ICONICS 10.96

Getting Started | AnalytiX®

November 2019

iCONICS

Make the Invisible Visible™

AnalytiX
Getting Started
Version 10.96

Document No. UG-ATX-1096

ICONICS LICENSE AGREEMENT

**YOU SHOULD CAREFULLY READ THE FOLLOWING
TERMS AND CONDITIONS!**

Opening and using the enclosed software for any purpose indicates your acceptance of the terms and conditions of this license agreement. If you do not agree with them, you should return all software, documentation and copy protection keys within seven days of shipment unopened and your money will be refunded.

ICONICS provides this program and licenses its use in the United States, Puerto Rico, or internationally. You assume the responsibility for the selection of the program to achieve your intended results, and for the installation, use and results obtained from this program.

LICENSE

You are granted a personal license to use this program under the terms stated in this Agreement. You may: 1) Install and use the program on a single machine; and 2) make a single archival back-up copy of the program for the sole purpose of supporting your use of the single program on a single machine. You may not copy, translate, modify or adapt the program, or any portion thereof, or incorporate it, in whole or any part, in any other product, create derivative works based on the program, or any portion thereof, or license others to reproduce any copies of the program, or any portion thereof, and you may not decompile, disassemble or reverse engineer the program, or any component thereof except as permitted by law, and then only after having prior requested in writing from **ICONICS** any interoperability information you are attempting to obtain.

TERM

The license is effective until terminated. It will terminate if you fail to comply with any term or condition of this Agreement. You agree, upon such termination, to destroy the program and all copies that were made from it and to promptly return any copy protection key(s) to **ICONICS**.

LIMITED WARRANTY

ICONICS WARRANTS THE CD-ROM, DVD OR PHYSICAL DISKETTES, ON WHICH THE PROGRAM IS FURNISHED, AND PHYSICAL DOCUMENTATION TO BE FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP UNDER NORMAL USE FOR A PERIOD OF NINETY (90) DAYS FROM THE DATE OF DELIVERY TO YOU AS EVIDENCED BY YOUR RECEIPT. THIS PROGRAM IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING, REPAIR, OR CORRECTION.

ICONICS SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN PARTICULAR, WITH RESPECT TO ANY PARTICULAR APPLICATION, USE OR PURPOSE, IN NO EVENT SHALL **ICONICS** INC. BE LIABLE FOR ANY OTHER COMMERCIAL DAMAGE, INCLUDING BUT NOT LIMITED TO SPECIAL, INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES. **ICONICS** DOES NOT WARRANT THAT THE FUNCTIONS CONTAINED IN THE PROGRAM WILL MEET YOUR REQUIREMENTS OR THAT THE OPERATION OF THE PROGRAM WILL BE UNINTERRUPTED OR ERROR FREE.

LIMITATION OF REMEDIES

ICONICS' entire liability and your exclusive remedy shall be the replacement of any CD-ROM, DVD or diskette not meeting **ICONICS**' "Limited Warranty" which is returned to **ICONICS** with a copy of your receipt within the warranty period. The remedy for breach of this warranty shall be limited to replacement and shall not encompass any other damages including but not limited to loss of profit, special, incidental, consequential, or other similar claims arising out of the use or inability to use such program even if **ICONICS** has been advised of the possibility of such damages, or for any claim by any other third party.

GENERAL

This Agreement will be governed by the laws of the Commonwealth of Massachusetts. Should you have any questions concerning this Agreement, you may contact **ICONICS** in writing at:

<div align="center">

ICONICS, Inc.
100 Foxborough Boulevard
Foxborough, MA 02035

</div>

You acknowledge that you have read this Agreement, understand it and agree to be bound by its terms and conditions. You further agree that it is the complete and exclusive statement of the Agreement between you and **ICONICS** which supersedes any proposal or prior Agreement, oral or written, and any other communications between you and **ICONICS** relating to the subject matter of the Agreement.

ICONICS RETURN POLICY

All sales are final (NO RETURNS) unless one of the following conditions is applicable: Program is returned in its original packaging material within 7 days after shipment. In such a case, a full refund is provided, less all incurred shipping and handling costs. Program is returned within 30 days from the original shipment date. In such a case a 20% restocking fee is applicable. No returns are allowed on OPC ToolWorX or ActiveX ToolWorX. All returns must have an appropriate RMA number.

EXPORT COMPLIANCE

You agree to comply with the United States of America's current Export Administration Regulations (EAR) and agree that you will not distribute or supply this product in violation of the EAR. You are responsible for securing any export approval or license as may be needed under the EAR. Additionally, you are responsible for obtaining local customs clearance as applicable and paying all duties, taxes and other charges.

TABLE OF CONTENTS

1 ANALYTIX OVERVIEW

1.1 Introduction

Welcome to ICONICS AnalytiX®, a new generation of Manufacturing Intelligence software designed to help you increase profitability, reduce energy and maintenance costs, control operating costs, and react to emergent situations before they negatively impact your bottom line.

AnalytiX empowers decision makers at all levels of the enterprise with real-time information to help them drive global operational efficiency and strengthen competitive market advantage. ICONICS AnalytiX solutions leverage the latest Microsoft technologies including the Windows Server platform, SQL Server, and SharePoint for rich, IT-friendly visualization components.

ICONICS AnalytiX is comprised of the following products:

- AnalytiX Suite*
- Facility AnalytiX®
- CFSWorX™
- BI Server
- BridgeWorX64™
- ReportWorX64™

* The AnalytiX Suite installation is comprised of the following options:

- o **Platform Services** – Core connectivity and communications layer shared between products
- o **Facility AnalytiX** – Predictive Software for Facilities Management
- o **Help** – Product Documentation

ICONICS AnalytiX Installation also includes the Workbench multi-functional, centralized web-based environment.

This *Getting Started* manual explains how you can:

- Install the AnalytiX software.

- Familiarize yourself with and start using the Workbench

- Access online help and technical support.

Note: This manual is an abbreviated version of the full AnalytiX Help documentation, which is available in the AnalytiX product installation.

2 SYSTEM REQUIREMENTS

AnalytiX has the following minimum system requirements. Your system must meet the minimum requirement before you can install AnalytiX.

Before installing any products please make sure you have the correct prerequisites installed.

ICONICS Suite

ICONICS advanced visualization, productivity, and sustainability solutions are built on its flagship products: GENESIS64™ HMI/SCADA, Hyper Historian™ plant historian, AnalytiX® solution suite and MobileHMI™ mobile apps. ICONICS is leading the way in cloud-based solutions with IoTWorX™, which helps customers embrace the Internet of Things (IoT) and Industry 4.0. This end-to-end software solution provides remote cloud monitoring and analytics via low-cost IoT gateway devices. Delivering information anytime, anywhere, ICONICS solutions scale from the smallest standalone embedded projects to the largest enterprise applications.

ICONICS System Requirements vary between:

- **Minimum Requirements**
- **Medium-powered Requirements**
- **High-powered Requirements**

System Requirements - Minimum Requirements

CPU

Dual Core 64-bit processors (e.g., AMD Athlon 64 X2, Intel Xeon, and AMD Phenom)

Memory

4 GB of RAM is required (6 GB Recommended)

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

Note: It is recommended that the virtual memory allotment be two times the amount of physical memory (RAM) on the system.

Hard Disk

At least 4 GB free hard disk space is required (10 GB Recommended)

Drive

DVD Drive for Installation

Video Card

Onboard Video Memory (256MB) Display resolution minimum - 1024x768, 32-bit color

DirectX 9 or 10 Video Card or better

Operating System

- Windows 10 x64 (Pro or Enterprise Edition)
- Windows 8.1 x64 (Pro or Enterprise Edition)
- Windows 7 SP1 x64 (Professional or Enterprise Edition)
- Windows Server 2019
- Windows Server 2016 x64

- Windows Server 2012 R2 x64
- Windows Server 2012 x64

Note: Windows 10 Anniversary Update is required for MobileHMI UWP app.

Note: Server-class operating system highly recommended for web hosting and AnalytiX features.

.NET Framework

Microsoft .NET Framework 4.7.2

Web Server/Access

Microsoft Internet Information Services (IIS) 7.0 or higher

Edge, Internet Explorer,Firefox, Safari, or Chrome

SQL Server

- Microsoft SQL Server 2019
- Microsoft SQL Server 2017
- Microsoft SQL Server 2016
- Microsoft SQL Server 2014
- Microsoft SQL Server 2012 R2

Notes:

- The connection to SQL Server data source may be either local or remote.
- ICONICS supports SQL databases with encryption.

System Requirements - Medium-powered Requirements

CPU

Quad Core 64-bit processors or better (e.g., AMD Athlon 64 X2, Intel Xeon, and AMD Phenom)

Memory

8 GB of RAM or higher

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

Note: It is recommended that the virtual memory allotment be two times the amount of physical memory (RAM) on the system.

Hard Disk

At least 4 GB free hard disk space is required (10 GB Recommended)

Drive

DVD Drive for Installation

Video Card

Onboard Video Memory (500MB) Display resolution minimum - 1024x768, 32-bit color

DirectX 9 or 10 Video Card or better

Operating System

- Windows 10 x64 (Pro or Enterprise Edition)
- Windows 8.1 x64 (Pro or Enterprise Edition)
- Windows 8 x64 (Pro or Enterprise Edition)
- Windows 7 SP1 x64 (Professional or Enterprise Edition)

- Windows Server 2019
- Windows Server 2016 x64
- Windows Server 2012 R2 x64
- Windows Server 2012 x64

Note: Windows 10 Anniversary Update is required for MobileHMI UWPapp.

