



XHQ

Solution Viewer User's Guide

About This Guide

Accessing The Solution from a Browser	1
Viewing The Solution	2
Learning to Navigate	3
The XHQ Navigation Bar	4
Saving and Printing	5
Viewing Preferences	6
XHQ View Statistics Utility	7
Visual Tile Composer	8
Advanced Charting	9
XHQ HTML5 Solution Viewer	10

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

DANGER
Indicates that death or severe personal injury will result if proper precautions are not taken.
WARNING
Indicates that death or severe personal injury may result if proper precautions are not taken.
CAUTION
Indicates that minor personal injury can result if proper precautions are not taken.
NOTICE
Indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage. See the topic, [Visual Cues for Online Viewing](#), for additional XHQ-specific notices.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner. For a complete list, see the [Copyrights and Trademarks](#) topic.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Copyright © 1998-2020 Siemens AG. All rights reserved. Protected by U.S. Patents Nos. 6,700,590, 7,069,514, 7,478,128, 7,689,579, 7,698,292, 7,814,123, 7,840,607, 8,001,332, 8,078,598, 8,260,783, 8,442,938, 8,566,781, 8,700,671 and 8,700,559; Patents Pending.

Siemens Industry Software Inc.
6 Journey, Suite 200
Aliso Viejo, CA 92656-5318, USA
siemens.com/xhq

XHQ® is a registered trademark of Siemens AG in the United States. This License does not grant LICENSEE any rights to trademarks or service marks of Siemens AG.

All other company, product and service names and logos may be trademarks or service marks of their respective companies. Any rights not expressly granted herein are reserved. LICENSEE may not remove or alter any trademark, logo, copyright or other proprietary notices, legends, symbols or labels from the Licensed Software or the Documentation.

This software is proprietary and confidential. Siemens AG or its suppliers own the title, copyright, and other intellectual property rights in the Software. The Software is licensed, not sold.

Adobe, the Adobe logo, Acrobat, the Adobe PDF logo, PostScript, and the PostScript logo, Distiller, and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Microsoft, Active Directory, ActiveX, Authenticode, Developer Studio, DirectX, Microsoft, MS-DOS, Outlook, Excel, PowerPoint, Visual Basic, Visual C++, Visual C#, Visual J#, Visual SourceSafe, Visual Studio, Win32, Windows, Windows Server, WinFX, Windows 7, Windows 10, Windows Server 2012, Windows Server 2016, Windows Server 2019, and the Windows logo are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries, or both.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce.

Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Oracle, Java, and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates. Oracle, or its licensor, shall at all times retain all rights, title, interest, including intellectual property rights, in Oracle Programs and media. SAP, SAP R/3, R/3, R/3 software, mySAP, mySAP.com, xApps, xApp, ABAP, BAPI, and SAP NetWeaver are trademarks or registered trademarks of SAP AG in Germany and in several other countries.

Documentum, OpenText Documentum, OpenText and the Corporate Logo are trademarks or registered trademarks of OpenText in the United States and throughout the world.

IBM, the IBM logo, DB2, and ibm.com are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide.

InstallShield® is a registered trademark and service mark of Macrovision Corporation and/or Macrovision Europe Ltd. in the United States and/or other countries. DemoShield, InstallFromTheWeb and PackageForTheWeb are service marks and registered trademarks of Macrovision Corporation and/or Macrovision Europe Ltd. in the United States and/or other countries. InstallShield Express, InstallShield for Windows Installer, InstallShield for Windows CE, Express Wizard, InstallShield Objects, WebUpdate, FastReg and NetInstall are trademarks and/or service marks of Macrovision Corporation and/or Macrovision Europe Ltd. InstallShield Software Corporation. InstallShield is a member of Macrovision Corporation.

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit <https://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

For the Siemens Security Advisory, visit <https://www.siemens.com/industrialsecurity>.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under <https://www.siemens.com/industrialsecurity>.

While every effort is made to ensure the accuracy of content, the XHQ product documentation set (which includes online help) could contain inaccuracies or out-dated material (which includes product screenshots and images) due to the large number of product enhancements being added. As such, the documentation set is subject to change at any time without notice. Refer to the README for documentation corrections and addendum. Please note, updates to the documentation set are reflected in the next general availability major release of XHQ.

Table of Contents

About This Guide	10
Conventions Used in This Guide	10
Visual Cues for Online Viewing	11
Related XHQ Product Documentation	12
Contacting Customer Support	14
General Feedback and Comments	15
1 Accessing The Solution from a Browser	16
To open the solution from a browser	16
To access a specific view directly	16
Troubleshooting Browser Client Access	17
Accessing XHQ Solution Viewer Help	19
To access browser help files	19
2 Viewing The Solution	20
Adjusting the Splitter Position	21
To display the Navigation panel	21
Using Tooltips in the Browser	22
About the Tag Tooltip	22
About the Value Tooltip	22
Bad Quality Value Markers	23
Adjusting the Zoom	24
Progress Indicators	25
3 Learning to Navigate	26
Left- and Right-Click Operations in the View Panel	28
About Common Operations	29
About Peer Views	29
About Links	29
About the Browser Control and the Right-click Shortcut Menu	30
Tree-style Navigation	31
Left- and Right-Click Operations in the Navigation Tree	32
4 The XHQ Navigation Bar	33
About the XHQ NavBar	34
The Button Bar	35
Logo and Clock	36
The Navigation Pointers and Tabs	37

"My Favorites" Quick Lists	38
General XHQ NavBar Tasks	39
To launch your solution using the XHQ NavBar	39
To print from the XHQ NavBar	39
To e-mail the URL of the current view	39
To access the XHQ WebHelp Topics	39
Working with Views, Trends, and Historical Navigation	40
About My User Settings	40
To set a Home View	42
To add a view to My Views	43
To add a trend to My Trends	44
Launching the XHQ Trend Viewer from the XHQ NavBar	45
About Relative and Absolute Times	46
Historical Viewing and Navigation	47
Customizing the XHQ NavBar	51
To change an XHQ NavBar property	52
5 Saving and Printing	53
Saving a View	53
To save a view from the XHQ Solution Viewer	53
Printing from the XHQ Solution Viewer	54
To print a view from the XHQ Solution Viewer	54
To print a Trend Chart (for a value item) from the XHQ Solution Viewer	55
To print an embedded trend from the XHQ Solution Viewer	56
6 Preferences	57
Setting Browser URL Parameters	57
Setting an XHQ Solution Home View	58
To set an XHQ solution home view	58
Setting the Splitter Position	59
To display the Navigation panel	59
To define a splitter position for the XHQ solution home view	60
Setting "show" Preferences	61
To set "show" preferences	61
Hiding the NavBar	62
Generating Logs	62
Embedding the XHQ Solution Viewer into a Web Page	63
Determining the Object Path	63
showView	63

onShowView	64
onBeforeShowView	65
Writing Values from XHQ to an External System	66
7 XHQ View Usage Statistics Utility	67
Who Can Access the Reports	67
Accessing and Touring the Utility	68
Working with the Standard Report Formats	69
XHQ Report: Peak and Average User Count	69
XHQ Report: User and View Hits by Month	70
XHQ Report: User and View Hits by Week	71
XHQ Report: View Usage By User Per Day	72
XHQ Report: View Usage Per Day	73
Managing View Statistics Reports	74
To add a new report	75
To edit an existing custom report	76
To delete a custom report	77
To print a report	77
8 Visual Tile Composer	78
To launch VTC from the XHQ Solution Viewer	78
About the VTC Interface	79
The VTC Toolbar	79
Extended Shortcut Menus	82
Creating CVs	85
To create a composed view	85
To configure tile properties	86
To use an expression to set the Title value	87
Responsive Layout	88
Ordering Tiles	88
To align or order tiles	88
Managing CVs	90
Sharing CVs	90
To copy URL	90
To email a CV link	91
Published and Personal CVs	91
9 Advanced Charting	93
Launching the Interactive Chart	94
Opening an Empty Chart	95

To change the chart type	95
Basic Tasks	96
From the Charts Menu	96
From the Plot Pop-up Menu	96
E-mailing a chart	97
Working with Charts	98
About the Series Table	98
Configuring a Chart	102
To add a series	102
To set chart options	108
To define the span (for Time Series and XY charts only)	115
Grouping	116
To define the group settings	117
Renderers	120
Rendering Limits	122
Using Multiple Range Axes	122
Setting the Range Axis Location	123
About Axis Minimum and Maximum Values	124
For the Domain Axis	124
For the Range Axis	124
Annotations	125
Annotation Types	125
Adding Annotations	126
Tag Mapping	128
Embedding Charts in Collection Views	130
Time Offset Types	130
Setting the Units of Measure	133
Viewing the Chart at Runtime	134
About the Domain Crosshair	136
Using Expressions in Chart Configurations	137
Color Expression	138
Series Mapping Column expression	140
URL Link Address and Action Link Function expressions	140
Date Format	141
Interacting with the Chart Plot	141
Zooming In and Out	141
Tooltip for a Series	142

Accessing the Solution	144
To access a specific view directly	144
To preview mobile views from a desktop Chrome browser	144
Troubleshooting a Connection	145
Navigating the Solution	146
Main Menu	147
Navigation	148
Views	148
My Views	149
My Trends	149
Explorers	150
History	150
Context Menu	151
Interactive Trender	152
Configuring a Pen Trace	154
Adding a Trend Chart to My Trends	160
Changing Trend Chart Settings	161
Displaying the Trend Table	166
Sharing the Trend Chart	167
Historical Navigation	169
Resizing View Elements	171
How Advanced Charts Are Displayed	171
Grouping Records in a Table	172
To use Group By in a table	172
Viewing the GISMap	172
To select multiple markers on the map	172

About This Guide

Conventions Used in This Guide

The following formatting cues are designed to allow you to quickly locate and understand the information provided in this guide.

Formatting Conventions

Convention	Example
Acronyms are spelled out the first time they appear.	Alert Notification System (ANS)
Bold is used for menu names, command options, and dialog box names in primary task procedures.	From the XHQ Workbench , go to the Add menu and click New Component .
<i>Italic</i> is used for glossary terms.	The first step in building this model is to develop reusable software building blocks, called <i>components</i> .
A monospaced font is used for program and code examples.	The subdirectory <code>\log</code> is automatically created below the location you choose. All log files are written to this subdirectory. <code>C:\xhq</code>
Key combinations appear in uppercase, bold. If joined with a plus sign (+), press and hold the first key while you press the remaining keys.	CTRL+B
In See Also notices, sub-chapter headings are in italics, chapter headings are in quotes, and guide titles are in bold.	For more information, go to the <i>About install.properties</i> topic located in the "Working with PROPERTIES Files" chapter of the XHQ Administrator's Guide .

Visual Cues for Online Viewing

This document uses the following styled paragraphs.

Important notices provide information that are required to completing a given task.



XHQ must run as a domain user.

Warnings tell you that failure to take or avoid a certain action could result in loss of data or application malfunction.



WARNING

Do not modify the `shutdown.dat` template file.

Notes are used to offer information that supplement important points of the main text. Tips suggest certain techniques and procedures that may help you achieve your task quickly.



Depending on your network configuration, include domain information only if the domains are different.

See Also notices provide you with additional references to similar topics and/or concepts within the documentation set. Sub-chapter headings are in italics, chapter headings are in quotes, and guide titles are in bold.



For more information, go to the About the Options Menu topic located in the "Working with PROPERTIES Files" chapter of the **XHQ Administrator's Guide**.

Tips provide additional hints to help you use the product more efficiently.



Use the `NavbarWestVerticalOffset` property to make fine adjustments in pixels. The upper, left-hand corner is the origin. The positive horizontal direction moves to the right and the positive vertical direction moves down.

Web References point you to external web sites that give additional information on the given topic.



Refer to Microsoft support information with regards to the various server settings for application performance and network utilization.

<http://support.microsoft.com>

Related XHQ Product Documentation

The XHQ documentation set includes the following titles.

XHQ Documentation Set

Title	Target Audience
XHQ Administrator's Guide	Administrators
Provides the steps required to begin administering XHQ. It also covers security and access, property settings, redundancy, and localization.	
XHQ ANS User's Guide	ANS Users, Administrators
Learn how to use and administer the XHQ Alert Notification System (XHQ ANS).	
XHQ Backup and Recovery Guide	Administrators
Learn how to properly backup XHQ.	
XHQ Connection Guide	Connector Developers
Provides information on injecting an XHQ-supported connector type and configuring the connection.	
XHQ Developer's Guide	Content and Solution Developers
Introduces the XHQ Development Client (Workbench and Solution Builder) user interface and provides information on how to set-up XHQ, develop reusable components, create views, and build a solution hierarchy.	
XHQ Getting Started	Content, Connector, and Solution Developers
Gives you step-by-step instruction on how to set up your model and solution.	
XHQ Installation Guide	Administrators
Provides the system requirements, installation instructions, and upgrade information for the current release of the XHQ System.	
XHQ Integrated Data Gateway Guide	Application Engineers, Integrators
Includes information on the ADO.NET and the XHQ OPC UA Server.	
XHQ Performance Analytics Guide	Solution Developers/Users, Analysts
Learn how to use the Engineering Environment to enable the generation of the processes necessary to extract and transform data for source systems, and populate the XHQ Data Store and Data Mart.	
XHQ Performance Management Guide	Administrators, End Users
Learn how to use Target Management to monitor performance indicators and eLogs to create shift reports.	
XHQ Reference Guide	Content and Solution Developers
Lists the functions and methods used in XHQ, and provides examples,	

Title	Target Audience
usage notes, and parameter descriptions.	
XHQ Reporting Services Guide	Application Engineers, End Users
Introduces the XHQ Reporting Services and provides instruction on how to connect to an XHQ data source.	
XHQ SDK Reference Guide	Application Engineers, Integrators
Provides a set of development tools that allows you to create applications that extend XHQ. Includes information on the Client API and Web Services.	
XHQ Solution Design and Architecture	Solution Architects
Provides best-practice examples for XHQ solution design. Includes information on tag synchronization.	
XHQ Solution Viewer User's Guide	All End Users
Gives you step-by-step instruction on how to access your solution through a browser client and set browser preferences.	
XHQ System Guide	Administrators, Application Engineers, Integrators
Contains information regarding secure handling of an XHQ implementation.	
XHQ Trend Viewer User's Guide	All End Users
Learn how to use the XHQ Trend Viewer to view both real-time and historical data.	

Contacting Customer Support

XHQ Customer Support is a second-level customer support offering, that is, it does not provide XHQ end users with direct support. XHQ end users are to contact their local company help desk or internal application support staff and, in turn, those representatives contact the XHQ Customer Support Team. These representatives are expected to have attended basic product administrative training or possess comparable skills with XHQ, and know and support the specific XHQ customer solution in use.

If the details or response times noted below deviate from those specified in a specific customer contract, the customer contract always takes precedence.

For general XHQ product support or related questions, pre-registered customer or partner support staff with a valid XHQ customer support agreement may contact the XHQ Customer Support Team using any of the following means:

Web Portal

The support portal leverages a system called GTAC (Global Technical Access Center). GTAC provides one common support entry point for many Siemens products. It is available via this URL:

<https://www.siemens.com/gtac>

Customers must be pre-registered to be able to use the web portal. A log-in can be requested at any time by self-registering in the GTAC portal. Note, the end-user "sold to" identifier is needed in order to register.

Use of the support portal is the preferred means to report incidents to the XHQ Customer Support Team unless immediate interactive telephone assistance is required. The support portal is available twenty four hours per day/seven days per week ("24/7").

E-mail

support.xhq@siemens.com

Phone Support and Hours of Coverage

International: +1 (949) 448-7463

U.S. only: +1 (877) 700-4639

The following paid support levels are available:

Bronze Support: 9/5

9 x 5 hours support. 9 hours per day, 5 days per week, Monday to Friday. Daylight Saving Time is honored.

Choice of one coverage zone out of the following options (the default is Americas):

- Americas (7 am - 6 pm PST; 11 hours coverage due to PST/CST/EST time zone coverage overlap)
- South Central Asia (9:30 am - 6 pm IST; 9 hours coverage)

Excludes national holidays as defined by the following countries for the related coverage zone:

- USA/California (Americas)
- India/Pune (South Central Asia)

Example Americas zone: *Implies coverage from 7:00 AM to 6:00 PM, Pacific Time, Monday to Friday, excluding US national holidays.*

Silver Support

Ability to leverage both support coverage zones **Americas** and **South Central Asia** as defined in Bronze for extended daily coverage hours.

The weekly start/end times of coverage follow the local times of the following coverage zone:

- California/USA (Americas)

This implies weekday coverage from 7 am until 6 pm Pacific Time, Monday to Friday, as in the Americas support coverage zone but with the ability to additionally leverage the South-central Asia coverage zone for additional coverage hours.

Gold Support: 24/7

Silver Support coverage plus 24 hours per day, 7 days per week emergency support for Severity One incidents.

Postal Mail

Siemens Industry Software Inc.

XHQ Operations Intelligence

Attn: XHQ Customer Support Department

6 Journey, Suite 200

Aliso Viejo, CA 92656, USA

General Feedback and Comments

Please send an e-mail to:

info.xhq@siemens.com

Siemens Industry Software Inc. and affiliated Siemens Industry Software companies (collectively referred to as "SISW") are committed to working with our customers. Your comments, suggestions, and ideas for improvements are very important to us. Thank you for taking the time to send us your feedback.

1 | Accessing The Solution from a Browser

You access an XHQ solution in the same way you access other web-based applications.



Embedding the XHQ Solution Viewer

For security, you cannot embed the XHQ HTML5 Solution Viewer into another page. This is restricted by the X-Frame-Options in the `sv/web.config` file, which is set to `SAMEORIGIN` by default. If you need to embed XHQ into another application, you must evaluate the security risk in updating this configuration.

To open the solution from a browser

1. Open your **browser**.
2. In your browser's **URL field**, type the web server location for your solution.



For Internet Explorer users, the URL field is labeled **Address**.

The address can either be a fully qualified web page URL or an IP address. The URL directs your browser to the appropriate XHQ web server and a particular `.html` and/or `.aspx` page.

Examples: Of server name/html pages

```
http://localhost/indx/xhqNavbar.aspx  
http://localhost/indx/CrushingPlant.html
```

Examples: Of IP addresses

```
http://205.6.35.224/indx/xhqNavbar.aspx  
http://205.6.35.224/indx/CrushingPlant.html
```

If this is the first visit to the page, a certificate appears. This certificate verifies the authenticity of the XHQ Solution Viewer.

3. Click **Run**.

The solution launches in your browser.

To access a specific view directly

1. Open your **browser**.
2. In the address field, enter the **fully qualified URL** for the view.

Example URLs: **For the XHQ Solution Viewer applet**

```
http://localhost/indx/xhqnavbar.aspx/?solutionHome=Root.GIS~Markers_PassThrough
```

For the HTML5 XHQ Solution Viewer

```
http://localhost/indx/sv/#::Root/GIS/~Markers_PassThrough
```

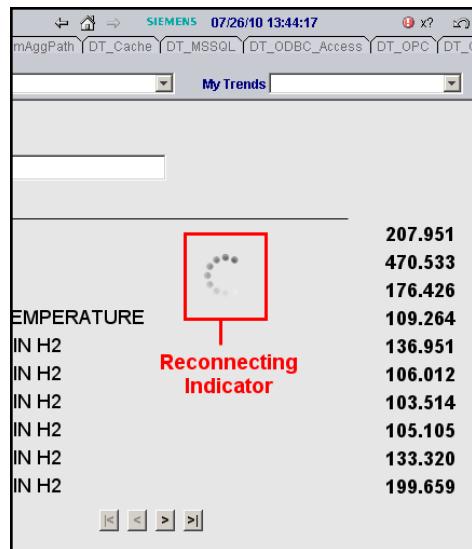
3. Click **Enter**.

The specific view launches in the browser.

Troubleshooting Browser Client Access

Message	Cause/Workaround
	Click OK , close all Internet Explorer windows, and restart the browser client.

Lost connection with the Solution Server



Reconnecting to the Server



View Load Failed

The requested resource is not available

This message, "The requested resource is not available," appears in the following scenarios:

- The user does not have access to the given component.

Message	Cause/Workaround
	<p>Attempts to access the restricted component using a URL link, an Action link (with ShowView function) or by entering the URL address directly in the browser result in this message.</p> <ul style="list-style-type: none">The user has accessed a restricted view by using a URL link, an Action link, or by entering the URL address in the browser. In this case, the user has access to the component but not the given view. Although the user has access to the navigation tree, the restricted view is not listed on the views list.

Accessing XHQ Solution Viewer Help

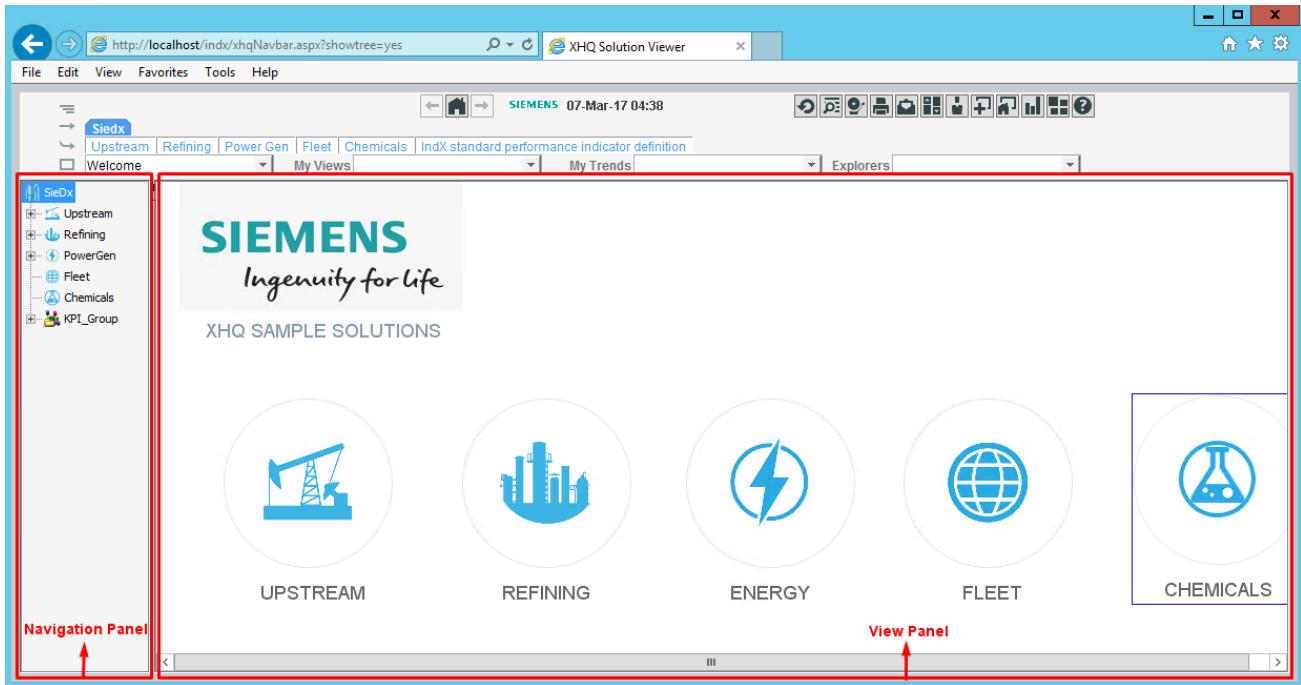
The XHQ Solution Viewer (for the browser client) help files are available in the location specified by the environment variable **%XHQ_WEB_HOME%\indx\help**, which by default is the **%SystemDrive%\Program Files\XHQ\XHQ Web Root\indx\help** directory.

To access browser help files

1. Navigate to **\Program Files\XHQ\XHQ Web Root** directory.
2. Go to **\indx\help** and double-click **xhqhelp.htm**.
The XHQ Solution Viewer help files open in your browser.

2 | Viewing The Solution

The XHQ Solution Viewer consists of the **Navigation Panel** and the **View Panel**.



XHQ Solution Viewer Panels

- i By default the navigation panel from the XHQ Solution Viewer is hidden; that is, when you launch an XHQ URL, the left panel that displays the solution navigation tree is hidden.
- As an alternative to the hierarchical tree you see in the Navigation Panel, the XHQ Navigation Bar can also be used to navigate through your solution. For more information, go to the topic, *The XHQ Navigation Bar*.

Adjusting the Splitter Position

The splitter position refers to the position of the split bar, which separates the Navigation panel from the View panel. You can adjust the width of the Navigation and View panels by dragging the splitter bar with your mouse.

Because the navigation panel is hidden by default, to see the splitter bar you must set the **showTree** preference to **yes**.

To display the Navigation panel

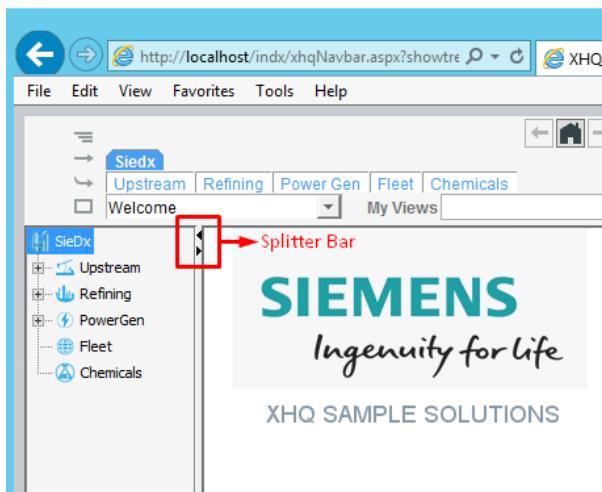
1. Enter an XHQ URL that includes the **showTree** and **splitterPosition** browser preferences.

Example: `http://www.acme.com/xhqnavbar.html?showTree=yes&splitterPosition=20`



For more information on these browser preferences, see the topic, *Setting Browser URL Parameters*.

The XHQ Solution Viewer appears with the navigation panel. Note the right and left arrows at the top of the vertical splitter bar.



2. Do one of the following:

- Point and click on the arrow pointing on either the left (>) or right (<) arrows to show or hide the navigation panel.

or

- Drag the splitter bar to a position.

Using Tooltips in the Browser

Tooltips are notes that appear on the screen when you mouse over a graphical image or a value item within a view.

For graphical image Tooltips:

- The **first** (top) line is the name of the component against which the current view is built.
- And, if the image is "drillable", a **second** line appears displaying the name of the view that launches if you select the link. A rectangular blue line appears around the image, indicating it is selectable.

For value item Tooltips:

- Depending on your view, the **first** line displays either the name of the component against which the current view is built or an expression relating to the given value item.
- The **second** line displays the Value.
- The **third** line displays the Time.
- The **fourth** line displays the Quality.

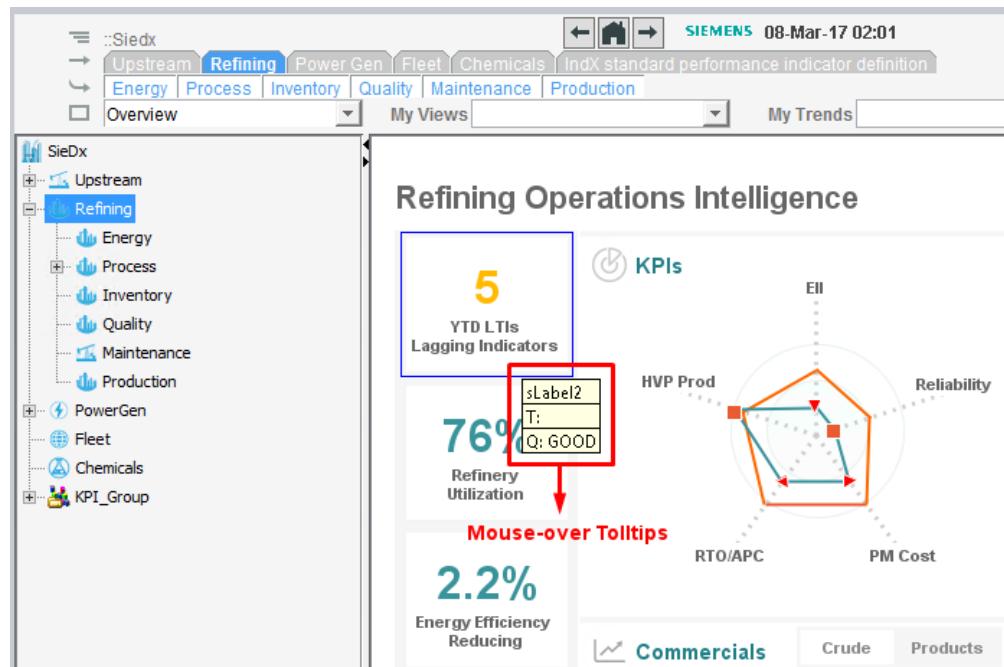
The behavior of Tooltips is the same in the browser runtime environment as it is in the XHQ Solution Builder.

About the Tag Tooltip

If the value item is associated with a component of the type **Tag**, the appropriate primitives are set as **Units** and **Description**. Therefore, the second and third lines display Units and Description, respectively. If either Units or Description are not set at the time of configuration, then the corresponding Tooltip line does not display.

About the Value Tooltip

Tooltips are also available from the Detail view when you mouse-over a Value under the Inventory Items panel. In this case, the Tooltip displays the VTQ (value, time, quality) for the given item.



Good Value Tooltip Example

BAD quality has the following indicators:

Quality	Symbol	Example
BAD	red asterisks	*****
BAD, Access denied	red question marks	?????
BAD, Calculation error	red asterisks	*****
BAD, Comm failure	red asterisks	*****
BAD, Config Error	red asterisks	*****
BAD, Connector not running	red asterisks	*****
BAD, Device failure	red asterisks	*****
BAD, Last known value	value	1234.56
BAD, Non-existent	red pound signs	#####
BAD, Not configured	red pound signs	#####
BAD, Not connected	red asterisks	*****
BAD, Not initialized	black pound signs	#####
BAD, Not supported	red asterisks	*****
BAD, Out of service	red asterisks	*****
BAD, Sensor failure	red asterisks	*****
BAD, Units conversion failure	red asterisks	*****

When using expressions, please note that there is a distinct order when displaying BAD quality: "BAD, Access denied" supersedes "Bad, Non-existent"; "BAD, Non-existent" supersedes "BAD, Not connected".

Consider the following example.

EXAMPLE: ORDER IN DISPLAYING BAD QUALITY

You have an expression containing four integers added together, "a + b + c", where the integers have the following quality:

```
a = "BAD, Access denied"
b = "BAD, Non-existent"
c = "BAD, Not connected"
```

Because the quality "BAD, Access denied" supersedes all the others, the overall quality of the expression will then be "BAD, Access denied".

Bad Quality Value Markers

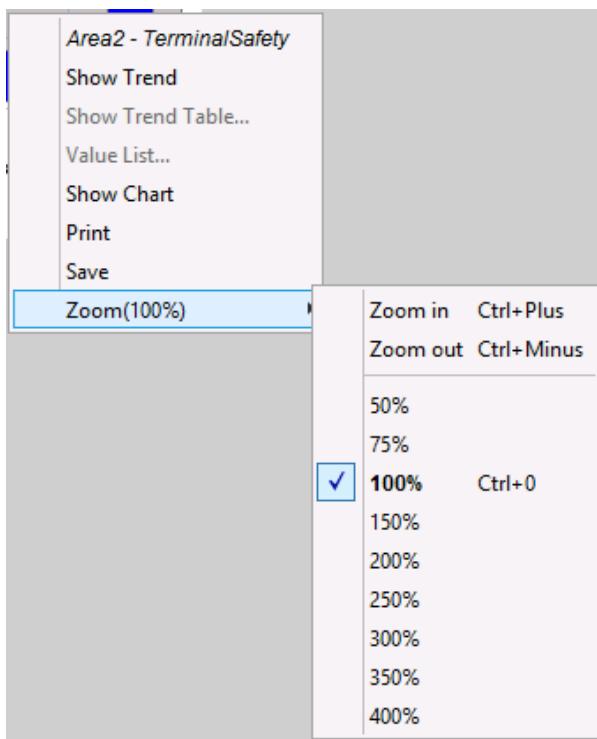
A BAD quality value **as a marker** is recorded for points at the start of XHQ (the point's activation time) as well as the shutdown of XHQ (the point's deactivation time). A BAD marker is also recorded when history is changed to "None" and back to "DR", and when the "Record data" checkbox is cleared (unchecked) and when it is set (checked).

In summary, BAD quality values as **markers** are recorded during the following conditions:

- XHQ is started up.
- XHQ is shutdown.
- History is configured for the Data Recorder.
- History is changed from the Data Recorder (DR) to None or to another historian.
- Recording is stopped (Record data is unchecked).
- Recording is resumed (Record data is checked).

Adjusting the Zoom

To use the XHQ Solution Viewer zoom feature, **right-click** on a view item and, from the shortcut menu, click **Zoom(%)**.



XHQ Solution Viewer Shortcut Menu - Zoom Option



The zoom factor applies to general views, pop-up views, and VTC views.

Use the following zoom hot keys to enlarge or reduce by 25%, or to return to 100%.

Zoom Hot Keys

Hot Key Combination	Description
CTRL + Plus	Zoom in, enlarging by 25%.
CTRL + Minus	Zoom out, reducing by 25%
CTRL + 0 (zero)	Returns to 100%

The list of percentages available on the shortcut menu may be customized by using the global setting property, **ZoomValues**.



For more information on global properties, refer to the section, (no condition, same for PDF and online) *Using globalsettings.properties*, located in the XHQ Administrator's Guide.

Progress Indicators

Each time a view is being loaded, the XHQ Solution Viewer broadcasts the load progress through the status bar (if enabled for the browser) or a progress indicator box.



There are global properties associated with these two features. For more information, go to the topic, *Solution Viewer Progress Indicator Settings*, located in the XHQ Administrator's Guide.

3 | Learning to Navigate

There are three ways you can navigate through your solution:

- **XHQ Navigation Bar**

The XHQ Navigation Bar (XHQ NavBar) offers an alternative to the hierarchical tree typically used to navigate through an XHQ solution.



For more information, go to the topic, *The XHQ Navigation Bar*.

- **Left- and right-click operations**

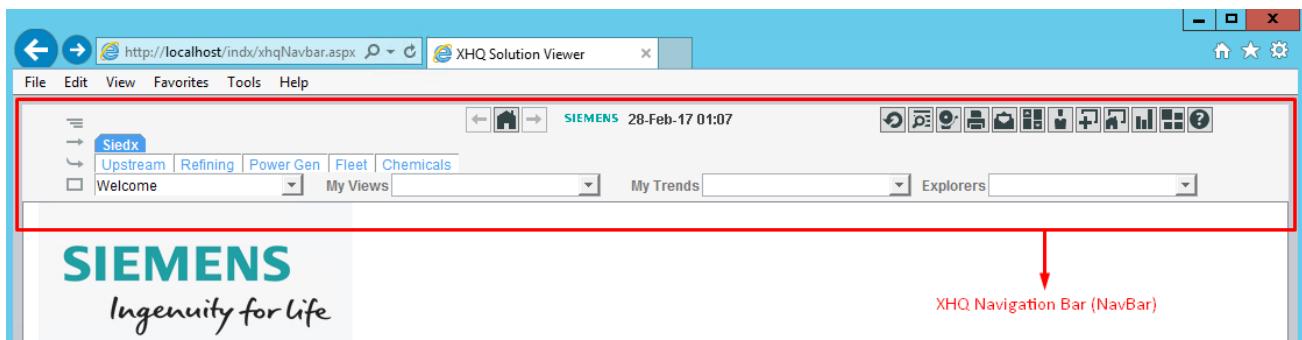
Left-click on a node or component in the tree and the default view for that node appears on the View panel. Right-click on a component and a shortcut menu appears, displaying all the views associated with the given component.

