

PortalWorX™

Product Brief for V10.71
October 2012



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PortalWorX

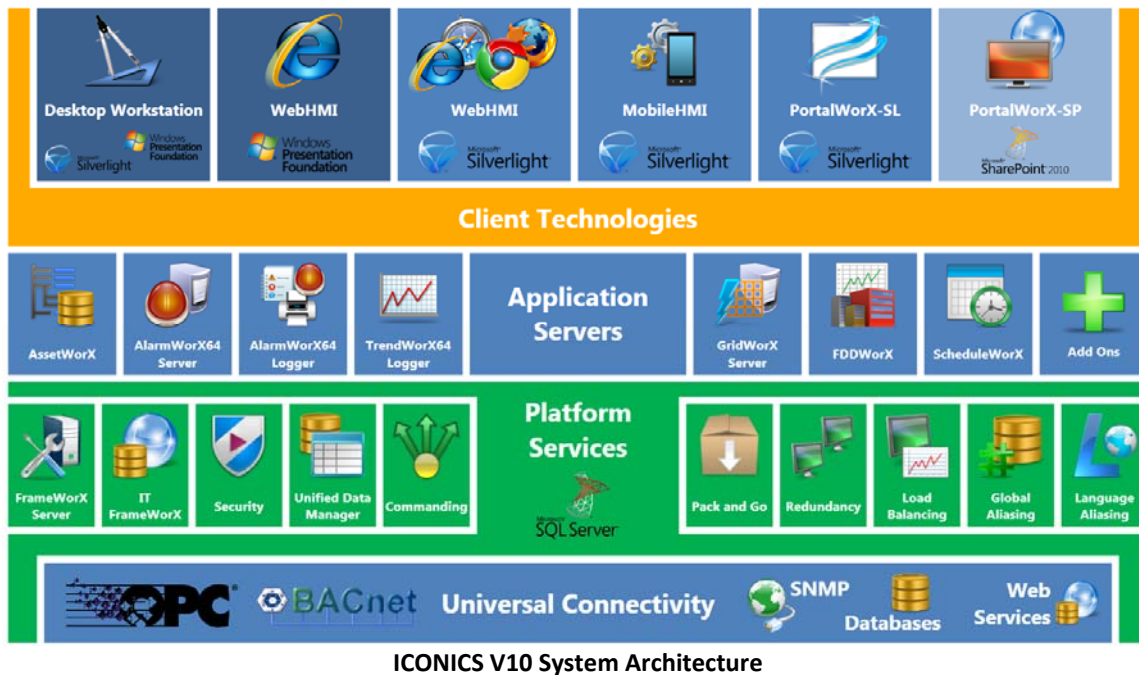
ICONICS PortalWorX is a pair of dashboarding products that provide role-based enterprise visualization of data via alarms, trends, graphics and additional viewing objects. PortalWorX has been implemented in two distinct technologies to provide flexibility in delivery.

- **PortalWorX-SP** – Microsoft SharePoint®-based dashboard for web access through the SharePoint platform.
- **PortalWorX-SL** – Microsoft Silverlight®-based for thin-client accessibility and performance on any browser.

Both PortalWorX-SP and PortalWorX-SL are provided. Visualization objects, such as trends and graphics, can be defined once and published to be viewed on one or both solutions. The shared architecture, role-based features and viewers are described below followed by module and viewer specific information.

PortalWorX Architecture

PortalWorX-SP and PortalWorX-SL utilize ICONICS Platform Services technology and are the primary visualization platform for ICONICS AnalytiX® solutions. Below is an architecture diagram showing where PortalWorX-SP and PortalWorX-SL fit into the ICONICS V10 System Architecture.



Role-based Dashboards for Any User in Any Industry

Below are some examples of the types of applications that can benefit from PortalWorX:

- Building Controls and HVAC
- Water and Wastewater
- Air Conditioning and Lighting
- Heating and Cooling
- Wind Turbines and Wind Farms
- Oil and Gas
- Utilities and City Heating Stations
- Conveying and Packaging
- Solar Facilities
- Pharmaceutical
- Geo Thermal and Bio Gas Power
- Heavy Industry

Comprehensive Library of Automation Viewers

For PortalWorX-SP, ICONICS' library of Automation Web Parts allow you to "SharePoint-enable" your existing application, delivering visibility to all roles within the organization. Leverage your existing HMI displays, trends, manufacturing intelligence reports, charts, and more with point-and-click configuration. These same Viewers are available in PortalWorX-SL as well.

Each Web Part can be applied in a myriad of different ways, depending on the nature of the application. Below is a quick reference table of the Web Parts included with PortalWorX-SP, and each Web Part is described in more detail in the sections following this summary table:

PortalWorX Viewers

GraphWorX64 Viewer	Viewer/Web part for integrating GraphWorX64 Silverlight displays into your role-based SharePoint dashboards
TrendWorX64 Viewer	Real-time and Historical trends for charting and analysis
AlarmWorX64 Viewer	Distributed alarm management within SharePoint
GridWorX Viewer	Data grid visualization web part with sorting, filtering, grouping and read/write capabilities to allow operators to fully interact with the data
Navigator	Runtime navigation tree for browsing your ISA-95 asset hierarchy with flexible commands
Report Browser	Provides quick access to recently executed reports, in Excel, PDF, or HTML format
Report Executor	A convenient interface to execute new reports with powerful parameter selection dialogs
Energy AnalytiX Viewer	Exposes information from Energy AnalytiX' powerful Cost, Consumption and Carbon calculations and presents it in variety of chart types and grid layouts
Facility AnalytiX Viewer	Visualizes faults and probable causes from ICONICS powerful Fault Detection and Diagnostics Engine

