QAD Enterprise Applications

Administration Guide
QAD .NET UI

Introduction to QAD .NET UI Administration
Administration Features and Functions
Configuring System Environments
Configurable Screens

70-3176-2017EE
QAD Enterprise Applications 2017
September 2017

UI_Admin_AG_v2017EE.pdf/sti/sti

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QAD .NET UI Administration Change Summary

The following table summarizes changes to this document.

Date/Version	Description	Reference
September 2017EE	Rebranded for 2017 EE	--
March 2016EE	Added new topic on using Document Attachment Applications Maintenance in the Channel Islands UI	page 53
March 2015EE	Moved Security Configuration to Security and Controls User Guide	
March 2014EE	Added Security Configuration chapter	page 99
	Other updates and corrections	Throughout
September 2013/2013.1EE	Added Browse Initial Database Query Suppression topic	page 15
	Added Configuring Dashboards topic	page 21
	Added Configuring Terminal Script Parameters topic	page 43
	Updated Process Map Configuration topic	page 45
	Other updates and corrections	Throughout
March 2013 EE	Updates and corrections	
September 2012/2012.1EE	Updates and corrections	
June 2012/2012SE	Updates and corrections	
March 2012/2012 EE	Updates and corrections	
	Added topic on e-mail action options	page 6
	Provided samples of menu images	page 12
September 2011/2011.1 EE	Rebranded for QAD 2011.1 EE	

Chapter 1

Introduction to QAD .NET UI Administration

The QAD .NET User Interface (UI) provides a common framework for multiple QAD applications. This framework is based on Microsoft .NET technology, and incorporates familiar UI standards, reducing the need for users to learn how to navigate QAD applications.

The QAD .NET UI is the common interface for both Standard Edition, the core QAD solutions suite, and Enterprise Edition, which offers all of the core Standard Edition capabilities as well as enhancements and new features in a number of other areas. This guide describes how to use the many QAD .NET UI maintenance functions to administer the QAD .NET UI, how to customize the interface for your own business requirements, and how to maintain the most commonly used configuration files. This chapter contains the following sections:

QAD .NET UI Administration 2
Discusses the maintenance features and utilities for the QAD .NET UI interface and programs.

Configuration Environments 2
Lists the configuration files used to customize interface features and functions.

Configurable Screens 2
Discusses the Configurable Screens customization function for non-component based programs.

QAD .NET UI Administration

The QAD .NET UI contains a range of maintenance programs and utilities that let you customize programs and the interface itself for specific requirements. These include programs to:

- Monitor user sessions
- Configure menus, programs, and workspaces
- Define menu and browse collections
- Add links to program help and enable the Guide Me feature
- Use the QAD Shell Interface

See “Administration Features and Functions” on page 3.

Configuration Environments

Many of the interface features are controlled using the system configuration files:

- `client-session.xml`
- `client-bootstrap.xml`
- `plugin-menus.xml`

These files also control program parameters and timings, and enable and disable application menus as required.

See “Configuration Files” on page 53.

Configurable Screens

The programs within the QAD .NET UI are fully customizable, and the Configurable Screens function lets you add or remove fields and frames from the application screen using user-defined templates. Once you have designed your template, you apply the template to enable your changes. The template system ensures that individual customizations can be applied without impacting the core application code.

See “Configurable Screens” on page 81.

Chapter 2

Administration Features and Functions

This section provides information for system administrators on how to use the administration features and functions to configure and customize the QAD .NET User Interface.

This section covers the following topics:

Configuring User Features 4

Configuring Menus, Programs, and Workspaces 7

Browse Performance Controls 13

Defining Menu Collections 16

Defining Browse Collections 18

Configuring Dashboards 21

Attachment Maintenance 24

Adding Links to Application Help 29

Enabling QAD Guide Me 30

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Configuring User Features

The following sections describe user configuration features.

Monitoring User Sessions

Use Session Master Maintenance (36.4.22) to view information about users who are currently logged in to the system through the QAD .NET UI. This information displays in the form of session records, each identified by a unique session ID that is generated by the system. (You can identify your current session ID by selecting Help|View Configuration and viewing the Session ID.) A session record is automatically created when a user successfully logs in to the system from the QAD .NET UI and is deleted when the user logs out.

Only some of the settings displayed on this screen apply to the QAD .NET UI sessions. You can ignore the following: Active Web, Number of Records, Security Profile, Active Telnet, Menu Substitution, and Context ID. The session context detail displays information about the current workspace (domain). One user session can be associated with multiple contexts if programs have been activated in more than one workspace. You can also monitor the status of sessions for maintenance programs, reports, and inquiries using Connection Manager.

Active Directory Authentication

The QAD .NET UI supports Microsoft's Active Directory authentication. With Active Directory support, user passwords can be centrally managed.

To enable Active Directory authentication:

1. Define users so that the user IDs match the Windows user IDs. Assign temporary QAD passwords to new user IDs.
2. Locate the `client-session.xml` file on the home server. (By default, the file is located in the *`TomcatInstallDir`*`/webapps/qadhome/configurations/default` directory.)
3. In the `client-session.xml` file, set `<QAD.Authentication.ActiveDirectory.Enabled>` to `true`.

When a user first logs in to the QAD .NET UI, the system prompts the user to enter the temporary QAD password that was assigned to the user ID. Entering the temporary password then completes the Active Directory setup. The next time that the user logs in to the QAD .NET UI, the user must use their Windows user ID and password.

Note In releases prior to QAD .NET UI 2.9.5 (2012 EE), when setting up Active Directory, you had to enable the Enforce OS User ID option in Security Control (mgurpmmt.p). Additionally, the passwords for user IDs had to be sent to blank. Starting with QAD .NET UI 2.9.5, these steps are no longer necessary.

Configuring Default Client Folder Name

By default, the QAD .NET UI client download is installed in a folder named `C:\Program Files\QAD\QAD Enterprise Applications` *`Version`*, where Version is the version of the product. Typically, this is the appropriate folder to use for client installations. If you prefer,

however, you can change *Version* to a different value by modifying the `options.js` file on the Home Server in the *TomcatInstallDir*`/webapps/qadhome/client` directory. For example, for QAD Enterprise Applications 2011- Enterprise Edition, `options.js` includes:

```
var Vers=" 2011 EE"
```

With this setting, the QAD .NET UI client will be installed to `C:\Program Files\QAD\QAD Enterprise Applications 2011 EE` by default. However, if you change options.js to:

```
var Vers=" 2011 Special"
```

The QAD .NET UI client will be installed to `C:\Program Files\QAD\QAD Enterprise Applications 2011 Special` by default.

Shortcut Options

You can add startup options to the QAD .NET UI shortcut on your desktop:

1. Right-click the shortcut icon for the QAD .NET UI on your desktop.
2. Select the Shortcut tab in the Properties dialog.
3. You can now add options to the command in the Target field. By default, Target will have:

   ```
   "C:\Program Files\QAD\QAD Enterprise Applications 2011 EE\QAD.Applications.exe"
   ```

4. You can add options, such as specifying the default user ID as “abc”, password as “123”, and configuration as “test”:

   ```
   "C:\Program Files\QAD\QAD Enterprise Applications 2011 EE\QAD.Applications.exe"
   -user:abc -password:123 -config-name:test
   ```

The following options are available:

Option	Description
`-user`	Specifies the user ID, as entered on the Login window’s User field. You must also specify the user’s password (if not specified, the -user setting is ignored).
`-password`	Specifies the password for the user, as entered on the Login window’s Password field. Use with caution.
`-config-name`	Specifies the environment configuration name, as entered on the Login window’s Log on to field.
`-workspace`	Specifies the name of the workspace you want to be in after you log in.
`-guideme`	Specifies whether Guide Me is enabled (-guideme.enabled:true or -guideme.enabled:false).
`-log-level`	Specifies the logging level or turns it off (-log-level:off).
`-log-file`	Specifies the location of the log file if you do not want to use the default location, which is %APPDATA%/QAD/shell.
`-enable`	Specifies a plugin to enable (-enable:qad.plugin.example).
`-param.url:file`	Specifies the location of a local file that contains the options.
`-param.url:http`	Specifies the URL of a file that contains the options.

You can put these options in a file on your machine and reference them from the Target setting. Here is an example where the settings are in a file `C:/params.pf`:

```
"C:\Program Files\QAD\QAD Enterprise Applications 2011 EE\QAD.Applications.exe" -
param.url:file:///c:/params.pf
```

The `params.pf` file is a simple text file that contains:

```
-config-name:test
-user:mfg
-password:(blank)
```

Instead of locating the file on a local drive, you can locate it on the network, accessible from a URL. For example:

```
"C:\Program Files\QAD\QAD Enterprise Applications 2011 EE\QAD.Applications.exe" -
param.url:http://hostname/.../params.pf
```

E-mail Action Options

The Action/Email feature in programs running in Desktop mode allows you to create an e-mail with a QAD Shell URI (`qadsh://`) to a Desktop program. Prior to QAD .NET UI 2.9.5, there was an inconsistency in this feature because different e-mail clients handle the QAD Shell URI differently, some recognizing it and allowing the e-mail recipient to launch the link and some not recognizing it and instead requiring the recipient to copy the link and paste it into a web browser.

Starting with QAD .NET UI 2.9.5, options are available to:

- Allow an administrator to set (using `client-session.xml`) whether they want the QAD Shell URI to be used directly (which is and has been the default) or if they want to wrap this QAD Shell URI in an HTTP URI (`http://`), which is more widely recognized by e-mail clients.
- Provide an option to turn on or off the inclusion of the full URI in the email. (By default two links are put in the email; the first is the program label that links to the URI and the second is the full URI. This option controls the second link.)
- Provide an option to create the link as text instead of HTML (for e-mail clients or settings that are text based).

These options are controlled by the following settings, which can be added to client-session.xml:

`<EmailAction.UseHTTP>true</EmailAction.UseHTTP>`

When set to `true`, the HTTP URI is used in the e-mail. When `false`, the direct QAD Shell URI is used.

`<EmailAction.IncludeURI>true</EmailAction.IncludeURI>`

When set to `true`, the full URI is added as a link in the e-mail. When set to `false`, it is not included.

`<EmailAction.UseText>true</EmailAction.UseText>`

When set to `true`, the link will be text. When set to `false`, the link will be HTML.

Configuring Menus, Programs, and Workspaces

Using Menu System Maintenance

With Menu System Maintenance (36.4.4), you can assign menu labels and execution files (such as programs) to menu numbers. When users type the menu number, either in the QAD .NET UI's Menu Search field in the application area or in the character UI, the execution file runs. If you want to move a menu item's location in the menu system, or have it run a different execution file, you can make those changes using Menu System Maintenance.

Understanding the Menu System

The menu system controls what displays when a user logs in. It is designed like a product structure, recorded as single-level relationships between a parent menu item and a child item. At the top level in the character UI, the parent item is the Main Menu (Menu 0).

Note The menu groups represented by the folders in the QAD .NET UI are referenced through the letter A. For example A.1 is Sales, A.2 is Manufacturing and so on.

At lower levels, the parent item is a submenu such as the Call Management Menu (11.1) or an executable function.

Menus are stored in a table indexed by language ID. Each user has a default language. When a user logs on, the system determines the user language and displays menu text in that language.

As a user moves through menus and makes selections, the Execution File specified in Menu System Maintenance controls the function or submenu that displays.

QAD applications are delivered with all offered menus and functions. You can remove menus for programs that you do not use by either taking them off the menu or controlling them with menu security.

Note It is easier to update your software releases if menus are not modified. Instead, use menu security for functions you do not use. In the character UI, you can set up User Menus for commonly used menus and functions. In the QAD .NET UI, each user can define a personal menu subsystem of commonly used functions using the Favorites feature.

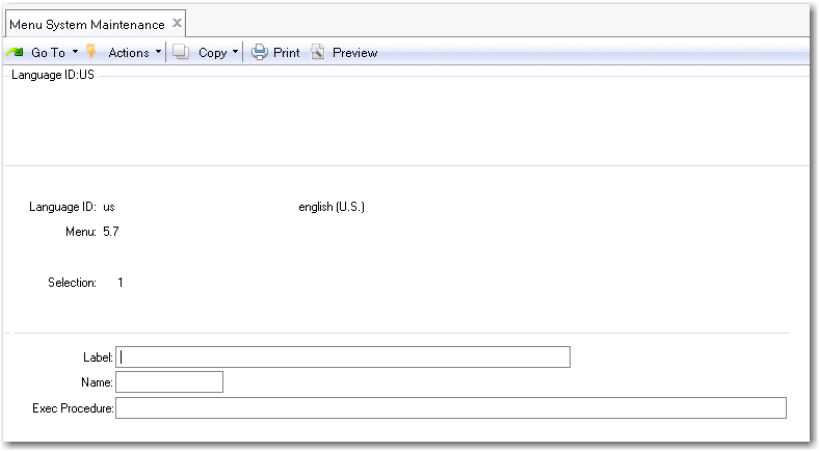
Configuring the Menu System

Note Menu System Maintenance changes might be lost during software updates when menus are reloaded.

Important Menus are cached in memory when you log in to the system. You must log out and log in again to see any changes made with this program. In addition, if you add menu items, you must grant access to them before anyone can see them.

In the QAD .NET UI, when you first start Menu System Maintenance, you must first specify the language to which the changes apply.

Fig. 2.1
Menu System Maintenance Settings



Language. Specify the language code to which the changes will apply.

As you modify or create a menu item, complete the following fields:

Menu. Specifies the code that places the menu item within the hierarchy of the menu system. Note that the menu groups represented by folders in the QAD .NET UI are referenced through the letter A. For example, A.1 is Distribution, A.2 is Manufacturing, and so on.

Selection. Specifies the code that, together with the menu code, identifies the menu item number. For example, for Purchase Approvals Maintenance, Menu is 5.1 and Selection 1, resulting in a menu item number of 5.1.1. If you enter 5.1.1 in the application pane's Menu Search field, you will get Purchase Approvals Maintenance.

Label. Specifies the menu label associated with the menu item. For example, the default menu label for the execution file sosomt.p is Sales Order Maintenance.

Name. Specifies a shortcut name for the menu item, so that rather than entering the full program name or number, users can just enter the shortcut to access the menu item.

Exec Procedure. Specifies the execution procedure. For example, sosomt.p is the execution file for Sales Order Maintenance. The execution procedure can be one of the following:

- A menu number such as `1.1`
- A Progress program such as `sosomt.p`
- A component-based function specified in the form of a uniform resource name (URN) such as
  `urn:cbf:BCreditor.Modify`
- A process map specified in the form of a URN such as
  `urn:pmap:IndustryProcessLevel1`
- A browse collection specified in the form of a URN such as
  `urn:collection:fcb4af10-e778-4db5-9461-766f5b7e2891`

To delete a menu item, click the Delete icon at the top of the screen.

To save the changes you have made so far, click the Save icon at the top of the screen.

Defining Program Information

The program information table contains a record for each menu-level program, defining characteristics that affect the way it runs. Each program in the QAD .NET UI must have a record both in Menu System Maintenance (36.4.4) and in Program Information Maintenance (36.3.21.1). In addition to menu-level Desktop programs, lookups must be defined in order for the look-up icon to display next to a field in an Desktop screen.

Note Reports created using the Report Resource Designer do not require an entry in Program Information Maintenance.

Program information records are loaded with other default data during system installation and can be viewed in Program Information Maintenance or Program Information Browse (36.3.21.2). You must manually create records for any custom programs that you want users to be able to access from the QAD .NET UI.

The following table lists the default settings for different program types.

Program Type	Web Logic Implemented	Type
Browses, lookups	Yes	Blank
Special Desktop programs such as Browse Maintenance and Kanban workbenches	Yes	Blank
Desktop reports and inquiries	No	Desktop
Desktop maintenance programs	No	Desktop

The Multi Domain field indicates a program that updates data that applies to all domains in a database. When this is set to Yes, the string All Domains displays in the Menu Properties window for the associated menu program. Otherwise, the domain name displays.

Appropriate default settings for the Multi Domain field are set during installation. For example, generalized codes apply to each domain separately so Multi Domain is set to No by default for Generalized Codes Maintenance (36.2.13). Country codes apply to the database as a whole so Multi Domain is set to Yes by default for Country Code Maintenance (2.14.1).

You can update the setting for your custom programs or change it if you want the current working domain to continue to display even when a user is updating a table that applies across domains. This change affects what displays on the UI only. The program continues to update data for all domains.

Adding Records

To execute a program from the QAD .NET UI menus, add a record to Program Information Maintenance for each custom program.

If you want to create records for a number of programs at once, use Program Information Update (36.3.21.23.18) to scan them and automatically create records.

To create program information records:

1. Enter a custom program name.
2. Indicate if this program updates data for all domains in the database.
3. Click Next to continue.

4 Set Web Logic Implemented to Yes if this is a browse written according to QAD standards. Set Web Logic Implemented to No if this is a maintenance program, report, or inquiry.

5 Leave the Type field blank for a browse. Specify Desktop for a maintenance program, report, or inquiry.

Adding Records Automatically for Custom Programs

Use Program Information Update (36.3.21.23.18) to automatically add records for custom programs to Program Information Maintenance. Use this utility as an alternative to adding records manually. It is especially useful for initially populating records with referenced tables.

Domain/Workspaces Configuration

With the introduction of Enterprise Financials, workspaces are partitioned by domain and entity. This has a dramatic impact on the number of workspaces, the amount of memory used, usability and migration. For this reason, you can configure the behavior of workspaces in your system using two configuration settings in the `client-session.xml` file:

- Workspace.Provider

  This setting controls the type of plugin used to display workspaces. It has two options:

  - `QAD.Plugin.Services.DomainWorkspaceProvider`

    This option displays one workspace per domain.
  - `QAD.Plugin.Services.DomainEntityWorkspace Provider`

    `QAD.Plugin.Services.DomainEntityWorkspace Provider` displays one workspace per domain and entity

- Workspace.Format

  This setting lets you customize the workspace display name. The following variables have been defined to allow flexible naming.

  ```
  db-name
  domain-name
  domain-id
  currency
  entity-name
  entity-id
  culture-name
  ```

  Example

  ```
  QAD.Plugin.Services.DomainWorkspaceProvider = ${domain-name}
  QAD.Plugin.Services.DomainEntityWorkspaceProvider = ${domain-id} ${domain-name}
  [${currency}] ${entity-id} > ${entity-name}
  -->
  <Workspace.Format>${domain-id} ${domain-name} [${currency}] > ${entity-id} ${entity-
  name}</Workspace.Format>
  ```

Configuring Lookups for Multiple Return Values

The majority of field lookups in Character mode return one value to the calling field. However a number of fields return values to several screen fields. You can now provide this functionality for QAD .NET UI screens.

This can be accomplished by editing the `lookupreturnfields.xml` file, which is stored in `tomcat/webapps/<appname>/net/lookups/`.

The format of each entry is as follows:

```
<program name="<program name>" screenid="<frame:field>" lookupfield="<lookup field>">
   <returnvalue screenfield="<screen field>" fieldinlookup="<field in lookup>"/>
</program>
```

`<program name>` is the menu-level program name.

`<frame:field>` is a combination (separated by a colon) of the frame name and the first enabled field on that frame.

`<lookup field>` is the name of the field that the lookup is attached to. Use Ctrl+F to view the name of the field.

`<screen field>` is the name of the field that the lookup should return data to. Use Ctrl+F to view the name of the field.

`<field in lookup>` is the field in the lookup that the data will be returned from. It can be determined by running the lookup, right-clicking on the column of the data you are interested in returning, and selecting Properties.

If you require more than one additional return value, add another `<returnvalue>` element with the appropriate attributes.

Once you have added your data into the XML document, save it, close down the QAD .NET UI, and then restart the application.

The `lookupreturnfields.xml` file contains a number of examples of the above format.

If the QAD .NET UI version is 2.8 or greater running on QAD Enterprise Applications SE SP10 and above or QAD Enterprise Applications EE SP5 and above, you can also enable this feature using Drill-Down/Lookup Maintenance (36.4.8.1), which has additional fields that provide this functionality.

Program Message Color and Font Options

You can specify the color and font of program messages by setting the Message Color and Message Font options available in Tools|Options. Note that Message Color and Message Font apply to the messages automatically displayed by programs. (Message Color and Message Font options do not apply to workflow messages: these settings apply only to program messages.)

Configuring Toolbar Colors

You can configure QAD .NET UI client toolbar colors in the client session configuration file (`client-session.xml`) file. The toolbar colors can vary based on the workspace, which gives you a helpful way of reminding users that they have changed environments or workspaces. For example, you might use red to indicate a test environment and silver to indicate a production environment.

To set the primary toolbar color, use <Workspace.DefaultToolBarColor>, specifying the color as RGB values:

```
<Workspace.DefaultToolBarColor>233,233,233</Workspace.DefaultToolBarColor>
```

To set the secondary toolbar color, use <Workspace.DefaultToolBarColor2>, specifying the color as RGB values:

```
<Workspace.DefaultToolBarColor2>233,233,233</Workspace.DefaultToolBarColor2>
```

You can specify individual workspaces to have different toolbar colors based on the workspace ID, which typically has the format *domain-id.entity_id*. For example:

```
<Workspace.workspaceid1.ToolBarColor>Silver</Workspace.workspaceid1.ToolBarColor>
<Workspace.workspaceid1.ToolBarColor2>LightGray</Workspace.workspaceid1.ToolBarColor2>
<Workspace.workspaceid2.ToolBarColor>LightGray</Workspace.workspaceid2.ToolBarColor>
<Workspace.workspaceid2.ToolBarColor2>Silver</Workspace.workspaceid2.ToolBarColor2>
```

Configuring Menu Images

The menu items listed in the left-hand Applications panel include small (16 x 16 pixels) icons to indicate the type of menu item. Process maps, maintenance programs, browses, reports, and collections all have default icons, but you can now include your own custom icons. Custom icons should be the same size as the default icons (16 x 16 pixels) and accessible from some URL path that you specify in the client session configuration file (client-session.xml) file.

The images are as follows:


ProcessMap.png


Maint.png


Browse.png


Report.png


Report-new.png


Group.png

By default, the following statements in the client session configuration file (client-session.xml) file specify the default images for process maps, maintenance programs, browses, reports, and collections:

```
<Menu>
   <Image name="process">ProcessMap.png</Image>
   <Image name="maint">Maint.png</Image>
   <Image name="browse">Browse.png</Image>
   <Image name="report">Report.png</Image>
   <Image name="qrfreport">Report-new.png</Image>
```

```
   <Image name="collection">Group.png</Image>
</Menu>
```

These statements specify which images to use for the menu items. The `name` attribute maps to the Image field in Program Information Maintenance. The `name` attribute must be in lower-case.

If you would like to use different images for the `process`, `maint`, `browse`, `report`, or `collection` menu items, you can specify a different file along with a URL to where you have located the file. For example, the following specifies `NewMaint.png`, located in **`http://url_path/`**, to be the image file for `maint` (maintenance program) menu items:

```
<Menu>
   ...
   <Image name="maint">http://url_path/NewMaint.png</Image>
   ...
<Menu>
```

If you have a custom menu item type, you can define an image for it as follows, where *`custom`* is what you have specified in Program Information Maintenance's Image field:

```
<Menu>
   <Image name="process">ProcessMap.png</Image>
   <Image name="maint">Maint.png</Image>
   <Image name="browse">Browse.png</Image>
   <Image name="report">Report.png</Image>
   <Image name="qrfreport">Report-new.png</Image>
   <Image name="collection">Group.png</Image>
   <Image name="custom">http://url_path/custom.png</Image>
</Menu>
```

Note Custom images should be 16 x 16 pixels.

Browse Performance Controls

If not developed carefully, custom browses can cause performance issues. If custom browses are causing performance issues, you can configure the system to identify those browses, send warnings to the Message Inbox, and cancel the browses after a specified time.

