

# What's New in AssetWise Performance Management 7.9



---

## Trademark Notice

Bentley, the “B” Bentley logo, AssetWise, Ivara, and Ivara Work Smart are either registered or unregistered trademarks or service marks of Bentley Systems, Incorporated or one of its direct or indirect wholly owned subsidiaries. All other brands and product names are trademarks of their respective owners.

## Copyright Notice

Copyright © 2017, [Bentley Systems, Incorporated](#). All Rights Reserved.

Including software, file formats, and audiovisual displays; may only be used pursuant to applicable software license agreement; contains confidential and proprietary information of Bentley Systems, Incorporated and/or third parties which is protected by copyright and trade secret law and may not be provided or otherwise made available without proper authorization.

For reference, a copy of the End User License Agreement named “EULA.pdf” is installed in the same folder as the product.

---

<b>Corporate Headquarters</b>	<b>International Headquarters</b>	<b>Asia Headquarters</b>
<b>Bentley Systems, Incorporated</b> 685 Stockton Drive Exton, PA 19341-0678 USA Phone: (1) 610 458-5000 Fax: (1) 610 458-1060 <a href="http://www.bentley.com">http://www.bentley.com</a>	<b>Bentley Systems International Limited</b> Second Floor, Block 2, Park Place Upper Hatch Street Dublin 2 Ireland Phone: +353 1 436 4600 Fax: +353 1 416 1261 <a href="http://www.bentley.com">http://www.bentley.com</a>	<b>Bentley Engineering Software Systems</b> Unit 1402-06, Tower 1 China Central Place, Beijing 100022 China Phone: (86) 10 5929 7000 Fax: (86) 10 5929 7001 <a href="http://www.bentley.com">http://www.bentley.com</a>

---

*What's New in AssetWise Performance Management 7.9*

Published December 2017

APM Release 7.9.0



## What's New in APM 7.9

Release 7.9 of AssetWise Performance Management (APM) introduces asset condition analysis, invoice templates and reversals, support for UTC, and more.

### Contents

APM Interoperability with SAP® Plant Maintenance . . . . .	4
APM Mobile Inspections – Route Compliance . . . . .	4
Asset Condition Analysis . . . . .	5
Asset Prioritization Analysis . . . . .	10
Assets . . . . .	12
Data Loading – Asset Bar Codes . . . . .	12
Documentation – What's New Archive . . . . .	12
Financial Periods . . . . .	13
Inspection Management . . . . .	13
Invoicing . . . . .	14
Server and Client Management . . . . .	18
Security . . . . .	20
User Interface – Refreshed Appearance . . . . .	20
UTC and the Enterprise Time Zone . . . . .	21

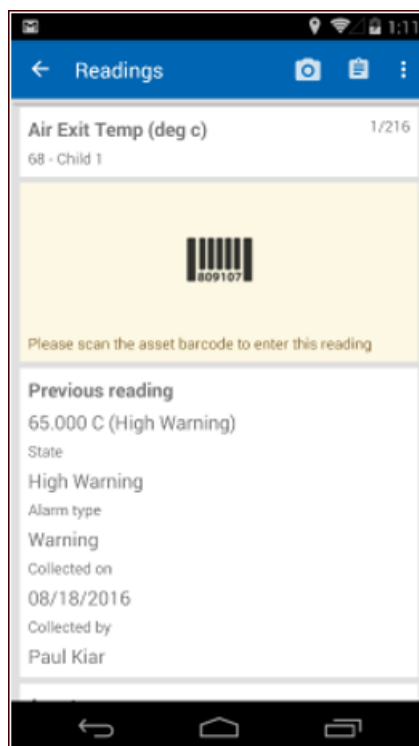
## APM Interoperability with SAP® Plant Maintenance

SAP Maintenance Order windows now provide the **Checksheets** view, which lists associated indicator checksheets and their statuses. The **APM Source** view, available on Maintenance Order and Notification windows, contains configurations for alarm acknowledgments, indicator reading follow-up work, and failure mode or action plan follow-up work.

## APM Mobile Inspections – Route Compliance

You can now enforce barcode scanning on mobile clients that use APM Mobile Inspections. This requires users to scan an asset’s barcode to enter indicator readings. When the barcode is scanned, the checksheet containing the indicator readings is automatically opened. If the asset has more than one checksheet, a list of checksheets is displayed on the mobile device. The appropriate checksheet can be manually opened and only indicators for that asset are displayed.

Here is an example of the indicator reading detail page when barcode scanning is required.



For more information, see “Enforcing Barcode Scanning on Handheld Computers” in APM Help.

## Asset Condition Analysis

Asset condition analysis (ACA) allows you to assess the current state of assets, typically to determine at what intervals assets are to be repaired or replaced, based on your organization's criteria. For example, criteria could include availability of parts and software, and frequency and effort of maintenance.

The condition value of each asset is determined by assessing it against a set of analysis criteria. After you have selected a value for each criterion, APM calculates the asset's score and determines its condition value. When all of the analysis assets have been assessed, you can apply the results to the assets, as well as to the related assets that you specify. The Asset window displays the asset's condition in the **Properties** view, **General** tab.