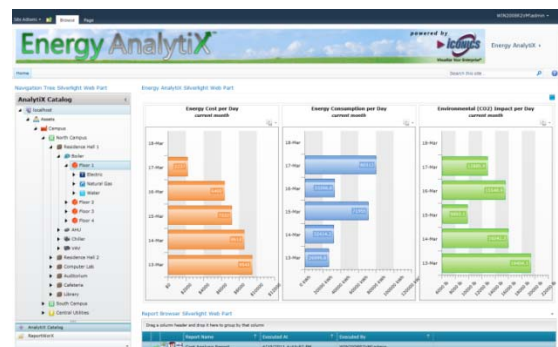
PortalWorX Features and Benefits

PortalWorX offers flexibility to cater to just about any application in any industry, and to scale up from a single site to a large enterprise or campus-wide installation. The following is a list of high-level features and benefits of PortalWorX:

Feature	Benefit
Library of powerful Automation Viewers (-SL) /Web Parts (-SP) based on Silverlight technology	Leverage your existing HMI displays, trends, manufacturing intelligence reports, charts, etc. with point and click configuration.
Role-based context-sensitive visualization to stay informed anywhere, any time, any place	Provide the right quantity of information required to quickly realize cost savings through informed decisions.
Single version of the truth	Empower your organization to be proactive and quickly solve issues.
Flexible Commands to communicate between Web Parts	Offers an intuitive navigation experience with context-sensitive, drill-down analysis.
Integrates with the SharePoint 2010 platform and 3 rd party Web parts	By leveraging your existing IT infrastructure you achieve a lower Total Cost of Ownership and faster Return On Investment.

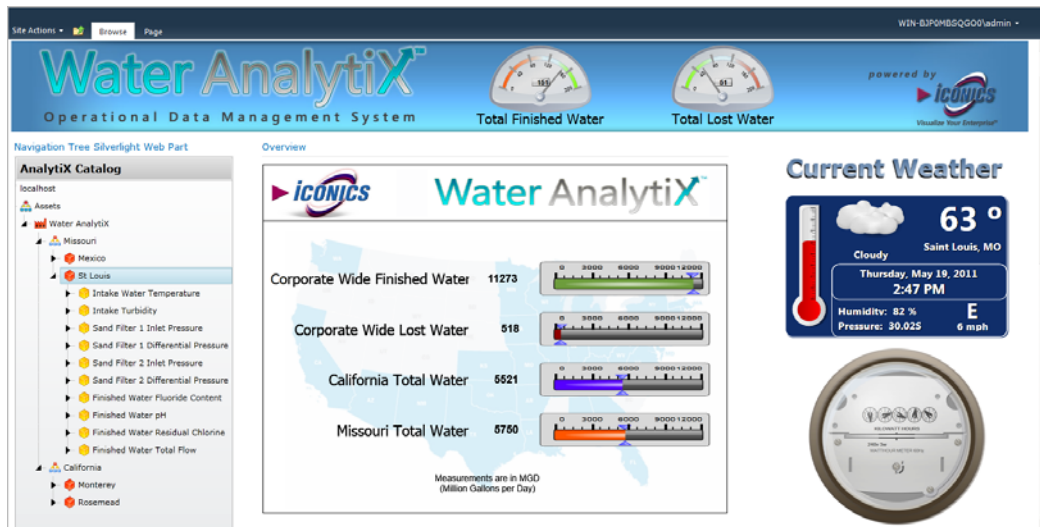
PortalWorX-SP™ Overview

ICONICS PortalWorX-SP™ provides a real-time collaboration portal built on the powerful Microsoft SharePoint 2010 Platform. Utilizing PortalWorX-SP and the SharePoint Platform, users can easily define portals and dashboards for corporate and customer collaboration. Utilizing the “Web Parts” delivered with PortalWorX-SP, and optional Web Parts available from Microsoft and many 3rd parties, users can deliver desired information to any user or role in their organization or supply chain.