Note: Server class operating system highly recommended for web hosting and AnalytiX features.

.NET Framework

Microsoft .NET Framework 4.7.2

Web Server/Access

Microsoft Internet Information Services (IIS) 7.0 or higher

Edge, Internet Explorer, Firefox, Safari, or Chrome

SQL Server

- Microsoft SQL Server 2017
- Microsoft SQL Server 2016
- Microsoft SQL Server 2014
- Microsoft SQL Server 2012 R2
- Microsoft SQL Server 2008 R2 SP1

Notes:

- The connection to SQL Server data source may be either local or remote.
- ICONICS supports SQL databases with encryption.

System Requirements - High Powered Requirements

CPU
Quad Core 64-bit processors or better (e.g., AMD Athlon 64 X2, Intel Xeon, and AMD Phenom)

Memory
16 GB of RAM or higher

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

Note: It is recommended that the virtual memory allotment be two times the amount of physical memory (RAM) on the system.

Hard Disk
At least 4 GB free hard disk space is required (10 GB Recommended)

Drive
DVD Drive for Installation

Video Card
Onboard Video Memory (1GB) Display resolution minimum - 1920x1080, 32-bit color

DirectX 9 or 10 Video Card or better

Operating System
Windows 10 x64 (Pro or Enterprise Edition)

Windows 8.1 x64 (Pro or Enterprise Edition)

Windows 8 x64 (Pro or Enterprise Edition)

Windows 7 SP1 x64 (Professional or Enterprise Edition)

Windows Server 2019

Windows Server 2016 x64

Windows Server 2012 R2 x64

Windows Server 2012 x64

Note: Windows 10 Anniversary Update is required for MobileHMI UWP app.

Note: Server class operating system highly recommended for web hosting and AnalytiX features.

.NET Framework

Microsoft .NET Framework 4.7.2

Web Server/Access

Microsoft Internet Information Services (IIS) 7.0 or higher

Edge, Internet Explorer, Firefox, Safari, or Chrome

SQL Server

Microsoft SQL Server 2017

Microsoft SQL Server 2016

Microsoft SQL Server 2014

Microsoft SQL Server 2012 R2

Microsoft SQL Server 2008 R2 SP1

Notes:

1. The connection to SQL Server data source may be either local or remote.

2. ICONICS supports SQL databases with encryption.

NOTE: The requirements described above are based on typical applications. Depending

on your specific application, the minimum requirements may vary.

Optional Hardware

- Ethernet adapter, WiFi card, or cellular 3G/4G
- USB port (for hardware license)
- Serial COM ports or other adapters (for data I/O)

Uninstalling

It is recommended by ICONICS to use Add/Remove Applications from Control Panel to uninstall the applications. Since applications are registered in the registry, Add/Remove uninstalls the product and makes the required registry changes for you.

If you uninstall some common components that are used by the product, you may be required to register those components again or simply reinstall the product.

NOTE: Do not delete the files and directories manually; doing so will leave the registry entries intact and interfere with future installations. Please use the uninstall feature of the operating system!

NOTE: The requirements described above are based on typical applications. Depending on your specific application, the minimum requirements may vary. The system requirements above assume that the OPC server(s) are installed locally on the system and the ICONICS components are all installed and running. For AnalytiX application servers that will also utilize portions of the ICONICS GENESIS64 HMI/SCADA suite, including tools within the Platform Services, note that those requirements are separate and must also be taken into consideration.

3 INSTALLING ANALYTIX

IMPORTANT NOTE: It is recommended that users uninstall ANY previous versions of ICONICS software before installing the latest version.

The following steps detail the AnalytiX system installation.

The AnalytiX installation uses standard InstallShield software to provide you with options for inputting components. This includes adding new or existing users, configuring the database engine that allows you to use and edit the size of the tables that are created, and more.

Warning: Prior to installation, verify that the system meets minimum hardware and software requirements, as described in the System Requirements section. The installation aborts if the minimum requirements are not met.

Note: You cannot install any 10.9x product from Remote Desktop when using a shared drive. If you are using a shared drive, it is suggested that you copy the installation's sources to a local drive or share the drive via Windows networking rather than via Remote Desktop.

3.1 Starting the Installation Process

To Install AnalytiX:

1. Insert the installation DVD into your optical drive. The installation begins automatically if autostart is operating correctly. If not, open the DVD drive window and double-click the **Default.hta** file icon.
   The main installation screen appears, as shown below.

2. Select "**ICONICS Suite**" under "Product Installation".
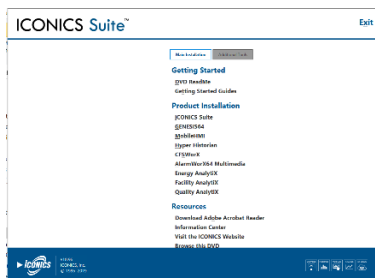
3. You may be asked to install some prerequisite components at this time, as in the example shown below. Click on the "Install" button to proceed.
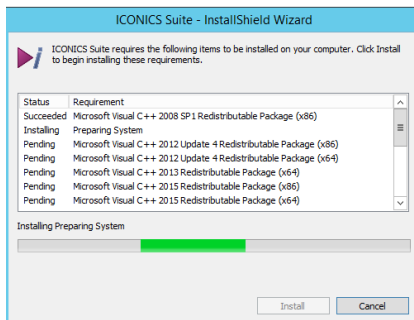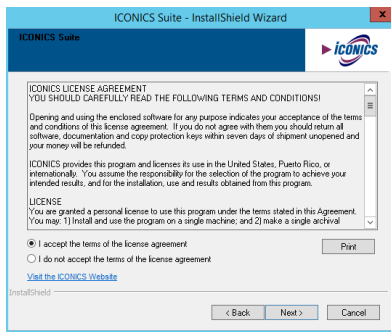

4. In the Welcome dialog box shown below, click the **Next** button to view the License Agreement step.
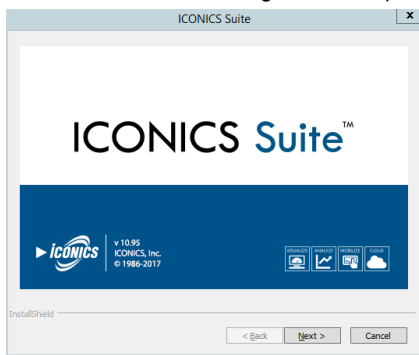

5. Click the "**I accept the terms of the license agreement"** radio button.

6.   Click the **Next** button to continue.

7.   In the Setup Type screen that appears, select the type of setup you wish to perform. The options are either Complete or Custom. **Complete** installation installs most of the components of AnalytiX and can, as an option, overwrite the supporting SQL database files or include sample displays via GenDemo.
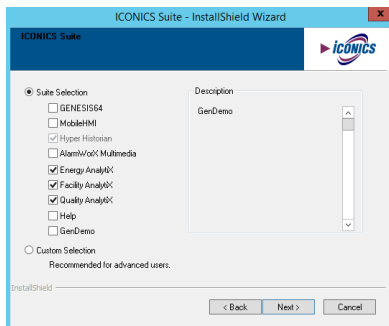

8.   The following window allows you to decide whether to include the additional Facility AnalytiX Equipment Library (with preconfigured rules for popular Building Automation Equipment) to your installation.

Customers who have purchased Facility AnalytiX can contact ICONICS for the Serial Number to enter here to activate this feature.
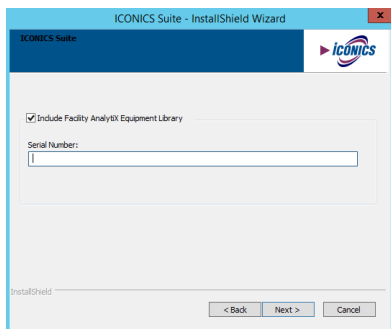

9. Once the code has been entered (or to proceed with the normal installation), click **Next.**

10. In the **Login Information** window, enter your User Name and Password.
    You can also click on the **New User Information** button to specify info about a new user that is created during installation.

11. Click **Next** to continue. The Database Server window appears.
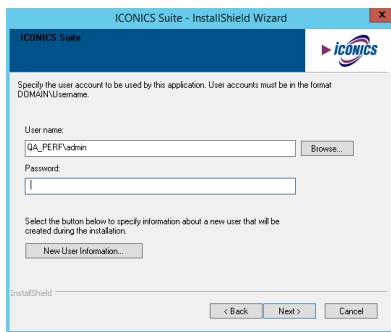
12. Use the pull-down menu or click the **Browse** button to navigate to your selected database server.
    Once you have selected a database server, you can customize your database creation and choose to utilize either Windows authentication or SQL Server authentication (using the Login ID and password token).
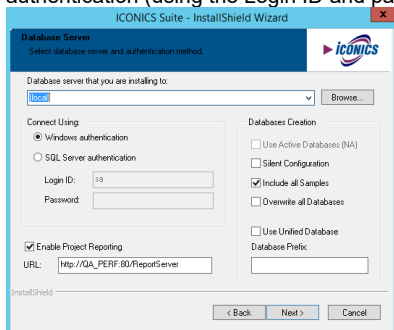
13. Click **Next** to continue.

