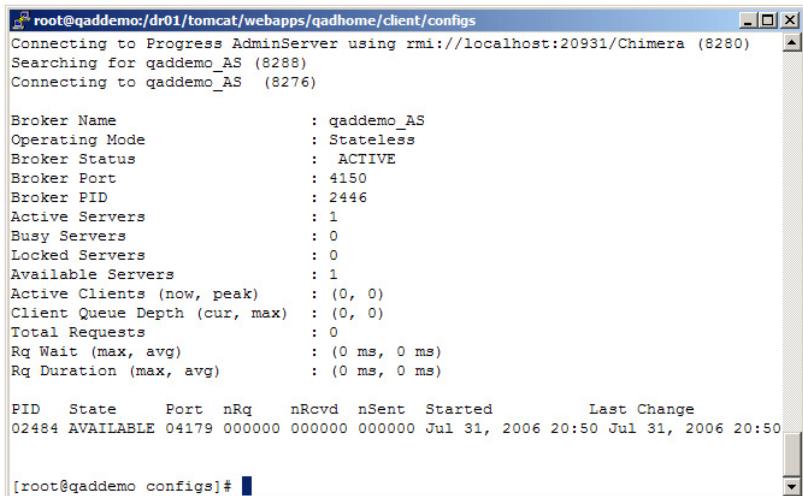
[root@qaddemo configs] #
```

Appserver Brokers

Test the AppServer Broker(s)

- Test the broker and agents

```
asbman -name qaddemo_AS -query
```



```
root@qaddemo:/dr01/tomcat/webapps/qadhome/client/configs
Connecting to Progress AdminServer using rmi://localhost:20931/Chimera (8280)
Searching for qaddemo_AS (8288)
Connecting to qaddemo_AS (8276)

Broker Name          : qaddemo_AS
Operating Mode       : Stateless
Broker Status        : ACTIVE
Broker Port          : 4150
Broker PID           : 2446
Active Servers       : 1
Busy Servers         : 0
Locked Servers       : 0
Available Servers    : 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
02484 AVAILABLE  04179  000000  000000  Jul 31, 2006 20:50 Jul 31, 2006 20:50

[root@qaddemo configs]#
```

WebSpeed Messenger

Test the WebSpeed Messenger

- A simple test of WebSpeed will tell you a lot

Address  http://plli01:8080/demo/cgi-bin/wspd_cgi.ksh?WService=wsdemo/ping

Web Object Path (PROPATH):

```
/apps/mfgpro/eb2/desktop  
/apps/mfgpro.eb2  
/apps/mfgpro/eb2/bbi  
/apps/progress/91d/tty  
/apps/progress/91d/tty/adecomm.pl  
/aps/progress/91d/tty/adeshar.pl  
/apps/progress/91d/tty/prodict.pl  
/apps/progress/91d/tty/adeedit.pl  
/apps/progress/91d/tty/adecomp.pl  
/apps/progress/91d/tty/as4dict.pl  
/apps/progress/91d  
apps/progress/91d/bin
```

Connected Databases:

```
qaddb (PROGRESS)  
qadhelp (PROGRESS)  
qadadm (PROGRESS)
```

Does the broker respond?

Is the PROPATH correct?

Are the correct databases connected?

Ping each service that you are supporting

Is Tomcat Running?

Verify Tomcat is Running

- Enter the URL for each Tomcat instance

Address  <http://plli01.qad.com:8080/index.html>

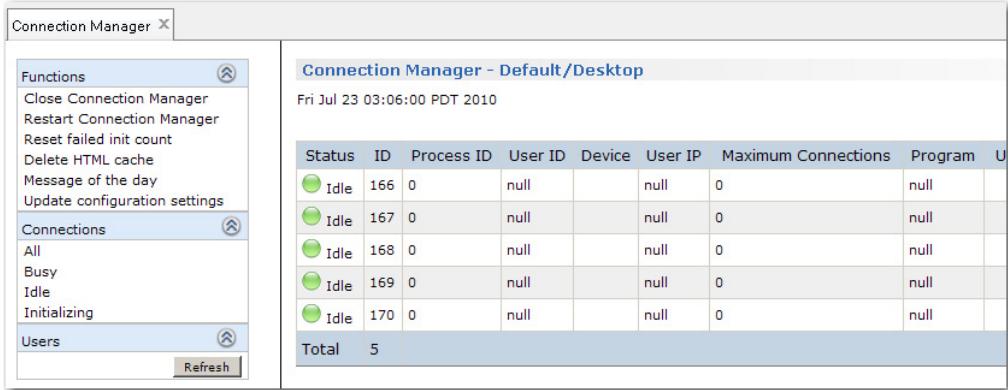


Address  <http://plnt07:8080/index.html>



Test the Tomcat Web App

- Log in to the application and run Connection Manager



The screenshot shows the 'Connection Manager - Default/Desktop' interface. On the left, a sidebar lists 'Functions' (Close Connection Manager, Restart Connection Manager, Reset failed init count, Delete HTML cache, Message of the day, Update configuration settings), 'Connections' (All, Busy, Idle, Initializing), and 'Users'. A 'Refresh' button is at the bottom of the sidebar. The main area displays a table titled 'Connection Manager - Default/Desktop' with the date 'Fri Jul 23 03:06:00 PDT 2010'. The table has columns: Status, ID, Process ID, User ID, Device, User IP, Maximum Connections, Program, and U. It shows five rows, each with a green circle icon indicating 'Idle'. The last row is a summary: Total 5.

Status	ID	Process ID	User ID	Device	User IP	Maximum Connections	Program	U
Idle	166	0	null		null	0	null	
Idle	167	0	null		null	0	null	
Idle	168	0	null		null	0	null	
Idle	169	0	null		null	0	null	
Idle	170	0	null		null	0	null	
Total	5							

- Is Connection Manager functioning?

who Command

Other Troubleshooting Aids

- Use the who command to differentiate users

```
root      pts/0    Sep 13 08:25 (:0)
root      pts/1    Sep 13 08:29 (:0)
dt2       pts/7    Sep 13 08:45 (pl1i01)
dt2       pts/9    Sep 13 08:45 (pl1i01)
dt2       pts/8    Sep 13 08:45 (pl1i01)
dt2       pts/10   Sep 13 08:45 (pl1i01)
mfg       pts/11   Sep 17 10:58 (167.3.25.15)
dtremote  pts/12   Sep 16 14:27 (plnt07)
dtremote  pts/13   Sep 16 14:27 (plnt07)
dtremote  pts/14   Sep 16 14:27 (plnt07)
dtremote  pts/15   Sep 16 14:27 (plnt07)
dtremote  pts/16   Sep 16 14:27 (plnt07)
dtremote  pts/17   Sep 16 14:27 (plnt07)
dttelnet  pts/18   Sep 17 10:59 (167.3.25.15)
dttelnet  pts/19   Sep 17 10:59 (167.3.25.15)
```

tail Command

Other Troubleshooting Aids

- Use the tail command to view active logs
- tail -f catalina.out

```
StateName: Idle
connectionID: 2
ID: null
RequestID: null
SessionID: null
ProcessSeqID:
UserIP: null
UserID: null
program: null
UserMaxSessions: 0
PID: 4592
SessionStart:
AgentStart: Fri Sep 13 08:44:32 PDT 2002
LastAccessedTime: Fri Sep 13 09:31:04 PDT 2002

Init:
Initializing
timing:,,,1032362612673,Connnection Mgr Monitor end,10
```

Troubleshooting Logs

Other Troubleshooting Aids

- Some important logs
 - WebSpeed broker logs:
 - /.../qadui/<brokername>/ .broker.log
 - /.../qadui/<brokername>/ .server.log
 - AppServer broker logs:
 - /.../qadui/<brokername>/ .broker.log
 - /.../qadui/<brokername>/ .server.log
 - Database logs:
 - <db name>.lg
 - Tomcat's catalina.out:
 - /.../tomcat/logs/catalina.out
 - Client shell log:
 - C:\Documents and Settings\<user>\Application Data\QAD\Shell\QAD.Applications.log



ADM_TSH_190

Additional Commands

Other Troubleshooting Aids

- Some additional informational commands
 - TOP - VSAR - GLANCE - VMSTAT
 - Windows Task Manager
 - GSW Admin Monitor
 - ps -ef or ps -elf
 - wtbman -name [broker] -query
 - asbman -name [broker] -query
 - nsman -name NS1 -query
 - WebSpeed Messenger Admin Utility - ping
 - Connection Manager status
 - ?

Troubleshooting Lab

- ### Troubleshooting Lab
- Bad news – All of your users report they can't get into their QAD .NET UI systems
 - Use your bag of tricks to determine and correct the cause of their problems
 - Be sure to test all functionality of QAD .NET UI before giving them the go-ahead
 - As always happens, they have a few more complaints, even after your heroic efforts to get the system up and running

Exercises and Knowledge Check

- 4** When databases are bounced, which services need to be re-started?
- 5** Which two commands do you use to test the Admin and Name servers?
- 6** How do you test WebSpeed Messenger?
- 7** What is the purpose of the `tail` command?
- 8** Where are the Appserver and `catalina.out` logs located?

Chapter 6

Customizing Browses

Chapter Objectives

Chapter Objectives

- The objective of this chapter is to describe the Browse Maintenance, Browse Link Maintenance, and Browse URL Maintenance programs.

Benefits

Benefits

- You will be able to use the Browse Maintenance programs to customize your browses.