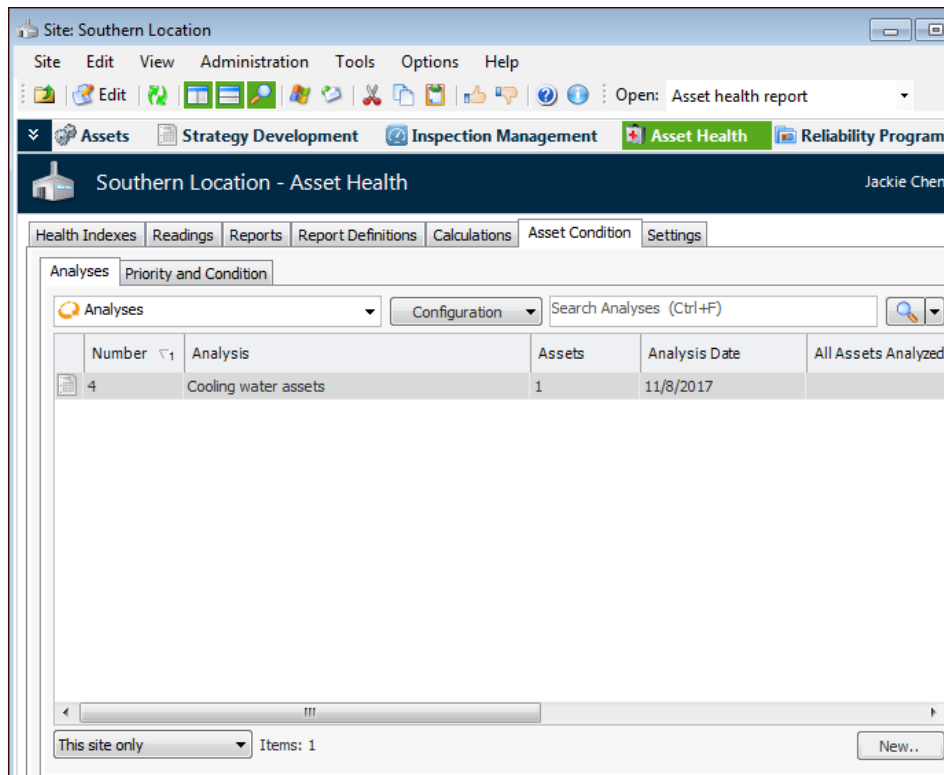
The ACA functionality includes:

- Flexible set of user-defined analysis criteria
- Powerful user-defined rules that determine the asset's condition based on your selections for the criteria
- Ability to define analysis criteria and rules for different families of assets. For example, separate criteria could be defined for control systems, IT equipment, and general equipment
- Ability to apply different selection criteria and rules based on the site where the asset is located
- Ability to analyze assets on a regular basis, for example, yearly. The new analysis can start with the results from the previous year or start from scratch

Asset condition analysis is included in the Asset Health application module.

### Asset Health View on Site

The **Asset Health** view has been reorganized to accommodate the new analysis. Select the **Asset Condition** tab to view and create analyses.



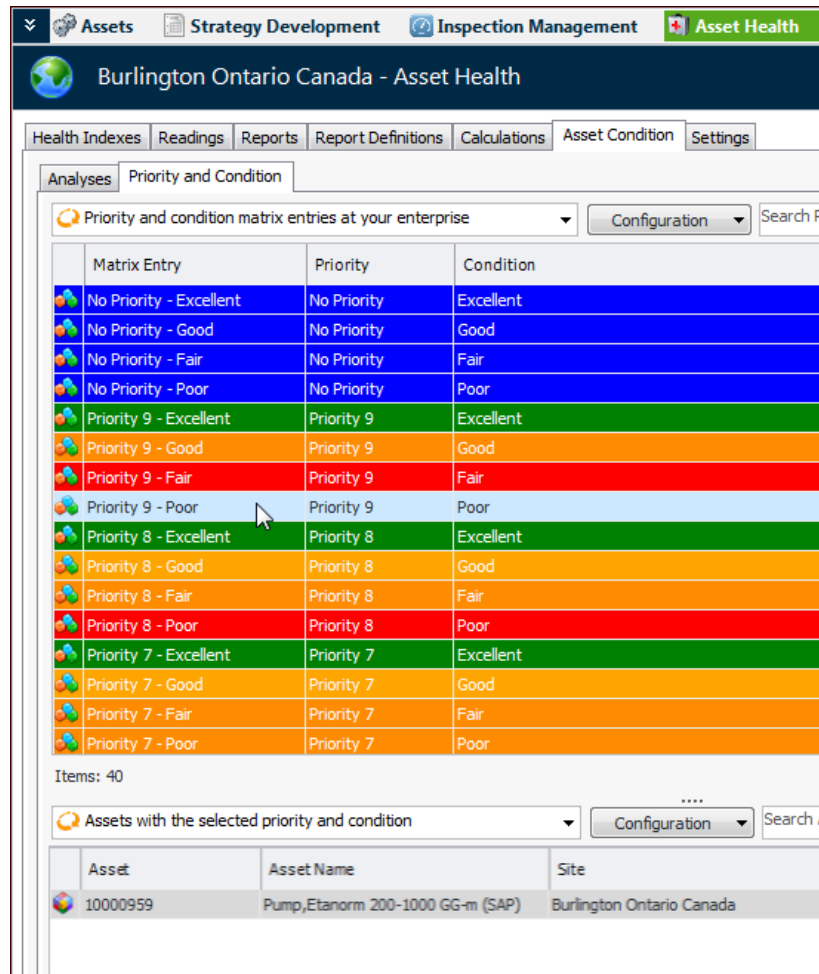
For detailed information about performing condition analysis, see “Asset Condition Analysis” in Help.

### Asset Condition and Prioritization Analysis

Asset condition is aligned with asset prioritization analysis. You can create a condition analysis from a prioritization analysis using the new **Condition Analyses** view in the prioritization analysis window. The view lists the condition analysis assets and shows their conditions and priority values.

For more information, see “Linking Prioritization Analyses to Condition Analyses” in Help.