Energy Dashboard using PortalWorX-SP

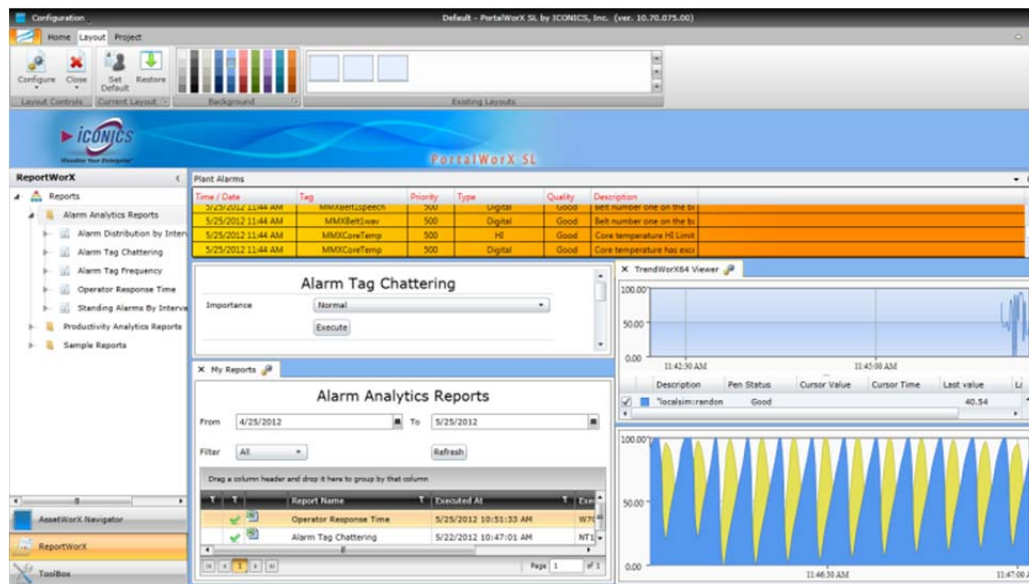
PortalWorX-SP is a revolutionary 64-bit product that has been written from the ground up to integrate with the ICONICS Platform Services architecture and run side-by-side with GENESIS64™. New native Silverlight Web Parts provided with PortalWorX-SP allow you to SharePoint-enable your GENESIS64 application to easily expose information to a variety of user roles, including operations management, quality management and executive level users. ICONICS Platform Services’ universal connectivity layer provides the ability to connect to any data source throughout your enterprise, including OPC Classic, OPC UA, OPC .NET, BACnet and SNMP. Also included in the Platform Services is the new ITFrameWorX module, which includes support for Web services and database connectivity.



Water Portal using PortalWorX-SP

PortalWorX-SL™ Overview

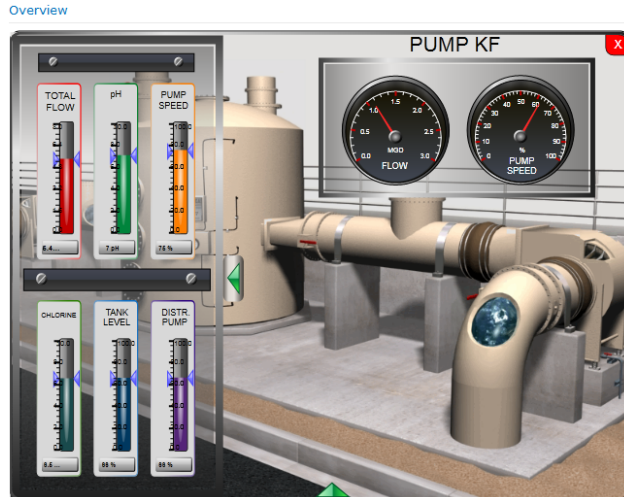
PortalWorX-SL is an innovative frame-based runtime environment used to provide an organized screen layout, typically referred to as a portal or dashboard. PortalWorX-SL will make it easier and faster to configure complex dashboards and layouts for functions such as alarm monitoring or operational control. Using Microsoft Silverlight, PortalWorX-SL requires very little setup and can be deployed easily on any system. The frame-based dashboards allow anyone to create and customize an organized environment with almost no training. Central to the frame-based environment is the AssetWorX Navigator, which will allow navigation and organization of assets for faster access to data. As a layer of further integration, AssetWorX Commanding will also provide options to send messages between frames such as GraphWorX64 displays, AlarmWorX64 Viewers, TrendWorX64 Viewers, FDDWorX Viewers and Energy AnalytiX Viewers.



Example Portal using PortalWorX-SL

GraphWorX64 Viewer

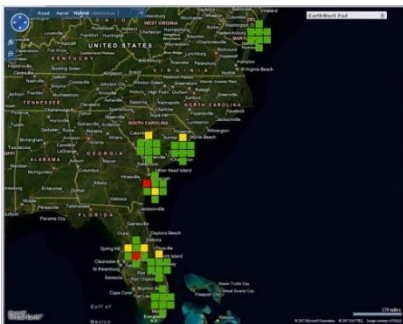
GraphWorX64™ is at the heart of the visualization in GENESIS64 and dashboard-enabling any operator interface is a snap with the GraphWorX64 Viewer Web Part. With an intuitive and instantly familiar interface the power is in your hands to deploy displays that present data in meaningful ways. GraphWorX64 offers a rich and powerful set of drawing and animation tools as well as customizable dynamics to any object. GraphWorX64 configuration is quick and easy without sacrificing the allowance for creativity and power.



GraphWorX64 Viewer

The GraphWorX64 Viewer/Web Part puts the powerful visualization and interactive capabilities of GraphWorX64 into the convenience of a native SharePoint Web Part. Integrate information from any data source using visual KPI gauges, gadgets and smart symbols to present relevant information in an intuitive manner. Connect the GraphWorX64 Viewer to the Navigator Web Part to quickly switch between displays for rapid access to information.

EarthWorX Viewer to Geographically Correlate Assets



EarthWorX Viewer

EarthWorX™, GENESIS64's geographical information technology, provides real-time visualization to widely dispersed assets such as factories, facilities, oil fields and many others through integration with Microsoft's Bing™ Maps. PortalWorX integrates the EarthWorX mapping technology and the power of the GENESIS64 HMI/SCADA solution in the convenient space of a Web part. EarthWorX can be used to contextualize geospatial data for operators, and ICONICS' unique SmartPin™ technology allows for an innovative drill-down capability to quickly view alarm conditions and status for any location around the world.