Training Flow

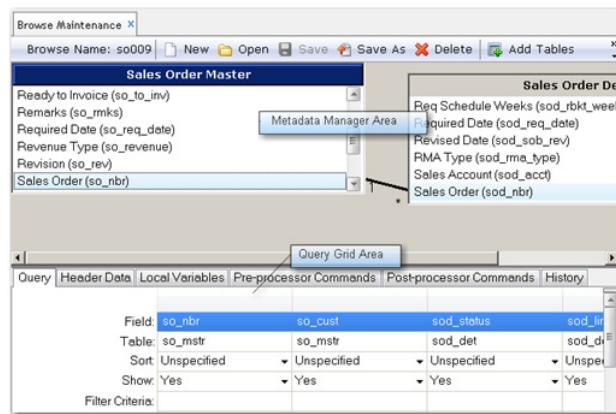
Training Flow



- Terminology and Components
- QAD .NET UI Administration
- Multiple Systems
- Performance Tuning
- Troubleshooting
- **Customizing Browses**
- Menu and Browse Collections
- Process Maps
- Configurable Screens

Browse Maintenance

- Browse Maintenance**
- Design tool for creating, editing, duplicating and deleting browses
 - .NET UI program for non-component based browses
 - Customize field properties
 - Create table joins
 - Import and export browses



ADM_BCUS_050

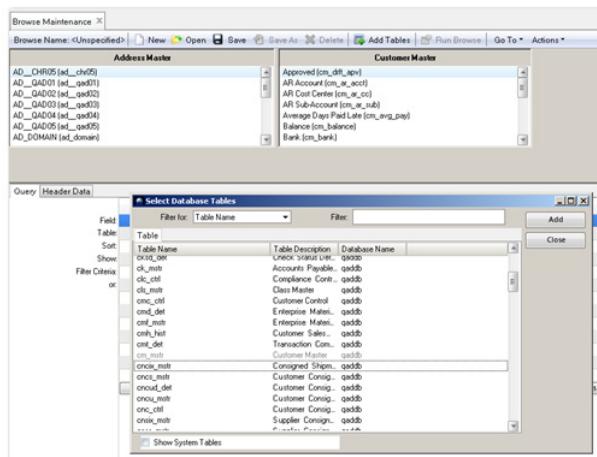
Use Browse Maintenance to specify the components of a browse. The storage of the browse definition is performed automatically.

All browses created by Browse Maintenance (.NET User Interface) can be maintained in the Character UI.

There is no limit to the number of tables you can include using the .NET UI Browse Maintenance, but including more than 30 tables in a browse definition can cause the .NET UI Browse Engine to halt. The Browse Engine was originally designed with a four-table limit to avoid Progress performance issues. The Character UI Browse engine and Desktop Browse engine have four-table limits.

Creating a Browse

- Add left and right tables
- Include or exclude system tables
- Can include up to 30 tables in a new browse
- Tables defined in clientsession.xml
- Restricted tables are not displayed



ADM_BCUS_0.60

When you start Browse Maintenance, the function is ready to create a new browse.

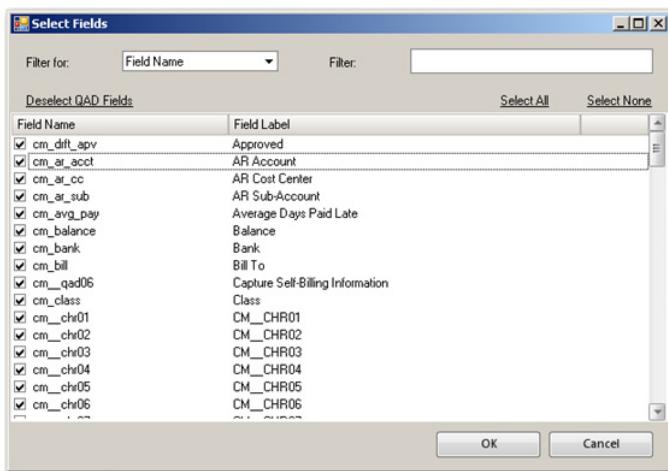
Double-click on the name of the table you want to add as the left table, and then double-click on the name of the table you want to add as the right table.

In the Select Database Tables screen, the Show System Tables screen ensures that system tables (such as * _Db, * _File, and * _Field) are displayed in the Table List.

The tables displayed for each program are defined in the `client-session.xml` file. The Browse Maintenance function reads this .XML file before populating the Select Tables screen. You can prevent tables from being displayed by modifying this file.

Selecting Fields

- Right-click Table Area
- Select or deselect custom QAD fields



ADM_BCUS_070

The Select Fields dialog has the following constraints:

- A field used in a table join may not be unchecked and is displayed as grayed-out text in the dialog field list.
- A minimum of one field must be checked in the dialog field list before clicking OK to exit the screen.

When you have selected a subset of fields for a table, only the selected fields are displayed in the table control area. Note the filter icon displayed in the upper right corner of the Table Control to indicate to the user that a filtered list of fields is being displayed.

Using the Query Tab

- ### Using the Query Tab
- Add fields to the browse using the Query tab
 - Set field Sort and Include properties
 - Set field filters
 - View and modify field properties

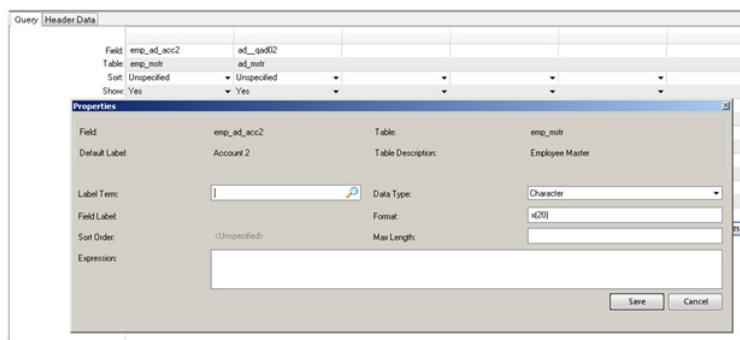


To add a field from a table to the browse, drag-and-drop a field from the table to a column in the Query section. Note that you can view and modify the properties by clicking on the Properties button at the bottom of the column.

To insert new blank columns into the grid, right-click the column header to display the column options.

Field Properties

- Specify a label term from the label master table
- Sort order if column is set to Ascending
- Expressions for local variables
- Data Types for local variables
- Format depends on data type
- Display length



ADM_BCUS_090

The label term field specifies the key or label term from the label master table which is used to retrieve the field label displayed in the browse results.

When saving the browse definition:

If the label term does not exist in the label master table, the system creates a new label master record using the string entered (the string is set to all uppercase and spaces are replaced with underscores).

The new label master record's value is the entered label term. For example, if you enter the new term Red Book, the label master table is queried and the term is not found. A new label master record is created with the key RED_BOOK and the value Red Book. An associated lookup allows the user to select an existing label term from the label master table.

Header Data Tab

- ### Header Data Tab
- Name and description for the browse
 - Optionally restrict access to the browse
 - Join the browse tables to the global domain
 - Specify the value returned by double-clicking on a browse row



ADM_BCUS_100

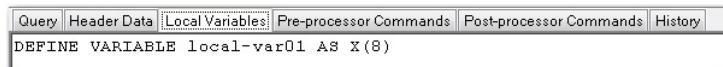
Roles in Enterprise Edition are the equivalent of user groups in Standard Edition. You use the same User IDs/Groups field to define access to browse functions in both applications.

If your role or user group has not been specified in the UserID/Groups field on the Header Data tab, you can run the browse but cannot open the browse in Browse Maintenance. You can also specify roles or user groups in the authorized user list for the Browse Maintenance Import, Export, and Multiple Delete functions.

Other Browse Options

Other Browse Options

- Local Variables
- Pre-Processor Commands
- Post-Processor Commands
- Browse History



ADM_BCUS_J10

Right-click the Header Data tab to include the Local Variables, Pre-processor Commands, Post-processor Commands, and History tabs.

The Pre-Processor Commands and Post-processor Commands tabs are available only for backwards compatibility with browses defined using the Character UI. These tabs provide a way to enter Progress 4GL code that can run either before (pre-processor) or after (post-processor) the browse runs. You do not need to use these tabs when creating a new browse using the QAD .NET UI.

The History tab displays revision history for this browse.

Performance Considerations

Performance Considerations and Limitations

- 200 character limit restricts the number of parameters in browse links
- Check the number of records that will be retrieved by the browse
- Check that fields have been properly indexed
- 30-table limit in browses
- Character UI and .NET Browse compatibility



ADM_BCUS_J20

A browse on a database table that has a great many records may take a long time to save and hours to run. System resources are also strained when you select fields as search criteria that have not been properly indexed.

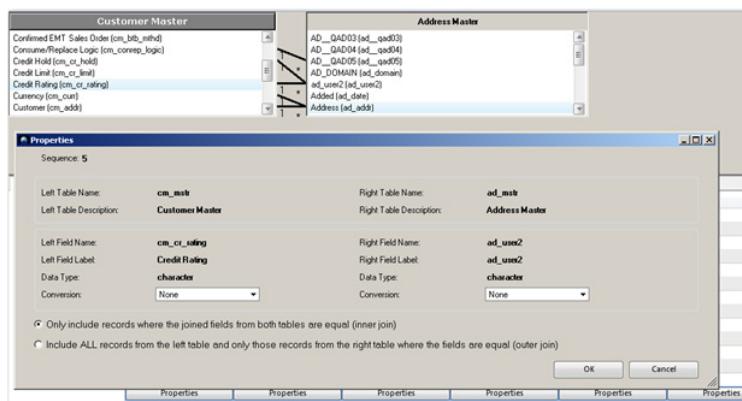
You should therefore consult the data dictionary before defining a browse, to check the number of records being retrieved by a browse. You should also check that the selected fields have been indexed.

There is no limit to the number of tables you can include using the .NET UI Browse Maintenance, but including more than 30 tables in a browse definition can cause the .NET UI Browse Engine to halt. The Browse Engine was originally designed with a four-table limit to avoid Progress performance issues. The Character UI Browse engine and Desktop Browse engine have four-table limits.