Canceling the browses after a specified time prevents long-running browse queries from adversely affecting application server performance, which can affect all the users of the system. You can have the system identify, report, and eventually cancel long-running browses. You can alert administrators that a performance problem could be developing by having the system periodically send messages to the Messages Inbox. The browse name and query conditions are included in the messages to help administrators identify problematic browses and their user-specified conditions. In general, performance issues can often center around just a few browses. To track particular types of browses, you can use regular expressions to specify the names of the browses you want to monitor and possibly cancel after some specified time. To configure the system to identify, report, and cancel such browses, use the following settings in the client session configuration file (`client-session.xml`):

`<NotifyRole>` indicates which role (or group) of users gets notified on any browse alert. Notification is sent to the Messages Inbox.

`<NotifyEmail>` specifies a comma-separated list of e-mail addresses to which browse alerts will be sent.

For example:
`<NotifyEmail>admin1@yourcompany.com,admin2@yourcompany.com</NotifyEmail>`

(The SMTP elements in this file need to be configured for your SMTP server for this setting to work.)

`<timeout browseId="`*`browse_name`*`" warnAt="`*`interval`*`" cancelAfter= "`*`interval`*`"/>` specifies a browse performance warning or cancelation, where:

`browseId` specifies a browse ID. The browse ID is the first two letters of the browse name, followed by the number (without the `br` or `.p` in the browse name). For example, the browse ID of Item Browse (`ppbr100.p`) is `pp100`. You can also enter a regular expression. For example, `pp*` specifies all browses whose browse IDs start with `pp`. The default is blank.

`warnAt` specifies the interval in minutes for sending warning messages to users in the `<NotifyRole>` role (or group). The warning messages can alert administrators that a performance problem could be developing because of a long-running browse query. The messages include the browse name and the query conditions entered by the user.

`cancelAfter` specifies the minutes after which the browse will be canceled, with `0` specifying no cancellation.

Use `warnAt` and `cancelAfter` to have the system report warnings up to some time after which the browse is canceled automatically. For instance, in `<timeout browseId="pp*" warnAt= "2" cancelAfter="10"/>`, the system reports warnings every two minutes for all browses running whose names start with `pp`. After ten minutes, those browses are canceled.

The following is an example of settings in `client-session.xml`:

```
<Browse>
  <Notification>
  ...
  <NotifyRole>qadadmin</NotifyRole>
  <timeout browseId="" warnAt="2" cancelAfter="3"/>
  <timeout browseId="ppbr100.p" warnAt="2" cancelAfter="5"/>
  <timeout browseId="so*" warnAt="2" cancelAfter="5"/>
  ...
  </Notification>
</Browse>
```

By default, the settings are not active; they are included as comments in `client-session.xml`. To use the settings, remove the comment markers (`<!--` ... `-->`) and edit the default values.

Disabling Browse Total Count Thread

The `<MaximumBrowseRecordsToCount>` configuration setting in the client session configuration file (`client-session.xml`) limits the total count of records for browses, which controls excessive database server load if the query corresponds to a large set of records. (The default is 50,000 records.)

However, counting the records can also have a performance impact. Generally, the greater the number of records that satisfy the query, the longer it takes for the count to complete. In some cases, the count operation can pose such a demand on system resources that disabling it might be

warranted. Custom browses (defined using Browse Maintenance) can include pre- and post-processor logic that can cause the total count thread to impact performance, since the logic would have to be executed across the entire data set to count the records properly. In such cases, you can either change the logic of the custom browses or disable the total count thread for the system.

To disable the total count thread, set `<MaximumBrowseRecordsToCount>` to a value less than or equal to zero (for instance, 0 or -1).

Browse Timeout

The browse timeout feature provides a mechanism to set the timeout on a browse “get all records” request to a single value with a `<TreatGetAllAsOneRequest>` setting in the `client-session.xml` configuration file. The “get all records” request is actually a series of requests to the server. Setting the parameter to false will treat each request separately for timeout. Setting the parameter to true will use one timer for the set of requests. Suppose the timeout value is 5 minutes and 3 calls are made, each taking 4 minutes. A false setting would not time out, as no single request exceeds 5 minutes. A true setting will time out on the second request, as the 5 minutes is used up.

Browse Initial Database Query Suppression

By default, browses run with an initial database query, which can cause performance issues with some browses. To improve performance, you can configure whether browses run with an initial database query. You can suppress the initial query for all browses or just specified browses. If you suppress all browses, you can then specify exceptions, allowing only specified browses to run with an initial database query. To configure the system, use the following settings in the client session configuration file (`client-session.xml`):

```
<Browse>
<!-- Browse specific override -->
<override>
    <suppressinitialload>
    <!-- To suppress browse launch for specific browses
    enter the browseid in the suppressinitialload section.
    Use "*" to suppress all
    -->
   <!--
   <id>pp100</id>
   <id>gp340</id>
    -->
   </suppressinitialload>
   <doinitialload>
   <!-- If "*" used above, allow specific browses to load -->
   <!--
   <id>mg003</id>
   -->
   </doinitialload>
</override>
</Browse>
```

In `<suppressinitialload>`, list the IDs of browses whose initial database query you want to suppress or use an asterisk (`*`) to suppress the initial database query of all browses. If you suppress all, you can then specify exceptions in `<doinitialload>`, where you list the IDs of browses that you want to run with an initial database query.

Examples

To suppress all browses:

```
<suppressinitialload>
   <all id="*"/>
</suppressinitialload>
```

To suppress Item Browse (pp100) and Sales Order Browse (so009):

```
<suppressinitialload>
   <id>pp100</id>
   <id>so009</id>
</suppressinitialload>
```

To suppress all browses except Item Browse (pp100), Sales Order Browse (so009), and Supplier View (BCreditor.View):

```
<suppressinitialload>
   <all id="*"/>
</suppressinitialload>
<doinitialload>
   <do id="pp100"/>
   <do id="so009"/>
   <do id="BCreditor.View"/>
</doinitialload>
```

Browse Performance Controls in AIA Environments

The browse performance controls, which enable the system to identify, report, and cancel long-running browses, work for environments using AIA. This feature requires that QAD Enterprise Applications be using Progress 10.2B.

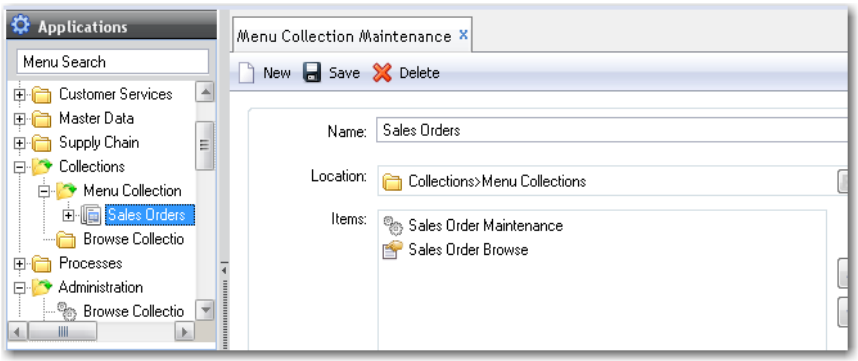
Request Timeouts in AIA Environments

The browse performance controls apply in AIA environments, but for other types of requests in AIA environments, you can configure the AIA timeout setting in the `client-session.xml` files's `<AppServer>...<Timeout>` setting (in seconds). The default setting of 0 directs the system to use the Progress default, which is 100 seconds.

Defining Menu Collections

You can define collections of menu items such as programs, browses, process maps, and dashboards using Menu Collection Maintenance. You can place menu collections in any folder in the Applications pane. The default location for menu collections is the Menu Collections folder, and you can use drag and drop to place the collection in any other menu.

Fig. 2.2
Menu Collection Maintenance



Note Menu Collection Maintenance is only available if you have access to the Administration menu.

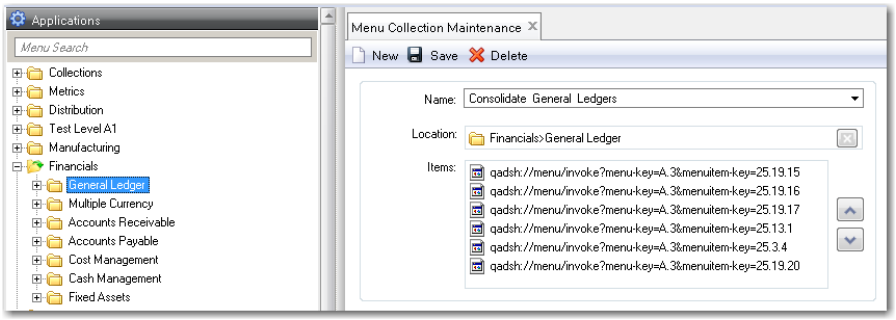
To define a menu collection:

1 Choose Administration|Menu Collection Maintenance.

2 In the Name field, enter a name for the menu collection. The Name field drop-down sorts collections alphabetically and a scrollbar displays for long lists of collections. Additionally, collections starting with the letters you enter in the Name field are listed automatically.

3 In the Location field, if you want to place the menu collection in a particular menu, drag-and-drop the menu folder from the Applications area to the Location field. This replaces the Menu Collections default location with the new menu folder. If you leave the field blank, the new menu collection is placed in the Menu Collections folder (In Collections).

Fig. 2.3
Changing Default Location



4 In the Items box, drag-and-drop one or more menu items from the Applications area to the Items box. These are the items that will be in the menu collection.

5 Click Save.

To edit a menu collection:

1 Right-click on the menu collection and choose Edit, or choose Administration|Menu Collection Maintenance.

2 In the Name field, use the drop-down menu to select the name of the menu collection you want to edit.

3 To change the placement of the menu collection, drag-and-drop a menu folder from the Applications area to the Location field. The menu collection now moves from its current location to the menu folder you drag-and-drop to the Location field.

4 To change the order of a menu item in the collection's Items box, click on a menu item in Items and use the up and down arrow buttons located next to the box.

5 To delete a menu item from the collection, in the Item box, click on a menu item and press the Delete key on your keyboard.

6 Click Save.

To delete a menu collection:

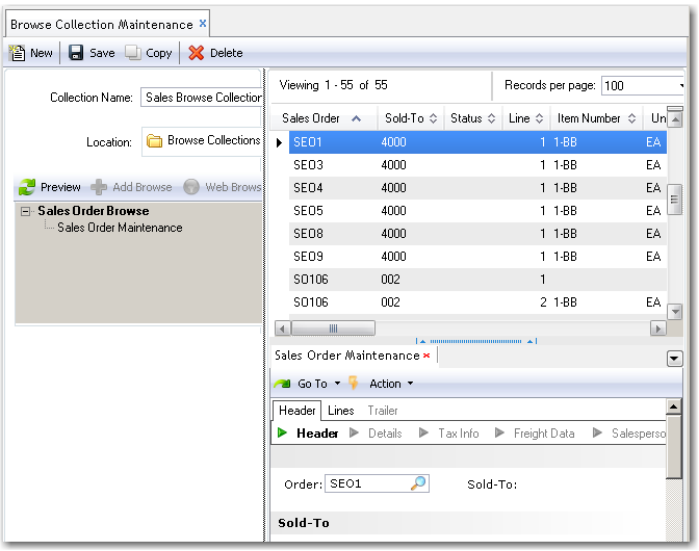
1 Right-click the menu collection and choose Delete. Alternatively, choose Administration| Menu Collection Maintenance.

2 In the Name field, use the drop-down menu to select the name of the menu collection you want to delete, and click the Delete icon.

Defining Browse Collections

To help you browse and maintain related item, site, sales, location, and customer data, you can define collections of related browse and maintenance programs using Browse Collection Maintenance.

Fig. 2.4
Browse Collection Maintenance



Note Browse Collection Maintenance is only available if you have access to the Administration menu.

In a browse collection, a main browse drives the fields selected in the other browses and programs. The QAD .NET UI displays the other browses and programs in the lower part of a horizontal split-screen, with the main browse located in the upper part. For example, you could define a browse collection called Sales that includes a Sales Order browse with a Site browse, Customer browse, and Sales Order Maintenance program.

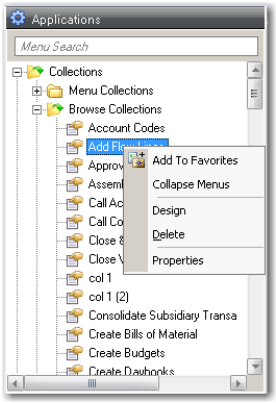
If you click on a record in Sales Order, the associated browses and Sales Order Maintenance program automatically have the data for that order entered. You can just click on the Customer tab to see the information on the customer for that order, or click on the Sales Order Maintenance tab to see the sales order.

Using Browse Collection Maintenance, you can define your own browse collections that you can then save under Favorites.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 collections are stored by default 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.

Fig. 2.5
Browse Collection Design Option



To define browse collections:

1. Select Administration|Browse Collection Maintenance.
2. To start a new collection, click the New button. (To edit an existing program group, click Load.)
3. In the Name field, enter a name for the browse collection.

   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}`*.

   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 Pane's display.

4 In the Location field, if you want to place the browse collection in a menu folder other than the Collections default menu, drag-and-drop a menu folder from the Applications area to the Location field. The new menu replaces Collections as the collection location. If you leave the field blank, the new menu collection is placed in the Browse Collections folder (in Collections).

Note Placing the collection into a menu folder is often used to restrict access of the collection to particular user groups. Only users who have access to the menu folder will see the collection on their menus. Use Menu Security Maintenance (36.3.10, Standard Edition) and Role Permissions Maintain (36.3.6.6, Enterprise Edition) to define permissions for menus.

5 Drag-and-drop the browse you want to use as the parent browse from the Application area to the gray area in the Browse Collection Maintenance screen.

6 For example, drag Sales Order Browse from the Applications area to the gray area in Browse Collections Maintenance. Sales Order Browse is now the parent browse in the browse collection.

Note The parent browse must contain some data or you will not be able to add child browses and create a browse collection.

7 Next, you add child browses to the parent browse. You can either drag-and-drop browses from the Applications area or click the Add Browse button.

8 For example, you can drag-and-drop Customer Address Browse from the Applications pane.

9 In the gray area, click on the name of the browse you have just added as a child browse. For example, click on Customer Address Browse as displayed in the gray area under Sales Order Browse.

10 Next, use the table with the Target Field and Source Field columns to specify the relationship between the parent browse and the child browse.

11 The Target Field column includes the fields that can be driven by whatever source fields you want to select.

12 To select a source field, go to the appropriate source field cell and select a field from the pull-down menu, which lists all the available fields from the browse you first selected. Note that programs allow only one field to be the target. For example, for Customer Address Browse, the Target Field can be Customer and the corresponding Source Field can be Sold-To.

13 Now the data displayed in the child browse will be driven by the current row in the parent browse.

You can also drive URLs from browses.

1 Select Customer Browse and click the Web Browser button.

2 In the Title field, enter Google Address Search. In the URL field, enter:
`http://maps.google.com/maps?q=#b#ad_zip#e#`
Now Customer Address Browse automatically drives a Google Maps query.

3 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.

4 To preview the collection, click Preview.

5 To save the program group as a favorite, click Save. The system prompts you to name the browse collection. The browse collection definition is saved as an XML file on your local machine where you are running the QAD .NET UI.

Adding Browse State Data

You can add state data (for example, charts or summaries) to a browse. When you then drill down by right-clicking on the browse running inside Collection Maintenance, the system saves that state with the collection. This also means that you can create child drill-downs in the running browse instance in this screen, rather than having to use the collection maintenance UI to add a child program. This also means that you can deploy browses with state to the menu using Collection Maintenance.

Configuring Dashboards

Dashboards bring together browses, web pages, business intelligence, and metrics within panels. Each panel offers a quick summary; to find out more, you click on the panel. As a user, you can create, edit, and delete dashboards directly in the QAD .NET UI. To create a new dashboard, you open Create Dashboard and then add content. You can also copy and edit an existing dashboard. As an administrator, you can also do the following:

- Change the number of panels allowed in a dashboard.
- Copy dashboards between systems.
- Identify the data files associated with each dashboard.
- Set dashboard characteristics in the client session configuration file (`client-session.xml`).
- Configure access to the BI portal so you can include BI panels on dashboards.

Changing the Number of Panels Allowed in a Dashboard

By default, a dashboard can include up to 12 panels. As a system administrator, you can change the default setting of 12 to some other number by editing the MaxPanels setting in the `client-session.xml` file on the home server:

```
<!-- Maximum number of panels allowed in a Dashboard. Set to zero for unlimited. -->
<MaxPanels>12</MaxPanels>
```

Copying Dashboards Between Systems

Dashboard definitions are saved on the server in XML files. The XML files are located in user-data directories and in the system-level directory: dashboards created by users are stored in the user-data dashboard directories, while system-level dashboards (such as published dashboards and those downloaded from the QAD Store and installed on your system) are stored in the system-level dashboard directory. The XML files use a naming convention based on a key identifier (for example, `7c430916-1494-475e-b5a1-18f574e9708d.xml`).

User-data Directories

Dashboard definitions for each user are saved on the server in XML files in the user-data dashboard storage directory:

```
TomcatInstallationDirectory/webapps/qadhome/configurations/EnvironmentName/storage/user-data/UserName/dashboards
```

System-level Directory

Dashboard definitions for the system can be placed in the system-level storage directory:

```
TomcatInstallationDirectory/webapps/qadhome/configurations/EnvironmentName/storage/dashboards
```

Copying the Dashboard Definitions

To copy dashboard definitions from one system to another, go to the various dashboards storage directories and copy the .xml files from there to the dashboard directories of the other system.

Note that the dashboard definitions can reference browses and metrics, so you also need to copy any referenced browse definitions and metric definitions not on the destination system.

Within a given system, the dashboard definition XML file names must be unique. For instance, if an XML file in a user-data dashboard directory has the same filename as a file in the system-level dashboard directory, the QAD .NET UI will not open properly.

Identifying Files Associated with Specific Dashboards

The XML files use a naming convention based on a unique key (for example, `7c430916-1494-475e-b5a1-18f574e9708d.xml`). To find out which file is associated with which dashboard on the QAD .NET UI, from the QAD .NET UI menu, right-click on a dashboard menu item and choose Properties. In the General tab, the Key field indicates the unique key, with a DB_ prefix (for example: DB_7c430916-1494-475e-b5a1-18f574e9708d). You can then identify the filename associated with the dashboard. Note that if the dashboard was created by some user, the dashboard will be located in that user's user-data directory rather than in the system-level directory.

Dashboard Settings in client-session.xml File

The dashboard settings section in the client session configuration file (`client-session.xml`) include:

```
 <!-- Dashboard options-->
<Dashboard>
    <!-- Comma separated list of roles with administration privileges
         These users can manipulate system level dashboard templates -->
    <AdminRoles>superuser,qadadmin</AdminRoles>
    <Padding>10</Padding>
    <!-- Maximum number of panels allowed in a Dashboard. Set to zero for unlimited. -->
    <MaxPanels>12</MaxPanels>
    <!-- Provider specific panel strip colors -->
    <ProviderColors>
      <QAD.OPMetrics.dashboard.OpMetricsDashboard>0xc0,0x39,0x2b</QAD.OPMetrics.dashboard.OpMetricsDashboard>
      <QAD.RolePage.UrlRoleTarget>0x8e,0x44,0xad</QAD.RolePage.UrlRoleTarget>
      <QAD.Plugin.BI.DashboardProvider>0x27,0xae,0x60</QAD.Plugin.BI.DashboardProvider>
      <QAD.Browse.dashboard.BrowseDashboardTarget>0xf3,0x9c,0x12</QAD.Browse.dashboard.BrowseDashboardTarget>
```

```
    </ProviderColors>
</Dashboard>
```

<AdminRoles>

Specifies a comma-separated list of roles with dashboard administration privileges. A dashboard administrator can associate dashboards with roles, publish dashboards, and edit or delete published dashboards.

In this example, the superuser and qadadmin roles have dashboard administration privileges:

```
<AdminRoles>superuser,qadadmin</AdminRoles>
```

<Padding>

Specifies the spacing between panels in pixels.

Example:

```
<Padding>10</Padding>
```

<MaxPanels>

Specifies the maximum number of panels allowed on a dashboard.

Example:

```
<MaxPanels>12</MaxPanels>
```

<ProviderColors>

Specifies the border colors for different types (browses, metrics, etc.) of panels in RGB Hex values. Under <ProviderColors>, we have settings for each type of panel content. The default settings for each type of panel are as follows:

Type	Setting	Default Color	RGB Hex Value
Browses	<QAD.Browse.dashboard.BrowseDashboardTarget>	Orange (#F39C12)	0xf3,0x9c,0x12
Operational Metrics	<QAD.OPMetrics.dashboard.OpMetricsDashboard>	Red (#C0392B)	0xc0,0x39,0x2b
Web Pages	<QAD.RolePage.UrlRoleTarget>	Purple (#8E44AD)	0x8e,0x44,0xad
BI	<QAD.Plugin.BI.DashboardProvider>	Green (#27AE60)	0x27,0xae,0x60

Example:

```
      <QAD.OPMetrics.dashboard.OpMetricsDashboard>0xc0,0x39,0x2b</QAD.OPMetrics.dash-
board.OpMetricsDashboard>
      <QAD.RolePage.UrlRoleTarget>0x8e,0x44,0xad</QAD.RolePage.UrlRoleTarget>
      <QAD.Plugin.BI.DashboardProvider>0x27,0xae,0x60</QAD.Plugin.BI.DashboardProvider>
      <QAD.Browse.dashboard.BrowseDashboardTarget>0xf3,0x9c,0x12</QAD.Browse.dash-
board.BrowseDashboardTarget>
```

Configuring Business Intelligence (BI) Portal for Dashboards

If you have the QAD Business Intelligence (BI) portal, you need to specify the URLfor accessing BI in the client session configuration (`client-session.xml`) file's `<BI.Dashboard.URL>` setting so that the QAD .NET UI can locate and access the BI portal.

The BI portal must be accessible for the availability of BI panels on dashboards. (If the BI portal is not accessible, the BI panel option will not be available on Create Dashboards.) The setting in `client-session.xml` is:

```
<BI.Dashboard.URL>http://ip_address_of_BI:port_number/qadbi</BI.Dashboard.URL>
```

In addition, to access the BI portal, the login / password for the QAD .NET UI client must match the login / password for the BI portal.

Attachment Maintenance

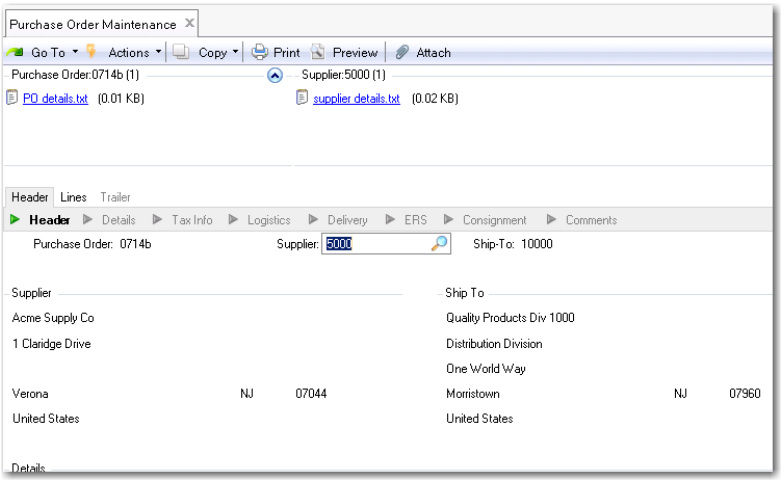
As a system administrator, you can use Attachment Maintenance to specify which programs can have attachments and can control attachment display. This option also lets you define multiple attachment areas for programs, in which you can define different attachments for different program fields. Attachment Maintenance uses a drag-and-drop facility, which means you can drag and drop attachments (such as product pictures, or text files or spreadsheets containing contact phone numbers) onto the attachment area from your desktop or Windows folder.