TrendWorX64 Viewer

The TrendWorX64™ Viewer/Web Part offers real-time and historical charting and analysis capabilities for a wide variety of data sources including OPC DA, HDA, OPC UA, SNMP, BACnet, databases and web services. The powerful Trend Viewer control allows operators to see what is happening in real time or what has happened historically to give them insight into their operations.

Overlay multiple pens and charts, freeze trends and look back in time at historical data, add and edit pens in runtime, and even configure trends on multiple tabs to organize visualization of different data. The TrendWorX64 Viewer supports auto scaling of pen ranges along with customization of styles, colors, scales, legends, chart types and components.

Trend and chart data in the standard Time Based Chart or quickly choose any of the following from the styling gallery: X vs. Y, Logarithmic, Bar Graph, the popular Strip Chart Recorder, Circular Charts and more. The TrendWorX64 Viewer toolbar allows operators to change time periods, show or hide the legend, freeze time and look back at trends during runtime.

Plotting both real-time and historical data in the same trend plot allows you to compare last week's data, for instance, to current information. Trend production numbers against a target. Plot batch data against a known recipe curve and more. Utilizing an "ideal" pen can also give further information on current versus normal operation.

TrendWorX64 Viewer Web Part



TrendWorX64 Viewer

AlarmWorX64 Viewer

The AlarmWorX64™ Viewer/Web Part brings distributed alarm management to the PortalWorX environment. Create both real-time and historical alarms in the same OPC-UA- and OPC A/E-enabled Silverlight viewer. View alarms from multiple data sources while adding new visualization features such as color translucent gradients for identifying key alarm conditions and improving operation response. With Server-side filtering developers can limit what alarms are shown to all clients, or client-side filters allow operators to narrow the data themselves, providing ultimate flexibility on how your operators work and how quickly they can react.

PortalWorX

Product Brief

PortalWorX™

Give your operators all of the information that they need without sacrificing simplicity or control. Escalate critical alarms for increased visibility within upper management by giving read-only access to designated alarm areas and KPIs.

AlarmWorX64 Viewer Web Part

Time / Date	Tag	Priority	Type	Quality	Description
5/27/2010 11:40 AM	MMXBelt1wav	500	Digital	Good	Belt number one on the boxline is slipping
5/27/2010 11:40 AM	MMXBelt1speech	500	Digital	Good	Belt number one on the boxline is slipping
5/27/2010 11:41 AM	Level Gauge	300	LO	Good	Level gauge is normal.
5/27/2010 11:41 AM	Humidity	400	LO	Good	Core humidity is normal.
5/27/2010 11:41 AM	Critical Mass	500	HI	Good	Critical Mass is ok.
5/27/2010 11:40 AM	Core Temp	500	HI	Good	Core temperature is normal
5/27/2010 11:40 AM	Coolant Pressure	900	LOLO	Good	Coolant Pressure is too low
5/27/2010 11:41 AM	Coolant Level	600	LO	Good	Coolant level is low. Possible leak?
5/27/2010 11:40 AM	Coolant Flow Rate	900	LOLO	Good	Coolant Flow Rate is too low
5/27/2010 11:41 AM	Compressor	350	LO	Good	Compressor gauge is reading normal
5/27/2010 11:41 AM	Box Line	400	LO	Good	Belt1 on the Box Line is slow.
5/27/2010 11:40 AM	Ash Content	400	LOLO	Good	Ash Content of Tank1 is too low. Contents are acidic.
5/27/2010 11:41 AM	Arm Torque	500	HI	Good	Arm Torque is High
5/27/2010 11:40 AM	Alkaline Level	800	LOLO	Good	Alkaline level in Tank1 is too low. Contents are basic
5/27/2010 11:40 AM	Temperature	400	LO	Good	System Temperature is normal
5/27/2010 11:40 AM	Temperature	500	Rate of Change	Good	System Temperature is normal

AlarmWorX64 Viewer

GridWorX

When viewing a large amount of data it is often helpful to align values into grids for spreadsheet style visualization. With the GridWorX™ Viewer/Web Part, users can customize data sets and create large grid-based data views. GridWorX natively supports read and write capabilities to allow operators to not just visualize data, but interact with it. Operators can view, sort, filter and group objects in real time. Sorting columns can bring the most important data to the operator and grouping can quickly create ways to visualize data in the context of related data.

GridWorX64 Viewer Web Part

CustomersProductsCompanies

CustomerID	CompanyName	ContactName	ContactTitle	Address
ALFKI	Alfreds Futterkiste	Maria Anders	Sales Representative	Obere Str. 57
ANATR	Ana Trujillo Emparedados...	Ana Trujillo	Owner	Avda. de la Constitu
ANTON	Antonio Moreno Taquería	Antonio Moreno	Owner	Mataderos 2312
AROUT	Around the Horn	Thomas Hardy	Sales Representative	120 Hanover Sq.
BERGS	Berglunds snabbköp	Christina Berglund	Order Administrator	Berguvsvägen 8
BLAUS	Blauer See Delikatessen	Hanna Moos	Sales Representative	Forsterstr. 57
BLONP	Blondesddsl père et fils	Frédérique Citeaux	Marketing Manager	24, place Kléber
BOLID	Bólido Comidas preparad...	Martín Sommer	Owner	C/ Araquil, 67
BONAP	Bon app'	Laurence Lebihan	Owner	12, rue des Bouchers
BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln	Accounting Manager	23 Tswassen Blvd.

