



QAD Adaptive Applications

User Guide

QAD Alerts

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Alerts User Guide Change Summary

Product Name Changes

Starting in September 2019, the new name for QAD's complete portfolio of products is QAD Adaptive Applications. Additionally, QAD Adaptive ERP is the new name for QAD's flagship ERP solution. QAD Adaptive ERP includes the functionality previously associated with QAD Cloud ERP and QAD Enterprise Applications - Enterprise Edition, plus the QAD Enterprise Platform and Adaptive UX which resulted from the Channel Islands program. Going forward, the terms QAD Enterprise Applications, QAD Cloud ERP, and Channel Islands will be deprecated but will remain in previous documentation and training materials. QAD's intention is to—as soon as possible—eliminate the use of the deprecated terms going forward.

Change Summary

The following table summarizes significant differences between this document and the last published version.

Date/Version	Description	Reference
September 2019/1.3.3	Rebranded for Alerts 1.3.3	-
March 2015/1.3.2	Added an appendix for error messages and possible causes	Page 27
March 2013/1.3.1	Rebranded for Alerts 1.3.1	-
September 2012/1.3	Changed the product name from QAD Workflow Alerts to QAD Alerts	-
	In Alert Maintenance, changed the tab name from Assign Users/Roles to Restrict Users/Roles	Page 19
	Added a note for using the field Alert Delay Days	Page 21

QAD Alerts Overview

This chapter provides a functional and architectural overview of QAD Alerts.

Welcome to QAD Alerts 2

Discusses the functions of QAD Alerts.

QAD Alerts Architecture 3

Illustrates the QAD Alerts architecture.

Proactive Date and Time-Based Alert and Subscription Conditions 5

Describes how to create conditions against date and date-time values that are monitored against data in the business event.

QAD Alerts Security 6

Discusses how security is configured.

Standard Alerts 6

Provides lists of alerts installed and configured during installation.

Welcome to QAD Alerts

In today's increasingly fast-paced and competitive business environment, key business processes must be closely monitored for milestone and exceptional events such as shipment received, customer put on hold, replenishment failure, and so on. When the events occur, process owners and other key stakeholders should be immediately notified so that they can make quick business decisions and take prompt actions.

QAD Alerts is a business management tool that helps you manage your business by exception—keep a close tab on your key business processes and receive real-time alerts of any exceptional events such as sales orders placed on credit hold that often need corrective actions.

QAD Alerts lets you:

- Define and publish business events from source QAD applications by monitoring key business data at the database level.
- Define triggering conditions for raising alerts on exceptional events.
- Subscribe stakeholders to alerts based on roles and users in QAD Enterprise Applications and optionally define subscription filtering rules.
- Compose alert messages that can reference associated event data.
- Enable subscribed users to define additional filter conditions and method of delivery for receiving alert messages.

Real-time alerts are triggered by business events or changes to data that are published from the source application to the QAD Alerts system as the change occurs. The system analyzes the event data and if alert triggering conditions are met, sends an alert notification to subscribers based on subscription filter criteria.

QAD QXtend Outbound is a prerequisite application for implementing QAD Alerts. QAD Alerts relies on QXtend Outbound to monitor and publish business data from the source application and requires proper setup of business objects, profiles, and subscribers in QXtend Outbound.

Through QXtend Outbound, QAD Alerts can monitor business events not only in QAD Enterprise Applications, but also in other QAD products and modules such as QAD Warehousing and QAD SSM.

Note This guide is intended for administrators who configure and implement QAD Alerts to set up alerts to notify relevant stakeholders of milestone and exceptional events, as well as for alert subscribers to help them define additional filter conditions for receiving alert messages.

The administrator should be familiar with the QAD Enterprise Applications and QXtend Outbound configurations.

If you do not have the expertise within your company, contact QAD Support for information on the customization offerings supplied by QAD's Global Services.

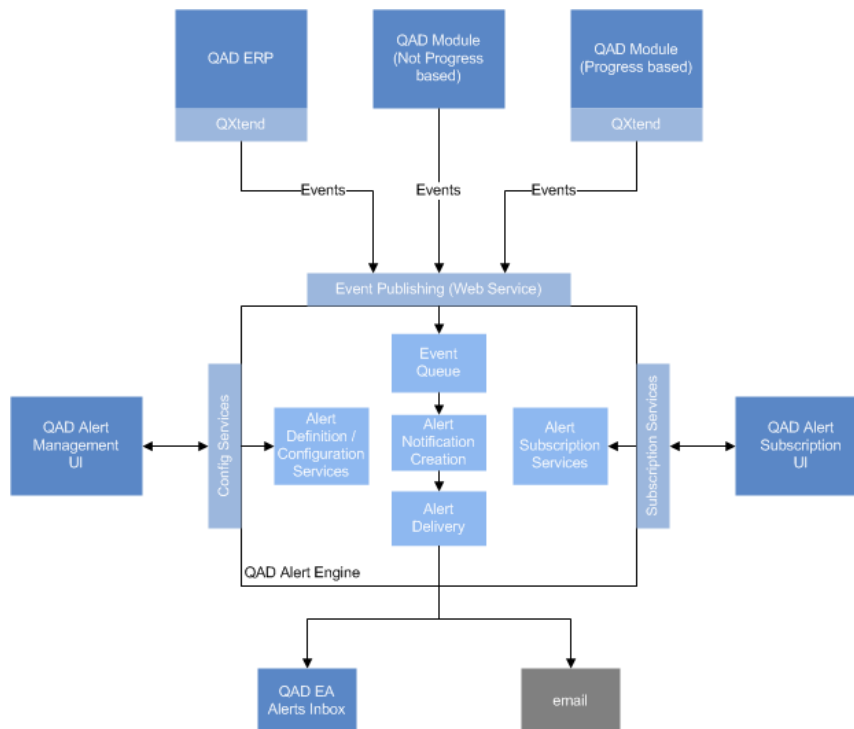


QAD Alerts Architecture

The QAD Alert Engine is at the core of QAD Alerts and has five main components:

- Event Publishing
- Alert Definition
- Alert Subscription
- Alert Notification Creation
- Alert Delivery

Fig. 1.1
QAD Alerts Architecture



Event Publishing

The QAD Alert Engine provides a well-defined event publishing interface that can be called as a Web service from any QAD application and module that needs to publish events. It offers a flexible, easy-to-invoke mechanism for raising events that is independent of the publishing application.

Calls to the event publishing service are processed synchronously and return a success status once the event has been accepted. The primary job of the Event Publishing service is to receive events from QAD Enterprise applications and move them into the QAD Alert Engine's event queue.

