

Mitsubishi SCADA Software

AX Application Getting Started Guide





SAFETY PRECAUTIONS


(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

In this manual, the safety precautions are classified into two levels:


"WARNING" and "CAUTION".


 WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
 CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "CAUTION" may lead to serious consequences.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Instructions]

 WARNING
<ul style="list-style-type: none">• When data change, program change, or status control is performed from a personal computer to a running programmable controller, create an interlock circuit outside the programmable controller to ensure that the whole system always operates safely. Furthermore, for the online operations performed from a personal computer to a programmable controller CPU, the corrective actions against a communication error due to such as a cable connection fault should be predetermined as a system.

 CAUTION
<ul style="list-style-type: none">• The online operations performed from a personal computer to a running programmable controller CPU (forced output and operating status changes) must be executed after the manual has been carefully read and the safety has been ensured. The operation failure may cause the injury or machine damage.

CONDITIONS OF USE FOR THE PRODUCT

- (1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
 - i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
 - ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.
- (2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.

("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

 - Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
 - Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
 - Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTS are required. For details, please contact the Mitsubishi representative in your region.

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1 *AX Application Overview*

1.1 Introduction

Welcome to AX Application[®], 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.

AX Application 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.

AX Application solutions leverage the latest Microsoft technologies including the Windows Server, SQL Server, SharePoint and Silverlight for rich, IT-friendly visualization components.

AX Application is comprised of the following products:

- AX Application Suite*
- AX Energy
- AX Facility
- AX Quality
- AX Portal™

* The AX Application Suite installation is comprised of the following options:

- **Platform Services** – Core connectivity and communications layer shared between products
- **AX Portal** – Real-time Collaboration and Visualization Dashboards
 - **AX Portal-SL** – Thin-client operations and runtime management dashboard, which is installed and included as part of the Platform Services above

- **AX Portal-SP** – SharePoint-based option for runtime visualization. Installs the base set of AX Portal-SP Web Parts including GraphWorX, TrendWorX, AlarmWorX, GridWorX, AssetWorX Navigator, AX Energy and AX Facility Viewers.
- **ReportWorX Web Parts** – Installs the optional ReportWorX Web Parts [Report Executor and Report Browser] (requires ReportWorX Server to be installed).
- **AX Energy** – Advanced Energy Management Solution (Requires SQL Server 2008 R2 or higher)
- **AX Facility** – Predictive Software for Facilities Management
- **AX Quality** – Complete SPC Quality Software Solution
- **Help** – Product Documentation

AX Application Installation also includes the Workbench, a multi-functional, centralized Web-based configuration environment.

This *Getting Started* manual explains how you can:

- Install the AX Application software.
- Familiarize yourself with and start using Workbench.
- Access online help and technical support.

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

2 System Requirements

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

CPU:

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

Memory:

Minimum: 4 GB of RAM

Recommended: 6 GB of RAM

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

Hard Disk:

Recommended: At least 50 GB free hard disk space is recommended – for installation and to allow for SQL Server database growth*.

Drive:

DVD Drive for installation

Operating System:

The following Windows 64-bit operating systems are supported, including:

- Windows Server 2012 R2 x64
- Windows Server 2012 x64
- Windows Server 2008 R2 x64
- Windows Server 2008 x64

.NET Framework:

Microsoft .NET Framework 4.5

Web Server:

Microsoft Internet Information Services (IIS) 7.0 or higher.

Additional Software:

Microsoft SQL Server 2014

Microsoft SQL Server 2012

System Requirements

Microsoft SQL Server 2008 R2 SP1 or higher (Note: Express Edition is NOT supported for AX Energy)

Microsoft SharePoint Server 2010 or SharePoint Foundation 2010 or higher (required for AX Portal-SP only, can be installed on a separate server if desired)

Web Access: Via Silverlight Publishing: Internet Explorer 7 or later, Firefox 3 or later, Safari, Chrome, Edge

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

Note: The connection to a SQL Server data source may be either local or remote.

Note: Mitsubishi Electric supports SQL databases with encryption.

StreamInsight:

Note: Microsoft StreamInsight, a required component for AX Energy will run in demo mode for 180 days if not registered with a valid SQL Server license key. This means that SQL Express installations will only be able to run AX Energy for 180 days unless they are upgraded with a valid SQL Server license key.

Users are encouraged to install StreamInsight with a valid license before installing AX Application. If you have already installed AX Application and have not yet validated your StreamInsight license, please refer to the Help documentation for additional instructions.

Optional Hardware:

Ethernet adapter (for remote PC connections or Ethernet I/O)

USB port (for hardware license or license transfer)

Serial COM ports or other adapters (for data I/O)

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 that the following components are all installed and running: AX Energy, AX Facility, AX Quality and AX Portal-SP. For AX Application servers that will also utilize portions of the MC Works64 HMI/SCADA suite, including tools within the Platform Services, note that those requirements are separate and must also be taken into consideration.

MEMO

[illegible]

3 *Installing AX Application*

The following steps detail the AX Application system installation.

The AX Application installation uses a standard InstallShield installer to provide you with options for installing components, adding new or existing users, configuring the database engine that you use and the size of the tables that are created, and more.

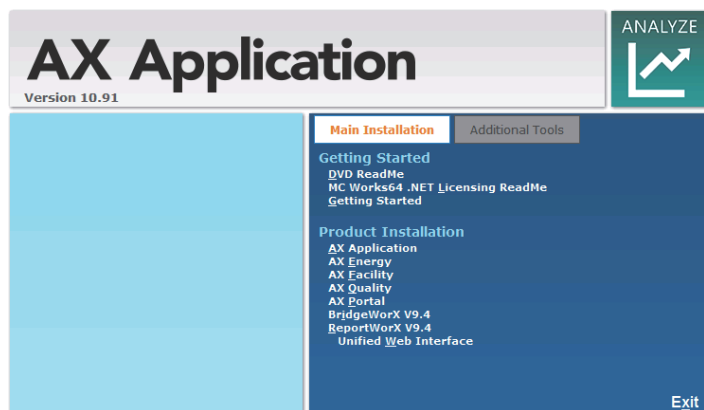
Warning: Prior to installation, verify that the system meets minimum hardware and software requirements, as described in the System Requirements section. Installation will abort if the minimum requirements are not met.

Note: You cannot install any 10.9x product from Remote Desktop when using a shared drive. In such instances, 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.

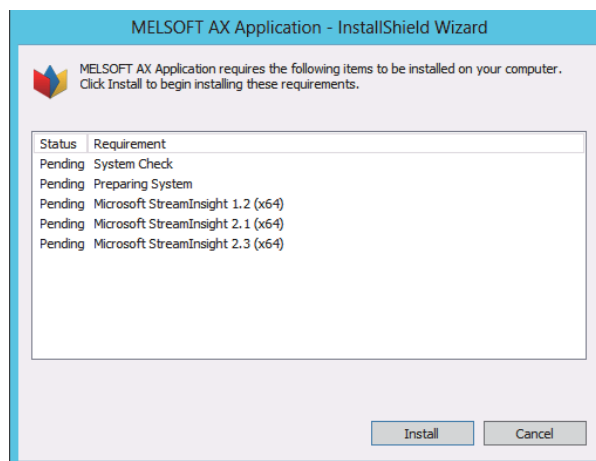
3.1 Starting the Install

To Install AX Application:

1. Insert the installation DVD into your optical drive and the installer will begin 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 will appear, as shown below. Select **“AX Application”** under “Product Installation”.