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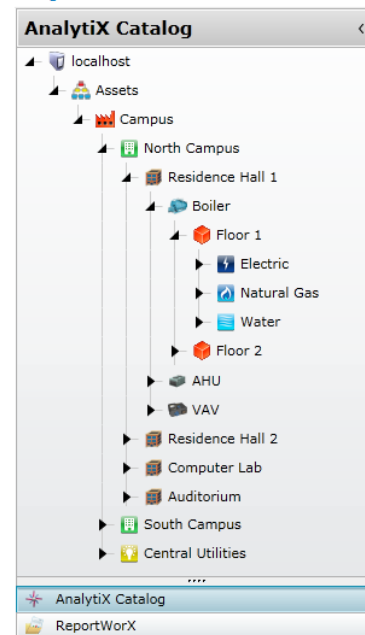
GridWorX Viewer

Navigator

Navigate your ISA-95 asset and equipment hierarchy in an intuitive tree-based format, with context-sensitive commands to communicate new data to related Web parts. The Navigator web part enables operators to quickly and intuitively navigate to the subject of interest. For a complete list of the commands that are provided as part of AssetWorX, see the following section titled “Context-sensitive Commands to Quickly Navigate Your Enterprise”. The Navigator generally acts as a “provider” Web part because it provides data to “consumer” Web parts such as the GraphWorX64 Viewer, TrendWorX64 Viewer, Report Executor, and so on.

The Navigator Web Part can also browse and execute reports natively via the ReportWorX provider, if ReportWorX is installed and accessible from the ICONICS application server.

Navigator Web Part



Context-sensitive Commands to Quickly Navigate Your Enterprise

PortalWorX-SP Web Parts intelligently communicate to one another for intuitive navigation and context-sensitive drill-down analysis, using a flexible “Commanding” infrastructure, which is part of ICONICS Platform Services. Users can configure Commands from the AssetWorX provider in ICONICS’ thin-client Workbench for Silverlight (Workbench-SL™) configuration tool to send information, displays, alarm views, reports, and much more between modules. Commands can be enabled at any level of your ISA-95 hierarchy and support the concept of inheritance as well to simplify configuration. The following commands are presently supported:

Commands

General	Set Language, Custom, Set Global Alias, Save Configuration, Group, Sort, Expand/Collapse
AlarmWorX64	Load Configuration, Set Filter, Acknowledge
AssetWorX	Select Asset
BridgeWorX	Run Transaction (Server Side)
EarthWorX	Go To Location
Energy AnalytiX	Load Configuration
Facility AnalytiX	Load Configuration
GraphWorX64	Open URL, Call Method, Write Value (Server Side), Load Display, Set Visibility, Navigate, Print, Export Image
GridWorX	Load Configuration, Select Element
MobileHMI	Send SMS, Phone Call, Send Email
ReportWorX	Run Report (Server Side), Load Report, Load Executed Report
TrendWorX64	Load Configuration, Set Time Range, Set Period, Create Pen, Delete Pen, Set Freeze Mode, Export Statistic

Report Browser

The Report Browser Web Part provides quick access to recently executed ReportWorX reports. It allows you to visualize reports in Excel, PDF or HTML format, based on availability. This Web part offers a standalone mode that allows it to operate without requiring a connection to a Navigator Web Part, by specifying within the Web Part properties which report folder should be loaded by default. The advantage of connecting the Report Browser to the Navigator Web Part is that it allows users to dynamically switch between report folders, using either the Asset Catalog “Load Executed Reports” command or by selecting a different report folder from the ReportWorX provider.

Report Browser Silverlight Web Part

Drag a column header and drop it here to group by that column			
	Report Name	Executed At	Executed By
  	Cost Analysis Report	5/2/2011 9:30:32 PM	WIN2008R2VM\admin
  	Average Daily Profile	5/2/2011 9:30:24 PM	WIN2008R2VM\admin

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Report Browser Web Part

Report Executor

The Report Executor Web Part allows users to execute reports using a compact user interface with the option to influence user-selectable parameter values such as date ranges, tags, assets, equipment, buildings, or other applicable threshold values and filters. Similar to the Report Browser Web Part, the Report Executor connects to the Navigator for dynamically switching between reports to execute, but can also operate in standalone mode to tie specifically to one report by default for execution.

Report Executor Silverlight Web Part

Raw Data per Variable

Execute

Start Time: 6/1/2011 7:00 AM

End Time: 6/8/2011 5:00 PM

Plant: St Louis

Variable(s): Intake Turbidity, Intake Water Temperature, Sand Filter #1 Inlet Pressure, Sand Filter #1 Differential Pressure

Report Executor Web Part

For users who simply want to execute a report without influencing the parameter values at all, the Asset Catalog provides the “Run report” command. This submits a report for execution to the ReportWorX web service behind the scenes, and it will execute in the background while you work on other tasks. To view the completed report in this case, users can employ the Report Browser Web Part to open it in the desired format, whether it be Excel, PDF or HTML.