Although all browses created by Browse Maintenance (.NET User Interface) can be maintained in the Character UI, some legacy browses defined using the Character UI might not be maintainable by Browse Maintenance (.NET User Interface). In the Character UI, you create a browse by entering data in two maintenance programs, View Maintenance and Browse Maintenance. You have to enter the join data in View Maintenance's Join Phrase field, where *join data* is a clause of the form <from table>. <from field> = <to table>. <to field>. However, more than just join data can be entered in View Maintenance's Join Phrase field. For example, you can include field filters of the form <field name> <operator> <value>. Browse Maintenance (.NET User Interface) only supports maintaining join data.

Table Joins

- Drag and drop to create a join
- View and modify join properties
- Datatype conversion
- Inner and Outer Joins



ADM_BCUS_J30

An inner join returns the records selected for the first table combined with related records selected from the second table. If a record does not exist in the second table, no records are returned. Only related records selected from both sides of the relationship display in the view.

An outer join returns the records found by an inner join. However, in addition, for each value in the first table, it returns unknown values from the second table when no related record is found. As a result, all matching records from the first table are preserved for unmatched records in the second table.

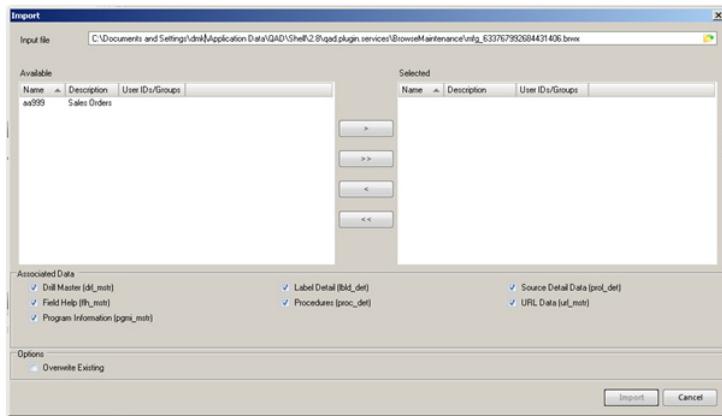
The default join type is inner. Using the outer join can give you more flexibility in displaying information.

Example An inner join between customers and sales orders displays only customers with sales orders. An outer join includes all customers, even those who do not have orders.

Importing Browses

Importing Browses

- Select a browse definition file (.brwx) using the Open lookup



- Specify the data to import using the Associated Data options



ADM_BCUS_140

Importing includes the browse and view data for the browse, but you can specify whether to include associated browse data in the Associated Data pane, which includes checkboxes for including the Drill Master, Field Help, Program Information, Label Detail, Procedures, Source Detail Data, and URL Data.

If you are importing a browse that has the same name as an existing browse, specify whether you want the system to replace the existing browse with the one you are importing by choosing the Overwrite Existing checkbox in the Options pane. Finally, click the Import button.

The Import and Export functions requires that you are using Progress version 10.1C01 at a minimum.

Exporting Browses

Exporting Browses

- Select a .brwx file to display available browsers
- Use the Associated Data options to limit the data to be exported
- Browses are exported to a default location:
 - C:\Documents and Settings\username\Application Data\QAD\Shell\version\qad.plugin.services\BrowseMaintenance



ADM_BCUS_J50

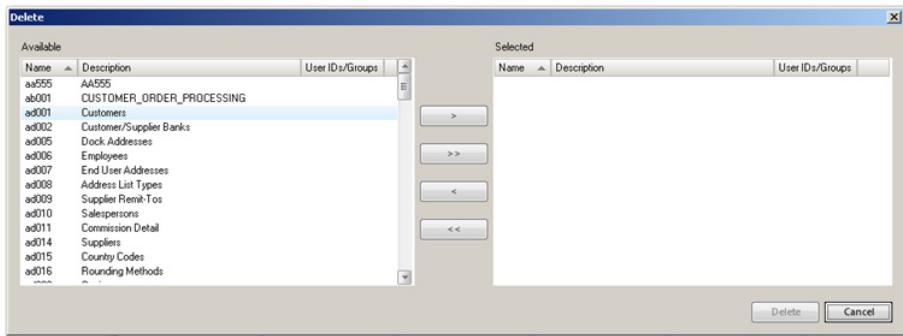
The ability to export, import, and delete browses is disabled by default and should be limited to authorized users.

The `client-session.xml` file (located in `TomcatInstallDir/webapps/qadhome/configurations/SysEnv/`) now includes a setting for authorizing access to the import, export, and delete features.

A new `<DotNetBrowseMaintenanceUtilities>` element includes a `<Utility>` element whose attributes specify authorization.

Deleting Multiple Browses

- # Deleting Multiple Browses
- Security considerations
 - Restricting the use of Browse Import, Export and Multiple Delete functions by modifying the clientsession.xml file

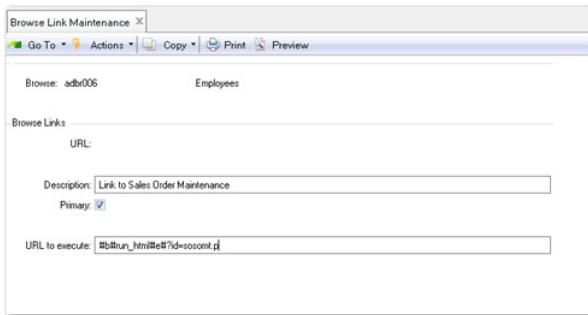


Deleting will remove the browse and view data along with the associated data.

Browse Link Maintenance

Browse Link Maintenance

- Creating New and Edit buttons on browses that link to Create and Modify programs
- Programs linked as URLs
- Data in the current browse is passed to the linked Modify program



ADM_BCUS_180

The New and Edit buttons provide browse program links. When you click on a browse program link Edit button, data from the currently selected row in the browse will be passed to the linked program.

For example, in Sales Order Browse, click Create to open Sales Order Maintenance to enter a new sales order. Click Edit to open Sales Order Maintenance to modify the order for the currently selected row in Sales Order Browse.

Creating a Browse Link

- ### Creating a Browse Link
- Select a browse
 - Specify the program link as a URL to Execute, using the syntax:
 - `#b#run_html#e#?id=program_name`
 - Set the HTTP parameters for the program
 - Index is the number of submits the program executes
 - Field and Value are the field and value you want to load in the linked program



ADM_BCUS_J90

The index field is used to store the number of times the program will execute an Enter action (similar to pressing the Next button).

In simple maintenance programs, this is set to 1 to simply enter the key field values and access the fields that can be maintained in the linked record.

For more complex maintenance programs, there may be multiple sets of input prompts to be processed to access the frame of maintainable data.

For example, the first prompt for data in addkmt.p requires a value for the field Shipto. The program link record provides the value of ad_ref from the browse and executes the first Enter action.

The next prompt for data in the maintenance program requires a value for the field ad_addr and the browse link provides the value of ad_addr from the browse and executes a second Enter action. This advances the maintenance program to its frame of maintainable data for the user. Each time the program asks for data to be entered, the browse link logic offers up the fields it has and if there is a match between the field names it has data for and the fields the program is looking for, the field value is provided and an Enter action is executed (if there are any left to execute).

Use the Field field to enter the name of the variables that the target program is using to prompt for data. This information can be found by executing the desired program, advancing the cursor into the desired fields and pressing Ctrl-F.

The value fields (Value[1], Value[2], etc.) are the variables names from the browse providing the data and must be contained within #b# and #e#. The browse link logic uses these tags to parse out the value of the field from its record buffer.

Example

```
Field[1]: shipto; Value[1] : #b#ad_ref#e#
Field[2]: ad_addr; Value[1] : #b#ad_addr#e#
```

Important Progress has a limit in the size of the data that can be stored in an index. In versions prior to 10.1B, the limit is around 200 characters (the sum of all the data contained in the fields of an index of a record). This limit has been increased to around 2000 characters in version 10.1B and beyond. Within Browse Link functionality, you are restricted to the 200-character limit unless you have upgraded your version of Progress. This limits the number of parameters that can be defined in a browse link, usually to four or less, although a fifth parameter is possible if the names of all of the involved fields are small.

Browse URL Maintenance

Hands-On Exercise



ADM_BCUS_200

When a browse cell contains a URL link, double-clicking it launches a new browser window and displays the intranet or Internet resource associated with the URL. You can use these URLs in two ways:

- Create links to external Web sites that users can activate from QAD .NET browses, such as a supplier Web site associated with a supplier ID.
- Create links to other programs and pass specific data values to the programs. This lets you use browses as a means of navigating directly to maintenance programs.

You can access links to other programs only from drill-down browses, not lookups. Drill-down browses are typically available directly from the menus, but can also be associated with program fields in Drill Down/Lookup Maintenance (36.20.1).

Creating a Browse URL Link to a Program

Browse URL Maintenance

- Create links to:
 - Programs
 - External web sites, such as supplier or customer company web sites,
- Create URL links for specific records in browse cells



ADM_BCUS_210

Example For example, you can set up links in an item browse to directly access Item Master Maintenance (1.4.1), passing the current item number to the maintenance program, and executing the Next command any number of times. When a user clicks the link, Item Master Maintenance displays in a detached window. Multiple columns of data in a browse can contain links so that you can access maintenance programs for any data related to a record. However, data for only one field can be passed to each program.

Creating a Browse Link to a Web Page

Creating a URL Link to a Program

- Using run_html to build the URL
- Specify:
 - The program
 - The field and value
 - The index
 - Use the syntax
`#b#run_html#e#?id=program_name&f1=field_name&v1=value_name#b#`
- Set the HTTP parameters for the program
- Field and Value are the field and value you want to load in the linked program



ADM_BCUS_220

Example You want to establish a URL link in the Purchase Order Browse from supplier ID GS10100 to the corresponding supplier's company Web site, located at <http://www.generalsupplies.com>.

Enter these values in Browse URL Maintenance:

Field Name	Value
Browse	pobr006.p
User ID	*
Field Name	po_vend
Value	gs_10100
URL	http://www.generalsupplies.com
Description	General Supplies Web Site
Primary	Yes

When you run Purchase Order Browse, the supplier gs_10100 record now features a link to the website www.generalsupplies.com.