14. The next window provides you with the option to go **Back** and change any previous installation settings.
    Click on the **Install** button if you do not need to make changes. The Database and Services Setup window appears.
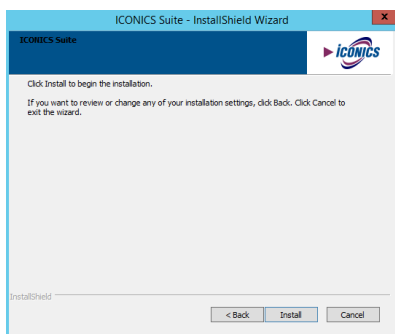
15. From here, you can decide if you want to include sample data with the installation, as well as if you would like to overwrite existing databases.
   Clicking the ellipsis button [...] to the right of each individual database allows you to set Database File and Log File settings for each database. This includes: Initial Size (in MB), File Growth (in either percentage or MB) and Maximum File Size (either Restricted [in MB] or Unrestricted). Make your selections, then click **Install** to proceed. The InstallShield Wizard Complete window appears.
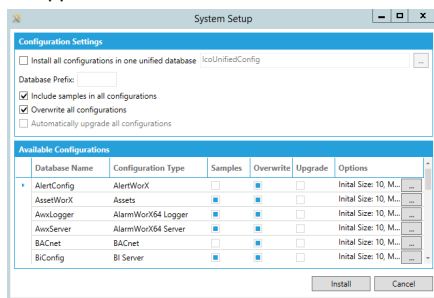
16. Click **Yes, I want to restart my computer now** to restart your computer.
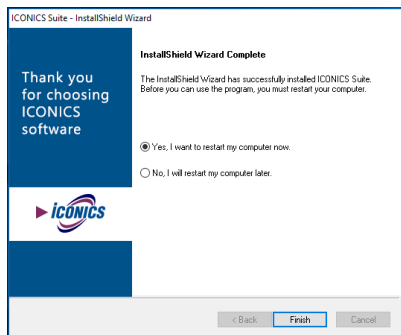
3.2 Installing Individual Components

1. Insert the installation DVD into your optical drive. The installer begins automatically if autostart is operating correctly. If not, open the DVD drive window and double-click the **Default.hta** file icon.
   The main installation screen appears, as shown below. You can now select your desired individual component for installation and the procedure is similar to section **3.1 "Starting the Install"**.

3.3 Uninstalling AnalytiX

It is recommended that you back up all of your project-related files before uninstalling. If your operating system requires a login, you must log in with administrator privileges to uninstall. Uninstalling AnalytiX software (or its components) does *not* uninstall the Licensing software. Your valid license will remain activated on your PC.

Uninstalling AnalytiX:

1. From the Windows **Start** menu, select **Settings.**

2. From Settings, select the **Control Panel.**

3. Double-click **Add/Remove Programs**. From the list of programs that you can remove, select **ICONICS AnalytiX** (or ICONICS MobileHMI, etc.).

4. Click **Change/Remove** to remove AnalytiX and all of its components.

5. Select **Remove,** and click the **Next** button. When the files are removed, the uninstall program indicates that the process is complete.

4 ICONICS SOFTWARE LICENSING

4.1 Software and Hardware Keys

AnalytiX licensing is handled by a *software key license registration system* that does not require a hardware protection key. However, ICONICS does offer an optional *hardware key* which you can purchase.

4.1.1 Software Licensing

The software key is a licensing key that resides on the hard drive of a computer. Each software key is used on a single, specific computer and is used only once. It is activated using a Site Key (license file) that is tied to the computer that is being licensed.

An activated license is required to use the software in full production mode. This license designates which products may be used, as well as the I/O point-count limit that controls the number of active data points (tags) that can be used by a system.

For important details about registering and activating software licenses for your AnalytiX installations, refer to the **ICONICS .NET Licensing Readme.htm** file, which is available on your AnalytiX installation DVD (and as a link from the disc's Info Center).

4.1.2 Hardware Key

The optional hardware key is a USB thumb drive (or flash drive) that you can move from system to system. AnalytiX recognizes the hardware key on the system you have the key attached to. A hardware key is easier and is a more reliable way of moving a license from one machine to another than a software key.

Upon insertion of the USB key into an available USB port, the necessary drivers are automatically loaded. A green status light will illuminate upon successful connection. Should the USB key be missing or unplugged during operation of AnalytiX software, plug the USB key back in either within an hour of removal or upon system reboot; otherwise the hardware-based license will not be immediately recognized.

Should you require a replacement key, visit
http://www.iconics.com/supportworx. New users must create
an account through the ICONICS Web Licensing Utility in
order to request replacement keys.

4.2 Licensing Utility

The Software Licensing Utility provides full authorization for
use to any purchased AnalytiX product and its available
options.

4.2.1   Running the Licensing Utility

To launch the License Utility from the Windows **Start** menu,
select **Programs** > **ICONICS .NET Licensing** > **Licensing
Utility**.

4.2.2   License File

Once you have opened the Software Licensing Utility, you
can browse for the Site Key (License File) itself. Either click
on the **Browse…** button in the License File section of the
window **OR** click on **File** in the top menu, then **Select
License File….**
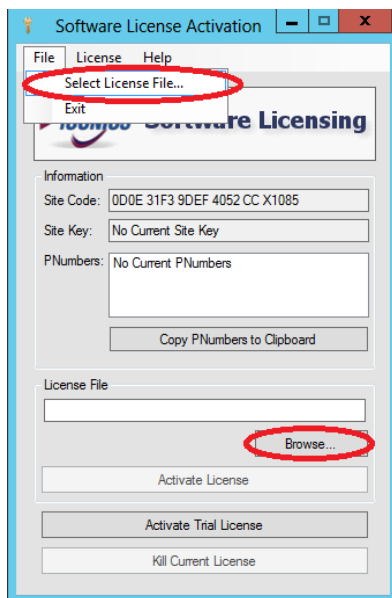
This brings up the Windows Explorer so that you may browse for the License File itself. Once you have located the file, double-click it or click **Open** to proceed.
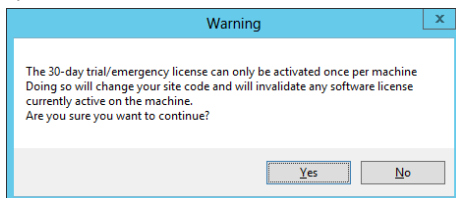
4.2.3   Activating the 30-day Trial/Emergency License

Within the Licensing Utility (Software License Activation for .NET) dialog box, you can click on the **Activate Trial License** box to initiate a 30-day trial/emergency license.

NOTE: This license can be activated only <u>once per machine</u>.
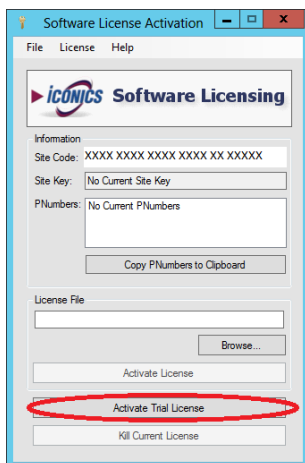
You will then see a warning about proceeding with activating the 30-day trial/emergency license. Click **Yes**, should you wish to proceed.
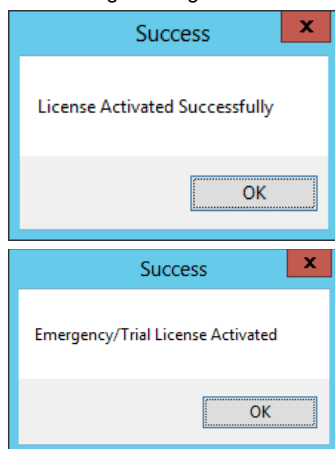

You will then see an additional warning confirming that you understand that enabling the trial license will invalidate any other software license that is currently active on the machine. Click **Yes** should you wish to proceed.
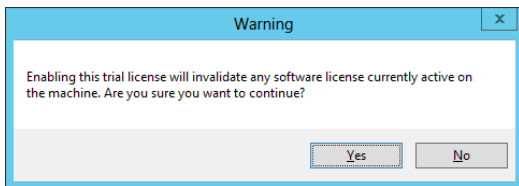
Once the 30-day trial/emergency license has been enabled, you will see the following messages:

The PC will then be authorized to run for a one-time only, 30-day backup period. The PC can be fully authorized at any time during or at the conclusion of this temporary backup period. Clicking **No** in the initial windows returns you to the Licensing Utility (Software License Activation for .NET) dialog box and preserves the existing license.

Note: Temporary backup license authorization is intended for urgent backup situations only. Clicking OK invalidates the existing license and activates a temporary backup authorization, permanently overwriting any existing license. Thus, please use caution when activating a temporary backup license authorization.

4.2.4   Killing a Software Key License

Killing a software key license deletes it and removes the current software license from the machine.