Alert Definition

The definition and configuration of events and alerts within the QAD Alerts foundation alert system is controlled through a comprehensive user interface that resides in the QAD .NET UI.

Using the Alert Definition component, you can:

- Define events raised by QAD applications that need to be published to the alert system.
Note Events are defined in QXtend Outbound and published to the alert engine. Once event definitions are present in the system, alert definitions can be created using the event data available.
- Define triggering conditions for alerts to be fired from associated events published from QAD applications.
- Compose alert messages that can reference associated event data.

Alert Subscription

Subscription to alerts is primarily handled through a set of subscription user interface functions that are part of the QAD .NET UI.

QAD Enterprise Applications users subscribe to the alerts that are of interest to their roles. Through the alert subscription user interface, you can restrict alerts available to a user based on the roles that the user belongs to. The subscribing user can also choose how the alert is delivered. Direct e-mail and QAD .NET UI Inbox are the two supported communication methods.

The alerts that a user subscribes to will contain a set of predefined conditions that have been specified in the alert definition and identify a general business exception, such as a sales order placed on hold. When subscribing to an alert, the user can optionally specify additional subscription filter conditions to limit the alert messages to receive. For example, in the case of a sales order being placed on hold, a sales administration clerk may only be responsible for a specific region or set of customers and is therefore only interested in an event that occurs to related orders.

Alert Notification Creation

The Alert Notification Creation services are responsible for sequentially processing every event in the event queue; they create alert messages for registered subscribers if the data contained in the event meets the alert triggering condition in the alert definition. Newly created alert notifications are queued for delivery to all subscribers.

Alert Delivery

Alert messages in the delivery queue are processed sequentially. When subscription filter conditions are met, messages are delivered to all alert subscribers. There are two ways QAD Alerts delivers alerts:

- QAD .NET UI Alert Inbox
Delivers alerts directly to a dedicated Alerts Inbox, which is a part of the QAD .NET UI. The facilitates quick and efficient processing of alert messages by users logged in to QAD Enterprise Applications. New alert messages sent to the Alert Inbox display a pop-up message to notify the user of the event.
- E-mail
Delivers alerts to the subscribed user's e-mail address. You can set the e-mail address in the user record in QAD Enterprise Applications or specify it when subscribing the user to an alert.

Proactive Date and Time-Based Alert and Subscription Conditions

When you define alerts and subscriptions, you can create conditions against date and date-time values that are monitored against data in the business event so that alerts can be proactively triggered before an important deadline is passed. For example, you can create date and time-based conditions for the following scenarios:

- Alert me 1 day before the due date
- Alert me 2 hours before the SLA expires
- Alert me 1 day after the order was created
- Alert me 2 hours after the stock was received

Proactive date/time conditions can be defined against fields with data types of date, datetime, and datetime-tz, which provides extra flexibility for calculating proactive times down to hourly increments. You can also define conditions against custom fields defined in QXtend outbound with values calculated from other fields within the profile.

Proactive date/time conditions do not support the Equals operator. Instead, the condition must use the Before or After operator to allow for scenarios such as “alert me 2 hours before the order is due” and “alert me 1 day after the items are issued.”

Fig. 1.2
Proactive Date/time Conditions

The screenshot displays the 'Alert Conditions' configuration window. At the top, there are tabs for 'Alert Data', 'Alert Message', and 'Assign Users / Roles'. The 'Alert Message' tab is active, showing the alert title 'Quantity on hand below zero' and a description 'The quantity on hand has fallen below zero.' Below this, there is a checkbox for 'Always Publish' and a 'Priority' dropdown set to 'Normal'. The 'Alert Conditions' section contains two conditions: 'inQtyOh' with the operator 'Less than' and value '0', and 'inIssDate' with the operator 'After' and value '1 Day'. A dropdown menu is open for the 'inIssDate' condition, showing a list of operators: 'Equals', 'Not Equals', 'Greater than', 'Greater than or equal to', 'Less than', 'Less than or equal to', 'Between', 'Before', and 'After'. The 'After' operator is currently selected. At the bottom of the window are buttons for 'Save', 'Save & Next', and 'Cancel'.

Alert messages containing the most current data are delivered when the planned send date/time arrives and the alert conditions are still satisfied.

Date and time-based alert conditions can be used in conjunction with other alert conditions to trigger alert messages. If there are multiple alerts for the same business object record, and all meet alert conditions and subscriber conditions, only one proactive date/time-based alert message is delivered to a subscriber.

QAD Alerts Security

QAD Alerts user interface resides in the QAD .NET UI and inherits the QAD .NET UI menu security mechanism. The security is configured in the `plugin-menu.xml` configuration file that resides in the qadhome Web application, as opposed to the standard menu security maintenance programs in QAD Enterprise Applications.

Typically, the administrator is responsible for defining and maintaining alerts and can access the following menus:

- Alert Maintenance
- Role Subscription Maintenance
- System Subscription Maintenance

All end users can access User Subscription Maintenance to configure subscriptions to personal alerts.

All the menus can be restricted to specific users and groups.

Standard Alerts

QAD Alerts includes a set of standard alerts that are installed and configured automatically as part of the installation process.

The following tables list currently available standard alerts.

Table 1.1 Standard Alerts for Core QAD Enterprise Applications (QADERP)

Business Event	Alert	Description	Details	QAD SE	QAD EE
Sales Order Maintained	Credit Hold Alert	Order placed on credit hold	The alert is triggered when a sales order is placed on credit hold. SSM transactions, such as depot orders and material orders, are also stored in the sales order tables and are excluded from the alert.	Yes	Yes
Sales Order Line Maintained	Sales Margin Alert	Sales order line margin below minimum	The alert is triggered when the gross margin on a sales order line is less than a specified minimum percent. The minimum gross margin may not be the same for all items, so different alerts could be specified for combinations of customers, items, product lines, item groups, types, and so on. It is recommended that the default value in the alert be reviewed and updated to a value appropriate to your company. SSM transactions, such as depot orders and material orders, are also stored in the sales order tables and are excluded from the alert.	Yes	Yes