Creating a Browse Link to a Record

Hands-On Exercise



ADM_BCUS_230

URLs can contain special strings that are automatically replaced by field values in the browse.

Selecting a link containing this type of string automatically replaces that string with the corresponding field value in the row.

Follow these steps to define this type of special string in a URL:

- 1 Enter #b# to indicate the beginning of the string.
- 2 After the #b#, enter a field name associated with the specified browse.
- 3 Enter #e# to indicate the end of the string.
- 4 The Web site for one of your primary suppliers contains a catalog of items. Entering an item's identifier at this Web site accesses the catalog entry for that item, containing information such as item cost, quantity available, and ship weight. To create links from the supplier item numbers to their corresponding catalog entries at the supplier's Web site, create the following URL: http://www.generalsupplies.com/catalog/#b#vp_vend_part#e#

Note You must include http:// in the URL. For example, you must use <http://www.generalsupplies.com/> and not just <www.generalsupplies.com>.

- 5 Next, associate the URL with the Supplier Item column in the Supplier Item Browse.

- 6** After you establish this link, selecting a supplier item number in the Supplier Item Browse automatically inserts the selected field value. For example, selecting supplier item 10-1005 creates this URL: <http://www.generalsupplies.com/10-1005>.
- 7** The system then launches a Web browser to display the relevant catalog information for that item located at that URL address.

Exercises and Knowledge Check

- 1 What is the recommended upper limit of tables you can include in a browse definition?
- 2 How do you restrict access to the Browse Import and Export functions?
- 3 What information should you check before creating a browse?
- 4 What is the file extension for browse definitions?
- 5 Which menu do you use to associate drill-downs with fields?

Chapter 7

Menu and Browse Collections

Chapter Objectives

Chapter Objectives

- The objective of this chapter is to introduce the Menu Collection and Browse Collection programs.

Benefits

Benefits

- You will be familiar with the Collections functions.

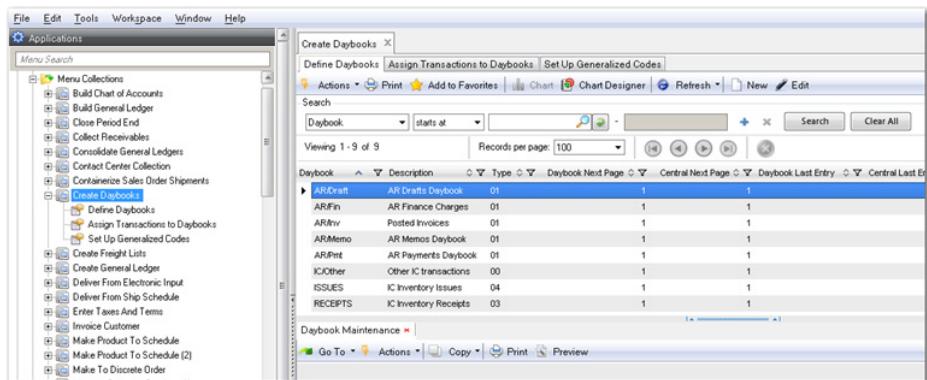
Training Flow

Training Flow

- 
- Terminology and Components
 - QAD .NET UI Administration
 - Multiple Systems
 - Performance Tuning
 - Troubleshooting
 - Customizing Browses
 - **Menu and Browse Collections**
 - Process Maps
 - Configurable Screens

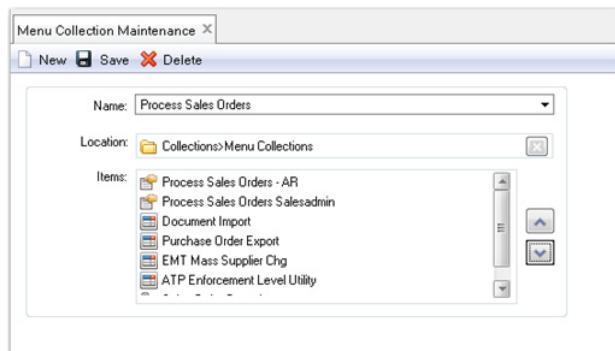
Menu Collections

- Collections of menu items such as programs, browses, process maps, and dashboards
- Stored in the Collections folder
- Need access to Administration Menu



Menu Collection Maintenance

- Drag-and-drop facility for adding menus to collections
- Set the order of menus in the collection using the up and down arrows



Browse Collections

Browse Collections

- Browse Collections comprise a main browse that can drive selected fields in other browses and programs
- Can be customized and saved to user favorites
- Can link to
 - Other browses
 - Maintenance and report programs
 - Other URLs (web pages etc.)
- Need access to Administration Menu

ADM_COLL_07
0

There is no limit to the number of programs and browses you can include in a Browse Collection. However, when defining the collection, you should consider that a large collection takes longer to display on the screen, and there may be a performance issue if it is to be in constant use by a large number of users. In this case, you should consider multiple smaller collections.

Browse Collection Maintenance

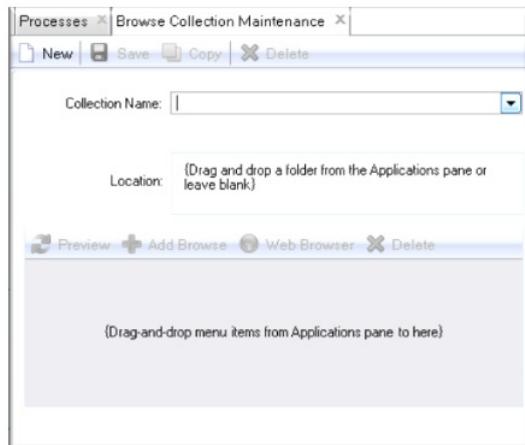
- Main browse in upper half of screen
- Related browses and programs in lower half

The screenshot shows the QAD .NET UI interface for 'Browse Collection Maintenance'. The main window title is 'Processes: [Browse Collection Maintenance] Sales: []'. The top menu bar includes 'Actions', 'Print', 'Add to Favorites', 'Chart', 'Refresh', 'New', and 'Edit'. Below the menu is a search bar with fields for 'Sales Order', 'starts at', and 'Search' buttons. The main content area displays a grid of sales order items with columns for Sales Order, Sold To, Status, Line, Item Number, Unit of Measure, Quantity Ordered, Quantity Open, and Due Date. The grid shows records 1-15 of 15, with record 10009 selected. Below the grid, there are four tabs: 'Inventory Detail', 'Sales Order Print', 'Sales Order Manual Allocations', and 'Sales Order Shipments'. The 'Sales Order Print' tab is currently active. At the bottom left of the main grid area, there is a 'Print' button. The bottom right corner of the window contains the text 'ADM_COLL_06'.

Browse Collection Maintenance

Browse Collection Maintenance

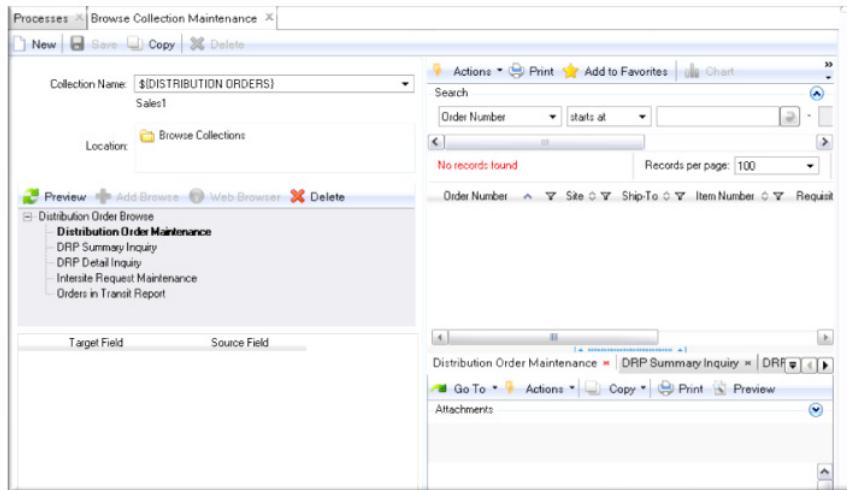
- Give collection a Name
- Assign Location in menu

ADM_COLL_09
0

Browse collections are stored in the Collections folder in the Applications area. When you right-click the Collection name and select Design, you can open the collection directly in Browse Collection Maintenance. This option lets you modify collection properties from the desktop without having to run the maintenance program.

Browse Collection Maintenance

- Select Main Browse and related browses / programs and links between them



You can specify a label term as a name for the browse collection. The advantage of doing this is that you can use a label term whose associated description has been translated into a supported language. To find an existing label term, open Label Master Browse (36.4.17.2). To quickly find a label term you might want to use, use the browse's Search function. For example, if you want to find a label term that includes Item, set the Search fields to Term contains Item and click Search.

In the browse, the Term column lists the label terms that include Item and the Long Label column displays the associated descriptions. Next, in Browse Collection Maintenance's Name field, enter the label term in the format \${Term}.