To Kill or Delete the Existing Software License:

1. Select **Kill Current License** within the Licensing Utility (Software License Activation for .NET) dialog box. Using this option, you can remove the current software license from the current machine.
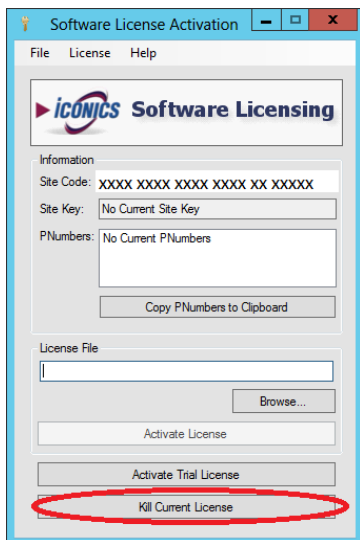
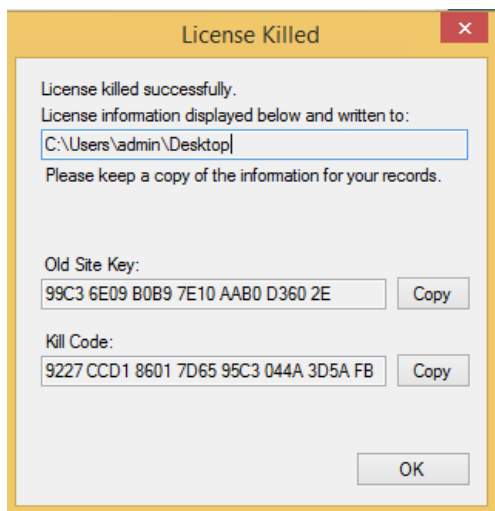A warning message appears on the screen as shown in the figure below.
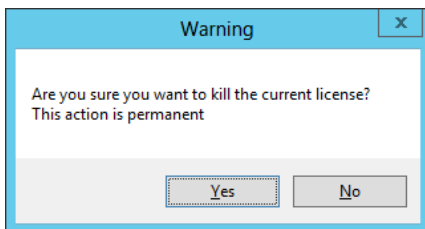
IMPORTANT: If you kill your license, you need to get a new license from ICONICS to restart your AnalytiX product.

2. Click **Yes** to continue, or click **No** to exit. Clicking **Yes** displays one of the following warning messages.

    If you are killing a *trial* or *emergency* license, once you click **Yes** you are done.

    Note: A trial or emergency license cannot be credited back to the web-based License Generator using the Kill Code.

    If you are killing a *permanent, registered* license, after you click **Yes**, the following warning message appears. Notice that the message lists the old Site Key, and a Kill Code. It also lists a .TXT file that has been written to the PC's desktop; the file name begins with "KillCode". This file contains the old Site Key and Kill Code that are listed in the message.

License Killed

License killed successfully.
License information displayed below and written to:

C:\Users\admin\Desktop

Please keep a copy of the information for your records.

Old Site Key:

99C3 6E09 B0B9 7E10 AAB0 D360 2E   Copy

Kill Code:

9227 CCD1 8601 7D65 95C3 044A 3D5A FB   Copy

OK

3. Click **Yes** to copy the Kill Code to the Windows Clipboard so that you can paste it elsewhere, such as in an email to ICONICS Support or on the ICONICS Web Licensing Utility. If you don't need to copy the Kill Code at this time, click **No**.

4. Look on the desktop for the KillCode*.TXT file. **Keep this file, and copy it to a safe location!** You will have to use the information it contains to confirm that you have killed your license (via either the ICONICS Order Entry Department or the ICONICS Web Licensing Utility).

5. Proceed with the online steps described in **4.4.3.1** "Killing a License via the ICONICS Web Licensing Utility"

Note: To reinstate a permanent license that you killed, you will need to provide the KillCode*.TXT file to ICONICS.

Note: If you uninstall the Software License Utility, the KillCode*.TXT file will be deleted. For this reason, make sure you copy the KillCode*.TXT file to a safe location or be sure to note or print its content before uninstalling the Software License Utility on the PC.   [*** = Site Key that was killed.**]

4.3 License Viewer

When you purchase licenses, the licenses are measured in a point count that determines the number of OPC tags that you can use in your application. One point count is used for most AnalytiX applications. There are two different modes for using tags in point counts:

*   On-demand mode. A system for dynamically using licensed points, and then reusing the points as needed. The count at any instance includes only active points in use.

*   Configure mode. A system in which all points are statically configured in a static central location, inside the Unified Data Manager. All configured points are counted against the point count.

The two mode types are not interchangeable and require you to buy a new license to upgrade your existing license status.

At any time, you can use the License Viewer to review the license status of ICONICS products installed on that computer. You can access the License Viewer by:

- From the Windows desktop: click **Start** > **All Programs** > **ICONICS Licensing** > **ICONICS .NET Licensing > MonitorWorX Viewer**.

- From the Workbench: from the **Tools** ribbon click the **Licensing** button. Or from the **File** menu, select **Tools**, and then **Licensing**. The License Viewer displays as shown in the following image.
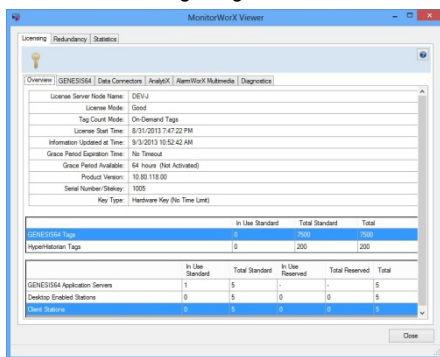
The tab that displays initially is the **Overview** tab, where you can see general information about the license for the server that the node points to. You can view license information for **GENESIS64, AnalytiX, Data Connectors**, **BizViz products (under the AnalytiX tab)**, and **AlarmWorX Multimedia** product features by using the tabs for those products. To locate the nodes where individual product features are consuming the server's license counts, use the **Diagnostics** tab.

4.4 Web Licensing

You can use the ICONICS Web Licensing Utility to generate a new license, kill a license and transfer a license. One function of the ICONICS Web Licensing Utility is to use it to upgrade your license.

Supported operating systems for using the ICONICS Web Licensing Utility to upgrade your license include Windows 8 x64 (Professional or Enterprise Edition), Windows 7 x64 (Professional, Ultimate, or Enterprise Edition), Windows Server 2008 R2 x64, Windows Vista x64 SP2 (Business, Ultimate, or Enterprise Edition), Windows Server 2008 x64 or Windows Server 2003 x64. Using the utility will require Internet access and a web browser (e.g. Internet Explorer 6.0 and up).

4.4.1   Acquiring a New Software License

Users of ICONICS software can use the ICONICS Web Licensing Utility to acquire a new software key license.

4.4.1.1   Issuing a New Software License

1.   On the machine where you want the AnalytiX license to reside, open the License Utility by going to **Start** -> **Programs** -> **ICONICS Licensing** -> **ICONICS .NET Licensing** -> **Licensing Utility**. This should open the Software License Activation for .NET window.

2.   You will see a dialog come up with a Site Code and "No Current Site Key" within the Site Key text box. Leave this window open.
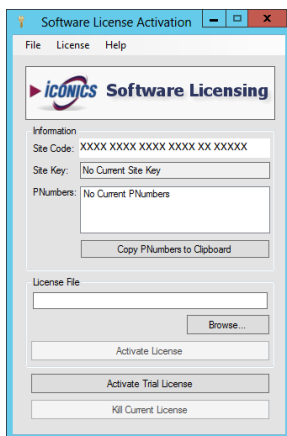
3. Go to http://www.iconics.com/supportworx and launch the Web Licensing Utility Site by clicking on the "License Product" link on the right side of the page.

Or, from ICONICS website (http://www.iconics.com), select "License Your Product" from the bottom-right Customer Connection area.

4. The main page of the Web Licensing Utility will load. Click on the "Software" button to access the Software License Options.

5. You will be required to log in to access the Software License Options. Enter your email address and password and click on the "LOGIN" button. If you do not yet have an account, you can create one by clicking on the "Create New Account" link near the bottom of the page.

6. Once you have logged into the website, click on the "New License" link in the top navigation bar.

7. Enter your Product Registration Numbers and Customer Keys for the products to license, then click "Next".

    NOTE: Your Product Registration Number and Customer Key are usually inside the DVD package that ICONICS sent to you.

8. In the next screen, you will be requested to identify the end user for whom the license is being issued. You can look up a list of users that have been previously entered by clicking on the "Existing End Users" link or can enter a new one by clicking on the "Create New" link.

9. Clicking the Existing End Users link will open a new window with a list of previously entered end users (either entered by you or tied to the product registration numbers entered in the previous screen). Select an end user from the list and click "Select" or double-click the selected end user.

    If you, yourself, are the end user and you are not listed in the grid, you can click on the "I am the End User" link to enter your data as the new end user. After identifying the end user, click on "Next".

10. In the next screen, you will see a list of the products that are available for you to license. Check all the products that you would like to license. Copy the Site Code from the license utility of the destination machine and paste it into the Site Code box of the current web page, then click on "Next".

11. Review the license information before proceeding. Click on "Generate Key" to issue the new Site Key.

12. The next page will show you a summary of what will be your license, as well as your Site Key and License File.

13. Download the license file (*.glic) by clicking on the link. You will need this file to license the machine. **NOTE:** If you misplace the file after receiving it, you can use the View License link with your Product Registration Number to download it again.
14. In the Software License Activation Utility, click on the "Browse" button and look for the license file that you downloaded from ICONICS website.
15. Once you have selected the file and the License File textbox shows the file path, click on the "Activate License" button.

16. You should then receive a popup message indicating the status of the license activation. You can click on "OK" to close the dialog.