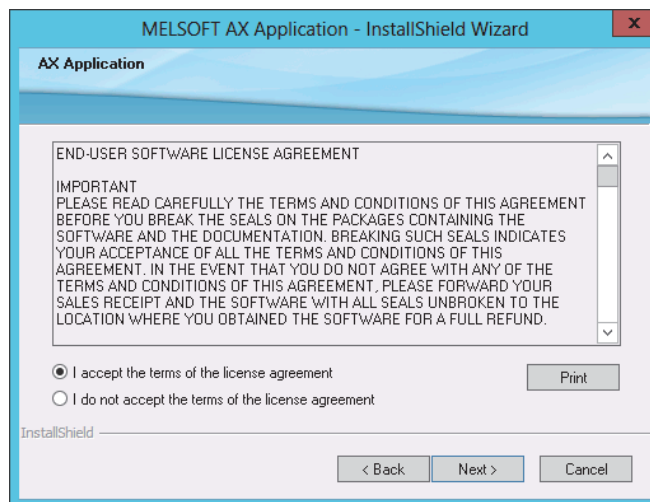
2. You may be asked to install some prerequisite components at this time, as in the example shown below. Click on the “Install” button to proceed.



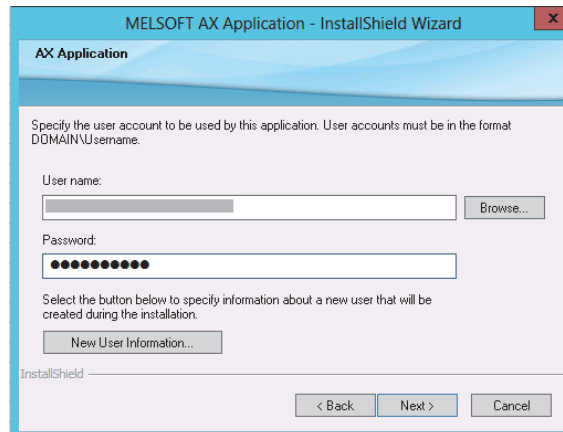
3. In the Welcome dialog box shown below, click the **Next** button to view the License Agreement step.



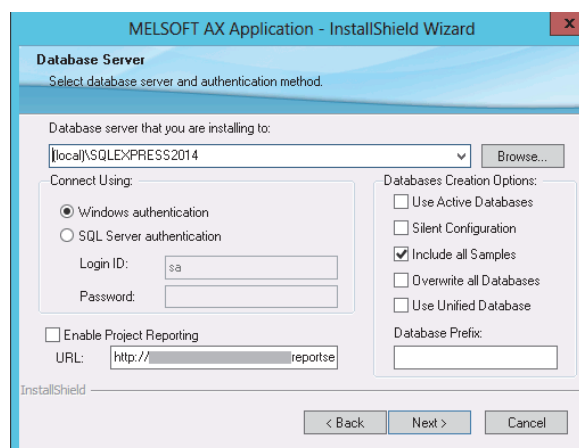
4. Click the **"I accept the terms of the license agreement"** radio button and then click the **Next** button to continue.



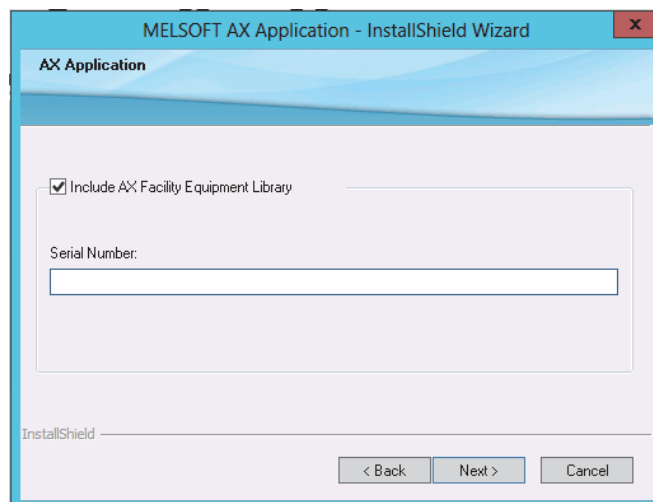
5. In the **Login Information** window, enter your User Name and Password. You can also click on the 'New User Information' button to specify info about a new user that will be created during installation. Click the **Next** button to continue.



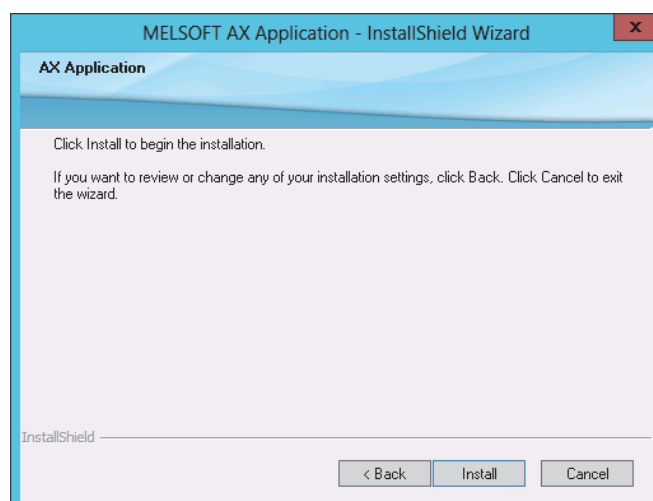
6. In the Setup Type screen that appears, select the type of setup you wish to perform, either Complete or Custom. **Complete** installation installs most of the components of MC Works64 and will, as an option, overwrite the supporting SQL database files or include sample displays via MCDemo.
7. The Database Server window will now appear. Use the pull-down menu or click the Browse button to navigate to your selected database server. Once selected, you can customize your database creation and choose to utilize either Windows authentication or SQL Server authentication (using the Login ID and password token). Click the **Next** button to continue.



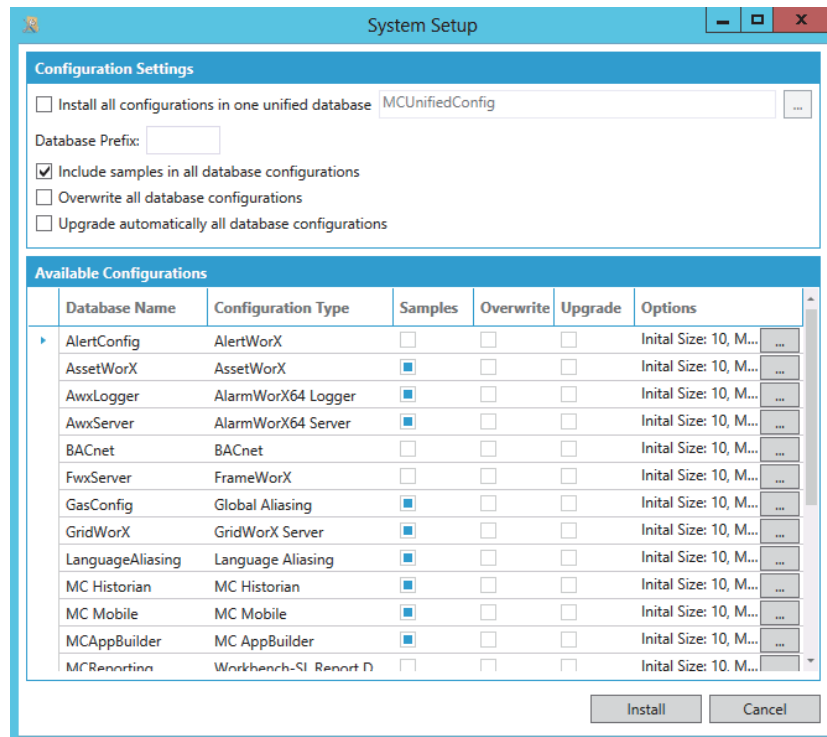
8. The following window allows you to decide whether to include the additional AX Facility Equipment Library [with preconfigured rules for popular Building Automation Equipment] in your installation. Customers who have purchased AX Facility can contact Mitsubishi for the Serial Number to enter here to activate this feature. Once the code has been entered (or, for those who have not purchased AX Facility, to proceed with the normal installation), click the **Next** button.