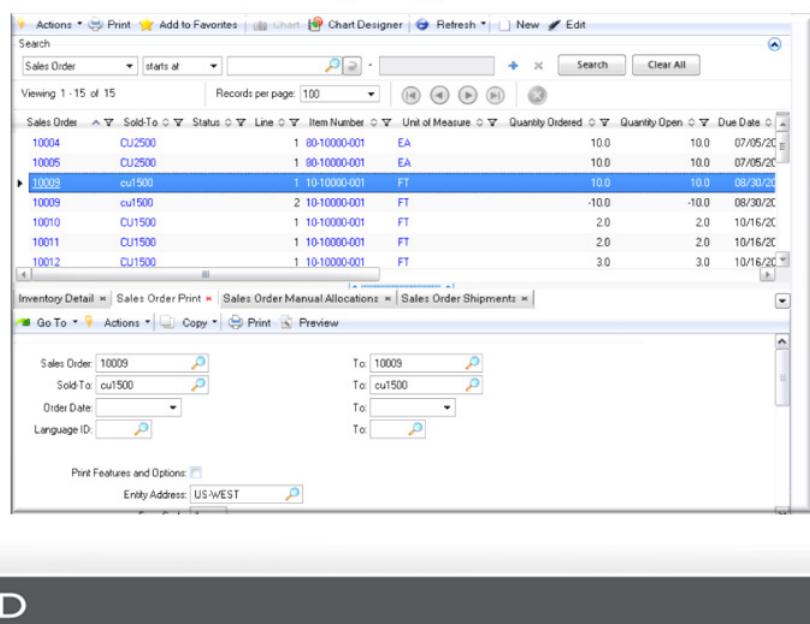
Important You must use curly brackets {} when defining a label term. Otherwise, the label will not link correctly to the translated description.

For example, if the label term is ALL_ITEMS, enter \${ALL_ITEMS} in the Name field. After the browse collection is saved, in the Applications Pane, the browse collection name takes the description associated with the ALL_ITEMS label term.

If the \${Term} name is not converted immediately to the label term's description, log out and log back in again to refresh the Application area's display.

Running Browse Collections

- Selecting a row in the main browse changes linked data in the programs in the collection



You can also drive URLs from browses. For example, select Customer Address Browse and click the Web Browser button.

- In the Title field, enter Google Address Search. In the URL field, enter `http://maps.google.com/maps?q=` and then choose Postal Code from the pull-down menu, which adds `<Postal Code>` to the Google Maps query. Now Customer Address Browse automatically drives a Google Maps query.
- If you decide you want to remove one of the browses or programs, select the browse or program and click the Delete button just above the gray area.
- To preview the collection, click Preview.

Exercises and Knowledge Check

- 1** Where are menu and browse collections located in the Applications area?
- 2** How do you edit a browse collection directly from the Applications area?
- 3** How many fields can be used as target fields?

Chapter 8

Process Maps

Objectives

Chapter Objectives

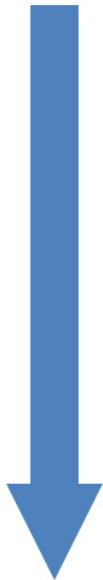
- The objective of this chapter is to describe the Process Map program.

Benefits**Benefits**

- You will be able to create process maps, and to link process maps to menus and operational metrics.

Training Flow

Training Flow

- 
- Terminology and Components
 - QAD .NET UI Administration
 - Multiple Systems
 - Performance Tuning
 - Troubleshooting
 - Customizing Browsers
 - Menu and Browse Collections
 - **Process Maps**
 - Configurable Screens

Overview

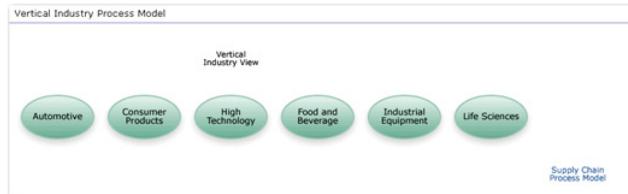
Process Maps

- A process is a structured set of activities designed to accomplish a specific objective.
- Process maps illustrate the principal business and operational processes within a QAD application, and provide graphical navigation.
- Two separate views for process maps in QAD applications
 - Vertical Industry View
 - Supply Chain View
- Both views lead to the same detailed maps.

Process Maps View

Process Maps Views

- Vertical Industry

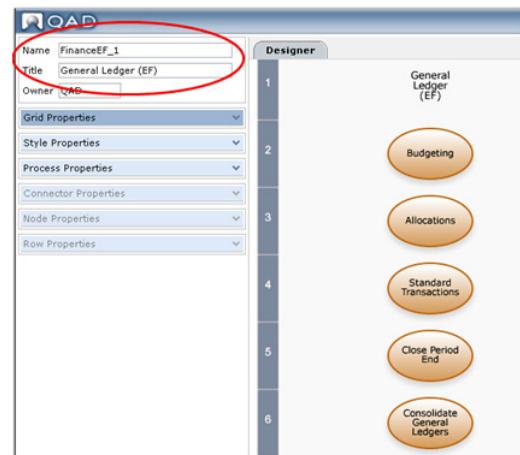


- Supply Chain



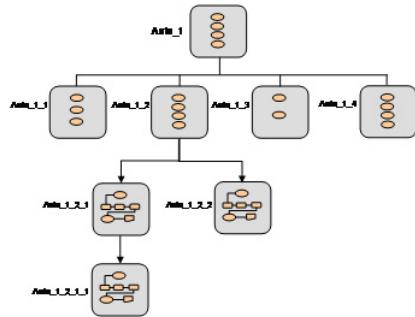
Naming Conventions

- # Naming Conventions
- Each map has:
 - an alphanumeric name, which is also the process map filename
 - a title, displayed on the process map breadcrumb.
 - You must enter the title as a Text node for it to appear on the process map.



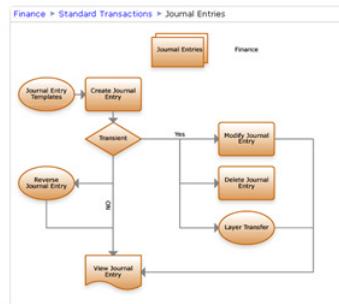
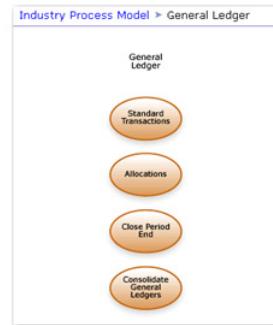
Numbering Conventions

- # Numbering Conventions
- A code identifies the functional area to which the map belongs.
 - A number indicates the map's place within the map hierarchy for that area.
 - Example: the first map in the Automotive area is named Auto_1. If Auto_1 opens four sub-maps, they are named Auto_1_1, Auto_1_2, Auto_1_3, and Auto_1_4. If two maps open from Auto_1_2, they are named Auto_1_2_1 and Auto_1_2_2.



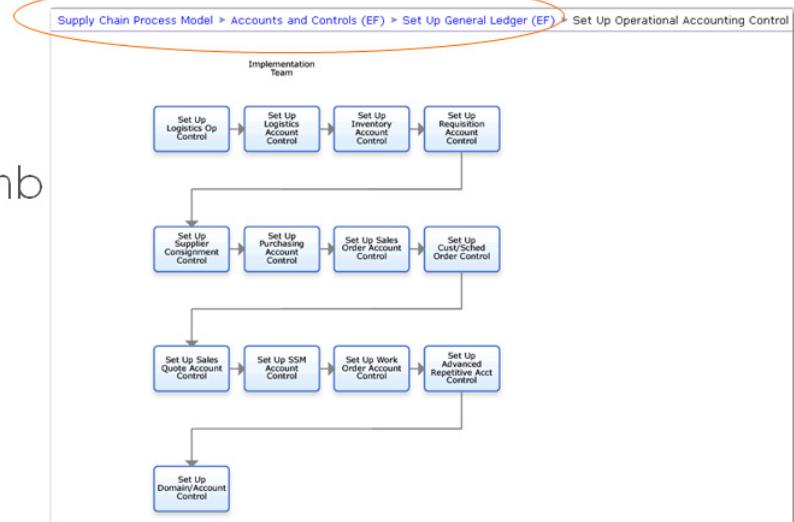
Map Titles

- Level 1: high-level vertical map for that area; title in black text above the map
- Level 2: a subsequent vertical map, or a detailed process flow; for detailed processes, the title is represented in a collection node



Breadcrumbs

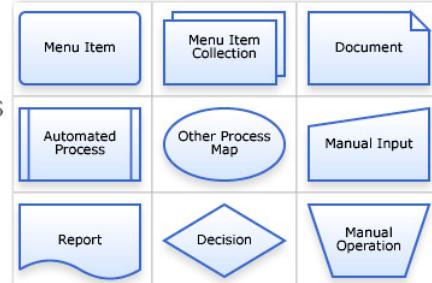
- Lowest level maps do not open any subsequent maps
- Title is indicated by a breadcrumb trail



Nodes

Nodes

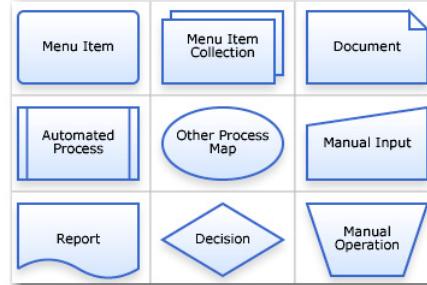
- Menu Item
 - Indicates a link to a program on the menu.
- Other Process Map
 - Connects activities on one process map to another process map.
- Menu Item Collection
 - Links to collections.
- Manual Step
 - Tasks performed outside of the QAD application, for example, external planning
- Decision
 - Directs the flow of a map when it can branch in two directions.



Nodes

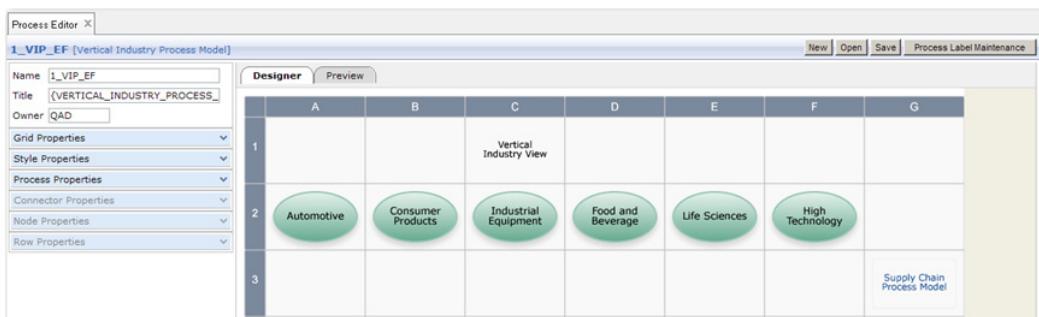
Nodes

- Document
 - Represents reports or files, such as Word documents or Excel spreadsheets, that are relevant to a task.