The priority and condition matrix allows you to view matches between priority numbers and conditions. Select an entry in the table to display assets with that priority and condition in the table below. The matrix is handy for deciding which assets to work on first, typically the ones with the highest priority and the lowest condition values. For example:



For more information, see “Setting up the Priority and Condition Matrix” in Help.

To clearly show the importance of priority and condition analysis results for individual assets, you can set up priority and condition groups and assign them to matrix entries. For example, create groups for each of the colors used for matrix rows so that red lines (for immediate attention), are identified by a group name and icon. The group designation appears in the Asset window. In the Site window, **Asset Health** view, **Asset Condition** tab, the **Analyses** tab offers configurations for viewing assets by priority and condition group as well as the priority and condition group summary.

For more information, see “Setting up Priority and Condition Groups” in Help.

## Setting up APM for Asset Condition Analysis

Important prerequisite tasks for performing condition analysis are setting up analysis criteria and conditions that reflect your organization's business goals. You can also set up rule sets, analysis types, the matrix and groups, and checklist items. You will find these objects in the **Asset Health** view, **Settings** tab, **Asset Condition** tab.

### Analysis Criteria

Analysis criteria define the business goals against which assets are assessed during the analysis. Examples are "Percentage of assets requiring replacement" and "Asset life expectancy". Each criterion is assigned a name, sequence number, maximum score, and, optionally, a rule set and weighting factor (as explained below).

Each criterion requires two or more criteria consequences, each with a score and example. You will assign these scores to assets during the analysis.

For more information, see "Setting up Criteria for Condition Analysis" in Help.

### Weighting Factors

After analysis criteria have been determined, stakeholders decide if any of the criteria should be given more importance. This is done by assigning weighting factors (whole numbers greater than 0) to criteria to raise or lower the significance of individual criteria. The consequence score is multiplied by the weighting factor. For example:

Criterion	Weighting	Consequence	Score	Weighted Score
Availability of parts and software	3	Spares or critical software updates not available	5	15
Frequency and effort of maintenance	2	Significant maintenance required	3	6
Technology maintainability	3	External and internal experts are available	2	6
Asset age	2	High risk	4	8
<b>Total scores</b>			14	35



## Rule Sets

If you wish to tailor analyses for families of assets, you can define a rule set with a descriptive name, for example, IT Equipment. Select the rule set when creating analysis criteria. Then, when you are setting up conditions, select the rule set on rule clauses to filter the list of criteria available.

In the asset condition analysis, select the appropriate rule set. When APM calculates the scores on the analysis, it uses only the rules that reference that rule set. If the analysis does not have a rule set, only rules that do not have rule sets are used.

You can also assign a rule set to an analysis type. When the type is applied to an individual analysis, the rule set is selected by default.

For more information, see “Setting up Asset Condition Analysis Rule Sets” in Help.

## Asset Conditions

APM determines an asset's condition by comparing the asset's scores for analysis criteria to rule clauses contained in the condition definitions. The clauses can use rule sets for different asset families.

As an example, here are the rules for the “Good” condition, which uses rule sets for control systems and equipment:

Control systems: [(Frequency and effort of maintenance AND Asset life age AND Technology maintainability AND Availability of parts and software)  $\geq$  6]

Equipment: [Percentage of assets requiring replacement AND Asset life expectancy AND Obsolescence)  $\geq$  6]

For more information, see “Setting up Asset Conditions” in Help.


## Analysis Types

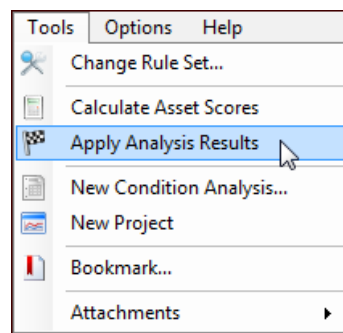
You can create analysis types that define preferred default settings. The settings include the rule set and preferences for applying analysis results. Selecting an analysis type on an individual analysis quickly ensures that its settings are correct and consistent with your organization's standards.

For more information, see “Setting up Analysis Types for Asset Condition Analysis” in Help.

## Asset Prioritization Analysis

Because of the similarities between asset prioritization and asset condition analysis, some terminology and features of prioritization analysis have been updated. For example:

- Prioritization criteria are now called “analysis criteria”
- The Asset Prioritization Analysis window is now titled “Asset Analysis”
- In the Asset Analysis window, the **Condition Analyses** view allows you to link the prioritization analysis to a new or existing asset condition analysis
- In the **Worksheet** view, the **Consequences** tab and table configuration are now labeled “Criteria”
- In the **Worksheet** view, the **Risk Plot** and **Comments** tabs have been replaced. Click the **Risk Plot** button to open a window showing the chart. Enter your comments in the text box provided on the worksheet
- In the **Worksheet** view, you can use the arrow icons to show and hide the expanded **Asset identification** area
- In the **Worksheet** view, the tip about dragging scores onto criteria is hidden by default. Click  to view the instructions
- To apply analysis results to assets, select the **Tools** menu, rather than the **Analysis** menu. There you will find **Apply Analysis Results**, along with similar commands:



### Weighting Factors

You can assign weighting factors (whole numbers greater than 0) to analysis criteria to raise or lower the significance of individual criteria. The consequence score is multiplied by the weighting factor. For example:

Criterion	Weighting	Consequence	Score	Weighted Score
Safety	2	Lost time injury	30	60
Environment	2	Minor impact	20	40
Quality	1	Minor product loss	5	5
Throughput	1	No lost production	0	0
Customer service	5	Minor impact	2	10
Operating cost	5	No cost	0	0
<b>Total consequences</b>			<b>57</b>	<b>115</b>

### Rule Sets

If you wish to tailor analyses for different sites or asset families, you can define a rule set with a descriptive name, for example, Site A. Select the rule set when creating analysis criteria. Then, when you are setting up consequence priorities, select the rule set on rule clauses to filter the list of criteria available.