- **Tree-style navigation**

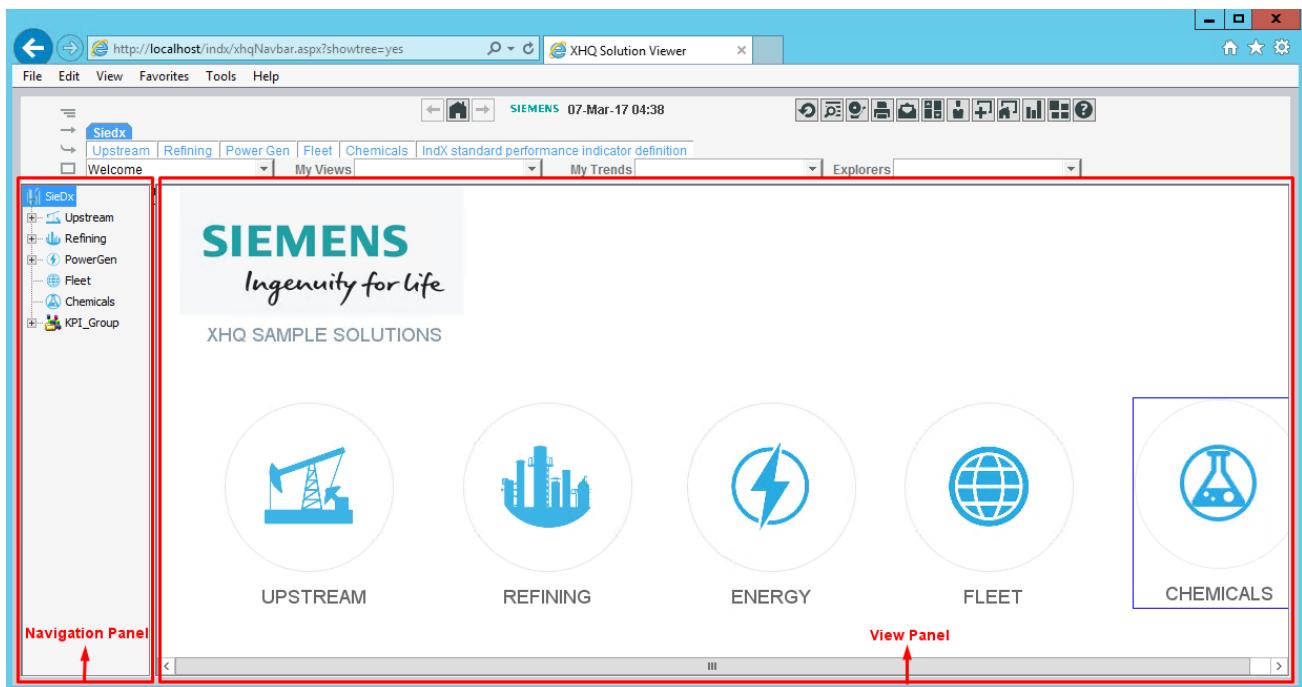
From the Navigation panel, you can expand or collapse the navigation tree and select a node.



By default the navigation panel is hidden; that is, when you launch an XHQ URL, the left panel that displays the solution navigation tree is hidden.



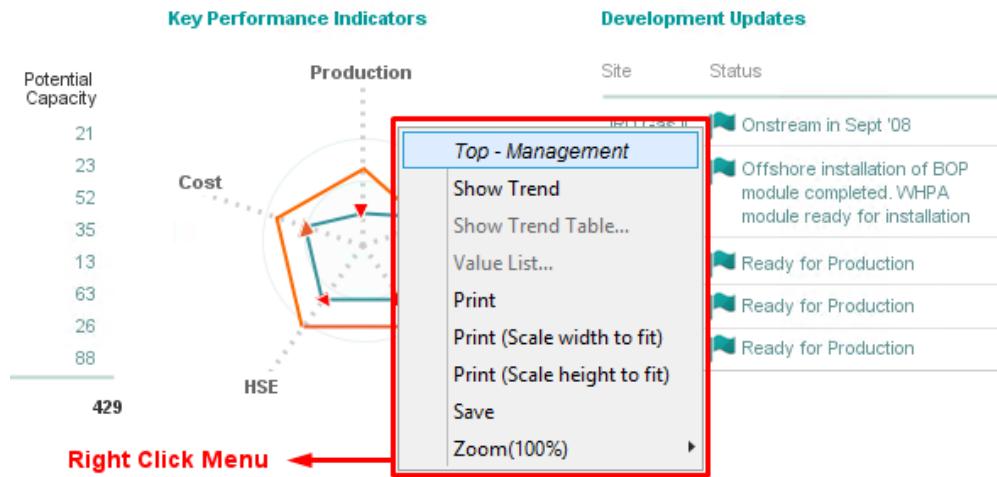
XHQ Navigation Bar



XHQ Solution Viewer Panels

Left- and Right-Click Operations in the View Panel

When you mouse-over **hotspots** in the View panel, a **rectangular blue outline** appears, indicating that it is selectable.



Mouse-over Hotspot and Tooltip – View Panel

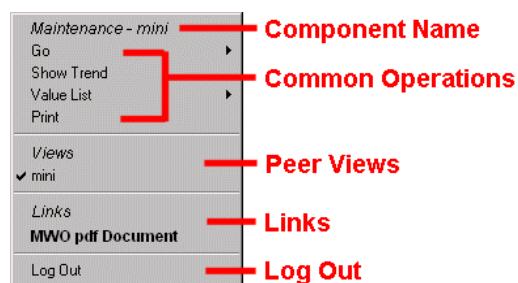
Depending on how the view is configured, left-clicking on a hotspot can open any of the following:

- The default (top) view of the component to which the view belongs.
- A URL link.
- A view link.
- The XHQ Trend Viewer.

From the View panel, you can right-click on the view to:

- Select a peer view of the component.
- Jump to other views and designated URLs.
- Select variables for the XHQ Trend Viewer.
- Print views.
- Go to previously visited views.

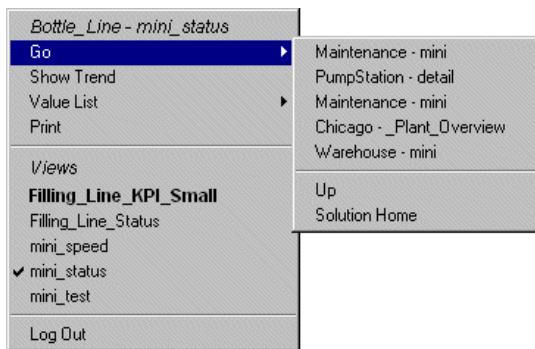
The content of the right-click shortcut menu is dynamically generated to correspond to the context of the view component you select. The first line shows the name, in italics, of the component to which the right-click shortcut menu belongs. Following that are four main parts: the **Common Operations**, the **Peer Views**, and the **Links**.



Right-click Shortcut Menu – View Panel

About Common Operations

In the **Common Operations** section, you will find the **Go** command with a right arrow that causes a submenu menu to appear with a list of as many as six previously visited views.



Go Submenu Example

From the **Go** submenu, you can also select the **Up** command to access the default view of the parent component and the **Solution Home** option to access the XHQ solution home view you define.

The next two commands in the Common Operations section are **Show Trend** and **Value List**. These relate to Trend Chart operations and the list of variables selected for trending. The last item, **Print**, allows you to print a view from the browser.

About Peer Views

The next major section of the right-click shortcut menu is **Peer Views**. Peer views are views against the same component.

In this section, you will find an alphabetically ordered list of the views that are peers of the component to which the current view belongs – the component indicated by the blue outline.



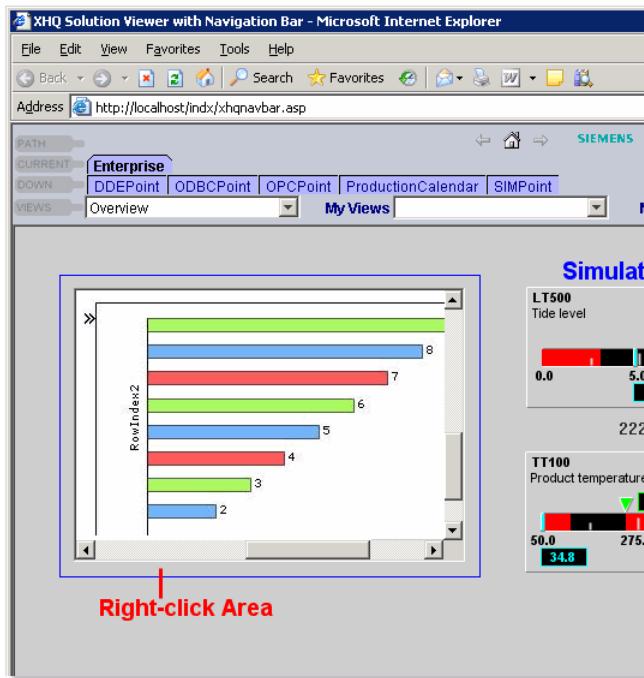
A check mark appears in front of the view that is currently displayed. The bold default item could be in the peer view list or in the link list.

About Links

The bottom portion of the right-click shortcut menu, **Links**, shows each hyperlink item that was configured in the view editor. Those links can jump to either another designated XHQ view from anywhere within the solution, or to a selected URL (web page).

About the Browser Control and the Right-click Shortcut Menu

Should the view include an embedded browser control, to access the XHQ Solution Viewer right-click shortcut menu, mouse-over the control to display the rectangular blue outline around the control. Then, place the mouse cursor just inside the blue outline, but not on the browser control viewing area. Right-click to display the XHQ shortcut menu. (If you right-click on the browser control viewing area, the Internet Explorer shortcut menu appears.)



Browser Control Right-click Area



For Windows Vista Users

In Internet Explorer, the embedded browser control will not work if Protected Mode is enabled.

Tree-style Navigation

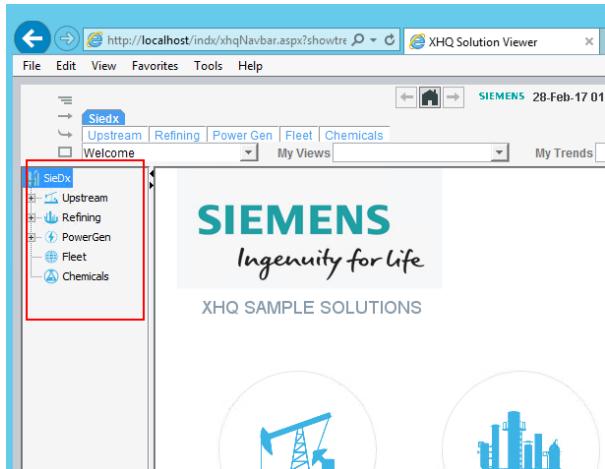
Tree-style navigation is available from the XHQ Solution Viewer (browser).



By default the navigation panel from the XHQ Solution Viewer is hidden; that is, when you launch an XHQ URL, the left panel that displays the solution navigation tree is hidden. To display the navigation panel, set the **showTree** preference to **yes**. For more information, go to the topic, *Setting Browser URL Parameters*.

When you click on an icon in the tree, a dark blue background highlight appears behind the icon and the component name and the default view appears in the view panel. From the XHQ Solution Builder, the detail (or structural) view of the component appears. From the XHQ Solution Viewer, the default view is the top view in the view list.

You can expand or collapse nodes in the navigation tree to show or hide additional component levels below the selected node. Nodes that can expand or collapse have either a plus (+) or a minus (-) sign, respectively, in front of the component icon.

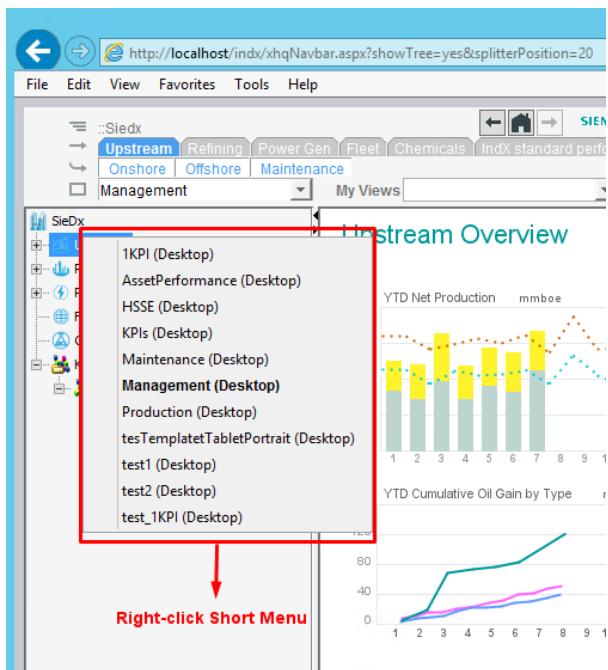


XHQ Solution Viewer – Navigation Tree

Left- and Right-Click Operations in the Navigation Tree

If you **left-click** an icon in the navigation tree, a blue background appears behind the icon and the component name, and the default view appears in the View panel.

When you **right-click** an icon in the tree, a list of the accessible component views appears in a shortcut menu. You may select any view from the list to see it in the View panel.

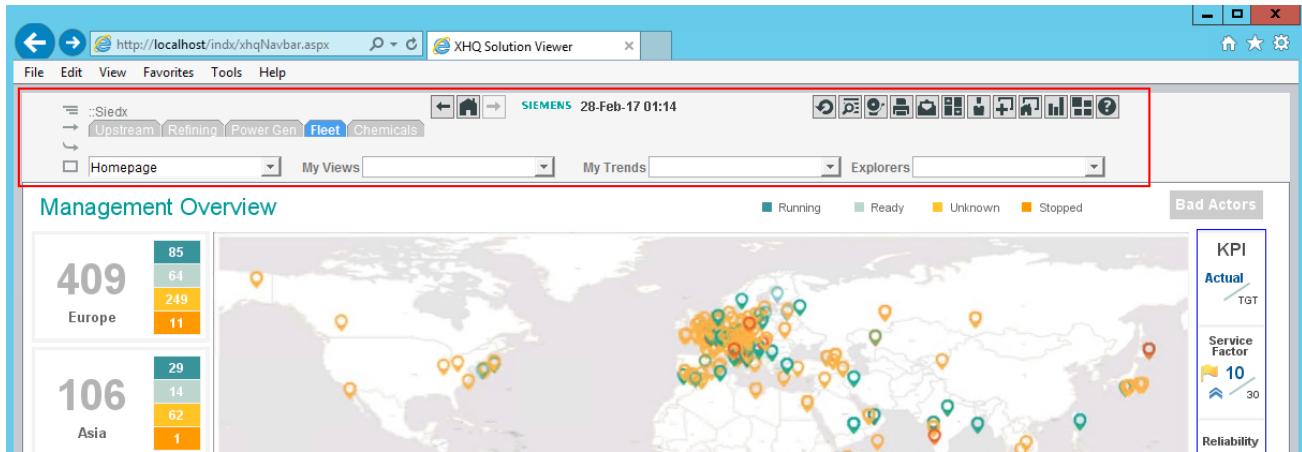


Right-click Shortcut Menu – Navigation Panel

In this shortcut menu, the view in **bold** is the default view. The **checkmark** next to the view name indicates that it is currently open in the View panel.

4 | The XHQ Navigation Bar

The XHQ Navigation Bar (XHQ NavBar) offers an alternative to the hierarchical tree typically used to navigate through an XHQ solution.



Example – XHQ NavBar

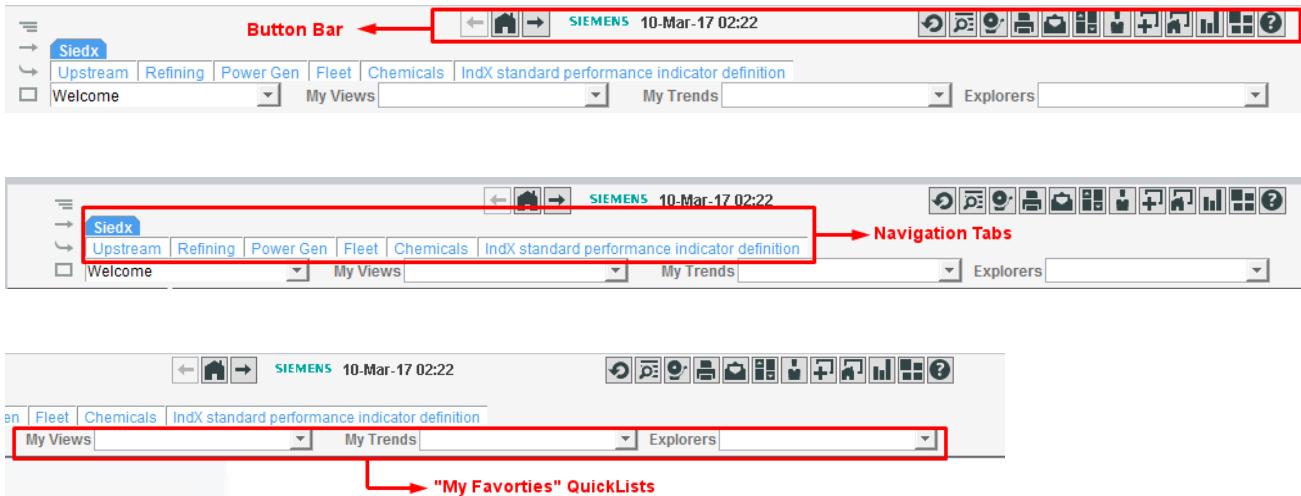


Currently, Quick Tabs navigation is not supported. Quick Tabs display thumbnails of all you open tabs.

About the XHQ NavBar

The XHQ NavBar provides the means for you to navigate through your XHQ solution. It is divided into four major areas:

- The Button Bar
- The Navigation Pointers
- The Navigation Tabs
- The "Favorites" Quick Lists



The Button Bar

In the upper right-hand corner is a button bar that allows you to quickly activate commonly used actions.



Navigation Bar Buttons

Icon	Action
	Back When you navigate through the different views in XHQ, a history of the views you visited is stored in a history stack. Use the Back button to return to any page you previously visited.
	Solution Home View Use to return to your solution's Home view.
	Forward When you navigate through the different views in XHQ, a history of the views you visited is stored in a history stack. Use the Forward button to return to any page you previously visited.
	Reset Filters Reloads the current view.
	History Launches Historical Navigation bar. <i>For additional information, refer to the topic, Historical Viewing and Navigation.</i>
	Alerts Launches the "Alert Status Display" for the XHQ Alert Notification System (XHQ ANS). This icon appears on the button bar only if the XHQ ANS is installed. <i>For more information on how to use the "Alert Status Display" or XHQ ANS in general, refer to the XHQ ANS Users Guide.pdf.</i>
	Print Use to print the current view.
	Send Mail Launches mail client. Enables you to e-mail a link of the current view.
	Toggle Scrollbars Shows or hides the view scrollbars.
	User Settings Launches the "My User Settings" dialog. Allows you to set favorite views and trends.
	Add View to My Views Adds the current view to your list of My Views. You are prompted to enter a view name. The default name in the prompt dialog is the name of the current view shown in the browser.
	Make This View Your Home View Sets the current view as your Home View.

Icon Action**Visual Tile Composer**

Launches the XHQ Visual Tile Composer.

**XHQ Solution Viewer Help**

Launches the XHQ Solution Viewer online help files.

Logo and Clock

You can replace the logo with your own corporate logo and customize its placement. The XHQ NavBar clock displays the current time in a given date/time format and updates periodically. You can configure the date/time format and the clock refresh rate using global properties.

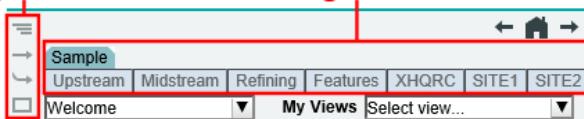


For a complete list of global settings for the XHQ NavBar, go to the topic, [*Working with .PROPERTIES Files*](#), located in the XHQ Administrator's Guide. For information on how to replace the logo or how to configure the clock, go to the topics, [*Using Custom Images*](#), [*Showing or Hiding the Logo*](#), or [*NavBar Clock Properties*](#), which are also located in the XHQ Administrator's Guide.

The Navigation Pointers and Tabs

The navigation pointers and tabs are located to the left side of the XHQ NavBar.

Navigation Pointers Navigation Tabs

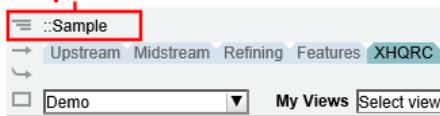


The navigation pointers display the following four levels:

- **Path**

Displays the "parent" path of the selected component.

Component Path



In the image above, the "parent" path is `: : Hydrocracker` and the selected component is `FCCCycleOilFeed`.



Clicking (to select) the path displays the component on the "Current" level.

- **Current**

Displays the selected component along with any associated peer components.



The tab for the selected component appears different from the other tabs (background color, bold font).

The tabs are in alphabetic order according to component name.

To modify the tabs (in appearance, order, and so forth), see the topic, *Customizing the NavBar*.

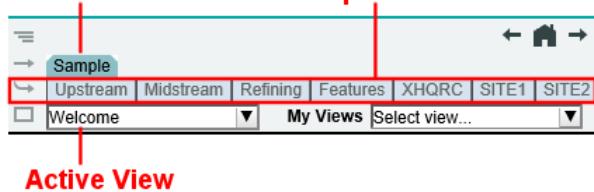
- **Down**

Displays the component members of the current component selected.

- **Views**

Lists all available views for the current component selected. The active view appears in the list box and is displayed in the main panel of the XHQ Solution Viewer.

Selected Node Components Below Node



Active View



The NavBar tab displays only the first 64 characters of the view name. If the view name is longer than this, then it is appended with "...".

When you navigate through the different views, using the navigation tabs in XHQ, a history of the views you visited is stored in a history stack. Use the **Back** or **Forward** buttons to return to any page you previously visited.

"My Favorites" Quick Lists

Quick lists allow you to set frequently used views, trends, or components for quick access. They are located along the bottom of the XHQ NavBar.



To learn how to add views, trends, or components to these quick lists, go to the topic, *Working with Views Trends and Historical Navigation*.

The names of favorite views and trends cannot include the following symbols:

^ (caret), ~ (tilde), ! (exclamation), | (pipe or vertical bar), < (less than), > (greater than), " (double quotation mark), ' (apostrophe), \$ (dollar), \ (back slash), / (forward slash), ; (semi-colon), : (colon), ? (question mark).

- **My Views**

Lists all views saved as favorites (through the "My User Setting" dialog box). By default, no view is selected. When a view is selected from this list, the view is displayed in the main panel of the Solution Viewer and the tab for the related component is activated.

- **My Trends**

Lists all trends saved as favorites. By default, no trend is selected. When a trend is selected, an XHQ Interactive Trend (XHQ Trend Viewer) opens.

For more information on trends, see the topic, *Launching the XHQ Trend Viewer from the NavBar*.

- **Explorers**

Lists all XHQ components saved as favorites (using the **NavbarExplorerItems** global property). By default, no component is selected. When a component is selected from this list, the related tab for the component is activated and the default view is displayed in the main panel of the XHQ Solution Viewer.

For more information and examples, see the topic, *To set the number of items on the Explorer drop-down list*, located in the XHQ Administrator's Guide.

General XHQ NavBar Tasks

In this section, you will learn how to launch, print, e-mail and use help from the XHQ NavBar.

To launch your solution using the XHQ NavBar

1. **Start** the XHQ Server.
2. Do one of the following:
 - Open a browser, and in the browser's URL field, type the web server location for your solution.
The URL directs your browser to the appropriate XHQ web server and the .html page with the navigation bar.

Examples:

`http://localhost/idx/xhqNavbar.html`

`http://localhost/idx/xhqNavbar.aspx`

(If XHQ Active Directory security has been enabled.)

- Else, go to the web server location for your solution, which is typically in the %SystemDrive%\Program Files\XHQ Web Root\idx directory, and click the appropriate launch file: `xhqNavbar.html` or `xhqNavbar.aspx` (if XHQ Active Directory security is enabled).

To print from the XHQ NavBar

1. Click the **Print** button .

The "Print" dialog box appears. The default printer is automatically selected.

2. Click **Print**.

To e-mail the URL of the current view

1. Click the **Send Mail** button .

This launches your mail client. The new message includes the URL of the current view.

2. **Enter** pertinent information and **send**.

To access the XHQ WebHelp Topics

1. Click the **Help** button .

This launches the XHQ help files in a new browser session.

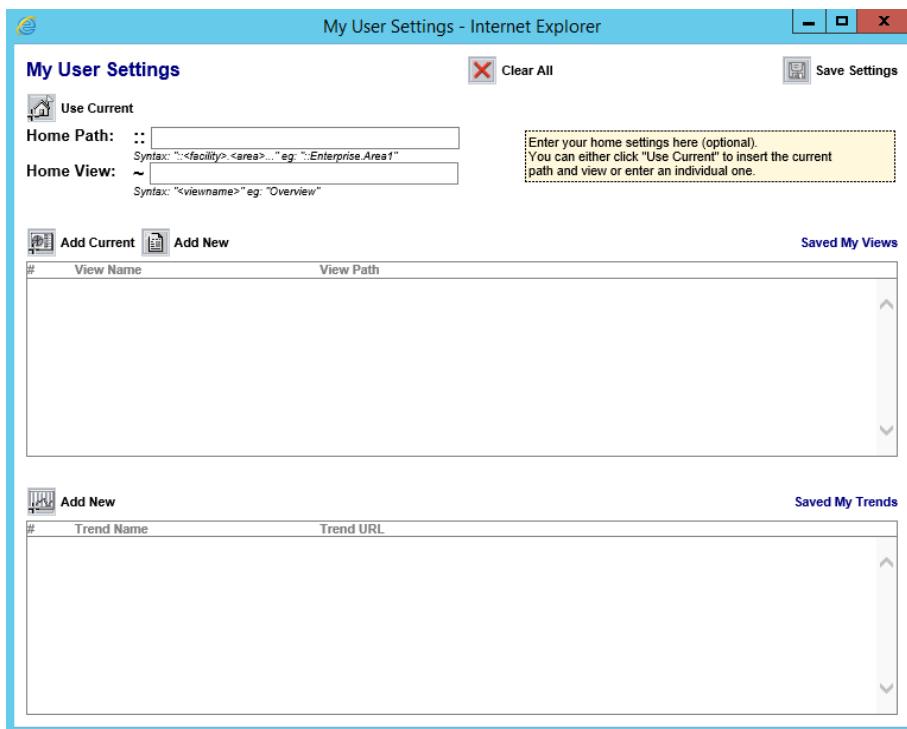
2. Do one of the following:
 - Click Contents and then click through the topics to browse through the Table of Contents.
 - Click Index and then enter a keyword or browse through the Index entries.
 - Click Search and then enter the word(s) to find.

Working with Views, Trends, and Historical Navigation

One advantage to using the XHQ NavBar is that it allows you quick access to often-used views and trends. In this section, you will learn how to set a list of "favorite" views and trends, as well as how to use historical navigation.

About My User Settings

You add to or edit your "favorites" list through the **My User Settings** dialog. To access this dialog, click on the **User Settings** button .



My User Settings dialog box

From this dialog, you can:

- Set the current view as your Home View.
- Add the current view to your Favorites list.
- Add another view to your Favorites list by entering the view path.
- Add a trend to your Favorites list by entering the trend URL.
- Delete (Clear) views and trends from your Favorites lists.



The names of favorite views and trends cannot include the following symbols:

^ (caret), ~ (tilde), ! (exclamation), | (pipe or vertical bar), < (less than), > (greater than), " (double quotation mark), ' (apostrophe), \$ (dollar), \ (back slash), / (forward slash), ; (semi-colon), : (colon), ? (question mark).

Changes to **My User Settings** do not take effect until **Save Settings** is clicked.

My User Settings Controls

Control	Description
 Clear All	Clears all values.
 Save Settings	Saves your changes. The button is initially disabled. Once a change has been made, the button becomes enabled. Note: After you click this button, the content is validated before actually saving it. If all values are valid, then changes are saved and the button becomes disabled.
 Use Current	Enters the current view information into the Home Path and the Home Value text boxes.
Home Path: :: <input type="text"/> Syntax: "::<facility>.<area>..." eg: "::Enterprise.Area1"	Displays the path for the home view. The double colon ":" at the beginning of the value is automatically assumed.
Home View: ~ <input type="text"/> Syntax: "~<viewname>" eg: "Overview"	Displays the name of the home view. The tilda (~) at the beginning of the value is automatically assumed.
 Add Current	(for View) Enters the current view information into the View Name and the View Path text boxes.
 Add New	(for View) Adds a new view entry under View Name and View Path . The default view name is "My View N", where "N" is a number that corresponds to the view's position on the list. For example, if this is the second view on the list, then the default view name becomes "My View 2".
	Removes the selected view or trend. This button appears at the end of each view and trend name.
 Add New	(for Trend) Adds a new trend entry under Trend Name and Trend URL . The default trend name is "My Trend N", where "N" is a number that corresponds to the trend's position on the list. For example, if this is the second trend on the list, then the default trend name becomes "My Trend 2".

To set a Home View

There are two ways to set the Home View.

Using the XHQ NavBar buttons

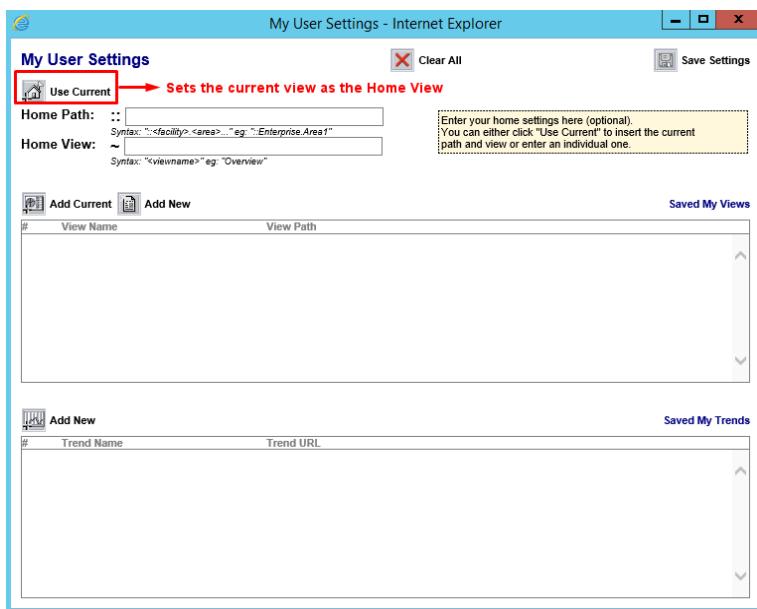
1. **Navigate** to the view.
2. Click the **Make this your Home View** button .

This sets the current view as your Home View.

Using the "My User Settings" dialog box

1. **Navigate** to the view.
2. Click the **User Settings** button .

The "My User Settings" dialog box appears.



3. Click the **Use Current** button .

The "Home Path" and "Home View" information for the current view appears in the given text boxes.

4. Click the **Save Settings** button  and close [X] the dialog box.

To add a view to My Views

There are two ways to add views to the "My Views" quick list.

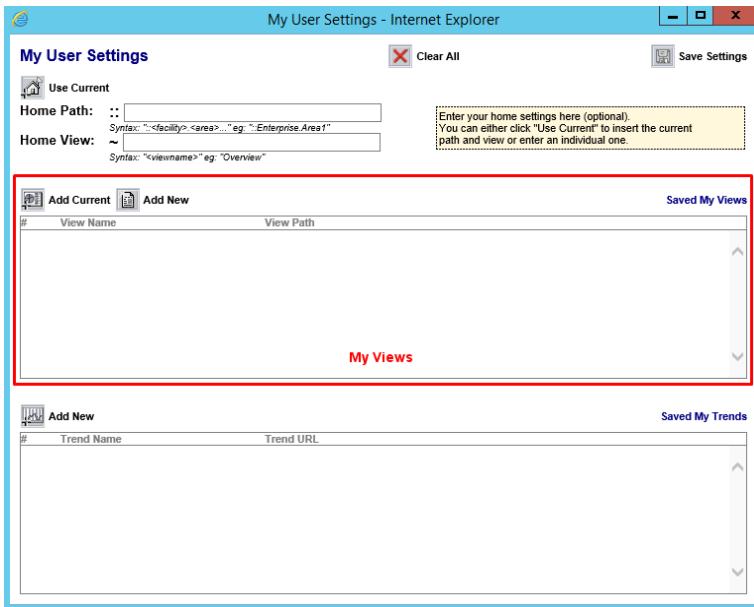
Using the XHQ NavBar buttons

1. Navigate to the view.
 2. Click the **Add View to My Views** button .
- The "Select View Name" dialog box appears.
3. In the text box, **enter a view name** and click **OK**.
- The view name appears on the "My Views" list.

Using the "My User Settings" dialog box

1. Click the User Settings button .

The "My User Settings" dialog appears.



2. In the view section, do one of the following:
 - Click the **Add Current** button  to add the current active view.

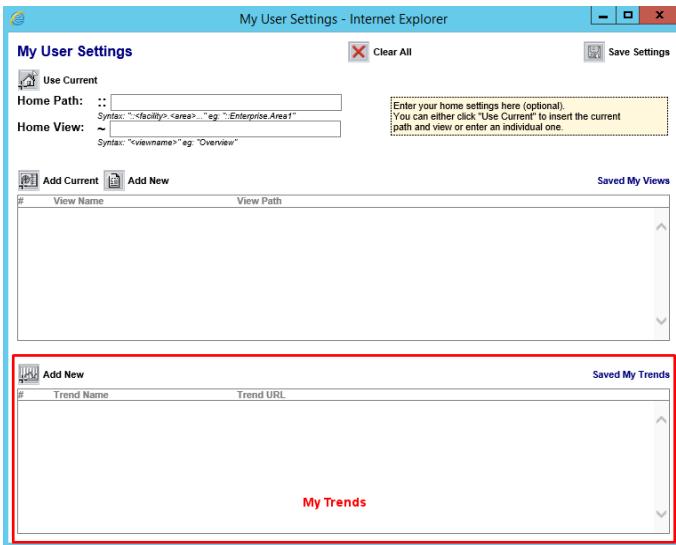
or

 - Click the **Add New** button  to enter a view name and path.
3. Click **Save Settings** and close [X] the dialog box.

To add a trend to My Trends

1. Click the **User Settings** button .

The "My User Settings" dialog appears.



2. In the view section, click **Add New** to enter a trend name and URL.
3. Click **Save Settings** and close [X] the dialog box.

Launching the XHQ Trend Viewer from the XHQ NavBar

If available, select a trend from the "My Trends" list of the XHQ NavBar to launch the XHQ Trend Viewer(also known as the XHQ Interactive Trender).