Business Event	Alert	Description	Details	QAD SE	QAD EE
	Line Price Alert	Sales order line net price zero	The alert is triggered when the net price of a sales order line is zero. SSM transactions, such as depot orders and material orders, are also stored in the sales order tables and are excluded from the alert.	Yes	Yes
	Line Discount Alert	Sales order line discount above allowed maximum	The alert is triggered when a sales order line has a discount that exceeds the defined maximum percent. The maximum discount limit may not be the same for all items so different alerts could be specified for combinations of customers, items, product lines, item groups, types, and so on. It is recommended that the default value in the alert be reviewed and updated to a value appropriate to your company. SSM transactions, such as depot orders and material orders, are also stored in the sales order tables and are excluded from the alert.	Yes	Yes
Inventory Quantity On Hand < Zero	Quantity on hand below zero	The quantity on hand has fallen below zero	Quantity on hand for a particular item at a particular domain and a particular site has fallen below zero. Action may be required to correct the situation.	Yes	Yes
Reject Material	Rejected Material Alert	Material on a work order has been rejected	The alert is triggered when a transaction rejecting material from a work order is created. (tr_type = "rjct-wo")	Yes	Yes

Table 1.2 Standard Alerts for QAD Service & Support (QADSSM)

Business Event	Alert	Description	Details	QAD SE	QAD EE
Call Maintained	CallCreated	New SSM call was created	The alert is triggered when a new SSM call is created in QAD Enterprise Applications. The event excludes other records stored in ca_mstr, such as call quotes and PRM project activity orders.	Yes	Yes
Material Order Maintained	MaterialOrderCreated	New SSM material Order was created	The alert is triggered when a new SSM material order is created in QAD Enterprise Applications. The event excludes other records stored in so_mstr, such as sales orders, depot orders, and RMAs.	Yes	Yes
Visit Maintained	VisitCreated	New SSM engineer Visit was created	The alert is triggered when a new SSM engineer visit is created in QAD Enterprise Applications.	Yes	Yes

Table 1.3 Standard Alerts for QAD Warehousing (QADWMS)

Business Event	Alert	Description	Details	QAD SE	QAD EE
Shipper Shipment	Shipment Notification	Shipment Notification	<p>Once a shipper or preshipper has been sent, customer will receive an e-mail notification with shipment information.</p> <p>Shipper/preshipper confirmations can be carried out by QAD EE or QAD Warehousing menu options.</p> <p>As this is a generic alert, the user can add more alert conditions such as domain, site, and so on.</p>	No	Yes
Sample Inspection Failed	Sample Inspection Failed	Sample Inspection Failed	<p>If sample inspection fails, a notification is sent to a warehouse supervisor or whoever in charge of the inspection process. Relevant information about samples, inventory details, and the worker carrying out the inspection will be the contents of the mail.</p> <p>As this is a generic alert, the user can add more alert conditions such as domain, site, and so on.</p>	No	Yes
Task Creation	PICK	Pick alert	<p>Each type of inventory transaction is identified by a transaction type code. The transaction type can be identified by TrType in Trand.</p> <p>In that way it is possible to identify what kind of transaction has been created in the system. In the alert notification will be send if a pick task has been created: Sales Order Pick (PICK-SO), Work Order Pick (PICK-WO), Bulk Pick (PICK-BP), Distribution Order Pick (PICK-DO), Sales Order Components Pick (PICK-FAS), Replenishment Pick (PICK-RE) and Repetitive Work Order Pick (PICK-RPS).</p> <p>As a generic alert, the user can add more alert conditions such as domain, site, and so on.</p>	No	Yes
Task Creation	SHRT	Shortage clearance (Cross-docking) task created	<p>Each type of inventory transaction is identified by a transaction type code. The transaction type can be identified by TrType in Trand.</p> <p>In that way it is possible to identify what kind of transaction has been created in the system. In the alert notification will be sent if a shortage clearance (Cross-docking) has been created: Distribution Order Shortage (SHRT-DO), Sales Order Shortage (SHRT-SO), Orders Global Shortage (SHRT-TFR), Work Order Shortage (SHRT-WO).</p>	No	Yes

Implementing QAD Alerts

This section provides detailed instructions on implementing QAD Alerts.

Implementation Overview 10

Briefly describes the general QAD Alerts implementation process.

Configuring QXtend Outbound 11

Describes the steps of configuring QXtend Outbound for QAD Alerts.

Setting up QAD Alerts 15

Describes the steps of configuring QAD Alerts.

Monitoring Alert Queues 24

Provides information on the Alert Queue Monitor.

Implementation Overview

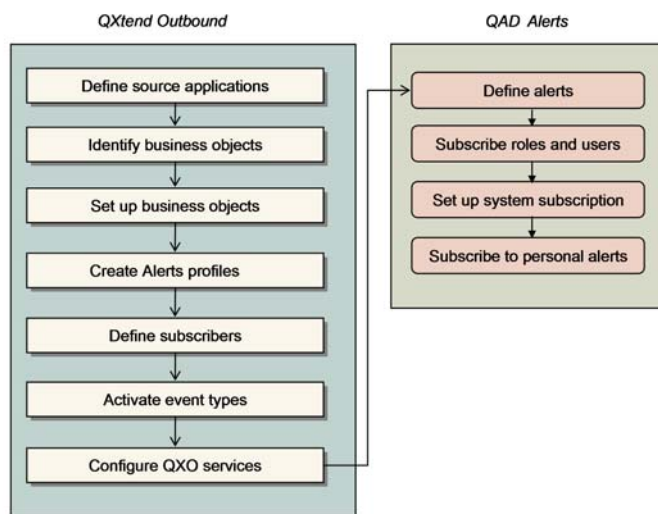
QAD Alerts relies on QXtend Outbound to:

- Gain notification of a change in a source application.
- Extract data from the source application.
- Publish the data to QAD Alerts.

Before implementing QAD Alerts, you must properly configure QXtend Outbound using basically the same steps in implementing QXtend Outbound for data communication.

Here is the general implementation process:

Fig. 2.1
QAD Alerts Implementation Process



In QXtend Outbound:

- 1 Configure each QAD Enterprise Applications instance as a source application.
- 2 Identify the required business objects.
- 3 Set up or modify the required business objects.
- 4 Create QAD Alerts profiles.
- 5 Define subscribers for QAD Alerts.
- 6 Activate all required event types for each source application.
- 7 Configure QXtend Outbound services to check for and then extract the data: event services, message publishers, and message senders.

In QAD Alerts:

- 1 Define alerts for exceptional events.
- 2 Subscribe roles and users to the alerts and define subscription filters.
- 3 Set up system subscriptions.

4 Subscribe to personal alerts.

Note The end user can only subscribe to personal alerts. Other actions can only be performed by the administrator.