In the prioritization analysis, select the appropriate rule set. When APM calculates the scores on the analysis, it uses only the criteria and rules that reference that rule set. If the analysis does not have a rule set, only rules that do not have rule sets are used.

You can also assign a rule set to an analysis type. When the type is applied to an individual analysis, the rule set is selected by default.

For more information, see “Setting up Prioritization Analysis Rule Sets” in Help.

## Assets

With the introduction of asset condition analysis, the Asset window has changed as follows:

- On the **Properties** view, **General** tab, the **Asset condition** list and **Priority and Condition Group** box have been added in the **Classification** area. For example:

When the results of the analysis are applied to assets, **Asset condition** is populated automatically. As with the asset's consequence priority, you can change the selection if needed.

- The **P&ID** box has moved to the **General** tab, **Details** tab:

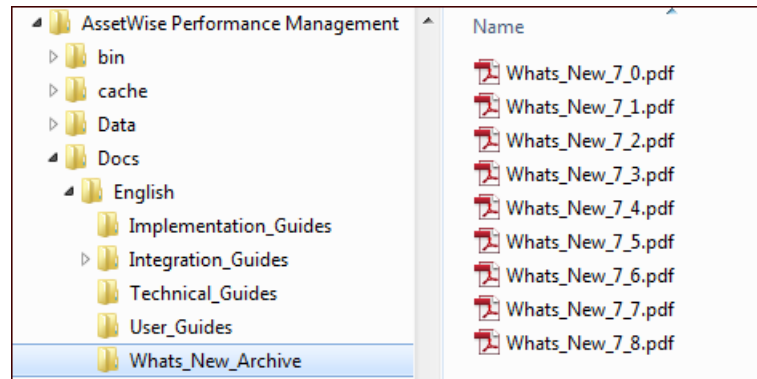
## Data Loading – Asset Bar Codes

The data loaders for assets, SAP functional locations, and SAP equipment now include the Bar code property.

## Documentation – *What's New* Archive

When you are installing APM, the Setup wizard copies the *What's New* documents for all 7.x releases to the Bentley\AssetWise Performance Management directory. Release 7.9 introduces the following changes:

- You will find *What's New* for the current release at the top level of the main folder. The filename is always *Whats\_New.pdf*
- What's New* files for previous releases are copied to the Docs\English\Whats\_New\_Archive folder. The filenames include the version numbers. For example:



You can download PDF files from the Bentley Communities page for [Asset Reliability | AssetWise APM](#).

## Financial Periods

You can now set up financial periods for the enterprise in application settings instead of in the site's accounting settings. This change reflects the wide use of financial periods beyond accounting, for example, by work orders, failures, and purchase orders.

To access financial periods from the Enterprise window, click the **Administration** menu and then **Application Settings**. On the Application Settings dialog, select the **Financial Periods** tab.

For more information, see “Setting up Financial Periods” in Help.

## Inspection Management

This release includes the following enhancements for indicators.

### Checksheets

You can now edit the title of checksheets that are created from a standard task or job, or that are associated with a work order task.

### Copying External ID to New Indicators

When indicators are copied or created from a template, the external ID value is copied to the new indicators.

### Triggering Rules on Indicators and Standard Jobs

The triggering rule summaries displayed on rule-based indicators and standard jobs are now provided in HTML format to accommodate longer expressions.

**Note:** HTML attributes cannot be used for filtering or sorting in table configurations. However, you can use the triggering expression attribute for filtering and sorting.

## Invoicing

This release introduces invoice templates and reversals.

### Invoice Templates

You can create invoice templates for regularly recurring expenses. Templates make it easy to enter invoices for regular expenditures, such as utility bills.

The new **Templates** tab is available in the site's **Invoicing** view, **Invoices** tab. On this tab, you can view available templates, create them, and create invoices based on templates.

Invoice templates identify a supplier, invoice number, and basic invoice details. You can give templates descriptive titles and add miscellaneous expense lines. When an invoice is created from a template, the following items are copied from the template to the new invoice:

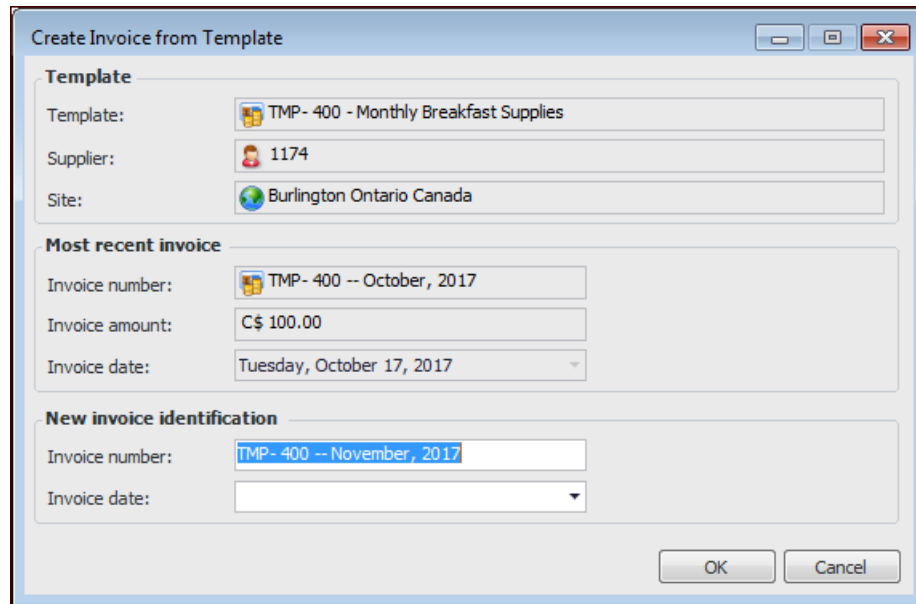
- Supplier information
- Invoice number, with the current month and year appended
- Invoice amount
- Invoice information, including the number and title of the source template
- Miscellaneous expense lines
- Invoice line extra charges
- Invoice line taxes
- Invoice line distribution