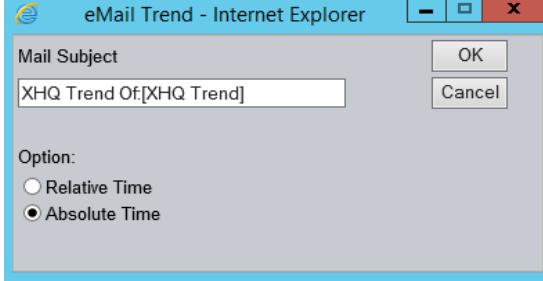
XHQ Interactive Trender

The top portion of the XHQ Interactive Trender consist of the following controls.

XHQ Interactive Trender Controls

Control	Description
My Trends <input type="button" value="▼"/>	A list of favorite trends.
	Add Trend to My Trends Launches the "Save Trend" dialog box. Allows you to save a trend under "My Trends" in either relative or absolute times.

The dialog box has a title bar 'Save Trend - Internet Explorer'. It contains a text input field labeled 'Enter Trend Name:' with the value 'trend1'. There are 'OK' and 'Cancel' buttons at the top right. Below the input field, there is a section labeled 'Option:' with two radio buttons: 'Relative Time' (selected) and 'Absolute Time'.

Control	Description
	Send Mail Launches the "E-mail Trend" dialog box. Allows you to e-mail a trend in either relative or absolute times.  A screenshot of an Internet Explorer dialog box titled "eMail Trend - Internet Explorer". It has "OK" and "Cancel" buttons at the top right. A "Mail Subject" field contains "XHQ Trend Of:[XHQ Trend]". Below it, an "Option:" label has two radio buttons: "Relative Time" (unchecked) and "Absolute Time" (checked). <hr/>
	Solution Viewer Help Launches the XHQ Solution Viewer online help in a separate browser.

About Relative and Absolute Times

Through the XHQ Interactive Trender (XHQ Trend Viewer), you can save or e-mail trends in either Relative or Absolute time. **Relative time** is an open-ended timeframe. Current time is used for the End time and the Span remains unchanged. **Absolute time** is a snapshot. Start and End times do not change.

Historical Viewing and Navigation

When you click the **History** button , you launch the Historical Navigation Toolbar. From this toolbar, you can select a historical time to apply to an XHQ view and force refresh updates at incremental time periods.



Historical Navigation Toolbar



You can also access the Historical Navigation Toolbar using the applet's `openHistoricalNavigation()` method.

JavaScript Example: `XHQ_Solution_Viewer.openHistoricalNavigation();`



When retrieving historical data, the Internet Explorer browser XHQ NavBar time matches the historical XHQ NavBar time and not the computer time. This is the expected behavior.

Once historical mode is enabled, the view automatically shows its data at the historical (or reference) time you entered. In fact, any view you navigate to will display its data in the given historical time.



In historical mode, values that are GOOD quality but are not historical data, such as collection data, will display as UNCERTAIN to indicate that the given values are not historical in nature.

For historical viewing, the following view items appear:

- Values and their timestamp.
- Values based on client-side expressions.
- Time-dependent functions.
For example: `Date()`, `Now()`, `DateAdd("day", 1)`, etc.
- Historical aggregate methods.
For example: `.avg(DateAdd("date", -1), Now())`
- Embedded trend-in-a-view.
- Historized members that are based on server-side expressions.

All other items are not affected by historical viewing and will appear in realtime.

To disable historical mode, either close the historical navigation toolbar or click the STOP toggle button (see description in the following table).

The historical navigation toolbar contains VCR-type buttons that allow you to:

Control Descriptions

The **Jog Back** (reverse) button moves the Select Time back according to the given jog increment.



Note: There is a delay time of 500 ms between jog button presses before the data in view is actually retrieved. This delay prevents constant view data retrieval, which may increase network traffic.

The **Jog Forward** button moves the Select Time forward according to the given jog increment.



Note: There is a delay time of 500 ms between jog button presses before the data in view is actually retrieved. This delay prevents constant view data retrieval, which may increase network traffic.

The **Jog Now** button moves the Reference Time to the current date and time (Now).



Starts and stops Historical Viewing.



When this toggle button is in the "down" (depressed) state, STOP, then historical mode is disabled and the XHQ data within the views is shown in real-time. In this mode, all other controls in the navigation toolbar is disabled.

When this button is returned to the "up" state, START, then historical viewing is again enabled and the XHQ data within the views is shown at the historical time entered.

The **Jog Increment** selector:



Allows you to either:

- Select from a predetermined set of jog increment times. The default values are **10s** (seconds), **10m** (minutes), **2h** (hours), **5d** (days), **5w** (weeks).
- or
- Select a given jog increment in **s** (seconds), **m** (minutes), **h** (hours), **d** (days), or **w** (weeks).

The **Reference Time** control:



Allows you to enter a valid reference date and time for the historical viewing. You simply replace (type over) the existing date/time with a new date/time and then press ENTER.

The first time the historical navigation toolbar is launched, it displays the current date/time.

Note: If the reference time is invalid, it is reset to the current time and the historical mode is then enabled.

The **Date/Time Picker** (if available):

Control Descriptions



Click on the calendar icon to launch the Date/Time Picker.



This also allows you to change the Reference Time. You have the option of manually editing the given date/time in the topmost text box or, if available, clicking on the Picker icon and using the calendar to select a specific day and/or time. You must enter a valid reference date and time.

The **Aggregation Type** selector:



Contains these options: Interpolate, Average, Min, Max, and Raw. Interpolate is the default.

The **Aggregation Interval** selector:



Is a pre-populated drop-down list with the default of 30 seconds (30s). Select from the given list or enter your own.

Note: XHQ splits the aggregation interval (DT) around the reference time (T) and asks the backend to send the aggregate over the time interval (T-DT, T+DT). Depending on the backend system, the timestamp associated with the aggregate value returned will vary.

For a PHD backend system, the timestamp returned with the aggregate value is the beginning of the aggregation interval (that is, T-DT).

The **Toggle Historical Movie Mode** button:



When clicked, extends the Historical Navigation dialog to include the start time, end time, and transition speed of the slide show.



Control Descriptions

In Movie Mode:

The **Start Time** is the time in which the Historical Viewing slide show starts playing. The **End Time** is the time in which the slide show stops playing.

The **Transition Speed** determines the number of seconds it takes to transition from one slide to the next slide.



Select from a predetermined set of transition times in seconds.

The **Play** button:



When pressed, this toggles to the **Pause** button:



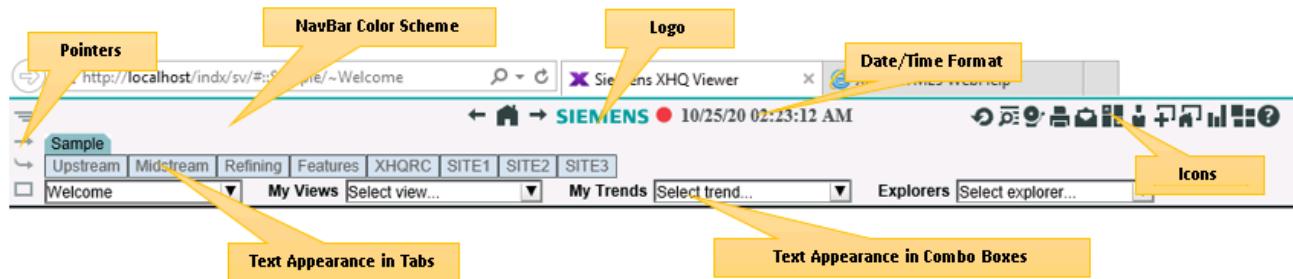
The Historical Navigation Toolbar is a *floating* toolbar. You can drag it to another location as well as resize the toolbar.

- ➊ To **resize the toolbar**, move the pointer over any boundary until it changes to a double-headed arrow. Then drag the edge of the toolbar to the desired size.
- ➋ For information on using the historical mode function `isInHistoricalMode(memberName)`, refer to the topic, *Miscellaneous Functions*, located in the XHQ Reference Guide.
- For information on using the `startHistoryNavigationSlideShow`, refer to the topic, *System Functions*, which is also located in the XHQ Reference Guide.

Customizing the XHQ NavBar

In this section, you will learn how to customize features of the XHQ NavBar by editing the `globalsettings.properties` file, which is located in the repos directory under `\XHQ\data`.

XHQ NavBar features you can customize include the following:



- The text for the tabs and the drop-down list box.
- The XHQ NavBar color scheme.
- The icons that appear on the button bar.
- The logo graphic.
- The Date/Time format of the Enterprise Server clock applet.



For a complete list of global settings for the XHQ NavBar, go to the topic, [Working with .PROPERTIES Files](#), located in the XHQ Administrator's Guide.



Because some of these are image files, editing them requires a graphics application.

Prior to modifying the XHQ NavBar, however, verify that these requirements are met.

You must:

- Have access to the `globalsettings.properties` file. If you do not have access, please see your XHQ Administrator.
- Have a text or HTML editor.
- If you are using custom images, make sure that all images are in `.GIF` format. In addition, you may need to create an images folder in the repos directory under `\XHQ\data` to house all custom images.
- (OPTIONAL) Have a graphics drawing application to edit images (such as the logo, the icons, and the pointers).

And, as you plan and implement your XHQ NavBar changes, consider the following.

You should:

- Place your custom scripts in the `%XHQ_WEB_DATA%\repos\conf\web` directory, which by default is `C:\XHQ\data\repos\conf\web`, to ensure that your customizations get backed up and moved with your repos (should you need to replace or switch the repos folder).



For more information, refer to the topic, *Location for Customized Web Script Files*, located in the XHQ Administrator's Guide.

- Write descriptive comments in every script, HTML, or any other code-based file that you create or customize. This simplifies the process of troubleshooting and application extension. And, if possible, provide examples.
- Document your customizations. This can help you recreate your changes in case you lose your work. Again, provide examples when possible.



Do not change the name or location of the standard subdirectories or move the standard files from their current locations.

To change an XHQ NavBar property

1. Find the **globalsettings.properties** file and **disable** the READ ONLY property. This file is stored at the location specified by the environment variable `XHQ_SERVER_REPO`s on the Enterprise Server (which by default is `\XHQ\data\repos`).

2. **Open** the `globalsettings.properties` file in a text editor (such as Notepad).

3. Add (or find and edit) the property.

Example: `NavbarTextMouseOverColor=255,0,0`



Property names are **case-sensitive**.

4. **Save** and **close** the text editor.

5. Start a new session of the XHQ Solution Viewer (browser client).



For a complete list of global settings for the XHQ NavBar, go to the section, *Working with .PROPERTIES Files*, located in the XHQ Administrator's Guide.

5 | Saving and Printing

Saving a View

You can save a view in either .JPEG, or .PNG format. The file is saved in the location specified by the environment variable %APPDATA%\XHQ\XHQ_devClient\repos\temp\print.

Example C:\Documents and Settings\johnsmith\Application Data\XHQ\XHQ
Path: devClient\repos\temp\print\acme.png

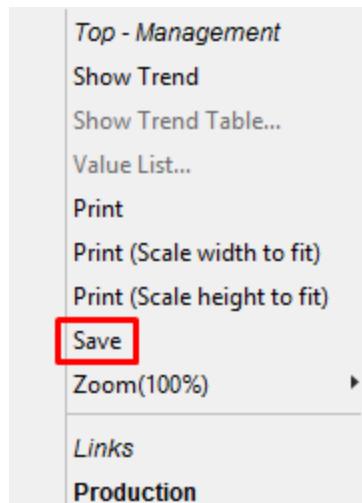


Typically, the **Application Data** folder is a hidden system folder. You will need to be logged on as an administrator to change the view properties to show hidden system files/folders.

To save a view from the XHQ Solution Viewer

1. **Right-click** on the view.

The right-click shortcut menu appears.



2. Click **Save**.

The "Save View" dialog box appears.

3. Do one of the following:

- Accept the default file name and click **Save**.

or

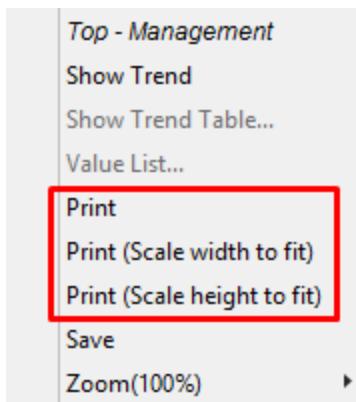
- Enter a file name and click **Save**.

Printing from the XHQ Solution Viewer

To print a view from the XHQ Solution Viewer

1. From the browser, **right-click** anywhere on the view.

A right-click shortcut menu appears.



2. Select any of the three options:

- **Print**

The entire view is scaled and printed to fit on a single page. This is equivalent to clicking the Print icon in the main toolbar of the XHQ NavBar.

- **Print (Scale width to fit)**

The view is scaled to fit the width of the page when printed.

- **Print (Scale height to fit)**

The view is scaled to fit the height of the page when printed.

The "Print" dialog box appears. The default printer is automatically selected.

3. Finally, click **Print**.



The header includes the view name, the current time, and the (logged on)user name.

View Name - ::PiPHD.AllTags~TagBrowser
Current Time - Thu Sep 25 11:10:37 PDT 2014

User - INDX\jamesma

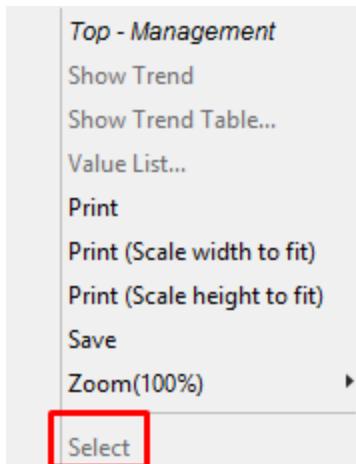
Tag	Description	Units
11FC0123	*****	179.025 R,nPI_15
11FC0123.HILIM	*****	322.750 R,nPI_15
11FC0123.LOLIM	*****	58.200 R,nPI_15
13A000K.DMCSTAT	LSFO AIR TEMPERATURE	***** FLOAT,PHD_15
13A090J.ACPRER	CO2 CONC IN H2	***** FLOAT,PHD_15
13A090J.CNSTRANT	CO2 CONC IN H2	***** FLOAT,PHD_15
13A090J.DMCSTAT	CO2 CONC IN H2	***** FLOAT,PHD_15
13A090J.LLIMIT	CO2 CONC IN H2	***** PCT FLOAT,PHD_15
13A090J.LPTARGET	CO2 CONC IN H2	***** PCT FLOAT,PHD_15
13A090J.PREDERR	CO2 CONC IN H2	***** PCT FLOAT,PHD_15

[<] [<] [>] [>]

Selected 6284 of 6284 total rows
6284

To print a Trend Chart (for a value item) from the XHQ Solution Viewer

1. Open the view that contains the value item.
2. Point the mouse cursor directly on the **value item** (where the values are updating) and right-click. The right-click shortcut menu appears.

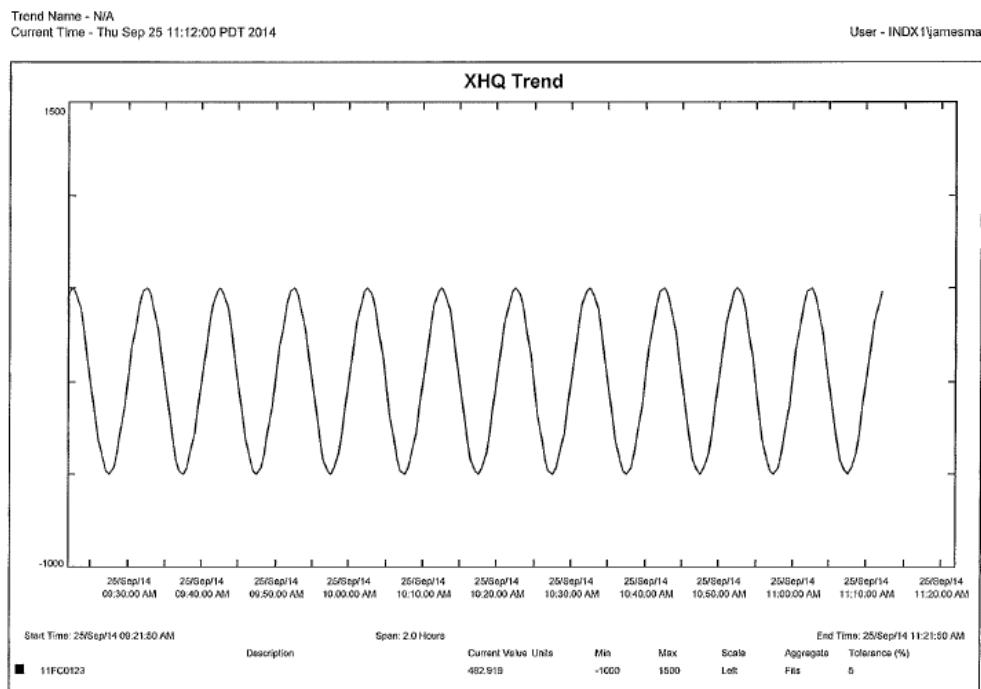


3. From the shortcut menu, click **Select**. This adds the value item to the trend list.
 4. Repeat steps 1 through 3 for each value item to trend. You can add up to sixteen variables (pens) to view in the XHQ Trend Viewer simultaneously.
- If you add more than sixteen variables, the "oldest" (the first one selected) is pushed out to make room for the "newest" (the most recently added).
5. Point to the last value item you selected and right-click. The right-click shortcut menu appears.

6. From the shortcut menu, point to **Value List**.
The "Value List" submenu appears.
7. From the submenu, **verify** that all the value items you want to trend are listed.
8. **Right-click** anywhere on the view, and then click **Show Trend**.
The XHQ Trend Viewer appears.
9. From the XHQ Trend Viewer menu toolbar, click the **Print** icon.
The "Print" dialog box appears. The default printer is automatically selected.
10. Finally, click **Print**.



The header includes the view name, the current time, and the (logged on)user name.



To print an embedded trend from the XHQ Solution Viewer

1. **Open** the view that contains the embedded trend (or trend-in-view).
2. **Point** the mouse cursor on the **embedded trend** and **right-click**.
The right-click shortcut menu.
3. **Click Print**.
The "Print" dialog box appears. The default printer is automatically selected.
4. Finally, click **Print**.

6 | Preferences

Setting Browser URL Parameters

Browser preferences allow you to control the appearance of your XHQ Solution Viewer. You can configure your browser preferences by appending the URL with the following parameters.

XHQ Solution Viewer Parameters

Parameter	Description
solutionHome	Sets an XHQ Solution Home view.
splitterPosition	Defines a splitter position for the XHQ solution home.
showSolutionHome	Shows the solution home view you have selected each time you launch your solution.
showTree	Controls whether or not the navigation tree will be visible.
showViewScrollBars	Renders the display scroll bars around the View panel visible or invisible.
hideNavBar	Hides the XHQ NavBar.
logname	Generates a custom browser log file.
perflog	Logs the view load performance.

When setting these URL parameters, XHQ does not place fully qualified view names in the URL Location field. Consequently, to add a Solution Home view or bookmark view, you must first type the explicit URL into the **URL Location/Address** field. In addition, preference names and values are **case-sensitive**. This means that you must distinguish lower case from upper case.



You can also hard-code these settings into the applet's preferences parameter.

The following is an example URL with all of the preferences specified.

```
http://www.acme.com/xhq.html?solutionHome=Acme.WestDiv.Sales~Forcasts&
splitterPosition=30&showSolutionHome=yes&showTree=yes&showViewScrollBars=yes
```



In the above URL example, note the use of the question (query) mark (?) after the web address.

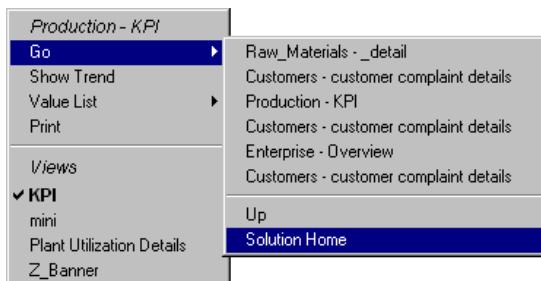
```
http://www.acme.com/xhq.html?solutionHome=Acme.WestDiv.Sales~Forcasts&
splitterPosition=30&showSolutionHome=yes&showTree=yes&showViewScrollBars=yes
```

This indicates the start of a query string. The query string is made up of several value pairs, each separated by the ampersand symbol (&).

```
http://www.acme.com/xhq.html?solutionHome=Acme.WestDiv.Sales~Forcasts&
splitterPosition=30&showSolutionHome=yes&showTree=yes&showViewScrollBars=yes
```

Setting an XHQ Solution Home View

The XHQ Solution Home view is the default home view you establish for your current session. At any time, you can return home to this view by selecting **Solution Home** from the **Go** submenu.



Right-click Shortcut Menu, Go Submenu

You can also show the solution home view you have selected each time you launch your solution applet. This is especially useful in the case when the applet's first view is being driven from the outside through the `showView` function.

To set an XHQ solution home view

1. In the browser, navigate through the tree until you locate the view you want to select as your default view.
2. With the view displayed, click twice to place the insertion point at the end of the URL address location displayed in the URL Location field, making sure you do not highlight the path displayed in the URL Location field.

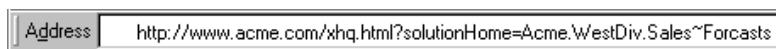


3. At the insertion point, type `?solutionHome=` and the explicit view reference for the view you select as your Solution Home view.
The explicit view reference is the path from the top node all the way to the view you select as your solution home view.

Example: `?solutionHome=Acme.WestDiv.Sales~Forcasts`



A tilde (~) precedes the view name.



If your view name includes spaces, use "%20" instead of spaces when entering your home name path in the URL Location/Address field.

Example: `?solutionHome=Acme.WestDiv.Sales~Forcasts%20June`



4. Press **Enter**.
The view refreshes. The solution home view is set.

Setting the Splitter Position

The splitter position refers to the position of the split bar, the bar that separates the navigation tree from the View panel.



Because the navigation panel is hidden by default, to see the splitter bar you must set the `showTree` preference to **yes**.

See the topic, [To display the Navigation panel](#).

You can add a default splitter position to your solution home view by adding the following at end of the URL:

```
splitterPosition=###
```

Where **###** is the percent space, from 0 to 100, that the navigation tree will occupy in the applet.

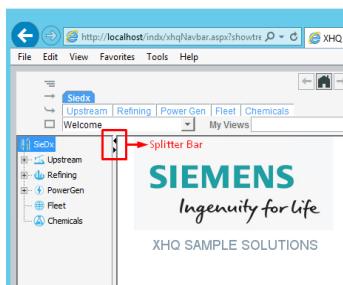
If your split bar location is 20, it moves to the right 20% of the overall applet size. The splitter position you set is not fixed. You can move the splitter at any time by selecting it and dragging it.

To display the Navigation panel

- Enter an XHQ URL the includes the `showTree` and `splitterPosition` browser preferences.

Example: `http://www.acme.com/xhqnavbar.html?showTree=yes&splitterPosition=20`

The XHQ Solution Viewer appears with the navigation panel. Note the right and left arrows at the top of the vertical splitter bar.



- Do one of the following:

- Point and click on the arrow pointing on either the left (>) or right (<) arrows to show or hide the navigation panel.

or

- Drag the splitter bar to a position.

To define a splitter position for the XHQ solution home view

1. With the browser and the URL address displayed, click **twice** to place the insertion point at the end of the URL address location displayed in the URL Location field, making sure you do not highlight the path displayed in the URL Location field.
2. At the insertion point, type a **question mark** (?) followed by the **solutionHome** preference.
3. Next, type **&splitterPosition=** and a **percentage value from 0 to +100**.
Type 20 if you want to move the splitter to the right 20 percent of the overall browser size. Type 50 if you want to move the splitter to the right 50% of the overall browser size.



The screenshot shows a browser window with the address bar containing the URL `http://www.acme.com/xhq.html?solutionHome=Acme.WestDiv.Sales~Forecasts&splitterPosition=30`. The browser interface includes a back button, forward button, and other standard controls.

4. Press **Enter**.
The view refreshes. The default splitter position is set.

Setting "show" Preferences

The "show" preferences are useful in web portal situations, where appearance or navigation may be dependent on a primary interface. These preferences have either a **yes** or **no** value.



By default the navigation panel from the XHQ Solution Viewer is hidden; that is, when you launch an XHQ URL, the left panel that displays the solution navigation tree is hidden.

"show" Preferences

Preference	Values	Default
showSolutionHome	"=yes" Shows the Solution Home view you define each time you launch the applet. "=no" This will not show the Solution Home view when you launch the applet.	=yes
showTree	"=yes" Shows the navigation tree. "=no" Hides the navigation tree.	=no
showViewScrollBars	"=yes" Shows the view scroll bars. "=no" Hides the view scroll bars.	=yes

To set "show" preferences

- With the browser and the URL address displayed, click twice to place the insertion point at the end of the URL address location displayed in the URL Location field, making sure you do not highlight the path displayed in the URL Location field.
- At the insertion point, type a **question mark (?)** followed by the **solutionHome** preference.
- Next, type an **ampersand (&)** followed by the **showTree** preference.

Example: &showTree=yes

Address http://www.acme.com/xhq.html?solutionHome=Acme!WestDiv.Sales~Forcasts&showTree=yes

- Press **Enter**.
- The view refreshes and the preference is set.

Hiding the NavBar

To hide the XHQ NavBar, use the `hideNavBar` parameter to append the URL. A "yes" value hides the NavBar; a "no" shows it.

Example:

```
http://localhost/indx/sv/?hideNavBar=yes
```

Generating Logs

To generate a **custom browser log file**, use the `logname` parameter to append the URL that launches XHQ.

Example:

```
http://localhost/indx/sv/?logname=browser1.log
```

To log the **view load performance**, add the parameter, `perflog`, to the XHQ Solution Viewer URL.

Example:

```
http://localhost/indx/sv/?perflog=true#::root/~viewA
```



For details, go to the topic, *About the Solution Viewer Log*, or the topic, *Load View Performance Logging*, which are both located in the XHQ Administrator's Guide.

Embedding the XHQ Solution Viewer into a Web Page

In this section you will learn how to embed the XHQ Solution Viewer into a web page alongside other web content.



These functions are not needed to embed the applet with other content. They are, however, required if you want the other web content to interact with the XHQ Solution Viewer.

There are three functions you use to control the XHQ Solution Viewer.

- **showView**

This method changes the currently displayed view in the viewer.

- **onShowView**

As the currently displayed view changes in the viewer, this function will be called with the object path, view name, and view type of the newly shown view.

- **onBeforeShowView**

As the currently displayed view changes in the viewer, this function will be called with the object path and view name of the newly shown view prior to that view being loaded. This will allow JavaScript variables that the view may depend on to be set.

Together, these functions support alternate navigation controls in the web page and allow DHTML or scripts in the web page to change other information in the page with the view.

Determining the Object Path

The Object Path (`objPath`) is the full path name of the object you want to view. The path must begin with two colon characters and each member in the path must be separated by a period.

```
::Acme.WestDiv.Sales
```

If the object is a record within a global collection, then the convention is different. Instead of using the full path name, only the global collection name is used for the `objPath` argument.

showView

This method changes the currently displayed view in the applet.

The description of this function is located in the current `xhq.js` file.

Syntax: `showView(objPath, viewName)`

Example: `showView('::Acme.WesternDivision.Sales', 'Forecasts')`

Parameter Description

objPath The fully qualified path of the object to view. The path must begin with two colon characters (::) and each member in the path must be separated by a period (.).

Example: `::Acme.WesternDivision.Sales`

viewName The name of the view of the object.

Example: `Forecasts`

onShowView

As the currently displayed view changes in the applet, this function will be called with the object path and view name of the newly shown view.

The description of this function is located in the current xhq.html file.



The displayed view can change either by the navigating through the tree, drilling down into a view, or by calling `showView`.

Syntax: `onShowView(objPath, viewName, type)`

Example: `onShowView('::Acme.WesternDivision.Sales', 'Forecasts', '2')`

Parameter Description

objPath The fully qualified path of the object to view. The path must begin with two colon characters (:) and each member in the path must be separated by a period (.).

Example: `::Acme.WesternDivision.Sales`

viewName The name of the view of the object.

Example: `Forecasts`

type Option:

`1` = Flat view completed

onBeforeShowView

As the currently displayed view changes in the applet, this function will be called with the object path and view name of the newly shown view prior to that view being loaded. This will allow JavaScript variables that the view may depend on to be set.

The description of this function is located in the current xhq.html file.



The displayed view can change either by navigating through the tree, drilling down into a view, or by calling showView.

Syntax: `onBeforeShowView(objPath, viewName)`

Example: `onBeforeShowView('::Acme.WesternDivision.Sales', 'Forecasts')`

Parameter Description

objPath The fully qualified path of the object to view. The path must begin with two colon characters (:) and each member in the path must be separated by a period (.).

Example: `::Acme.WesternDivision.Sales`

viewName The name of the view of the object.

Example: `Forecasts`

Writing Values from XHQ to an External System

XHQ works with other applications to allow you to write values to an external system. XHQ supports the navigation and provides the context for invoking an external web page using the URL expression. Although XHQ is a READ ONLY system, the external web page supports the WRITE operation.

To provide this functionality, XHQ leverages existing technology, such as Microsoft Active Server Pages (.aspx), Java Server Pages, Java applets or ActiveX controls embedded in a web page. Siemens Industry Software Inc. integrates these tools into a solution with the ability to pass the view context to the web page.

For example, suppose a Compressor component in XHQ includes a MaintenanceID field with the maintenance system's equipment ID. Using the ability of XHQ to generate URLs on the fly, the view (which is independent of specific compressors) can include a URL link that embeds the equipment ID. Use the following expression:

```
"http://server/write.aspx?EquipmentID=" + EquipID
```

Where EquipID is a member of the component the view is defined against.

Example: http://maintenance/workorder.aspx?EquipmentID=53471

This page would then use the equipment ID to set properties of an ActiveX control to open a work order for the correct equipment.

7 | XHQ View Usage Statistics Utility

The XHQ View Usage Statistics Utility (also known as the View Usage Tracking Utility) is a system that records the view access information and provides reports that are integrated with the XHQ Solution Viewer.

Who Can Access the Reports

By default, the following XHQ roles have access to the View Usage Tracking utility:

- Role Admin
- Model Admin
- Solution Admin

These roles can be edited using the Role Administration utility, which can be accessed from the XHQ Workbench.



For more information on this utility, go to the topic, *Security, Access, and Privileges*, located in the XHQ Administrator's Guide.

If you attempt to access the system and do not have the right privileges (that is, you do not belong to one of the roles listed above), then an error message displays.

Accessing and Touring the Utility



To use the XHQ View Usage Statistics Utility, you must enable the XHQ Application Server.

For information on how to start the XHQ Application Server, go to the topic, *About xhqboot.properties*, located in the XHQ Administrator's Guide.

The XHQ View Usage Statistics Utility is launched from the XHQ NavBar by clicking the icon.

The utility URL is <http://<server>/idx/viewstats/mainPage.aspx>.



This icon is only available from the XHQ NavBar if the logon user has the appropriate access rights.

The screenshot shows the XHQ View Usage Statistics Utility interface. The 'Reports Panel' on the left lists various reports. The 'Main Area' on the right displays a table of usage statistics. A red box highlights both the 'Reports Panel' and the 'Main Area' table.

Path	View Name	#Hits	Date	Domain&User Name
:SieDx	Welcome	1	02/14/17	XHQ\joydaludado
:SieDx.Refining	Maintenance	1	02/14/17	XHQ\joydaludado
:SieDx.Upstream.Onshore	FieldManagement	2	02/24/17	XHQ\CristinaPetrica
:SieDx.Upstream.Onshore.CFM	Overview	1	02/24/17	XHQ\CristinaPetrica
:FMPProductionWells	zPopupWellDetail	3	02/24/17	XHQ\fabioterasaka
:SieDx.Upstream	Management	7	02/28/17	XHQ\CristinaPetrica
:SieDx.Fleet	Homepage	4	02/28/17	XHQ\CristinaPetrica
:SieDx	Welcome	5	02/28/17	XHQ\laurenreyes
:SieDx.PowerGen	Overview	2	02/28/17	XHQ\laurenreyes
:SieDx.Refining	Overview	9	02/28/17	XHQ\laurenreyes
:SieDx.Upstream.Onshore	FieldManagement	3	02/28/17	XHQ\laurenreyes
:SieDx.Upstream.Offshore	Overview	2	02/28/17	XHQ\laurenreyes
:SieDx.Upstream	AssetPerformance	36	02/28/17	XHQ\laurenreyes
:SieDx.Upstream.Maintenance	XMMManagement	1	03/01/17	XHQ\CristinaPetrica

The XHQ View Usage Statistics Utility User Interface

The interface consists of three major areas:

- The **Button Bar**

Which includes the buttons for creating a new report, editing an existing report, printing a report, deleting a report, accessing the help files.



- The **Reports Panel**

Which lists all (both standard and custom) reports available for selecting.

- The **Main Area**

Which displays the statistics of the selected report.

Working with the Standard Report Formats

There are five standard report formats that come with this utility. Each is populated using a specific query.

XHQ Report: Peak and Average User Count

This report summarizes the average and peak number of XHQ users by analyzing the view access records in the XHQ database.

The screenshot shows an Internet Explorer window titled "XHQ View Statistics - Internet Explorer". On the left, there is a sidebar menu with the following options:

- Reports
- Peak and Average User Count** (selected)
- User and View Hits by Month
- User and View Hits by Week
- View Usage By User Per Day
- View Usage Per Day

The main content area displays the following information:

Monthly average number of XHQ users: 5
Monthly peak number of XHQ users: 7
Month of peak number of XHQ users: MARCH , 2017

Average by
Month

#Users	Time Period
4	DECEMBER , 2016
6	NOVEMBER , 2016
4	OCTOBER , 2016
7	MARCH , 2017
4	JANUARY , 2017
5	FEBRUARY , 2017

View Usage Tracking Utility – Standard XHQ Report for Peak and Average User Count

By default, the number of XHQ users is averaged by month. You can also elect to get the weekly or daily average.

XHQ Report: User and View Hits by Month

This report summarizes the user count and view hits per month.

The screenshot shows a web browser window titled "XHQ View Statistics - Internet Explorer". On the left, a sidebar menu under "Reports" lists "Peak and Average User Count", "User and View Hits by Month" (which is currently selected), "User and View Hits by Week", "View Usage By User Per Day", and "View Usage Per Day". The main content area displays a table for the year 2017 and a bar chart titled "Users by month".

User and View Hits by Month

Month	#Users	#Hits
January	0	0
February	5	170
March	7	434
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0

Users by month

A bar chart titled "Users by month" showing the number of users (#Users) for each month. The Y-axis ranges from 0 to 10. The X-axis lists the months from January to December. Bars are present for February (~5 users) and March (~7 users).

View Usage Tracking Utility – Standard XHQ Report for User and View Hits by Month

XHQ Report: User and View Hits by Week

This report summarizes the user count and view hits per week.

The screenshot shows a web-based reporting application titled "XHQ View Statistics - Internet Explorer". On the left, a sidebar menu under "Reports" lists several options: Peak and Average User Count, User and View Hits by Month, **User and View Hits by Week** (which is selected and highlighted in grey), View Usage By User Per Day, and View Usage Per Day. The main content area displays a table for March 2017 and two bar charts for "Users by week" and "Hits by week".