Once you have defined an attachment for a field in a program, an attachment area is created for that field, and is visible when you run the program. You can define attachments for a field (for example, for Sales Order Number) or for a value for a field (for example, SO1234). When the attachments you define are linked to the field value you select, and are available when you select that field value in another program. For example, when you add contact phone numbers as a text file to the site 10000 in Purchase Order Maintenance, the attachment is visible and accessible on screen when you select this site while creating a sales order in Sales Order Maintenance.

The attachments you define in Attachment Maintenance can be deleted from within the program, and can be replaced with another attachment.

When you define an attachment for a field in the initial frame of a program, for example, for Sales Order in `sosont.p`, the attachment area is visible throughout the program. If, however, you define an attachment in a subsequent frame of the program, for example, for the field Item in Sales Order Maintenance, the attachment area is visible only when the field is on-screen.

Fig. 2.6
Attachments Areas on Purchase Order Maintenance

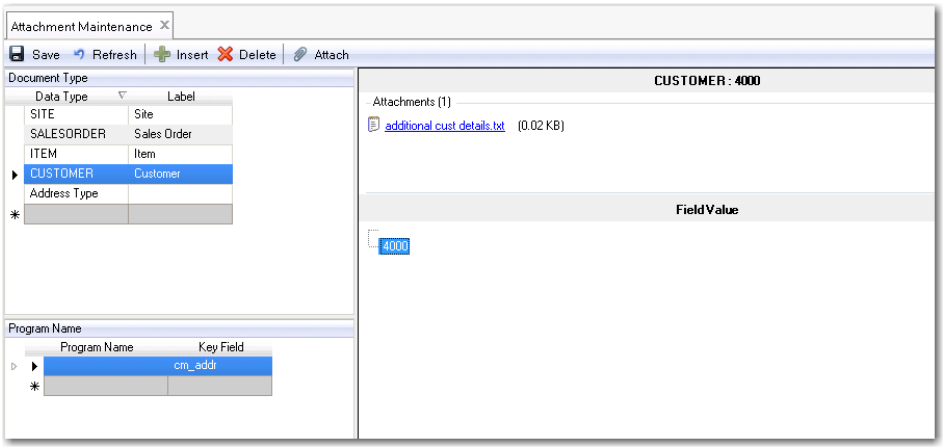


Using Attachment Maintenance

Use Attachment Maintenance to define attachments and attachment areas for fields and programs. The Attachment Maintenance screen has three areas:

- Document Type
- Program Name
- Attachment Area

Fig. 2.7
Attachment Maintenance



Document Type

Use this area to identify the attachments in the system. When you have defined a document type and label, the system searches for the document type when you run the program, and displays the attachment defined for the field value associated with this document type.

Data Type. Specify a data type identifier for organizing attachments. The data type name should relate to the program to which you are adding attachments.

Label. Specify a label for the attachment area.

For translation purposes, if you use the $ variable to specify the label, the system looks for the label in the database and translates the term accordingly. For example, if you use the label ${SALES_ORDER}, the system retrieves the translation for the term and displays the term Orden Ventas in a Latin Spanish installation.

Program Name

Program Name. Specify a program for which you want to include attachments. You must also specify a field. The wild card character * can be used to match a range of programs, for example "so*.p" A blank program name matches the field anywhere.

Key Field. Specify a field that will trigger acceptance of attachments (required).

Note You delete a document type or program name by clicking the arrow to the left of the row to select the row, and pressing Delete.

Attachments Area

This area displays attachments for the selected data type in the Document Type area. You associate attachments with specific values for a given field. The lower part of the area displays possible field values. When you click on one of these values, the attachments associated with the value are displayed in the upper part of the area.

Enabling Attachments

To enable attachments for a program field:

1. In the Document Type area, enter a data type and label for organizing attachments.
2. In the Program Name area, enter a program name (optional) and a key field (required). If you do not enter a program name, the ability to add attachments will be available whenever the focus is on the specified field. If you do enter a program name, the ability to add attachments will be available when the focus is on the field in the specified program.

Adding Attachments

In the Attachments area, you specify a field value and select an attachment as follows:

1. Select a document type. This displays the fields already defined for this document type, if any.
2. Place the cursor in the Field Value area and right-click.
3. Select the Insert option. This positions the cursor in the name field.
4. Type the value of the field. For example, to add an attachment to the Purchase Order 114, select the type, position the cursor in the Field Value area, right-click to select Insert, and type the code.

Fig. 2.8
Entering a Field Value

5. Place the cursor in the upper part of the Attachments area, right-click, and choose Attach. (Alternatively, you can click the Attach button.)

Fig. 2.9
Defining an Attachment

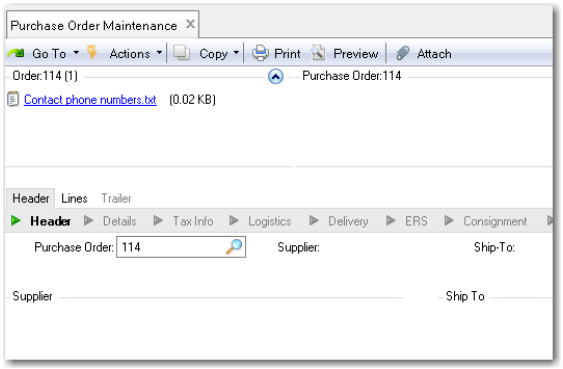
6 Browse to a file on your local computer and select it.

7 Click Save.

You can also drag-and-drop an attachment from your desktop area or Windows Explorer folder.

8 Run the program to view the attachment for the specified field.

Fig. 2.10
Purchase Order with Attachment



Deleting an Attachment

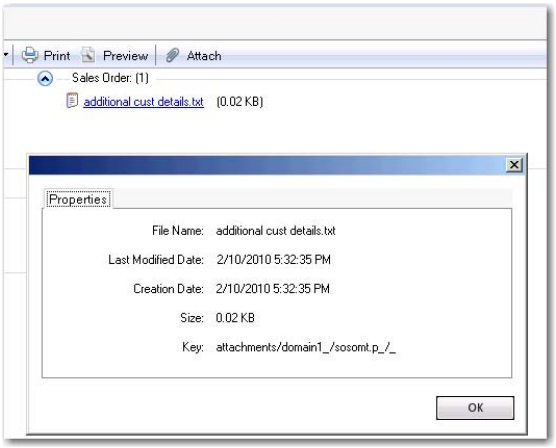
The Delete function is a right-click option either in Attachment Maintenance, or in the Attachments area of the program. In Attachment Maintenance:

1 Place the cursor in the upper part of the Attachments area, right-click, and choose Delete. (Alternatively, you can click the Delete button.)

Attachment Properties

You can view the key used for attachment areas by right-clicking the area and selecting Properties. This key also displays the location of the attachment.

Fig. 2.11
Attachment Properties



Attachment Security

You can restrict the use of Attachment Maintenance by specifying attachment administrators in the `<AttachmentAdministrationRoles>` field in the `client-session.xml` file:

```
<AttachmentAdministrationRoles>role1,role2</AttachmentAdministrationRoles>
```

where *`role1,role2`* is a comma-separated list of roles.

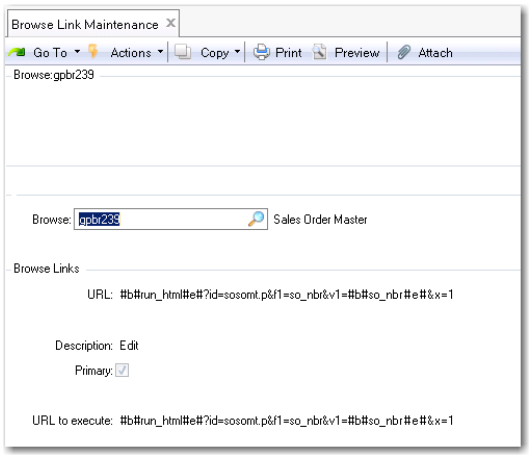
The default administrator roles are `qadadmin` and `superuser`.

Automatic Attachment Areas

The system automatically creates attachment areas for certain program fields.

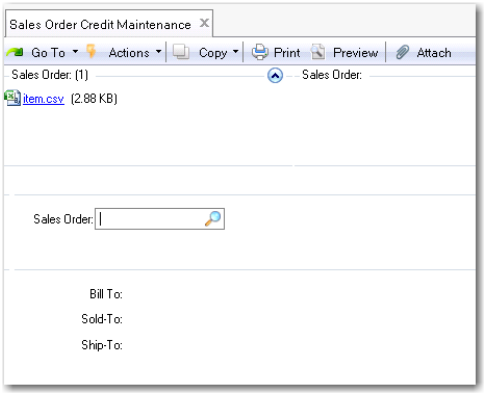
Some lookup browses within programs are defined with additional Edit program links. For example, the Sales Order Browse lookup (`gpbr239`) is defined in Browse Link Maintenance with an Edit link to Sales Order Maintenance, which ensures that Sales Order Maintenance is a right-click option on sales order records when you run the browse.

Fig. 2.12
Sales Order Lookup, Browse Link Maintenance



Because the Sales Order lookup has an edit link for Sales Order Maintenance, the lookup field has an automatic attachment area, based on the name of the edit program (Sales Order Maintenance). Lookup fields with Edit links display an automatic attachment area in every program in which the lookup field is used. For example, this lookup is also used in Sales Order Credit Maintenance, and this program also displays the automatic attachment area.

Fig. 2.13
Sales Order Credit Maintenance



Use Browse Link Maintenance to create Edit links for lookups, and to identify existing links.

Attachment Storage

By default, attachments are stored in *`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/storage/attachments`, where subdirectories organize the attachments based on domain, program, type, and field. Each directory includes an underscore character (_) at the end by default to account for the possibility of using a blank. In addition to the default storage option, two other options for storing attachments are available. For more information on attachment storage, see the following:

- “Default Attachment Storage” on page 50
- “Single WebDAV Repository Attachment Storage” on page 51
- “Database and WebDAV Repository Attachment Storage” on page 51

Adding Links to Application Help

You can add links to the Application Help for programs using the Field Help Maintenance (36.4.13) program.

In Field Help Maintenance, by leaving both the Calling Field and Calling Procedure fields blank, the content you enter in the Text field applies to all program help.

Enter brief HTML-formatted statements in the Text field.

To add a URL to a graphic such as your company logo, enter an `<img>` statement. For example, the following would include the graphic in `logo.gif` located in `http://www.yourintranet.com:8080/images`:

```
<img src="http://www.yourintranet.com:8080/images/logo.gif">
```

To add a URL to a document such as a Word (.doc) document explaining company procedures, use an `<a href>` statement. For example, the following would provide a link to a `proceduresA1.doc` file located in `http://www.yourintranet.com:8080/procedures/`:

```
<a href="http://www.yourintranet.com:8080/procedures/proceduresA1.doc">
Procedures</a>
```

In general, you can add a link to any URL using the `<a href>` tag.

You can link to programs in the QAD .NET UI. See “Viewing Process Maps with QAD Shell URL” on page 47. For example, the following would link to Sales Order Maintenance:

```
<a href="qadsh://menu/invoke?menuitem-alias=sosomt.p"> </a>
```

Enabling QAD Guide Me

The QAD Guide Me feature provides immediate mouse over descriptions of fields in both component and non-component programs, and is disabled by default.

Note Field help for non-component based programs is also displayed by pressing the F1 key when the cursor is positioned in the field.

The QAD Guide Me feature is enabled in the following ways:

- By selecting Tools|Options and setting the Guide Me Enabled parameter to True.
- By setting the Guide Me parameter in the `client-session.xml` file to True.
- By setting the option to True in the local `QAD.Client.exe.config` file or on the command line.
- By adding a parameter to the shortcut path for QAD Applications.

  When you right-click the shortcut icon for the QAD .NET UI on your desktop area and select the Shortcut tab in the Properties dialog, you can add the following line to the Target command:
  `-guideme.enabled:true`

  For example:
  ```
  "C:\Program Files\QAD\QAD Enterprise Applications 2010
  EE\QAD.Applications.exe" -guideme.enabled:true
  ```

  This enables the Guide Me feature when you run the client, over-riding the environment setting in the `client-session.xml` file.

You can disable the feature by changing the above settings to false or by disabling the Guide Me plugin in the `client-bootstrap.xml` file.

client-session.xml File

The following settings affect the Guide Me feature.

- `GuideMe.Enabled`. This setting enables or disables Guide Me feature. The default value is true.
- `GuideMe.Debug`. This debugging setting displays unresolved tokens and enables browser context menu. The default value is false.
- `GuideMe.ShowDelay`. This sets the delay in milliseconds before the ToolTip is displayed. The default value is 500.
- `GuideMe.HideDelay`. This sets the delay in milliseconds before the ToolTip is hidden. A value of zero indicates the ToolTip is not hidden until the mouse leaves the control region. The default value is zero.

- `GuideMe.Animation`. This enables and disables tooltip animation affects. When set to true (the default), this ensures that the Guide Me screen is displayed gradually on the screen, instead of immediately displaying and disappearing.

Like all application settings, these may also be set in the local `QAD.Client.exe.config` file or on the command line, as follows:

```
-guideme.enabled:true
-guideme.debug:false
-guideme.showdelay:250
-guideme.hidedelay:0
-guideme.animation:true
```

client-bootstrap.xml File

You can also disable the Guide Me plugin in the client-bootstrap.xml on the home application server:

```
<disable>qad.plugin.guideme</disable>
```

This option can also be performed on the command line, as follows:

```
-disable:qad.plugin.guideme
```

Connection Manager Access

Access to the Connection Manager is controlled by Tomcat's `\WEB-INF\conf\securityfilter-config.xml` file, which controls which groups have access to Tomcat administration functions. The `<role-name>` element controls which groups have access to the administration functions:

```
<security-constraint>
  <web-resource-collection>
     <web-resource-name>Administrative Functions</web-resource-name>
     <url-pattern>/admin/*</url-pattern>
  </web-resource-collection>
  <auth-constraint>
     <!-- NOTE:  This role is not present in the default users file -->
     <role-name name="mfgadmin">qadadmin</role-name>
  </auth-constraint>
</security-constraint>
```

The default setting specifies that only users in the group (or role) `qadadmin` are allowed access. Additional entries must be added here for additional groups (or roles). Further, to make sure Connection Manager is available on the QAD .NET UI menu, be sure the `<Security>` section in the menu extension configuration file (*`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/menus/plugin-menu.xml`) specifies all the roles for administrative users using the `<Role>` element:

```
<Security>
  <SecurityConstraint key="admin" constraint="allow">
     <Role>admin</Role>
     <Role>dtadmin</Role>
     <Role>qadadmin</Role>
     <User>mfg</User>
  </SecurityConstraint>
```

```
</Security>
```

Groups have access to the administration functions:

```
<security-constraint>
   <web-resource-collection>
      <web-resource-name>Administrative Functions</web-resource-name>
      <url-pattern>/admin/*</url-pattern>
   </web-resource-collection>
   <auth-constraint>
      <!-- NOTE:  This role is not present in the default users file -->
      <role-name name="mfgadmin">qadadmin</role-name>
   </auth-constraint>
</security-constraint>
```

The default setting specifies that only users in the group (or role) `qadadmin` are allowed access. Additional entries must be added here for additional groups (or roles). Further, to make sure Connection Manager is available on the QAD .NET UI menu, be sure the `<Security>` section in the menu extension configuration file (*`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/menus/plugin-menu.xml`) specifies all the roles for administrative users using the `<Role>` element:

```
<Security>
   <SecurityConstraint key="admin" constraint="allow">
      <Role>admin</Role>
      <Role>dtadmin</Role>
      <Role>qadadmin</Role>
      <User>mfg</User>
   </SecurityConstraint>
</Security>
```

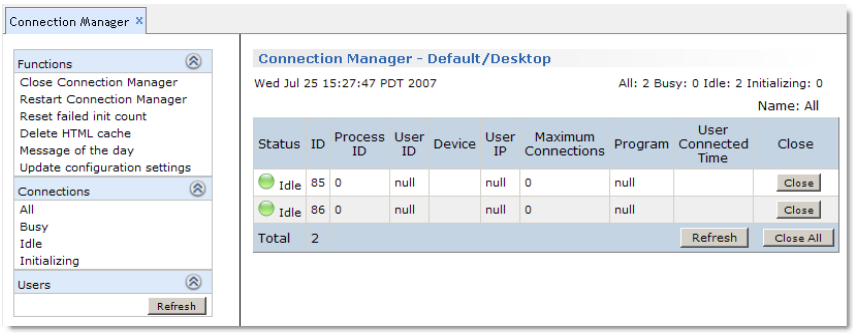
Using the Connection Manager

This section describes using the Connection Manager in the QAD .NET UI.

Note You need access to the Administration menu in order to access the Connection Manager. If you do not have access, contact your system administrator.

The Connection Manager controls the pool of telnet sessions used for Desktop maintenance programs, lookups, reports, and inquiries.

Fig. 2.14
Example of the Connection Manager



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.

Note QAD .NET UI only displays Administration programs such as the Connection Manager for users who have security privileges or who are members of a defined administration group.

Connection Manager is composed of several administrative functions and views that help you manage the pool of telnet connections. The initial Connection Manager page includes the following menus:

- "Functions Menu" on page 33
- "Connections Menu" on page 35
- "Users Menu" on page 35

Functions Menu

The Connection Manager's Functions menu includes the following:

Close Connection Manager. Terminates all active Desktop connections. Any data being processed by active 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 HTML 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. This is a legacy feature and does not apply to Desktop programs running in the QAD .NET UI.

Update configuration settings. It displays the "Configuration Parameters Page" on page 33, which is used to set up and configure the Connection Manager options.

Configuration Parameters Page

The Configuration Parameters page includes the following settings:

Host. The machine name or IP address of the SSH or telnet server.

Port. The port number for SSH or telnet. The default is `22` (SSH). For telnet, the port number is `23`.

Protocol. Specifies the connection protocol as `ssh` (the default) or `telnet`.

Startup Script. The server log-in prompts and the responses to these prompts, separated with the pipe symbol (|). The standard order is:

```
loginPrompt|userid|passwordPrompt|$PASSWD|osPrompt|cd UIConfigDir|
osPrompt|startScript
```

For example:

```
login:|mfg|Password:|$PASSWD|$|cd /user/mfg/work|$|exec
/user/mfg/work/scripts/connmgr.wrap
```

The same startup script can be used for both SSH and telnet. If using SSH, the login credentials in the script will be ignored if they are specified in the *Server Startup User* and *Server Startup Password* settings. For SSH, if you have defined *Server Startup User* and *Server Startup Password*, you can remove the login credentials from the script but the first four token delimiters must still be included in the script. For example, for telnet, the script might be:

```
login:|mfg|Password:|$PASSWD|$|cd /user/mfg/work|$|exec
/user/mfg/work/scripts/connmgr.wrap
```

For SSH, however, with the login credentials defined in *Server Startup User* and *Server Startup Password*, the script can be:

```
||||$|cd /user/mfg/work|$|exec
/user/mfg/work/scripts/connmgr.wrap
```

Server Startup User. Specifies the user ID of the server startup user, if not specified in the startup script. (This setting is only used for SSH.)

Server Startup Password. The password for the session startup script, if not specified in the startup script. It is encrypted on entry.

Minimum Connections. The minimum number of open connections that the system should maintain.

Maximum Connections. The maximum number of open connections that the system should allow.

Maximum Failures. Number of times Connection Manager should attempt to restart an unsuccessful connection.

Connections Monitor Frequency. Number of milliseconds between checks for all connections.

Wait Time for Idle Connection. The maximum wait time in milliseconds for a requested connection from the Connection Manager. If the maximum number of connections has been reached, or if new connections are in the initializing state, the wait time may expire. The default value is 20000 (20 seconds).

Connection Timeout. Number of milliseconds a session can remain inactive before Connection Manager closes it. The default value is 3600000 (60 minutes).

Processing Timeout. How often, in milliseconds, a locked or busy screen is pinged (that is, checked for changes). A locked or busy screen is considered to be in processing mode, which is when the underlying program is processing and is not prompting for user input. The default value is 2000 (2 seconds).

Initializing Timeout. Number of milliseconds Connection Manager will wait for a session to successfully initialize. The default value is 180000 (3 minutes).

Operating System Win32/NT. True if the Progress sessions are executing on a computer with a Windows operating system.

Wait Time. Number of milliseconds between checks of a session while it runs reports. The default value is 2000 (2 seconds).

Connections Menu

The Connection Manager's Connections menu displays the pool of active sessions based on session status. Each session can have one of the following statuses:

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 might 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 one of the options under Connections to see a listing of sessions based on status. The session information includes the following: Status, ID, Process ID, User ID, Device, User IP, Maximum Connections, Program, and User Connected Time.

All. Display all sessions.

Busy. Only display sessions with Busy, Pause, or Processing status.

Idle. Only display sessions with Idle status.

Initializing. Only display sessions with Initializing status.

Users Menu

The Connection Manager's Users menu displays a list of currently logged in users.

- 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.

Using QAD Shell URL (qadsh:// protocol)

You can access QAD .NET UI using a URL defined by QAD called the `qadsh://` protocol:

- The `qadsh://` protocol is registered on a user basis, allowing different users to access different versions of the QAD .NET UI client on the same machine.
- The `qadsh://` protocol is registered during the launch of the QAD .NET UI, ensuring that the protocol is defined correctly.
- The `qadsh://` protocol is only registered if the registry setting for the currently running QAD .NET UI client is different than the one already registered.
- The `qadsh://` protocol always points to the last QAD .NET UI version that was launched rather than the version most recently installed.
- The user registry settings do not require administrative permissions, enabling XCOPY installations.
- You can copy (and paste) `qadsh://` links to Desktop programs and browses by choosing Actions | Copy Link To Clipboard. You can then paste the URL into a browser to run the Desktop program or browse.

The qadsh:// protocol has the following format:

`qadsh://menu/invoke?`*`argument_list`* where *`argument_list`* can include optional arguments for `workspace-key`, `menu-key`, `menuitem-key`, and `menuitem-alias`.

The following summarizes the *`argument_list`* options:

Argument	Value	Description	Required	Multiple
`workspace-key`	A workspace key	If provided the container will activate the workspace before forwarding the request to any service providers.	No	No
`menu-key`	A menu key	The menus that should be searched for the menu keys and aliases. If not specified all menus in the activated workspace will be searched.	No	Yes
`menuitem-key`	A menu item key	The keys identifying menu items to execute. You can customize the display of menu items using the following parameters: `&target=tab:` Open the program in tab view. `&target=tabgroup/Sales`: Open in a tab group called Sales. `&target=window`: Open in a detached window) `&target=fullscreen`: Open in full screen mode)	No	Yes

Argument	Value	Description	Required	Multiple
`menuitem-alias`	A menu item alias	The aliases identifying menu items to execute.	No	Yes

`browse-search`	A table name, a field name, an operator, start value, and end value (optional).	The fields are comma delimited and multiple search conditions can be applied by adding additional parameters to the URL.
		The operator can be one of the following:
		`=`
		`>=`
		`<>`
		`<`
		`>`
		`contains`
		`range`
		`isnull`
		`isnotnull`
		The start value specifies the value or the start of a value range if the optional end value is included.
			No	No

Example `qadsh://menu/invoke?workspace-key=Domain1.1000&menuitem-key=5.1.1` starts the QAD .NET UI client installed on your machine and opens Purchase Approvals Maintenance in Domain 1.

Example `qadsh://menu/invoke?menuitem-key=7.1.1&target=fullscreen` starts the QAD .NET UI client and opens Sales Order Maintenance in your default domain in full screen mode.

Example `qadsh://menu/invoke?menuitem-alias=ppptmt.p` starts the QAD .NET UI client and opens Item Master Maintenance in your default domain.

Example `qadsh://menu/invoke?menuitem-alias=mgbr003.p&browse-search=brw_mstr,brw_name,=,ad001` starts the QAD .NET UI client and opens a browse with a single search condition.

Example `qadsh://menu/invoke?menuitem-alias=mgbr003.p&browse-search=brw_mstr,brw_name,=,ad001&browse-search=brw_mstr,brw_name,=,ad002` starts the QAD .NET UI client and opens a browse with multiple search conditions.