- Manual Input
 - Indicates inputs to the process from external systems or outputs from the process to external systems, for example, Electronic Document Interchange (EDI).
- Automated Process
 - Indicates a link to an automated process, such as ??
- Report
 - Indicates a link to a report program
- Nodes also indicate a user's permissions with regard to functionality. If the user does not have access to a linked program, the node grays out.



Viewing Process Maps

- Use the Process Editor to view maps



- Click Open to select existing process maps

Process Map Rendering

Viewing Process Maps

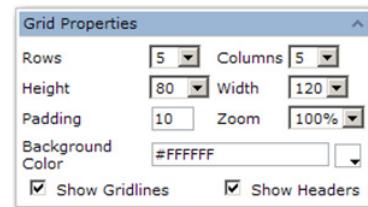
- Process maps are rendered using Microsoft's **Silverlight** technology
- Silverlight is a programmable web browser plugin compatible with .NET applications.
- Can also be viewed using standard **SVG**-based technology.
- The scalable vector graphics (SVG) format is an XML technology for defining vector-based two-dimensional graphics for the Web.
- You set the default display technology in Process Admin Context Parameters.

ADM_PMAP_14
0

Note Adobe Scalable Vector Graphics (SVG) Viewer is no supported by Adobe Systems. If the SVG plugin does not correctly install automatically, you must install it manually.

Creating a Process Map

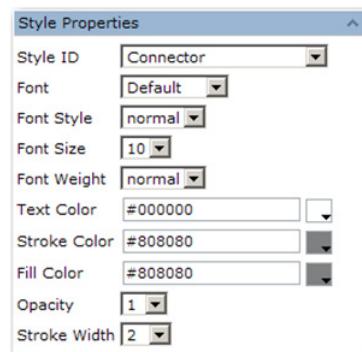
- ### Creating a Process Map
- Click New to create a new map.
 - Assign a name, title, and owner. Do not use spaces.
 - Use Grid Properties to set:
 - the number of rows and columns,
 - cell height, width, and padding
 - A zoom factor for previewing purposes
 - Cell background color
 - Cell gridlines and header settings



Style Properties

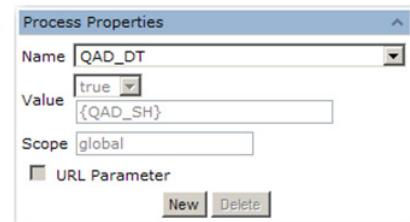
Editing Style Properties

- Styles are pre-defined and are applied to nodes
- You can edit the default font and node properties for the style
- Style attributes are stored in process-config.xml
- Changes you make to styles do not affect existing process maps in which the style is used



Process Map Variables

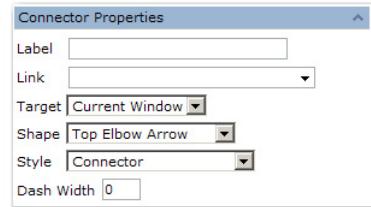
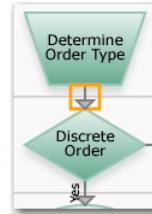
- ### Process Maps Variables
- Used to create links from the Editor to programs, images, icons, other nodes, operational metrics, ..
 - Variables ensure that processes can be used in multiple environments.
 - System global variables are displayed in the Process Properties dialog, and defined in the Process Administration dialog.
 - You can also define local variables with this dialog.



Connector Properties

Connector Properties

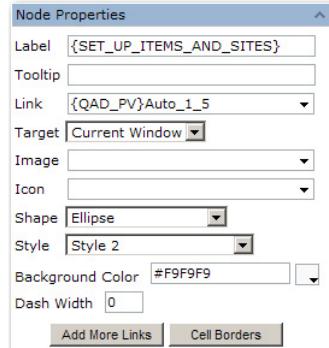
- Available when you select an inter-node connector
- Define properties arrows and lines
- Apply a label, or link the connector to a program, other process map, or file
- If the connector is linked, specify the target window
- Set the shape, style, and dash width



Node Properties

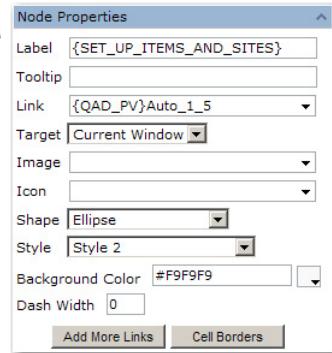
Node Properties

- Available when you click a cell in the grid.
- Use to design nodes.
- Set a label and tooltip, which use the default attributes defined in the style.
- Link to a file, program or another node. The system uses the process variables to locate the files, programs or process maps to be linked. The Target option lets you open the link in the current window or new window.



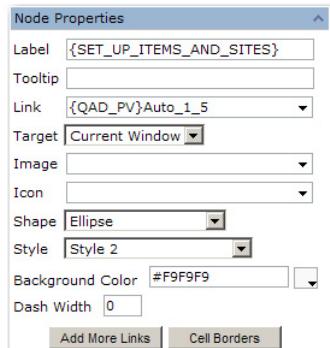
Node Properties

- Display an image instead of the default node shape.
- The image sized to fit the cell.
- Select an icon to display in the lower right-hand corner of the node.
- Select the node shape, based on the function of the node in the process map.
- Select a style for the node, from the default styles defined in Style Properties.
- Set a background color.



Node Properties

- Dash Width is the length in pixels of dashed lines for the node border or for connectors.
- Click Add More Links to add up to 8 additional URL links for the process map.
- Click Cell Borders to define the color, width, and dash width of the cell borders.



Process Map Administration

- ### Process Administration
- Use the Process Admin option to set context parameters and define system properties variables.

The screenshot shows the 'Process Admin' dialog box. On the left, there's a sidebar with 'Context Parameters' and 'Process Properties' buttons, and a 'Refresh' button. The main area is titled 'Context Parameters' and contains the following settings:

Menu Lookup Result Size	100
Menu Lookup Timeout	30
Menu Lookup URL	http://coli48.qad.com:8240/merlot/cgi-bin/cgiip/WService=test_merlot_WS
Properties Directory	WEB-INF/pronav/properties
SVG Directory	WEB-INF/pronav/svg
URL Lookup	MenuLookup.jsp
XML Directory	WEB-INF/pronav/xml/eB2.1
SVG XSL Path	WEB-INF/pronav/xsl/process.xsl
Silverlight XSL Path	WEB-INF/pronav/xsl/process_sl.xsl
Use Silverlight Viewer?	no

At the bottom right is a 'Save' button.

Context Parameters

Context Parameters

- Menu Lookup Result Size
 - The number of records returned when a user displays the Program Lookup associated with the URL field in Node Properties and Connector Properties. Default 100.
- Menu Lookup Timeout
 - When a user uses the Program Lookup, the system connects to the active database using the URL specified in Menu Lookup URL and reads the menu information from the database. This information is held in memory for the number of minutes specified in this parameter.

Context Parameters

- Menu Lookup URL
 - The full URL the system uses to connect to a database when it reads menu records to display in the Program Lookup. Example:
 - `http://crsu04.qad.com:4949/cgi-bin/qad_wspd_cgi_31c_dt91.ksh/WService=testdt91web/com/qad/nav/xmenu.p?Action=MenuLookup`
- It is built using the following elements:
 - Relative path to the executables directory on the Web server
 - WebSpeed executable name
 - WebSpeed broker name
 - API for reading the database menus

Context Parameters

- SVG Directory
 - Specifies the directory path where the SVG files created with the Process Editor are stored. The path is relative to the QADDesktopBase/webapps directory.
- URL Lookup
 - Specifies the file to use for generating the listing of programs associated with the URL field in Connector and Node Properties. By default, this is MenuLookup.jsp.

Context Parameters

- XML Directory
 - Specifies the path to the directory where the XML files created with the Process Editor are stored. The path is relative to the QADDesktopBase/webapps directory. Process maps for each supported language are stored in the QADDesktopBase/webapps/WEB-INF/pronav/xml directory.
- SVG XSL Path
 - Specifies the path to the XSL file used to convert process files from XML to SVG format, typically WEB-INF/pronav/xsl/process.xsl. The path is relative to the QADDesktopBase/webapps directory. This file was installed during installation.

Context Parameters

- Silverlight XSL Path
 - Specifies the path to the XSL file used to convert process files from XML to SVG format, typically `WEB-INF/pronav/xsl/process_sl.xsl`. The path is relative to the `QADDesktopBase/webapps` directory. This file was installed during installation.
- Use Silverlight Viewer
 - Use this option to set the default process map viewer. By default, this is set to Yes.

Process Properties

Process Properties

- Use to display variables used by the Process Editor when creating maps
- Edit the default global variable definitions or create a new local variable.
- Generally, you may only need to change the path for the QAD_DT_DOC_ROOT variable.

Process Properties					
Delete	Name	Value	Scope	URL Parameter	
<input type="checkbox"/>	QAD_CONTENT	(QAD_DT_DOC_ROOT)/content/	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_CONTENT_IMG	/content/	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_DT	(QAD_SH)	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_DT_DOC_ROOT	/zinfandee	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_DT_IMG	(QAD_DT_DOC_ROOT)/images/	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_HOMESERVER	http://qad48.qad.com:8880/qad/zinfandee/	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_IMG	(QAD_DT_DOC_ROOT)/images/	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_IMG_DOCUMENT	(QAD_IMG)document.gif	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_IMG_MENUITEM	(QAD_IMG)table.gif	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_IMG_PROCESS	(QAD_IMG)process.gif	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_METRICS_IMAGE	(QAD_HOMESERVER)configurations/<test>/storage/metrics_images/	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_PV	ProcessViewer.jsp?ProcessName=	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_SH	qadsh://menu?invoke?menutem-alas=	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	QAD_SH_MENU_KEY	qadsh://menu?invoke?menutem-key=	global <input checked="" type="checkbox"/>	<input type="checkbox"/>	

Language Support

Language Support

- The node Label field specifies the node text.