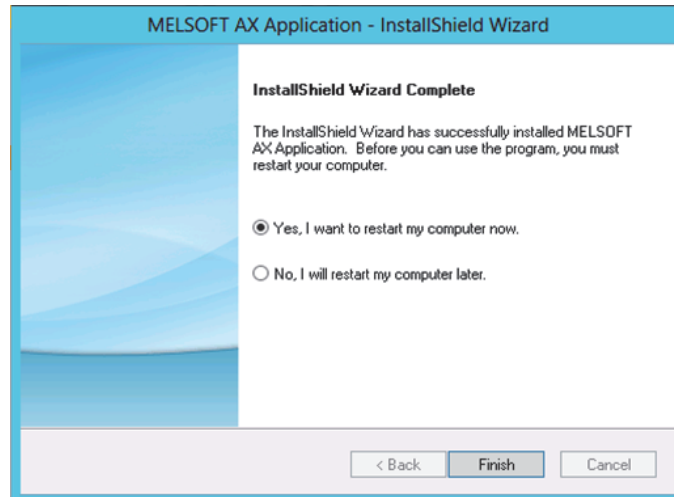
9. The next window provides you with the option to go “Back” and change any previous installation settings. If you are okay with your settings thus far, click on the **Install** button to move to the next steps in the installation.



10. The **System Setup** Dialog will now appear. You can either leave the **Include all samples** checkbox enabled (in order to install sample data that you can experiment with) or disable this checkbox to install blank tables. Advanced configuration will allow settings for additional sizing options on the database and log files. You can enable Unified database (one database that contains all the configurations) and also you can enable Overwrite all (overwrite all existing databases), or you can use Upgrade automatically all database configurations (existing databases will be automatically upgraded to the newest version).

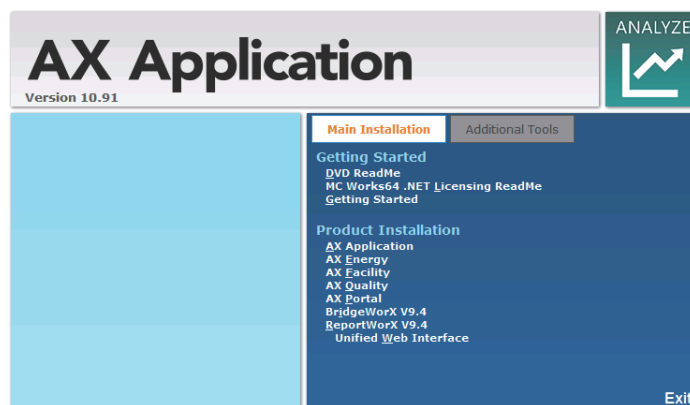


11. Click the **Install** button to continue the installation.
12. Once complete, you will see the following window. Click **Yes, I want to restart my computer now** to restart your computer.



3.2 Installing Individual Components

1. Insert the installation DVD into your optical drive and the installer will begin 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 will appear, as shown below. You can now select your desired individual component for installation and the procedure will be similar to section 3.1 “Starting the Install”.



3.3 Uninstalling AX Application

The AX Application software can be uninstalled (removed) from the system. 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 AX Application software (or its components) will *not* uninstall the Licensing software. Your valid license will remain activated on your PC.

To uninstall AX Application: From the Windows **Start** menu, select **Settings > Control Panel**. Double-click **Add/Remove Programs**. From the list of programs that you can remove, select **AX Application**. Click **Change/Remove** to remove AX Application and all of its components. Select **Remove**, and then click the **Next** button. When the files are removed, the uninstall program will indicate that the process is complete.

4 *Software Licensing*

4.1 Software and Hardware Keys

AX Application licensing is handled by a *software key license registration system* that does not require a hardware protection key. However, Mitsubishi Electric co. 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 AX Application installations, refer to the **MC Works64 .NET Licensing Readme.htm** file, which is available on your AX Application installation DVD.

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. AX Application 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

AX Application 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.

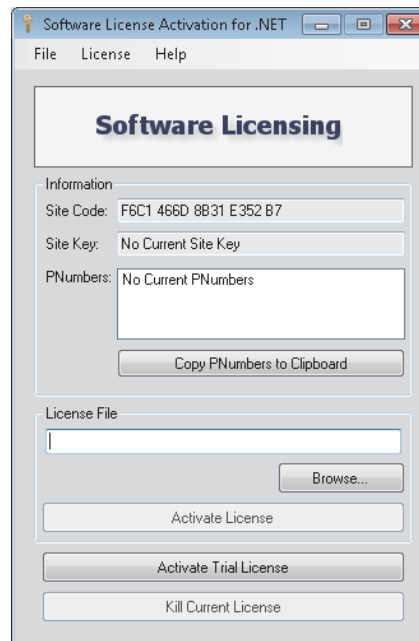


4.2 Licensing Utility

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

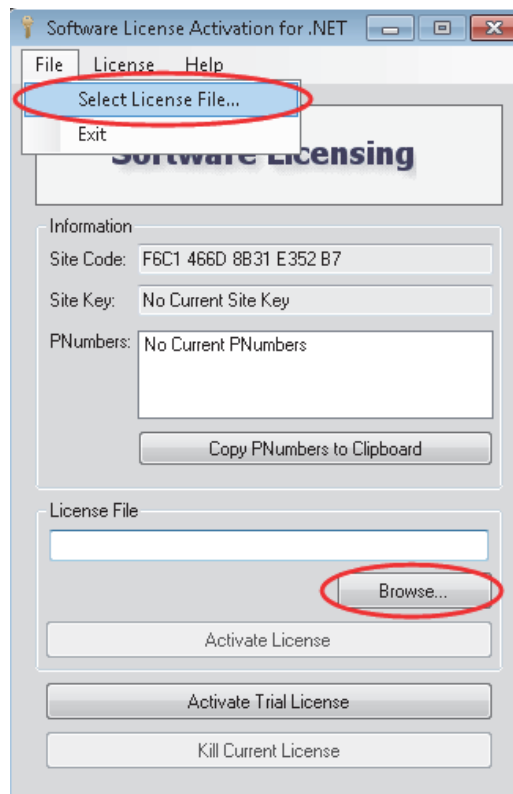
4.2.1 Running the Licensing Utility

To launch the License Utility from the Windows **Start** menu, select **Programs > MELSOFT > MC Works64 > .NET Licensing > License 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...**