Example `qadsh://menu/invoke?menuitem-alias=mgbr003.p&browse-search=brw_mstr,brw_name,range,ad001,ad022` starts the QAD .NET UI client and opens a browse with a range condition.

Example `qadsh://menu/invoke?menuitem-alias=mgbr003.p&browse-search=lbl_mstr%2Clbl_long%2Ccontains%2C%252C` starts the QAD .NET UI client with comma delimited values, where a comma is encoded as `%2C`.

Note If you have installed multiple instances of the QAD .NET UI client on a machine, the `qadsh://` URL will invoke the most recently opened instance.

Using QAD Shell URL to Run Reports

You can use the QAD URL Shell to run reports, in a similar way to running browses.

The `report-search` parameter lets you specify the report to be run, and you can also specify the value of a report field.

Example `qadsh://menu/invoke?menu-key=A.6&menuitem-key=36.4.21.12.6&report-search=tt_ca_mstr,ca_bill,=,10000`

In this example, the Call Quote Print Sample report (`tt_ca_mstr`) is run from the command line, and the Bill To field (`ca_bill`) is auto-populated with the value 10000.

The `autorun=true` can also be added to the command for the report, which causes the report to automatically run when launched, avoiding the need to click Run on the toolbar.

Example `qadsh://menu/invoke?menu-key=A.6&menuitem-key=36.4.21.12.6&autorun=true`

This example runs Call Quote Print Sample and automatically runs the report:

Important You should be aware of possible performance issues when using the `autorun` parameter. If you automatically run multiple reports without careful filtering the search criteria, the number of system queries required can have an impact on system resources and result in lengthy delays.

Report Invoke Command

You can also run reports on the command line using the following `qadsh://` command:

`qadsh://report/invoke?report-code=36.4.21.12.6, provider=c1, label=TestReport`

where `report-code` is the report menu number or program name, `provider` is an optional parameter to identify the report builder (which defaults to `c1` for Component One), and `label` is the description you enter to overwrite the default tab text that appears on the report when you run it.

You can enter multiple search conditions and search range conditions into the command syntax.

Example `qadsh://menu/invoke?menu-key=A.6&menuitem-key=36.4.21.12.6&report-search=tt_ca_mstr,ca_bill,range,1000,2000`

This command runs the Call Quote Print Sample report (`tt_ca_mstr`), and creates a range for the Bill To field `ca_bill`.

Heartbeat URLs for Load Balancing

System administrators setting up a load balancer for multiple Tomcat instances can access heartbeat URLs to check connection status for each instance.

Load balancing scripts (or other custom status scripts) can access the following links under `http://`*`TomcatHost`*`:`*`TomcatPort`*`/heartbeat/`:

- `status.jsp` — returns a status message containing the number of agents that are All, Idle, Init, or 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

The pages are installed in *`TomcatInstallDir`*`/webapps/heartbeat/`.

Enhancing Reports

You can display selected non-component based reports in an enhanced format. The enhanced format improves the appearance of reports, including:

- Enhanced report header and footer
- Report header inclusion of company logo
- Data representation using HTML tables
- True Type font support
- Different colors for alternate rows

The upper-right area displays the date and time. Additionally, to improve readability, the program name and number are at the bottom of a report rather than at the top near the report title.

Setting Report Format

You can specify whether to use the enhanced format on selected reports or the standard format on a system-wide basis as follows:

1. To use the enhanced format, edit the `settings.dat` file in the `QADInstallDir/qadui/com/mfgpro` directory, setting `beautifyReports` to `yes`. For information on the setting.dat file, see “Editing setting.dat File” on page 39.
2. The selected reports that display in the enhanced format are specified in the `beautifyReports.lst` file. For more information on using the `beautifyReports.lst` file to select which reports use the enhanced format, see “Selecting Which Reports Use Enhanced Format” on page 40.
3. To use the standard format, set `beautifyReports` to `no`. By default, `beautifyReports` is set to `yes`.
4. Restart the Connection Manager for the changes to take effect.
5. Finally, all users must clear the QAD .NET UI’s cache of temporary Internet files before running further reports.

Editing setting.dat File

The `setting.dat` file is located in the *`QADInstallDir`*`/qadui/com/mfgpro` directory. However, you must also edit the additional `setting.dat` file located in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory.

The `setting.dat` file in the *`QADInstallDir`*`/qadui/com/mfgpro` directory is compiled from the `setting.dat` file in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory. When you change the files in the *`QADInstallDir`*`/qadui/com/mfgpro` directory, you see the effect of the change right after you edit the file.

When you change the files in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory, you do not see the effect of the change until after a compile, at which time the files in the *`QADInstallDir`*`/qadui/com/mfgpro` directory are over-written by the new files compiled from the files in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory.

After you make changes to the `setting.dat` file, you must restart the Connection Manager for the changes to take effect.

Selecting Which Reports Use Enhanced Format

The `beautifyReports.lst` file in the *`QADInstallDir`*`/qadui/com/mfgpro` directory lists the reports that will use the enhanced format when the `beautifyReports` setting in the `setting.dat` file is set to `yes`.

The reports listed in `beautifyReports.lst` have been tested to display using the enhanced format. You can include other reports in this list but QAD recommends only using the reports listed by default in `beautifyReports.lst`. If you do modify the `beautifyReports.lst` file, be sure to restart the Connection Manager and have all users clear the QAD .NET UI's cache of temporary Internet files before running further reports.

As with the two `setting.dat` files, the `beautifyReports.lst` file is located in the *`QADInstallDir`*`/qadui/com/mfgpro` directory. However, you must also edit the additional `beautifyReports.lst` file located in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory.

The `beautifyReports.lst` file in the *`QADInstallDir`*`/qadui/com/mfgpro` directory is compiled from the `beautifyReports.lst` file in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory. When you change the files in the *`QADInstallDir`*`/qadui/com/mfgpro` directory, you see the effect of the change right after you edit the file. When you change the files in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory, you do not see the effect of the change until after a compile, at which time the files in the *`QADInstallDir`*`/qadui/com/mfgpro` directory are over-written by the new files compiled from the files in the *`QADInstallDir`*`/qadui/com/qad/mfgpro` directory.

Including Company Logo

With the enhanced format, the upper-left area can include your company's logo. To include a logo:

1. Locate the Tomcat installed images directory (for example, *`TomcatInstallDir`*`/webapps/qadui/images`).
2. Place any graphics files containing company logos in this directory. For example, place a file named `myLogo.jpg` that contains the logo you want to use. By default, the directory includes `companyLogo.jpg`, which contains the QAD logo. For example, place a file named `myLogo.jpg` that contains the logo you want to use. By default, the directory includes `companyLogo.jpg`, which contains the QAD logo.

Note Use `companyLogo.jpg` as the file name so that you do not have to modify the `setting.dat` file as described in the next step.

Note If the height of the logo exceeds 60 pixels, report page formatting can be affected.

3 To add your company's logo to the report, edit the `setting.dat` file in the *`QADInstallDir`*`/qadui/com/mfgpro` directory, setting `reportCompanyLogoImage` to the graphics file (for example, `images/myLogo.jpg`). By default, `reportCompanyLogoImage` is set to `image/companyLogo.jpg`. (Note that the file name is case-sensitive.) For information on the `setting.dat` file, see "Editing setting.dat File" on page 39.

4 If you do not want to display a logo on reports, set `reportCompanyLogoImage` to blank (do not enter any graphics file).

5 Finally, all users must clear the QAD .NET UI's cache of temporary Internet files before running further reports.

Removing Report Footer

The enhanced report footer now includes the program name and number at the bottom of the report. If required, you can remove the footer information as follows:

1 Edit the *`TomcatInstallDir`*`/webapps/qadui/css/AppReportStandard.css` file, changing the `div.reportFooter` statement to the following:

```
div.reportFooter {display:none;}
```

2 Finally, all users must clear the QAD .NET UI's cache of temporary Internet files before running further reports.

Setting Default Browser Text Size

To have reports use your default browser text size setting, edit the setting.dat file in the *`QADInstallDir`*`/qadui/com/mfgpro` directory, setting `allowBrowserFontSize` to `yes`. The default setting is `no`. (Note that to set the default browser text size setting in Internet Explorer, select View|Text Size). For information on the `setting.dat` file, see "Editing setting.dat File" on page 39.

Different Colors for Alternate Rows

If a report includes different colors for alternate rows, to have the different colors display, select Tools|Internet Properties and click the Advanced tab. In the Settings view, scroll down to Printing and select Print background color and images.

Saving Enhanced Reports to Excel

In general, you cannot export reports from the QAD .NET UI to Microsoft Excel. While in a report, right-clicking and selecting Internet Explorer's Export to Microsoft Excel will not export the report data to Excel. However, you can quickly copy data from an enhanced report and place it

into Excel. To do so, while in an enhanced report, right-click and select Select All (Ctrl+A) and then select Copy (Ctrl+C). Next, open Excel and select Paste. Excel places the report data into appropriate columns and rows in Excel.

Configuring Multiple Language Support for Terminal Client

Supporting multiple languages requires the `<TerminalEncoding>` setting in the client session configuration file to be synchronized with the `cpstream` setting for the character Progress session. When starting a Progress client session, you must include the `-cpstream <encoding>` parameter, which directs Progress to transform the internal database encoding sent to the client. The client must know which encoding is being sent in order to display the correct characters on the screen and return the correct data to the Progress client.

For Windows, the `<TerminalEncoding>` setting must be UTF-8 for all languages.

Note Progress on a Windows Server does not support the display of double-byte characters through its terminal client. Consequently, if your system uses Progress on a Windows server, the QAD .NET UI will not receive the data it needs to display double-byte characters such as Japanese and Chinese.

For UNIX, refer to the following table, which identifies the `TerminalEncoding` setting based on the QAD language code and Progress codepage (`cpstream`) language code:

QAD Language Code	Language	Progress Codepage cpstream Setting	Terminal Encoding Setting
us	English	iso8859-1	iso-8859-1
jp	Japanese	shift-jis	shift-jis
ch	Simplified Chinese	gb2312	gb2312
ge	German	iso8859-1	iso-8859-1
bu	Bulgarian	1251	windows-1251
cz	Czech	1250	windows-1250
da	Danish	iso8859-1	iso-8859-1
du	Dutch	iso8859-1	iso-8859-1
fr	French	iso8859-1	iso-8859-1
it	Italian	iso8859-1	iso-8859-1
no	Norwegian	iso8859-1	iso-8859-1
po	Portuguese	iso8859-1	iso-8859-1
cs	Castilian Spanish	iso8859-1	iso-8859-1
sw	Swedish	iso8859-1	iso-8859-1
hu	Hungarian	1250	windows-1250
pl	Polish	1250	windows-1250
ro	Romanian	1250	windows-1250
ru	Russian	1251	windows-1251
tu	Turkish	1254	windows-1254
tw	Traditional Chinese	cp950	cp950
ko	Korean	ksc5601	ksc5601

QAD Language Code	Language	Progress Codepage cpstream Setting	Terminal Encoding Setting
fi	Finnish	iso8859-1	iso-8859-1
lt	Lithuanian	1257	windows-1257
ua	Ukrainian	1251	windows-1251

Configuring Terminal Script Parameters

With the User Option Telnet Maintenance program, you can specify the login scripts that initiate the telnet sessions for running the terminal mode programs in the QAD .NET UI. Each line in a telnet login script is a single record containing a combination of three values: pattern, value, and status. Use the Script Pattern, Script Value, and Script Status fields to enter these values to generate as many script lines as needed. For the Script Value, after specifying the script file, you can include the following parameters:

${d} – Domain

${u} – User ID

${e} – Entity

${c} – Code Page

Any number of these can be included, with each separated by a space. For example:

```
/dr01/scripts/telnet.ksh ${d} ${u} ${e} ${c}
```

These will then be available in the telnet script as standard parameters (${1} ${2} ${3} ${4}).

Configuring Terminal Encoding By Domain

You can have terminal encoding change dynamically based on the domain's code page as follows:

1. Use the `${c}` parameter in User Option Telnet Maintenance's Script Value field (see "Configuring Terminal Script Parameters" on page 43). For example:
   `/dr01/scripts/telnet.ksh ${c}`
2. Add a `<TerminalEncodingMap>` section to the client session configuration file (`client-session.xml`) with `<CodePage>` elements for each code page for the domains. For example:

   ```
   <TerminalEncodingMap>
      <CodePage Progress="iso8859-1">iso-8859-1</CodePage>
      <CodePage Progress="1251">windows-1251</CodePage>
    </TerminalEncodingMap>
   ```

   The value in the `Progress` attribute is the code page specification recognized by Progress 4GL (that is, the value assigned to the domain). The value within the `<CodePage>` elements is the value used by the terminal. (Note the commented section in the `client-session.xml` file that specifies these mappings, which can be used as a reference to create these entries.)
3. Restart the QAD .NET UI so that the changes can take effect.

Defining Custom Key Mappings

A system administrator can define custom key mappings for use in the QAD .NET UI's terminal mode.

Use an XML file to define the key mappings. Name the file `keymapping.xml` and place it in the directory defined by the HomeServer configuration value, which is defined at installation time. (The HomeServer configuration value is typically *`TomcatInstallDir`*`/webapps/qadhome`.) The system identifies the `keymapping.xml` file through the `<TerminalKeyMapUrl>` element in the client session configuration file. If the element is not in the file by default, you must add it.

For example, in the client session configuration file, you can add a `<TerminalKeyMapUrl>` element and set it to `${HomeServer}/keymap.xml` as follows:

```
<TerminalKeyMapUrl>${HomeServer}/keymapping.xml</TerminalKeyMapUrl>
```

The `keymapping.xml` file includes a `<KeyMapping>` element that includes one or more `<KeyMap>` elements, whose key and value attributes define a key mapping.

Note You can change the name and location of the XML file provided you also change the value of the `<TerminalKeyMapUrl>` setting accordingly.

In this example, the `keymapping.xml` file directs the number pad keys "/" and "*" to act as F1 and F4 keys in terminal mode:

```
<KeyMapping>
   <KeyMap key="/" value="\u001bOP" />
   <KeyMap key="*" value="\u001bOS" />
</KeyMapping>
```

For a listing of possible key settings, see Microsoft Developer Network's .NET Framework Class Library for Key Enumeration (http://msdn2.microsoft.com/en-us/library/system.windows.forms.keys(vs.71).aspx).

The following table lists the possible value settings:

Terminal Mode Key	Value
F1	`"\u001bOP"`
F2	`"\u001bOQ"`
F3	`"\u001bOR"`
F4	`"\u001bOS"`
F5	`"\u0004"`
F6	`"\u001b[17~"`
F7	`"\u001b[18~"`
F8	`"\u001b[19~"`
F9	`"\u001b[20~"`
F10	`"\u001b[21~"`
F11	`"\u0002"`
F12	`"\u001b[24~"`
F13	`"\u001b[25~"`
F14	`"\u001b[26~"`
F15	`"\u001b[28~"`
F16	`"\u001b[29~"`

Terminal Mode Key	Value
F17	"\u001b[31~"
F18	"\u001b[32~"
F19	"\u001b[33~"
F20	"\u001b[34~"
0 (keypad)	"0"
1 (keypad)	"1"
2 (keypad)	"2"
3 (keypad)	"3"
4 (keypad)	"4"
5 (keypad)	"5"
6 (keypad)	"6"
7 (keypad)	"7"
8 (keypad)	"8"
9 (keypad)	"9"
/ (keypad)	"/"
* (keypad)	"*"
- (keypad)	"-"
+ (keypad)	"+"
Tab	"\u0009"
Shift Tab	"\u001bOP\u0009"
Page Up	"\u001b[5~"
Page Down	"\u001b[6~"

Process Map Configuration

For Enterprise Edition, the process maps are delivered separately from the QAD .NET UI. The process maps are included with the QAD Enterprise Edition release media and are available on the QAD Store (http://store.qad.com). The QAD Deployment Toolkit (QDT) installs the process map components (including the viewer and editor) along with the process map content as part of the overall installation process for the product. However, you should then get the latest process map content from the QAD Store.

Process Map Configuration Settings

As of Enterprise Edition 2013, QDT installs the process map viewer, editor, and related components on the home server as a stand-alone web application named pronav (`tomcat/webapps/pronav`). The following settings in the client session configuration file (`client-session.xml`) specify the default configuration:

```
<!-- Process map settings -->
<ProcessMapBaseUrl>${DesktopProtocol}://${DesktopHost}:${DesktopPort}/pronav</ProcessMap-
BaseUrl>
  <qad.url.process.editor>${ProcessMapBaseUrl}/ProcessEditor.jsp</qad.url.process.editor>
  <qad.url.process.viewer>${ProcessMapBaseUrl}/ProcessViewer.jsp</qad.url.process.viewer>
```

Previously, the process viewer and editor were in `/tomcat/webapps/<environment>` and the process map content was in `/tomcat/webapps/<environment>/WEB-INF/pronav.`

Now process maps are included in an environment named pronav (`/tomcat/webapps/pronav`) by default. A benefit of this approach is that you can now define a single process map installation that can be shared across multiple environments.

Note The configuration setting for the process map images (QAD_IMG), set in Administration > Process Admin, now requires a fully qualified domain name. The settings now include a QAD_PMAP_ROOT setting to specify the URL to the process map installation (`http://server.domain.com:port/pronav/`) and then the QAD_IMG setting is `{QAD_PMAP_ROOT}images/`.

Process Map Storage and Multiple Language Support

Process maps look up the appropriate label text to display for the user's current language when the QAD .NET UI displays the process map. The system identifies the label text to display based on a label key and the user's language.

Maintaining the label text for the supported languages in these properties files makes it easier for QAD .NET UI administrators to modify the label text of process maps for the language that they must support.

Note Use the Language button in Preview mode to view maps in other languages.

Enabling New Language Support for Process Maps

You use the Process Label Maintenance option to store process map labels in different languages. The translated labels are stored in the `properties_language.xml` file in the `/pronav/properties` directory. Each language has its own XML file – for example, the file for the label text in English is `properties_en.xml`.

To add a new language to the drop-down language list in Process Label Maintenance, you must create a `properties_<language>.xml` for the language, add a line for the new language to the `process-config.xml` file (as shown below), and restart the web appserver when you have updated the file:

```
<PropertySet id="locale" name="locale_Castilian_Spanish" value=
"es_es" />
    <PropertySet id="locale" name="locale_Dutch" value="nl" />
    <PropertySet id="locale" name="locale_English" value="en" />
    <PropertySet id="locale" name="locale_French" value="fr" />
    <PropertySet id="locale" name="locale_German" value="de" />
    <PropertySet id="locale" name="locale_Italian" value="it" />
    <PropertySet id="locale" name="locale_Japanese" value="ja" />
    <PropertySet id="locale" name="locale_Latin_America_Spanish"
value="es_mx" />
    <PropertySet id="locale" name="locale_Polish" value="pl" />
```

```
    <PropertySet id="locale" name="locale_Portuguese" value="pt" />
    <PropertySet id="locale" name="locale_Simplified_Chinese" value=
"zh_cn" />
    <PropertySet id="locale" name="locale_Traditional_Chinese" value=
"zh_tw" />
```

Note On the Home Server the current property files are found in the `packages/plugins/base.code/data.zip` file on the home server.

Viewing Process Maps with QAD Shell URL

You can also view and edit process maps using the QAD Shell URL.

To view a process map using the QAD Shell URL, use the following format:

`qadsh://process/view?ProcessName=<process_name>`

To edit a process map using the QAD Shell URL, use the following format:

`qadsh://process/edit?ProcessName=<process_name>`

Regional Display Setting Control

The language code associated with a QAD application user in User Maintenance (36.3.1) determines the language of strings displayed on the user interface. Other regional settings such as date and number format are determined in different ways, depending on which type of program or browse the user is executing.

- QAD .NET UI screens displayed in the default Desktop mode—the mode using native .NET technology—are formatted based on the regional settings of the user's client PC, set by choosing Start|Control Panel|Regional and Language Options|Regional Options and editing the Standards and Formats section.
- QAD .NET UI screens displayed in terminal or HTML mode as well as character UI screens always derive regional settings based on the country code associated with the user in User Maintenance and country-specific settings in the `locale.dat` file located in the application installation directory.

Typically, the settings in the `locale.dat` file and the available regional settings on the user's computer are in agreement according to ISO locales. However, in some situations, this is not the case. This can result in inconsistent formatting depending on which type of screen the user is viewing. To avoid this inconsistency, a new setting can be used to control how the system applies regional settings.

For example, to configure settings for a user who wants to view screens in English but dates and numbers in the French format, follow these steps:

1. In User Maintenance (36.3.1), set the language to `US` and country code to `FR`.
2. Make sure the alternate country code for `FR` defined in Country Code Data Maintenance (2.14.1) is also the ISO code `FR`.

3 Edit the `locale.dat` file and add a line with the combination of settings that the user wants to be displayed. For example, for a user whose associated language is `US` and country is `FR`, `locale.dat` should include the following line:

```
US,en,FR,,dmy,European
```

Where `US` is the user's language code, `en` is the ISO language code associated with `US`, `FR` is the ISO country code associated with the user's country code, the optional variant is blank (indicated by `,,`), `dmy` (day/month/year) is the date format, and `European` is the numeric format (period as the decimal separator; comma as the thousand separator).

4 In the `client-session.xml` file (located under *`TomcatInstallDir`*`/webapps/qadhome`), set the following new parameter to `false`:

```
<UseLocalDateAndNumberFormats>false</UseLocalDateAndNumberFormats>
```

The default setting is `true`, which results in the behavior seen in prior releases of the QAD .NET UI. When set to `false`, all types of UIs derive locale settings from the same `locale.dat` file, ensuring consistency regardless of which screen is being viewed.

Chapter 3

Configuring System Environments

This section provides information for system administrators on how to administer and configure the QAD .NET User Interface.

This section covers the following topics:

Multiple Instance and Environment Recommendations 50

Configuration Storage Directories 50

Configuration Files 53

Client Bootstrap Configuration File 55

Client Session Configuration File 57

Menu Extension Configuration File 64

Multiple Instance and Environment Recommendations

One QAD .NET UI Tomcat home server can support multiple environments. However, as a best practice, one home server should not be used for testing, production, and development environments. Instead, these should each run under its own home server. For example, your test environment should be under one home server, your production environment should be under another home server, and so on. The main reason this is recommended as a best practice is because of updates. Updates to a home server are pushed out to all the QAD .NET UI clients for that home server. If all the environments are all under the same home server, the updates will apply to all the environments. By having the environments under different home servers, you can test the updates against a test environment under one home server before applying them to a different home server where the production environment is located.

Configuration Storage Directories

The following sections describe the configuration storage directories for browse collections, menu collections, favorites, and attachments.

Browse Collection Storage

Browse collections are stored in *`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/storage/browse-collections`. Each browse collection is assigned a unique ID by the system.

Menu Collection Storage

Menu collections are stored in *`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/storage/menu-collections`. Each menu collection is assigned a unique ID by the system.

Favorites Storage

Favorites are stored in *`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/storage/user-data`, where subdirectories based on user ID and domain maintain `UserMenu.xml` files that include favorites information.

Attachments Storage

Default Attachment Storage

By default, attachments are stored in *`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/storage/attachments`, where subdirectories organize the attachments based on domain, program, type, and field. Each directory includes an underscore character (_) at the end by default to account for the possibility of using a blank.

Single WebDAV Repository Attachment Storage

Instead of using the default attachment storage location, you can configure the system to have a single WebDAV repository of attachments across multiple installations.

Instead of using the default path, you can specify a path (a WebDAV location) using the `<Attachment>... <WebDAVRoot>` setting in the client session configuration file (`client-session.xml`) file. By default, the setting is commented out. The setting's default path `is ${HomeServer}/webdav/attachments`), so that all attachments are stored on the Home Server in `/webdav/attachments`. To use this path, simply remove the comment delimiters (<!-- and -->) around the statement. To use another location, edit the setting to use a path to some other server; for example:

```
<Attachment>
      <WebDAVRoot>ServerURL/webdav/attachments</WebDAVRoot>
</Attachment>
```

Note that the WebDAV location should be UTF-8 enabled to support the WebDAV standard.