Energy AnalytiX Viewer

The Energy AnalytiX Viewer Web Part is an extremely flexible Silverlight component that allows users to build rich energy visualizations through a point-and-click interface. Configuration is simple yet powerful and supports a wide variety of chart types, layouts, grids and options. Users have the option to specify a default overview configuration that should be loaded whenever they visit their role-based Energy AnalytiX dashboard, but it is simple to switch between various charts and grids using the powerful Navigator Web Part.

Drill down into energy offenders to uncover savings opportunities and optimizations. Charts support both vertical (asset-based) and horizontal (query-based) drill-down to enhance the ease with which users can identify areas of inefficiency.



Energy AnalytiX Viewer Drill-Down Capabilities

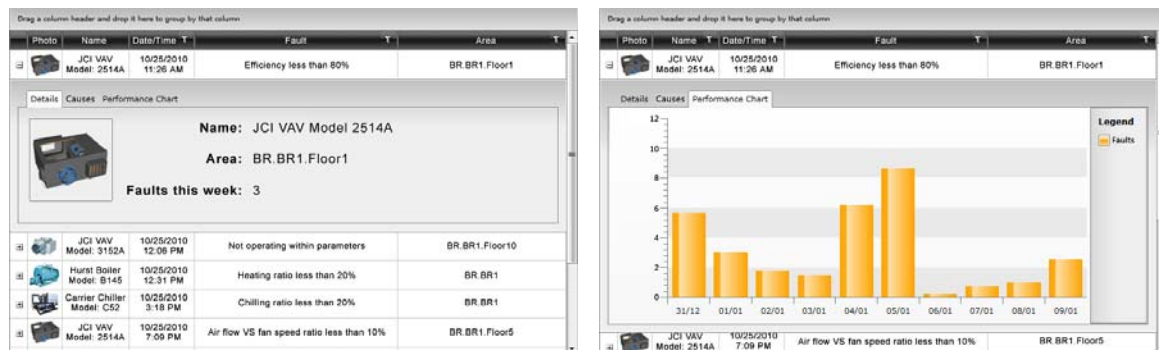
Configuring the Energy AnalytiX Viewer is easy. Simply point-and-click to add charts, grids, panels, tab controls, and other details to the configuration, in order to compose a rich visualization control with information that is laid out in an intuitive fashion. Each visual item can be mapped to a query or calculation from Energy AnalytiX in order to expose cost, consumption, carbon, weather data, or any other information collected by the system.

Energy AnalytiX Viewer Web Part in Configuration Mode

Facility AnalytiX Viewer

The Facility AnalytiX Viewer Web Part is very similar in appearance to the Energy AnalytiX Viewer Web Part, except it exposes information from the Facility AnalytiX Fault Detection and Diagnostics Engine instead of the Energy AnalytiX service.

Out-of-the-box queries from Facility AnalytiX enable users to analyze faults, fault summaries and distributions (over time, by fault or by asset), and possible causes related to each fault, weighted by probability.



Facility AnalytiX Viewer Web Part

AnalytiX Viewer Specifications

The Energy and Facility AnalytiX Viewers are both derived from a common Silverlight control that makes it easy for users to quickly build powerful visualizations from their AnalytiX information. The following specification table lists the features and visual elements supported by both the Energy and Facility AnalytiX Viewers:

Energy and Facility AnalytiX Viewer Specifications

Supported Environments	
PortalWorX-SL	Thin client operator dashboard
PortalWorX-SP	SharePoint-based manufacturing intelligence portal
GraphWorX64	Supported in both WPF and Silverlight displays
General	
Supported Visual Elements	Chart, Grid, Tab Container, Panel, Detail Panel
Layout Options	Horizontal, Vertical, Embedded within other elements (Charts within Panels, Grids within Tabs, etc.)
Global Configuration Settings	Title, Created By, Created Date, Modified By, Last Modified Date, Description, Default flag (specifies which configuration should be loaded by default)
Toolbar Options	New, Load from File, Load from Database, Save to File, Save to Database, Viewer Settings, Configuration/Runtime mode switch
Time Range Options	
Now	Data initializes with the current time as the Start or End Time
Inherited	Start and/or End Time is inherited from the parent level
Relative to Start/End	Applies an offset (forward or backward) to or from the Start or End Time in Hours, Days, Months, or Years
Preset	First Day Current Week, First Day Last Week, First Day Current Month, First Day Last Month, Last Day Current Week, Last Day Last Week, Last Day Current Month, Last Day Last Month
Custom (Fixed)	Specify a fixed time to be used by default
Offset	All times above support an optional offset (forward or backward) in Hours, Days, Months, or Years
Auto Update	Automatically updates the chart/grid at the specified interval
Asset Selection	
Inherited	Inherit Asset information from parent or override at any level
Child of Inherited Asset	Show data for one of the children of the inherited asset. Allows to specify an index corresponding to which child should be shown by default (1 st , 2 nd , 3 rd , etc.)
Specific Asset	Show data for a specific asset from AssetWorX
Child of Specific Asset	Show data for one of the children of a specific asset. Allows to specify an index corresponding to which child should be shown by default (1 st , 2 nd , 3 rd , etc.)
Show Runtime Panel option	Shows current asset selection in runtime and allows to switch dynamically between assets
Charts	
Linear Chart Types	Line, Stacked Line, Spline, Stacked Spline, Area, Stacked Area, 100% Stacked Area, Spline Area, Stacked Spline Area, 100% Stacked Spline Area, Step Line Area, Range, Spline Range, Stick, Candle
Column Chart Types	Bar, Stacked Bar, 100% Stacked Bar
Scatter Chart Types	Scatter, Bubble