Configuring QXtend Outbound

Most of the steps of configuring QXtend Outbound for QAD Alerts are identical to those of configuring QXtend Outbound for data communication. This section assumes that you are already familiar with QXtend Outbound implementation steps. It only describes the steps specific to QAD Alerts implementation. For detailed information about implementing QXtend Outbound, see *QAD QXtend User Guide*.

Creating QAD Alerts Profiles

Profiles are views of business objects tailored for the requirements of specific subscribers.

Define profiles of type QAD Alerts to select which components of a business object are sent to QAD Alerts. The way you define a profile is nearly identical to the way you define a business object.

You can only create a copy of an existing profile and modify it.

When maintaining profiles, make sure that you set proper values for the following fields.

Fig. 2.2
Maintaining QAD Alerts Profile

Type. Select QAD Alerts as the profile type.

Maintain State. Specify whether to have the alert system keep track of alert messages that have been delivered for a specific business event instance; for example, sales order #123456.

Yes: The system only sends an alert when business data causes the alert conditions to change to an alert-triggered state; the alert is not sent again until business data once again changes the alert from a not-triggered state into a triggered state.

Setting the field to Yes not only avoids sending redundant alerts, but also improves system performance.

Example There is an alert on inventory so that when inventory quantity goes below 100, an alert is triggered. If an issue transaction decreases the inventory from 110 to 90, the alert is triggered. Another issue transaction decreases the inventory from 90 to 80, but no alert is sent because Maintain State is Yes. Then another receipt transaction takes the inventory level back up to 120. No alert is triggered because the alert conditions are not met. However, when another transaction again lowers the inventory level to 98, once again an alert is sent.

No: The system sends an alert every time a business event is processed that meets the defined alert conditions, regardless of whether the alert has already been sent.

The option is only effective when the Always Publish option is No in Alert Maintenance. When Always Publish is Yes, the system always sends out alerts when alert conditions are met.

Module. Specify the module—QADERP, QAD WMS, or QADSSM—that you want the system to monitor and send change alerts to QAD Alerts.

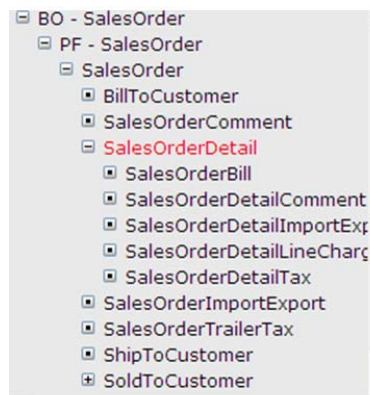
The field is only available when profile type is QAD Alerts, and it cannot be left blank.

Once a profile has been assigned to a subscriber, the field cannot be changed.

Important QAD Alerts only supports flat data structures, and it does not support data containing parent-child relationships. The event definition that gets published to QAD Alerts must represent a flattened version of the profile.

Example A normal SalesOrder profile has multiple levels as follows:

Fig. 2.3
Multi-level Profile



If you want to create an Alerts profile by duplicating the SalesOrder profile, the profile can only be flat—the parent on each level can only include one child and you either exclude the rest of them or publish them with the parent.

Fig. 2.4
Maintaining QAD Alerts Profile

XML Name	Name	Data Type	Fixed Value	Calc. Prog.	Always Incl.	Pub.	Add Only
adAddr	ad_addr	character			☐	☐	☐
adDomain	ad_domain	character			☐	☐	☐
adName	ad_name	character			☐	☒	☐
oidAdMstr	oid_ad_mstr	decimal			☐	☐	☐

For detailed information on creating profiles in QXtend Outbound, see *QAD QXtend User Guide*.

Defining Subscribers for QAD Alerts

When maintaining subscribers for QAD Alerts in QXtend Outbound, make sure that you set proper values for the following fields:

Fig. 2.5
Configuring Subscribers for QAD Alerts

Subscriber Code*	Subscriber Description	Source Domain	Source Entity	Suspend on	Sending Option	Communication Method	Allow Superseded	Tomcat Host*	Tomcat Port*	Webapp Name*	SSL	Response Timeout*	HTTP Version*	User Name	Password	Encode Password
AlertSub	Default Subscriber for QAD Alerts			☐ Sending Error ☐ SOAP Error ☐ Application Error	Send Immediately	QAD Alerts	☐	qadrh	8080	alerts-server	☐	120	1.1	mfg		☐

Registered Profiles

- QADEE/QADERPInventoryMaster/QOHLessThanZero
- QADEE/QADERPRejectMaterial/RejectMaterial
- QADEE/QADERPSalesOrder/SOMaintained
- QADEE/QADERPSalesOrderLine/SOLineMaintained

Communication Method. Select QAD Alerts to have the system send messages through the QAD Alerts Event Publishing Web service.

Tomcat Host. Specify the hostname of the Tomcat server that hosts the QAD Alerts server component.

Tomcat Port. Specify the port number where the server component is available.

Webapp Name. Specify the name of the server used to connect to QAD Alerts.

When you register profiles with QAD Alerts subscribers, you can only select profiles whose type is QAD Alerts, and you can only register the profile with one subscriber.

Once a profile has been added to a QAD Alerts subscriber and saved:

- The profile name cannot be changed.
- When the profile is modified, it is republished to QAD Alerts.
- If republishing profile data to QAD Alerts fails; for example, when the changed fields are being used by alert conditions, alert messages, or subscription conditions, changes to the profile are not committed to the QXtend Outbound database and an error message is displayed.

When the subscriber is saved, a warning message is displayed:

Warning: Please restart all *EventServiceName* and all Message Publisher service instances to ensure changes to take effect.

Restart the services.

Configuring Subscriber Profiles

You now can configure individual profiles for subscribers to enhance your control over when messages are sent. For example, you can specify which events must occur before a message is published to a QAD Alerts subscriber. The message is sent only when the event types you select were the original trigger for the raw message.

You can define a sending option, and filter based on data within the profile message, and substitute values for tokens in the profile message. You can also define which operations—Add, Modify, and so on—the subscriber requires.

You configure subscriber profiles using the Subscriber Profile Configuration Parameters screen. To display the screen, click the name of the profile under the subscriber to which the profile is registered.

Fig. 2.6
Subscriber Profile Configuration Parameters

QXtend Outbound

Subscriber Profile Configuration Parameters

Profile: QADEE/QADERPRejectMaterial/RejectMaterial

Sending Option: Send Immediately

Filter:

Operations:

Add	☒
Modify	☒
Delete	☒
Unmodified	☐

Event Types:

Event Type	Table/Object
tr_hist	tr_hist

Field Substitution:

Token	Data Type	Fixed Value
No token		

Detailed Response: ☐

Save Cancel

Operations. Specify the status of the watched records you want to send an alert on. A record is either changed (added, modified, or deleted) or unchanged (represented by the Unmodified status). Select the statuses you want the system to send alert messages for.