17. The Software License Activation Utility should now show the current license information, similar to the following image.
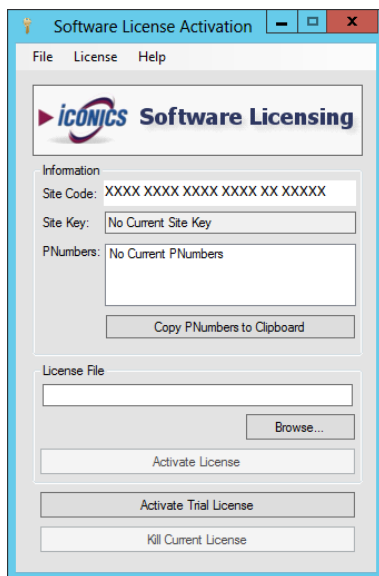
18. Notice that the Site Code may change, as expected, but the Site Key should be the same one you saw on the website.

4.4.2   Adding to an Existing Software License

1. Go to http://www.iconics.com/supportworx and launch the Web Licensing Utility Site by clicking on the "License Product" link on the right side of the page.
2. Once you have logged into the website and accessed the Software License main page, click on the "Add to License" link in the top navigation bar.
3. Enter your Existing Site Key, Product Registration Numbers and Customer Keys, then click "Next".

4. In the next screen, you will see a summary of the current license and a list of products that are available for you to add to the existing license. Check all the products that you would like to license. Copy the Site Code from the License Utility of the destination machine and paste it into the Site Code text box of the current web page, then click "Next".

5. Review the license information before proceeding. Select "Generate Key" as shown in the following image.

6. The next screen will display the new Site Key and the link to your license file. Follow steps 13 to 18 from **4.4.1.1** "Issuing a New Software License" to complete the licensing process.

4.4.3 Upgrading a Software License Key

There are four basic steps when it comes to upgrading a license via the Web Licensing Utility:

- Step 1: Kill the older version license and credit it on our website
- Step 2: Upgrade the license on our website
- Step 3: Uninstall the older version of software and install the newer version
- Step 4: License the newer version

The order in which you do Step 2 and Step 3 does not matter.

4.4.3.1   Killing a License via the ICONICS Web Licensing Utility

See Section **4.2.4** "Killing a Software Key License" for the initial steps on how to kill a license within the Licensing Utility (Software License Activation for .NET) provided on the AnalytiX DVD. Be sure to take note of the Site Key and Kill Confirmation Code. This information is necessary to put the license back on the ICONICS website. NOTE: This information is also in the KillCode*.TXT file.
[*** = Site Key that was killed.**]

Once you have the Kill Code, follow these additional steps:

1. Go to http://www.iconics.com/supportworx and launch the Web Licensing Utility Site by clicking on the "License Product" link on the right side of the page.
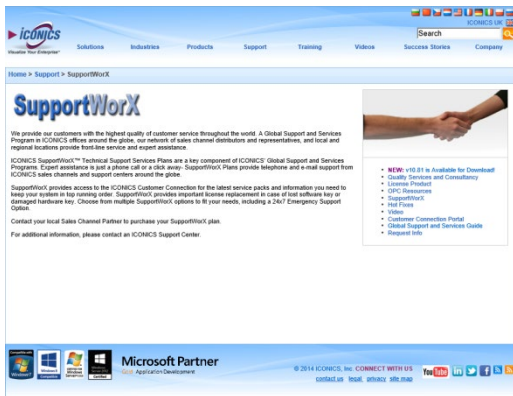
2. The main page of the Web Licensing Utility will load. Click on the "Software" button to access the Software License Options.

3. You will be required to log in to access the Software License Options. Enter your email address and password and click on the "LOGIN" button. If you do not yet have an account, you can create one by clicking on the "Create New Account" link near the bottom of the page.

4. Click on the "Kill License" link in the top navigation bar.
5. Copy the Site Key from the KillCode*.TXT file into the Site Key field on the web page, then copy the Kill Confirmation Code into the Kill Code field on the web page. Next, click on the "Remove Key" button on the web page.

6. You will get a message confirming that the Site Key has been successfully deleted as shown in the image below. The products associated with the deleted Site Key will now be available to be re-licensed.

4.4.3.2   Upgrading the License on ICONICS Website

See Section **4.2.4** "Killing a Software Key License" for the initial steps on how to kill a license within the Licensing Utility (Software License Activation for .NET) provided on the AnalytiX DVD. Be sure to take note of the Site Key and Kill Confirmation Code. This information is necessary to put the license back on the ICONICS website. NOTE: This information is also in the KillCode*.TXT file.
[*** = Site Key that was killed.**]

1. After you have copied your Site Key and Kill Confirmation Code in the previous step (either physically or electronically), you can now visit http://www.iconics.com/supportworx.
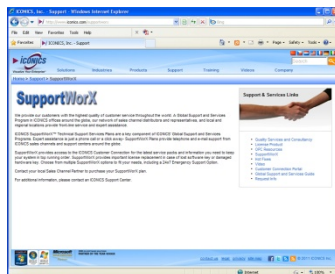
2. Next, click on the "License Product" link. This opens a new Web page, as shown below.

3. Click on the "Software" button to proceed. You will then be required to enter your email address and password for the site, as shown below. If you do not already have a login for this page, click on the "Create New Account" link near the bottom of the page.

4. Once you have logged in, click on the "Kill License" link in the top navigation bar.

5. Next, fill in your Site Key and Kill Code information that you copied while killing your previous license (see 4.2.4 "Killing a Software Key License").

6. Once you kill the license on ICONICS' website, you will receive an email containing the following information:
   - Site Key
   - Kill Code
   - Product for which you have killed the license

   The web page itself should now look similar to the figure below.

7. At this point, you have completed killing the license. Notice that in the final "Kill License" page, as shown above, it states that if the license is eligible, it can be upgraded to the latest version and it provides a link for availability.

4.4.3.3   Checking License Upgrade Availability

The easiest way to check if your license is available for an upgrade is by clicking the link on the page immediately after you kill the license. Clicking the link brings you to the Upgrade License page. You can also get to this page by clicking on the "Upgrade License" link in the tree control (third item).

Follow these steps to upgrade your license.

1.   On the Upgrade License page, fill in your Product Registration Number and Customer Key. This is the same information you received in the web page and in your email after you have killed the license on our website.
2.   Click on "Next" when you have filled in the necessary information.
3.   If the license is available for an upgrade, you will see the available license on the page.

4.   Notice that the Product Description here shows a different product with an earlier version license (Version 8). Yours should reflect the license you have for your product. Check the available product that you would like to upgrade and click on "Next".
5.   The next page is a confirmation page. Check that the information shown is correct and click on the "Upgrade" button to proceed.

6. On the new page that loads next, you can see a list of upgraded products. Notice that the Product Description shows a license for a later version product (Version 9.2) instead of the earlier one (Version 8).

7. You should also receive an email with the license upgrade information.

4.4.4   Upgrading a Hardware Key License

Upgrading a hardware key license is similar to upgrading the software key license. You would follow the exact same procedure as upgrading a software license. In the case of a Hardware key License though, you will need the USB dongle in order to kill the license from it and put the new one onto the key.

4.4.5   Licensing the New Version

Now that you have upgraded the license, you can follow the regular procedure to license your machine with the new version. When it asks you for the Product Registration Number and the Customer Key, you can provide the same one. This information was sent to you in the last step of upgrading your license via email. If you need more information on how to license the machine with the upgraded license, please consult our application notes titled *Licensing – Using the ICONICS Web License Utility for Software Key Licenses* and *Licensing – Using the ICONICS Web License Utility for Hardware Key Licenses,* as it pertains to your individual situation. These Application Notes and more can be found via the Info Center on the AnalytiX DVD.

4.5 Cloud Licensing

4.5.1   How Cloud Licensing Works

ICONICS Cloud Licensing is a means of licensing ICONICS products that is specifically designed for applications running on public cloud, private cloud, or virtualized environments. Rather than maintaining the license locally on the machine, licenses are hosted by ICONICS on a publicly-accessible data center.

During normal operations of the licensed machine, the first action it takes when starting up is to request the license information according to its License Pool ID. This request requires the machine to have access to the internet in order to request the information from the ICONICS cloud licensing server.

Once the license information has been successfully retrieved, the machine continues to operate using the licensing information retrieved from the web. The machine then periodically checks with the ICONICS Cloud Licensing server in order to validate the license. If it cannot validate the license for an extended period of time, the machine license will fail.

4.5.2   Issuing a New Cloud License

Follow these instructions to activate a license on a machine that currently has no license on it, or has a license on it that you want to overwrite.

If your machine already has a license on it and you are looking to add another license to it, see the next section entitled, "Adding to an Existing Cloud License".

1.   Go to http://www.iconics.com/support and click the "License Your Product" link on the right.
2.   In the new page that appears, select "Cloud" and log in with your username and password.

Note: If you do not have a username and password pair, you can register for one using the "Create New Account" link at the bottom of the window.

If you have a username and password but have forgotten them, you can click on the "Forgot Password" link at the bottom of the window.

3.   Once you have logged into the website, click on the "New License" link at the top.

4.   Enter your Product Registration Number(s) and Customer Key(s) for the products.

Note: Your Product Registration Number(s) and Customer Key(s) are usually inside the DVD tin package that ICONICS sent when the product was purchased.