- Each label has a key that identifies the label.
- Use Process Label Maintenance to maintain the label keys and text in multiple languages.
- Translated label text is stored separately to the node attributes.
- Create a new label key for each new node
- Specify this key and its translated text for each required language

Process Label Maintenance

Process Label Maintenance

- Select a language from the drop-down list.
- The translated text is displayed for each label key.

Key	Text
ACCEPT_RFQ	Accepter la demande de proposition
ACCEPT_RFQ	Accepter demande de devis
ACCOUNTING	Comptabilité
ACCOUNTS_AND_CONTROLS	Comptes et contrôles
ACCOUNTS_AND_CONTROLS	Comptabilité et contrôles
ACCOUNTS_PAYABLE	Comptabilité fournisseurs
ACCOUNTS_RECEIVABLE	Comptabilité clients
ACCOUNT_BROWSE	Consultation du compte
ACCOUNT_CODE_BROWSER	Consultation des codes comptables
ACCOUNT_REPORT	Etat du compte
ACKNOWLEDGE_KANBANS	Confirmer les Kanbans
ACKNOWLEDGE_KANBAN_CARD_RECEIPT	Confirmer la réception de la carte Kanban
ACTIVATE_AUDIT_PROFILES	Activer les profils d'audit
ACTIVATE_AUDIT_TRAILS	Activer les suivis d'audit
ACTIVATE_EMAIL_NOTIFICATION	Activer la notification par e-mail
ACTIVATE_MULTIPLE_TIME_ZONES	Activer plusieurs fuseaux horaires
ACTIVATE_RELEASE_GROUPS	Activer les groupes de lancement
ACTIVITY_RECORD_REQ	Enregistrement sur l'activité requis
ADD_ALTERNATE_ROUTINGS_TO_ITEMS	Ajouter des acheminements de remplacement aux articles
ADD_ASSET_DATA	Ajouter des données d'actif

- Translated labels are stored in the *properties_language.xml* file
- The system identifies the label text to display based on the label key and the user's language.

Managing Process Maps

- ### Managing Process Maps
- Process maps are stored as XML files, for example, *FinanceEF_3_4.xml*.
 - These files are stored in the *TomcatInstallDir/webapps/qadhome/configurations/default/storage* directory.
 - When migrating to a new QAD .NET UI release, you must manually copy the map files to the *configurations/default/storage* directory of the new web applications server.

Exercises and Knowledge Check

- 1** When a user does not have permissions for a program, how is this represented in the related process map?
- 2** In which menu do you set the default display technology?
- 3** In which file are the map style properties stored?
- 4** What is the purpose of the xml directory parameter?
- 5** Where are process maps stored?
- 6** What is the procedure for migrating process maps from one installation to another?

Chapter 9

Configurable Screens

Objectives

Chapter Objectives

- The objective of this chapter is to describe the Configurable Screens design function.

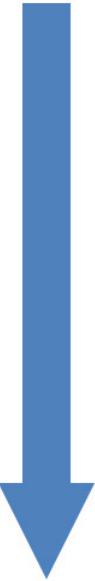
Benefits

Benefits

- You will be able to customize non-component based programs using Configurable Screens features and functions.

Training Flow

Training Flow

- 
- Terminology and Components
 - QAD .NET UI Administration
 - Multiple Systems
 - Performance Tuning
 - Troubleshooting
 - Customizing Browsers
 - Menu and Browse Collections
 - Process Maps
 - **Configurable Screens**

Overview

Configurable Screens

- Design tool for configuring non-component based screens
- Equivalent to Design Mode for component-based screens
- Enabled for members of defined UI-design groups



ADM_CONF_050

Configurable Screens lets users in a designated UI design group disable fields for input, hide fields, set a predefined default value for a field, mark a field as required, add fields and frames, and set frame navigation.

Configurable Screens is used for non-component based programs only. Component-based screens are customized using Design Mode.

Note Access to the Configurable Screens functionality is enabled by the system administrator.

Types of Configuration

Types of Configuration

- You can:
 - Disable fields for input
 - Hide fields
 - Set pre-defined default values for fields
 - Set fields as mandatory
 - Add fields and frames
 - Control frame navigation



ADM_CONF_060

Each company that implements a particular function may use different features. This affects which fields are required and which are optional.

Configuration Examples:

- Generalized codes validation
- Optional modules
- Control settings

You must have a very clear understanding of how a particular function is being used before you change the data input requirements. You must thoroughly test the templates you create before using them in a production environment.

User Groups and Templates

- ### User Groups and Templates
- Changes saved as customized UI template
 - Assigned to user groups
 - Enterprise Edition setup v. Standard Edition setup
 - Generic template for all users



ADM_CONF_070

Screen definitions are stored as UI templates, which can be assigned to user groups so that the screen appearance and behavior can vary based on the user's role within an organization.

In QAD Enterprise Applications - Enterprise Edition, the user group function is replaced by the role function. To enable Configurable Screens in Enterprise Edition, you therefore enter the name of the role to which you want to assign the function in the UI Design Group setup field. The users to which this role has been assigned are then authorized to use Configurable Screens.

Error Handling and Template Conflicts

- ### Error Handling and Template Conflicts
- Error messages displayed when mandatory fields hidden or removed
 - Possible conflicts when users belong to more than one group
 - Conflict management tool to list users, programs, and conflicts



ADM_CONF_060

When you hide a field that is validated by the system, and attempt to progress through the frame containing the field, the system displays the following error message:

The following error was caused by a configurable screen setting.
Please contact your System Administrator.

ERROR: Country code does not exist. Please re-enter.

Use the Configurable Screen UI Template Conflicts screen to resolve conflicting template assignments. If a user belongs to more than one group, the system uses the template associated with the first group assigned to the user. You can view and manage these conflicts using the UI Template Conflicts function, accessible from the Configurable Screens table on the Configurable Screens Admin screen. The administrator can use the drop-down list in the Conflict column to select the group assignment that the system should prioritize.

Setup

Configurable Screens Setup

- Enable the function
- Specify the role that can use this design group
- Save to enable



To setup configurable screens:

- 1 Choose Administration, Configurable Screens.
- 2 Select Configurable Screens Setup.

Enable Configurable Screens

Select this field to enable the function for members of the UI Design Group. If you do not select the field, the function is disabled for all users.

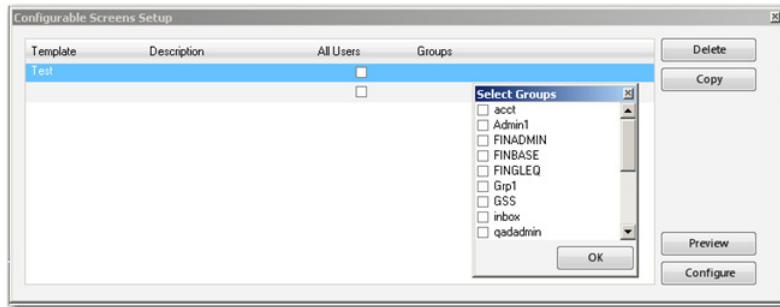
UI Design Group

Enter the name of a role that is authorized to create and modify screen templates. Only users assigned to this group can create configurable screen templates. You can create a specific role for Configurable Screens using Role Create (36.3.6.1).

Click Save to apply this setting.

Creating a Template

- # Creating a Template
- Select the program to configure
 - Right-click to select Design
 - Enter a name, description, and roles for the template
 - Click Configure to enter Design mode



ADM_CONF_100

Right-click the program name in the Applications area, and select Design to display the setup screen.

You can assign this template to all users, or select a specific role.

Templates are defined per program. When you select Design for a program, the existing templates for this program are listed, and you can use Delete to remove unwanted templates, or Copy to copy an existing template. When you copy a template, the copy is re-named by adding a 1 to the template name.

Template Considerations

- ### Template Considerations
- Templates control the behavior of the program
 - When creating a new record to navigate through a screen, the database is not updated, but the record sequential number may be incremented
 - When using an existing record, you may hide a mandatory field, which will not produce an error until the template is saved and the program is run



ADM_CONF_110

Each template defines how fields display, whether they are required and enabled, if default values are supplied, and any automatic navigation from frame to frame.

To move through the sequence of frames in a program, you must either create a new record or modify an existing one. In cases where new records are assigned sequential numbers, it may be better not to create new records. Although the records are not saved, number sequences are incremented.

If you hide a required field and test with an existing record that has a field value, no error is generated. Later when a user attempts to create a new record, template errors may occur because a field that needs input cannot be updated.

Performance Considerations

Performance Considerations

- Consider the impact on the database of deleting the field at a later stage
- If the field is in constant use, many records are created for it
- When you delete, you delete the field and all its values.
- You can remove the field from the frame without deleting it



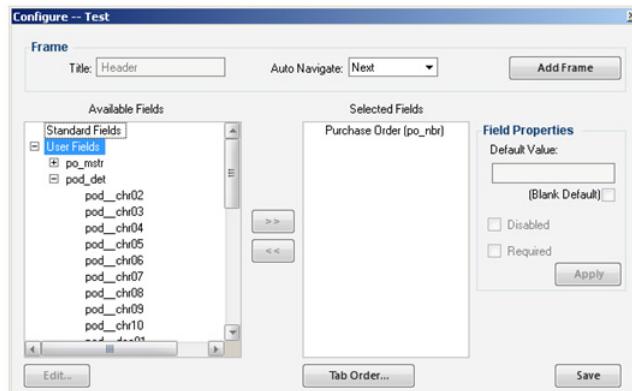
ADM_CONF_120

When you create your own field and frame, you add the field to the schema, and as the program is used, users add values to it. When you delete, you delete the field and all its stored values from the database. Use the Disable or remove options to remove a field from the screen without deleting it from the database.