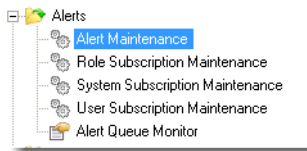
By default, Add, Modify, and Delete operations are selected. At least one option must be selected; otherwise the system displays an error.

Setting up QAD Alerts

Use the functions under the Alerts|Alerts menu to set up QAD Alerts:

- Alert Maintenance
- Role Subscription Maintenance
- System Subscription Maintenance
- User Subscription Maintenance

Fig. 2.7
Alerts Menu



All the functions are accessible to the administrator, but all other users can only access User Subscription Maintenance.

Fig. 2.8
Alert Maintenance

The screenshot shows the 'Alert Maintenance' window. On the left, there's a pane with 'Application' set to 'QADERP' and 'Event' set to 'QOHLessThanZero'. Below this is a table with two columns: 'Alert' and 'Description'. The first row shows 'Quantity on hand below zero' and 'The quantity on han'. On the right, the 'Alert Data' tab is active. It contains fields for 'Alert' (Quantity on hand below zero), 'Description' (The quantity on hand has fallend below zero.), 'Always Publish' (checkbox), 'Priority' (Normal), and 'Alert Conditions' (inQtyOh Less than 0 0). At the bottom are 'Save', 'Save & Next', and 'Cancel' buttons.

Maintaining Alerts

Use Alert Maintenance to maintain QAD Alerts. You can create multiple alerts for a single event.

To edit an alert:

- 1 In the left pane, select an event pertaining to the source application you want to define an alert for.

Application. Select a source application you defined in the Module field when creating profiles in QXtend Outbound.

Event. Select a profile you defined for QAD Alerts in QXtend Outbound.

- 2 To create a alert definition, click New at the top of the left pane; to edit an existing alert definition, select the alert definition and click Edit at the top of the left pane.

- 3 In the right pane, define alert data details under the Alert Data tab.

Alert. Enter a unique alert title.

Description. Enter an alert description to be used along with the alert name to form the subject line on the delivered alert messages; for example, in the alert message “Credit Hold Alert - Sales order placed on credit hold alert”, “Credit Hold Alert” is the alert name and “Sales order placed on credit hold” is the alert description.

Always Publish. Specify whether to send alerts when alert conditions are met.

Yes: The system always sends out alerts when alert conditions are met. The setting overrides the Maintain State setting of the corresponding profile.

No: The Maintain State setting of the corresponding profile determines whether to send alerts.

For information on the Maintain State setting, see “Configuring Subscriber Profiles” on page 14.

Priority. Specify the priority of the alert that determines the delivery order of alert messages: High, Normal, or Low.

Alert Conditions. Define conditions for triggering alerts in the Alert Conditions box.

A condition is made up of three components: an event field, an operator, and a value.

The field list displays all the available fields in the current profile, including custom fields defined in QXtend Outbound with values calculated from other fields within the profile. Primary key fields are displayed first, followed by all the rest in alphabetical order.

When defining conditions, the condition operator available is dependent on the data type of the field being referenced; for example, a logical field only has the operators Equals and Not Equals with possible values of Yes and No.

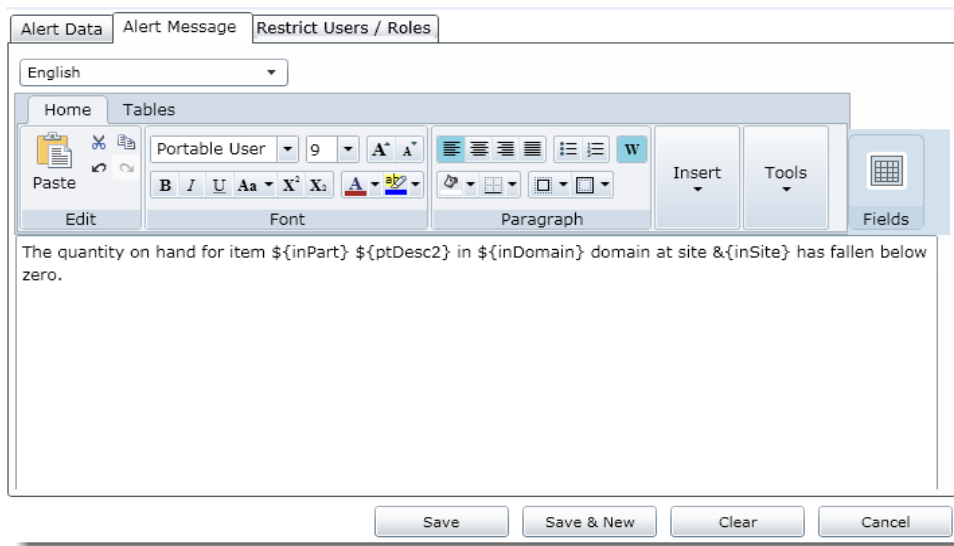
Proactive date/time conditions can only be defined against fields with data types of date, datetime, and datetime-tz, and they only support the Before and After operators to allow for scenarios such as “alert me 2 hours before the order is due” and “alert me 1 day after the items are issued.” For more information, see “Proactive Date and Time-Based Alert and Subscription Conditions” on page 5.

You can create multiple conditions for an alert. To add another condition to the alert, click the plus sign (+) icon to create a condition line. All conditions in an alert definition must be met (the AND relationship) to trigger an alert.

Important If your alert definition contains a proactive date/time-based condition, make sure that the Maintain State option is selected for the corresponding profile. The system needs to maintain the state of the alert to proactively send alert messages once the condition is met. For information on the Maintain State option, see “Creating QAD Alerts Profiles” on page 11.

- 4 Under the Alert Message tab, compose the alert message in rich text. The alert message cannot be blank.