Radial Chart Types	Pie, Doughnut
Horizontal Chart Types	Bar, Stacked Bar, 100% Stacked Bar
Drill-down Support	Asset-based (Vertical) or Custom (Horizontal)
Chart Appearance Options	
Legend	Visibility, Position, Item Orientation, Item Markers
Data Sampling	Function (Average, First, Last, Max, Min, Sum, Keep Extremes), Threshold
X-Axis	Visibility, Title, Show Labels, Label Format, Layout Mode, Step, Label Step, Label Rotation, Ticks Distance, Step Label Level Count, Step Label Level Height
Y-Axis	Visibility, Title, Show Labels, Label Format, Step, Label Rotation, Fixed Range (Min and Max values)
Chart Series Options	
Override Chart Type at Series Level	Allows to overlay different types of series on the same chart
General Settings	Visibility, Title, Line Color, Thickness, Fill Color, Foreground Color, Item Animation Duration, Series Animation Duration
Point Markers	Visibility, Marker Stroke Color, Thickness, Marker Fill Color, Marker Shape
Labels	Visibility, Format, Show Connectors, Show Zero Value Labels, Distance from Point, Support for Images
Tooltips	Visibility, Format
Data	Bound to any available Energy or Facility AnalytiX calculation or query
Grids	
Rows	Background Color, Alternate Background Color (for banded rows support)
Column Options	Visibility, Header Title, Width (in pixels or relative), Background Color, Header Font (Color, Size, Style, Alignment), Cell Font (Color, Size, Style, Alignment), Content Type (Value, Image), Sort (Ascending, Descending, None)
Filtering Options	Equal, Less Than, Less Than or Equal, Greater Than, Greater Than or Equal, Not Equal, Starts With, Ends With, Contains, Does Not Contain, Is Contained In
Grouping Options	Group By any column, with optional default sort order
Data	Bound to any available Energy or Facility AnalytiX calculation or query
Panels	
Layout Orientation	Specifies if objects within the Panel will be stacked vertically or horizontally
Asset Detail Panels	
Field Settings	Visibility, Label, Label Font (Color, Size, Style, Alignment), Value Font (Color, Size, Style, Alignment)
Asset Image	Visibility, Stretch (None, Fill, Uniform, Uniform to Fill), Width, Height
Data	Bound to any available Energy or Facility AnalytiX calculation or query
Appearance Options	(Available within all visual elements in the Viewer)
Title	Text, Format, Color, Size, Style, Alignment
Subtitle	Text, Format, Color, Size, Style, Alignment
Border	Color, Thickness
Background	Color

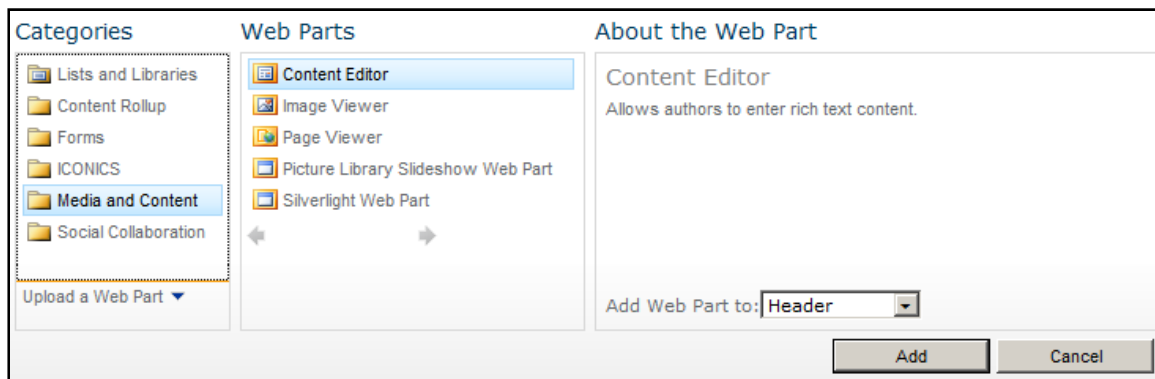
PortalWorX-SP Built-in Tracing and Diagnostics

PortalWorX-SP utilizes SharePoint lists to store configuration settings and to manage tracing and diagnostics information. This makes life easy on IT personnel in charge of managing the portal site, since PortalWorX-SP itself it can be managed using standard SharePoint tools. The configuration settings and tracing/diagnostics lists are installed as part of the ICONICS Web Part Solution Package (.wsp) file.

PortalWorX-SP Web Parts from Microsoft with SharePoint Server 2010

With PortalWorX-SP based on top of the SharePoint 2010 platform, users have the power of choice for a broad range of applications. For simpler, smaller scale projects the basic framework known as SharePoint Foundation is sufficient, but for more advanced collaboration portals with integrated business intelligence aspects users should evaluate the use of the SharePoint Server 2010 Standard or Enterprise editions.