Table Data:

Week in Month	#Users	#Hits
Week 1	5	339
Week 2	5	95
Week 3	0	0
Week 4	0	0
Week 5	0	0

Users by week Bar Chart:

A bar chart titled "Users by week" showing the number of users (#Users) for each week. The Y-axis ranges from 0 to 6. The X-axis categories are Week 1, Week 2, Week 3, Week 4, and Week 5. The chart shows 5 users in Week 1 and Week 2, and 0 users in the other three weeks.

Hits by week Bar Chart:

A bar chart titled "Hits by week" showing the number of hits for each week. The Y-axis ranges from 0 to 400. The X-axis categories are Week 1, Week 2, Week 3, Week 4, and Week 5. The chart shows approximately 339 hits in Week 1 and 95 hits in Week 2, with 0 hits in the other weeks.

View Usage Tracking Utility – Standard XHQ Report for User and View Hits by Week

XHQ Report: View Usage By User Per Day

This report filters in the view path, view name, user name, and access period (the start and end dates).

The screenshot shows a web browser window titled "XHQ View Statistics - Internet Explorer". On the left, there is a sidebar with a "Reports" section containing links: "Peak and Average User Count", "User and View Hits by Month", "User and View Hits by Week", "View Usage By User Per Day" (which is highlighted in grey), and "View Usage Per Day". The main content area has a form titled "Filter by...". It includes fields for "View Path" (containing "*"), "View Name" (containing "*"), "User Name" (containing "*"), "Start Date" (containing "02/13/17"), and "End Date" (an empty field). A "Refresh" button is located at the bottom right of the filter form.

View Usage Tracking Utility – Standard XHQ Report for View Usage by User per Day



The view path, view name and user name drop-down lists are populated by the given view path, view name and user name in the XHQ database.

This report shows the number of hits on each view by each user on each day. The table is sorted in ascending order by date. And by default, it retrieves the records in the last 30 days.

This report is populated using the following query:

```
SELECT MEMBER_PATH "Path", VIEW_NAME "View Name", count(*) as "#Hits", to_char(ACCESS_TIMESTAMP, '<date_format>') "Date", ACCOUNT_ID "Domain&User Name"
FROM XHQ_SOL_VIEW_STAT_V
WHERE ACCESS_TIMESTAMP >= (sysdate - 30)
GROUP BY MEMBER_PATH, VIEW_NAME, to_char(ACCESS_TIMESTAMP, '<date_format>'), ACCOUNT_ID
```

XHQ Report: View Usage Per Day

This report filters in the view path, view name, and access period (the start and end dates).

The screenshot shows a web browser window titled "XHQ View Statistics - Internet Explorer". On the left, there is a sidebar menu under "Reports" with options like "Peak and Average User Count", "User and View Hits by Month", "User and View Hits by Week", and "View Usage By User Per Day" (which is highlighted). The main content area has a form with fields for "Filter by...": "View Path" (set to "*"), "View Name" (set to "*"), "Start Date" (set to "02/13/17"), and "End Date" (empty). A "Refresh" button is located to the right of the date fields.

View Usage Tracking Utility – Standard XHQ Report for View Usage per Day

The report shows the number of hits and number of users for each view during the given period of time. The table is sorted in descending order by the number of hits. And by default, it retrieves the records in the last 30 days.

This report is populated using the following query:

```
SELECT MEMBER_PATH "Path", VIEW_NAME "View Name", count(*) as "#Hits", to_char(ACCESS_TIMESTAMP, '<date_format>') "Date", count(DISTINCT ACCOUNT_ID) as "#Users"
FROM XHQ_SOL_VIEW_STAT_V
WHERE ACCESS_TIMESTAMP >= (sysdate - 30)
GROUP BY MEMBER_PATH, VIEW_NAME, to_char(ACCESS_TIMESTAMP, '<date_format>'), ACCOUNT_ID
```

Managing View Statistics Reports

In this section, you will learn how to:

- Add a new, custom report
- Edit an existing custom report
- Delete an existing custom report
- Print a report

Things to Note

- **Standard** XHQ Reports cannot be edited or deleted.
- **Custom** reports use read-only queries.

SIDE BAR: ABOUT XHQ_SOL_VIEW_STAT_V COLUMNS

The view `XHQ_SOL_VIEW_STAT_V` (which stores the view access information) may contain the following columns.



The column names listed below may change in later releases. Therefore, to view a current list of columns available to you, use the query `DESC XHQ_SQL_VIEW_STAT_V` when adding or editing a custom report.

Columns for the View `XHQ_SOL_VIEW_STAT_V`

Column Name	Description
CATALOG_ID	The unique identifier for the parent catalog.
CMPNT_ID	The component identifier of the object and/or view.
CMPNT_REV	The component revision identifier.
VIEW_ID	The view identifier.
VIEW_REV	The view revision identifier.
SOLUTION_ID	The unique identifier for the parent solution.
OBJECT_ID	The unique identifier for the object within the solution.
MEMBER_ID	The unique identifier for the member of an object.
MEMBER_PATH	The member XHQ path.
ACCOUNT_ID	The user name with domain.
VIEW_NAME	The accessed view name.
ACCESS_TIMESTAMP	The time when the view was accessed.
CLIENT_HOSTNAME	The client machine name.

To add a new report



The custom reports feature in the View Statistics Utility enforces use of **read-only queries**.

1. From the **View Usage Tracking utility**, in the **Button Bar**, click **New Report**.

The "New Report" window pops up.

2. Enter a **Report Name**.

3. Do one of the following:

- To use SQL query of an existing report

Go to **Copy SQL from reports**, click the drop-down arrow to see a list of all existing reports. Select the report from which you want to copy the query. This populates the **Enter SQL for the report** text box with the given query.

or

- To type in a custom SQL query

In the **Enter SQL for the report** text box, enter a custom SQL query.

4. Click **Test Query** to test the SQL query.

The results of this test query appears in the "Test Results" text box.

Example:

New Report

Report Name: Custom Report 1

Enter SQL for the report:

```
SELECT to_char(ACCESS_TIMESTAMP, 'MONTH, W, YYYY') "Time Period", count(DISTINCT ACCOUNT_ID) "#Users", count(*) as "#Hits" FROM XHQ_SOL_VIEW_STAT_V WHERE ACCESS_TIMESTAMP >= (sysdate - 30) GROUP BY to_char(ACCESS_TIMESTAMP, 'MONTH, W, YYYY')--, ACCOUNT_ID
```

Copy SQL: User and View Hits by Week

Test Results

Time Period	#Users	#Hits
MARCH , 2, 2017	5	95
FEBRUARY , 2, 2017	2	7
FEBRUARY , 4, 2017	5	160
MARCH , 1, 2017	5	339

Test Query Save Close

5. Then click **Create** and **Close**.

This returns you to the View Usage Tracking utility. Notice that the new report now appears in the "Reports" panel.

To edit an existing custom report

1. From the **View Usage Tracking utility**, in the **Report panel**, select (highlight) the custom report you want to edit.
- Standard XHQ Reports cannot be edited.
2. In the **Button Bar**, click **Edit Report**.
The "Edit Report" window pops up.

Edit Report: Custom Report 1

Enter SQL for the report:

```
SELECT to_char(ACCESS_TIMESTAMP, 'MONTH, W, YYYY') "Time Period", count(DISTINCT ACCOUNT_ID) "#Users", count(*) as "#Hits" FROM XHQ_SOL_VIEW_STAT_V WHERE ACCESS_TIMESTAMP >= (sysdate - 30) GROUP BY to_char(ACCESS_TIMESTAMP, 'MONTH, W, YYYY')--, ACCOUNT_ID
```

Test Results

Test Query Save Close

3. In the **Edit SQL for the report** text box, make your changes to the query.
4. Click **Test Query**.
The results of this test query appears in the "Test Results" text box.
5. Click **Apply** and **Close** to commit your changes.

To delete a custom report

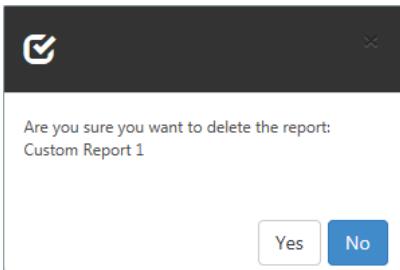
1. From the **View Usage Tracking utility**, in the **Report panel**, select (highlight) the custom report you want to delete.



Standard XHQ Reports cannot be deleted.

2. In the **Button Bar**, click **Delete Report**.

A message appears, prompting you to verify that you want to delete the selected report.



3. Click **OK**.

The database entry corresponding to the custom report is deleted.

To print a report

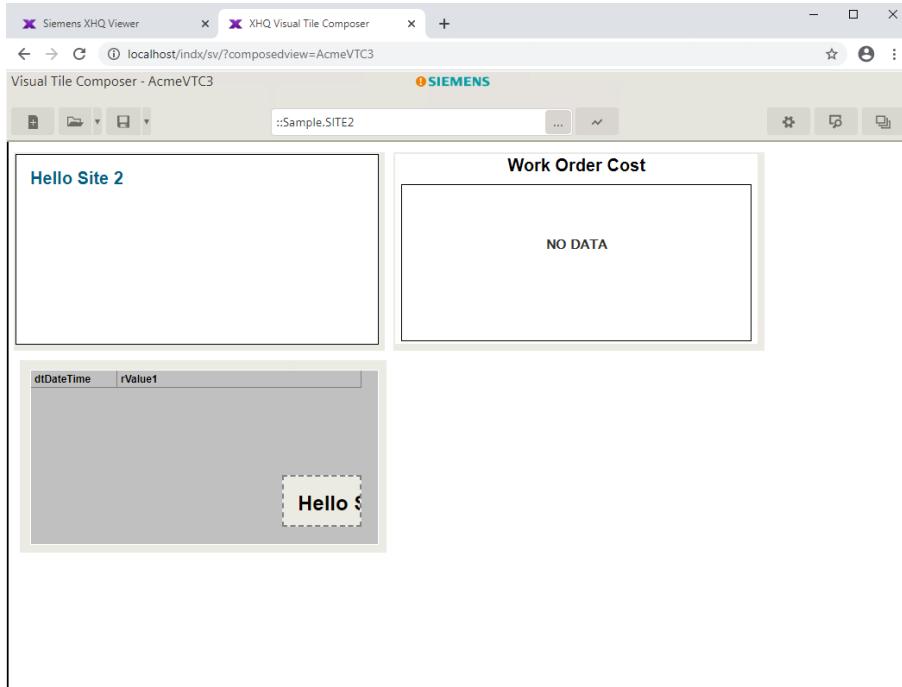
1. From the **View Usage Tracking utility**, in the **Report panel**, select (highlight) the report you want to print.
2. In the **Button Bar**, click **Print Report**.



For Standard XHQ Reports, the filter criteria are included on the print out.

8 | Visual Tile Composer

The XHQ Visual Tile Composer (VTC) is a web-based tool that allows the user with right permissions to quickly and intuitively create/modify/view/manage Composed Views (CVs). The assembled view can be either published or private.



XHQ Visual Tile Composer



XHQ Visual Tile Composer is supported in the desktop browser.

To work with the Visual Tile Composer, you must first get familiar with the following terms:

Term	Definition
Tile	A tile is the building block you see in the VTC. It contains live and contextualized graphical elements.
Composed View (CV)	This is the view that you create by arranging the tiles in VTC.

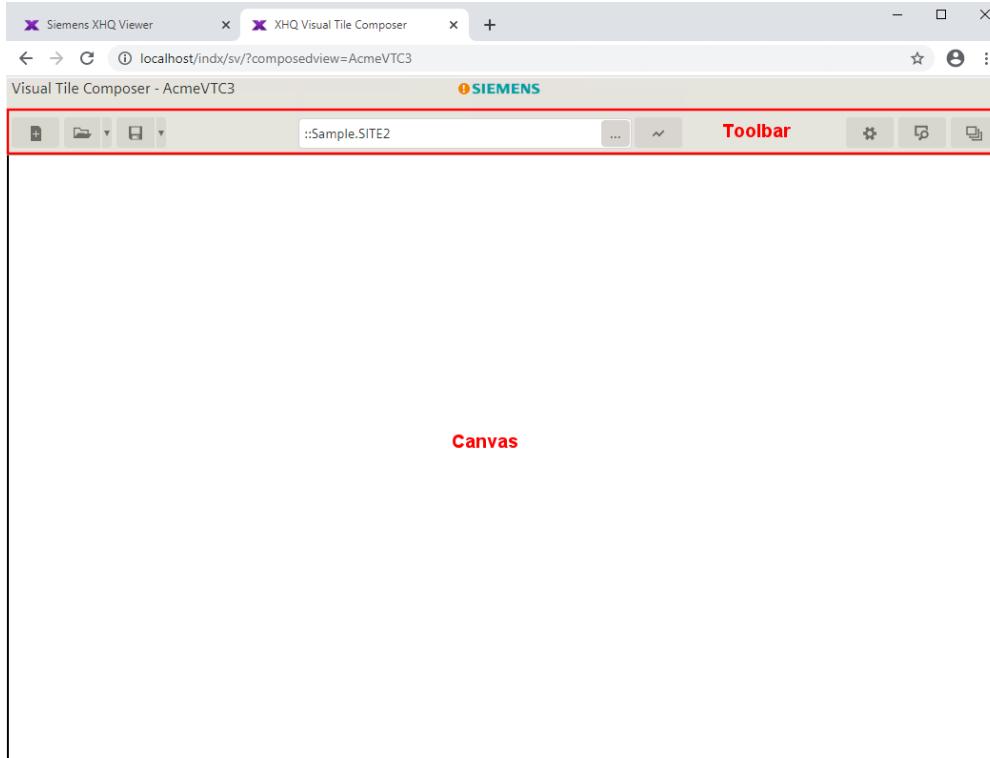
To launch VTC from the XHQ Solution Viewer

From the XHQ NavBar, click the **Open VTC** icon.



About the VTC Interface

The XHQ Visual Tile Composer consists of two main areas: the Toolbar and the Canvas.



XHQ Visual Tile Composer Interface

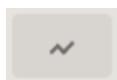
The VTC Toolbar

A screenshot of the VTC Toolbar. It includes icons for file operations and a search bar. A specific icon with a plus sign inside a square is highlighted with a red box and labeled "Icon". To its right, a "Description" box states: "Creates a new CV. It launches the New CV dialog:". Below this, a "New CV" dialog box is shown. The dialog has fields for "View Name" and a checked checkbox labeled "Grid". At the bottom are "OK" and "Cancel" buttons.

Icon	Description
	<p>You can choose to enable (check) or disable (uncheck) the Grid option. When the grid is disabled, the Tiles can "float" over other tiles. In this case, use the Order tool to establish tile layering order.</p>
	<p>Opens an existing CV. It launches this dialog:</p>
	<p>Select a CV to open. Click the Browse icon to launch the following shortcut menu (which is similar to the extended shortcut menu that appears when you click the DOWN arrow next to the Open tool icon).</p>
	<p>For more information, see the extended shortcut menu for the Open tool.</p>
	<p>Saves the CV. Click the DOWN arrow to see additional save options.</p>
	<p>For more information, see the extended shortcut menu for the Save tool.</p>
::Sample.SITE2	<p>Either enter a path/tag or click the Browse button to select a path/tag, for which mapping has been configured.</p>

Icon	Description
	<p>The Select component dialog box is displayed. It shows a tree view of components under a selected path. The tree includes categories like Sample, Upstream, Midstream, Refining, Features, and XHQRC, with specific items SITE1, SITE2, and SITE3 under XHQRC.</p> <p>OK Cancel</p>

The path selected is used to populate the Tiles list.



Opens a list of available tiles for the selected path/tag.

For more information, see the [extended shortcut menu for the Tiles tool](#).



The Properties tool allows you to update the mapped members with text values using the Map Field tab.

Properties	
ID:	TileView4
Name	Widget_Text
Shape:	Fabulous
Path/Tag:	::Sample.SITE3
Map Fields	Free Form
OK	Cancel

You can also update the configuration for the view value items using the Free Form tab. The syntax is ValueItem.value=some text.

Icon	Description
	Previews the CV in runtime mode.
	Arranges the tiles on the CV; determines layering order. This tool is enabled only when the Grid option is disabled when creating the CV.

Extended Shortcut Menus

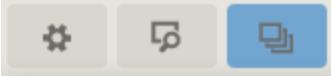
The following commands have extended Shortcut Menus.

Shortcut Menus

Command Menu	Description
Open <ul style="list-style-type: none"> Open Rename Copy URL Share Publish Add to "My Views" Delete 	<p><i>Options:</i></p> <ul style="list-style-type: none"> • Open Opens a CV. If the CV is already opened, then the CV is reloaded. • Rename Launches a dialog, prompting for the new CV name. • Copy URL Copies the CV URL to the clipboard. • Share Launches the mail client and provides the shareable URL. • Publish Opens a dialog, prompting for the location in the Solution to which the CV will be published. The published view is associated to the component. Note: The Tiles and their content are not relative to the component instances. • Add to "My Views" Adds a link to the CV in the "My Views" list on the XHQ Solution Viewer. • Delete Deletes the CV.

Command Menu	Description
Save  <ul style="list-style-type: none"> <li data-bbox="486 382 540 409">Save <li data-bbox="486 445 567 473">Save as <li data-bbox="486 508 665 536">Save and Publish 	<p><i>Options:</i></p> <ul style="list-style-type: none"> • Save Saves the current CV as a <i>personal</i> CV. • Save as Saves the current CV with a different name. • Save and Publish Saves the current CV as a personal CV and opens the Publish dialog to allow you to publish the CV in the Solution.
Tile  <div style="border: 1px solid #ccc; padding: 5px; background-color: #f9f9f9;"> <input data-bbox="360 709 719 741" type="text"/> 🔍 <ul style="list-style-type: none"> <li data-bbox="355 762 535 789">< AcmeLib1::Fabulous <li data-bbox="355 804 393 832">1x1 <li data-bbox="355 846 474 874">1x1_minus1pix <li data-bbox="355 889 470 916">1x1minus2pix <li data-bbox="355 931 470 958">1x1minus5pix <li data-bbox="355 973 425 1001">Barchart <li data-bbox="355 1015 474 1043">Barchart_SNA_ <li data-bbox="355 1058 458 1085">BubbleChart </div>	<p>The <CurrentComponent> option shows the views marked as Tile in the component property.</p> <p>When you select a Library, a submenu appears. The top level is the "Library::Shape", which is followed by a list of the associated viewlets.</p> <p>You can also do a Search across the list associated with the selected path.</p>

Submenu Example

Command Menu	Description
Order  <ul style="list-style-type: none"> Align left edges Align horizontal centers Align right edges Align top edges Align vertical centers Align Bottom Edges<hr/> Distribute vertically Distribute horizontally<hr/> Move to top Move up Move down Move to bottom	The Order tool is enabled if the Grid option (when creating the CV) is disabled.

Creating CVs

To create a composed view

1. From the XHQ Solution Viewer **Button Bar**, click the **Open VTC** icon.



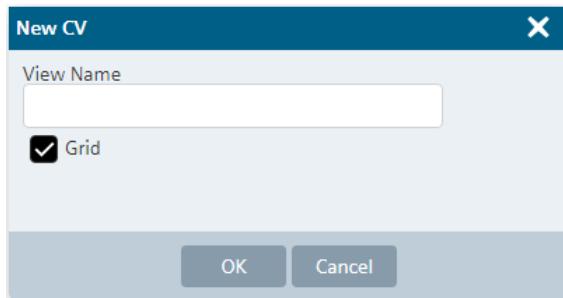
The XHQ Visual Tile Composer launches in a new tab.



By default, the path that appears is where you were in the model.

2. On the **VTC Toolbar**, click **New CV**.

The "New CV" dialog appears.



3. Enter the **View Name**.



As a general rule, avoid using *reserved words* for view names. These are words that have a specific meaning to the XHQ System.



For a list of view names to avoid, go to the topic, *Reserved Words*, located in the XHQ Developer's Guide.

4. *Optional*

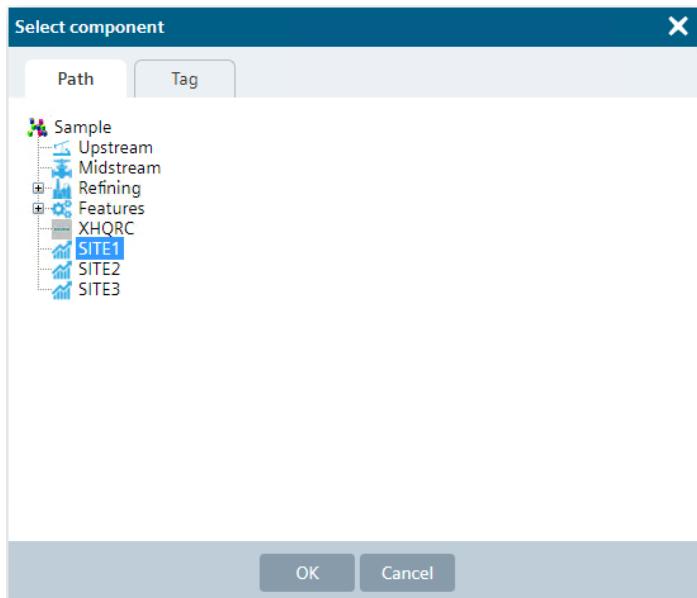
Uncheck Grid to use tile stacking/layering capabilities.

5. Click **OK**.

6. Next to the **Path tool**, click the **Browse** button to select a path/tag that has configured Tiles.



The "Select component" dialog appears.



7. In the **Path tab**, click **SITE1** and then click **OK**.

The path to SITE1 appears on the combo box.

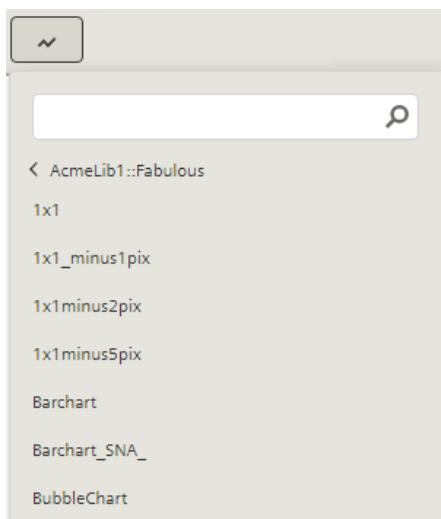
8. Click the **Tile** tool.



The library naming format is <Library>::<shape>.

9. Select the Library/Shape.

A list of the tiles for this shape appears.



10. Select the tile to add to the CV.

Once you've added all the tiles to the CV, you can rearrange them. To resize, drag the tile's lower right corner.

To configure tile properties

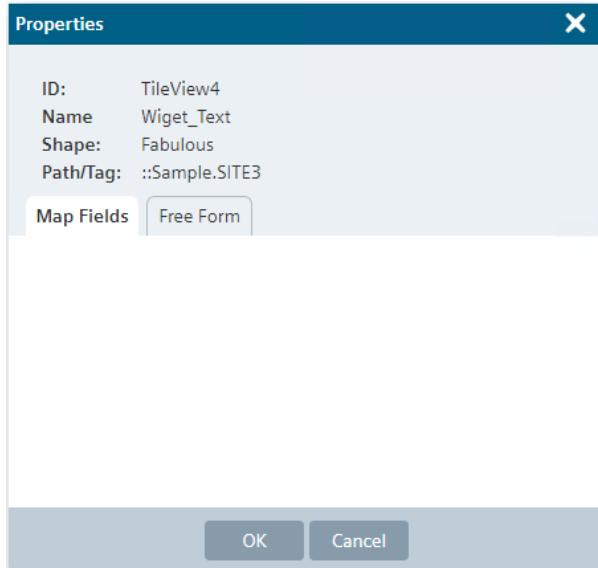
In this example, you will change the SITE1 title.



When you manually change the title, it becomes a static element.

1. Select the SITE1 title.
2. On the **VTC Toolbar**, click **Properties**.

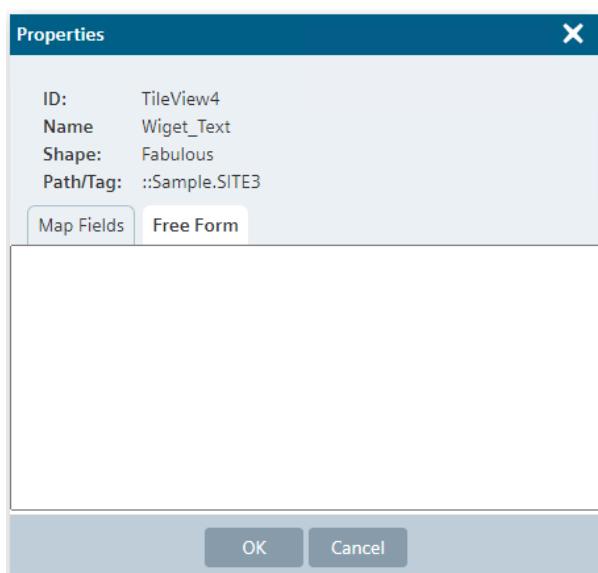
The "Properties" dialog appears.



3. In the **Map Fields tab**, check the Title and enter a new title.
4. Click **OK** and **Save**.

To use an expression to set the Title value

1. Select the tile and click **Properties**.
2. Click the **Free Form tab**.



3. Enter a **simple expression**:

```
Title.Value="Hello World"
```

4. Click **OK** and **Save**.

Responsive Layout

With the Grid enabled, the CVs responsiveness is based on the device. This takes into consideration, the number of grid columns and grid rows when building the viewlet (from the XHQ Workbench).

For example, for views created with the Grid option enabled, tiles show vertically (stacked) in phone portrait mode. Stacking also occurs in the desktop browser if the screen width is minimized to a certain point.

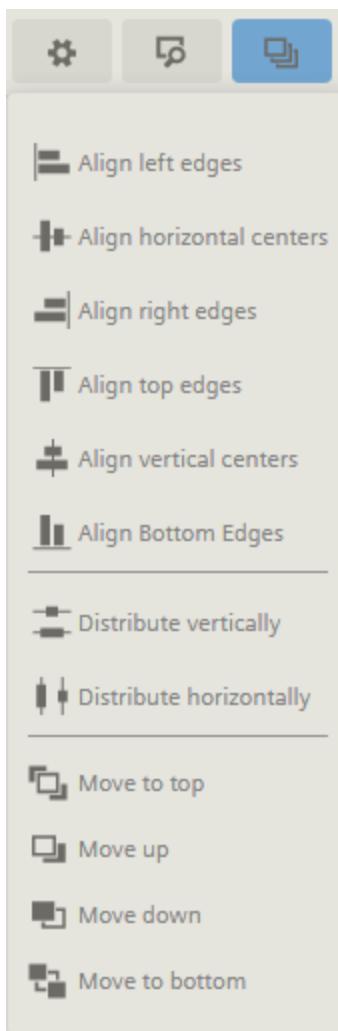
Ordering Tiles

To align or order tiles



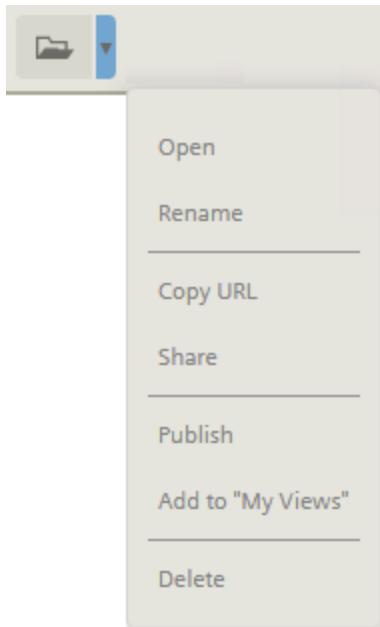
To order tiles, the Grid option must be unchecked when creating the CV.

1. Open the CV and select a tile.
2. From the **Toolbar**, click **Order**.
The extended menu for the Order tool appears.



3. Select an option.

Managing CVs

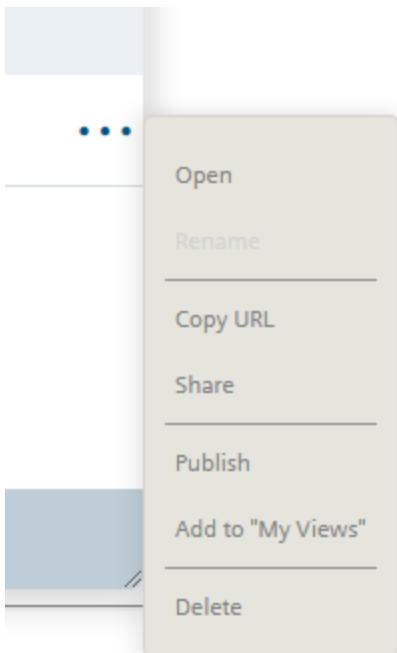


Sharing CVs

To copy URL

There are two ways to copy a URL:

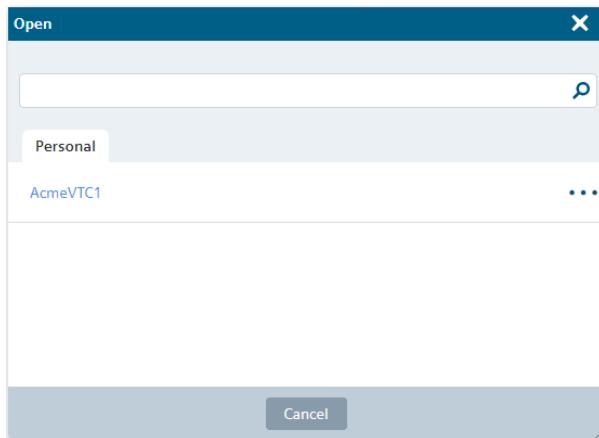
- With the CV open, click the **DOWN arrow** next to the Open tool. From the extended menu, click **Copy URL**.
or
- Click the **Open tool**. The Open dialog appears with a list of personal views. Click the Browse button next to the CV for which you want to copy the URL. From the extended shortcut menu, click Copy URL.



To email a CV link

1. Click the **Open tool**.

The "Open" dialog appears with a list of personal views.



2. Locate the CV and click the **Browse** button next to it.
3. From the extended shortcut menu, click **Share**.

Published and Personal CVs

By default, when you save a CV, it is saved as a *personal* CV. Once you publish a CV, it is then treated like a typical XHQ view and is visible wherever views are.



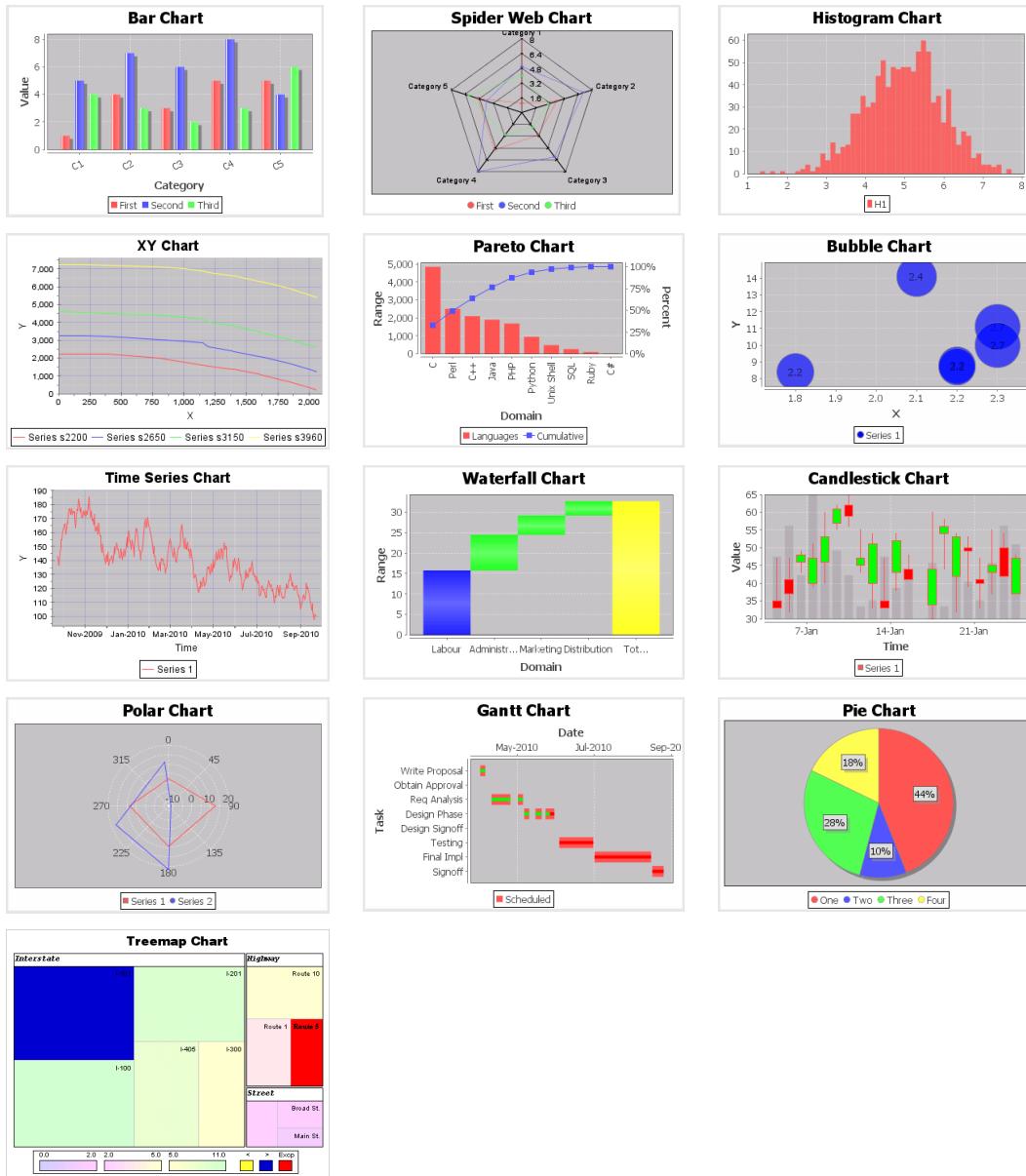
You can only publish CVs on relative paths (relative published views go to the component). Absolute paths are currently not supported.

Published CVs are saved in the component. They can be imported and exported.

Personal CVs are stored in the repos user content, under the user's folder (`Users\domain\user_name\Views`).