Fig. 2.9
Alert Message Maintenance

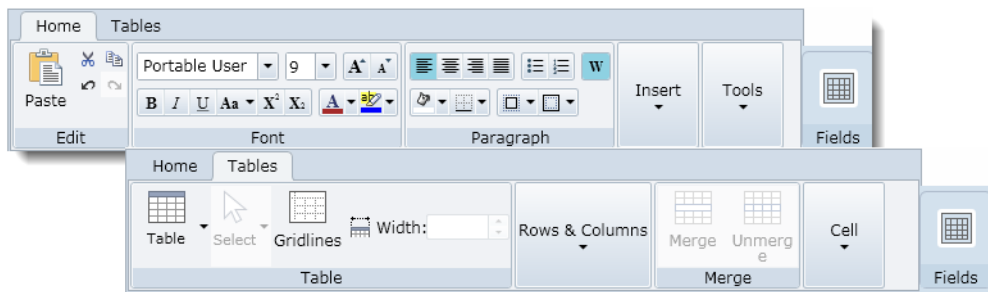


- a** Choose the language in which you want to compose alert messages. You can create alert messages for multiple languages, and the value defaults from the user language defined in User Maintenance.

When the system sends an alert message to a user, it only sends the message in the language defined for the target user.

- b** Compose an alert message in the rich text editor. The rich text editor provides an array of tools on the toolbar for you to format text and enrich your messages with images, symbols, hyperlinks, and tables.

Fig. 2.10
Rich Text Editor Toolbar

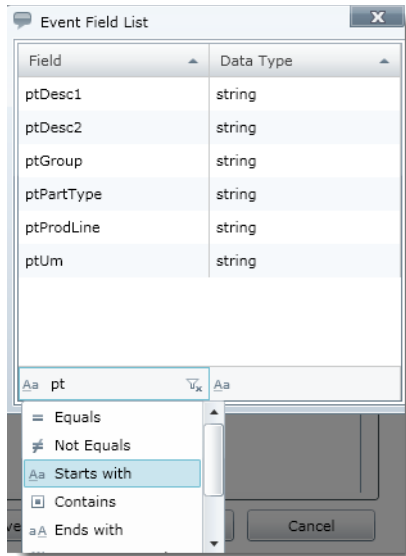


- Use the Font and Paragraph tools to format message text.
 - Click the Insert button to insert pictures, symbols, and hyperlinks.
 - Click the Tools button to access the spelling check and find & replace functionality.
 - Use the tools under the Tables tab to create and manipulate tables in the message.
- c** You can insert event fields into the message as variables; for example:

The quantity on hand for item \${inPart} \${ptDesc2} in \${inDomain} domain at site &{inSite} has fallen below zero.

To insert an event field, click the Fields button on the rich text editor toolbar and double-click the event field from the Event Field List. You can enter filtering conditions for field name and data type at the bottom of the event field list to quick-find the event field you want.

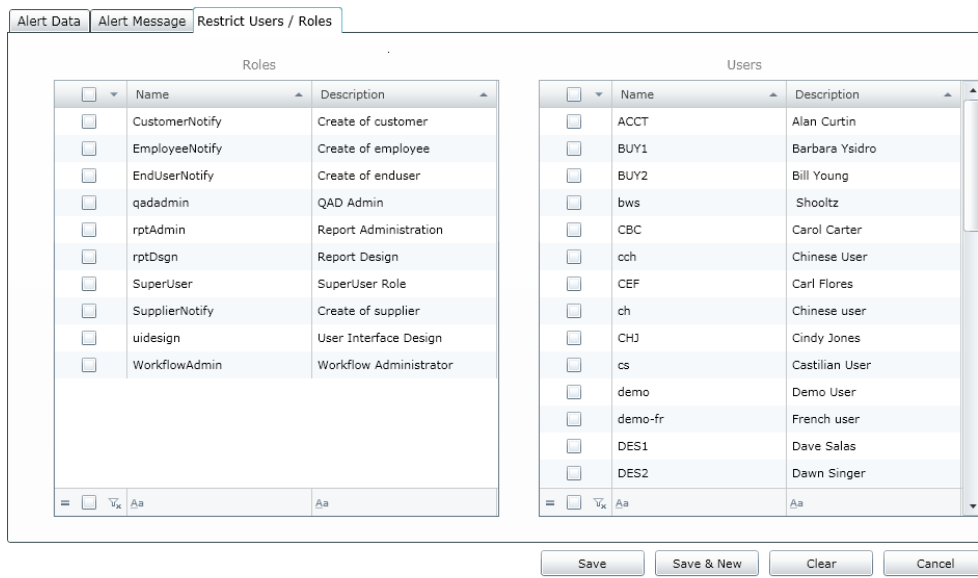
Fig. 2.11
Rich Text Editor Toolbar



d Click Save to save your message.

5 Under the Restrict Users/Roles tab, define an access control list (ACL) for the alert.

Fig. 2.12
Restrict Users/Roles



The screen lists all the roles and users defined in QAD Enterprise Applications. Select the roles and users you want to grant access to the alert and click Save. Only users and roles with access permissions can be subscribed to the alert.

You can enter filtering conditions at the bottom of the roles and users lists to quick-find the records you want.

If you have edited roles and users in QAD Enterprise Applications, refresh the list to view the most current roles and users.

To refresh the roles/users list:

- a Click the Information icon on the top-right corner of the screen.
- b In the About window, click Clear Cache; then close the window.
- c Click Refresh on the menu to refresh the roles/users list.

Subscribing Alerts to Roles

After you define alerts, use Role Subscription Maintenance to subscribe them to eligible roles.

Fig. 2.13
Alert Role Subscription

- 1 In the left pane, select a source application (module), an event (profile), and a role you want to subscribe to alerts. All the defined event alerts accessible to the selected role are listed underneath. To refresh the list, click the Refresh button next to the Roles field.
- 2 In the Subscribed column of the alert list, select the Subscribed check boxes to subscribe the role to alerts.
- 3 In the right pane, enter the subscription details.

Effective Date. Specify the date on which the subscription takes effect.

Alert Delay Days. Specify a time delay in days and hours that will have the system deliver alert messages not at the time the alert is triggered, but when the specified delay time has passed but the business event associated with the alert is still in a triggered state. You can use the feature to escalate alerts for certain exceptional events when corrective actions are not taken in a specified amount of time. For example, you can set up the “Quantity on hand below zero” alert subscription to send out an alert to the material planner when quantity on hand for a particular item falls to zero, and when no corrective actions are taken within 24 hours, send another alert to the material planning manager, and so on. It ensures that managers do not get inundated with alerts that their staff should be addressing while making sure that they are aware of major addressed problems that require their attention.

When an alert message is pending for delivery, if more alert messages are generated for the same alert and the same business object record, the system ignores them.

Important If you use Alert Delay, make sure that the Maintain State option is selected in the corresponding Alerts profile. If you are not sure about the Maintain State option, check with the person who defined the Alerts profile. For more information about the Maintain State option, see “Creating QAD Alerts Profiles” on page 11.