SharePoint Foundation comes with Web parts focused around content management and collaboration, with some basic business data connectivity features. Here is a glimpse at what the typical Web Part Gallery looks like for a SharePoint Foundation portal:



A powerful operations or executive portal can be built using only the ICONICS provided Web parts and the basic features included with SharePoint Foundation. These applications can be greatly expanded with a very extensive set of additional Web Parts available from Microsoft as part of their SharePoint Server or SharePoint Enterprise offerings, and also available from many 3rd parties. Those generally fall under the following focus areas:

- **Collaboration and Social Computing** – blogs, wikis, newsfeeds, social tagging, My Sites
- **Enterprise Content Management** – managed metadata, document sets, improved templates, records management, Web content management with Web Analytics and support for streaming video
- **Search** – Advanced parameterized search, Federated search, People search and more
- **Offline access to site content** – Use SharePoint Workspace 2010 to work with sites, libraries and lists offline and synchronize changes on reconnect

- **Business Intelligence** – Excel Services, Chart Web Part, PerformancePoint, Scorecards and Business Connectivity Services, a SharePoint-based framework that provides standardized interfaces to existing business data and processes
- **Outlook Web Parts** – Display selected content from folders in your Microsoft Exchange Server email account including Calendar, Contacts, Tasks, Inbox, and Mail Folders

The differences between each edition (Foundation, Standard and Enterprise) are very well documented in online articles from Microsoft, so for more information please refer to Microsoft's online documentation.

Leverage Your Existing IT Investment for Faster ROI

PortalWorX offers the following Microsoft technology benefits and features for a true role-based visualization dashboard platform, providing fast returns from your manufacturing intelligence project:

Feature	Benefit
Microsoft Silverlight	Rich visualization and charting components for thin-client, IT-friendly deployment
Microsoft .NET Framework	Web services to enhance the computing experience with highly integrated communications and information
Windows Server 2008 Platform	Leverage the foundation on which Microsoft has built all of its latest server-class products.
Microsoft Office 2010 System	Ribbon and gallery technologies for user-friendly interface and easy-to-access operations for rapid development
Bing™ Maps Geographical Information System (GIS)	Real-time visualization of widely dispersed assets using ICONICS EarthWorX component based on Bing Maps
SQL Server	Comprehensive data management platform with open database technology for 3 rd party integration
Windows Communication Foundation (WCF)	Secure, reliable and transacted messaging and interoperability
User Account Control (UAC)	Reduced exposure and attack surface of client and server applications, improving overall system security

PortalWorX was designed from the ground up to take maximum advantage of Windows Server 2008, .NET and SharePoint® technology.

According to Microsoft, "Windows Server 2008 builds on the success and strengths of its Windows Server predecessors while delivering valuable new functionality and powerful improvements to the base operating system. New Web tools, virtualization technologies, security enhancements, and management utilities help save time, reduce costs, and provide a solid foundation for your information technology (IT) infrastructure."

ICONICS software solutions such as PortalWorX work in unison with these and other Microsoft technologies to provide further industrial automation benefits.

System Requirements

PortalWorX requires the following hardware and software components. System requirements may vary based on application size, system performance requirements, and loading factors.

Minimum Hardware and Additional System Requirements:

Component	Requirement
CPU	Dual Core 64-bit processors (e.g. AMD Athlon 64 X2, Intel Xeon, or AMD Phenom)
Memory ¹	<i>Minimum:</i> 4 GB of RAM <i>Recommended:</i> 6 GB of RAM
Hard disk	At least 20 GB of free hard disk space is recommended
Drive	DVD Drive for installation
Display	Recommended: Onboard Video Memory (256Megs) Display resolution minimum - 1024x768, 32-bit color DirectX 9 or 10 Video Card or better
.NET Framework	Microsoft .NET Framework 4.0
Web Server	Microsoft Internet Information Services (IIS) 7.0 or higher
Operating System	Any Windows 64-bit operating system, including: Windows 8 x64 (Professional or Ultimate Edition) Windows 7 x64 (Professional or Ultimate Edition) Windows Server 2008 R2 x64 Windows Vista x64 SP2 (Business, Ultimate, or Enterprise Edition) Windows Server 2008 x64 Note: Microsoft SharePoint requires a Windows Server class operating system, but can be installed on a separate machine from PortalWorX-SP itself. SharePoint is only required for PortalWorX-SP.
SQL Server ²	Microsoft SQL Server 2012 Microsoft SQL Server 2008 R2 SP1 Note: Express Edition is supported in demo mode only for 180 days
SharePoint	Microsoft SharePoint 2010 - all editions are supported (PortalWorX-SP only)
Excel	Microsoft Office Excel 2003 or above (required for ReportWorX only)

Note 1: It is recommended that the system page file size be a minimum of four (4) times the size of installed (physical) RAM.

Note 2: The user also has the option of designating a remote SQL Server, in which case the user will not be forced to install SQL Server locally.



Founded in 1986, ICONICS is an independent software developer of award winning real-time visualization, HMI/SCADA, manufacturing intelligence, building automation and energy/sustainability solutions. With over 250,000 installations worldwide, ICONICS products are used in automotive, building automation, oil & gas, pharmaceutical, renewable energy, utilities, water/wastewater, and many other applications.

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