**Note:** Extra charge and tax lines can only be added to templates from miscellaneous expense lines.

**Tip:** You can also create and use templates in the Supplier window.

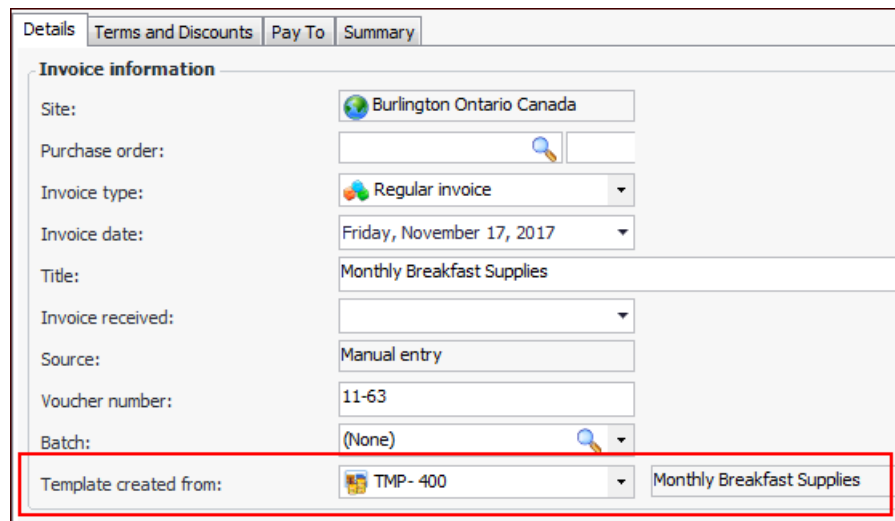
For more information, see “Creating an Invoice Template” in Help.

Creating an invoice based on a template is as simple as selecting a template in the table and clicking **Create Invoice**. In the Create Invoice from Template dialog, you can view information about the template and the most recent invoice:

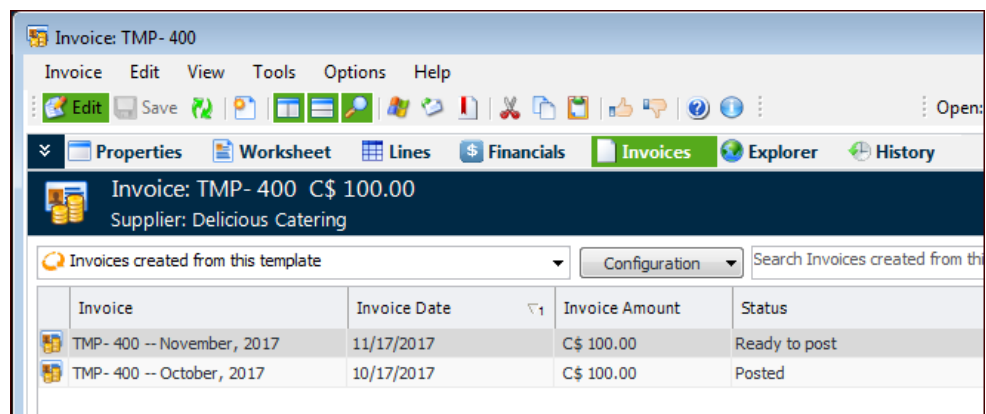


The invoice number defaults to the template number, followed by dashes and the current month and year. Select the invoice date and click **OK** to open the Invoice window.

The source template appears in the Invoice window, **Properties** tab, **Details** tab:



Similarly, the Template window's **Invoices** view lets you see the invoices created from the template and their statuses:



For more information, see “Creating an Invoice from a Template” in Help.

### Invoice Reversals

You can create reversing invoices for posted invoices (including credit memos) that were entered in error or that have errors. The process includes reversing liabilities, PO lines, and inventory.

When the reversal invoice is created, it is posted immediately. Reversal invoices do not support APM approvals, and an invoice can only be reversed once.

A replacement invoice can be created, if specified in the request for the reversal. The original invoice, its lines, taxes, extra charges, and distribution are copied to the replacement, including the original quantities and amounts.

To reverse a posted invoice, select it in the site’s **Invoicing** view, **Invoices** tabs, right-click and click **Reverse Invoice**. (You can also open the Invoice window, click the **Tools** menu and then **Reverse Invoice**.) In the Reverse Invoice dialog, set the reversal invoice’s type and date and, optionally, create a replacement invoice:



When you click **OK**, the reversal invoice is entered and posted. If you chose to create a replacement, its Invoice window opens. You can then complete the invoice as usual.

In the original invoice’s window, select the **Properties** view, **General** tab, **Reversal** tab to view the reversal:

Corresponding information is displayed in the reversal’s Invoice window.