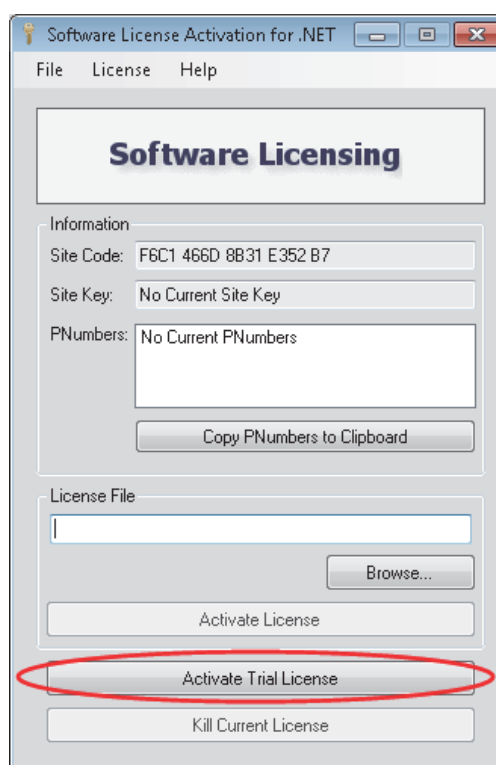


This brings up the Windows Explorer so that you may browse for the License File itself. Once you have located the file, double-click it or click **Open** to proceed.

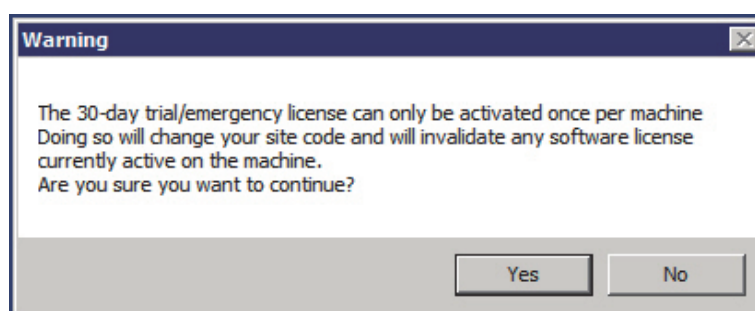
4.2.3 Activating the 30-day Trial/Emergency License

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

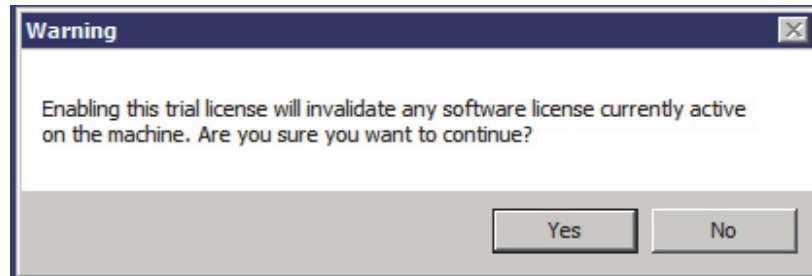
Note: This license can be activated only once per machine.



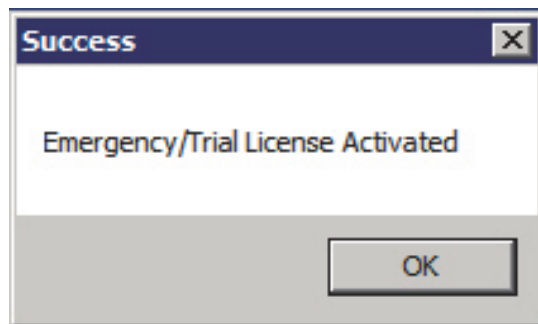
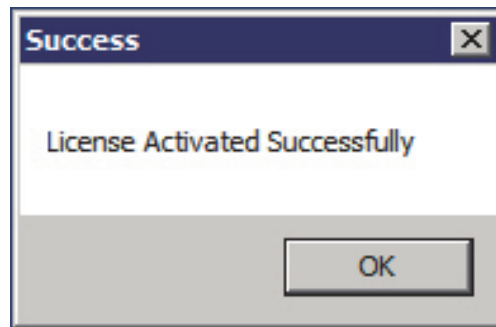
You will then see a warning about proceeding with activating the 30-day trial/emergency license. Click **Yes**, should you wish to proceed.



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.

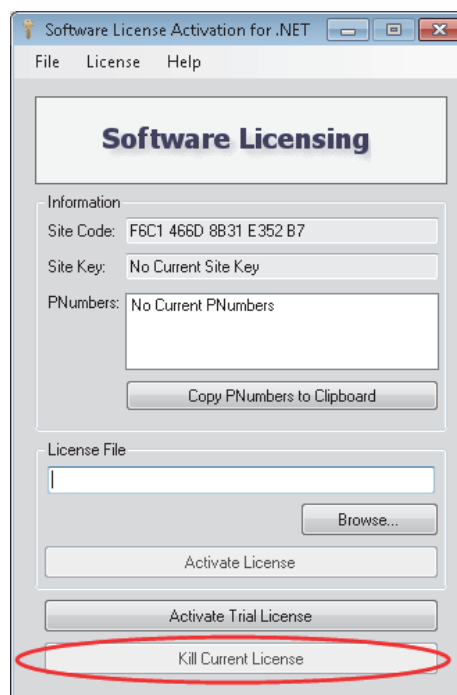
Note: Temporary backup license authorization is intended for urgent backup situations only. Clicking OK invalidates the existing license and activates a temporary backup authorization, permanently overwriting any existing license. Thus, please use caution when activating a temporary backup license authorization.

4.2.4 Killing a Software Key License

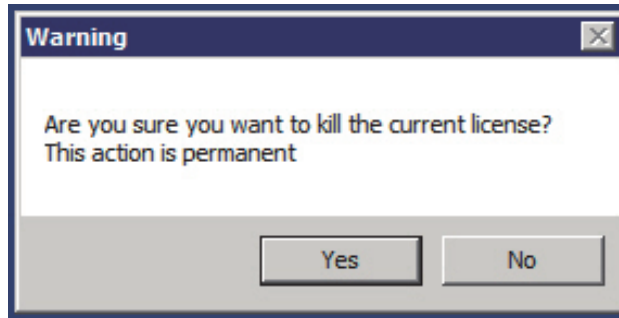
Killing a software key license deletes it and removes the current software license from the machine.

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.