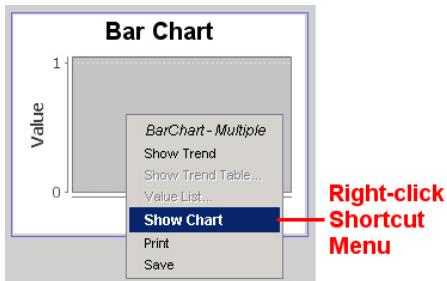
9 | Advanced Charting

XHQ Advanced Charting enables you to build dynamic charts using data from tags, aliases and members, and XHQ collections. Currently, the following charts are supported:



Launching the Interactive Chart

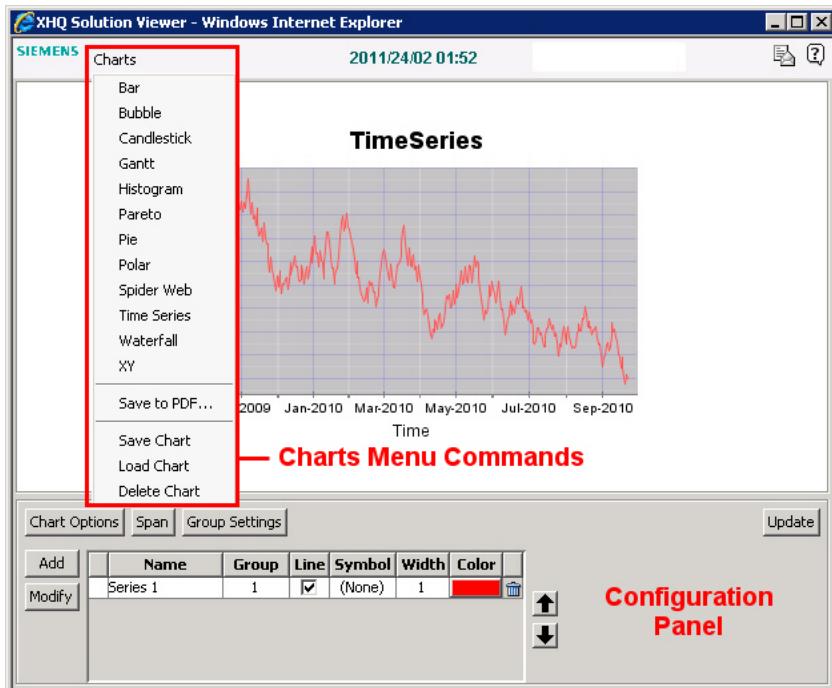
To launch the Interactive Chart from the XHQ Solution Viewer, you simply **right-click** on the view chart and select **Show Chart** from the shortcut menu.



When you mouse-over the view chart, a **thin blue outline** appears, indicating that it is a hotspot and is therefore selectable.

The Interactive Chart interface consists of three major areas:

- **The Menu Bar**
Which includes the Charts Menu and the E-mail and Help buttons.
- **The Chart Display**
- **The Configuration Panel**
Which includes the Series Table and various configuration buttons.

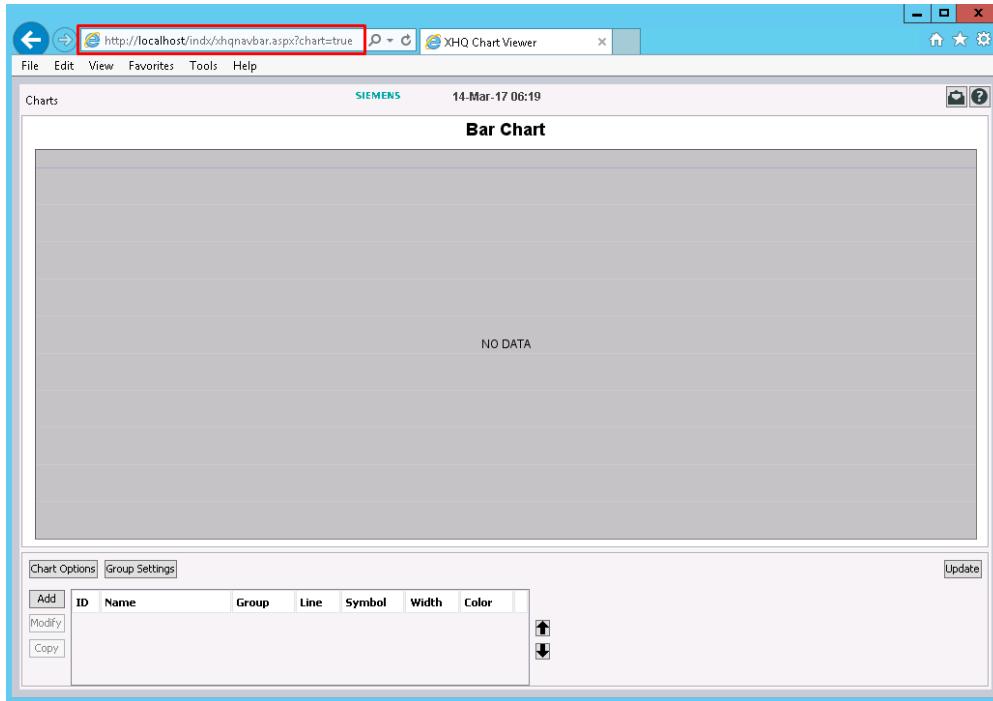


Interactive Chart Interface

Opening an Empty Chart

To launch an empty chart, you can enter a URL with the following parameter in the browser.

Example: `http://<xhqServer>/indx/xhqNavbar.html?chart=true`



Empty Bar Chart



By default, the empty chart opens with a bar chart. To select a different chart, use the **Charts** menu located at the upper left corner of the page.

To change the chart type

1. Launch an **Interactive Chart** and, from the **Menu Bar**, click **Charts**.
2. From the drop-down menu, **select** the desired chart type.



For more information, go to the topic, *Configuring a Chart*.

Basic Tasks

From the Charts Menu

From the Charts Menu, you can also save, load, or delete a chart.

Command	Description
Save to PDF	Saves the chart as a PDF file. This file is saved (by default) in the <username>\Application Data\Idx\temp\print directory.
Save Chart	Saves the chart under your profile based on your login. Note: Once saved, a chart can be loaded or deleted from the server.
Load Chart	Loads the selected chart (that was previously saved onto the server). Note: Only the charts that belong to the current user are shown in the list of available charts to load.
Delete Chart	Deletes the selected chart.

SIDE BAR: SAVING CHARTS ON THE SERVER

Chart configurations are saved on the XHQ server as XML files. When a new chart is saved, folders are created in the repos, based on the current user login.

For example, if the current login user ID is acme\johndoe, then a Users\acme\johndoe\Chart folder is created directly under the repos directory.

From the Plot Pop-up Menu



The Plot Pop-up Menu enables you to perform the following tasks.

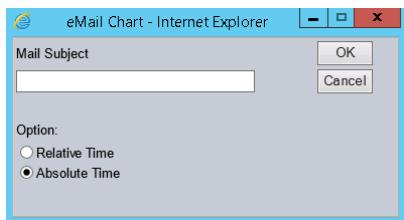
Command	Description
Zoom In	Zoom in to get a closer look at the image in detail.
Zoom Out	Zoom out to get a distant view of the image.
Auto Range	Sets the auto range for Both axes, Domain only, or Range only.
Show Chart	Displays the chart.



For more information on zooming, see the topic, [Zooming In and Out](#).

E-mailing a chart

To e-mail the Interactive Chart, click the  button. The "eMail Chart" pop-up appears.



eMail Chart Pop-up

Enter the **Subject**. If sending a Time-Series chart, select a **time** option. Click **OK** to launch your mail client.

Working with Charts

This section covers the following topics:

- About the Series Table
- Configuring a Chart
- Grouping
- Renderers
- Using Multiple Range Axes
- About Axis Minimum and Maximum Values
- Annotations
- Tag Mapping
- Embedding Charts in Collection Views
- Time Offset Types
- Setting the Units of Measure
- About the Domain Crosshair
- Interacting with the Chart Plot



The XHQ HTML5 Solution Viewer shows the order of the chart as they appear in the XHQ Workbench (except for Controls).

About the Series Table

The Series Data dialog displays the chart configuration.

Edit Series Data							
	ID	Name	Group	Line	Symbol	Width	Color
Add	s_1	"Series 1"	1	<input checked="" type="checkbox"/>	▼	1	█
Modify	s_2	"Series 2"	1	<input checked="" type="checkbox"/>	(None)	5	█
Copy	s_3	"Series 3"	2	<input checked="" type="checkbox"/>	(None)	1	█

Finish

Example: Series Table

	ID	Name	Group	Line	Symbol	Width	Color
Add	s_1	Series 1	1	<input checked="" type="checkbox"/>	(None)	1	█
Modify	s_2	Series 2	1	<input checked="" type="checkbox"/>	(None)	1	█
Copy	s_3	(Annotation)				1	█

Example: Series Table with Annotation

The Series Table enables you to set (depending on the chart type) the following options.

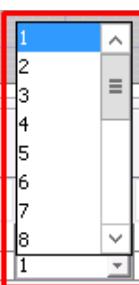
- Modify the series **Name**.
Double-clicking on the series name makes the cell editable.

Add	ID	Name	Group	Line	Symbol	Width	Color	
Modify	s_1	Series 1	1	<input checked="" type="checkbox"/>	(None)	1		
Copy	s_2	Series 2	1	<input checked="" type="checkbox"/>	(None)	1		

After renaming the series, press **Enter** to save the change.

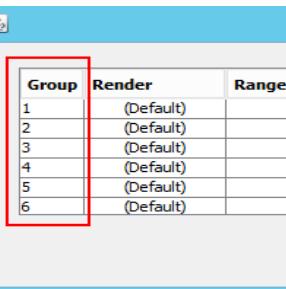
- Combine like series into **Groups**.

Click inside the Group cell to display the drop-down list.



Add	ID	Name	Line	Symbol	Width	Color	
Modify	s_1	Series 1	<input checked="" type="checkbox"/>	(None)	1		
Copy	s_2	Series 2	<input checked="" type="checkbox"/>	(None)	1		

By default, there are six groups available. Each group corresponds to a group in the Group Settings panel.



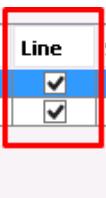
Group	Render	Range
1	(Default)	
2	(Default)	
3	(Default)	
4	(Default)	
5	(Default)	
6	(Default)	



See the topic [Grouping](#) for details.

- Show or hide plot **Lines**.

Check this option to display plot lines; deselect to hide.



Add	ID	Name	Group	Line	Symbol	Width	Color	
Modify	s_1	Series 1	1	<input checked="" type="checkbox"/>	(None)	1		
Copy	s_2	Series 2	1	<input checked="" type="checkbox"/>	(None)	1		



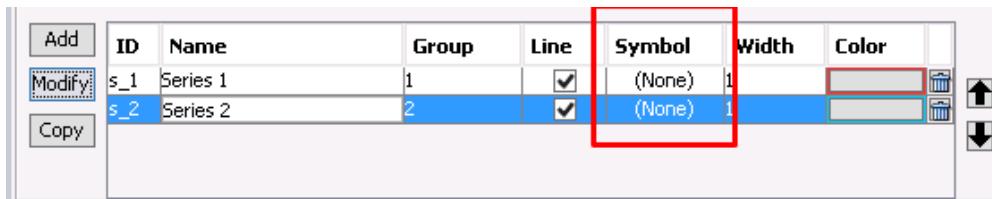
The **Line option** is only available for the **Time Series**, **XY**, and **Bar** charts.



By default, this column is *disabled* for **Bar** charts. To enable, you must select a line-based *renderer* (such as the **LineAndShape** renderer) for the Bar chart **Group**.

- Assign **Symbols**.

This option allows you to assign a symbol that marks each data point on a line chart. Click inside the Symbol cell to display the drop-down list.



Add	ID	Name	Group	Line	Symbol	Width	Color
Modify	s_1	Series 1	1	<input checked="" type="checkbox"/>	(None)	1	
Copy	s_2	Series 2	2	<input checked="" type="checkbox"/>	(None)	1	

The following symbols are available: square, circle, up-pointing triangle, diamond, horizontal rectangle, down-pointing triangle, horizontal ellipse, right-pointing triangle, vertical rectangle, and left-pointing triangle.

When **(None)** is selected, the symbol is hidden.



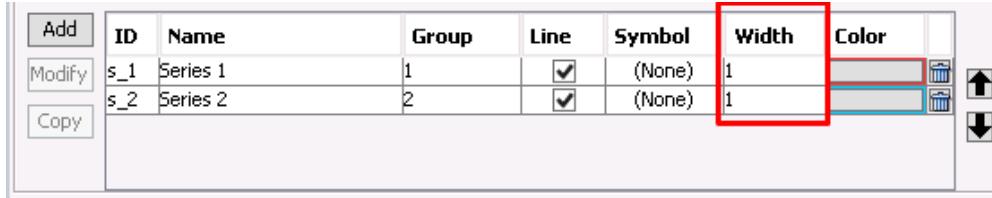
The **Symbol option** is only available for the **Time Series**, **XY**, and **Bar** charts.



By default, this column is *disabled* for **Bar** charts. To enable, you must select a line-based *renderer* (such as the **LineAndShape renderer**) for the Bar chart **Group**.

- Select plot line **Widths** (in pixels).

Click inside the Width cell to display the drop-down list.



Add	ID	Name	Group	Line	Symbol	Width	Color
Modify	s_1	Series 1	1	<input checked="" type="checkbox"/>	(None)	1	
Copy	s_2	Series 2	2	<input checked="" type="checkbox"/>	(None)	1	

You can select from line widths of 1 pixel to 9 pixels.



The **Width option** is only available for the **Time Series**, **XY**, and **Bar** charts.

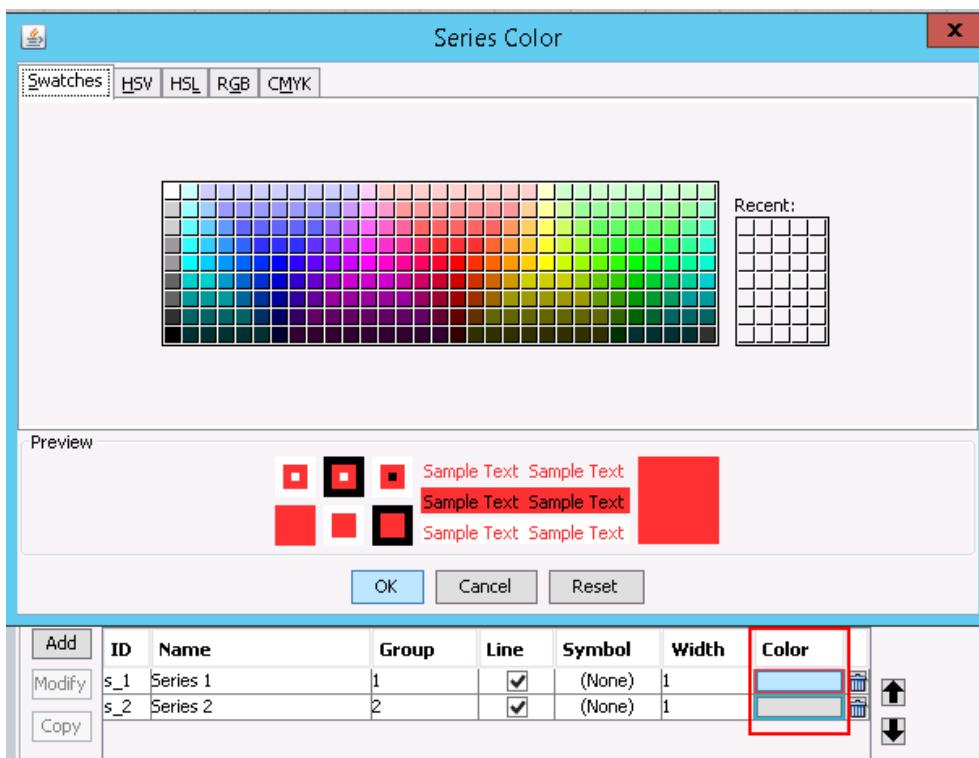


By default, this column is *disabled* for **Bar** charts. To enable, you must select a line-based *renderer* (such as the **LineAndShape renderer**) for the Bar chart **Group**.

- Select a plot **Color**.

Click the color swatch to launch the **Color Selector**.

The "Series Color" dialog appears.



For more information, go to the topic, [Using the Color Selector](#), which is located in the XHQ Developer's Guide.

- **Delete** a series from the table.

Click the garbage can icon next to the series you want to delete.

- Use the **Up and Down Arrows** to order the series.

From the table, select the series, then click either the up or down arrow to re-order the series within the table.

The screenshot shows the same table as above, but the 'Up' and 'Down' arrow buttons at the end of the 'Color' column are highlighted with a red box.

Add	ID	Name	Group	Line	Symbol	Width	Color
Modify	s_1	Series 1	1	<input checked="" type="checkbox"/>	(None)	1	
Copy	s_2	Series 2	2	<input checked="" type="checkbox"/>	(None)	1	

Configuring a Chart

Use the following procedures to configure your blank chart.

- [Adding a chart series.](#)
- [Defining the Span.](#)
- [Setting Chart Options.](#)
- [Defining the Group Settings.](#)

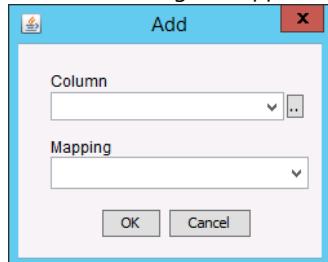
To add a series

1. Launch an empty chart.
From a browser, enter the URL with the following parameter:
`http://<xhqServer>/indx/xhqNavbar.asp?chart=true`
2. From the Charts menu, select a chart.
A blank chart appears.
3. From the **Configuration Panel**, click **Add**.
The "Add" dialog appears.
4. Depending on the chart type, select one of the following **Types**:
 - [Collection](#)
 - [Manual Entry](#)
 - [Tag](#) (for Time Series chart only)
 - [Tag Mapping](#) (for XY chart only)

Collection type

- a. For **Type**, click **Collection**.
- b. In the **Collection tab**, select a **Collection** from the drop-down list.
The list of available columns appears in the "Columns" box.
- c. Click **Add**.

The "Add" dialog box appears.



- d. For **Column**, click the **down arrow** and select a column *OR* click the **Browse button** to enter an **expression**.

Your next step is to map the columns based on the chart type you selected (for example, Time Series).

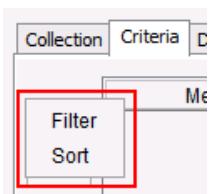


For a list of data mapping rules for each chart type, go to the topic, [Chart Mapping and Data Sets](#), located in the XHQ Developer's Guide.

- e. For **Mapping**, click the down arrow and select an option for the given chart type.

Example: For the Time Series chart, the available mapping options are Time, Value, Annotation, Tooltip, and Color.

- f. Click **OK**.
- g. OPTIONAL
Repeat the preceding steps to add more columns.
- h. OPTIONAL
To apply a constraint to filter rows before the data set is retrieved, click the **Criteria tab** and select a criteria type: **Filter** or **Sort**.



For more information, go to the topic, *Setting Criteria*, located in the XHQ Developer's Guide.

- i. OPTIONAL
Click the **Time Offset tab** and select one of the following:

- None
- Golden Run
- Compared Run

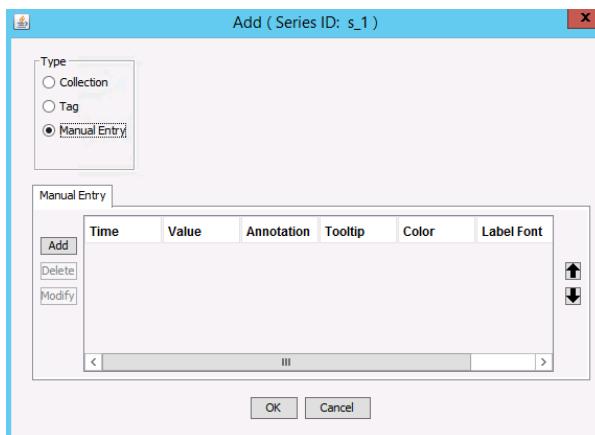
For more information, go to the topic, *Time Offset Types*.

- j. OPTIONAL
Click the Drill Down tab and select one of the following:
 - Do Nothing
 - Update Dependent Items
 - Links
- k. Click **OK** and continue to step 5.

Manual Entry type

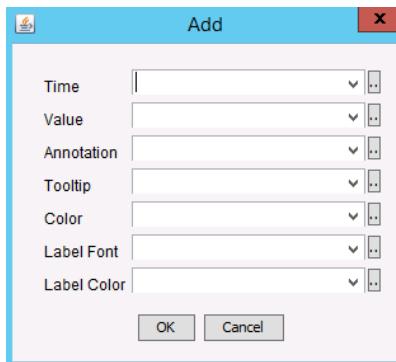
Manual Entry allows you to directly enter data when configuring a chart instead of retrieving it from a collection or a tag. As such, it is meant to be used when a *small amount of data* is needed to be *quickly entered* without having anything configured in the backend. Manual entry of data for a series is available for **all** charts, including 3D charts. Historical Navigation works with manual entry mappings that involve a time component. And all mapping fields support expression entries.

- a. For **Type**, click **Manual Entry**.



- b. From the **Manual Entry tab**, click **Add** to add a row of data.

The "Add" dialog box appears.



This dialog lists all the **possible mapping columns** available for the given **chart type**. The example dialog image above is for a Spider Web chart.

Mapping fields support **expression** entries. The context is the view itself.

The **data types** that are compatible for each mapping are as follows.

Mapping Type	Numeric	String	Time
Category		X	
Tooltip		X	
Color	X	X	
Key		X	
Annotation		X	
Item		X	
Task Name		X	
Sub Task		X	
Value	X		
Domain		X	

Mapping Type	Numeric	String	Time
Range	X		
X	X		
Y	X		
Z	X		
Box Size	X		
Shade	X		
Exception	X		
Percent Complete	X		
High	X		
Low	X		
Open	X		
Close	X		
Volume	X		
Parent Category		X	X
Time			X
Start Date			X
End Date			X
Label Font		X	
Label Color	X	X	

c. For each **mapping type**, do one of the following:

- Click the Down arrow to select a value.
- Or, click the **Browse button** to enter an **expression**.



These are some **examples of expressions** you can use.

For mappings that support the **Numeric** data type, such as *Value* or *Domain*:

```
r:'PT001'
r:PT001
r:PT001 * 2
r:PT001 + r:PT002
$EditBox1
$Value
400 * 2
```

For mappings that support the **String** data type, such as *Category* or *Tooltip*:

```
"Category1"
$EditBox2
```

For mappings that support the **Time** data type, such as *Time*:

`DateValue("01/Apr/15 12:00:00 AM")`

As stated earlier, **Historical Navigation** works with manual entry mappings that involve a time component. For example, tag "r:PT001" is configured as part of a mapping and historical navigation is enabled. So, when navigating to time period t1, the value at time t1 for tag "r:PT001" is retrieved and automatically updated in the chart.

For more information on expressions, go to the topic, [Using Expressions in Chart Configurations](#).

- d. Click **OK**.

The mapping columns you added appear in the Manual Entry table.

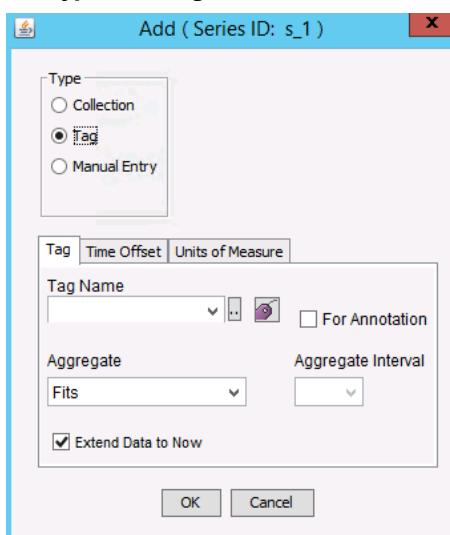
- e. OPTIONAL

Click the Up/Down arrows to rearrange the rows.

- f. Click **OK** and continue to step 5.

Tag type (for Time Series Chart only)

- a. For **Type**, click **Tag**.



- b. For the **Tag Name**, do one of the following:

- Enter a valid Tag name.
- Click the **Browse** button to enter an **expression**.



For information, go to the topic, [Using Expressions in Chart Configurations](#).

- Click the **Tag Picker button**  to select a tag from the **Tag Selector**.

- c. OPTIONAL

Check **Annotation** to use the tag for annotation.

- d. Select the **Aggregate** type.

- e. For time-sliced aggregates (for example, the Average aggregate), select an **Aggregate Interval**.

- f. OPTIONAL

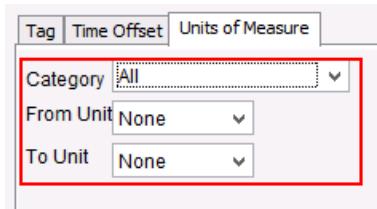
Check **Extend Data to Now**.

- g. Click the **Time Offset tab** and select the offset option.



For more information, go to the topic, *Time Offset Types*.

- h. Click the **Unit of Measure tab**.



- i. Select a **Category**, the **From Unit**, and the **To Unit**.



For more information, go to the topic, *Setting the Units of Measure*.

- j. Click **OK** and continue to step 5.

Tag Mapping type (for XY Chart only)

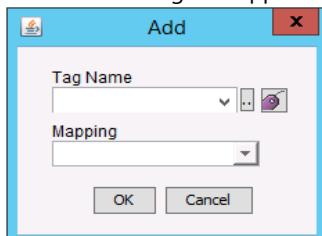
Tag Mapping allows you to plot time-correlated values (retrieved from two different tags) onto a single XY plot.



For more information, go to the topic, *Tag Mapping*.

- For **Type**, click **Tag Mapping**.
- From the **Tag Mapping tab**, click **Add**.

The "Add" dialog box appears.



- For the **Tag Name**, do one of the following:

- Enter a valid Tag name.
- Click the **Browse button** to enter an **expression**.



For information, go to the topic, *Using Expressions in Chart Configurations*.

- Click the **Tag Picker button** to select a tag from the **Tag Selector**.



For the Tag Name, click the **Browse button** to enter an expression.

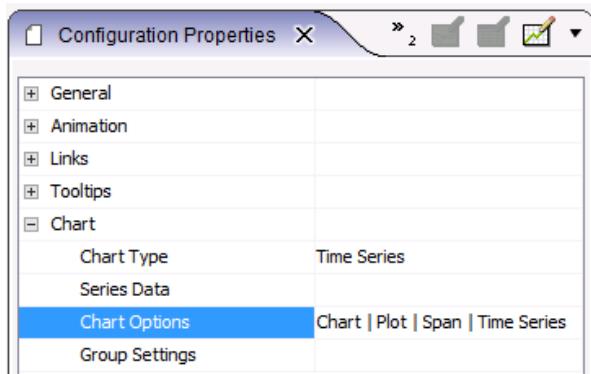
For information, go to the topic, *Using Expressions in Chart Configurations*.

- d. For **Mapping**, click the down arrow and select an option for the XY Chart.
 - e. Click **OK**.
 - f. OPTIONAL
Repeat the preceding steps to add more tags.
 - g. Click (to highlight) a tag and select an **Aggregate** type.
 - h. For time-sliced aggregates (for example, the Average aggregate), select an **Aggregate Interval**.
 - i. OPTIONAL
Repeat steps g and h.
 - j. Click **OK** and continue to step 5.
5. Click **Update**.
The mapping information is now added to the Series Table. This initial series is assigned the following default values:
- "Name" property = Series 1
 - "Group" property = 1
 - "Color" property = Blue
6. OPTIONAL
Repeat for each series you want to add.

To set chart options

In this step, you will configure properties that have to do with how your chart and plot will look, such as the title, axis labels, background colors, and so forth. Chart options are dependent on the chart type you select. For example, the Histogram Chart does not have a Span tab, but has a Histogram tab that allows you to set the bins and bounds for the chart.

1. From the **Chart properties**, for **Chart Options**, click **Chart**.



2. Enter a chart **Title** and **Subtitle** name, enclosed by quotations, OR click the **Browse button** to enter an expression.



For more information, go to the topic, [Using Expressions in Chart Configurations](#).



For the **Subtitle**, multiple lines can be entered, separated by a
.

Examples:

SubtitleLine1
SubtitleLine2

"This is line 1"
"This is line 2"

3. OPTIONAL

In the **Domain group**, do the following:



The **Domain group** options are not available for the Polar, Pie, and Spider Web charts.

- a. Enter the **Axis Label**.

This is the label for the domain axis.

- b. Enter the **Value Format** for the tick labels.



For a Numeric Axis

The value format must be a valid `DecimalFormat`.

For a Date Axis

The value format must be a valid `SimpleDateFormat`.

- c. Select a **Tick Label Angle**, which tilts the tick label at a given angle.



For charts with categories on the domain, the available options are from 0° (degrees) to 90°, incrementing by 10°. For all other charts, the options are limited to 0° and 90°.

- d. Enter a **Minimum Value** for the domain axis (enabled for the XY chart only).

- e. Enter a **Maximum Value** for the domain axis (enabled for the XY chart only).

4. OPTIONAL

Click the **color block** (square) to select a **Background Color** for the chart area.

The Color Selector appears.



For more information, go to the topic, [Using the Color Selector](#), located in the XHQ Developer's Guide.

5. OPTIONAL

Check **Show Legend** to display the legend at runtime, and select the legend location to **Bottom**, **Left**, **Right**, or **Top**.

6. OPTIONAL (enabled for the Time Series and XY charts only)

Check **Split Chart Groups** to separate charts by groups that share a common domain axis.



For more information, go to the topic, [Grouping](#).

7. OPTIONAL

Check **Allow Interaction with Chart** to enable the end-user to interact with the chart within the view.

8. OPTIONAL (enabled for the Time Series, XY, and Bar charts only)

- Check **Y-axis Color Based on Series** to set the Y-axis color to the series color. This is the default behavior.
- Or, leave unchecked to set the Y-axis color to black, which is the same color as the X-axis.

9. OPTIONAL

For **Tick Mark Label Font & Color**, check **Domain** and/or **Range**.



The following charts support the Tick Mark Label Font & Color feature:

- XY
- Time-Series
- Bar
- Bubble
- Candlestick
- Pareto
- Waterfall
- Polar
(the Domain is for the angle labels,
and Range is for the value range
labels)

- Gantt
- Histogram
- Spiderweb
(only the Range is available to set all tick labels in the chart)

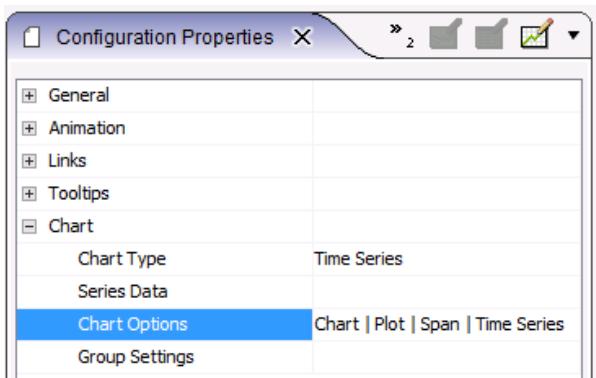
The Pie and Treemap charts do not support this feature because they do not have a domain or a range.

- a. Click **Font** and select a font type and size.
- b. Click the color block to select a **Color** for the Domain and/or Range.
If the Range portion of Tick Mark Label Font & Color is enabled, the color that is set overrides any default color from the series.



See the topic, *Label Font and Color* for information on how to use the label font and label color mappings.

10. Click **Plot**.



11. Select an **Orientation** (enabled for the Bar and XY charts only).
12. Configure the **Annotation** (enabled for the Time Series and XY charts only).
 - Select **Pointer** to include an arrow pointing to a specific (x,y) location. Determine an arrow **Angle** in degrees.
 - Select **Text** to show the annotation as a text label near a specific (x,y) location.
 - Set the **Text Anchor** to define a point on the annotation's framing rectangle that is aligned with the specific (x,y) location.



For more information, go to the topic, *Annotations*.

13. OPTIONAL (enabled for the Time Series and XY charts only)
Check **Domain Crosshair**. This displays a domain crosshair at the center of the plot.



For more information, go to the topic, *About the Domain Crosshair*.

14. Click the color block to select a **Background Color** for the plot area.
15. Configure the major **Grid Lines** (for the Time Series and XY charts only)

Option	Description
Horizontal Only	Display only horizontal grid lines.
Vertical Only	Display only vertical grid lines.
Both	Display both horizontal and vertical grid lines.
None	Hide the grid

16. Configure the **Minor Grid Lines** (for the Time Series and XY charts only).

17. Select the major **Grid Lines Color**.

18. Select the **Minor Grid Lines Color**.

19. Check the box to **Show Item Label** at runtime.



For more information, go to the topic, [Label Font and Color](#).

20. Check the box to **Show Plot Border** at runtime.

21. Depending on your chart type, do one of the following:

- Go directly to step 20.

- Configure the following **Span** options (for Time Series and XY charts only):



Click the **Browse button** to enter an expression.

For more information, go to the topic, [Using Expressions in Chart Configurations](#).

Option	Description
Start Time	Enter the start time. Note: This supports the Date/Time expression.
End Time	Enter the end time. Note: This supports the Date/Time expression.
Duration	The duration, together with the Unit option, specifies the amount of time to plot. If both Start Time and End Time are not specified, but the Duration is, then the span for the plot is controlled by the Duration; in which case, the end time is the current time. Note: The types supported by this expression are: integer, long, float, double, decimal, or time interval.
Unit	Defines the units in weeks, days, hours (default), minutes, or seconds.
Tag Mapping Show History	<i>For the XY chart only.</i> Check to select the Historical mode. For more information, go to the topic, Tag Mapping .

- Configure the following **Histogram tab** options:



Click the **Browse button** to enter an expression.

For more information, go to the topic, [Using Expressions in Chart Configurations](#).

Option	Description
Bins	The number of bins to use for the Histogram chart.
Lower Bound	The lower bound to use for the bins setting.
Upper Bound	The upper bound to use for the bins setting.

- Configure the following **Bar tab** options:



Click the **Browse button** to enter an expression.

For more information, go to the topic, [Using Expressions in Chart Configurations](#).

Option	Description
Interval Width	Is used to calculate the start and end x-values. This allows the bars to be separated for a better visual display. The default is 2. This option is only enabled when the Domain and Range mappings are used.
Item Margin	Sets the spacing between the bars within each category. The value is expressed as a percentage of the available bar width. At runtime, this margin is distributed evenly between each bar. The larger the percentage, the larger the space is in between each bar. The default is "0.10" (or 10%). To remove the space between the bars (in the same category), set the Item Margin to 0.0.

- For a Spider Web chart, configure the following **Spider Web tab** options:

Option	Description
Show Web Line Labels	Check to display the number labels on each web line.
Fill Web	Check to fill each web series.
Number of Web Lines	Set the number of web lines for the Spider Web chart. The default is 5 lines.
Axis Label Gap	The gap between the axis and the label. Specify this value as a percentage of the available drawing space. The default value is 0.05 (which is 5 percent).
Interior Gap	The space between the edge of the plot and the plot itself. This is the region where the axis label appears. Specify this value as a percentage of the available drawing space. The default value is 0.10 (which is 10 percent).
Start Angle	The starting angle, in degrees , of the plot. The default is 90 degrees.

- For a Gantt chart, configure the following **Gantt tab** options:

For each of the options below, you can click the **Browse button** to enter an **expression** or click the **color block** to use the **Color Selector**.



Click the **Browse button** to enter an expression. For more information, go to the topic, [Using Expressions in Chart Configurations](#).

Click the **color block** to use the **Color Selector**

Option	Description
Task/Subtask Color	Set the color of all the tasks and subtasks.
% Complete Color	Set the color of the section representing completed tasks.
% Incomplete Color	Set the color of the section representing incomplete tasks.

- For a Waterfall chart, configure the following **Waterfall tab** options:



If you set these options, then the last value inputed is ignored. Instead, the sum of all previous values are displayed. By default, the last value inputed is used.