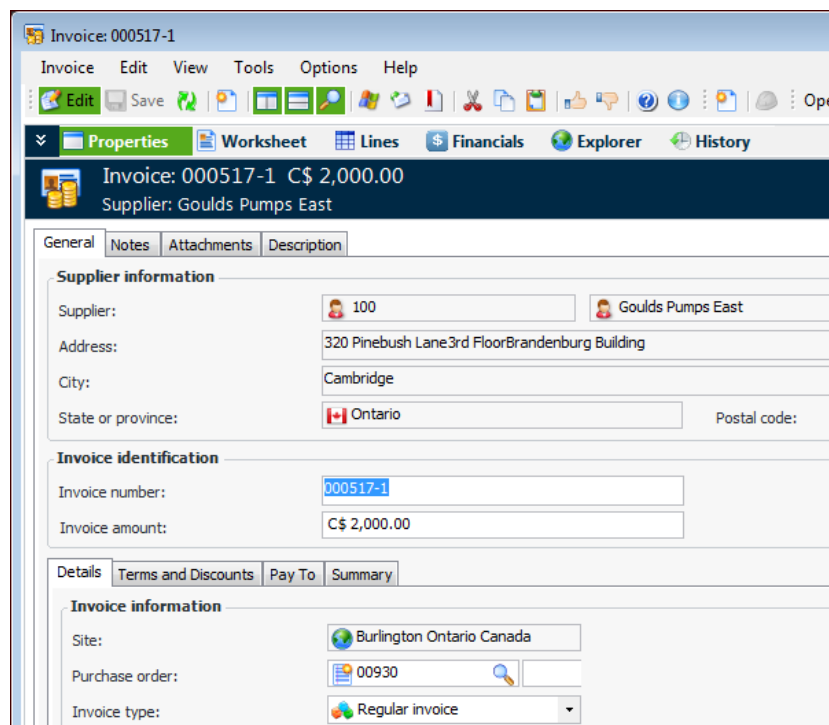
The original invoice’s **History** view, **Status** tab also displays information about the reversal.

The table configurations in the site’s **Invoicing** view, **Invoices** tab display “Has Been Reversed” and “Is a Reversal” columns, showing check marks for individual invoices, as appropriate.

For more information, see “Reversing an Invoice” in Help.

## Invoice Window

The **Properties** view was added to the Invoice window to make it consistent with other APM windows and to make the **Worksheet** view easier to use. The **Properties** view contains the **General**, **Notes**, **Attachments**, and **Description** tabs. For example:



The screenshot shows the 'Invoice: 000517-1' window with the 'Properties' tab selected. The window title bar includes 'Invoice: 000517-1' and a menu bar with 'Invoice', 'Edit', 'View', 'Tools', 'Options', and 'Help'. Below the menu bar is a toolbar with icons for Edit, Save, Undo, Redo, Print, and others. The main content area is divided into several sections:

- Supplier information:** Supplier: 100 (Goulds Pumps East), Address: 320 Pinebush Lane 3rd Floor Brandenburg Building, City: Cambridge, State or province: Ontario, Postal code: (empty).
- Invoice identification:** Invoice number: 000517-1, Invoice amount: C\$ 2,000.00.
- Details:** Terms and Discounts, Pay To, Summary.
- Invoice information:** Site: Burlington Ontario Canada, Purchase order: 00930, Invoice type: Regular invoice.

## Server and Client Management

This release introduces encrypted email and logging for server login attempts from clients.

### Email using SMTP Enable TLS

By default, the APM server now sends emails encrypted. The Settings Editor provides a parameter called SMTP Enable TLS for client and server email settings. The parameter is set to “true” by default.

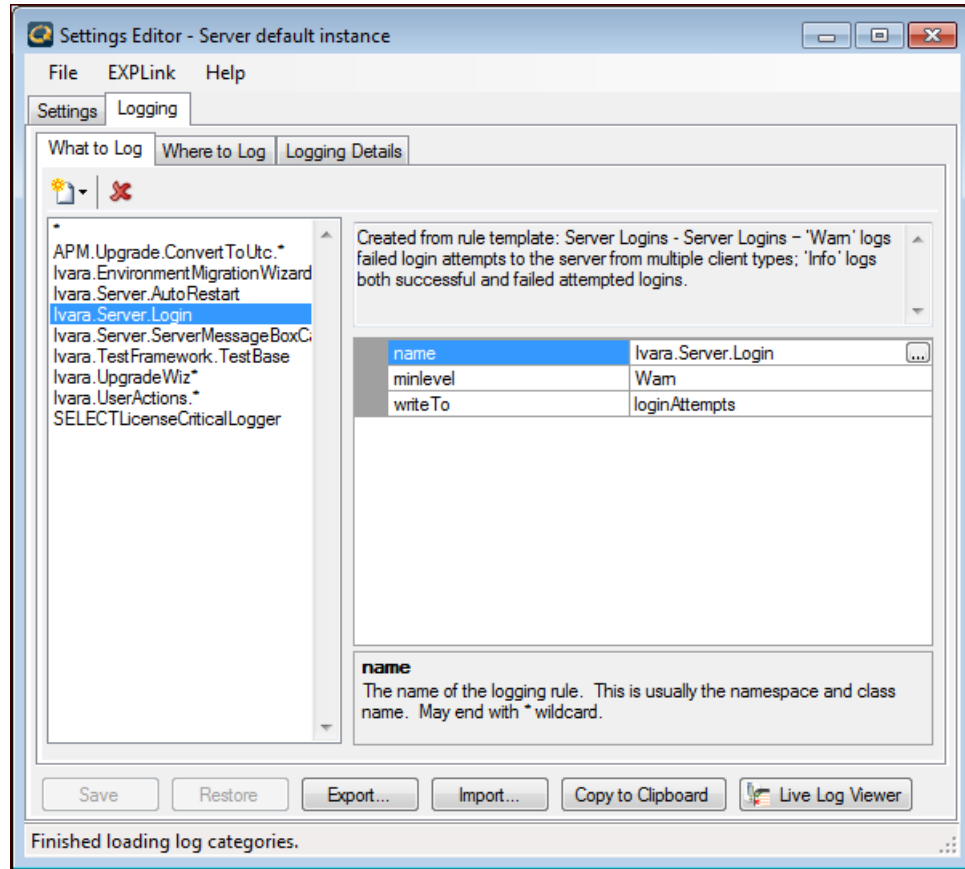
If your SMTP server does not support Transport Layer Security (TLS), set the parameter to “false” for your client and server instances.