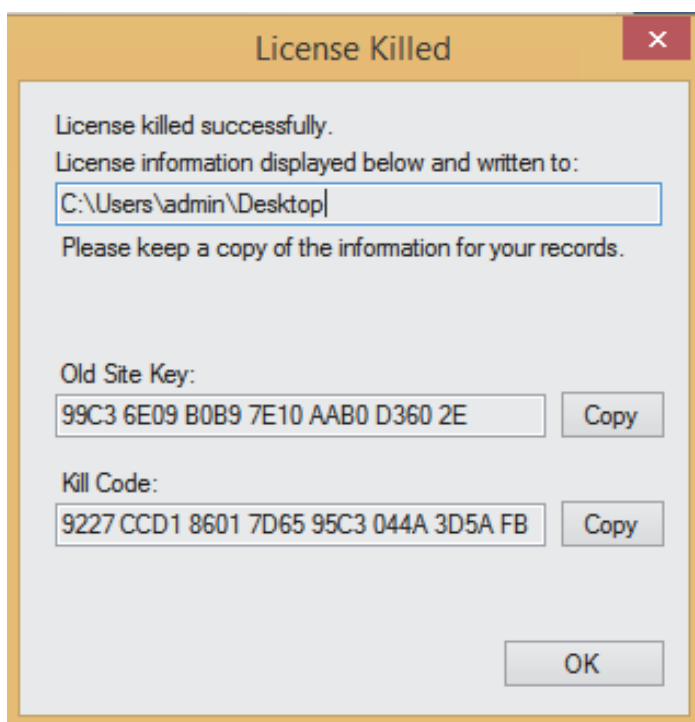
IMPORTANT: If you kill your license, you need to get a new license from Mitsubishi Electric to restart your AX Application product.

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.



3. Click **Copy** to copy the Kill Code to the Windows Clipboard so that you can paste it elsewhere, such as on the Mitsubishi Web Licensing Utility.
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 the Mitsubishi Web Licensing Utility).

5. Proceed with the online steps described in **4.4.3.1** “Killing a License via the Mitsubishi Web Licensing Utility”

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

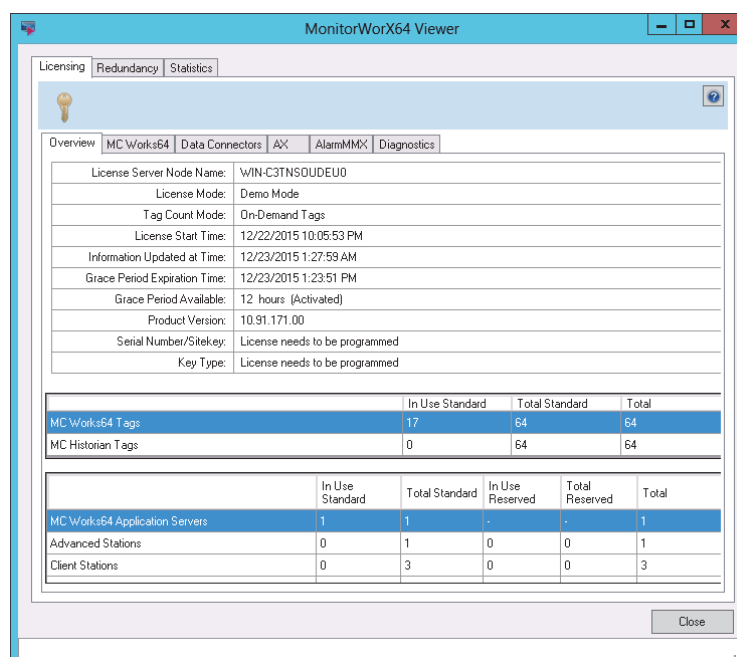
When you purchase licenses, the licenses are measured in a point count that determines the number of OPC tags that you can use in your application. One point count is used for most AX Application applications. There are two different modes for using tags in point counts:

- 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 products installed on that computer. You can access the License Viewer in either of the following ways:

- From the Windows desktop: click **Start > All Programs > MELSOFT > MC Works64 > .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 **AX Application**, **MC Works64**, **Data Connectors**, 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 Mitsubishi Electric Web Licensing Utility to generate a new license, kill a license and transfer a license. One function of the Mitsubishi Electric Web Licensing Utility is to use it to upgrade your license.

Supported operating systems for using the Mitsubishi Electric Web Licensing Utility to upgrade your license include Windows 8 x64 (Pro 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. Using the utility will require Internet access and a Web browser (e.g. Internet Explorer 6.0 and up).

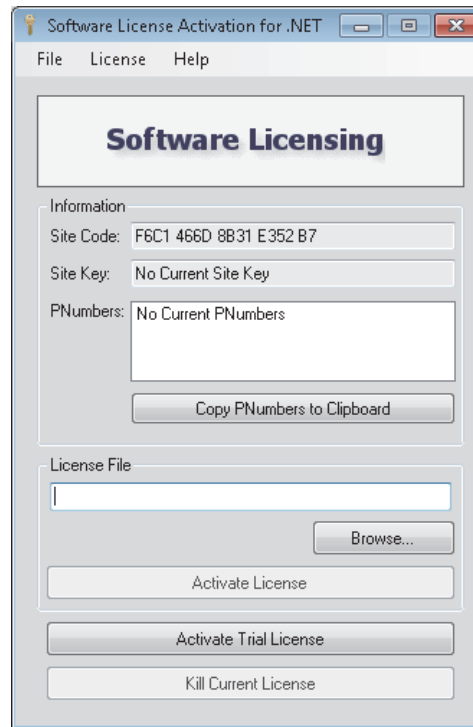
4.4.1 Acquiring a New Software License

Users of Mitsubishi Electric software can use the Mitsubishi Electric 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 AX Application license to reside, open the License Utility by going to **Start -> Programs -> MELSOFT -> MC Works64 -> .NET Licensing -> License 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.mcworkslicensing.com/>
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.

The screenshot shows the Mitsubishi Web Licensing Utility login page. At the top, there is a header with 'MITSUBISHI ELECTRIC' and 'MC Works 64'. Below the header, a navigation bar contains links: 'Home', 'View License', 'Key Replacement', and 'Print Friendly'. The main content area is titled 'Mitsubishi Web Licensing Utility' and includes a welcome message: 'Welcome to the new MITSUBISHI Web Licensing Utility!'. It also states: 'If you have already created an account on this new site please log in below.' A login form is displayed with fields for 'Email Address' and 'Password', a 'Remember me next time.' checkbox, and a 'LOGIN' button. Below the form are links for 'Create New Account' and 'Forgot your Password?'.

6. Once you have logged into the Web site, 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 Mitsubishi Electric co. sent to you.

The screenshot shows the 'New License' page in the Mitsubishi Web Licensing Utility. It includes instructions: 'Use this New License option if you do not currently have a permanent license on your computer. To issue a New license, do the following: 1. In the Product Registration column enter the registration number(s) and the associated Customer Key on the right. Product Registration number(s) and Customer Key(s) can be found on the back of the ICONICS CD/DVD case(s). 2. For multiple registrations enter each on a separate row. 3. Click the Next button to continue.' Below the instructions is a table with two columns: 'Product Registration #' and 'Customer Key'. The first row contains the values 'G795655919' and 'CJ58225E'. There are 'Add Row' and 'Remove Row' buttons at the bottom of the table. A 'Next' button is located at the bottom right of the page.

Product Registration #	Customer Key
G795655919	CJ58225E

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.