Configure Screen

Configure Screen

- Auto-Navigate
- Available and Selected Fields
- Field Properties
- Tab Order



ADM_CONF_130

You can click the Save button at any time to save your changes and leave configuration mode. Your changes are also saved each time you click Next or Back to access a new frame.

Auto-Navigate. Use Auto-Navigate to control navigation between frames. You can use the Next and Back options to skip entire frames. To skip an entire frame without generating an error, the proper defaults must exist for all required fields. Next and Back have a similar effect; use them to skip the display of a frame. Which one you use depends on the normal screen navigation.

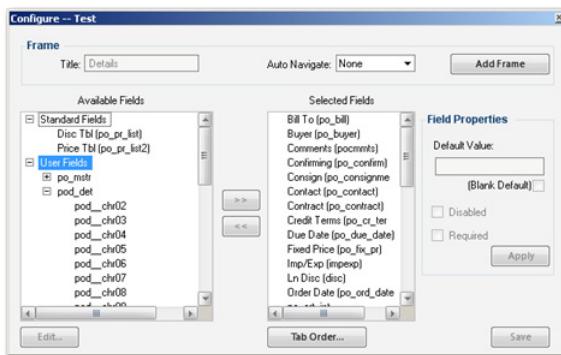
Available Fields. This area displays the user-defined fields you can add to the current frame or to a new frame. These fields are defined for each program in the `configscreens.xml` file.

Selected Fields. This area displays the fields selected for use on the current frame.

Tab Order. The tabbing order is the sequence in which you access fields using the Tab key. Click to display the tabbing order of fields in the current Frame. Use the Up and Down buttons to change the order, if required.

Available Fields

- Standard Fields and User Fields
- Tables and fields defined in `configscreens.xml`
- Add new user fields to `configscreens.xml`
- Default values for fields



ADM_CONF_140

- Standard Fields

These are existing data fields for the program. The Standard fields area only displays fields that have been hidden from the screen as part of a previous customization.

- User Fields

These are the default user customization fields that are defined for all tables.

Adding New Fields and Tables to Programs

When you design a program, the user fields available to add to the screen are displayed in the Available Fields area. You can add these to existing frames, or create a new frame to contain one or more of these fields.

By default, only specific tables and fields are displayed for a particular program. These tables and fields are defined in the `configscreens.xml` file.

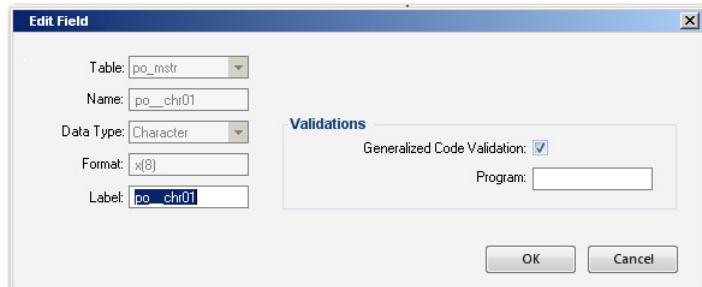
Default Values

You can add a default value to existing or new fields, which is displayed in red on the screen. A drop-down list of default values (None, True, or False) is displayed beside logical-type fields. Defaults you specify for a template override any other defaulting logic associated with a field are only applied to new records; when a record is being edited, no field values are overridden.

Field Properties

Field Properties

- Editing Field Properties
- Field Validation
- Generalized Codes
- Program Validation



ADM_CONF_150

The Edit Field screen displays read-only properties for the selected field, and lets you modify the field label and validation.

Note The Edit Field screen is not available for Standard Fields.

Table

This read-only field displays the database table for which this field is defined.

Name

This read-only field displays the field name.

Data Type

This field displays the field type: character, date, logical, decimal, user 1, or user 2

Format

This read-only field displays the field data format, for example, the maximum number of characters for a character field.

Label

This field displays the field label. Note that the system will translate the value you put in the Label field if the value is a label term. Otherwise, the system will just use the value for the label.

Generalized Code Validation

Check this field to ensure that the values for this field are based on the values specified in Generalized Code Maintenance (36.2.13). You can use Generalized Codes Validation Rpt (36.2.15) to view a list of database fields that have schema validation assigned.

Note When adding values in Generalized Codes Maintenance, you must specify the full table and field name. For example, if specifying values for the field pt_chr01, you enter the table and field name pt_mstr.pt.chr01.

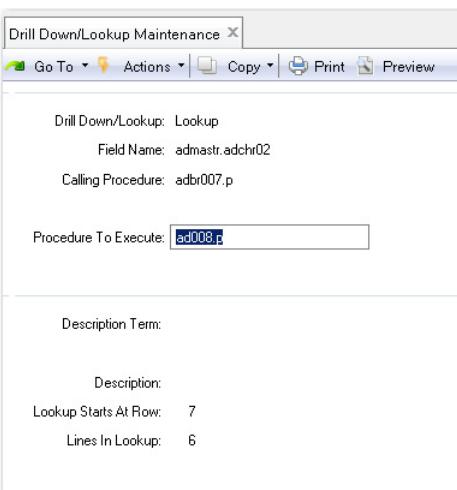
Program

Use this field to enter the name of a user-defined Progress program that validates the field.

You can use the program template gpvalidate.p to create your own Progress programs. This template is stored in the *QADInstallDir/qadui/com/qad/shell/interface* directory and contains instructions for usage. Copy the template and rename it appropriately.

Adding Lookups to Fields

- ### Adding Lookups to Fields
- Use Drill-Down/Lookup Maintenance
 - Enter the full table and field name



ADM_CONF_160

Use Drill-Down/Lookup Maintenance (36.4.8.1) to assign drill-downs or lookups to fields that do not have a browse, to replace a browse, or to delete one.

Warning Most programs attached to a function with Drill-Down/Lookup Maintenance display values in a database table. You can attach any Progress function to a field, and this program executes when the user selects Help. For example, you can attach the program `calculat.p` to field `pt_avg_int` to display a calculator.

When you create your own field and frame, you add the field to the schema, and as the program is used, users add values to it. When you delete, you delete the field and all its stored values from the database. Use the Disable or remove options to remove a field from the screen without deleting it from the database.

Using Added Fields in Character Code

Using Added Fields in Character Code

- Using the `gpgenfld.i` include file
- `gpgenfld.i` get and set function calls



ADM_CONF_170

You can modify character code to add new fields to program screens. New fields can be added to existing tables without requiring schema changes. These fields are not physically part of the master tables but are stored in a side table and thus require a different way to access their values from the code. For this purpose, the include file `gpgenfld.i` gives access to the values of these new fields through function calls.

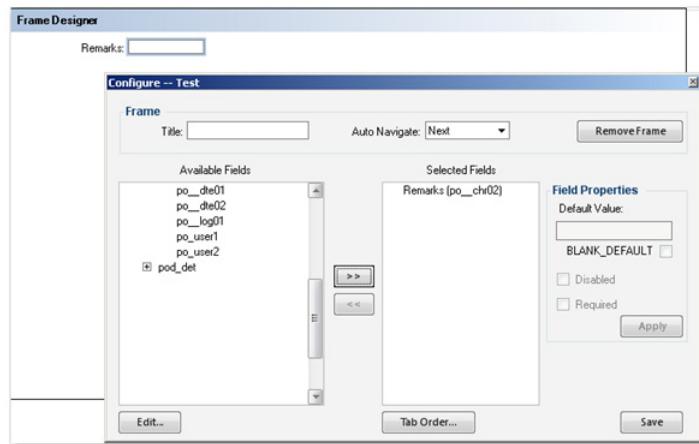
Note This function is only used when modifying character code.

To gain access to the get and set function calls, include this file at the top of the program that will use them, for example:

```
{com/qad/mfgpro/gpgenfld.i}
```

Adding Frames

- Frames option only available when fields are available
- Use Tab Order to set the tabbing order



ADM_CONF_180

The Frame button is only available when there are available fields to add. A default message (8622, ‘See User Guide for adding User Fields) is displayed when no fields are available.

The new frame is displayed behind the Configure screen. To add fields to the screen, use the arrow key to move fields from the Available Fields area to the Selected Fields area. Use the cursor to position fields in the frame, and click the Tab Order button to set the tabbing order for the frame.

Click Save to save this frame and insert it into the program sequence, or Remove Frame to remove the frame from the sequence. When you remove a frame, the fields are selectable again in the Available Fields area.

When you create a new frame, save your updates and exit Configure Screens, the frame is displayed immediately following the current frame when you next launch the program.

Configurable Screens Report

Configurable Screens Report

- All configured screens
- Details on individual fields

The screenshot shows two pages of a report titled "Configurable Screens Report". The first page (Page:1) displays configuration details for program "popmt.p" under template "Test". It lists frames "a" and "b" with their respective field configurations. Frame "a" contains fields "po_cr_terms", "po_pr_list", "po_pr_list2", and "po_mks", all set to "Added". Frame "b" contains fields "po_cr_terms", "po_pr_list", "po_pr_list2", and "po_mks", with "po_cr_terms" set to "Disabled" and the others to "Hidden". The second page (Page:2) shows report criteria: Program: popmt.p, To: popmt.p, Output: PAGE. The footer of the report includes the QAD logo and the identifier "mgcfgrp.p".



ADM_CONF_190

You can generate a report on individual configured screens or on all screens.

Exercises and Knowledge Check

- 1** How does Configurable Screens handle template conflicts?
- 2** You cannot delete design templates: True or False?
- 3** How do you define the tabbing sequence in a new frame?
- 4** In which file are new fields defined?
- 5** How do you add a lookup to a field?
- 6** What causes the Frame button to be unavailable?