Send Alerts to. Specify whether to send alert messages to the subscriber’s Inbox, e-mail address, or both. When E-Mail is selected, alerts are sent to the subscriber’s user account e-mail address as defined in User Maintenance (36.3.1) in QAD Enterprise Applications.

Alert Conditions/Subscription Conditions. Define conditions for triggering alerts for subscribers. Both conditions must be met for the system to alert subscribers.

A condition is made up of three components: an event field, an operator, and a value.

The field list displays all the available fields in the current profile, including custom fields defined in QXtend outbound with values calculated from other fields within the profile.

Primary key fields are displayed first, followed by all the rest in alphabetical order.

When defining conditions, the condition operator available is dependent on the data type of the field being referenced; for example, a logical field only has the operators Equals and Not Equals with possible values of Yes and No.

Proactive date/time conditions can only be defined against fields with data types of date, datetime, and datetime-tz, and they only support the Before and After operators to allow for scenarios such as “alert me two hours before the order is due” and “alert me 1 day after the items are issued.” For more information, see “Proactive Date and Time-Based Alert and Subscription Conditions” on page 5.

You can create multiple conditions for an alert. To add another condition to the alert, click the plus sign (+) icon to create a condition line. All conditions in an alert definition must be met (the AND relationship) to trigger an alert.

Important If your alert definition contains a proactive date/time based condition, make sure that the Maintain State option is selected for the corresponding profile. The system needs to maintain the state of the alert to proactively send alert messages once the condition is met. For information on the Maintain State option, see “Creating QAD Alerts Profiles” on page 11.

- 4 Click Save to save the configuration.

Setting Up a System Subscription

Use System Subscription Maintenance to have the system send event alerts to an external e-mail address at the system level rather than to the subscriber through the Inbox or the system-defined E-mail address.

Fig. 2.14
Alert System Subscription

Alert System Subscription						
Application <input type="text" value="QADERP"/>						
Event <input type="text" value="QOHLessThanZero"/>						
Subscribed	Alert	Description				
☒	Quantity on hand below zero	The quantity on hand has fallen below zero.				
Effective date <input type="text" value="8/31/2012"/>						
Alert Delay Days <input type="text" value="0"/> Hours <input type="text" value="0"/>						
Event Email Field <input type="text"/>						
Alert Conditions <table border="1"> <tr> <td>inQtyOh</td> <td>Less than</td> <td>0</td> <td>0</td> </tr> </table>			inQtyOh	Less than	0	0
inQtyOh	Less than	0	0			
Subscription Conditions <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>						
Message <p>The quantity on hand for item &{inPart} &{ptDesc1} &{ptDesc2} in &{inDomain} domain at site &{inSite} has fallen below zero.</p>						

Save

You set up alert system subscriptions almost the same way as you set up alert role subscriptions except for the following:

- In the left pane, you do not need to select roles to subscribe to event alerts.
- In the Alert Data pane, you select from the Event E-Mail Field list a field from which to extract the destination e-mail address. The list of fields includes those contained in the event definition of the alert.

Subscribing to Personal Alerts

End users can use User Subscription Maintenance to subscribe to personal alerts in addition to the alerts they may have already subscribed to through Alert Role Subscription.

Fig. 2.15
Alert User Subscription

User Subscription Maintenance x

Alert User Subscription

Application: QADERP

Event: QOHLessThanZero

Subscribed	Alert	Subscriber
☒	Quantity on hand below zero	mfg mfg

Alert Data

Alert Quantity on hand below zero

Description: The quantity on hand has fallend below zero.

Effective date: 8/31/2012 15 Alert Delay Days: 0 Hours: 0

Send alerts to: ☐ Inbox ☐ Email

Alert Conditions: inQtyOh Less than 0 0

Subscription Conditions

Message: The quantity on hand for item &{inPart} &{ptDesc1} &{ptDesc2} in &{inDomain} domain at site &{inSite} has fallen below zero.

Save

If you belong to a role that has already been subscribed to alerts, you can see the role-based alerts on the left pane of the Alert User Subscription screen. However, the alert subscriptions are read-only and cannot be customized.

In addition to role-based alerts you may have already subscribed to, you can subscribe to personal alerts in Alert User Maintenance. Personal and role-based alerts do not affect each other. If you subscribe to the same alert through both user and role subscription, you will get two identical alert messages when the alert conditions and subscription conditions are met.

You define and subscribe to personal alerts almost the same way as you define role-based alerts, except that you do not select a role in the left pane. For detailed steps, see “Subscribing Alerts to Roles” on page 20.

Note Personal alert subscriptions are stored by domain and only take effect in the domain where they are defined. If you want to subscribe to personal alerts in multiple domains, you must log in to each of the domains and access Alert User Subscription to set them up.

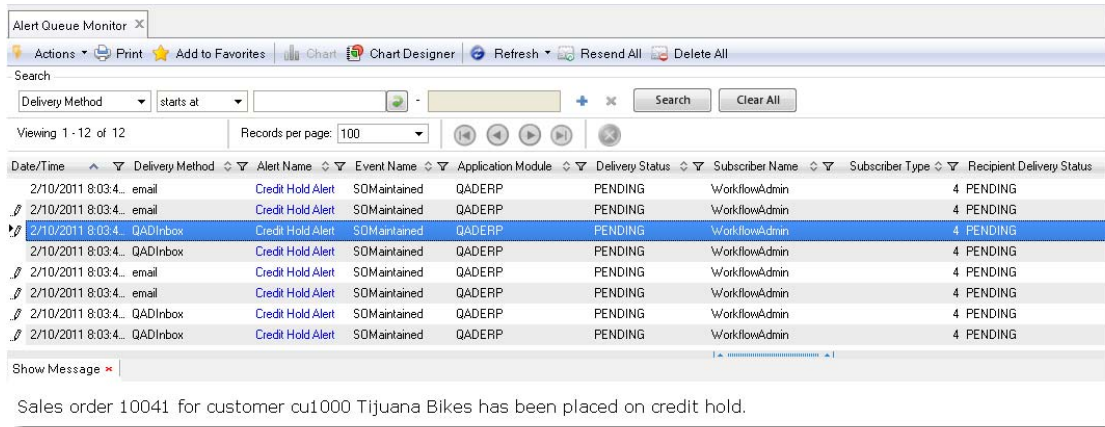
When E-Mail is selected, the system sends alerts to the subscriber’s external e-mail address. If no external e-mail address is defined, alerts are sent to the subscriber’s user account e-mail address as defined in User Maintenance (36.3.1) in QAD Enterprise Applications.