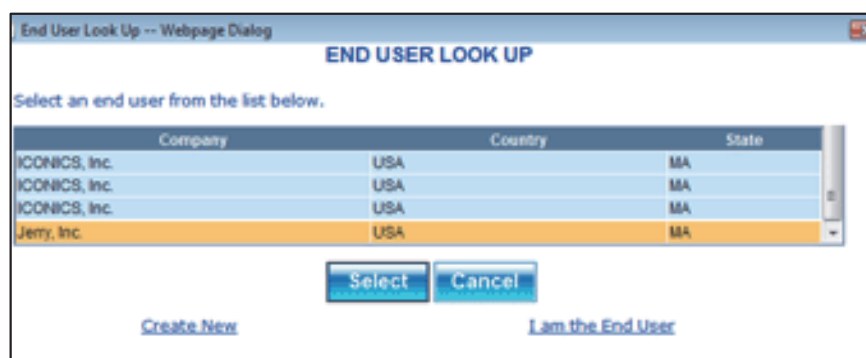


End User Information

Please identify an End User by clicking one of the options below

[Existing End Users](#) [Create New](#)

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”.



End User Look Up -- Webpage Dialog

END USER LOOK UP

Select an end user from the list below.

Company	Country	State
ICONICS, Inc.	USA	MA
ICONICS, Inc.	USA	MA
ICONICS, Inc.	USA	MA
Jerry, Inc.	USA	MA

[Create New](#) [I am the End User](#)

[Select](#) [Cancel](#)

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”.

Home > Software License > New License

New License

Below are the product(s) that you have purchased and that have not yet been assigned a Site key.

To register product(s) to a specific system, do the following:

1. Enable the check box(es) next to the product name(s) that you would like to assign.
2. Enter the site code into the Enter Site Code text box. The Site Code can be found in the ICONICS License Utility. Select the Authorize License command from the Actions menu to view the Site Code.
3. Click the Next button to continue.

Select	Product Key	Product Description	RegNo
<input checked="" type="checkbox"/>	BIZVIZ-SP V8 C12	12 MONTH CONSIGNMENT LICENSE FOR V8 BIZVIZ	G795665919
<input type="checkbox"/>	BIZVIZ-SP V8 C12	12 MONTH CONSIGNMENT LICENSE FOR V8 BIZVIZ	G795665919
<input type="checkbox"/>	BIZVIZ-SP V8 C12	12 MONTH CONSIGNMENT LICENSE FOR V8 BIZVIZ	G795665919
<input type="checkbox"/>	BIZVIZ-SP V9 C12	12 MONTH CONSIGNMENT LICENSE FOR V9 BIZVIZ	G795665919
<input type="checkbox"/>	GENESIS32-SP V7 C12	12 MONTH CONSIGNMENT LICENSE FOR SP	G795665919
<input type="checkbox"/>	GENESIS32-SP V8 C12	12 MONTH CONSIGNMENT LICENSE FOR V8	G795665919
<input type="checkbox"/>	GENESIS32-SP V9 C12	12 MONTH CONSIGNMENT LICENSE FOR V9	G795665919
<input type="checkbox"/>	GENESIS32-SP V9 C12	12 MONTH CONSIGNMENT LICENSE FOR V9	G795665919
<input type="checkbox"/>	GENESIS32-SP V9 C12	12 MONTH CONSIGNMENT LICENSE FOR V9	G795665919

Enter Site Code of the PC : 536E 2ACB B4EB C1D4 0123 440F FDB9 F8

Previous Next

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

Home > Software License > New License

New License

You requested to have the products below be registered to the following Site Code:

54B3 AE27 40AD ADE7 D5

Product Key	Product Description	PRegNo	GRegNo
GEN64-v10.5 TEST LAB	v10.5 LICENSE	PN888113111111543	GNDE6805A83AB65F45

Total BizViz/GEN32 Point Counts :0
Total GEN64 Point Count: 100000
Total Hyper Historian Point Count: 100000
License Days:30

Previous Generate Key

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

Home > Software License > New License

The following License File has been assigned to your system for use in license activation. Use the License File inside the ICONICS Software Licensing Utility. Please keep the Site Key for future reference purposes.

Site Code: 54B3 AE27 40AD ADE7 D5
Site Key: 1B44 954F E61A 79ED 5FFA 6610 7C

Download the following **LICENSE FILE** to authorize your license
[Click here to download](#)

Registered Products

Product Key	Product Description	Order Date	Order #	PRegNo	GRegNo	Customer Key
GEN64-v10.5 TEST LAB	v10.5 LICENSE	12/February/2010	29549HQ	PN8881113111111543	GND6805A83AB65F45	CUS02266

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.

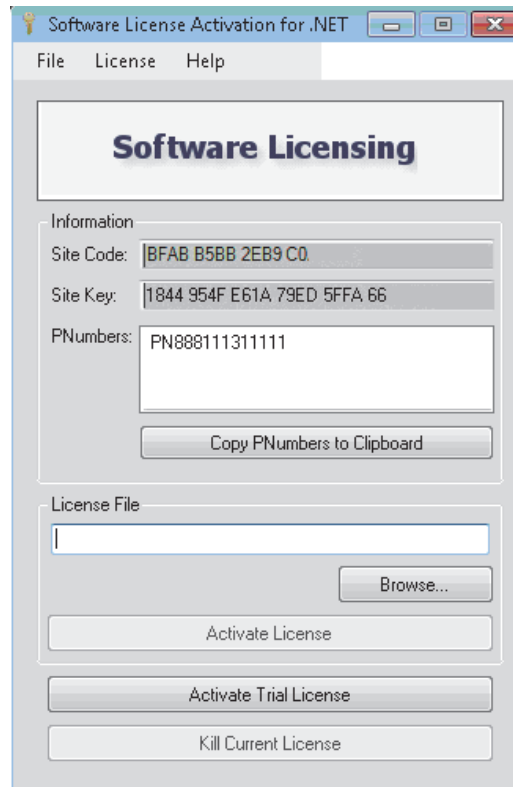
Thank you for choosing ICONICS.

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.
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 Web site.

4.4.2 Adding to an Existing Software License

1. Go to <http://www.mcworkslicensing.com/> .
2. Once you have logged into the Web site 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”.

Home > Software License > Add To License

Add To License

Use the Add To License option below to modify an existing license to include products you have purchased. To add to a license, do the following:

1. Enter your assigned Site Key into the Existing Site Key text box. The Site Key should be identical to the one found in the ICONICS License Utility on your system. Use the View License command on the Actions menu to display this information.
2. In the Product Registration column enter the registration number(s) and the associated Customer Key on the right. Product Registration Number(s) and Customer Key(s) can be found on the back of the ICONICS CD/DVD case(s).
3. For multiple registrations enter each on a separate row...
4. Click the Next button to continue.

Existing Site Key: 400A 27DD AA32 ACA0 0D94 5567 0F30 EA03 40AD EA

Product Registration #	Customer Key
P148418844	CUS00051

Add Row Remove Row

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”.

Home > Software License > Add To License

Add To License

Current License Summary

Existing Site Key: 400A 27DD AA32 ACA0 0D94 5567 0F30 EA03 40AD EA

Product ID	Product Description	Status
P148418844	P148418844	Active

Product(s) to Add

Below are the product(s) you have purchased that have not been assigned a site key. You may register these products to the P148418844 and check those which product(s) that you would like to assign to use.

Select	Product ID	Product Description	Status
<input type="checkbox"/>	P148418844	P148418844	Active

Select Site Code of the PC: 00A1 27DD AA32 ACA0 0D94 5567 0F30 EA03 40AD EA

To find your Site Code, select the PC you want to license. The Site Code will be displayed on the screen.