5.   Click the "Next" button once you have entered all of your Product Registration Number(s).

6.   Choose an existing end user or enter new end user information. Click "Next" when done.

Note: The existing end user dialog may take a few moments to appear. Please be patient.

7.   On the next screen, you see a list of the products that are available for you to license. Check all the products that you would like to license on this machine. Click "Next".

8.   This page shows you a summary of what is in your license. Check to make sure everything is correct, then click on the "Generate Key" button. A page similar to the image below appears.

New License

The following License Pool has been assigned to your system for use in license activation.
Use the License Pool inside ICONICS Platform Services Configuration.
Please keep the License Pool for future reference purposes.

License Pool: A64F9EF1-D289-4386-A34D-637CD4857ADD

Registered Products

Product Key	Product Description	Order Date	Order #	P Number	G Number	Customer Key	32-bit VersionNum	64-bit VersionNum
ICO360-SIP 30DAY	1 MONTH LICENSE FOR ICO360-SIP	29/Oct/2014	55351HQ	PN1264C8E08EABCF41		CU502266	9.35	10.55

We recommend that you print this screen for your records. Use the print friendly button on the left.
An email has been sent to your email account with the above information.

Thank you for choosing ICONICS.

4.5.3   Activating the License

1. Open the "Platform Services Configuration" application by going to **Start** > **Programs** > **ICONICS** > **Tools** > **Platform Services Configuration**.
2. Select the "License" tab.
3. Select the radio button for "Cloud License" and enter the "License Pool" code that was provided by the Web License Utility. You can leave the "Password" blank.
4. Restart the FrameWorX64 Service.

4.5.4   Adding an Existing Cloud License

1. Go to http://www.iconics.com/support and click the "License Product" link on the right.
2. In the new page that appears, select **Cloud** and log in with your user name and password.
3. Once you have logged into the website, click on the "Add to License" link at the top.

Note: It is very important to pick "Add to License" and not "New License". Picking "New License" overwrites any existing license already activated on this machine. Make sure to pick "Add to License" if you are adding products to a machine that already has a license on it.

4. Enter your existing License Pool ID and the Product Registration Number(s), and Customer Key(s) for the new products.

Note: Your Product Registration Number(s) and Customer Key(s) are usually inside the DVD tin package that ICONICS sent when the product was purchased.

5. Click the "Next" button once you have entered all of your Product Registration Number(s).
6. Choose an existing end user or enter new end user information.
    Click "Next" when done.

Note: The existing end user dialog may take a few moments to appear. Please be patient.

7.   In the next screen, you see a list of the products that are available for you to license. Check all the products that you would like to license on this machine. Click "Next".

8.   This page shows you a summary of what is in your license. Check to make sure everything is correct, then click on the "Generate Key" button.

4.5.5   Killing a Cloud License

1.   Go to http://www.iconics.com/support and click the "License Product" link on the right. Select the "License" tab.

2.   In the new page that comes up, select "Cloud" and log in with your username and password.

3.   Once you have logged into the website, click on the "Kill License" link at the top. A page similar to the figure below appears.

4.   Enter your License Pool ID into the prompt. Click "Remove Pool".

5.   A message confirming that the license has been successfully removed appears. You will also receive an email with the killed license information. The products associated with this License Pool are now safely parked on the website and available to be re-licensed at any time.

4.6 Demo Mode

Without a valid license installed in your PC, it is still possible to use AnalytiX in Runtime mode. The software will check for a valid hardware or software license key on initialization. If none is found, GENESIS64 runs in Demo Mode, which limits you to:

- Twelve hours of runtime

- Only 64 OPC tag connections (points) can be updated

Running AnalytiX longer than the 12-hour limit generates a message stating that the demo time has been exceeded. You must then exit AnalytiX and reboot the PC. On restarting AnalytiX, you will get another 12-hour block of time in which to run. If there are more than 64 tags on a particular screen, gray keys (or whatever is configured as the Point Failure character) will appear in place of the actual I/O data.

5 ANALYTIX QUICK START

5.1 Introduction

This chapter provides a brief overview of the following AnalytiX products and tools:

- Workbench
- Facility AnalytiX
- CFSWorX
- BI Server
- BridgeWorX64
- ReportWorX64
- Quality AnalytiX
- Additional tools and utilities

Note: For complete information about any AnalytiX product, please refer to the Help documentation, which you can launch from the ICONICS product itself.

5.2 Workbench

The ICONICS Workbench is a multi-functional, centralized web-based environment is included as part of the Platform Services in the AnalytiX suite installation.

The Workbench offers a light-weight deployment with a fast startup time, which also supports third-party plug-ins. The updated Workbench, including familiar elements such as a tool bar ribbon and Project Explorer, but with enhanced user friendly options such as a list-view Project Explorer for browsing which can be filtered and sorted.

The Workbench runs in all browser platforms, including Microsoft Internet Explorer, Firefox, Chrome, Safari, and more.

In the Workbench, you can:

- Organize data sources on the basis of a hierarchical structure of assets and equipment, using AssetWorX.
- Locate and react to Facility AnalytiX faults if the FDDWorX provider is installed.

Many configurations can be done from within the Workbench.

To open the Workbench from the Windows **Start** button, select **All Programs** > **ICONICS** > **Workbench**.

When you open the Workbench for the first time, you will be able to see all of the applications, tools, utilities and services listed in the Project Explorer that you can open within the Workbench.

It is made up of:
- The **Ribbon bar** (along the top).
- Two **Project Explorers** that you can hide or show:
    - A **tree explorer** that gives you a way to navigate and browse; and buttons that give you access to ICONICS providers.
    - A **grid explorer** you can use for searching.
- The **content or work area** where configuration forms open.

Ribbon:
The ribbon for the Workbench is designed to help you quickly find the commands you need to complete a task. Commands are organized into logical groups.

The **Home** tab provides general tool bar functions and changes depending on the item that is selected in the Project Manager. In addition, ProjectWorX allows you to utilize new features for your database. Examples are shown below.

You can minimize the ribbon by double-clicking on the ribbon tabs.

Development and runtime modes of all installed and licensed ICONICS (AnalytiX and GENESIS64) products can be accessed and used in the Workbench.

Even though all of the providers are available in the Workbench, you can pick and choose which providers appear in the Workbench's Project Explorer.

5.3 Facility AnalytiX/FDDWorX

Facility AnalytiX is a predictive building automation solution powered by ICONICS' powerful FDDWorX engine with advanced Fault Detection and Diagnostics (FDD) technology at its core to detect and predict faults in equipment. It incorporates algorithms that weigh the probability of faults and advises management, operators and maintenance personnel of actions to prevent equipment failures or excessive use of energy. With Web-based configuration, Facility AnalytiX is easy to setup and deploy, integrating with most popular BAS, SCADA and building systems. An extensive library of standard equipment diagnostic models speed setup and configuration, while a rules based editor lets you easily customize and add new equipment diagnostics models.

When equipment failures occur, advanced software technology provides automatic guidance to a list of causes sorted by probability, resulting in reduced downtime and lower costs to diagnose and repair.

Information obtained from Facility AnalytiX can be used to:

- Predict, reduce, and eliminate equipment downtime
- Automate fault detection and real-time notifications
- Reduce maintenance and determine probable causes
- Improve reliability and control
- Improve overall environmental quality

To launch Facility AnalytiX, from the Windows **Start** menu, select **All Programs** > **ICONICS** > **Workbench**. Then, select the Facility AnalytiX provider within the Project Explorer on the left.

5.4 CFSWorX

ICONICS CFSWorX is a Connected Field Services solution containing a set of digital tools that provide:

- Realtime Monitoring of Field Equipment

- Realtime Monitoring of Service Worker Availability and Location

- Alerts to Field Workers when Field Equipment Requires Service

  - o Equipment status alerts (alarms) available to all Field Workers

  - o Can auto-notify Field Worker(s) of Field Equipment Failures

  - o Can Choose the Most Appropriate or Closest Service Worker

  - o Monitors Responses from Notified Service Workers

  - o May Notify Backup Worker(s) in case Primary is Not Available

- A Maintained Audit Trail of Notifications and Activity

CFSWorX is comprised of multiple entities including:

- Monitoring (of both Field Equipment and Field Workers)

- Workflows

- Alerting (via Notifications)

- Mobile App

5.4.1   Monitoring - Field Equipment

The monitoring of Field Equipment involves a backend of data source connectivity options (CFSWorX can work with any Platform Services real-time data source [e.g.,

OPC UA, Modbus, SNMP, etc.) and a robust Monitoring Engine (using AlarmWorX64 Server, Platform Services and AnyGlass Engine technology). The front end involves Alarms

(exposed as A&E Events), and the mobile client (providing an alarm viewer for alarm details, alarm acknowledgment, and availability response options).

5.4.2   Monitoring - Field Worker Availability

CFSWorX is able to maintain a database of an organization's field workers. Users also have the option of syncing the database with third-party identity databases such as Active Directory or CRM. Users can also decide whether to sync external data or use local definitions - using information such as contact info (name, email, cell number for SMS, etc.) or CRM calendar. In addition, CFSWorX can associate ICONICS solution-provided data such as schedules (if not external), alarms, assets, mobile device health data (updated periodically), security ID, and groups.

CFSWorX also includes Field Worker Mobile Health Monitoring. This includes Signal Strength, Battery Life, and Location (GPS).