Monitoring Alert Queues

Use Alert Queue Monitor to monitor statuses of alert messages and view their detailed information. You can also view the messages in HTML format. For failed and partially failed alert messages, you can delete them or resend them to subscribers who failed to receive them.

Note Currently, Alert Queue Monitor only shows messages that are in the delivery queue waiting to be sent. Date/time-based proactive and delayed messages are not displayed.

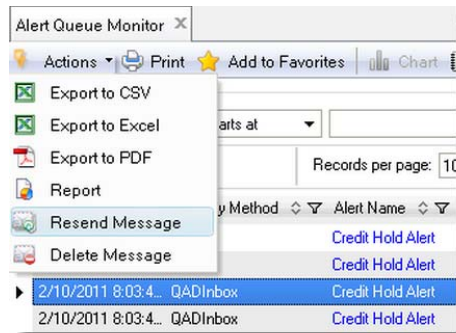
Fig. 2.16
Alert Queue Monitor



To perform administrative actions on a message in the alert queue, select it and use the Actions menu on the toolbar:

- To resend a selected message, click Actions and choose Resend Message.
- To delete a selected message, click Actions and choose Delete Message.
- To export the messages list to a CSV, Excel or PDF file, click Actions and choose the corresponding action.

Fig. 2.17
Alert Queue Monitor Actions Menu



To view the message details, right-click on a message and then click Show Message in the pop-up menu. The detailed content of the message is displayed in the bottom panel. Selecting a different row in the alert queue updates the bottom panel with the message text of the selected message.

Fig. 2.18
View Message Details

Date/Time	Delivery Method	Alert Name	Event Name
2/10/2011 8:03:47 PM	email	Credit Hold Alert	SOMaintained
2/10/2011 8:03:47 PM	email	Credit Hold Alert	SOMaintained
2/10/2011 8:03:47 PM	QADInbox	Credit Hold Alert	SOMaintained
2/10/2011 8:03:47 PM	QADInbox	Credit Hold	Show Message
2/10/2011 8:03:48 PM	email	Credit Hold Alert	SOMaintained
2/10/2011 8:03:48 PM	email	Credit Hold Alert	SOMaintained

Access to Alert Queue Monitor is restricted to the qadadmin group users by default, but you can configure the access control by updating the security constraints in the qadhome configuration.



Error Messages and Possible Causes

The following table lists some error messages related to Alerts menus and possible causes of the errors. The information here is for the administrator to address environment issues related to the Alerts UI.

Table A.1 Errors and Possible Causes (Page 1 of 2)

Errors	Errors in Logs	Possible Causes
When opening a maintenance menu, the screen is blank; or when opening a maintenance menu from Favorites, an error message appears: The system was unable to process your request.	In QAD.Applications.log: System.NullReferenceException: Object reference not set to an instance of an object. at QAD.Commands.WebBrowserCommand.GetUrl() at QAD.Commands.WebBrowserCommand.OnAfterFormDisplayed(Form form) at QAD.Commands.FormCommand.Execute().	The Alerts Server URL in the .Net UI client-session.xml file is not defined or correctly set.
When opening a maintenance menu, an error message appears: Unauthorized. No login info found for token: \${alerts.sid} (410)	No errors in QAD.Applications.log. In qadworkflow-debug.log: com.oakgrovesystems.reactor.frontDesk.FrontDeskRequestHandler - Failed request: 410 Unauthorized No login info found for token: \${alerts.sid}	The user is not authorized by Alerts Server. Since Alerts Server authenticates users by sending an authentication QDoc to QXtend Inbound, any issue on the Inbound side could cause the failure in authentication. Check the previous error in qadworkflow-debug.log for a possible clue. For example, when you see Timed out waiting for an Idle AppServer Connection in the qadworkflow-debug.log file, check the SI-API connection pool in QXtend Inbound.

Table A.1 Errors and Possible Causes (Page 2 of 2)

Errors	Errors in Logs	Possible Causes
When opening a maintenance menu in .NET UI 3.1, an error message appears: The system was unable to process your request. See the log file for further details.	In QAD.Applications.log: QAD.Plugin.Services.PluginExtensionMenuProvider.GetXmlParameters(1), Unable to resolve \${alerts.baseurl}/WorkflowUI.jsp?id=maint&lang=\${alerts.lang}&domain=10USA&user=demo&sid=\${alerts.sid}. Check for incorrect or missing configuration/client-session.xml settings. QAD.Commands.WebBrowserCommand.OnAfterFormDisplayed(1), { System.NullReferenceException: Object reference not set to an instance of an object. at QAD.Commands.WebBrowserCommand.GetUrl() at QAD.Commands.WebBrowserCommand.OnAfterFormDisplayed(Form form) }	The Alerts Server URL in the .Net UI client-session.xml file is not set.
When opening Alert Queue Monitor, an error message appears: The system was unable to proceed your request.	In QAD.Applications.log: QAD.Proxy.ProxyMessageException: Exception of type 'QAD.Proxy.ProxyMessageException' was thrown. ERROR: wkbr001.p: Unable to create buffer for table MESSAGEDELIVERYRECIPIENT. Could not create buffer object for table MESSAGEDELIVERYRECIPIENT. (7334)	The QAD .NET UI AppServer is not connected to the Alerts database. Open the ubroker.properties file using a text editor and check whether you can find the reference to the .pf file used by the QAD .NET UI AppServer.
When opening a maintenance menu, an error message appears: Navigation to the web page was canceled. Click Refresh the Page, the following message appears: This page can't be displayed. Make sure the web address xxx is correct.	No errors in QAD.Applications.log.	The Alerts Server URL in the .NET UI client-session.xml file is incorrect. The host cannot be found. Or Tomcat is not running.
When you click Show Message for a message in Alert Queue Monitor, an error message appears: Request did not include an authentication token.	No errors in QAD.Applications.log.	The Alerts Server URL in the .NET UI client-session.xml file is incorrect. The host cannot be found. Or Tomcat is not running.

Product Information Resources

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

[QAD Forums \(community.qad.com\)](https://community.qad.com)

Ask questions and share information with other members of the user community, including QAD experts.

[QAD Knowledgebase \(knowledgebase.qad.com\)*](https://knowledgebase.qad.com)

Search for answers, tips, or solutions related to any QAD product or topic.

[QAD Document Library \(documentlibrary.qad.com\)](https://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 \(learning.qad.com\)*](https://learning.qad.com)

Visit QAD's one-stop destination for all courses and training materials.

*Log-in required

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