Option	Description
Calculate Total	When checked, the last bar is calculated automatically. There's no need to include the total in the data set when this option is checked.
Total Label	The label used for the total bar. The default label is Total . This field is enabled only when the Calculate Total box is checked.

- For a Treemap chart, configure the following **Treemap tab** options:



If available for the option, click the **Browse button** to enter an expression. For more information, go to the topic, [Using Expressions in Chart Configurations](#).

Click the **color block** to use the **Color Selector**

Option	Description
Item Color Logic	Select whether to use the color table for the item color. <i>Options:</i> <ul style="list-style-type: none"> None - The color of the item is specified by the Background Color for the Item group. Color Table - You select the item color using the color table.
<i>Item Group:</i>	<i>These options configure the items that represent the leaves.</i>
Background Color	The background color of the item if the color table is not used.
Label Color	The item label color.
Label Alignment	The item label alignment. <i>Options:</i> Bottom Center, Bottom Left, Bottom Right, Center, Center Left, Center Right, Top Center, Top Left, Top Right
Label Font	The item label font.
<i>Exception Group:</i>	<i>These options configure the exception items. Exception items are specifically marked by the Exception mapping column.</i>
Background Color	The exception item background color.
Label Color	The exception item label color.
Label Alignment	The exception item label alignment. <i>Options:</i> Bottom Center, Bottom Left, Bottom Right, Center, Center Left, Center Right, Top Center, Top Left, Top Right

Option	Description
Label Font	The exception item label font.
<i>Category Group:</i>	<i>These options configure the category items.</i>
Background Color	The background color of the category panel.
Border	The color of the category border.
Label Color	The category label color.
Label Alignment	The category label alignment. <i>Options:</i> Top Left, Top Center, Top Right
Label Font	The category label font.
<i>Color Table Exception Group:</i>	<i>These options configure the items that fall below the smallest value or above the largest value in the color table.</i>
Below Min Value Color	The background color of the items that fall below the minimum value of the color table.
Below Max Value Color	The background color of the items that fall above the maximum value of the color table.
Value Number Format	Specifies the format of all values that appear in the treemap.

22. OPTIONAL (for Time Series chart only)

Click the **Time Series tab** and configure the following options.



If available for the option, click the **Browse button** to enter an expression. For more information, go to the topic, [Using Expressions in Chart Configurations](#).

Click the **color block** to use the **Color Selector**

Option	Description
Time Offset	A Time Offset chart is a Time Series chart that has one series serving as the Golden Run , with the other remaining series as Compared Run that are offset by the Compared Run Time. For more information, go to the topic, Time Offset Types.
Use Domain Tick Unit	Select this checkbox to show the tick labels of actual point values on the domain axis (x-axis) only. For more information, go to the topic, Setting the Tick Unit.
Item Margin	Sets the spacing between the bars. The value is expressed as a percentage of the available bar width. At runtime, this margin is distributed evenly between each bar. The larger the percentage, the larger the space is in between each bar. The default is "0.10" (or 10%). To remove the spaces between the bars, set the Item Margin to 0.0.

23. Click **OK**.

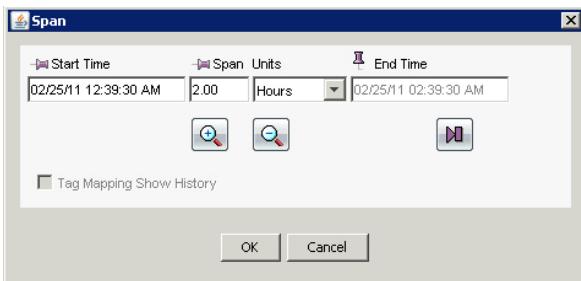


To set options for **3D Charts**, go to the topic, [Setting Chart Options for 3D Charts](#).

To define the span (for Time Series and XY charts only)

1. From the **Configuration panel**, click **Span**.

The "Span" dialog box appears.



2. Set the **Start Time**, **Span Units**, and **End Time**.

3. OPTIONAL

Click the button to zoom in 50% of the span.

4. OPTIONAL

Click the button to zoom out one full span.

5. OPTIONAL

Click the button to forward to real-time.

6. OPTIONAL (enabled for the XY chart only)
Check Tag Mapping Show History.

7. Click **OK** and then click **Update**.

Grouping

You can group multiple series together as a unit using the Group column in the Series Table.

Add	ID	Name	Line	Symbol	Width	Color
Modify	s_1	Series 1	<input checked="" type="checkbox"/>	(None)	1	
Copy	s_2	Series 2	<input checked="" type="checkbox"/>	(None)	1	

Series Table: Group Column

Grouped series share the same settings: Renderer, Range Axis Label, Location, and Min/Max values. For example, if a Renderer is defined for a group, then all the series that belong to that group will have the Renderer applied to them. The **Group Settings** dialog is used to define these settings.

Gro...	Render	Range Axis Label	Value Form...	Location	Min	Max
1	(Default)			Left		
2	(Default)			Left		
3	(Default)			Left		
4	(Default)			Left		
5	(Default)			Left		
6	(Default)			Left		
7	(Default)			Left		
8	(Default)			Left		
9	(Default)			Left		
10	(Default)			Left		
11	(Default)			Left		
12	(Default)			Left		
13	(Default)			Left		
14	(Default)			Left		
15	(Default)			Left		
16	(Default)			Left		
17	(Default)			Left		
18	(Default)			Left		
19	(Default)			Left		
20	(Default)			Left		

Finish

Group Settings Dialog

All series in a group can be combined into a **single** chart when the **Split Chart Groups** option (which is located in the **Chart Options** dialog) is checked.

To define the group settings

The "Group Settings" dialog allows you to set renderers and range axis labels for a group.



For additional information, go to the topics:

- [Grouping](#)
- [Renderers](#)
- [Using Multiple Range Axes](#)

1. From the **Configuration panel**, click **Group Settings**.

The "Group Settings" dialog box appears.

Edit Chart Group Settings

Group	Render	Range Axis Label	Value Format	Location	Min	Max
1	(Default)			Left		
2	(Default)			Left		
3	(Default)			Left		
4	(Default)			Left		
5	(Default)			Left		
6	(Default)			Left		
7	(Default)			Left		
8	(Default)			Left		
9	(Default)			Left		
10	(Default)			Left		
11	(Default)			Left		
12	(Default)			Left		
13	(Default)			Left		
14	(Default)			Left		
15	(Default)			Left		
16	(Default)			Left		
17	(Default)			Left		
18	(Default)			Left		
19	(Default)			Left		
20	(Default)			Left		

Finish

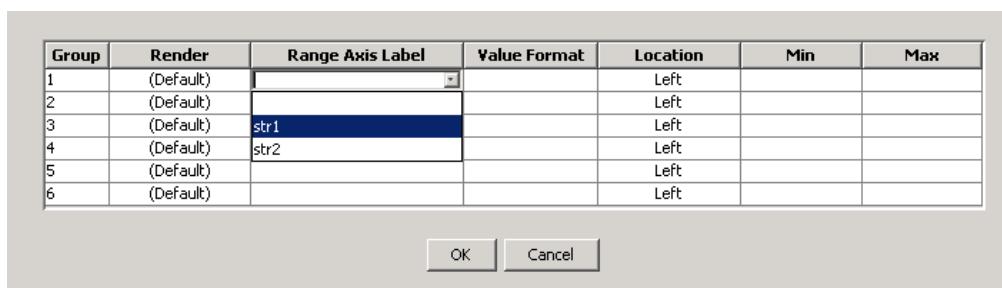
2. Do the following for **Group 1**:

- Click inside the **Render** cell and select the renderer.

Group	Render	Range Axis Label	Value Format	Location	Min	Max
1	(Default)			Left		
2	(Default)			Left		
3	XYArea			Left		
4	XYSpline			Left		
5	XYBar			Left		
6	(Default)			Left		

OK **Cancel**

- Click inside the **Range Axis Label** cell and select the label for Group 1.



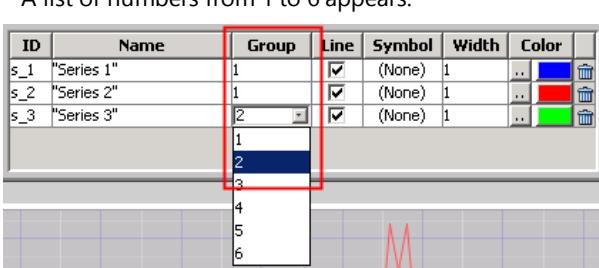
- Click inside the **Value Format** cell and select a value.
 - Select the **Location** of the Range axis.
 - Enter a numeric value for **Min** (which is the minimum value for the Range axis).
 - Enter a numeric value for **Max** (which is the maximum value for the Range axis).
3. Repeat step 2 for additional groups.
4. Click **OK** and then click **Update**.

EXAMPLE: SPLITTING CHART GROUPS

The following three series (for a Time Series chart) are configured as shown in the following figure:

ID	Name	Group	Line	Symbol	Width	Color
s_1	"Series 1"	1	<input checked="" type="checkbox"/>	(None)	1	[...]
s_2	"Series 2"	1	<input checked="" type="checkbox"/>	(None)	1	[...]
s_3	"Series 3"	2	<input checked="" type="checkbox"/>	(None)	1	[...]

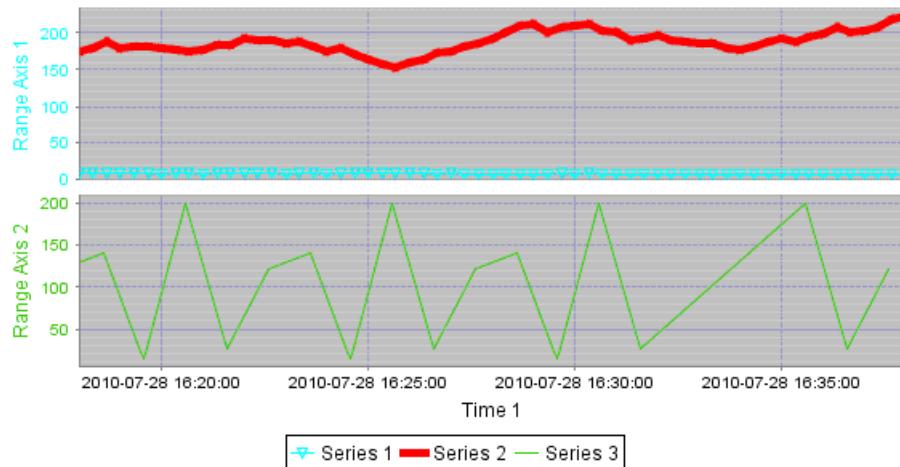
- Series 1 and 2 belong to **Group 1**.
 - Series 3 belongs to **Group 2**.
1. To change the group, click inside the **Group** cell.
A list of numbers from 1 to 6 appears.



2. Select a group number.
3. Next, click **Group Settings**.
The "Group Settings" panel appears.
4. In the **Group Settings** panel, set the **Range Axis Label** for Group 1 and 2.
5. Click **OK** to close the dialog.
6. Click **Chart Options**.
The "Chart Options" panel appears.

7. On the **Chart tab**, check the **Spit Chart Groups** option.
8. Click **OK** and the **Update**.

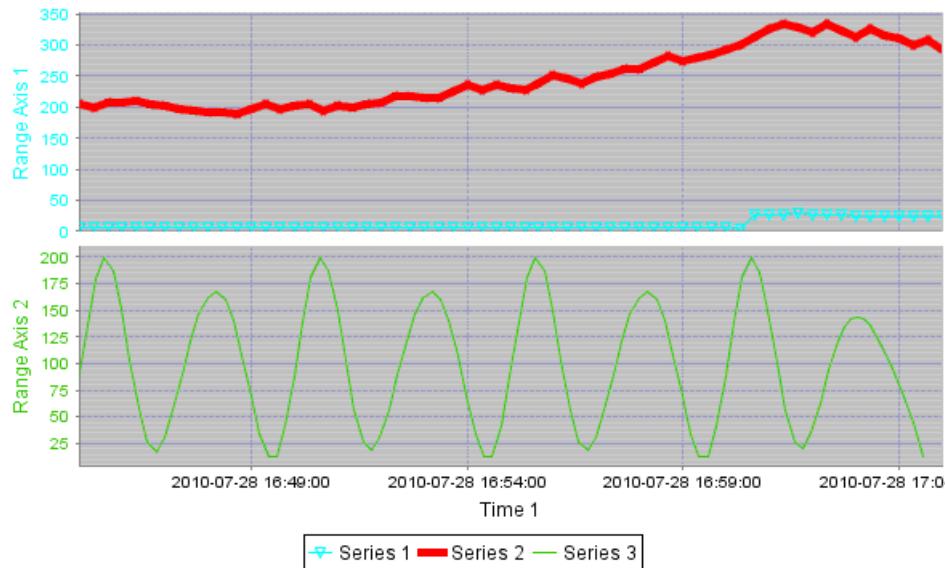
At runtime, the resulting plot contains Group 1 (top) and Group 2 (bottom):



To smooth out the line, open the Group Settings and apply the **XYSpline Renderer** to **Group 2**.

Group Settings		
Group	Render	Range Axis Label
1	(Default)	str1
2	XYSpline	str2
3	(Default)	
4	(Default)	

Note the plot difference in Group 2:





See the topic, [Renderers](#), for more information.

Renderers

Applying a Renderer causes the plot to display differently without making any changes to the actual data set. The Render option is accessed from the **Group Settings** dialog. Renderers, however, are only available for the following chart types.

Charts with Renderers

Chart Type(s)	Renderers Available
Time Series and XY Charts	<ul style="list-style-type: none"> XYLineAndShape Draws a line between each data point and overlays a shape at each point. This is the Default renderer. XYArea Draws each item in the data set using a polygon that fills the area between the X-axis and the data point. XYSpline Connects data point using spline curves, resulting in a smooth line passing though all the data points. XYBar Renders points as bars. This renderer is useful to do a composite chart containing bars and lines. XYStackedArea Draws each item in the data set using a polygon that fills the area between the x-axis and the data point. This is different from the XYArea renderer in that the area is stacked on top of one another for the series. Note: Currently, this renderer is only available for the Time Series chart. The Time component for each series should be the same for the best stacked result. XYStackedArea100% Draws each item in the data set using a polygon that fills the area between the x-axis and the data point. This is different from the XYArea renderer in that the area is stacked on top of one another for the series, with values normalized to 100%. Note: Currently, this renderer is only available for the Time Series chart. The Time component for each series should be the same for the best stacked result. XYStackedBar Renders points as bars. This is different from the XYBar renderer in that the bars are stacked on top of one another for the series. Note: Currently, this renderer is only available for the Time Series chart. The Time component for each series should be the same for the best stacked result. XYStackedBar100%

Chart Type(s)	Renderers Available
	<p>Renders points as bars. This is different from the XYBar renderer in that the bars are stacked on top of one another for the series, with values normalized to 100%.</p> <p>Note: Currently, this renderer is only available for the Time Series chart. The Time component for each series should be the same for the best stacked result.</p>
Bar (Category Data only)	<ul style="list-style-type: none"> Bar Renders the Category data items as bars. This is the Default renderer. Bar3D Renders the Category data items as 3-dimensional bars. BarStacked Renders the Category data items as stacked bars, normalizing the values to 100%. AreaStacked Renders the Category data items as stacked area. AreaStacked100% Renders the Category data items as stacked area, normalizing the values to 100%. LineAndShape Displays data items by drawing a shape at each data point and/or connecting data point with straight lines.

Renderer Support for Runtime Features

Renderer	Color	Annotation	Tooltip	Drill-down	Golden Run Support*
Bar	X	X	X	X	
Bar3D	X	X	X	X	
BarStacked	X	X	X	X	
BarStacked100%	X	X	X	X	
AreaStacked	X	X	X		
AreaStacked100%	X	X	X		
LineAndShape	X	X	X	X	
XYLineAndShape	X	X	X	X	X
XYArea		X	X		X
XYSpline	X	X	X	X	X
XYBar	X	X	X	X	X
XYStackedArea		X	X		
XYStackedArea100%		X	X		

Renderer	Color	Annotation	Tooltip	Drill-down	Golden Run Support*
XYStackedBar	X	X			
XYStackedBar100%	X	X			

* Golden Run feature is for **Time Series Charts** only.

Rendering Limits

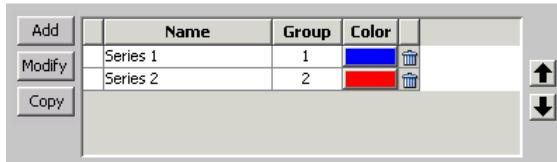
There are limits to the number of items that are rendered. These limits ease the plot times and produces charts that are more readable. The number of items are limited to 1000 for all charts.

Using Multiple Range Axes

Multiple Range axes are available for the **Time Series**, **XY**, and **Bar** charts.

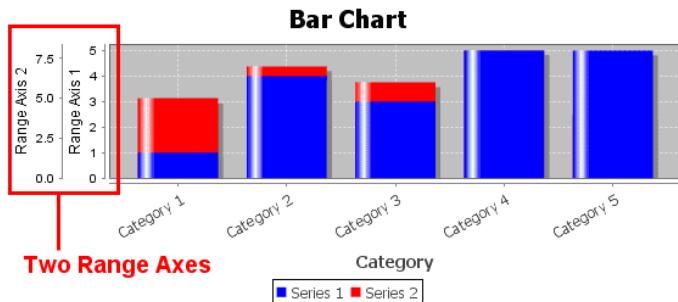
EXAMPLE: USING MULTIPLE RANGE AXES

1. Create a **Bar chart**.
2. Add two series, setting Series 1 to **Group 1** and Series 2 to **Group 2**.



3. Click **Group Settings**.
The "Group Settings" panel appears.
4. For **Group 1**, click inside the **Range Axis Label cell** and select a value.
5. For **Group 2**, click inside the **Range Axis Label cell** and select a value.
6. Click anywhere outside the panel to save and close.
7. Click **OK** and **Update**.

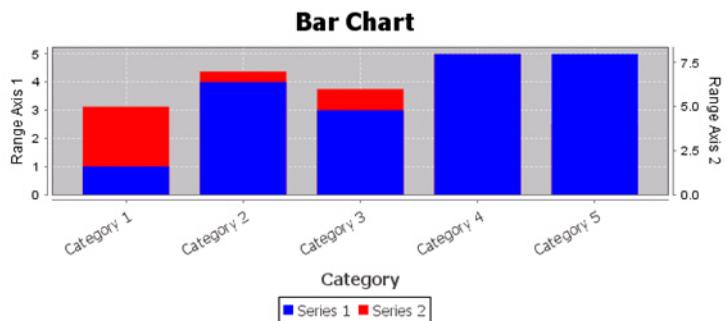
At runtime, the resulting plot displays two Range axes:



Setting the Range Axis Location

You can place the Range axis on either side of the plot, left or right. Or, you can select None to hide the Y-axis at runtime.

In the previous Bar Chart example for multiple Range axes, if the **Location** for **Group 2** is set to the **Right**, then the resulting plot is:



About Axis Minimum and Maximum Values

By default, plots are automatically ranged for both the Domain and Range axes. This enables all series to fit within the plot area without requiring you to set axis parameters. You may, depending on the chart type, manually set the minimum and/or maximum axis values for both the Domain and Range axes.

Important Things to Note

- Minimum and maximum values must be numeric values.
- The maximum value must be larger than the minimum value. If not, the plot will not update.

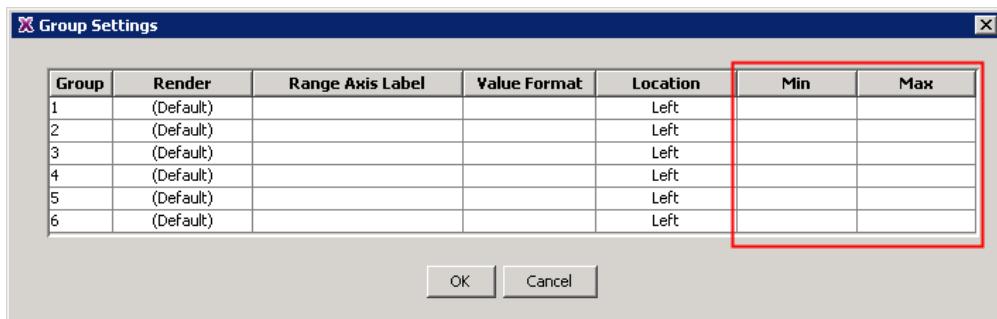
For the Domain Axis

Only the **XY chart** allows you to manually set the minimum/maximum Domain axis values from the **Chart Options** dialog.

You may set the Domain axis minimum/maximum values for the **Time Series chart** using the **Span** Start and End Time.

For the Range Axis

You can manually set the minimum/maximum Range axis values from the **Group Settings** dialog. This, however, is only available for the **Time Series** and **XY charts**.



Group Settings: Range Min/Max Value

Annotations

An annotation is text that is displayed on the plot at a specific (x,y) location.



To see which charts support annotations, go to the topic, *Chart Features*, located in the XHQ Developer's Guide.

Additional Things to Note

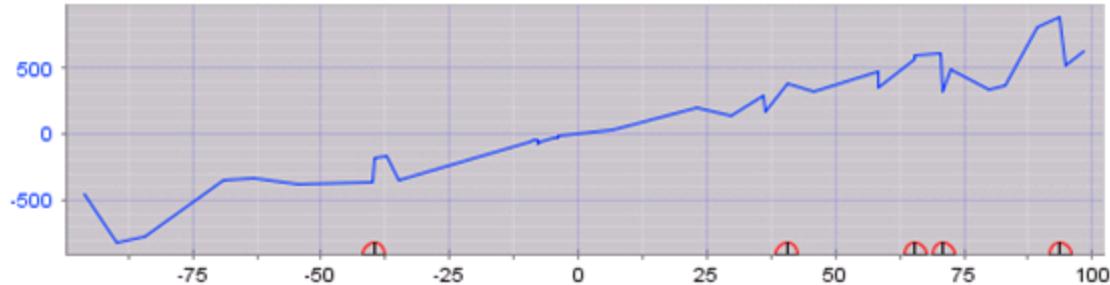
- The Annotation series must exist with the Chart series.
- Only one Annotation series is allowed per chart.
- In an Annotation series, the Group, Line, and Symbol columns are disabled. Only the **Width** and **Color** can be edited.

	Name	Group	Line	Symbol	Width	Color	
	(Annotation)				1		

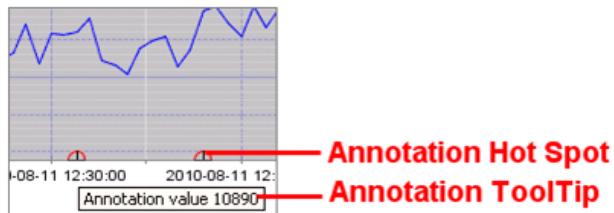
Annotation Types

There are two types of annotation that can be configured:

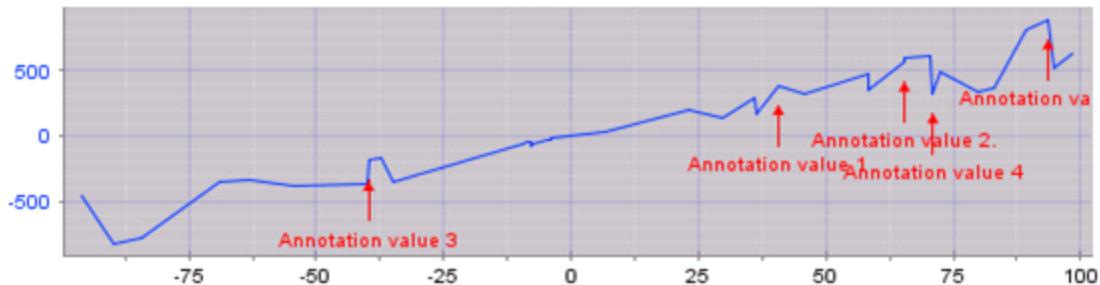
- Type 1** This annotation type results in annotations that appear along the X-axis as semi-circles.



Mouse-over these annotations to display the Tooltip.



- Type 2** This annotation type results in annotations that appear at the location specified by the annotation mapping.



The following table shows which chart(s) support these annotation types as well as the mapping requirements.

Annotation Mapping Requirements

Chart Type	Type 1	Type 2
Time Series	Time, Annotation	Time, Value, Annotation
XY	Domain, Annotation	Domain, Range, Annotation
Gantt	(not supported)	Task Name, End Date, Annotation
Pareto	(not supported)	Value, Category, Annotation
Waterfall	(not supported)	Value, Category, Annotation Note: Annotation series must have the same filter as the main series.
Bar	Domain, Annotation (XY-based)	Value, Category, Annotation (category-based) Domain, Range, Annotation (XY-based)
Candlestick	Time, Annotation	Time, High, Annotation
Bubble	X, Annotation	X, Y, Z, Annotation

Adding Annotations

To add an annotation to a **Time Series chart**, you must map the Time column to a Date/Time data type, the Value column to a Numeric data type, and the **Annotation** column to a **String**.



For a list of data mapping rules for each chart type, go to the topic, *Chart Mapping and Data Sets*, located in the XHQ Developer's Guide.

To add an annotation to an **XY chart**, you must map the Domain and Range columns to Numeric data types, and the **Annotation** column to a **String**.

EXAMPLE: ADDING A TYPE 1 ANNOTATION TO A TIME SERIES CHART

1. Create a Time Series chart.
2. Click **Add** to configure a **series**.
3. **Map** the **Time** and **Value** columns and click **Add**.
This returns you to the series table.

4. Click **Add** to configure an **annotation**.

5. Map the **Time** and **Annotation** columns.

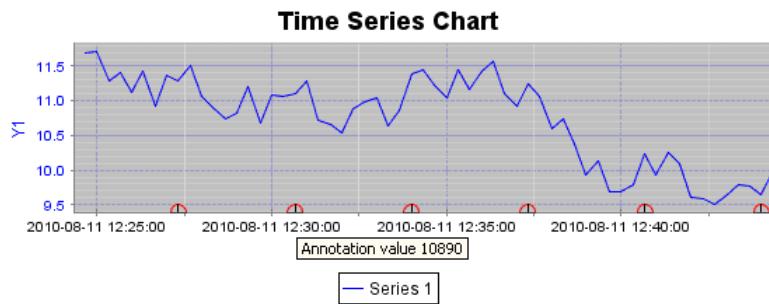
6. Click **Add**.

The series table lists a series and an annotation.

	Name	Group	Line	Symbol	Width	Color	
Add							
Modify	Series 1	1	<input checked="" type="checkbox"/>	(None)	1		
Copy	(Annotation)				1		

7. **Save**.

At runtime, the resulting plot displays the annotations along the X-axis.



Tag Mapping

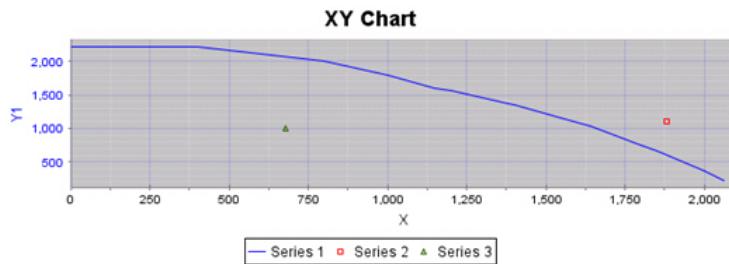
Tag Mapping allows you to plot a pair of time-correlated values (retrieved from two different tags) onto a single **XY** plot.



Real-time Charting is currently supported by the XY chart when the Tag Mapping type is used. These charts automatically update when viewing in real-time or whenever a collection, or tag, updates.

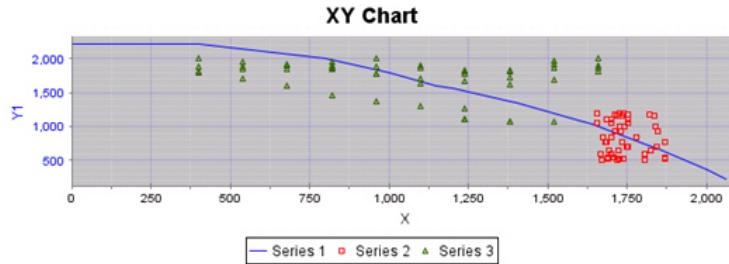
Modes of Tag Mapping

Actual Mode



Only the latest point is shown on the plot. When a new point is received, it replaces the existing point.

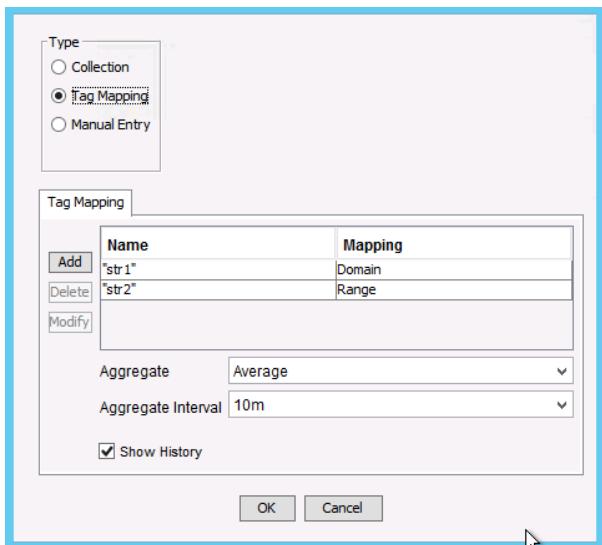
Historical Mode



All the points between a given time span are shown on the plot. The points are plotted using the selected symbol only; connecting lines are not used. The values of the tag pair can be configured to aggregate over a period of time. The aggregates available are: FITS, Average, Min, Max, Interpolate, and Raw. For non-time-sliced aggregate types (FITS and Raw), new points are added to the plot once they are received.



For steps on how to configure a Tag Mapping type, see the topic, [To add a series](#).



Tag Mapping Configuration

Embedding Charts in Collection Views

At runtime, when launching a pop-up embedded chart within a collection view, the following **UI restrictions** occur:

- The **Path field** in the **Collection tab** for a series is **disabled**.
The actual path to the nested collection index that is being referenced cannot be described by a path. Regardless, the global collection that is being referenced is still visible.
- The series table **Add button** is **disabled**.
The valid path to a nested collection cannot be configured.
- The **Email button** is **disabled**.
This prevents an interactive chart from a nested collection from being e-mailed.
- The **Save Chart menu** is **disabled** to prevent an invalid configuration from being saved.



If a new chart type is selected from the **Chart menu**, then all the restrictions described above are set back to the default.

Time Offset Types

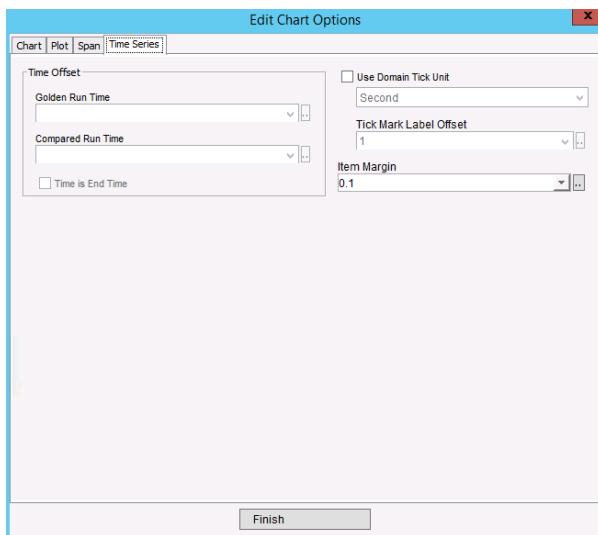
A Time Offset chart is a **Time Series chart** that has one series serving as the **Golden Run**, with the other remaining series as Compared Run that are offset by the Compared Run Time.

The minimum steps to configure a Time Offset chart are as follows:

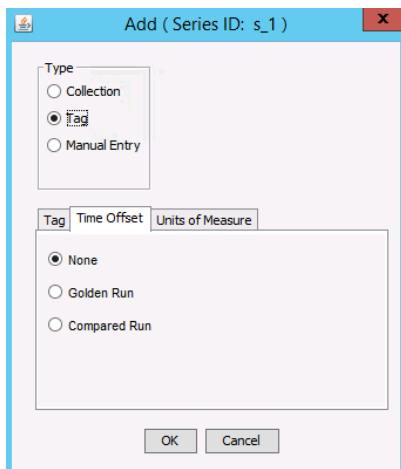
1. Select a Time Series chart.
2. Add one or more series and select "Golden Run" for each of them in the Time Offset tab.
3. Add one or more series and select "Compared Run" for each of them in the Time Offset tab.
4. Open up Chart Options and go to the Time Series tab. Enter an expression for each of the Golden Run Time and Compared Run Time field. Select the "Time is End Time" if the time expressions are supposed to represent the "end time" instead of the default "start time".
5. Go to the Span tab (also under Chart Options) and enter a duration. This will be the duration used for the whole chart.



This chart only displays a single Domain axis for all Compared Run series. There is a hidden Domain axis that is used by the Golden Run series.



Time Configuration for Time Offset series (located in Chart Options)



Time Offset Configuration (located in Series configuration)

When configuring the Time Series chart, the Time Offset options are:

Option	Description
None	No time offset. This is the default.
Golden Run	Select this to specify the base series from which the other series are offset. This series must be the first series in the Series Table.
Compared Run	Select this to specify a series that is offset by a Compared Run amount of time from the Golden Run. The Compared Run Time is configured under the Time Series tab of Chart Options. A <u>positive</u> integer offsets by that amount <u>after</u> the Golden Run period. A <u>negative</u> integer offsets by that amount <u>before</u> to the Golden Run period.

EXAMPLE: SETTING THE TIME OFFSET

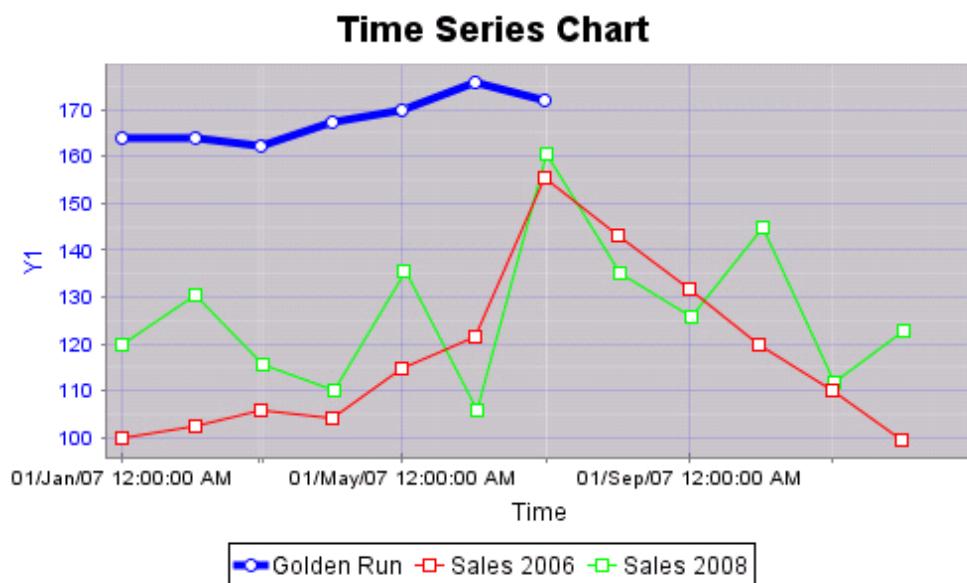
Given: The following series configurations.