Next

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

The screenshot displays the 'Add To License' web interface. At the top, it shows the 'Current License Summary' with a Site Key: 400A 27D0 AA32 ACA0 0D94 5567 0F30 EA03 40A0 EA. Below this is a table with columns: Product Key, Product Description, RegNo, and ICUs. The table contains one row: GENESIS32-SP V9 C3, 3 MONTH CONSIGNMENT LICENSE FOR V9, P535919368, 1065. Below the table, it lists: Pocket Genesis Users :2, Total ICUs :1065, Total Point Counts :128000. The next section is 'Product(s) to Add', stating: 'You requested to have the products below registered to the following Site Code: 5BA7 45AE E5F2 D208 9439 A040 CA09 6F'. Below this is another table with columns: Product Key, Product Description, RegNo, and ICUs. The table contains one row: BIEV2-SP V9 C12, 12 MONTH CONSIGNMENT LICENSE FOR V9 BIEV2, P146418644, 210. Below the table, it lists: Mobile Users :32, Total ICUs :210, Total Point Counts :128000. The final section is 'Total Values', listing: Pocket Genesis Users :2, Mobile Users :32, Total ICUs :1275, Total Point Counts :128000. At the bottom right, there are two buttons: 'Previous' and 'Generate Key'.

Product Key	Product Description	RegNo	ICUs
GENESIS32-SP V9 C3	3 MONTH CONSIGNMENT LICENSE FOR V9	P535919368	1065

Pocket Genesis Users :2
Total ICUs :1065
Total Point Counts :128000

Product(s) to Add

You requested to have the products below registered to the following Site Code:
5BA7 45AE E5F2 D208 9439 A040 CA09 6F

Product Key	Product Description	RegNo	ICUs
BIEV2-SP V9 C12	12 MONTH CONSIGNMENT LICENSE FOR V9 BIEV2	P146418644	210

Mobile Users :32
Total ICUs :210
Total Point Counts :128000

Total Values

Pocket Genesis Users :2
Mobile Users :32
Total ICUs :1275
Total Point Counts :128000

Previous Generate Key

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 Web site
- Step 2: Upgrade the license on our Web site
- 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 Mitsubishi Electric 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 MC Works64 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 Mitsubishi Electric Web site.

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.mcworkslicensing.com/>
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.



The screenshot shows the Mitsubishi Web Licensing Utility login page. At the top, there is a header with "MITSUBISHI ELECTRIC" and "MC Works⁶⁴". Below the header, a navigation bar contains links: "Home", "View License", "Key Replacement", and "Print Friendly". The main content area is titled "Mitsubishi Web Licensing Utility" and includes a welcome message: "Welcome to the new MITSUBISHI Web Licensing Utility!". Below this, a login form is displayed with fields for "Email Address:" and "Password:", a "Remember me next time." checkbox, and a "LOGIN" button. At the bottom of the page, there are links for "Create New Account" and "Forgot your Password?".

4. Click on the “Kill License” link in the top navigation bar.

- 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.

Home > Software License > Kill License

Kill License

Please enter the Site Key to be credited and the associated Kill Confirmation Code.
Please enter Site Key and Kill Code exactly as shown in KILL.TXT file, including spaces.

Site Key:

Kill Code:

To remove a license for GENESIS32, do the following:

- Click on Start, Programs, ICONICS Software License, and select License Utility.
- Select the Kill License command from the Actions menu.
- Enter your name, date and the password "ibisok" (lower case) into the dialog box; then click the OK button. The License Utility generates a dialog box containing your Site Key and the associated Kill Code and stores this information to the KILL.TXT file in %SystemDrive%\Program Files\ICONICS\SoftLic.
- Enter your Site Key and Kill Code into the text boxes above; then click the Remove Key button.

To remove a license for GENESIS64, do the following:

- Click on Start, Programs, ICONICS GENESIS64, Licensing Utility.
- Click the Kill License button on the main panel and click 'OK'.
- The License Utility generates a dialog box containing your Site Key and the associated Kill Code and stores this information to the KillCode.txt file on your current desktop.
- Enter your Site Key and Kill Code into the text boxes above; then click the Remove Key button.

[Remove Key](#)

- 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.

Home > Software License > Kill License

Kill License

Site Key successfully deleted

Site Key: 1B44 954F E61A 79ED 5FFA 6610 7C
Kill Code: 6D57 CEFB F8FE 05B6 BD53 7A08 4ED5 EA

The following products are again available to you for registration:

Available Products						
Product Key	Product Description	Order Date	Order #	PRegNo	GRegNo	Customer Key
GEN64-v10.5 TEST LAB	v10.5 LICENSE	12/February/2010	29549HQ	PN8881113111111543	GNDE6805A83AB65F45	CUS02266

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.

4.4.3.2 Upgrading the License on Mitsubishi's Web Site

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 MC Works64 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 Mitsubishi's Web site.

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.mcworkslicensing.com/>



- 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.

CONTACT US | SITE MAP

MITSUBISHI ELECTRIC MC Works⁶⁴

You are not logged in
[Login](#)
[Create New Account](#)

Home > User Management > Login

Mitsubishi Web Licensing Utility

Welcome to the new MITSUBISHI Web Licensing Utility!

If you have already created an account on this new site please log in below.

Use your email address to log in.

Email Address:

Password:

☐ Remember me next time.

[Create New Account](#)
[Forgot your Password?](#)

- Once you have logged in, click on the “Kill License” link in the top navigation bar.
- 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”).

Kill License

Please enter the Site Key to be credited and the associated Kill Confirmation Code.

Please enter Site Key and Kill Code exactly as shown in KILL.TXT file, including spaces.

Site Key:

Kill Code:

To remove a license for GENESIS32, do the following:

- Click on Start, Programs, ICONICS Software License, and select License Utility.
- Select the Kill License command from the Actions menu.
- Enter your name, date and the password "itsok" (lower case) into the dialog box; then click the OK button. The License Utility generates a dialog box containing your Site Key and the associated Kill Code and stores this information to the KILL.TXT file in %SystemDrive%\Program Files\ICONICS\SoftLic.
- Enter your Site Key and Kill Code into the text boxes above; then click the Remove Key button.

To remove a license for GENESIS64, do the following:

- Click on Start, Programs, ICONICS GENESIS64, Licensing Utility.
- Click the Kill License button on the main panel and click 'OK'.
- The License Utility generates a dialog box containing your Site Key and the associated Kill Code and stores this information to the KillCode.txt file on your current desktop.
- Enter your Site Key and Kill Code into the text boxes above; then click the Remove Key button.

5. Once you kill the license on Mitsubishi's Web site, 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.

[Home](#) > [Software License](#) > Kill License

Kill License

Site Key successfully deleted

Site Key: **250C 3CDD 0524 B282 2DB3 456F D438 85C5 B799 0B**

Kill Code: **CB1E B52F 8984 0B87 F679 6767 89A3 DDEF 01C0 24B0 28EF 99**

If products in this license are eligible, they may be upgraded to the latest version [here](#).

The following products are again available to you for registration:

Available Products

Product Key	Product Description	Order Date	Order #	PRegNo	GRegNo	Customer Key
GEN32V8-5000	V8 GEN32 RUNTIME 5000 PT - 1 USER	12/February/2010	29549HQ	PN21111111111111111111	GND123456789123456	CUS02266

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.

6. 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 Web site.
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.

Upgrade License

Below are the product(s) that you have purchased that are available for upgrade.