For more information, see “Setting up Email” in *APM Installation Guide*.

### Log Files – Logging Server Login Attempts

You can now enable logging for both successful and failed attempts to login to an APM server from multiple locations: smart and thick client instances, mobile clients (APM Remote, APM Mobile.NET, APM Mobile apps), Server Manager, Web Monitor, and EXPLink.

To quickly configure this, use the APM Logging utility to create a rule using the Ivara.Server.Login template:



To log successful attempts, as well as failed ones, set the minlevel to “Info”. The information is saved to the loginAttempts.txt file in the default server log location.

Click **Save** in the Record Settings dialog to update the logging.config file in the Bentley\AssetWise Performance Management\bin folder.

For more information, see “Viewing and Configuring Log Files” in *APM Installation Guide*.

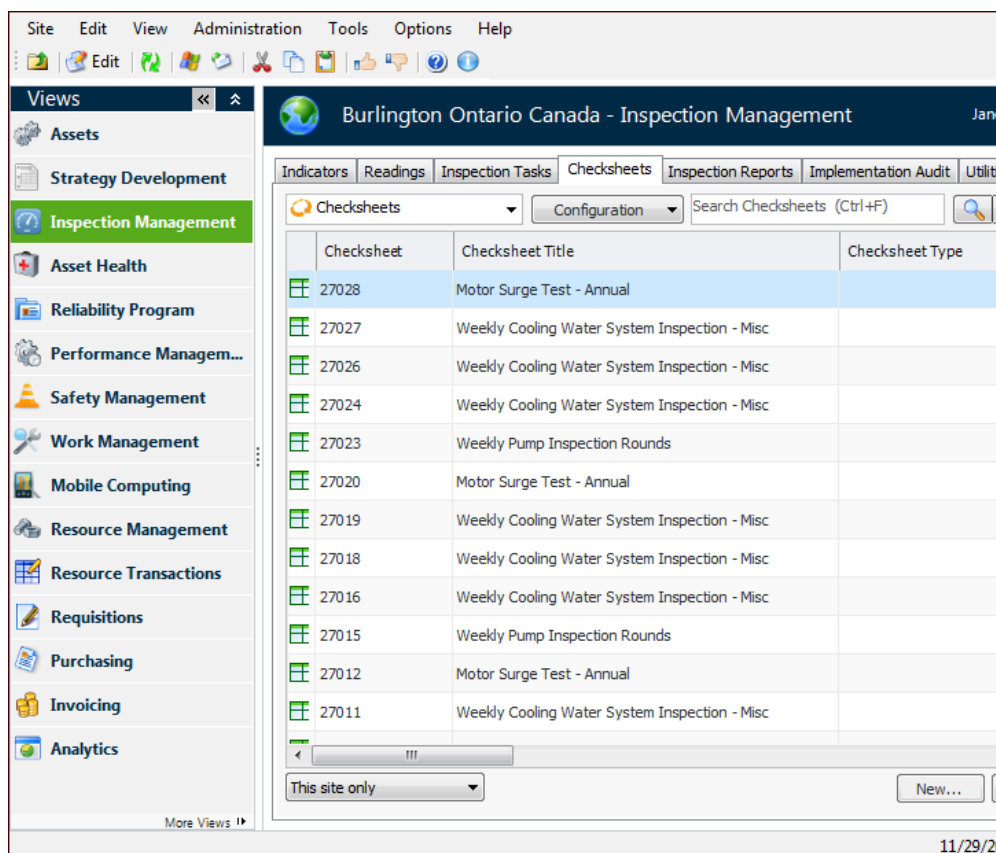
## Security

Administrators can now secure the **Switch User** command in **Site** and **Enterprise** menus when setting up security profiles.

For information about security profiles, see “Security” in Help.

## User Interface – Refreshed Appearance

The user interface for APM now displays the standard colors of AssetWise products. For example:



You will also notice that the row height has been increased in tables.

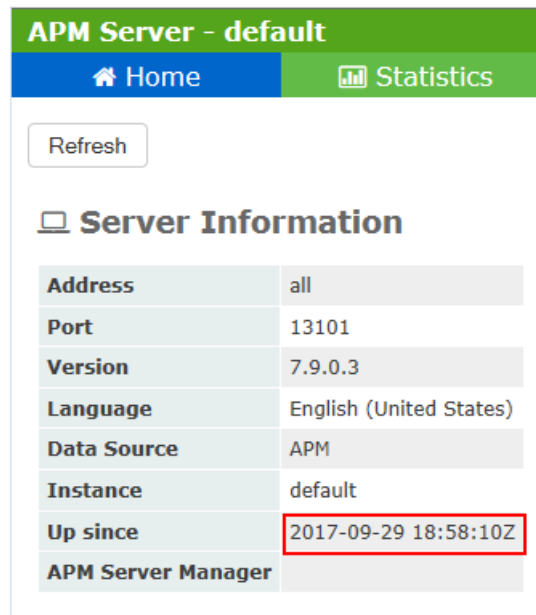
## UTC and the Enterprise Time Zone

With this release, the APM server and database support Coordinated Universal Time (UTC). This means that date and time data is stored in the database and displayed in some locations as UTC.