With the `<WebDAVRoot>` setting, you have a way to have all the attachments located on a common server.

Database and WebDAV Repository Attachment Storage

Instead of using the default attachment storage or the single WebDAV repository attachment storage, you can maintain the attachment information in the system database while the attachments are stored in a specified WebDAV directory.

This approach gives you the option of storing attachment information in the system database, which provides better control and extra tagging information on the attached files. The actual files remain in a WebDAV-accessible directory defined by QAD Enterprise Applications.

Note This feature currently applies only to non-component based programs (programs based on procedural, Progress-based technology) and requires QAD Enterprise Applications 2011–Enterprise Edition (or later). Using this feature with a version of QAD Enterprise Applications prior to 2011–Enterprise Edition will require assistance from QAD Services to update the database schema.

This feature introduces the following Document Attachments menu items:

- Document Attachment Application Maintenance — Configure the system so that document attachment information will be stored in the database.
- Document Tag Maintenance — Define the tags available for document attachments.
- Document Maintenance — Select the tags and other metadata for a document attachment.
- Documents browse
- Document Tags browse — List all the tags, and right-click on a record to list all documents associated with a tag.
- Document Tags by Language Code browse — List all tags and language codes.
- Document Attachment Applications browse — List all the Application IDs defined in Document Attachment Application Maintenance.

To set up Document Attachments for non-component based programs:

1. Open Document Attachment Application Maintenance.
2. Set Application ID to `mfg` (enter `mfg` for attachments to non-component based programs).
3. Set Repository to the WebDAV location where you are storing attachments. For example: `http://host.domain.com/.../webdav/.../configurations/default/storage/attachments`.

   Note The default path for storing attachments (*`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/storage/attachments`) and the storage location in specified in the `config-session.xml` file's `<Attachment>...<WebDAVRoot>` setting is ignored. Instead, the default path for storing attachments is the path specified in the Repository field.
4. Set Repository Type to `webdav`.

Now, when you add an attachment to a non-component based program, the attachment's properties include additional information after Key, including Title, Last Author, Audience, Revision, Label, and Tags.

You can define tags you want to have available using Document Tag Maintenance by entering a tag string in the Tag Name field. You can use label terms (for example, `${SALES_ORDERS}`) for tags that you want to be translated.

To assign tags you have defined to a particular document attachment, open Document Maintenance and select the document in the Field Name field. Under Tags, select from the tags defined in Document Tag Maintenance. You can include up to 10 tags. Note that you can also define Title, Description, File Type, Audience, Revision fields here.

To determine the document attachments associated with a particular tag, in Document Tags browse, right-click on a row (tag record) and choose Documents by Tag Name. Documents by Tag Name launches in a tab under Document Tags, listing all the documents associated with the tag. The columns in Documents by Tag Name include: Tag Name, Description, Tag Translation, File Name (the file name of the document attachment), Title (title of the document attachment), File Size, File Type, Last Author, and Timestamp.

Additionally, Document Attachment Applications lists the Applications IDs. Right-click on an Application ID and choose Documents by Application ID to list all the documents associated with a particular application ID (for example, `mfg`).

Attachment Storage Path for Operating System Subdirectory Limit

Operating systems can have an upper limit to the number of files or subdirectories that a directory can have. For example, on some versions of Linux, the limit can be 32,768 (32K). Although this limit is almost never reached, in certain circumstances it is possible to approach it. For instance, if your process of adding attachments to programs in the QAD .NET UI is automated in such a way that an attachment is being added for each invoice, over time the default mechanism for storing the attachment files on the home server can approach the operating system's limit. If you have an automated process for including many attachments and are running the QAD home server on an operating system with a limit that you might exceed, QAD provides an alternative mechanism for storing attachment files.

The alternative approach uses a hashing algorithm such that the number of subdirectories for storing attachments will always be less than 16,384 (16K). With the alternative mechanism, the directory path used for storing attachments (such as invoices) for item numbers in Item Master Maintenance (ppptmt.p) will change from the default path (`attachments/`*`domain`*`_/ppptmt.p__/`*`item-number`*`_`) to (`attachments/`**`32k`**`/`*`domain`*`_/ppptmt.p_/`***`hash`***`/`*`item-number`*`_`).

You can configure whether to use the default mechanism by setting `<Bypass32kAttachmentLimit>` in the client session configuration file (`client-session.xml`). The default value for this setting is false. If set to true, attachments will be stored using the hashing mechanism.

Note that if you change the setting from false to true, the attachments previously stored using the default mechanism will continue to be available to the system while new attachments will be stored using the hashing mechanism. No conversion steps are needed. However, if you then go back to the default mechanism, attachments stored using the hashing mechanism will not be visible to the system. The attachment files are all still there in the directory structure, but by going back to the default mechanism for storing and accessing attachments from the system, the system will not have the ability to access the attachments stored using the hashing mechanism.

Document Attachment Applications Maintenance and QAD Channel Islands

Note This information only applies if you are using the QAD Channel Islands UI with QAD Enterprise Applications.

In the QAD .NET UI, Document Attachment Applications Maintenance specifies how attachments are stored:

- If no Application ID is specified (the Application ID field is blank), the QAD .NET UI uses the home server default for storing attachments.
- If the Application ID is `mfg` and the Repository Type is `webdav`, the QAD .NET UI uses WebDAV for storing attachments under the URL specified in the Repository field.

Additionally, for implementations of QAD Enterprise Applications with the QAD Reference Architecture (QRA) that are using the QAD Channel Islands UI:

- If Application ID is mfg and the Repository Type is `qra`, the QAD .NET UI uses a web service for storing attachments with the URL specified in the Repository field.

With this approach, attachments to programs in the QAD .NET UI can be associated with QAD Channel Islands UI views (and vice versa). Note that this is only available if you are using the QAD Channel Islands UI with your implementation. For more information, see the QAD Channel Islands UI documentation.

Changing the location (as specified in the Repository field) requires that the directory under the previous location be copied to the new location; otherwise, the files cannot be accessed.

Configuration Files

For system administrators, the default configuration files are consolidated in a *`TomcatInstallDir`*`/webapps/qadhome/configurations/default` directory. This directory includes the following:

- Client bootstrap configuration file (`client-bootstrap.xml`): defines parameters for the QAD .NET UI client that apply to all system environments associated with the home server (*`TomcatInstallDir`*`/webapps/qadhome`). For more information, see “Client Bootstrap Configuration File” on page 55.
- Client session configuration file (`client-session.xml`): defines session characteristics of a client session. For more information, see “Client Session Configuration File” on page 57. Note that the `client-session.xml.sample` file included in the `configurations` directory provides an example backup copy of `client-session.xml`.
- Menu extension configuration file (`.../menus/plugin-menu.xml`): defines menu items added to the QAD .NET UI outside of the standard programs and functions, along with security settings. For more information, see “Menu Extension Configuration File” on page 64.

In the `configurations` directory, the `default` directory provides the system-wide default settings for the home server (*`TomcatInstallDir`*`/webapps/qadhome`). Because it is the default, the default system environment does not appear in the “Log on to” pull-down on the Login window. Be sure not to delete the `/configurations/default` directory, which specifies the system-wide defaults and is a useful reference when you define other system environments.

You define additional system environments by creating additional directories under the `configurations` directory. For example, to create a system environment named `demo`, create a `/configurations/demo` directory. Copy the `client-session.xml` file from the `/configurations/default` directory to the `/configurations/demo` directory, and copy `/configurations/default/menus/plugin-menu.xml` to `/configurations/demo/menus/plugin-xml`. You can now modify the settings in `/demo/client-session.xml` and `/demo/menu/plugin-menu.xml` to the demo system environment. Meanwhile, the `/default/client-bootstrap.xml` file continues to define system-wide settings. (You should not remove or rename the default directory.) When users log in to the QAD .NET UI client, they will now see the demo system environment available in the “Log on to” pull-down menu on the Login window.

In the configurations directory, the storage directory is where menu collections and browse collections are stored when they are saved from Menu Collection Maintenance or Browse Collection Maintenance. The `/configurations/storage/menu-collections` directory contains XML files representing menu collections and the `/configurations/storage/browse-collections` directory contains XML files representing browse collections. Menu and browse collections included with the QAD .NET UI are in the menu-collections and browse-collections directories under the `.../default/storage` directory (*`TomcatInstallDir`*`/webapps/qadhome/configurations/default`). To access the menu and browse collections when you set up a system environment, you must copy the menu-collections and browse-collections directories (and their contents) under the appropriate system environment directory. For example, if you have set up a system environment named demo, you need to set up a `/configurations/demo/storage` directory with the `menu-collections` and `browse-collections` subdirectories.

Note Starting with QAD .NET UI 2.9.3, for QAD Enterprise Applications–Enterprise Edition, you no longer have to copy the files from the default directory. Instead, the QDT-based installation process does that for you based on the system environments you specify while using QDT. This only applies to Enterprise Edition, which uses QDT; for Standard Edition, you must copy the files from the default directory.

Client Bootstrap Configuration File

The client bootstrap configuration file defines parameters for the QAD .NET UI client that apply to all system environments associated with the home server (*TomcatInstallDir*/webapps/qadhome).

Some configuration parameters must be resolved prior to the selection of a system environment. These parameters are identified as bootstrap only and apply to all system environments for the home server. The other parameters can be configured on a system environment basis by commenting or removing the definition from the client bootstrap configuration file and adding definitions in the various client session configuration files for each system environment.

The variable `${installation/directory}` expands to the directory in which the executing instance of the QAD .NET UI is installed.

`${[pluginkey]/installation/directory}` identifies the directory in which a specific plugin is installed.

All other variable references are resolved first as configuration parameter references and if not resolved as environmental variables on the client.

By default, the client bootstrap file is located in *TomcatInstallDir*/webapps/qadhome/configurations/default/client-bootstrap.xml.

File Usage

The client bootstrap file must be placed in the `/configurations/default` directory, as follows:

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

File Format

The client bootstrap configuration file's top-level XML element is `<Configuration>`, which then includes the elements listed in the next section.

File Elements

Element	Description	Default
<log.level>	Specifies a threshold limiting the type of information that will be logged for all logging contexts in which a threshold has not been set (`OFF`, `ERROR`, `WARN`, `INFO`, `DEBUG`). Bootstrap only.	`INFO`
<log.file>	Specifies the location of the file on the client where logging output should be written. Value type: file system path. Bootstrap only.	`${storage/directory}\QAD.Applications.log`
<log.file.size>	Specifies the maximum size of the log file in kilobytes. When the maximum size is reached, the log file is renamed as a backup and a new log file is created. Value type: integer. Bootstrap only.	`5000`

Element	Description	Default
<log.file.backups>	Specifies the number of log file backups that should be retained. When the maximum number of backups is reached, the oldest log file backup is deleted. Value type: integer. Bootstrap only.	`5`
<style.enabled>	When true, application styling is enabled. Value type: boolean (`true` or `false`). Bootstrap only.	`true`
<style.path>	Specifies the location of a file that configures the look and feel of the application. Value type: file system path. Bootstrap only.	`${installation/directory}\container\QAD.Applications.Style.isl`
<style.reload>	When true, changes to the style file will be automatically reapplied. Value type: boolean (`true` or `false`). Bootstrap only.	`false`
<storage.directory>	Specifies the directory on the client where local state may be stored where `${APPDATA}` resolves to the user-specific %APPDATA% environment variable.Value type: file system path. Bootstrap only.	`${APPDATA}\QAD\Shell`
<webdav.uri>	Specifies a URI locating a WebDAV service where shared state may be stored. Value type: URI. Bootstrap only.	`${homeserver}/webdav`
<check.updates>	When true, the version of the installed client will be compared with the version of the client available on the configuration server. If the configuration server has a newer version available, the user will be prompted to update their local installation. Value type: boolean (`true` or `false`). Bootstrap only.	`true`
<allow.multiple>	When false, a check will be made to see if the client is already running on the target computer. If it is, the user will be notified, and the existing instance will be activated. Value type: boolean (`true` or `false`). Bootstrap only.	`true`
<show.workspace selector>	When true, a navigation bar will be displayed on the bottom of the application with a button for each enabled workspace. Clicking on a button switches the active workspace to the workspace represented by the button. Value type: boolean (`true` or `false`). Bootstrap only.	`true`
<perf>	Controls whether performance metrics will be collected and printed to the log file. May be set to `true` or `false`, or to an integer value that specifies a threshold in milliseconds to limit the output to timed tasks whose duration was equal to or greater than the threshold. Value type: boolean or integer. Bootstrap only.	`false`
<disable>	Specifies that a plugin deployed on the client that should not be initialized. Multiple plugins can be disabled by repeating this configuration. Value type: plugin key. Bootstrap only.	(blank)
<config.ignore.errors>	Allows the client to continue even if configuration errors are reported. Value type: boolean (`true` or `false`). Bootstrap only.	`false`

Client Session Configuration File

The client session file defines client session characteristics of the QAD .NET UI.

By default, the file is located in *TomcatInstallDir*/webapps/qadhome/configurations/default/client-session.xml.

The default client-session.xml file also includes parameters for QAD Enterprise Applications–Enterprise Edition's Financials module, starting from <!-- QAD Financials Settings --> to the end of the file. Each parameter includes comment sections that describe parameter usage. These parameters only apply if you are using QAD Enterprise Applications–Enterprise Edition. They do not apply if you are using QAD Enterprise Applications–Standard Edition.

You can view the configuration settings directly from the QAD .NET UI client by choosing Help | View Configuration.

Note The client-session.xml.sample file in the *TomcatInstallDir*/webapps/qadhome/configurations/default/ directory includes extensive comments with examples of using the parameters for each file entry. Be sure to refer to this file for more information about the client session configuration.

File Usage

You can define client session files for each system environment by placing them in appropriate sub-directories under the /configurations directory, as follows:

TomcatInstallDir/webapps/qadhome/configurations/*config-name*/client-session.xml

Where *config-name* is the system environment name that you select when you log in to the QAD .NET UI.

File Format

The client session configuration file's top-level XML element is <Configuration>, which then includes the elements listed in the next section.

File Elements

This section summarizes settings available in client-session.xml. For a complete listing with comments and examples, be sure to refer to the client-session.xml.sample file in the *TomcatInstallDir*/webapps/qadhome/configurations/default/ directory.

Element	Description	Default
<Attachment>	Includes elements for specifying attachment properties, including `<AttachmentsEnabled>`, `<MaxFileSize>` and `<ValidFileTypes>`.	

<Attachment AdministrationRoles>	Specifies the administrator roles that have permission to use Attachment Maintenance. For example:
	`<AttachmentAdministrationRoles>`
	`<role1, role2>`
	`<AttachmentAdministrationRoles>`
		None

<Attachments Enabled>	Specifies whether attachments are enabled (true or false). Included in `<Attachment>...</Attachment>` element.	`true`
<Browse>	Specifies various browse notification and performance controls (see “Browse Performance Controls” on page 13).	(Refer to examples in `client-session.xml.`)
<BrowseRecordsFor PrintWarning>	When this number of records is reached or exceeded during printing, a warning is displayed on the client.	`10000`
<BrowseRecordsFor ExcelWarning>	When this number of records is reached or exceeded during export to Excel, a warning is displayed on the client.	`10000`
<ChartElementsFor ChartWarning>	Rendering charts with many elements can be CPU intensive. To prevent users from attempting to render large charts that could degrade their computer’s performance, the system checks the number of elements in a chart before rendering the chart and provides a warning if the number of elements exceeds the value specified here. In a chart without grouping, the number of elements in a chart is the number of records in the browse display. In a chart with grouping, the number of elements is the number of groups of records.	`100`
<ConnectionProtocol>	Specifies the application server (AppServer) protocol. Enter one of the following: `AppServer` — Unsecured connection to the name server. `AppServerS` — Secure connection to the name server. `AppServerDC` — Unsecure connection to the AppServer broker. `AppServerDCS` — Secure connection to the AppServer broker.	`AppServer`
<ConnectionHost>	Specifies the host name of the Progress Name Server if `<ConnectionProtocol>` is set to `AppServer` or `AppServerS`. Specifies the Progress AppServer broker host name if `<ConnectionProtocol>` is set to `AppServerDC` or `AppServerDCS`.	`$NameServerHost`

Element	Description	Default
<ConnectionPort>	Specifies the NameServer port number if `<ConnectionProtocol>` is set to `AppServer` or `AppServerS`. The default NameServer port number is 5164. Specifies the AppServer broker port number if `<ConnectionProtocol>` is set to `AppServerDC` or `AppServerDCS`.	`$NameServerPort`
<ConnectionService>	Specifies the name of the Progress AppServer created for this configuration.	`$AppServerBrokerName`
<ConnectionSecure Protocol>	Specifies the AppServer secure protocol used during authentication.	`AppServer`
<ConnectionSecure Service>	Specifies the protocol to use when launching Desktop maintenance programs within the QAD .NET UI. This may be changed to https for that kind of communication.	`$AppServerBrokerName`
<ConnectionSecure Host>	Specifies the secure AppServer host name.	`$NameServerHost`
<ConnectionSecure Port>	Specifies the secure AppServer port number.	`$NameServerPort`
<Dashboard>	Specifies the dashboard configuration settings, including administration roles, padding, maximum number of panels, and border colors (see “Dashboard Settings in client-session.xml File” on page 22).	(Refer to examples in `client-session.xml`.)
<DefaultRefreshRate>	Specifies the default rate in seconds at which browses are automatically refreshed. QAD .NET UI users can start the automatic refresh by choosing Refresh|Start and can stop it by choosing Refresh|Stop. They can change the refresh rate by choosing Refresh|Rate, right-clicking, and editing the value.	`30`
<DesktopProtocol>	Specifies the protocol for connecting to the AppServer. Valid values are `http` or `https`.	`http`
<DesktopHost>	Specifies the name of the machine that Tomcat is running on.	`$TomcatHostName`
<DesktopPort>	Specifies the port number that Tomcat listens on; by default this is 8080, but could be 8443 if `<DesktopProtocol>` is `https`.	`$TomcatPort`
<DesktopService>	Specifies the name of the UI configuration directory under Tomcat `webapp` directory.	`$DesktopWebappName`
<DesktopAPI>	Specifies the program used to run Desktop maintenance programs; it does not change.	`shell.jsp`
<DesktopBaseUrl>	Specifies the Desktop base URL.	`${DesktopProtocol}://${DesktopHost}:${DesktopPort}/${DesktopService}`
<DesktopHelp Service>	Specifies the link to the program that delivers the QAD Desktop help service.	`com/qad/desktop/interface/wsep1.p`
<DesktopUsercount Servlet>	Specifies the name of the servlet used to track user log-ins; it does not change.	`UsercountServlet`

Element	Description	Default
<DesktopUtf8 Conversion>	Set to `false` if Tomcat has `<Connector> with URIEncoding="UTF-8"` in `server.xml`. Otherwise, set it to true (the default).	`true`
<DotNetBrowseMaintenanceShowIndexInformation>	Specfies a performance check on the index use of a new browse definition when you save it from Browse Maintenance. The performance check, Show Index Information, will help to avoid the creation of poorly performing browses with non-indexed fields in joins, filters, and sorts.	`true`
<GoOnLastField>	Specifies whether a program screen (frame) will be automatically submitted when the cursor leaves the last field on the frame. Enter `true` or `false`.	`false`
<GuideMe.Debug>	When set to "true" unresolved tokens are displayed and the Browser context menu is enabled. Tokens are in the form {help:program:field} and by default unresolved tokens are not displayed.	`false`
<GuideMe.Enabled>	Enables/disables the GuideMe feature.	`false`
<GuideMe. ShowDelay>	Sets the time in milliseconds the mouse must hover over a control region before displaying the GuideMe tooltip.	`500`
<GuideMe. HideDelay>	Sets the time in milliseconds to display the GuideMe tooltip before hiding the tooltip. A value of zero indicates the tooltip will not be hidden until the mouse leaves the control region.	`0`
<GuideMe. Animation>	Enables/disables GuideMe animation. Animation can cause performance issues in Citrix environments and can be disabled using this setting.	`true`
<HomePage.Enabled>	Specifies whether the home page feature is enabled or disabled by default. Enter `true` or `false`.	`false`.
<HomePage.Url>	Specifies the default home page URL. The URL can be any valid URL, including `qadsh:\\` links.	`http://www.qad.com`.
<HelpService>	Specifies the help service program. This is an administration setting; it does not change.	`mfwb01.p`
<ImageFont>	In operational metrics, specifies the font used in saved images. Included in `<Metrics>...</Metrics>` element.	`Microsoft Sans Serif, 8.25pt`
<MaxFileSize>	Specifies the maximum file size (in kilobytes) that users can attach. Zero (0) specifies no limit. Included in `<Attachment>...</Attachment>` element.	0
<MaxBrowseRecords ForCount>	In opertaional metrics, specifies the maximum number of records for count metrics. Included in `<Metrics>...</Metrics>` element.	100000
<MaxBrowseRecords Returned>	In operational metrics, specifies the maximum number of records returned to the client when requested. Included in `<Metrics>...</Metrics>` element.	50000
<MaximumBrowse RecordsToCount>	Specifies the maximum number to check for (count) before a > symbol is displayed on a client.	`50000`

Element	Description	Default
<MaximumBrowse RecordsToDownload>	Specifies the maximum number of records that a client can download.	`50000`

<Menu>...<Image>	Specifies a path to a custom image for a custom menu item type.
	`<Menu>`
	`<Image name=`
	`"custom">http://url_path/custom.png`
	`</Image>`
	`</Menu>`	

<Metrics>	Includes elements for operational metrics, including: `<MaxBrowseRecordsForCount>`, `<MaxBrowseRecords Returned>`, `<ShowTextOnImage>`, and `<ImageFont>`.	As listed
<QAD.Message.Poller. Frequency>	Specifies the frequency to retrieve Inbox messages from the server in milliseconds.	`300000` (five minutes).
<RequestTimeout>	This parameter sets the number of seconds after which a web request times out. The range is 10 to 120 seconds.	30 seconds.
<ShowServer Timezone>	You can configure the workspace title to include the server time zone by setting this parameter to `true`.	`false`
<ShowTextOnImage>	In operational metrics, specifies whether to show the title and date on saved images. Included in `<Metrics>...</Metrics>` element.	`true`
<SshProviderUrl>	Specifies the location for the DLL file (`Routrek.granados.dll`) to be downloaded to the clients when they use SSH for terminal connections. Note that the file is not included with QAD software because of exportation laws regarding encryption software. When installing QAD software, you must download the file from `http://www.routrek.co.jp/support/download/varaterm/granados200.tar.gz`. and place the file in the location specified by the `<SshProviderUrl>` so that the file is downloaded to clients. For additional information, see the comments in the client session configuration file (`client-session.xml`) for the `<SshProviderUrl>` element.	`${HomeServer}/ Routrek.granados.dll`
<TerminalProtocol>	Specifies the protocol used for terminal connections. Options include `telnet`, `ssh1`, and `ssh2`. The telnet option is the default setting for typical non-secure Telnet implementations. The `ssh1` option is for Secure Shell protocol 1 (SSH1). The `ssh2` option is for Secure Shell protocol 2 (SSH2). Note that Telnet uses port 23 and SSH protocols use port 22. The port number is set in User Option Telnet Maintenance (36.20.10.3). Also see: “Configuring Georgia Softworks for both Telnet and SSH” on page 64.	`telnet`
<TerminalEncoding>	Specifies the encoding for terminal connections.	`UTF-8`