5.4.3   Workflows

CFSWorX utilizes a new customizable Workflow Engine, based on existing ICONICS Workflow components. CFSWorX' Workflow engine provides the ability to both receive and consume alarms. It also supports additional states (including Rejected, Busy, and Accepted) via association between alarms and users. Generated alarms can be logged by ICONICS' alarm logger component, can be viewable by alarm viewer, and can be optionally send

via SMS or Email Alerts.

CFSWorX' Worfklow will introduce new transaction execution options, including Alarm Source. It will also introduce new Blocks, similar to those used within ICONICS Bridging and standalone Workflow components. These include:

- Alarm Event Output
- Conditions Common:
    - Ack
    - Alarm
    - Normal
- Conditions CFS:
    - Fixed Contact List
    - Worker Lookup
    - Accept
    - Busy
    - Reject
    - Assign
- Communication Channel Send
    - SMS
    - ATT
    - Twilio SMS
    - Twilio WhatsApp
    - Others (future)

Note that the following Workflow Blocks are not available for use with CFSWorX:

- CSV File Reader
- XML File Reader
- CSV File Output
- XML File Output
- Data Set Reader
- Historical Input
- Historical Alarms Input

- Bulk Real Time Input
- Bulk Real Time Output
- Bulk Data Manipulator
- Data Manipulator
- Data Set Transformer

5.4.4   Notifications

CFSWorX' Alert Engine architecture users a REST API to work with third-party services. It supports SMS acknowledgements, as well as alarms. It also log activity to an audit log. The pluggable architecture supports continued enhancements.

Users are able to configure both reliable and "best effort" Device Notifications. The reliable notifications utilize ICONICS' FrameWorX to FrameWorX Mobile technology to transmit alarms. This channel supports Error Notification as well as Retry. The "best effort" notifications involve SMTP (email) and SMS (text messaging) technologies. That being understood, data sent in this manner cannot be guaranteed. These efforts are used only to notify users to launch a native application. Communications may go through a service provider such as ATT, Twilio, etc.

5.4.5   CFSWorX Mobile App

The CFSWorX MobileApp is based on ICONICS' MobileHMI technology and is able to be run on iOS and Android devices. It has the ability to collect and report mobile device health. It displays alarms in a MobileHMI Alarm Flip View. The mobile app supports new CFS worker response options, including Accept, Busy, and Reject. The displays (including operator/dispatcher dashboards) are customizable.

5.5 BI Server

The landscape of data in today's applications is of very diverse nature: systems are made of a large variety of components, many of which have their own data storage

and their own interface to provide access to stored data – whether it is a web service,a database, an historian, etc.

This scattering of information often makes it difficult to provide a cohesive view of a system and, even in cases where all the data can be visualized together, it might not be shaped logically for the end user. Correlating these different datasets with each other is challenging and trying to query them using a common set of filters or parameters is difficult.

AnalytiX-BI was created to address these problems. Data is organized in user-defined Data Models, representing collections of datasets that are logically related to each

other, irrespective of their physical origin. Data Models are connection to actual data using Data Flows; ETL processes that allow multi-step transformations of the ingested data for better shaping and filtering before loading it in a model.

5.5.1 AnalytiX-BI Overview

There are many ways to use AnalytiX-BI, but the diagram below outlines the most common and most powerful architecture, and the way the pieces are designed to work together.

Following the data from the bottom up, your originating data sources can be just about any piece of data that ICONICS can connect to, whether it be OPC, web services, Hyper Historian, AssetWorX, or a custom database. This data is pulled into data flows. Each data flow is a sequence of steps to modify and shape the data to best fit the data model. Data flows can be parameterized, so clients can get only the specific data they need.

Note: Data flows are not cached. Each time a data flow is accessed, the data is read from the data sources anew and all steps are followed.

Once the data has been shaped by data flows, it is pulled into data tables inside a data model. The data model defines relationships between the tables. These relationships make it easy to query the data. Data models cache the data, and use a number of techniques to optimize memory use and performance. (See Performance Considerations.)

Data from a data model can either be queried directly by clients such as GraphWorX64 or KPIWorX, or the user can predefine views for a data model. Views can be based on the data tables, or on other views. Due to the predefined relationships, it is very easy to query the data model without having to worry about the proper JOINs between tables.

Since the data model is cached, triggers can be defined on each data table in the model to re-query its data source. Triggers can tell the table to be dropped and recreated anew, or only update the records that have changed. Each table can have multiple triggers, so you can define the best scheme to ensure your table is refreshed in the manner best suited for it. Triggers can work with parameters of data flows to only pull in data since the last data model refresh.

This architecture takes full advantage of all the features of AnalytiX-BI, but it is flexible, and many of its parts are optional. If there is no need to shape or parameterize your data, you can pull a data source directly into a table inside a data model without using a data flow. You can connect your clients directly to data flows without a data model if you only need to do some shaping and have no need to cache the data. You can forego views, and simply connect your clients directly to the model, writing your query within a point name.

5.6 BridgeWorX64

The Bridging provider in the Workbench, based on ICONICS' BridgeWorX technology, provides Graphical Data Bridging, taking advantage of multi-core, 64-bit systems as well as utilizing .NET 4.6 and the Parallel Tasks Library.

It also fully integrates with ICONICS V10 Platform Services, including:

- Common Workflow Execution Engine
- Data Flow Library
- GridWorX
- Web Services
- BI Server
- OData (REST)
- Facility AnalytiX, AlertWorX, ReportWorX, etc.

The Bridging provider in the Workbench provides multiple user benefits, including:

- Transaction Workflow Execution
- Transaction Triggering
- Enterprise Service Design
- Transaction Recovery Option

5.6.1 Transaction Workflow Execution

Transaction Workflow Execution includes:

- Diagram Designer - providing custom control flow logic
- Drag & Drop configuration of Transaction Diagram Activities
- Connectivity to heterogenous data sources
- On Complete, On Success, On Fail, On True, On False control flow branching

- Ability to execute custom .NET code in a Transaction

5.6.2 Transaction Triggering

Transaction Triggering provide the following trigger types:

Manual

Periodic

On OPC Data Value Change

On Alarm

On Database Value Change

On File/Directory Change

On NT Event posted

5.6.3 Enterprise Service Design

Enterprise Service Design provides:

- Multithread/multicor design with Parallel Task Library
- Concurrent Transaction execution on a Thread Pool
- Workflow Priorities: Normal, Below Normal, Above Normal
- If the Workflow Engine is already running at maximum capacity, then other submitted workflows are enqueued in the Priority Queue.
- Powerful transaction options for enqueuing transactions:
  - o Queue and Execute immediately
  - o Queue and Execute if no other similar transaction is running
  - o Queue and Execute if no other similar transaction is running or enqueued

5.6.4   Transaction Recovery Option

The Transaction Recovery Option provides:

- Heartbeat of running Transaction
- Recovery Options
    - o   No Recovery
    - o   Re-Execute from Start

5.6.5   Transaction Data Sources

All transaction data sources will come from the BridgeWorX DataFlow engine. Real 'live' data sources (i.e., those driven by subscription-based callbacks) are converted into datasets at the moment of consumption.

Single values (e.g., OPC DA, BACnet, SNMP, etc.) are represented as a simple data set containing at least a value, quality and timestamp. However, they may include any additional properties requested by the user (e.g., engineering units, high/low range, etc.).

Current alarms (e.g. OPC A&E, BACnet, custom point managers, etc.) are transformed into a dataset (table) when activity executes (like a snapshot of a "current" active alarms pattern).

Data sources that are not subscription-based, but require polling, will make use of reader blocks to control exactly when the Read is executed, including:

- Datasets (e.g., Web Services, Database Queries, custom point managers)
- Historical Data (e.g., OPC HDA, BACnet, custom point managers, etc.) are transformed into a dataset (table)
- CSV files
- XML files
- JSON files

5.6.6   Transaction Activities

Transaction Blocks (activities) are used to manipulate the data. Internally, they handle data as in-memory datasets.

All Reader Activities will have at least one output dataset.

The Expression Syntax allows users to use any Activities output value of row X, columnY in expression calculations.

5.6.7   Variables

Global and Local Variables in Bridging in the Workbench are typed DataSets. Schema defines column names and column data types. Global Variables are exposed by BridgeWorX64 Point Manager as DataSets.

Elements of Global, Local, Trigger Variables or Parameters could be used as data sources or in expression calculations.

5.6.8   Configuration

Bridging configuration is easy to use and maximizes available space within the Workbench tool. It is possible to use Drag & Drop within transactions. Each activity has an intuitive configuration tool, with no popups. A handy library of activities is available, as well as visual feedback about any errors within diagrams.

5.7 ReportWorX64

A new data reporting ability has been added to GENESIS64 via a new provider within the Workbench. Reports are integrated in the system, similar to how alarms or historical data are treated.