However, wherever dates and times are displayed in smart and thick clients, the data is converted to the time zone assigned to the enterprise. You can set the enterprise time zone after installation or when upgrading an APM database.

### Viewing UTC in APM

The Server Manager, Server Window, Web Monitor, and log files display dates and times with the suffix “Z” to indicate UTC. Here is an example from the Web Monitor:



The screenshot shows the 'APM Server - default' interface. It has a navigation bar with 'Home' and 'Statistics' buttons. Below is a 'Refresh' button and a section titled 'Server Information' containing a table of server details. The 'Up since' field is highlighted with a red box, showing the timestamp '2017-09-29 18:58:10Z'.

APM Server - default	
Home	Statistics
Refresh	
<b>Server Information</b>	
Address	all
Port	13101
Version	7.9.0.3
Language	English (United States)
Data Source	APM
Instance	default
Up since	2017-09-29 18:58:10Z
APM Server Manager	

### Viewing Enterprise Time in APM

Wherever dates and times are displayed in clients, the data is converted to the enterprise time zone, regardless of the time zone used on the computer. Consequently, all main windows in APM and APM Remote now display the enterprise time in the status bar. For example:

kPa	Indicator 1	91.000 lbs per sq
kPa	Indicator 1	101.000 lbs per
kPa	Indicator 1	97.000 lbs per sq
kPa	Indicator 1	102.000 lbs per
kPa	Indicator 1	85.000 lbs per sq
kPa	Indicator 1	80.000 lbs per sq
kPa	Indicator 1	70.000 lbs per sq

New... Selected Tools

11/23/2017 3:12 PM ...

### Enter Date and Time Data in Enterprise Time

When you enter a date and time in APM, it must be in the enterprise time zone. In particular, data imported from Microsoft Excel® spreadsheets is expected to be in the enterprise time zone. This applies to data loading, importing indicator readings to checksheets, and importing bid sheets.

### Setting the Enterprise Time Zone After Installation

When you launch APM for the first time after installing the software, setting up the install database, and configuring a thick-client instance, you will be presented with a dialog prompting you to select the enterprise time zone.

For more information, see “Launching APM, Selecting a Time Zone, and Creating Users” in *APM Installation Guide*.

### Upgrading Your Databases and Customizations

When upgrading your APM and APM Remote databases using the APM Upgrade Wizard, you can select the enterprise time zone, set options, convert the database to UTC, and validate data. .

**Note:** When you are upgrading an APM or APM Remote database, Internet access is required on the computer that runs the Upgrade Wizard so that the latest time zone information can be downloaded.

The first package that is downloaded to APM Remote after the database has been upgraded includes the enterprise time zone and intervals.

If your APM implementation includes customizations, ensure that all custom classes have a join path reference to the Site class so that date and time attributes can be converted to enterprise time. Review custom code with date and time attributes to ensure that the enterprise time zone is used. Review custom calculations, stored procedures, and functions that access APM DateTime columns, which now use UTC.

For more information, see *APM Upgrade Guide*.

### Viewing the Enterprise Time Zone

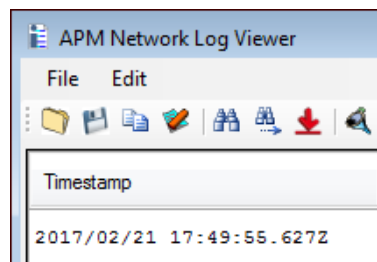
To see the geographical area that supplies the enterprise time zone, open the Enterprise window. Click the **Enterprise** menu and then **Properties**. The Enterprise Properties dialog displays the time zone at the top site. For example:



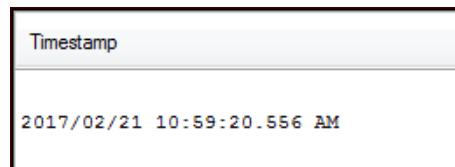
**Note:** The enterprise time zone is selected when APM is installed or upgraded. Typically, the value in the **Time zone** box is the geographical area that represents the time zones used to display date and time information in APM clients.

### Viewing Logging Times in the APM Network Log Viewer

By default, log times are shown in UTC format in the Network Log Viewer. For example:



You can show logged time in the local time zone (**Edit** menu, **Settings**). The Timestamp column displays dates and times in the time zone of the computer. For example:



APM log files also show date and time data in UTC format. The majority of these files are stored in the default log directory:

%programdata%\Bentley\IvaraEXP\Logs

For more information about log files, see “Viewing and Configuring Log Files” in *APM Installation Guide*.

### Scheduled Actions

Scheduled actions run in the server's time zone, regardless of enterprise time. Consequently, we recommend running the Action Scheduler on a server operating with a system time that matches the enterprise time zone. Otherwise, the next scheduled date and time for your actions might appear to be incorrect. The jobs will continue to run on a regular schedule, but the dates and times will be in the server's system time and might not match the schedule as you defined it.

**Note:** If the start or end of daylight saving time prevents a task from being launched at its scheduled time, the task will automatically run as soon as possible after the scheduled task is missed.

For more information about the Action Scheduler, see “Setting up Action Scheduling” in *APM Installation Guide*.

### EXPLink

The following methods have been added to EXPLinkSession to support UTC and the enterprise time zone:

- GetCurrentDBTimeAsZoned – which takes ZoneID
- GetCurrentDBTimeAsUTC – replaces GetCurrentDBTime

The method GetCurrentTimeDBTime is no longer supported.

All EXPLink objects now have access to a new method called GetZoneID(), which returns the Timezone string for the object, for example, “America/Toronto”.

For information about using EXPLink features, contact APM Support.

**Note:** Site time zones will be supported in a future release.