Element	Description	Default
<TerminalEncoding Map>	Specifies code pages (such as `<CodePage Progress="iso8859-1">iso-8859-1</CodePage>`) for configuring terminal encoding by domain (see “Configuring Terminal Encoding By Domain” on page 43).	(Refer to examples in `client-session.xml`.)
<Terminal Authentication>	Specifies the credentials to use for terminal connections. Valid values are `ShellUser`, `ScriptUser`, or `PromptUser`. (The values are case-insensitive.) `ShellUser` specifies to use the QAD .NET UI user ID and password when logging into the server. `ScriptUser` specifies to use the user ID and password defined in User Option Telnet Maintenance (36.20.10.3). With `PromptUser`, when a terminal screen is launched, the user is prompted for a user ID and password to log into the server. These credentials are used throughout the current session, so the user is not prompted again until they log in again to the QAD .NET UI.	`ShellUser`
<UseLocalDateAnd NumberFormats>	Specifies whether the QAD .NET UI uses the regional settings on a user’s computer. Enter `true` or `false`.	`true`
<ValidFileTypes>	Specifies a comma-separated list of file types allowed for attachment. Includes a size attribute so a particular file type has a larger size than the default (as specified in `<MaxFileSize>`). For example, `<ValidFileTypes size="3096">zip</ValidFileTypes>` specifies that .zip files can be up to 3096 kilobytes. Also includes a typeid attribute to overwrite the default for a particular program. For example,`<ValidFileTypes typeid="sosomt.p" size="0">zip</ValidFileTypes>` specifies no limit on the size of .zip files that can be attached to Sales Order Maintenance. `<ValidFileTypes>` is included in the `<Attachment>...</Attachment>` element.	
<WebDAVRoot>	By default, attachments are stored in *`TomcatInstallDir`*`/webapps/qadhome/configurations/`*`config-name`*`/storage/attachments`, where subdirectories organize the attachments based on domain, program, type, and field. Each directory includes an underscore character (_) at the end by default to account for the possibility of using a blank. Instead of using the default attachment path, you can specify a different path (WebDAV location) using the `<Attachment> <WebDAVRoot>` setting. By default, the setting is commented out and the default path is used. Note that the WebDAV location should be UTF-8 enabled to support the WebDAV standard.	`${HomeServer}/webdav/attachments`

Element	Description	Default
<Web.Connection Limit>	Specifies the maximum number of Web connections.	`11`
<Web.DnsRefresh Timeout>	Specifies the DNS refresh timeout limit in milliseconds.	`7200000` (two hours)
<Web.MaxService PointIdleTime>	Specifies the session "keep alive" limit in milliseconds.	`10000` (10 seconds).
<Web.WebdavUtf8 Conversion>	Set to `false` if Tomcat has `<Connector>` with `URIEncoding="UTF-8"` in `server.xml`. Otherwise, set it to `true` (the default).	`true`
<Workspace.Default ToolBarColor>	Specifies toolbar colors. To set the primary toolbar color, use `<Workspace.DefaultToolBarColor>`, specifying the color as RGB values. To set the secondary toolbar color, use `<Workspace.DefaultToolBarColor2>`, specifying the color as RGB values. You can specify individual workspaces to have different toolbar colors based on the workspace ID, which typically has the format *`domain-id.entity_id`*. For example: `<Workspace.workspaceid1.ToolBarColor>Silver</Workspace.workspaceid1.ToolBarColor>`	`233,233,233`
<Workspace.Provider>	Specifies the workspace provider as `QAD.Plugin.Services.DomainWorkspaceProvider`, which creates one workspace per domain, or `QAD.Plugin.Services.DomainEntityWorkspaceProvider`, which creates one workspace per domain plus entity.	`QAD.Plugin.Services.DomainEntity WorkspaceProvider`.
<Workspace.Format>	Specifies the format of a workspace display name. You can use the following to customize the workspace name: `${db-name}` (the database name) `${domain-name}` (the domain name) `${domain-id}` (the domain ID) `${currency}` (the currency) `${entity-name}` (the entity name) `${entity-id}` (the entity ID) `${culture-name}` (the culture name) `${domain-timezone}` (server timezone name for domain) `${domain-tzoffset}` (server timezone offset for domain, +HH:MM format) `${domain-codepage}` (server codepage used for domain)	`${domain-id} ${domain-name} [${currency}] > ${entity-id} ${entity-name}`

Configuring Georgia Softworks for both Telnet and SSH

You can configure the Georgia Softworks Universal Terminal Server to run both Telnet and SSH on the same machine by configuring some registry settings:

1. Make sure that you are running Georgia Softworks Universal Terminal Server (GSW UTS) version V6.50.0038 or later.
2. Change the parameter:

   `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GS_Tnet\Parameters\AllowTelnetWithSSH`

   to a setting of `1`.
3. Change the parameter:

   `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GS_Tnet\Parameters\LsnOnLoopbackOnly`

   to a setting of `0`.
4. Restart the GSW UTS service.

Menu Extension Configuration File

The menu extension configuration file defines menus added to the QAD .NET UI outside of the standard programs and functions. By default, the menu extension configuration file is located in *`TomcatInstallDir`*`/webapps/qadhome/configurations/default/menus/plugin-menu.xml`.

File Usage

You can define menu extension configuration files for each system environment by placing them in appropriate subdirectories under the `/configurations` directory, as follows:

TomcatInstallDir`/webapps/qadhome/configurations/`*`config-name`*`/menus/plugin-menu.xml`

Where *`config-name`* is the system environment name that you select when you log in to the QAD .NET UI.

File Format

The default menu configuration file is located in *`TomcatInstallDir`*`/webapps/qadhome/configurations/menus/plugin-menu.xml`. The file contains hierarchical XML elements. The top-level element is `<PluginExtender>`.

File Elements

The file includes the following XML elements:

<PluginExtender>

The <PluginExtender> element is the top-level container for the menu extension configuration file.

Contains

```
<ResourceFile>
<Security>
<Workspaces>
```

Contained By

Not contained by any other element.

Attributes

Name	Description	Default	Req?
provider	Identifies the originator of the menu extensions.	QAD	Yes
key	Specifies the element identifier.	blank	Yes
version	Specifies the version of the menu extension file definition.	1.0.0.0	Yes

Example

```
<PluginExtender provider="QAD" key="" version="1.0.0.0">
```

<Security>

The <Security> element contains a set of security constraints.

Contains

```
<SecurityConstraint>
```

Contained By

```
<PluginExtender>
```

Attributes

N/A

Example

```
<Security>
 <SecurityConstraint key="admin" constraint="allow">
  <Role>admin</Role>
  <Role>dtadmin</Role>
  <Role>qadadmin</Role>
  <User>mfg</User>
```

```
  </SecurityConstraint>
</Security>
```

<SecurityConstraint>

The <SecurityConstraint> element defines a security constraint key and whether the constraint is to allow or deny access.

Contains

```
<Role>
<User>
```

Contained By

```
<Security>
```

Attributes

Name	Description	Default	Req?
key	Specifies a security constraint key, which identifies a shell menu security group consisting of various roles and users. The menus made available by a given <ShellMenu> element are only available to roles and users within the security constraint key.	admin	Yes
constraint	Define a listing of allowed (allow) or denied (deny) roles or users.	allow	Yes

Example

```
<Security>
 <SecurityConstraint key="admin" constraint="allow">
  <Role>admin</Role>
  <Role>dtadmin</Role>
  <Role>qadadmin</Role>
  <User>mfg</User>
 </SecurityConstraint>
</Security>
```

<Role>

The <Role> element specifies a role subject to a security constraint.

Contains

N/A

Contained By

```
<SecurityConstraint>
```

Attributes

N/A

Example

```
<Role>admin</Role>
```

<User>

The `<User>` element specifies a user subject to a security constraint.

Contains

N/A

Contained By

```
<SecurityConstraint>
```

Attributes

N/A

Example

```
<User>mfg</User>
```

<Workspaces>

The `<Workspaces>` element contains the workspace elements within which the menu extensions are available.

Contains

```
<Workspace>
```

Contained By

```
<PluginExtender>
```

Attributes

N/A

Example

```
<Workspaces>
 <Workspace key="all" image="" label="">
 ...
```

```
 </Workspace>
<Workspaces>
```

<Workspace>

The <Workspace> specifies the workspace within which the menu extensions are available. By default, the key attribute is set to all so that it applies to all the workspaces.

Contains

<ShellMenus>

Contained By

<Workspaces>

Attributes

Name	Description	Default	Req?
image	Specifies the element identifier.	all	Yes
key	Specifies an image for the workspace.	blank	Yes
label	Specifies a label for the workspace.	blank	Yes

Example

```
<Workspace key="all" image="" label="">
  <ShellMenus>
  ....
  </ShellMenus>
  <ShellMenus>
  ....
  </ShellMenus>
</Workspace>
```

<Properties>

The <Properties> element specifies a set of properties. Specifies a property whose type is defined as string, config or label. Properties defined as a label are translated using Label Master. The config properties are resolved using configuration values. The string properties are resolved using any combination of properties or literal strings.

Note The entries for this element do not typically require any changes by a system administrator. This section is provided for informational purposes only.

Contains

N/A

Contained By

<PluginExtender>

Attributes

N/A

<Property>

The <Property> element under <Properties> specifies a property whose type is defined as string, config or label. Properties defined as a label are translated using Label Master. The config properties are resolved using configuration values. The string properties are resolved using any combination of properties or literal strings.

Note The entries for this element do not typically require any changes by a system administrator. This section is provided for informational purposes only.

Contains

N/A

Contained By

<Properties>

Attributes

Name	Description	Default	Req?
name	The name of the property, which is resolved from an item such as a label defined in the format $(name).	N/A	Yes
value	The value of the property, which the system uses to look up the translation for the name	N/A	Yes
type	The type of the property. The type of the property is set to string by default if type is not included.	string	No

Example

You have defined a shell menu with the label set as ${Processes}, as follows:

```
<ShellMenus>
 <ShellMenu key="process" menuType="application" label "${Processes}">
 ...
 </ShellMenu>
</ShellMenus>
```

The system resolves the string inside the dollar sign and brackets and identifies the value to look up the label based on an entry for the string in a <Property> element's name attribute:

```
<Property name="Processes" value="PROCESSES" type="label"/>
```

The system looks up the actual string for the label based on the `PROCESSES` value and displays the string as the label in the QAD .NET UI.

<ShellMenus>

The `<ShellMenus>` element contains the `<ShellMenu>` elements that define a particular menu extension.

Contains

```
<ShellMenu>
```

Contained By

```
<Workspace>
```

Attributes

N/A

Example

```
<ShellMenus>
 <ShellMenu key="process" menuType="application" label="Processes">
 ...
 </ShellMenu>
</ShellMenus>
```

<ShellMenu>

The `<ShellMenu>` element specifies a menu extension consisting of one or more `<ShellMenuItem>` elements.

Contains

```
<ShellMenuItem>
```

Contained By

```
<ShellMenus>
```

Attributes

Name	Description	Default	Req?
`key`	Specifies the element identifier.	N/A	Yes
`menuType`	Specifies the menu type, such as application.	N/A	Yes

Name	Description	Default	Req?
label	Specifies the name of the menu as it appears on the QAD .NET UI.	N/A	Yes
security	Specifies a security constraint key, defined using the <SecurityConstraint> element.	N/A	No

Example

```
<ShellMenu key="process" menuType="application" label="Processes">
 <ShellMenuItem key="process.0" label="Inventory" image="ProcessMap">
 ...
 </ShellMenuItem>
</ShellMenu>
```

<ShellMenuItem>

The <ShellMenuItem> specifies a menu item.

Contains

```
<Command>
<Parameter>
<Property>
```

Contained By

```
<ShellMenu>
```

Attributes

Name	Description	Default	Req?
key	Specifies the element identifier.	N/A	Yes
label	Specifies the name of the menu item as it appears on the QAD .NET UI.	N/A	Yes

Name	Description	Default	Req?
`image`	Specifies an image to be associated with the menu item on the QAD .NET UI. A 16x16 pixel icon is returned and converted to a bitmap. There are two methods for resolving image names. The first method uses internal images and can be referenced by a case-insensitive canonical name. If the image cannot be found internally, the image is retrieved from the operating system. Images resolved by the operating system can reference file names or file extensions. For example, `image="print"` uses the internal print image and `image=".pdf"` uses the image associated with a PDF file. Standard image keys include the following: • Help • AddTable • OpenFolder • ClosedFolder • Cut • Paste • Copy • Excel • Document • Forms • Mail • Save • Search • Print • PrintPreview • Views • Filter • Chart	N/A	Yes

Name	Description	Default	Req?
image	• Quantity • Browse • Maint • Report • ProcessMap • Fields • FirstPage • LastPage • PrevPage • NextPage • Load • ClearResults • Go • Add • Remove • Globe • Admin • Bom • BomComponent • NewNode • NewFile • Refresh • Cancel • Home • Favorites • UndoProductStructure • UndoComponent • NewNode • NewFile • Refresh • Cancel • Home • Favorites • UndoProductStructure • UndoComponent • BrowseGrid • ChartDesignIcon • Clear • SaveAs • Edit • MenuCollection	N/A	Yes

Name	Description	Default	Req?
`image`	• GoTo • Action • Sort • SortUp* • SortDown* • GridColumnHeaderBackground* • CompanyLogo* • CloseActive* • CloseInactive* • CloseInactiveMouseOver* • CloseActiveMouseOver* • TabHeaderBackground* • TabSeparator* • ChartSampleColumn* • ChartSampleColumn3D* • ChartSampleBar* • ChartSampleBar3D* • ChartSamplePie* • ChartSamplePie3D* • ChartSampleStackedColumn* • ChartSampleStackedColumn3D* • ChartSampleStackedBar* • ChartSampleStackedBar3D* • ActiveTabBackground* • Bullet* • BulletWithTail* • Arrow* • BulletTriangle* • ToolbarBackground* • Delete* • QADIcon* The asterisk (*) indicates that images that are not 16x16 pixels in size.	N/A	Yes
`security`	Specifies a security constraint key, defined using the `<SecurityConstraint>` element.	N/A	No

Examples

The following example adds a process map:

```
<ShellMenuItem key="process.3" label="Inventory" image="ProcessMap">
 <Command type="QAD.Commands.ProcessViewerCommand">
<Parameter value="${DesktopBaseUrl}/ProcessViewer.jsp?ProcessName=
Inventory" type="System.Uri,System"/>
 <Property name="Text" value="Inventory"/>
 </Command>
</ShellMenuItem>
```

The following example adds Microsoft Notepad:

```
<ShellMenuItem key="apps.word" label="Notepad" image="notepad.exe">
 <Command type="QAD.Commands.ProcessCommand">
   <Property name="StartInfo.FileName" value="notepad.exe"/>
 </Command>
</ShellMenuItem>
```

The following adds Microsoft Word:

```
<ShellMenuItem key="apps.word" label="Word" image=".doc">
 <Command type="QAD.Commands.ProcessCommand">
  <Property name="StartInfo.FileName" value="WinWord.exe"/>
 </Command>
</ShellMenuItem>
```

The following adds Microsoft Excel:

```
<ShellMenuItem key="apps.excel" label="Word" image=".xls">
 <Command type="QAD.Commands.ProcessCommand">
  <Property name="StartInfo.FileName" value="Excel.exe"/>
 </Command>
</ShellMenuItem>
```

The following adds Microsoft Internet Explorer:

```
<ShellMenuItem key="apps.iexplore" label="WebBrowser" image=".html">
 <Command type="QAD.Commands.ProcessCommand">
  <Property name="StartInfo.FileName" value="about:blank"/>
 </Command>
</ShellMenuItem>
```

<Command>

The `<Command>` element specifies a QAD-defined command for a menu item.

Contains

```
<Parameter>
<Property>
<Method>
```

Contained By

```
<ShellMenuItem>
```

Attributes

Name	Description	Default	Req?

`type`	Specifies the command type as made available by QAD. Examples of command type include the following:
	`QAD.CommandsProcessCommand`
	`QAD.CommandsProcessViewerCommand`
	`QAD.CommandsStackedCommand`
	`QAD.CommandsWebBrowserCommand`
	`QAD.CommandsPlayListCommand`
	`QAD.CommandsRoleListCommand`
		N/A	Yes

Example

```
<Command type="QAD.Commands.ProcessViewerCommand">
```

<Parameter>

The `<Parameter>` element specifies a parameter associated with a particular command or method.

Contains

N/A

Contained By

<Command>
<Method>

Attributes

Name	Description	Default	Req?
value	Specifies a path or program as required by a <Command> or <Method> element.	N/A	Yes
type	Specifies the value type.	N/A	No

Example

```
<Parameter value="${DesktopBaseUrl}/ProcessViewer.jsp?ProcessName=
Inventory" type="System.Uri,System"/>

<Parameter value="gpbr348.p" type="System.String" />

<Parameter value="popomt.p,sosomt.p" />
```

<Property>

The <Property> element under <Command> specifies a property associated with a particular command.

Contains

N/A

Contained By

<Command>

Attributes

Name	Description	Default	Req?
name	Specifies the name of the property.	N/A	Yes
value	Specifies the value of the property.	N/A	Yes

Example

```
<Property name="Text" value="Inventory"/>
```

<Method>

The <Method> element specifies a method associated with a particular command.

Contains

<Parameter>

Contained By

```
<Command>
```

Attributes

Name	Description	Default	Req?
name	Specifies the name of the method.	N/A	Yes

Example

```
<Method name="AddMenuItemAliases">
 <Parameter value="popomt.p,sosomt.p" />
 ...
</Method>
```

Setting Menu Extension Security

With the <SecurityConstraint> element, you can define a key that specifies a group of roles and users that are subject to a security constraint. You can then refer to that key as an attribute in a <ShellMenu> or <ShellMenuItem> element, which specify the external menus and menu items. In this way, you can limit the availability of menus or menu items.

For example, you could define an admin security constraint key that applies to some roles (admin, qadadmin) and users (mfg), as follows:

```
<SecurityConstraint key="admin" constraint="allow">
   <Role>admin</Role>
   <Role>qadadmin</Role>
   <User>mfg</User>
</SecurityConstraint>
```

With the constraint attribute set to allow, only the admin roles or users can access menus defined in a <ShellMenu> element that includes a security attribute set to admin:

```
<
ShellMenu key="images" menuType="application" label="Example Menu"
security="admin">
...
</ShellMenu>
```

Use of the security attribute in <ShellMenu> is optional, so if it is not used there are no security constraints on that particular menu set.

With the above setup, you will see Example Menu and everything under it in the QAD .NET UI only if you are the user mfg or have the admin or qadadmin roles.

The menu extension configuration file does not define the roles and users in the system; it only identifies the ones to which it applies security constraints.

You can also define a security constraint key with constraint=deny. In this case, the roles and users in the security constraint key definition are denied access to any <ShellMenu> (or <ShellMenuItem>) element with the security attribute set to that key. Further, those roles and

users are denied access to any items defined below the initially denied element in the hierarchy, even if another security constraint key further down in the hierarchy has been set that allows them access.

You can control how the menu extension configuration file gets applied depending on how it is named and where you put it, which can affect how security constraints are applied.

Defining Labels

In the menu extension configuration file, you can map label names as used in the file to label values that display in the QAD .NET UI.

The `<Properties>` element maps a label name to a label value as follows:

```
<Properties>
   <Property name="LabelName" value="Label Value" type="label"/>
   ...
   ...
</Properties>
```

In the menu extension configuration file, you can now use `${LabelName}` in your menu item definitions. When the label displays as a menu item in the QAD .NET UI, the menu item label is displayed as Label Value.

For example, in the following `<ShellMenu>` definition with the label `${Admin}` will be transformed to `Administration` in the QAD .NET UI because the `<Property>` element maps `Admin` to `Administration`.

```
<Properties>
   <Property name="Admin" value="ADMINISTRATION" type="label" />
   ...
   ...
   ...
</Properties>
   ...
   ...
   ...
<ShellMenu key="images" menuType="application" label="${Admin}" security=
"admin">
   <ShellMenuItem ...>
   ...
   </ShellMenuItem>
   ...
   ...
   ...
</ShellMenu>
```

Adding URIs as Shell Menu Items

You can add URI links as shell menu items within any shell menu set. For example, the `<ShellMenuItem>` element for adding a link to Google is as follows:

```
<ShellMenuItem key="example.1" label="Google">
<Command type="QAD.Commands.WebBrowserCommand">
<Parameter value=”http://www.google.com” type="System.Uri,System">
<Property name="Title" value="Google"/>
```

```
</Command>
</ShellMenuItem>
```

Similarly, a URI link to FedEx is as follows:

```
<ShellMenuItem key="spec.3" label="FedEX">
<Command type="QAD.Commands.WebBrowserCommand">
<Parameter value="http://www.fedex.com" type="System.Uri,System" />
<Property name="Title" value="FedEX" />
</Command>
</ShellMenuItem>
```

Adding Process Maps

To add process maps to the QAD .NET UI, you must add them in the menu extension configuration file using the `<ShellMenuItem>` element. The format for adding a process map using the `<ShellMenuItem>` element is as follows:

```
<ShellMenuItem key="process.N" label="ProcessMapName" image=
"ProcessMap">
<Command type="QAD.Commands.ProcessViewerCommand">
<Parameter value="${DesktopBaseUrl}/ProcessViewer.jsp?ProcessName=
ProcessMapName" type="System.Uri,System"/>
<Property name="Text" value="ProcessMapName"/>
</Command>
</ShellMenuItem>
```

The first process map defined in the file includes `<ShellMenuItem key="process.0"...`, the next map includes `<ShellMenuItem key="process.1"...`, and so on. If the last process map defined in the file includes `<ShellMenuItem key="process.9"...`, then the next map you add should include `<ShellMenuItem key="process.10"...`. Next, references to the process name need to be included in the `<ShellMenuItem>`'s label attribute, the `<Parameter>` element's value attribute, and the `<Property>` element's value attribute. For example, the following adds a process map named `MapExample` as the 11th map defined in the file:

```
<ShellMenuItem key="process.10" label="MapExample" image="ProcessMap">
  <Command type="QAD.Commands.ProcessViewerCommand">
<Parameter value="${DesktopBaseUrl}/ProcessViewer.jsp?ProcessName=
MapExample" type="System.Uri,System"/>
<Property name="Text" value="MapExample"/>
</Command>
</ShellMenuItem>
```

Chapter 4

Configurable Screens

This chapter describes using Configurable Screens in the QAD .NET UI:

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Using Configurable Screens

This section describes using Configurable Screens in the QAD .NET UI.

QAD provides a design tool for configuring selected screens. The design tool 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 indicate that navigation through a frame should occur automatically. By combining these features, designers can create a screen sequence that greatly streamlines data input for users.

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. Tools are provided so that administrators can resolve any conflicts that occur regarding screen assignment when a user belongs to more than one user group.

Configuring screens enables you to help the individuals in your company get their jobs done quicker and more effectively. By eliminating fields that are not used at your site, you can also reduce training time and potential data input errors. However, you must have a very clear understanding of how a particular function is being used before you change the data input requirements. Because of the inherent flexibility of the software, each company that implements a particular function may use different features. This can affect which fields are required and which are optional.

The following are a few examples of how this can occur:

Example Generalized codes validation. Many programs support the use of generalized codes. If codes have been defined for a field in Generalized Codes Maintenance (36.2.13), built-in validation results in an error when the field is left blank. However, if no codes are defined, the field can be left blank and an error is not generated. Hiding a validated field without providing a valid default value creates a problem in the first scenario but not in the second.

Example Optional modules. The behavior of some programs is affected by the implementation of optional related modules. For example, different fields and pop-ups display in Sales Order Maintenance depending on whether you are using available-to-promise features, Enterprise Material Transfer, or updating the Service/Support Management installed base. In addition, Container and Line Charges, Customer Consignment Inventory, and Logistics Accounting affect sales orders.

Example Control settings. Settings in control programs can determine whether a field is required or even whether it displays on the interface. For example, the Invoice From Recording setting in Call Management Control determines if certain fields display in the last frame of Call Activity Recording (11.1.1.13).

These examples highlight that you must take care in planning the changes you want to implement. You must also thoroughly test the templates you create before using them in a production environment.

Note The Configurable Screens function is available for non-component-based screens only. You can customize component-based screens using component-based Design Mode.