Name	Color	Symbol	Width	Time Offset Type
Golden Run	Blue	Circle	4	Golden Run
Compared Run	Red	Square	1	Compared Run

Results: Series Table:

Name	Group	Line	Symbol	Width	Color	
Golden Run	1	✓	○	4	Blue	Delete
Sales 2006	1	✓	□	1	Red	Delete
Sales 2008	1	✓	□	1	Green	Delete

Runtime Plot:



Setting the Units of Measure

In charting, the Units of Measure allows the current unit of a **Time Series chart** to be **converted** to another compatible unit that is within the same category.



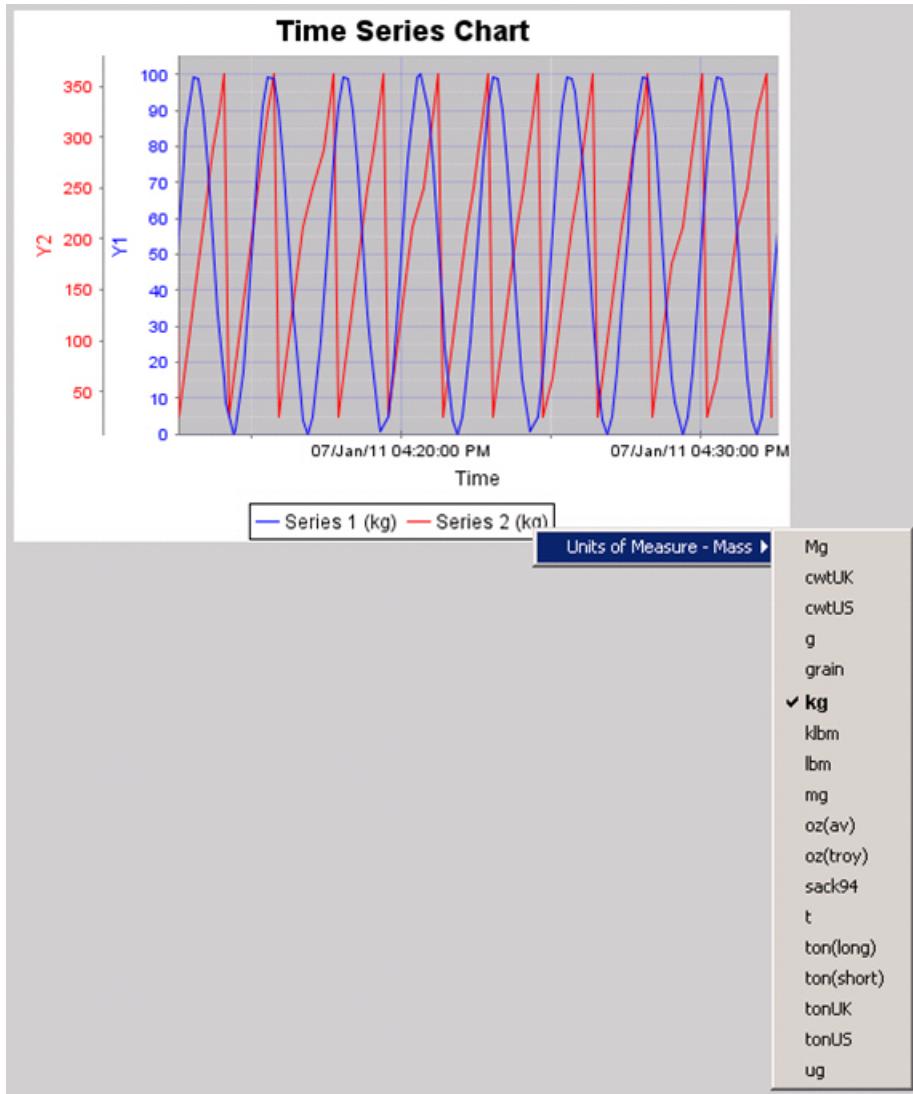
The Units of Measure for charting is similar to the Units of Measure for trending.

Additional Things to Note

- The Units of Measure feature is enabled only for the **Tag type** series.
- This feature requires you to interact with the Chart legend. Therefore, the **Show Legend** (and if the chart is embedded in a view, the **Allow Interaction with Chart**) option must be enabled (checked).

Viewing the Chart at Runtime

During runtime, you can access the **Units of Measure** option (if configured) by going to the chart **Legend**, mouse over the series name, and right-clicking. The Units of Measure option appears with a submenu listing the units that belong to the given category.



Example: Units of Measure

In the example above, the **Category** is Mass. The **Default Unit** is in bold, which in this case is kg (kilograms). The **Selected Unit** appears with a check mark.

EXAMPLE: CONFIGURING THE UNITS OF MEASURE

1. From a **Time Series** chart, **add** a new series.
The "Add" dialog box appears.
2. For **Type**, click **Tag** and, from the Tag tab, enter a tag.

3. Click the **Units of Measure tab**.
4. Select a **Category**, the **From Unit**, and the **To Unit**.



Selecting a non-default **From Unit** or **To Unit** value allows the initial chart to display that unit instead of the default. If you leave these options blank, then the chart initially displays the default unit from the backend.

5. Click **OK**.
6. OPTIONAL
Repeat steps 1 to 5 for additional series.



Tip

For multiple series, set each series in its own separate group. This results in each series having its own Range axis, making it easier to see the effect of unit change at runtime.

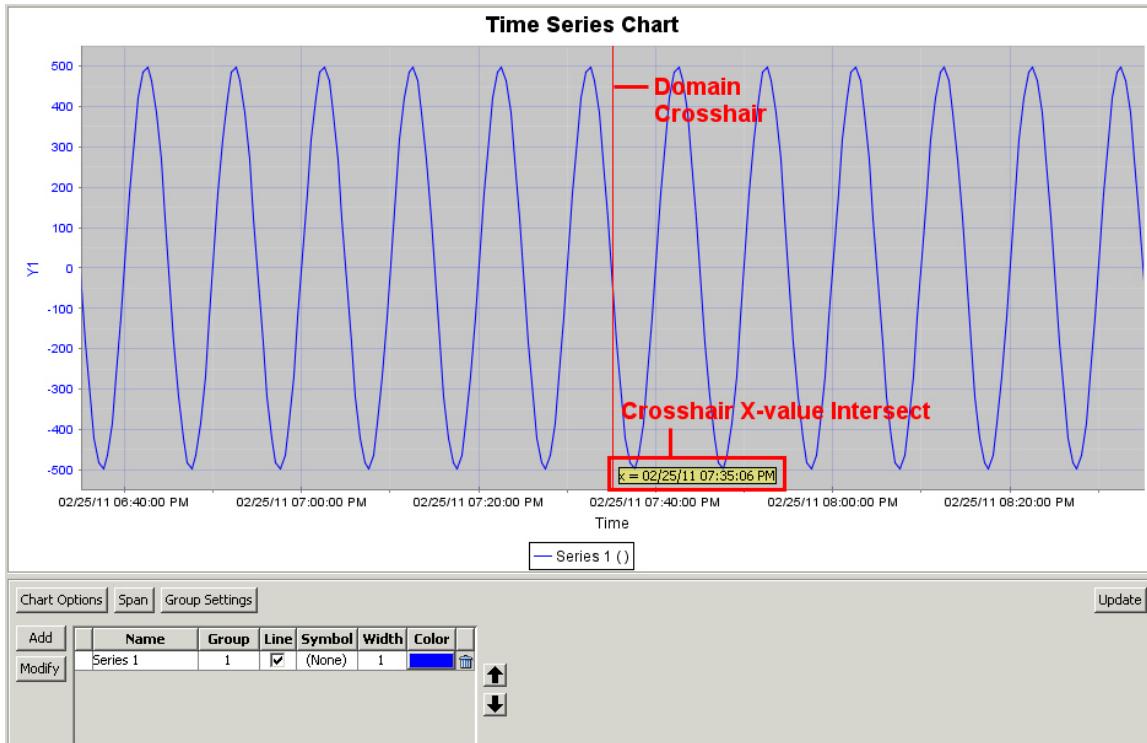
7. Click **Chart Options**.
The "Chart Options" dialog appears.
 8. In the **Chart tab**, check **Show Legend**.
-
- The **Allow Interaction with Chart** option is enabled only for a chart that is embedded in a view.
9. Click **OK**.
 10. From the **Charts menu**, click **Save Chart**.
 11. Next, open the chart view (runtime).
 12. In the **Legend**, mouse-over the series name and right-click.
The "Units of Measure" option appears with a submenu listing the units that belong to the given category.
 13. Select a **new unit** to which you want to convert.
The Legend shows the new unit for the series. The values on the series' Range axis is also converted to the new unit.

About the Domain Crosshair

The crosshair feature is available for the **Time Series** and **XY** charts in Interactive Chart mode. At runtime, the crosshair appears at the center of the plot, if the chart has valid data.

Additional Things to Note

- If the data is not valid, the crosshair does not appear.
- The X-value of where the crosshair intersects the plot appears on the chart area.
- This option is only used in the Interactive Chart mode. The crosshair is not saved when the chart is saved.



Example: Domain Crosshair

EXAMPLE: ENABLING THE DOMAIN CROSSHAIR

1. Create a Time Series chart and launch the Interactive Chart.
2. Add a series and map the necessary columns.
3. Click **Chart Options**.
The "Chart Options" panel appears.
4. Click the **Plot tab**.
5. Check **Domain Crosshair**.
6. Click **OK**.

Using Expressions in Chart Configurations

Options that support expressions have a **Browse** button that launches the "Edit Expression" box.

You can also type a custom expression directly into the option box.



Literal string expressions must be enclosed in double quotation marks ("MyTitle").

Click the down arrow to display a list containing compatible members and variables for the supported expression type.

Color Expression

For color typed expression, the interface is different. In addition to the normal color button to bring up the color palette dialog, there is also an extra expression button  to allow an expression to be set. The format for a color expression must either be a string like #FFFFFF or #FFF for hex format, or an integer.



If the color expression cannot be parsed to a valid color (for example, an expression such as \$EditBox1 versus a valid color like #FFFFFF), then the color button will change to show a dollar sign (\$) to indicate that it is an expression and the actual color is evaluated at runtime.



The following options support expressions.

Option (Location)	Supported Expression Type
Title (Chart Options > Chart tab)	String
Subtitle (Chart Options > Chart tab)	String
Domain Axis Label (Chart Options > Chart tab)	String
Domain Value Format (Chart Options > Chart tab)	String
Chart Background Color (Chart Options > Chart tab)	String
Plot Background Color (Chart Options > Plot tab)	String
Grid Lines Color (Chart Options > Plot tab)	For Time Series, XY, Bar, Pareto, Polar, Histogram, Candlestick String
Minor Grid Lines Color (Chart Options > Plot tab)	For Time Series, XY, Bar, Pareto, Polar, Histogram, Candlestick String
Domain Min and Max Values (Chart Options > Chart tab)	Integer, Long, Float, Double, Decimal, DateTime, or Time Interval
Range Min and Max Values (Group Settings dialog box)	Integer, Long, Float, Double, Decimal, DateTime, or Time Interval
Range Axis Label (Group Settings dialog box)	String
Range Value Format	String

Option (Location)	Supported Expression Type
(Group Settings dialog box)	
Start and End Date (Chart Options > Span tab)	<i>Time Series chart only</i> DateTime
Duration (Chart Options > Span tab)	<i>Time Series chart only</i> DateTime
Tag Name (Add series dialog box > Tag Type)	<i>Time Series chart only</i> String
Tag Name (Add series dialog box > Tag Mapping Type)	<i>XY chart only</i> String
Series Name (Series table)	<i>String</i>
Bins (Chart Options > Histogram tab)	Non-zero positive Integer
Lower Bound, Upper Bound (Chart Options > Histogram tab)	Integer, Long, Float, Double, Decimal
The Treemap ...	String
Item Background Color	
Item Label Color	
Category Background Color	
Category Border	
Category Label Color	
Exception Background Color	
Exception Label Color	
Color Table Exception Below Min Value Color (Chart Options > Treemap tab)	
Color Table Exception Above Max Value Color (Chart Options > Treemap tab)	
Series Mapping Column (Add series dialog box > Collection)	<i>Various types depending on mapping. See below for examples and restrictions.</i>
URL Link Address (Add series dialog box > Drill Down)	String <i>See below for examples and restrictions</i>
Action Link Function (Add series dialog box > Drill Down)	String <i>See below for example and restrictions</i>

Series Mapping Column expression

1. Constant mapping of Value.

Examples: 9, pow(3,2), sqrt(81). All three examples of these examples result in a value of "9" for the value mapping. For Time Series chart, this will be a horizontal line located at 9.

A **constant string expression** results in the given string for all values.

Example 1: If you map the string "My tooltip" to the Tooltip mapping, at runtime, "My tooltip" appears as the tooltip for all entities.

Example 2: If you map the String control variable \$EditBox1 to the Tooltip mapping, at runtime, whatever value you enter in that edit box will be the tooltip for all entities.

2. Other expression examples:

- a. **rV1** – simple expression mapping a collection column to Value for Time Series chart.
- b. **IFF(\$ComboBox1==1, rV1, rV2)** – a more involved expression like this can be mapped to Value for Time Series chart.
- c. **"Tooltip: " + sV3 + "
" + "Name: " + sV2** – this expression can be mapped to Tooltip for Treemap.
- d. **ReferenceToReal(tagName).at(dtT)** – this expression can be mapped to Value of the Time Series chart.

URL Link Address and Action Link Function expressions

1. Example of URL Link: "http://www.google.com/search?as_q=" + \$Chart1.s_1.sV2.selected()
2. To reference the current selected item, regardless of chart type, use the function "selected()" as follows: \$Chart1.s_1.column1.selected(), where "\$Chart1" refers to the current chart, "s_1" is the series ID of the current series, and "column1" is the collection column to use. NOTE: Only the series ID of the current series being configured is allowed to be used in these type of expressions.

Date Format

Whenever a date, or time, is displayed in a chart, its format is determined by the global setting properties: `DefaultDateOnlyFormat` or `DefaultTimeOnlyformat`, respectively.



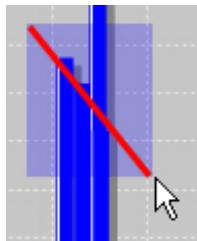
For more information on global properties, refer to the section, *Working with .PROPERTIES Files*, located in the XHQ Administrator's Guide.

Interacting with the Chart Plot

Zooming In and Out

To **zoom into** a particular spot on the plot, draw a rectangle around the given area. Use the mouse cursor to create the rectangle, starting from the top, left corner to the bottom, right corner. A highlighted rectangle appears, indicating the area to zoom.

To **zoom out**, position the mouse cursor anywhere on the plot, drag towards the top, left corner of the plot, and release the mouse cursor. The plot reverts back to the original view.



Zooming into a Plot



Zoom Menu Commands

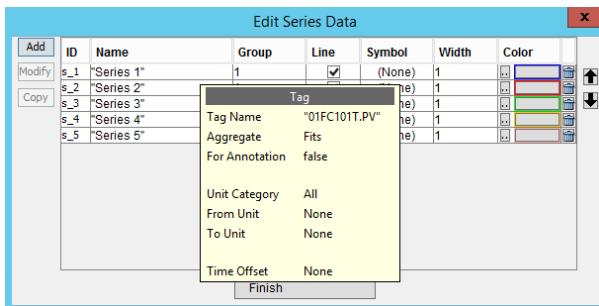
Alternatively, you can click anywhere on the chart area to display the Plot Pop-up Menu. Point to Zoom In or Zoom Out, and then select which axis(es) to zoom: Both, Domain only, or Range only. This method enables you to zoom in increments.



For information on the XHQ Solution Viewer zoom feature, see the topic, *Adjusting the Zoom*.

Tooltip for a Series

To view the column mapping for a given series in the table, mouse-over the series and a Tooltip appears.



Series Table Tooltip

Annotations also have Tooltips enabled.

10 | XHQ HTML5 Solution Viewer

This initial release of the XHQ HTML5 Solution Viewer is primarily targeted for **mobile devices**, such as tablets and phones. Desktop operating systems are not yet supported. The current version of the XHQ HTML5 Solution Viewer includes features such as:

- Charts (time series, pie, bar)
- Tables
- Embedded trends
- Keyed views
- Browser control
- Interactive Trends
- Historical Navigation



This initial release does not support the charts not listed above. Performance and usability will be enhanced in future XHQ releases.



To set security, enable SSL in IIS. For additional information, go to the topic, *Security, Access, and Privileges*, located in the XHQ Administrator's Guide.

Accessing the Solution

To access the XHQ HTML5 Solution Viewer, enter `http://<servername>/indx/sv` or `http://<servername>/xhq` (the latter redirects to the first URL).



XHQ HTML5 Solution Viewer from a Mobile Device

To access a specific view directly

1. Open your **browser**.
2. In the address field, enter the **fully qualified URL** for the view.

Example URL: For the HTML5 XHQ Solution Viewer

`http://localhost/indx/sv/#::Root/GIS/~Markers_PassThrough`

3. Click **Enter**.

The specific view launches in the browser.

To preview mobile views from a desktop Chrome browser

1. Open the **Chrome Developer Tools** (F12).
2. Click the **Toggle Device Toolbar** to open the view that simulates a mobile device.
3. Refresh the page, as needed.



You can only run one browser session from the same machine, to open the solution in either the desktop mode or the non-desktop mode (like mobile) of the XHQ HTML5 Solution Viewer.

Troubleshooting a Connection

This table lists possible error messages and their causes.

Error Message	Description
"The connection to XHQ is lost, restart this session. Please contact your support organization if the problem persists."	This error message appears when any of the following occurs: <ul style="list-style-type: none">• There is a network issue during initial load.• There is a network issue after the initial load.• The XHQ Solution Server/XHQ Enterprise Server are down.• XHQ Web Server is down.

Navigating the Solution

To access the **Left Panel** or **Slide-out Menu** from the Homepage, click the **Menu icon** located on the upper, left-hand side.

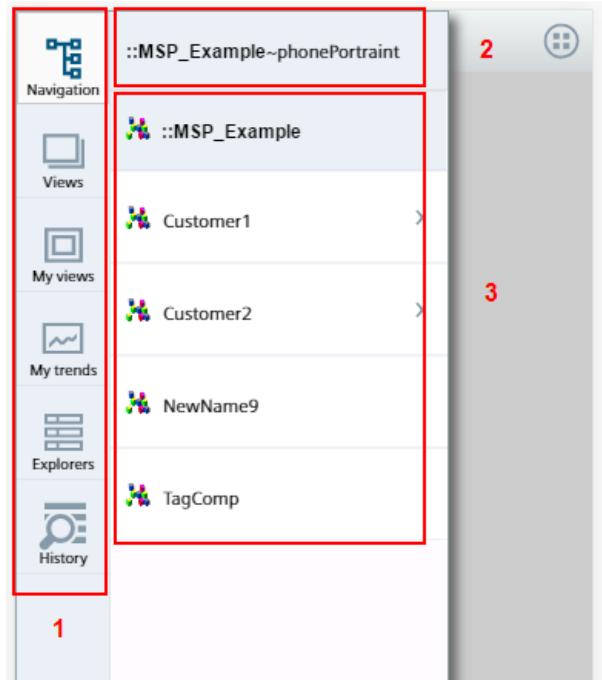


XHQ Sample Solutions

Menu Icon

The panel slides open and you are now able to navigate through the solution. It is divided into three sections:

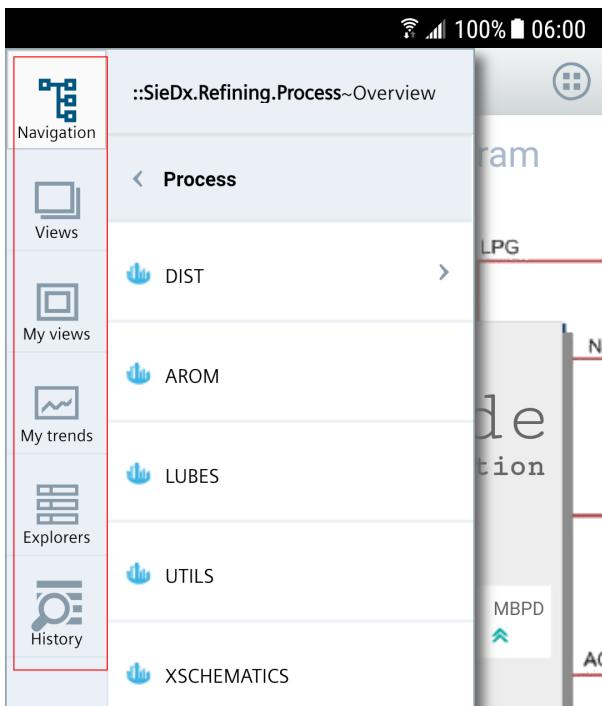
1. [The Main Menu](#)
2. The **Path Bar**
3. The **Content Tabs**



Slide-out Menu

Main Menu

This menu consists of the following areas.

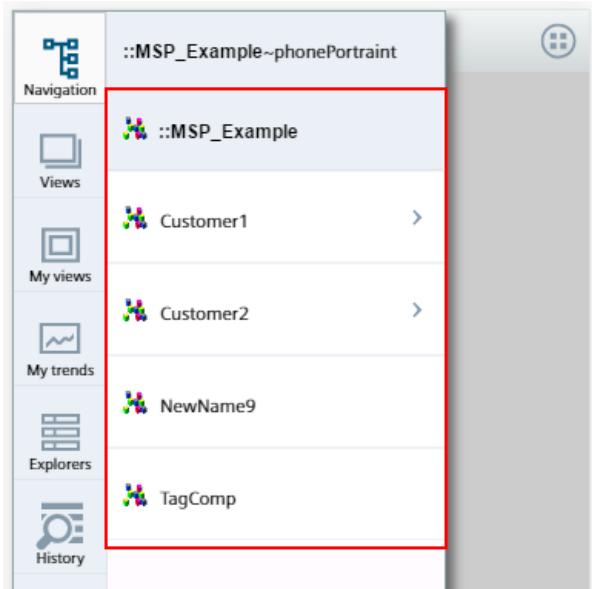


Main Menu Options

Menu Item	Description
Navigation	Allows you to navigate to nodes within the given solution.
Views	Allows you to navigate to a specific view for the current node.
My Views	Lists your saved views.
My Trends	Lists your saved trends. Activates the <i>XHQ HTML5 Interactive Trender</i> .
Explorers	Allows you to navigate to the configured explorers.
History	Activates <i>XHQ HTML5 Historical Navigation</i> .

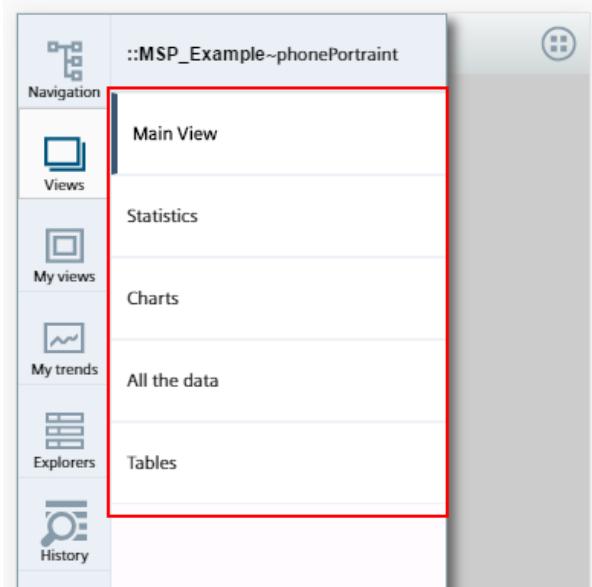
Navigation

The Navigation menu item displays the solution tree.



Views

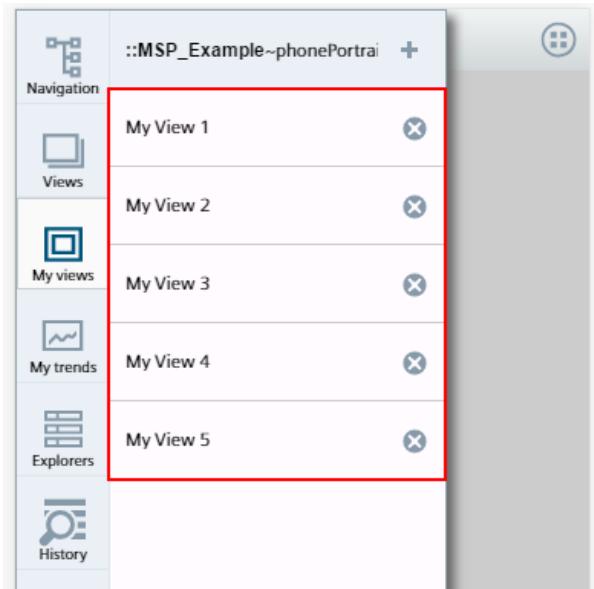
The Views menu item displays the views for the given component. The topmost view is the default view. The view list is refreshed each time you change device orientation.



My Views

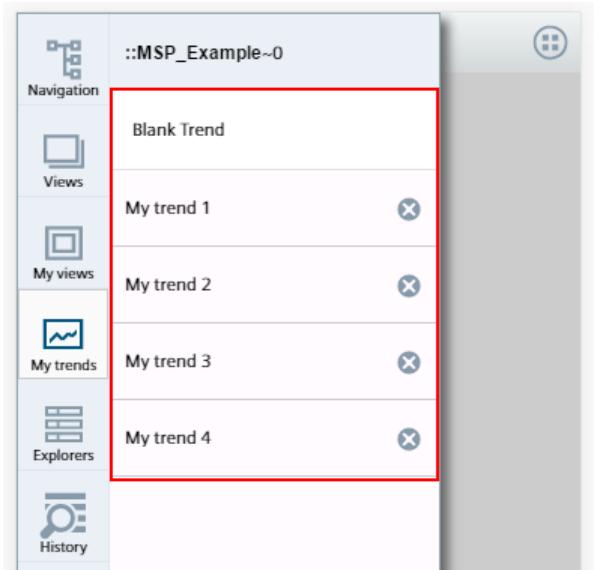
This displays your saved favorite views.

To **save** a view, tap the "+" (plus) button. To **remove** a view, simply tap the "X" button.



My Trends

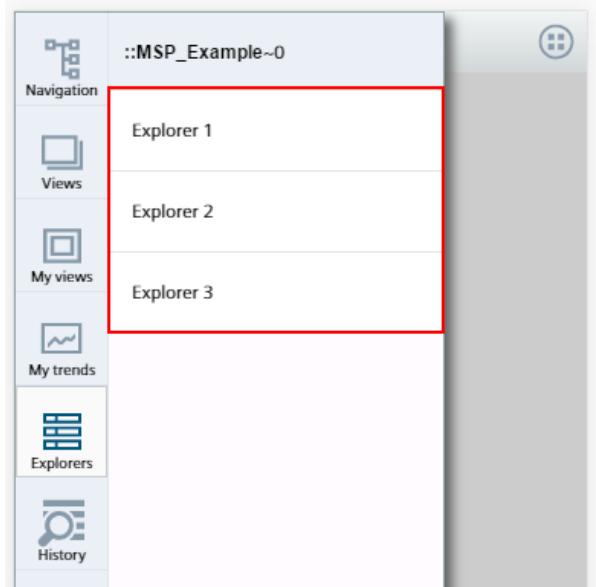
This displays your favorite trends. Tap on any of the trends that are listed to launch it in a new window. Similar to My Views, tap the "X" button to remove a trend. Activates the XHQ HTML5 Interactive Trender.



See Also: [XHQ HTML5 Interactive Trender](#)

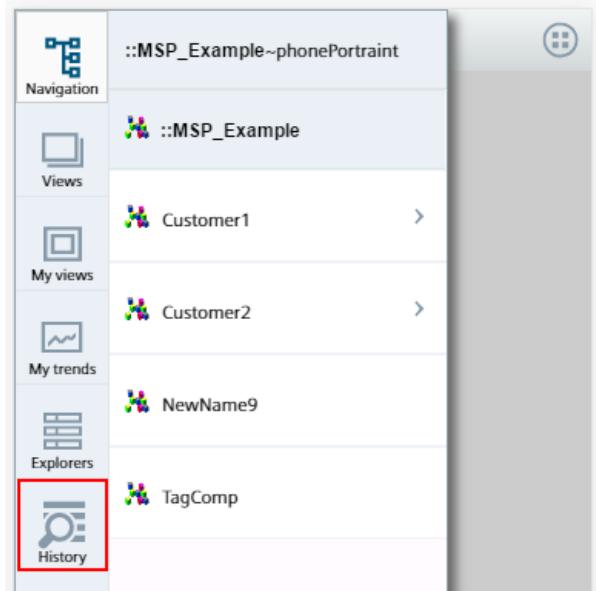
Explorers

This displays all the XHQ components that have been saved as favorites (using the `NavbarExplorerItems` global property) for the current repos. Tap on the listed explorer to open (or execute).



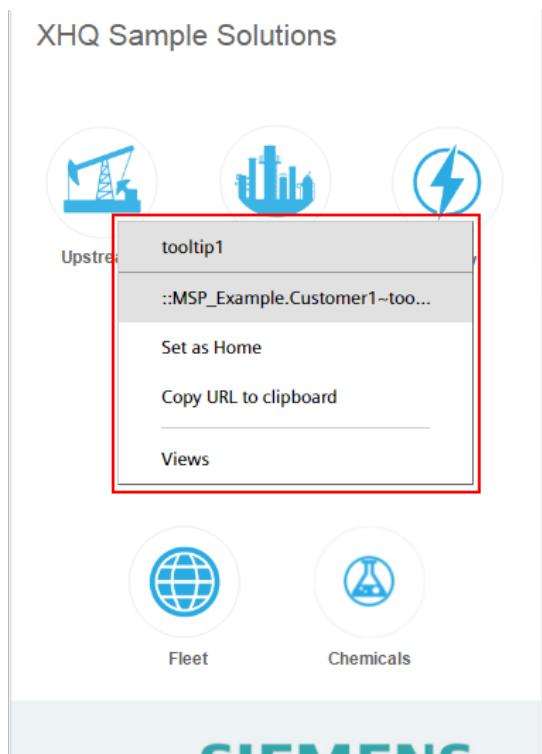
History

This menu item activates [XHQ HTML5 Historical Navigation](#).



Context Menu

To access the Context Menu, **tap long** on a component.



XHQ HTML5 Solution Viewer - Context Menu

From the Context Menu you can:

- View this component's Tooltip (if enabled).
- View this component's path in the solution tree.
- Set the current view as the solution home view (which is the view that appears when the XHQ HTML5 Solution Viewer starts).
- Copy the current URL (with the component path) to the clipboard.
- Access a list of all this component's views.

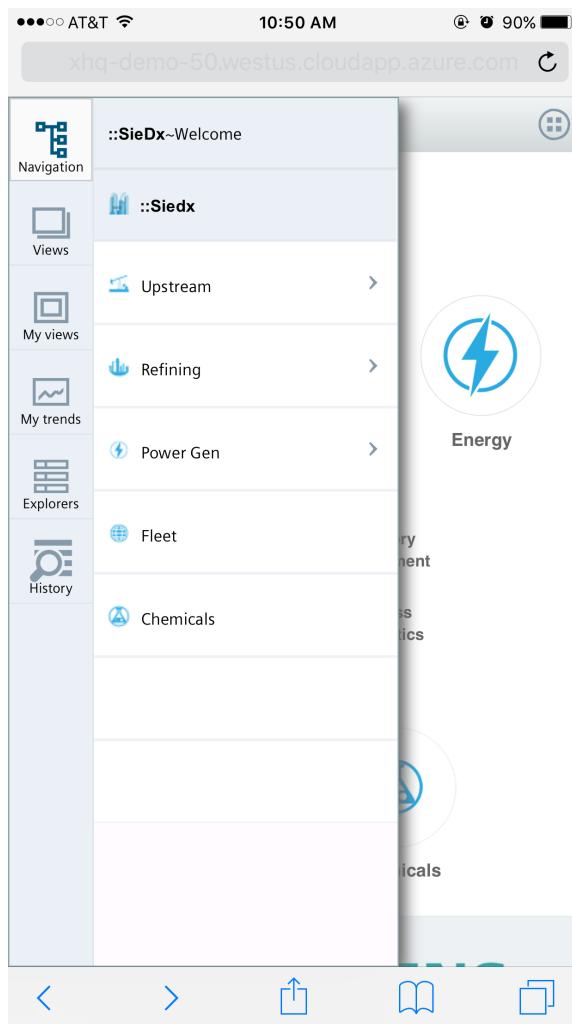
Interactive Trender

To launch the XHQ HTML5 Interactive Trender from the XHQ HTML5 Solution Viewer, tap on the **Menu icon**  located on the title bar.



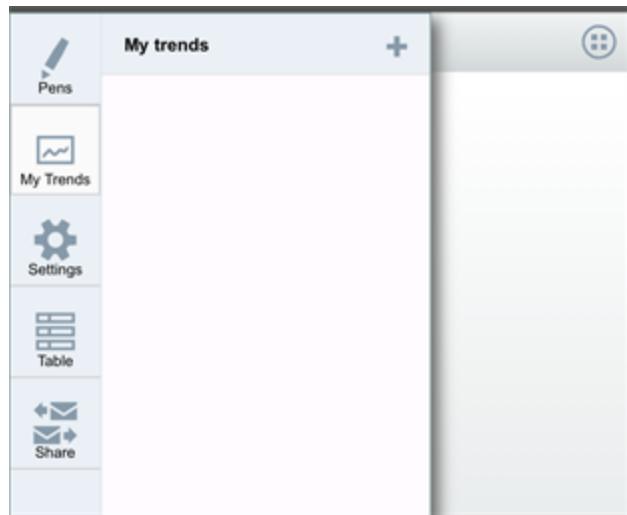
Menu Icon

From the **slide-out Main menu**, tap **My Trends**. *This launches a new session.*



XHQ HTML5 Solution Viewer Slide-out Menu

The slide-out **Trender menu** appears.



XHQ HTML5 Interactive Trender Slide-out Menu

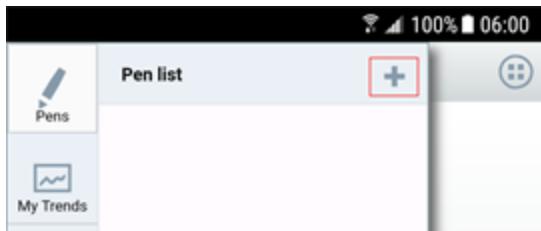
The XHQ HTML5 Interactive Trender slide-out menu consists of the following options.