Reports in the Workbench in GENESIS64 contains multiple features, including:

5.7.1   Report Dashboard

Data Integration

- Uses simple drag-and-drop interfaces to create flexible, interactive data visualizations
- Integrates with the AnalytiX BI Server
- Contains drill-down capabilities
- Can share data to any device
- Uses Responsive Design - for access on any device any time in any location

5.7.2   Report Server

- Supports features of ICONICS ReportWorX32 32-bit-based reporting product
- Integrates with ICONICS FrameWorX Server
    - o Data can be consumed by any client
    - o Utilizes unified security and licensing
    - o Does not require Microsoft Excel to be installed on the server
    - o Uses standard OpenXML SDK to manipulate reports
    - o Each report exposes a list of tags that can be browsed

5.7.3   Report Sources

- Data sources are unified for a complete view of information
- Utilizes a Data Flow Library

5.7.4   Report Generation

Reports can be scheduled at specific times or under specific conditions. Actions (Workflows, Schedules, Triggers) can be used to execute reports.

Reports can also be manually generated. A Report Control Page can be utilized on any glass, similar to ICONICS Health Monitoring System.

5.7.5   Report Execution

Report Execution is performed when the server retrieves the template from the configuration. The OpenXML SDK is used to generate the reports. (Note that Microsoft Excel is not required on the server side.) The generated report is saved in a runtime database, which is not tied to the configuration database.

Users can use the system to deliver customized reports anywhere automatically. In addition, generic commands can be executed when reports are successful, are failing or simply when completed.

ICONICS' commanding abilities have been enhanced to support the ability to attach reports. For example, a "Send Email" command could forward a report to AlertWorX.

5.8 Quality AnalytIX

Quality AnalytiX is part of the AnalytiX product suite for GENESIS64. With Quality AnalytiX, you can monitor the efficiency and reliability of any system using statistical methods. These tools allow you to detect and correct for anomalies in your industrial process more easily than ever before.

This component of the AnalytiX suite allows you to access and configure SPC tags, distribution rules, and statistical calculations in Hyper Historian. You can also create and view trends and alarms associated with SPC tags and calculated tags within TrendWorX64 or AlarmWorX64.

Quality AnalytiX also supports:

- New chart types in TrendWorX64 (Histogram and SPC)
- Integration with ReportWorX Express
- Dashboard customization in PortalWorX

Quality AnalytiX delivers charts, KPIs, data, and alerts to any device, any time. It also provides an extensive set of viewing options to create dazzling displays and dashboards for your device. These views allow you to monitor your processes, identify issues, and fix them in a proactive manner to achieve better performance for your system.

5.9 Additional Tools and Utilities

There are additional tools and utilities that are installed with AnalytiX. A brief description of each is described in the remainder of this chapter. For more information about a tool or feature, refer to the Help documentation included with the product.

5.9.1 License Utility

License Utility (Start > All Programs > ICONICS Licensing > ICONICS .NET Licensing > License Utility) provides full authorization for use of any purchased AnalytiX product and its available options.

MonitorWorX Viewer (Start > All Programs > ICONICS Licensing > ICONICS .NET Licensing > MonitorWorX Viewer) allows users to review the status of ICONICS licenses.

5.9.2 Configure AnalytiX

Configure AnalytiX (Start > All Programs > ICONICS > AnalytiX > Configure AnalytiX) allows you to configure the product similar to the options you were provided during installation. See Step 8 onward of "Starting the Install / To Install AnalytiX" on page 3-5 for detailed steps.

5.9.3 SQL Server Setup

SQL Server Setup (Start > All Programs > ICONICS > Tools > SQL Server Setup) allows you to select the SQL Server(s) that will be used by the ICONICS applications. The added SQL Servers will then appear in the Workbench to assist in the creation of, or connection to, databases.

5.9.4 TraceWorX

TraceWorX (Start **>** All Programs **>** ICONICS **>** Tools **>** TraceWorX) provides online diagnostics and tuning of ICONICS applications. TraceWorX is intended for use by systems integrators, OEMs and customers who want to have tools for doing their own troubleshooting and diagnostics.

6 HELP AND TECHNICAL SUPPORT

6.1 Help Documentation

ICONICS software provides online help with descriptions and explanations of each application. Help is available throughout ICONICS Suite. You can access help in the following ways:

- Click the Help ❓ icon in the Workbench. This opens the help file for that application. To search for a topic in the help file, click the **Index tab** or the **Search tab**. Type or select the term you want to find, and then **click** the topic you want to read.

- Press the **F1** key to display context-sensitive help.

- Click the **Help** button in any dialog box to display context-sensitive help for that dialog box.

- Move the mouse pointer over an icon and pause for a moment to display pop-up ToolTips for quick help.

- From the Windows **Start** menu, select **All Programs** > **ICONICS Help** > **Help**.

6.2 Product Videos

A new feature of the Customer Connection Portal is the in-depth training videos highlighting many ICONICS products. These videos help users configure their systems using the best practices. Starting with a Quick Start series introducing each module in GENESIS64, these videos provide brief overviews and demonstrations of how to use ICONICS products. We accept customer suggestions for improvements.

6.3 Training Classes

Training classes are held regularly at the ICONICS training facility in Foxborough, Massachusetts. To reserve seats in training courses and to view the current ICONICS training schedule, go to http://www.iconics.com/Training.aspx. If you have any questions about ICONICS training, please contact our training coordinator at 508-543-8600.

6.4 Technical Support

ICONICS customers may obtain technical support in several different ways. First-line Support is reached through your local ICONICS representative or distributor. You may also contact ICONICS' Support Engineers directly by phone, email or the Customer Connection Portal (https://getconnected.iconics.com).

For complete information about Global Technical Support, please see the Global Support and Services User Guide at http://www.iconics.com/supportworx.

6.4.1 **Global Support and Services**

ICONICS is proud to provide our customers with the highest quality customer service. Our Global Support and Services programs are supported by ICONICS offices around the globe and our network of sales channel distributors and representatives, with local and regional locations for front-line service and expert assistance. Programs include the **SupportWorX™** Technical Support Services subscription program for continuous technical support; **Quality Professional Services** for expert system architecture design assistance, training and start-up assistance; a **24 x 7 Emergency Support Option** plan; and **Training and Certification** programs for ICONICS users, systems integrators and sales channels.

For complete information about SupportWorX service plans and technical support, please see the Global Support and Services User Guide at:
http://www.iconics.com/supportworx.

6.4.2 **Customer Connection Portal**

Get connected with ICONICS by visiting the Customer Connection Portal for general support, product downloads, product updates, customer collaboration and product tips from ICONICS' engineers and support team. The Customer Connection Portal features Support Solutions, a Support Bulletin, product videos, app notes, and whitepapers. The Support Solutions section addresses essential questions through the FAQ, Licensing, and a Global Search Engine, enabling users to find answers quickly and easily. The Support Bulletin lists your support cases with real-time status

updates along with popular knowledgebase articles and the most active forum threads. If users are current on their SupportWorX software maintenance plan, they are entitled to free upgrades. Download the latest product updates and new product releases from the Customer Connection Portal or sign up for the Beta program to try select features before they are officially released

6.4.3   Telephone Support

ICONICS support centers are open Monday through Friday, year round, except for local holidays and ICONICS holidays. Support handles calls on a first-come, first-served basis during the business hours below.

Americas (United States): 1-508-543-8600	8:00 AM – 6:00 PM Eastern Standard Time
Europe (Czech Republic): + 420-377-183-420	9:00 AM – 5:00 PM European Central Time
Asia Pacific (Australia): + 61-2-9605 1333	9:00 AM – 5:00 PM Australian Eastern Time

Please have the following available when you call:

- Your SupportWorX Plan Number.
- A PC available for tests and diagnostics.
- A clear understanding about the issue.
- The version of your OS and the ICONICS product(s).
- OPC server or relevant third-party software info.

Note: Go to https://getconnected.iconics.com/ICONICS/Support/GetSupport.aspx to contact our Technical Support department.

Email Support

The ICONICS support center email addresses are:

- **North America:** Support@ICONICS.com
- **Europe:** EuropeSupport@ICONICS.com
- **Pacific Rim:** PacificRimSupport@ICONICS.com

Please include your SupportWorX Plan Number when sending your message. Email requests will be answered on a first-come, first-served basis typically the same day.

NOTES

Global Support Offices

Americas

☎ +1 508 543 8600

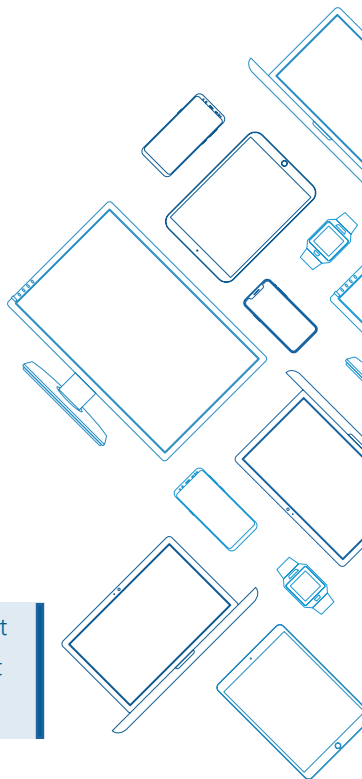✉ support@iconics.com

Asia Pacific

☎ +61 2 9605 1333

✉ pacificrimsupport@iconics.com

Europe

☎ +420 377 183 420 (Czech Republic)

☎ +49 2241 16 508 0 (Germany)

✉ europesupport@iconics.com

To open a support case, please visit our Customer Connection Portal at getconnected.iconics.com.

For more, visit www.iconics.com

A Group Company of
Mitsubishi Electric

VISUALIZE HISTORIZE MOBILIZE ANALYZE IoT CLOUD