Assigning Configurable Screen Templates

A set of changes to a particular program's user interface is stored as a template. Templates are then assigned to user groups. In QAD Enterprise Applications - Standard Edition, groups are defined in User Group Maintenance (36.3.4) and then assigned to users in User Maintenance (36.3.1). The system displays all groups defined in User Group Maintenance. In addition, you can assign a generic template to all users. The system activates a template assigned to all users only when a specific template is not assigned to users, based on their group membership.

Specific group assignments always take precedence over generic templates. However, it is still possible for a user to belong to more than one group with different assigned templates. In this case, the system chooses the template based on an internal identifier, which might not be what is wanted or expected. However, the UI Template Conflicts screen allows the administrator to specify the template.

The system also provides a UI Template Conflicts administrative function that lets you view UI template assignment conflicts and manually determine which template should be used

When you design your templates, you should plan how you want to assign users and determine if your existing groups accommodate the way you want to develop your templates. Since security groups often reflect functional responsibility within an organization, they typically already represent different views of an organization that can be supported by different templates. However, you may find that you need to add new groups to be able to use templates to the best advantage in your particular implementation.

Impact of System Changes to Configurable Screens

UI templates are based on the order and organization of a specific user interface. Certain changes to screens can invalidate existing UI templates, resulting in unexpected behavior during execution. These changes include:

- Key fields are added or removed.
- The initial focus field or the first field of a frame is changed. These fields are points of reference for other field information in the template.
- The internal Progress frame name is changed.
- The location of a frame on the screen is changed; for example, moving a frame from the top of the screen to the bottom. This changes the x and y coordinates of the frame, which are used as location identifiers.

  These types of changes are not common.

You should be aware of possible UI impacts when:

- You customize any supported programs.
- You install QAD service packs or upgrade QAD releases.

Be sure to check the release notes provided with the release or service pack to see if these kinds of program changes occurred.

The following kinds of UI changes do not adversely affect UI templates:

- Adding or removing fields from frames, other than the initial focus field or first field mentioned previously.

- Adding or removing frames.
- Changing the sequence that frames appear as long as the frames remain in the same screen location.

Configurable Screen Error Handling

To help you during testing, an additional message displays when a program error is generated because a template does not allow entering a field that is validated by the system.

For example, a frame can have a field that is validated by the system. If that field is hidden so that the user cannot supply a value, the user will not be able to proceed through the program.

In this case, the system displays additional information with the error indicating that a configurable screen setting caused the error, like the following example:

```
The following error was caused by a configurable screen setting.
Please contact your System Administrator.
ERROR: Country code does not exist. Please re-enter.
```

Resolving Configurable Screen UI Template Conflicts

Use the Configurable Screen UI Template Conflicts screen to resolve conflicting template assignments. These conflicts can occur because users belong to more than one group.

For example, John Smith belongs to the Sales1 user group and Manager1 group. The UI designer creates a UI template for Sales Order Maintenance and assigns it to group Sales1. The designer also creates a second Sales Order Maintenance template for managers and assigns it to group Manager1. When John logs in and uses Sales Order Maintenance, the system has no way of knowing which version of the UI to present.

In these situations, the system chooses the template based on an internal identifier, which might not be what is wanted or expected. The system notes this as a conflict to be resolved by the UI Template Conflicts function. 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.

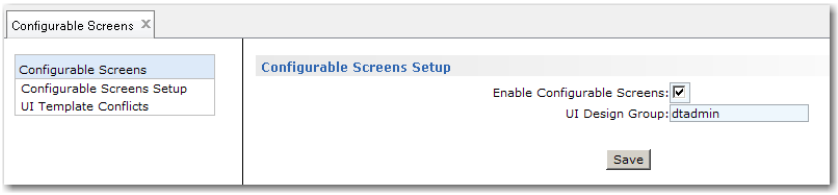
The UI Templates Conflict screen lists all users that belong to more than one group with an assigned template. The administrator can use the drop-down list in the Conflict column to select the group assignment that the system should prioritize.

Setting up Configurable Screens

To set up configurable screens:

1. Choose Administration|Configurable Screens.
2. Click Configurable Screens Setup.

Fig. 4.1
Configurable Screens Setup



You must specify values for the following fields:

Enable Configurable Screens. Select this field to enable members of the group specified for UI Design Group to create screen templates and assign them to users.

- Enabled: Members of the UI design group can create templates, and templates assigned to user groups are active when those users access the associated program.
- Disabled: Templates cannot be created and any that exist are not active even if assigned to users.

UI Design Group. Enter the name of a user group that is authorized to create and modify screen templates. Only members of this group can create configurable screen templates. In QAD Enterprise Applications - Standard Edition, predefine groups in User Group Maintenance (36.3.4) and then associate them with users in User Maintenance (36.3.1).

Click Save to apply this setting.

Setting Up Configurable Screens in Enterprise Edition

In QAD Enterprise Applications - Standard Edition, you assign templates to user groups, which you define in User Group Maintenance (36.3.4) and then assign to users in User Maintenance (36.3.1).

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 create and modify templates for Configurable Screens.

Designing a Template

When you configure screens, you create templates and assign them to user groups. 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 create a new template, select one of the programs in the menu system, such as Customer Maintenance. Right-click to display options and choose Design.

Note This option is enabled only when you are logged in as a member of the UI Design Group.

To move through the sequence of frames in a program, you must either create a new record or modify an existing one. However, when you are in configure mode, none of the changes that you make to database records are saved. You use the record simply as a way to move through the screen.

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. For example, if you create a new sales order in configure mode, the new order is not saved. However, the next sales order number in Sales Order Control (7.1.24) is incremented, leaving a gap in sales order numbers.

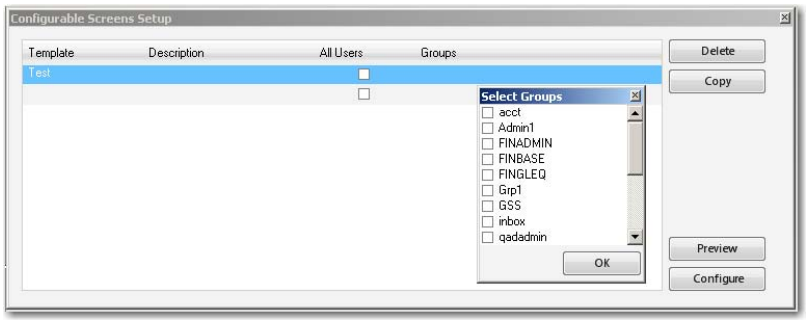
On the other hand, testing of template changes is simplified when you create a new record, rather than editing an existing one. When a new record is created, many fields that require data may be initially blank. For an existing record, these would already have values. If you hide a required field and 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.

Important To support rolling back changes when you exit design mode, some database records may remain locked during the entire time you are in simplify mode. To reduce any adverse effects of record locking on other users of the system, designers should create and modify UI templates when other users are not actively using the system.

Creating a Template

The Configurable Screens Setup screen is displayed when you right-click on a program in the Applications area and choose Design. Use this screen to manage the UI templates for the selected program.

Fig. 4.2
Configurable Screens Template



To create a new template, follow these steps:

1. Enter a name (up to 40 characters) for the new template in the Template column of the Configurable Screens Setup screen.
2. Enter the template description (up to 60 characters) to indicate its purpose.
3. Indicate if you want this template to be a generic template assigned to all users. If you want this template to be used whenever a more specific one is not found, select the All Users field. When this option is selected, you cannot assign any specific groups.
4. If this is not a generic template, select one or more user groups to assign to this template. The Select Groups list displays all defined groups in the system.

   Select one or multiple user groups to which to assign the template.

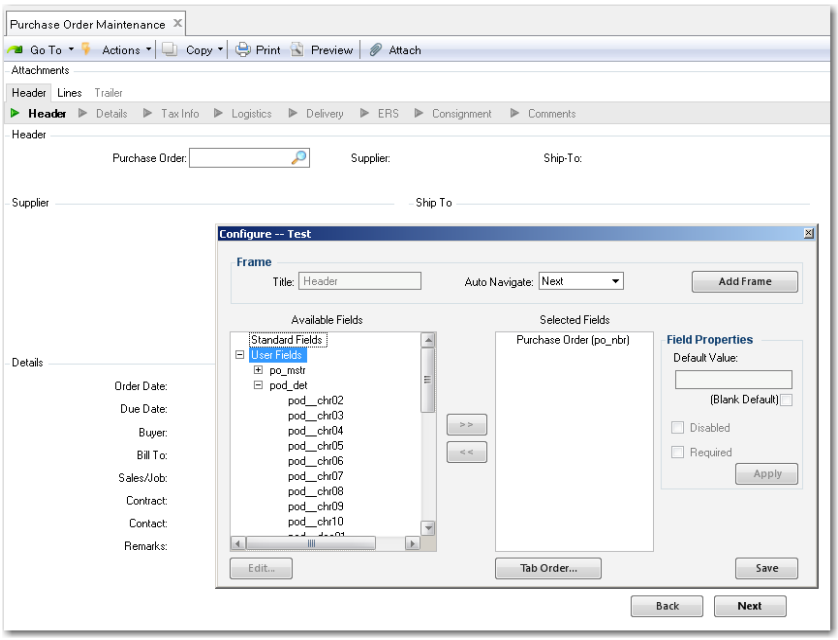
5 Click Delete to delete the selected template, Copy to create a copy of the selected template, or Preview to display the template as it applies to the current program screen.

6 Click Configure to display the Configure screen and program screen, and to begin the template design, as described in the next section.

Configuring Program Screens

Once you click Configure, you view the program screen in configurable mode. The fields in the current frame are highlighted when you mouse over their borders. Grab this highlighted area to move fields around the screen.

Fig. 4.3
Configure



Use the Configure screen to add or remove fields, modify field properties, set the tabbing order on the screen, add new frames, and set the navigation properties on frames.

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.

Field Descriptions

Frame

Title. This field displays the title of the current frame in read-only format. When you create a new frame, use this field to specify a name (up to 36 characters).

Auto-Navigate. Select from None (the default), Next, Next (bidirectional), and Back. You can use the Next, Next (bidirectional), and Back options to simplify data entry by skipping entire frames. Use these settings only with careful planning. 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.

To proceed from one frame to the next, you normally use the *Next* command. However, when you are in a frame that lets you enter multiple lines—such as sales order detail or customer banks—you use the *Back* command to indicate you are through entering lines and ready to display the next frame.

So, for example, if you do not want a particular user group to modify bank accounts associated with customers or even see them, set the Back option on the Bank Accounts frame in Customer Maintenance.

When users execute the program, that frame does not display. Typically, Next and Back prevent the display of a frame. However, in some cases, the screen may be visible before the navigation reaches that point.

For example, if you set Next on the bottom frame of the first screen in Customer Maintenance, the frame will still be visible when the screen is launched. When the user navigation reaches that frame, it will then be skipped.

Next (bidirectional) has the same effect as the Next option (which causes the configured program to automatically navigate through a frame), but in addition, the Next (bidirectional) option prevents that automatic Next from being bypassed when a user is navigating Back through the frame. That is, Next (bidirectional) applies while the user is navigating forward and backward. By default, when a user navigates backward (using the Back button) to a frame that has Auto Navigate set to Next, the system bypasses execution of that automatic Next to prevent navigation from returning to the frame it started on. However, there are some cases where this bypassing is not desired. In those cases the option Next (bidirectional) can be used to override this default behavior.

Add Frame. Click to add a frame to the program. See “Adding Fields and Frames” on page 90.

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. See “Adding New Fields and Tables to Programs” on page 90.

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

Field Properties

Use this area to view and modify the properties of a field selected in the Selected Fields area.

You can assign more than one option to a field; for example, you can provide a default value for a field as well as disabling or hiding it.

If you plan to mark fields as required, you should consider marking all fields that are validated by the application logic as required, and not just newly added fields.

You can configure all types of enabled fields in a frame except for fields that are represented with drop-down lists, such as the Line Format field in Sales Order Maintenance (7.1.1). None of the field-level commands can be used with this type of field. When you right-click the Line Format field, the commands are disabled.

Default Value. 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. Defaults are only applied to new records; when a record is being edited, no field values are overridden.

The following is a list of the programs for which the Default Value option for fields is available:

adcsmt.p	icunrc01.p	remove.p	sfoptr06.p
advnmt.p	kbcdrp01.p	renplf.p	sfscrap.p
aprvmt.p	kbcdrp03.p	rescrap.p	soivmt.p
apvomt.p	poblmt.p	reset.p	sosomt.p
bmpsmt.p	popomt.p	rewadj.p	sosopk.p
dsdopk01.p	poporc.p	rework.p	sososl.p
fscamt.p	pppsmt01.p	rqrqmt.p	sqqomt.p
fsrmamt.p	ppptmt.p	rspomt.p	wobkfl.p
icccaj.p	ppptmt04.p	rwopmmt.p	woopmt.p
iclomt.p	rcpsmt.p	rwromt.p	wowois.p
iclotr02.p	rcsomt.p	rwromt01.p	wowoisrc.p
iclotr03.p	rcssmt.p	sfoptr01.p	wowomt.p
icrsrc.p	rebkfl.p	sfoptr02.p	woworc.p
icsorc.p	redt.p	sfoptr03.p	woworl.p
icunis.p	reject.p	sfoptr04.p	woworl01.p
icunrc.p	relbr.p	sfoptr05.p	

Blank Default. Select this field to set a blank default for the selected field.

Disabled. Select this field to disable the selected field in the screen. The field label remains on the screen, the value box is removed from the screen, and the user cannot update it.

You can remove both field name and value box from the screen by selecting the field in the Selected Fields area and using the arrow key to return it to the Available Fields area. Existing fields are moved to the Standard Fields section of the Available Fields area, and new fields are moved to the User Fields section.

Required. Select this field to prevent users from advancing through the current frame without supplying a value for this field. In configurable mode, the field name is bolded, changed to a blue color, and marked with an asterisk (*) at run-time.

New. Click to display the New field screen, in which you add a new field to the list of Available Fields. This option is only available for Enterprise Edition applications.

Edit. Select a field in the Available Fields area and click Edit to display the field properties. See “Editing Field Properties” on page 91.

Note You cannot edit the properties of a Standard Field.

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.

Apply. Click to apply your field properties changes.

Save. Click to save your template changes.

Adding Fields and Frames

In component-based screens in QAD Enterprise Edition, you can add a new field to a table and then add the new field to the current screen.

In Standard Edition, the list of fields that you can add to a screen is displayed in the Available Fields area of the Configure screen. The Available Fields area has two sections:

- 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.

The `<tableaccess>` section of this file lists the tables associated with some of the programs that are available for Design mode.

By default, you can only add fields that follow these naming conventions:

```
*__chr..
*__dte..
*__log..
*__dec..
*_user1
*_user2
```

These names correspond to the following field types:

character

date

logical

decimal

integer

These fields are reserved for customization and can be added as values for any table.

The `<userfields>` section of the file allows additional fields to appear in the User Fields section of the Configure screen.

Warning The default fields that follow the naming convention above are safe to add to screens because they are specifically reserved for customizations. However, when adding other fields to the `<userfields>` section of `configscreens.xml`, you must be very familiar with the fields and the side effects that can be caused by adding them to the screen. Some fields are heavily validated and verified by the standard code. If they are added to the screen using this mechanism, this validation and verification will be bypassed—causing data corruption.

In the example, the `<tableaccess>` section of the `configscreens.xml` file lists the tables for `woworl01.p` and `wowor1.p`.

The `default` value of each program displays the default table that appears first in the Available Fields area of the Design window.

```
<configscreens>
   <tableaccess>
      <program name="woworl01.p" default="wo_mstr">
         <table name="wo_mstr"/>
         <table name="pt_mstr"/>
      </program>
      <program name="woworl.p" default="wo_mstr">
         <table name="wo_mstr"/>
         <table name="pt_mstr"/>
      </program>

        …
</tableaccess>
   <userfields>
      <table name="pt_mstr">
         <field name="pt_desc1"/>
         <field name="pt_desc2"/>
      </table>
   </userfields>
</configscreens>
```

There are two copies of `configscreens.xml`, in the `com/qad/mfgpro` and `com/mfgpro` folders. You must modify both files to enable your additional field changes.

Adding Available Fields to Screens

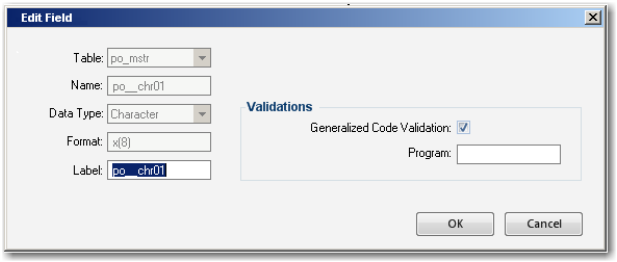
To add a field to the current frame, select the field in the Available Fields area and use the arrow button to move the field to the Selected Fields area. Before moving the field, click Edit to view and modify the field properties. The Edit button is only available for user fields in the Available Fields area.

Editing Field Properties

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.

Fig. 4.4
Edit Field



Field Descriptions

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. You can modify the label up to a maximum of 35 characters. 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.

Validations

Use this area to define how the field is to be validated.

Generalized Code Validation. Check this field to ensure that the values for this field are based on the valued 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`.

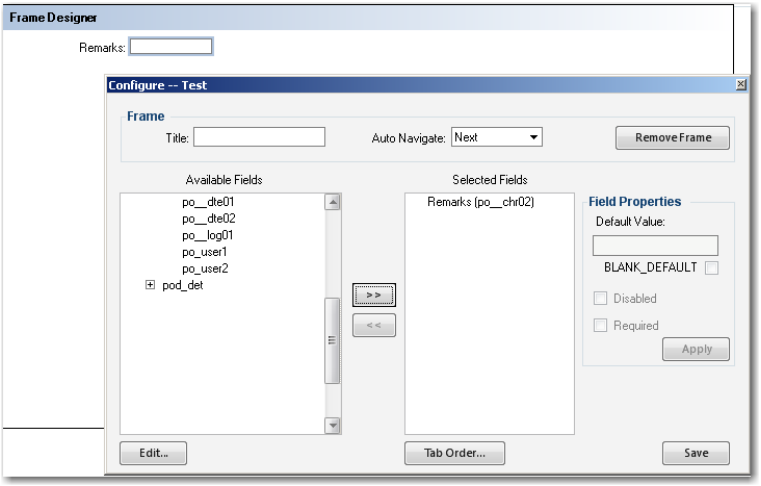
Program. Use this field to enter the name of a user-defined Progress program that validates the field.

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 New Frames to Screens

Click the Add Frame button to add a new frame to the program.

Fig. 4.5
Add Frame



The 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.

Note A technical limitation with underlying Progress program transactions can prevent data from being saved in frames that are added using Configurable Screens design tool. In particular, adding a configured frame after the last frame of a program can be a problem. The design tool cannot determine which programs are affected by this and thus cannot prevent a frame from being added in the trouble spots. Instead of placing a configured frame after the last frame in a program, consider the following alternative approaches:

- Move the configured frame to be located earlier in the program. For example, if configuring Item Planning Maintenance, put the configured frame before the Item Planning Data frame. This will properly save the data in the configured frame.
- Add fields to existing frames that will put them in the proper transaction scope. If there is not a lot of available space in an existing frame it is still possible, in some cases, to place fields in that frame in spaces that appear too small to fit and which cause overlap with other fields. At run-time, the frame will be expanded to accommodate this and the fields will appear spaced properly.
- Using the design tool, drag around the existing fields on a frame to make space available for adding additional fields.
- Customize the underlying Character UI code to add the additional frame within the transaction scope (this would not involve using the Configurable Screens design tool).

- QAD Services has a customization tool kit (ICT), which provides a nonintrusive customization mechanism that can handle some customizations that Configurable Screens cannot handle. (Implementing this requires more effort than the previous options.)

Note There is a technical limitation with Configurable Screens regarding existing transactions of the underlying Progress program. This limitation can prevent data from being saved in frames that are added using the Configurable Screens design tool. Adding a configured frame after the last frame of a program can sometimes be a challenge. The design tool cannot determine at design time which programs are affected by this and thus cannot prevent a frame from being added in the trouble spots. Nevertheless, there are some alternatives:

- The configured frame can be moved earlier in the program. For example, in the case of Item Planning Maintenance, the configured frame can be added before the Item Planning Data frame. This will properly save the data in the configured frame.
- Fields can be added to existing frames that put them in the proper transaction scope. If there is not a lot of available space in an existing frame it is still possible, in some cases, to place fields in that frame in spaces that appear too small to fit and that cause overlap with other fields. At run-time the frame will be expanded to accommodate this and the fields will appear spaced properly. The workability of this varies depending on the frame but it can be a very workable option.
- The existing standard fields on a frame can be dragged around, using the design tool, to free up space to add additional fields.
- The underlying CHUI code itself can be customized to add the additional frame within the transaction scope. (This would not utilize the Configurable Screens mechanism.)
- QAD Services has a customization tool kit (ICT), which provides a nonintrusive customization mechanism that can handle some customizations that Configurable Screens cannot. Note that implementing this is a larger scope than the above options.

Adding Lookups to a User-Defined Field

Note To add a lookup to a user-defined field, you must use the full field name when you set up the lookup in Drill Down/Lookup Maintenance. The full field name includes the table name and the field name in the format *`table_name.field_name`*. View the screen and enter Ctrl+F on the added field. You will see the full field name (for example, `ad_mstr.ad__chr02`, where `ad_mstr` is the table name and `ad_chr02` is the field name).

You can remove fields you have added by clicking Delete. (You can only remove the fields you have added.)

Warning 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 New Fields in Character Code

The Configurable Screens functionality for Enterprise Edition allows New Fields that are not part of the existing schema to be added to screens via the Configure dialog-box. These New 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 CHUI 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 access to the function calls, include the following file at the top of the program that will use them:

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

The `get` function calls provided by `gpgenfld.i` are as follows:

`GetFieldValueChar` returns `character` (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pRefresh` as logical).

`GetFieldValueDec` returns `decimal` (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pRefresh` as logical).

`GetFieldValueInt` returns `integer` (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pRefresh` as logical).

`GetFieldValueDate` returns `date` (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pRefresh` as logical).

`GetFieldValueLog` returns `logical` (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pRefresh` as logical).

Where:

`pTable` is name of the table.

`pField` is name of the new field that is being accessed.

`pRecordId` is the OID value of the specific record of table `pTable`.

`pRefresh` specifies whether the function should read the record fresh or use a cached value. The first call for a particular OID value will always read the record. From then on, the cached record will be used for additional function calls, unless the call specifies `yes` for this parameter. Then the record will be reread.

For example: `GetFieldValueDec("so_mstr", "so_field1", oid_so_mstr, yes)`.

The set function calls provided by `gpgenfld.i` are as follows:

`SetFieldValueChar` returns logical (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pValue` as function-dependent datatype).

`SetFieldValueDec` returns logical (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pValue` as function-dependent datatype).

`SetFieldValueInt` returns logical (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pValue` as function-dependent datatype).

`SetFieldValueDate` returns logical (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pValue` as function-dependent datatype).

`SetFieldValueLog` returns `logical` (`pTable` as character, `pField` as character, `pRecordID` as decimal, `pValue` as function-dependent datatype).

Each function returns a logical that indicates if the operation was successful and accepts the parameters as follows:

`pTable` is the name of the table.

`pField` is the name of the new field that is being accessed.

`pRecordId` is the OID value of the specific record of table `pTable`.

`pValue` is the value to assign (the datatype varies depending on which function is called).

Example `SetFieldValueDec("so_mstr", "so_field1", oid_so_mstr, 5.6)`.

Restricting Configurable Screens by Domain

By default, the Configurable Screens function does not take into account the user's domain when providing access to the Configurable Screens templates. This means that if you have access to a template in one domain, access is granted across all domains. You can, however, restrict this function by domain by resetting the `configByDomain parameter` in the `setting.dat` files for the environment.