Trender Menu Options

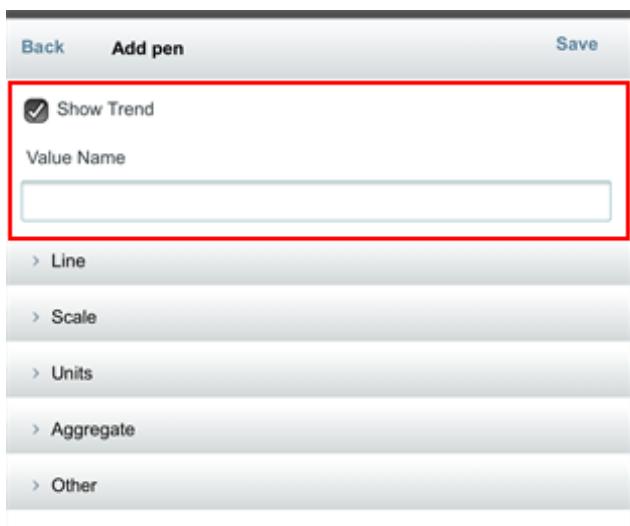
Menu Item	Description
Pens	Lists the available pens. Enables you to configure, edit, or delete a pen.
My Trends	The trends you add to My Trends.
Settings	Change the overall Trend chart settings (title color, add axis labels, etc.).
Table	Displays the pen values in tabular form.
Send Trend	Enables you to send the current trend to another user.

Configuring a Pen Trace

From the slide-out **Trend menu**, tap **Pens**. The Pen list appears. To add a pen, tap the **plus icon**; to edit, tap an existing pen from the content list.



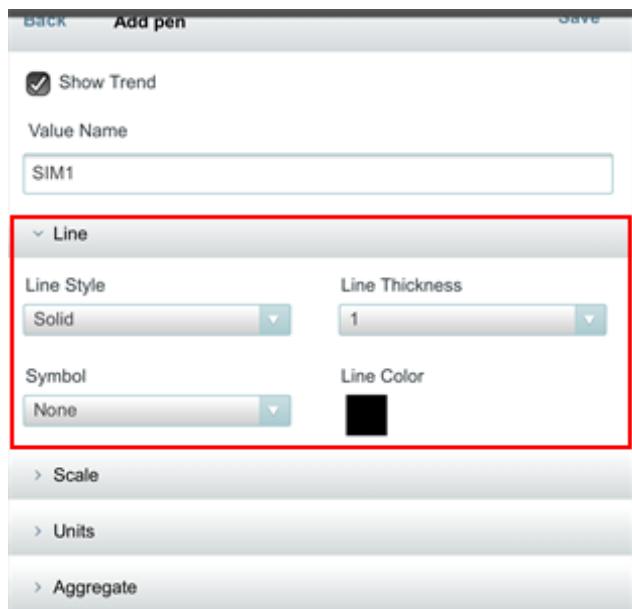
The **Add pen** screen appears.



General Trend Options

Menu Item	Description
Show Trend	Enable this option to render the pen trace visible on the Trend Chart.
Value Name	Select the value associated with the pen.

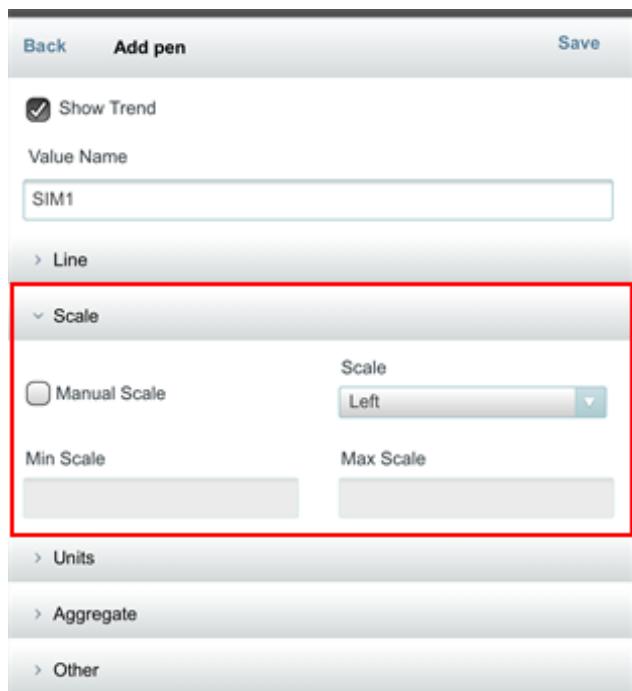
Expand Line to configure the trend line style, thickness, symbol representation, and color.



Line Options

Menu Item	Description
Line Style	Select from Solid, Dashed, Dotted, or No line
Line Thickness	Maximum is 10, minimum is 1.
Symbol	Select a symbol associated with the pen trace.
Line Color	Tap to display color grid. Select line color.

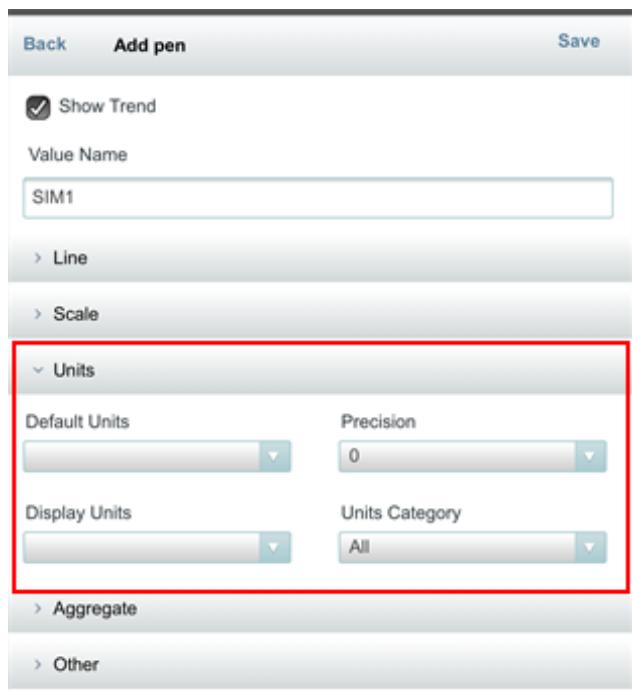
Expand Scale to set the scale type, position, and range.



Scale Options

Menu Item	Description
Manual Scale	Enable this option to manually enter Minimum limit and Maximum limit values.
Scale	Set which side the scale axis appears, either on the left or the right of the chart.
Min Scale	Enter the minimum y-scale value.
Max Scale	Enter the maximum y-scale value.

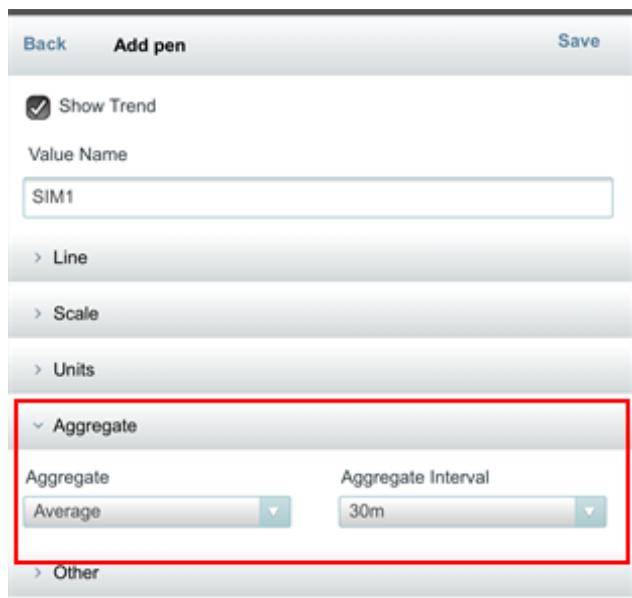
Expand Units to set the default, precision, and category.



Units Options

Menu Item	Description
Default Units	Select the default unit of measurement.
Precision	Set the current precision for the given pen. At runtime, this value is editable.
Display Units	Select the unit of measurement to display.
Units Category	Select the category for the unit of measurement.

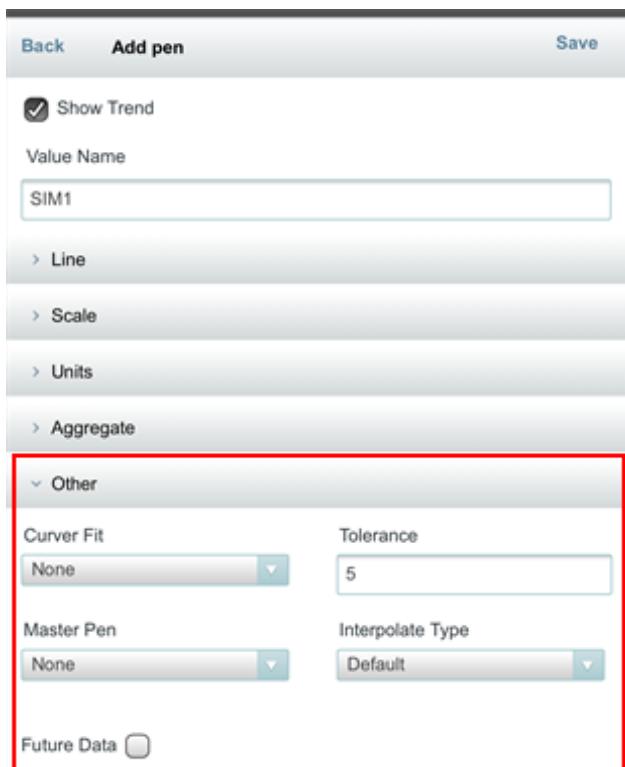
Expand Aggregate to select the aggregate type and interval.



Aggregate Options

Menu Item	Description
Aggregate	Select the history retrieval type: <ul style="list-style-type: none">• Fits• Average• Min• Max• Interpolate• Raw <p><i>Default value:</i> Fits</p>
Aggregate Interval	The <i>aggregation interval</i> is the interval over which the aggregate is computed. These intervals are defined in seconds, minutes, hours, days, or weeks. You can select from the given set of aggregate interval values listed or enter any desired aggregation interval by typing it directly in the interval field. Note: The aggregation interval is meaningful only for the Average, Min, Max, and Interpolate retrieval types. It has no affect on retrieval of Raw or Fits data.

Lastly, expand **Other** to set the curve fit, tolerance, master pen, and interpolation type.



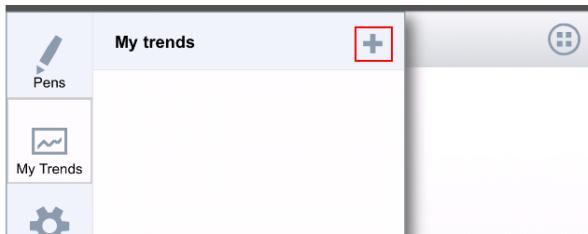
Other Options

Menu Item	Description
Curve Fit	Curve fitting is the approach of finding equations of approximating curves that fit given sets of data. Currently, two types of curve fits are available: Linear and Simple Average. <i>Default value:</i> None
Tolerance	This is the <i>pen tolerance</i> . The pen tolerance is the <i>percentage</i> value applied to the maximum/minimum when calculating the high/low limit of each trend. If this value is not set, the default tolerance value of 5% is used.
Master Pen	When you designate a pen as the Master Pen, its scale format, scale precision, value format, value precision, and tolerance is used for the entire pen group. <i>Default value:</i> None
Interpolate Type	<p>Options:</p> <p>Default The interpolate type is determined by the backend data configuration.</p> <ul style="list-style-type: none"> • Linear Uses a linear line to connect two data points. • Stepped Uses a stepped line to connect two data points. <p>Note: The client trend configuration for an interpolation type has only visual impact on the data points connection. It does not change the interpolation type of the backend data source.</p>
Future Data	If checked, future data points are retrieved. If unchecked, only historical data points are retrieved.

When you've finished configuring the pen trace, tap **Save** and then tap **Back** to return to the Trender menu options.

Adding a Trend Chart to My Trends

From the slide-out **Trender menu**, tap **My Trends**. The Trends list appears. To add a trend, tap the **plus icon**; to edit, tap an existing trend from the content list.



The **Save Trend** screen appears.

Back Save Trend Save

Enter Trend Name:

SIM1

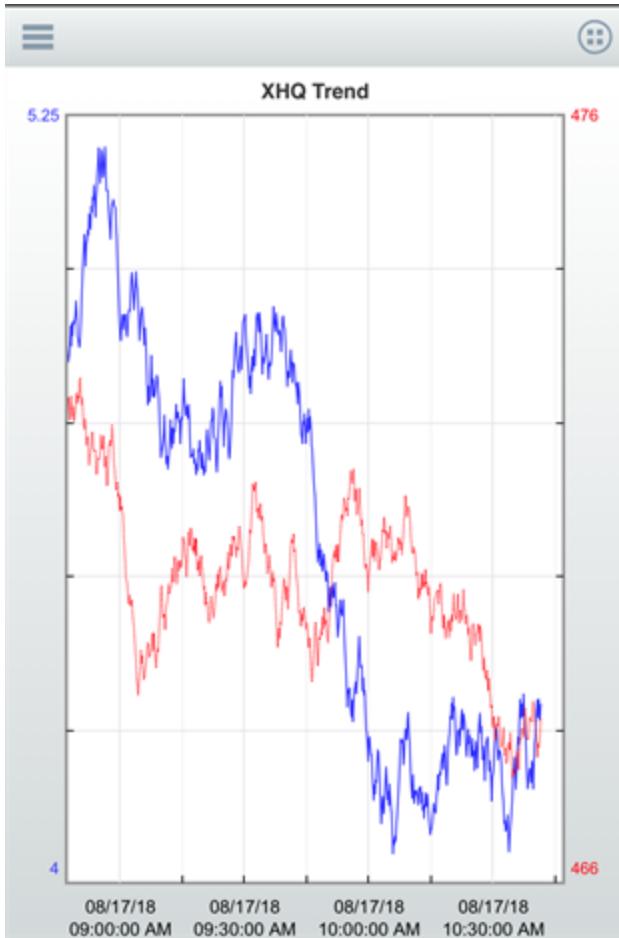
Relative Time

Absolute Time

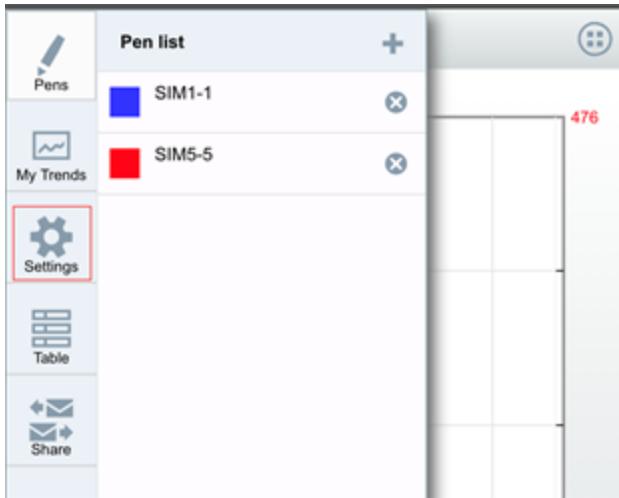
Enter the **Trend Name** and select either Relative or Absolute time. Tap **Save** and then tap **Back** to return to the Trender menu options.

Changing Trend Chart Settings

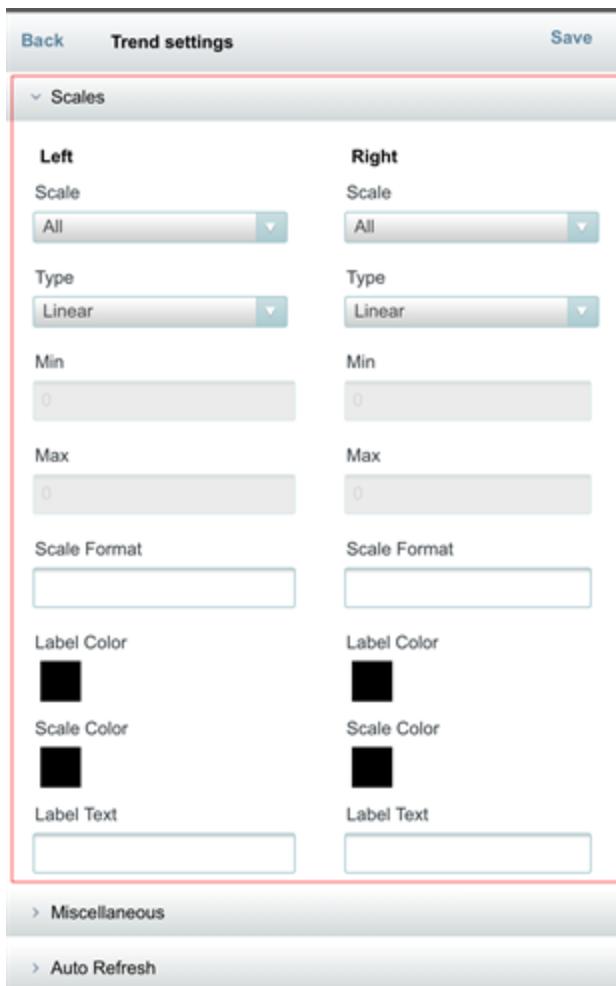
First, select the Trend chart. So, from the slide-out **Trend menu**, tap **My Trends** and select the chart for which you want to change the settings. The Trend chart appears.



Click the **Menu icon** and the slide-out **Trend menu**, displaying the Pen list.



Tap **Settings**. The **Trend settings** screen appears.



General Settings Options

Menu Item	Description
Title	Enter the trend title.
Start time	Set the time to start retrieving trend values. Tap the Calendar icon to open the date/time picker.
End time	Set the time to stop retrieving trend values. Tap the Calendar icon to open the date/time picker.

Expand **Scales** to set the scale type and format labels.

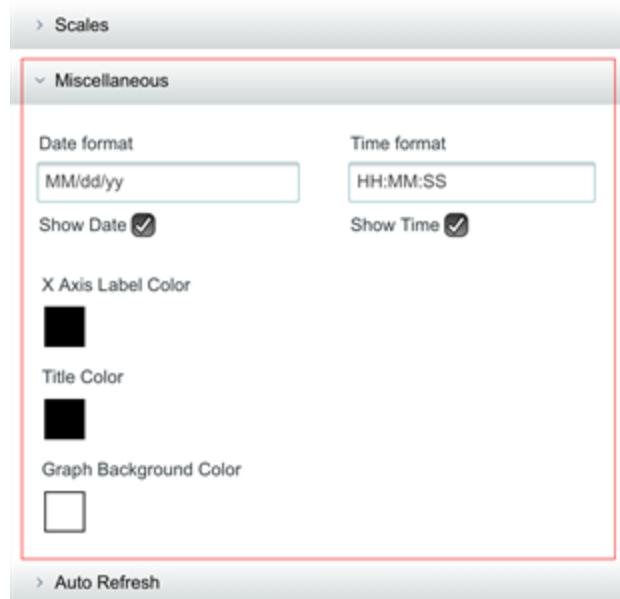


Scale Options

Menu Item	Description
Scale	<p><i>Options:</i></p> <ul style="list-style-type: none"> • All Enables you to view the Y-scale values for all traces (All). • Single Enables you to view the Y-scale value for a single trace. • Common-Auto Automatically sets a common max and min value for all pens displayed. • Common-Manual Enables you to set a common max and min value for all pens displayed.
Type	<p>Displays the scale in:</p> <ul style="list-style-type: none"> • Linear This is the default. • Log10 Common logarithm of base-10.

Menu Item	Description
• Log	Natural logarithm of base-e. Note: The <i>logarithm</i> of a given number is the power to which the base is raised to yield the given number. So, logarithm (base) of n=x if $b^x=n$ Where n is the given number; b is the base; and x is the power. Also, $(\text{base})^{\log(n)}=n$
Min	This displays the minimum y-scale value.
Max	This displays the maximum y-scale value.
Scale Format	The number format of the y-scale. Use standard number formatting pattern. For example, "0.##" means two digits. Leading zeros are omitted.
Label Color	The color of the label for the y-scale.
Scale Color	
Label Text	Enter the y-scale label.

Expand **Miscellaneous** to set the date/time formats, x-axis label color, and title color.



Miscellaneous Options

Menu Item	Description
Date format	
Time format	

Menu Item	Description
Display Date/Time	
X Axis Label Color	
Title Color	
Graph Background Color	

Expand **Auto Refresh** to set the default, precision, and category.

> Miscellaneous

Auto Refresh

Auto Refresh feature updates End Time to Now periodically based on the configured refresh period.
The minimum refresh period allowed is 60 seconds.
The maximum refresh period allowed is 1 day.

Enable Auto Refresh

Refresh Period:

5m ▾

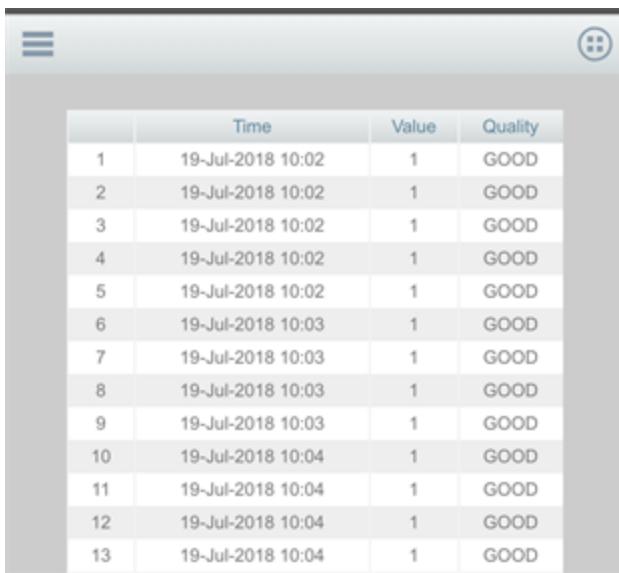
Auto Refresh Options

Menu Item	Description
Enable Auto Refresh	When Auto Refresh is enabled , the XHQ Trend Viewer is in <i>auto play mode</i> , which means that the Start Time, Span, and End Time boxes are <u>not</u> editable. In fact, all time changing buttons (such as the "Retrieve" button) are disabled. The text, "Auto Refresh is On", is displayed.
Refresh Period	You may select from the given set of refresh periods or enter your own. Note, however, the minimum refresh period allows is 60 seconds, and the maximum is 1 day. The options listed in the Refresh Period drop-down can be customized by setting the global property, AggregateAverageList .

When you've finished, tap **Save**.

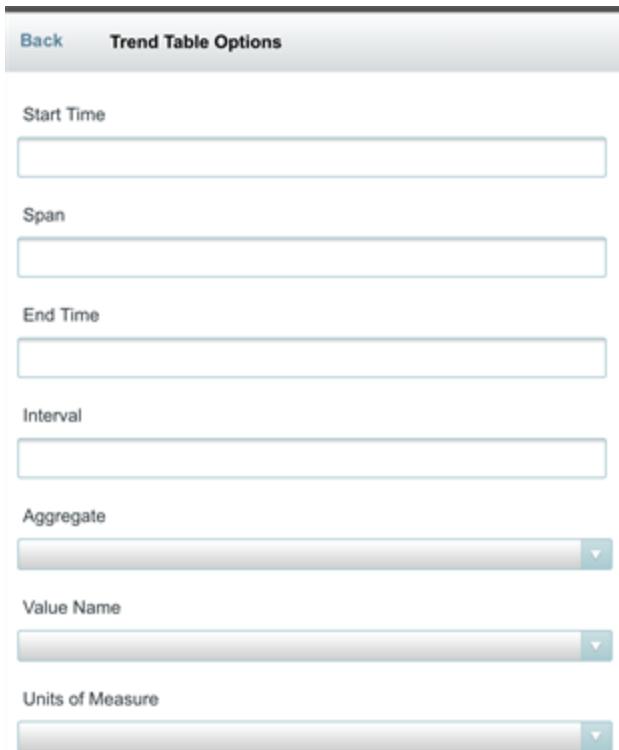
Displaying the Trend Table

From the slide-out **Trend menu**, tap **Table**. The Trend Table appears.



	Time	Value	Quality
1	19-Jul-2018 10:02	1	GOOD
2	19-Jul-2018 10:02	1	GOOD
3	19-Jul-2018 10:02	1	GOOD
4	19-Jul-2018 10:02	1	GOOD
5	19-Jul-2018 10:02	1	GOOD
6	19-Jul-2018 10:03	1	GOOD
7	19-Jul-2018 10:03	1	GOOD
8	19-Jul-2018 10:03	1	GOOD
9	19-Jul-2018 10:03	1	GOOD
10	19-Jul-2018 10:04	1	GOOD
11	19-Jul-2018 10:04	1	GOOD
12	19-Jul-2018 10:04	1	GOOD
13	19-Jul-2018 10:04	1	GOOD

To filter table results, tap the **Menu icon**. The Trend Table Options screen appears.



Back Trend Table Options

Start Time

Span

End Time

Interval

Aggregate

Value Name

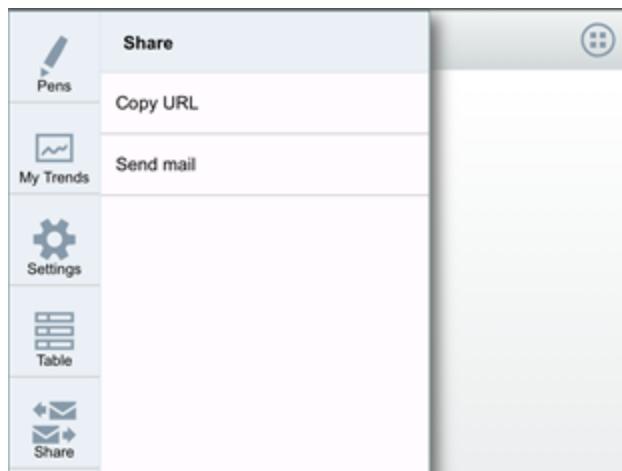
Units of Measure

Trend Table Options

Menu Item	Description
Start Time	The start date and time.
Span	The time span viewed.
End Time	The stop date and time.
Interval	How often the data is to be displayed.
Aggregate	The Aggregate type (Fits, Average, Minimum, Maximum, Interpolate, or Raw)
Value Name	Select the pen trace.
Units of Measure	The unit of measure associated with the pen trace.

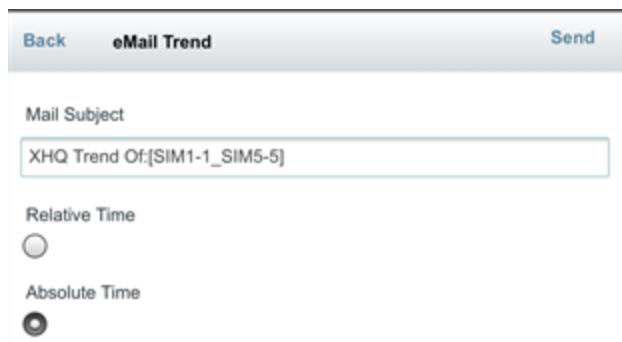
Sharing the Trend Chart

From the slide-out **Trender menu**, tap **Share**. The Share list appears.



Tap **Copy URL** to copy the URL to the Clipboard.

Tap **Send mail**. The **eMail Trend** screen appears. , tap **Send** to launch your email client.



Enter the email **Subject** line and select Relative or Absolute time. Tap **Send** to launch your email client.

Subject: XHQ Trend Of:[SIM1-1_SIM5-5]

Click on the link below to see the trend:

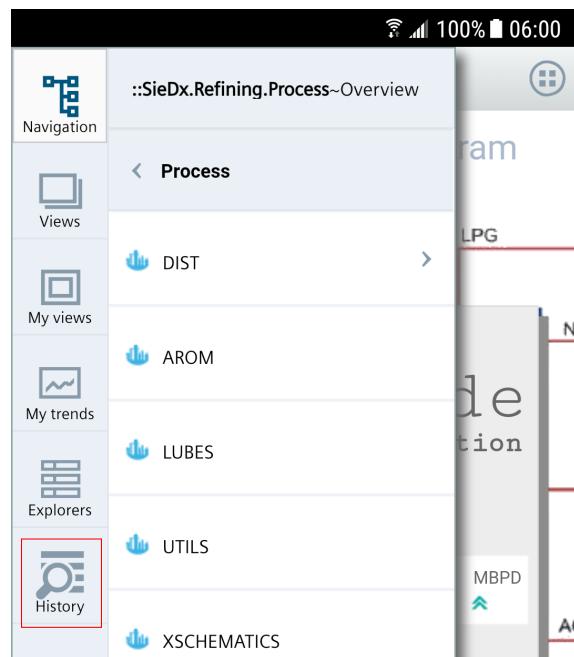
"[https://\[REDACTED\]/trend.html?configName=anon4642854236465707050user&expiration=1534537418194](https://[REDACTED]/trend.html?configName=anon4642854236465707050user&expiration=1534537418194)"

This link will expire in <30> days. Once the trend is open, you may save it to your personal favorites if desired.

Regards,
J. Smith

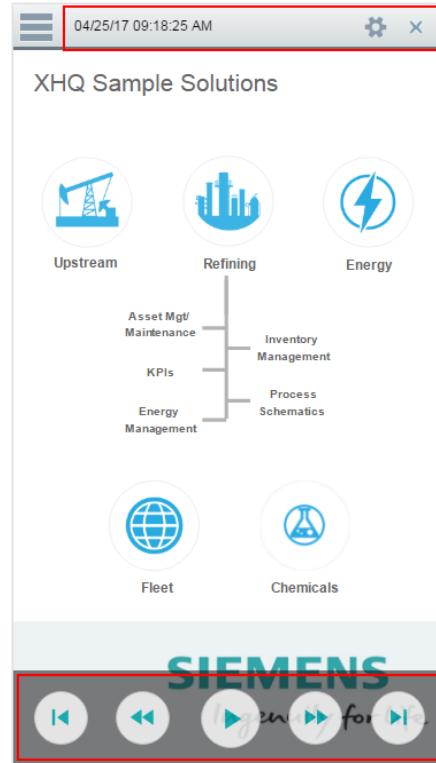
Historical Navigation

To launch the XHQ HTML5 Historical Navigation player from the XHQ HTML5 Solution Viewer, tap on the **Menu icon** located on the title bar. From the slide-out menu, tap **History**.



XHQ HTML5 Solution Viewer Slide-out Menu

The History Navigation screen appears. The **Title Bar** appears at the top and displays the history time as well as the **Settings** icon. The History Navigation **Player** appears at the bottom.



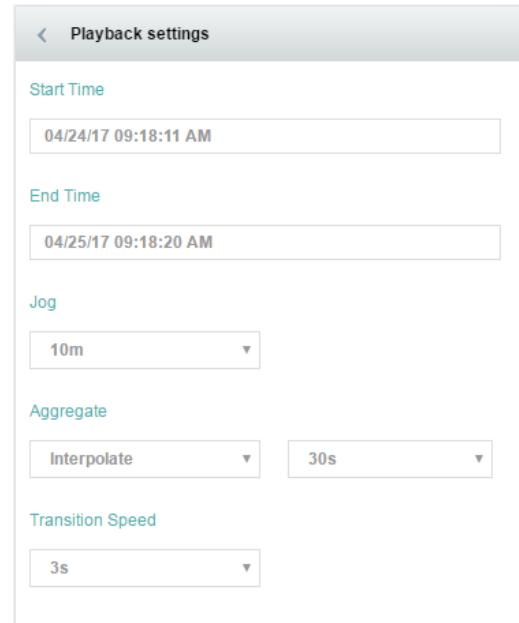
Historical Navigation: Title Bar and Player

Historical Navigation Player Buttons

Button	Description
	Start Time Skips to the Start Time configured in the Playback Settings.
	Jog Back Each tap moves back in history by an increment of the Jog period (as configured in the Playback Settings).
	Play Uses the Transition Speed to play the historical navigation. Note: This behaves similarly to the Play mode of the <i>classic Historical Navigation Player</i> .
	Pause Pauses historical playback.
	Jog Forward Each tap moves forward in history by an increment of the Jog period (as configured in the Playback Settings).
	End Time Skips to the End Time configured in the Playback Settings.

Tap on **Settings**  (located on the title bar) to edit the

Playback Settings.



Playback Settings

Historical Navigation Settings

Setting	Description
Start Time	The time in which the Historical Viewing slide show starts playing.
End Time	The time in which the slide show stops playing.
Jog	Uses the Transition Speed to play the historical navigation.
Aggregation Type	Contains these options: Interpolate, Average, Min, Max, and Raw. Interpolate is the default.
Aggregation Interval	Is a pre-populated drop-down list with the default of 30 seconds (30s). Select from the given list or enter your own. Note: XHQ splits the aggregation interval (DT) around the reference time (T) and asks the backend to send the aggregate over the time interval (T-DT, T+DT). Depending on the backend system, the timestamp associated with the aggregate value returned will vary. For a PHD backend system, the timestamp returned with the aggregate value is the beginning of the aggregation interval (that is, T-DT).
Transition Speed	Determines the number of seconds it takes to transition from one slide to the next slide. Select from a predetermined set of transition times in seconds.

Resizing View Elements

The XHQ HTML5 Solution Viewer follows the standard SVG rendering for resizing (which differs from resizing in the XHQ Solution Viewer applet).



As a solution best practice, resizing: 1) grouped view elements, 2) templates, or 3) embedded views (which include key views) is not recommended. Resizing affects every element in the view proportionally, which may result in undesired line widths or font sizes. Consider using a different view or an animation to get the desired behavior.

How Advanced Charts Are Displayed

The XHQ HTML5 Solution Viewer shows the order of the chart as they appear in the XHQ Workbench (except for Controls).



See also the topic, [Using XHQ Advanced Charts](#).

Grouping Records in a Table

Do the following to sort data based on grouped elements and resultant aggregations.

To use Group By in a table

Given scenario: A table control in XHQ HTML5 Solution Viewer has at least four columns, a minimum of 10 rows, and is bound to a data set containing a minimum of 100 records.

1. From the table, click the **arrow icon** at the upper right-hand corner to **expand** the **GroupBy panel**.
 2. Select the columns from which you want to **group data** and drag-and-drop into the **GroupBy box**.
 3. Select the columns for **aggregation data** and drag-and-drop into the **Aggregation box**.
 4. Select which data you want to aggregate and then click the **Apply button** (which is the checkmark icon located next to the Aggregation box).
- The grouped collection data appears below the GroupBy panel.
5. **OPTIONAL**
Click the **Settings button** (located next to the GroupBy box) to change the table display mode (Show GroupBy table, Show table, Show both, Remove all fields).

Viewing the GISMap

You can view maps from various providers (such as Google Maps, OpenStreetMap, ArcGIS REST, XYZ or Bing Maps) from the XHQ HTML5 Solution Viewer.



The GISMap control allows maps to be displayed as *layers*. *Markers* can be added to highlight special landmarks. It is configurable from the XHQ Workbench and displayed only from the XHQ HTML5 Solution Viewer at runtime.



For configuration information, see the topic, [Configuring the GISMap Control](#), located in the XHQ Developer's Guide.

Expect the following to occur if the given resource cannot be found.

If this ...	Then this ...
The configured image cannot be found in the Image provider layer	A "NOT FOUND" message appears next to the layer name.
The Shapefile ZIP file cannot be found for the Shapefile provider layer	A "NOT FOUND" message appears next to the layer name.
The image cannot be found for the marker (on all layers)	The default "X" image is displayed.



To improve the user experience when viewing the GISMap on a mobile device, pinch-to-zoom and pinch-to-rotate features have been disabled.

To select multiple markers on the map

Select a rectangular area by holding down the CTRL key and dragging the mouse from top left to bottom right.

All the markers in this area are selected.