For example, you have access to a template as a member of the group/role G1 in domain D1. If `configByDomain=no`, the template is applied regardless of the domain you are logged in to. If `configByDomain=yes`, however, the template is applied only when you are logged in to domain D1. If, however, a group/role named G1 is also available in a different domain D2, the template is also applied in domain D2. This is because templates are assigned to groups/roles and not specifically to domains.

The `setting.dat` files are located in two directories:

`QADInstallDir``/qadui/com/mfgpro`, and *`QADInstallDir`*`/qadui/com/qad/mfgpro`

and you must apply this change to both files:

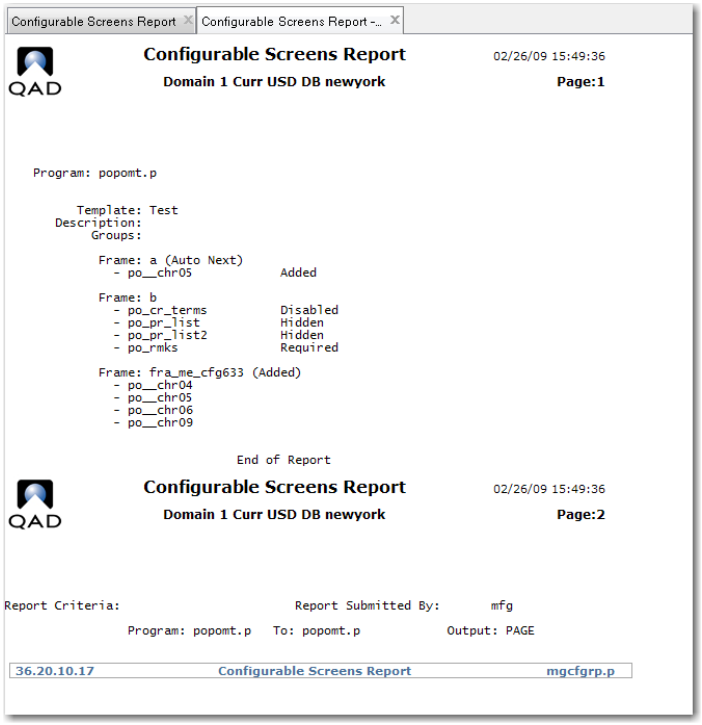
1. Locate the following parameter in the `setting.dat` files:
   `/* Restrict Configurable Screens by Domain */ configByDomain=No`
2. Set `configByDomain=Yes` in both files.
3. Exit the files and log in to the application.
4. Select Connection Manager and click Restart Connection Manager.

Configurable Screens Report

Configurable Screens Report (36.20.10.17) lists all screens that have been configured. The Report details the fields that have been modified or added, and you can generate a report on individual configured screens or on all screens.

Note The Configurable Screens Report is available in QAD Enterprise Applications Standard Edition 2009 or greater, and QAD Applications 2009 Enterprise Edition or greater, or if you have installed the patch ECO Q1WY.

Fig. 4.6
Configurable Screens Report



Configurable Screens Report | Configurable Screens Report -...

QAD

Configurable Screens Report 02/26/09 15:49:36

Domain 1 Curr USD DB newyork **Page:1**

```
Program: popomt.p

     Template: Test
  Description:
       Groups:

        Frame: a (Auto Next)
          - po__chr05            Added

        Frame: b
          - po_cr_terms          Disabled
          - po_pr_list           Hidden
          - po_pr_list2          Hidden
          - po_rmks              Required

        Frame: fra_me_cfg633 (Added)
          - po__chr04
          - po__chr05
          - po__chr06
          - po__chr09

                    End of Report
```

QAD

Configurable Screens Report 02/26/09 15:49:36

Domain 1 Curr USD DB newyork **Page:2**

```
Report Criteria:                    Report Submitted By:       mfg
              Program: popomt.p   To: popomt.p           Output: PAGE
```

36.20.10.17 Configurable Screens Report mgcfgrp.p

Chapter 5

Security Configuration

This chapter describes how to configure security for the QAD .NET UI.

Setting Up SSH on the QAD .NET UI ***100***

Setting Up Public Key Authentication for SSH ***101***

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Setting Up SSH on the QAD .NET UI

As of QAD NET UI 2013 EE (3.0.0), the Connection Manager specifies secure shell (SSH) rather than telnet by default.

To view and change the settings, in Administration | Connection Manager, under Functions, click Update configuration settings:

Host. The machine name or IP address of the SSH or telnet server.

Port. The port number for SSH or telnet. The default is 22 (SSH). For telnet, the port number is 23. (Previously, the default was 23 for telnet).

Protocol. Specifies the connection protocol as ssh (the default) or telnet. (Previously, the default was telnet.)

Startup Script. The server log-in prompts and the responses to these prompts, separated with the pipe symbol (|). The standard order is:

```
loginPrompt|userid|passwordPrompt|$PASSWD|osPrompt|cd
UIConfigDir|osPrompt|startScript
```

For example:

```
login:|mfg|Password:|$PASSWD|$|cd /user/mfg/work|$|exec
/user/mfg/work/scripts/connmgr.wrap
```

Note The same startup script can be used for both SSH and telnet. If using SSH, the login credentials in the script are ignored if they are specified in the Server Startup User and Server Startup Password settings. For SSH, if you have defined Server Startup User and Server Startup Password, you can remove the login credentials from the script but the first four token delimiters must still be included in the script. For example, for telnet, the script might be:

```
login:|mfg|Password:|$PASSWD|$|cd /user/mfg/work|$|exec
/user/mfg/work/scripts/connmgr.wrap
```

For SSH, however, with the login credentials defined in Server Startup User and Server Startup Password, the script can be:

```
||||$|cd /user/mfg/work|$|exec /user/mfg/work/scripts/
connmgr.wrap
```

Server Startup User. Specifies the user ID of the server startup user, if not specified in the startup script. (This new setting is only used for SSH.)

Server Startup Password. The password for the session startup script, if not specified in the startup script. It is encrypted on entry.

SSH Private Key File. If using public key authentication (see next section), you enter the directory path to the private key file here (for instance, /directory/path/id_rsa).

SSH Private Key Password. If using public key authentication (see next section), you enter the passphrase here.

Setting Up Public Key Authentication for SSH

SSH supports both password-based authentication and public key authentication. By default, the QAD .NET UI uses password-based authentication, but you can set up public key authentication instead.

Public key authentication is an authentication method that relies on a generated public/private keypair. The keypair is generated using public key cryptography that has the mathematical property that prohibits the same key from encrypting and decrypting the same message. The keys are used at the protocol level for authentication inside SSH during session creation.

It is important to protect the privacy of the private key file. The private key file can be encrypted with a password to ensure that even if someone were to obtain the private key file it would be useless. The SSH public key authentication implementation supports both password protected and unencrypted private key files.

To set up public key authentication:

1. Log in to the server as the user specified in the Connection Manager settings for Startup Script or Server Startup User. After logging in, go to your .ssh directory:

   ```
   $ cd $HOME/.ssh
   ```

2. Generate your public/private RSA keys with a blank passphrase:

   ```
   $ ssh-keygen -t rsa
   Generating public/private rsa key pair.
   Enter file in which to save the key (~/.ssh/id_rsa): (press
   return)
   Enter passphrase (empty for no passphrase): (press return)
   Enter same passphrase again: (press return)
   Your identification has been saved in ~/.ssh/id_rsa
   Your public key has been saved in ~/.ssh/id_rsa.pub
   The key fingerprint is:
   ```

3. Ensure that your .ssh directory has the correct permissions:

   ```
   $ chmod 700 .ssh
   ```

4. Copy the contents of your public key "id_rsa.pub" into your .ssh/authorized_keys file:

   ```
   $ cat id_rsa.pub >> authorized_keys
   ssh-rsa
   AAAAB3NzaC1yc2EAAAABJQAAAIEAlW5CbYdQXy4hmLVZq2A8uMKk6eZyNF+r6a
   k23RUHyxscAm7EEysD4lnDW1sbdc1aEEKPowcXKYoG4h1RkJbjz8KBj6kYeplo
   60NEg6Vm+q+MUzdm99CdneN0fQHEjvTxtyBCvyUx+dotKOl0DuCteMHsASuyTW
   q37X0bHyEcBxE= rsa-key-20130418
   ```

5. Ensure that your public/private keys have the correct file permissions:

   ```
   $ chmod 600 id_rsa.pub
   $ chmod 600 authorized_keys
   ```

The private key file needs to be accessible by the user that started Tomcat. Put it in a location accessible by that user and change its owner and permissions:

```
$ chown <tomcat user>:<tomcat group> id_rsa
$ mv id_rsa tomcat/webapps/<app name>/WEB-INF
$ chmod 600 tomcat/webapps/<app name>/WEB-INF/id_rsa
```

Add a Passphrase to Private Key File

Use the following command to add or change a passphrase to an existing private key file.

1. If not already in your .ssh directory, go to your .ssh directory:

   ```
   $ cd .ssh
   ```

2. Add a passphrase to your private key stored in the `id_rsa` file:

   ```
   $ ssh-keygen -f id_rsa -p
   Key has comment 'id_rsa'
   Enter new passphrase (empty for no passphrase):
   Enter same passphrase again:
   Your identification has been saved with the new passphrase.
   ```

Connection Manager Configuration Screen Settings

Finally, in the Connection Manager configuration screen, set the following:

In *Startup Script*, remove the login and password entries but leave all the other text including the pipe symbols (|).

For example, if the setting for *Startup Script* is:

```
login:|qad|Password:|qadpass|$|cd /home/demo|$|/dr01/qadapps/qdt/
envs/live/scripts/connmgr.live
```

Change it to:

```
login:||Password:||$|cd /home/demo|$|/dr01/qadapps/qdt/envs/live/
scripts/connmgr.live
```

In *Server Startup User*, enter the user ID.

In *Server Startup Password*, remove any value (this field should be blank).

In *SSH Private Key File*, enter the directory path to the file (for instance, `/directory/path/id_rsa`).

In *SSH Private Key Password*, enter the passphrase.

Troubleshooting Tips

If the Connection Manager sessions are not connecting properly via SSH (that is, they are stuck in the initializing state), then check the following:

- Check the desktop.log file (`tomcat/webapps/<app_name>/WEB-INF/logs`) for connection errors.
- On Linux, check the `/var/log/secure` file for SSH connection errors.
- Some systems using SSH require that the home directory of the SSH user is owned by the SSH user. For example, if the user is telnet and the home directory is /home/telnet, then make sure that the owner of that directory is telnet and that it belongs to the same group as telnet.
- Some systems using SSH require that the home directory of the SSH user has certain permissions. Set the permissions to 700 (for example: `chmod 700 /home/telnet`).

Setting Up SSH for QAD .NET UI Terminal Mode

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

The safeguards that SSH provides include:

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

The steps to set up SSH for QAD .NET UI terminal mode are included in the “Set Up SSH” section of the *QAD Progress Database Installation Guide*.

Setting Up SSL on QAD .NET UI Tomcat Home Server

The following steps describe how to set up SSL on the QAD .NET UI Tomcat Home Server. Be sure to review the Apache Tomcat documentation on this topic. For example, see:

http://tomcat.apache.org/tomcat-6.0-doc/ssl-howto.html#SSL_and_Tomcat

1 Create a keystore file to store the server’s private key and SSL certificate. Make sure that $JAVA_HOME/bin is in your PATH. (This example uses Java 1.6.):

```
$ cd $TOMCAT_HOME/bin
$ mv keystore keystore.bak # save the old keystore
$ keytool -genkey -alias tomcat -keyalg RSA -dname "CN=
vmnnn01.qad.com,OU=QAD,O=QAD,L=Santa Barbara,ST=California,C=
US" -keystore keystore -keysize 2048 -storepass changeit -
keypass changeit
```

Note The Common Name (CN) is the name of the web server as it will be referenced from a browser (for example, CN=vmnnn01.qad.com).

```
# View keystore
$ keytool -list -v -keystore keystore -storepass changeit
```

The response is as follows:

```
Your keystore contains 1 entry
Alias name: tomcat
Creation date: Oct 18, 2011
```

```
Entry type: PrivateKeyEntry
Certificate chain length: 1
Certificate[1]:
Owner: CN=vmnnn01.qad.com, OU=QAD, O=QAD, L=Santa Barbara, ST=California, C=US
Issuer: CN=vmnnn01.qad.com, OU=QAD, O=QAD, L=Santa Barbara, ST=California, C=US
Serial number: 4e9dbf82
Valid from: Tue Oct 18 11:03:46 PDT 2011 until: Mon Jan 16 10:03:46 PST 2012
Certificate fingerprints:
   MD5: FE:B4:69:FA:78:CA:D1:3E:41:5D:A8:1C:6A:F3:E4:CF
   SHA1:FD:DF:94:3A:A8:74:76:C3:4F:AC:8A:60:9A:94:5A:C0:8C:9A:11:3E
   Signature algorithm name: SHA1withRSA
   Version: 3
```

For this example, the default password of `changeit` is being used.

Make sure you back up your keystore because it contains your public/private keys.

2 Generate a Certificate Signing Request (CSR) required by the certificate provider into the file certreq.csr.

```
$ keytool -certreq -keyalg RSA -alias tomcat -file certreq.csr
-keystore keystore -storepass changeit
```

3 You will receive an SSL certificate and a Primary Intermediate CA certificate file. You will need to install the Primary Intermediate CA certificate first. GeoTrust will issue these files in PKCS#7 format. Open a file named primary.p7b in the vi editor and copy the Primary Intermediate CA certificate into the file. The contents look like this:

```
-----BEGIN CERTIFICATE-----

MIID2TCCAsGgAwIBAgIDAjbQMA0GCSqGSIb3DQEBBQUAMEIxCzAJBgNVBAYTAlVTMRYwFAYDVQQKEw1HZW9Ucn
VzdCBJbmMuMRswGQYDVQQDExJHZW9UcnVzdCBHbG9iYWwgQ0EwHhcNMTAwMjE5MjIzOTI2WhcNMjAwMjE4MjIz
OTI2WjBAMQswCQYDVQQGEwJVUzEXMBUGA1UEChMOR2VvVHJ1c3QsIEluYy4xGDAWBgNVBAMTD0dlb1RydXN0IF
NTTCBDQTCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAJCzgMHk5UatcGA9uuUU3Z6KXot1WubKbUGl
I+g5hSZ6p1V3mkihkn46HhrxJ6ujTDnMyz1Hr4GuFmpcN+9FQf37mpc8oEOdxt8XIdGKolbCA0mEEoE+yQpUYG
a5jFTk+eb5lPHgX3UR8im55IaisYmtph6DKWOy8FQchQt65+EuDa+kvc3nsVrXjAVaDktzKIt1XTTYdwvhdGLi
cTBi2LyKBeUxY0pUiWozeKdOVSQdl+8a5BLGDzAYtDRN4dgjOyFbLTAZJQ5096QhS6CkIMlszZhWwPKoXz4mda
AN+DaIiixafWcwqQ/RmXAueOFRJq9VeiS+jDkNd53eAsMMvR8CAwEAAaOB2TCB1jAOBgNVHQ8BAf8EBAMCAQYw
HQYDVR0OBBYEFEJ5VBthzVUrPmPVPEhX9Z/7Rc5KMB8GA1UdIwQYMBaAFMB6mGiNifurBWQMEX2qfWW4ysxOMB
IGA1UdEwEB/wQIMAYBAf8CAQAwOgYDVR0fBDMwMTAvoC2gK4YpaHR0cDovL2NybC5nZW90cnVzdC5jb20vY3Js
cy9ndGdsb2JhbC5jcmwwNAYIKwYBBQUHAQEEKDAmMCQGCCsGAQUFBzABhhhodHRwOi8vb2NzcC5nZW90cnVzdC
5jb20wDQYJKoZIhvcNAQEFBQADggEBANTvU4ToGr2hiwTAqfVfoRB4RV2yV2pOJMtlTjGXkZrUJPjiJ2ZwMZzB
YlQG55cdOprApClICq8kx6jEmlTBfEx4TCtoLF0XplR4TEbigMMfOHES0tdT41SFULgCy+5jOvhWiU1Vuy7AyB
h3hjELC3DwfjWDpCoTZFZnNF0WX3OsewYk2k9QbSqr0E1TQcKOu3EDSSmGGM8hQkx0YlEVxW+o78Qn5Rsz3VqI
138S0adhJR/V4NwdzxoQ2KDLX4z6DOW/cf/lXUQdpj6HR/oaToODEj+IZpWYeZqF6wJHzSXj8gYETpnKXKBuer
vdo5AaRTPvvz7SBMS24CqFZUE+ENQ=

-----END CERTIFICATE-----
```

Then copy the SSL certificate into the file ssl_cert.p7b.

4 Import the Primary Intermediate certificate (primary.p7b) into the Java keystore:

```
$ keytool -import -alias primary -trustcacerts -file
primary.p7b
-keystore keystore -storepass changeit
```

5 Import the SSL certificate into the Java keystore (`ssl_cert.p7b`):

```
$ keytool -import -alias tomcat -trustcacerts -file
ssl_cert.p7b -keystore keystore -storepass changeit
```

6 Validate the keystore entries:

$ keytool -list -v -keystore keystore -storepass changeit | more

The response is as follows:

```
Alias name: primary
```

```
Creation date: Oct 18, 2011
Entry type: trustedCertEntry
Owner: CN=GeoTrust SSL CA, O="GeoTrust, Inc.", C=US
Issuer: CN=GeoTrust Global CA, O=GeoTrust Inc., C=US
Serial number: 236d0
Valid from: Fri Feb 19 14:39:26 PST 2010 until: Tue Feb 18 14:39:26 PST 2020
Certificate fingerprints:
MD5: DF:F1:B7:6B:25:8D:BE:73:48:E3:76:68:97:A9:38:71
SHA1: 78:0A:06:F6:E9:B4:06:1C:AD:0C:65:02:71:06:06:EB:53:5F:1C:26
Signature algorithm name: SHA1withRSA
Version: 3
…
Alias name: tomcat
Creation date: Oct 18, 2011
Entry type: PrivateKeyEntry
Certificate chain length: 3
Certificate[1]:
Owner: CN=vmnnn01.qad.com, OU=QAD, O=QAD Inc, L=Santa Barbara, ST=California, C=US,
SERIALNUMBER=haR57uaOG5cC3ZMg5ugxN9t6rjDKEVF/
Issuer: CN=GeoTrust SSL CA, O="GeoTrust, Inc.", C=US
Serial number: f310
Valid from: Sun Oct 16 23:55:13 PDT 2011 until: Thu Oct 18 22:33:33 PDT 2012
Certificate fingerprints:
MD5: E8:76:F2:97:C0:CE:00:0A:AB:01:71:9F:70:21:9E:7F
SHA1: 1D:66:21:6E:C2:E3:58:F2:B5:D2:80:38:C7:E3:5F:FA:BF:7E:89:4B
Signature algorithm name: SHA1withRSA
Version: 3
```

7 Uncomment the SSL HTTP/1.1 Connector entry in the `$TOMCAT_HOME/conf/server.xml` file. You may have to add the keystorePass attribute and set the value to the keystore password:

```
<Connector port="8443" protocol="HTTP/1.1" SSLEnabled="true"
maxThreads="150" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS"
keystoreFile="bin/keystore"
keystorePass="changeit"
URIEncoding="UTF-8"
compression="on"
compressableMimeType="text/html,text/xml,application/
xml,application/octet-stream"
/>
```

8 Restart Tomcat:

```
$ cd $TOMCAT_HOME/bin
$ ./startup.sh
```

9 Port 8443 should be in the LISTEN state.

10 Validate the connection by going to the Tomcat home page (for example, go to the following URL):

```
https://vmnnn01.qad.com:8443
```

11 Update client-session.xml (HOMESERVER/configurations/<config name>/client-session.xml) to use HTTPS when connecting to Desktop:

```
<!-- The desktop protocol. Valid values are "http" or "https".
-->
<DesktopProtocol>https</DesktopProtocol>
<!-- The Tomcat host name. -->
<DesktopHost>vmnnn01.qad.com</DesktopHost>
<!-- The Tomcat port number. -->
```

```
<DesktopPort>8443</DesktopPort>
```

12 Start the QAD .NET UI and open Sales Order Maintenance. You can check the configuration by looking in Help | View Configuration and searching for the `desktopbaseurl` setting. It should look like `https://host:port/qadui`.

Setting Up HTTPS for QAD .NET UI Desktop Screen Display

In the QAD .NET UI, screens that display in Desktop mode are based on XML representations of Character UI screens. By default, the XML is posted to Tomcat with an HTTP request to the XMLReceiverServlet for use by the QAD .NET UI. However, instead of using HTTP, you can now use HTTPS.

To set up HTTPS for QAD .NET UI Desktop screen display:

1 Enable the SSL Connector in Tomcat (see previous section).

2 To install the certificate file into Progress you will need the certificate in the .pem or .cer format.

3 If you do not have this format then use Internet Explorer to export the certificate in the .cer format: Select Internet Options > Content > Certificates > Trusted Root Certification Authorities and then select your certificate and then Export. Use Base-64 encoded X.509(.CER).

4 Take the certificate file and run the following Progress command on it.

If the certificate is in the .pem format, run:

```
$DLC/bin/mkhashfile <your certificate>.pem
```

If the certificate is in the .cer format, run:

```
$DLC/bin/mkhashfile <your certificate>.cer
```

5 Edit `tomcat/webapps/<appname>/WEB-INF/conf/connectionManagerConfig.xml`. Go all the way to the bottom of the file then go up a few lines to the following element: `<connectionSetupParameter>` and edit the "value" attribute to use "https" and use the secure Tomcat port.

6 Edit `tomcat/conf/server.xml` and find the `<Host>` element near the bottom. Add the following inside that `<Host>` element (this will provide logging to verify that the XMLReceiverServlet calls are coming through the https port):

```
<Valve className="org.apache.catalina.valves.AccessLogValve"
       directory="logs"
       prefix="requests_log."
       suffix=".log"
       pattern="port=%p urlpath=%U" />
```

7 Restart Tomcat.

8 To verify the HTTPS activity, look in the `tomcat/logs` directory for a log file that starts with `requests_log` and `tail -f` that log file. You should see requests going to the XMLReceiverServlet on the https port.

9 Once you have done the verification, edit `tomcat/conf/server.xml` and remove the `Valve` entry that you added in step 6. It was only for verification. Finally, restart Tomcat.

Setting Up HTTPS for AIA

Progress AIA provides Internet access for clients to access an AppServer or Sonic Adapter application. It supports both HTTP and HTTPS. This section describes how to set up AppServer Internet Adapter (AIA) with HTTPS. The following steps assume you have installed AIA and now want to configure it to support HTTPS.

1 In the `ubroker.properties` file, update the `httpsEnabled` parameter in the `Aia` section (`0` is disabled and `1` is enabled):

```
httpsEnabled=1
```

2 Update the `client-session.xml` file to use HTTPS with AppServer connections. For example:

```
<!-- MFG AppServer connection -->
<ConnectionProtocol>https</ConnectionProtocol>
<ConnectionHost>vmnnn01.qad.com</ConnectionHost>
<ConnectionPort>8443</ConnectionPort>
<ConnectionService>aia/Aia?AppService=
QADMFG_AS</ConnectionService>
```

3 Update client-session.xml to secure the MFG Login AppServer connection. For example:

```
<!-- MFG login AppServer connection -->
<ConnectionSecureProtocol>https</ConnectionSecureProtocol>
<ConnectionSecureHost>vmnnn01.qad.com</ConnectionSecureHost>
<ConnectionSecurePort>8443</ConnectionSecurePort>
<ConnectionSecureService>aia/Aia?AppService=
QADMFG_AS</ConnectionSecureService>
```

4 Update `client-session.xml` to secure the Financials AppServer URL connection. For example:

```
<!-- Financials AppServer URL -->
<qad.appserver url=
"https://vmnnn01.qad.com:8443/aia/Aia?AppServer=QADFin_AS">
</qad.appserver>
```

5 Restart Tomcat.

Product Information Resources

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

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

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

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

QAD Learning Center (learning.qad.com)*
Visit QAD's one-stop destination for all courses and training materials.

*Log-in required

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