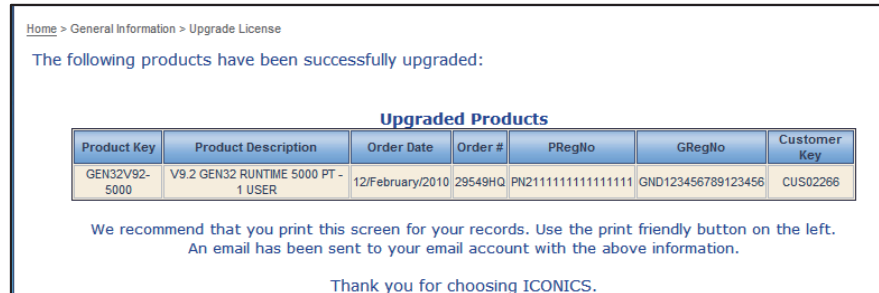
To upgrade product(s), do the following:

1. Enable the check box(es) next to the product name(s) that you would like to upgrade.
2. Click the Next button to continue.

Available Licenses					
Select	Product Key	Product Description	PRegNo	GRegNo	Status
<input checked="" type="checkbox"/>	GEN32V8-5000	V8 GEN32 RUNTIME 5000 PT - 1 USER	PN2111111111111111	GND123456789123456	Available

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).



The screenshot shows a web page titled 'Home > General Information > Upgrade License'. Below the title, it says 'The following products have been successfully upgraded:'. There is a table titled 'Upgraded Products' with the following data:

Product Key	Product Description	Order Date	Order #	PRegNo	GRegNo	Customer Key
GEN32V92-5000	V9.2 GEN32 RUNTIME 5000 PT - 1 USER	12/February/2010	29549HQ	PN2111111111111111	GND123456789123456	CUS02266

Below the table, it says: '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.'

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.

4.4.6 Software Key Replacement

Please fill in the online "Key Replacement Form" at "<http://www.mcworkslicensing.com/>" to start the replacement process of the original license if your license has been lost. Once your license has been recovered, follow the steps in the section titled, "4.4.1.1 Issuing a New Software License" to activate the new license.

4.5 Demo Mode

Without a valid license installed in your PC, it is still possible to use AX Application in Runtime mode. The software will check for a valid hardware or software license key on initialization. If none is found, MC Works64 runs in Demo Mode, which limits you to:

- Twelve hours of runtime
- Only 64 OPC tag connections (points) can be updated

Running AX Application longer than the 12-hour limit generates a message stating that the demo time has been exceeded. You must then exit AX Application and reboot the PC. On restarting AX Application, 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.

MEMO

[illegible]

5 *AX Application Quick Start*

5.1 Introduction

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

- Workbench
- AX Energy
- AX Facility
- AX Portal
- Additional tools and utilities

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

5.2 Workbench

The Mitsubishi Electric Workbench is a multi-functional, centralized Web-based configuration environment and is included as part of the Platform Services in the AX Application suite installation.

Workbench-SL offers a light-weight deployment with a fast startup time, which also supports third-party plug-ins. Workbench-SL has a look-and-feel that is similar to the Classic 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.

Workbench-SL runs in all browser platforms, including Microsoft Internet Explorer, Firefox, Chrome, Safari, and more. It has a runtime mode known as AX Portal-SL, and its Silverlight components are available as Web Parts in SharePoint (via AX Portal-SP), plus they can run on Windows Phone operating systems.

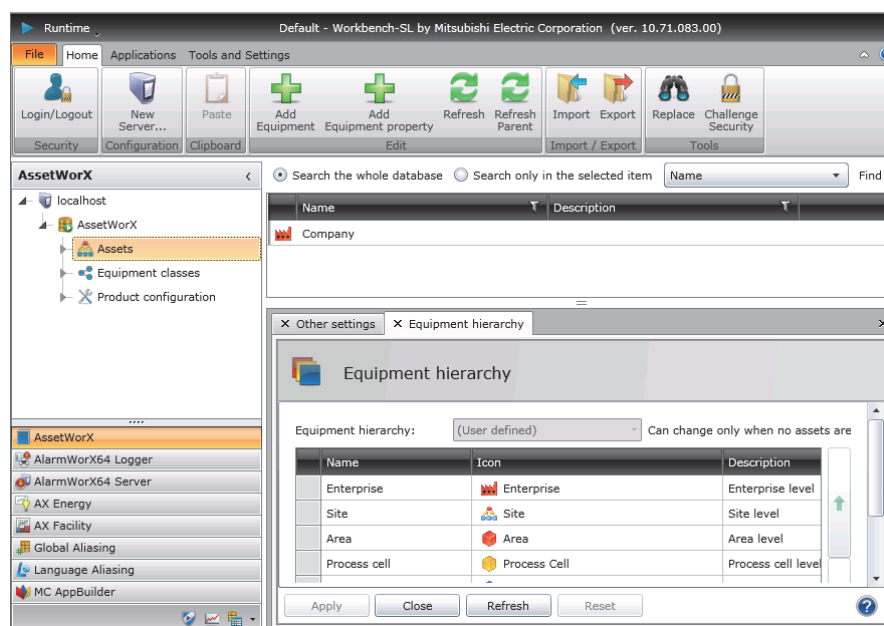
In Workbench, you can:

- Organize data sources on the basis of a hierarchical structure of assets and equipment, using AssetWorX.
- Calculate, report on, and manage energy use if the AX Energy provider is installed.
- Locate and react to AX Facility faults if the FDDWorX provider is installed.
- Monitor and control SPC calculations if the AX Quality provider is installed.

Many configurations can be done from within the Workbench. What can't be done inside the Workbench can be done via Classic Workbench or Workbench-SL, installed as part of MC Works64 suite.

To open Workbench-SL, from the Windows **Start** button, select **All Programs > MELSOFT > MC Works64 > Tools > Workbench-SL**.

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.

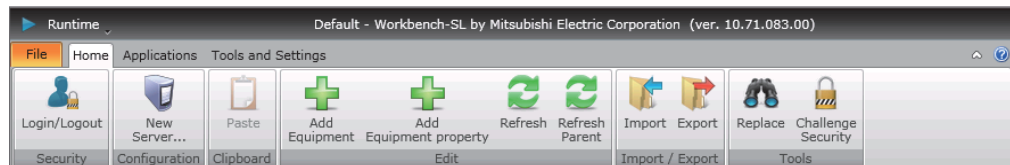


It is made up of:

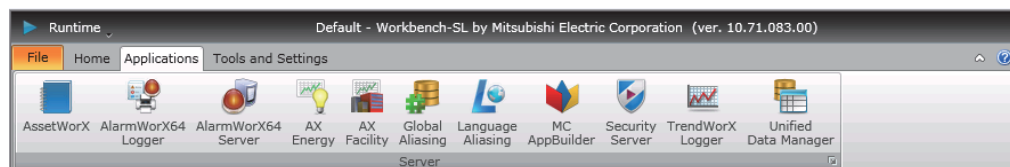
- The **Ribbon bar** (along the top).
- Two **Project Explorers** that you can hide or show:
 - A **tree explorer** that gives you a way to navigate and browse; and buttons that give you access to Mitsubishi Electric providers.
 - A **grid explorer** you can use for searching.
- The **content or work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

Ribbon:

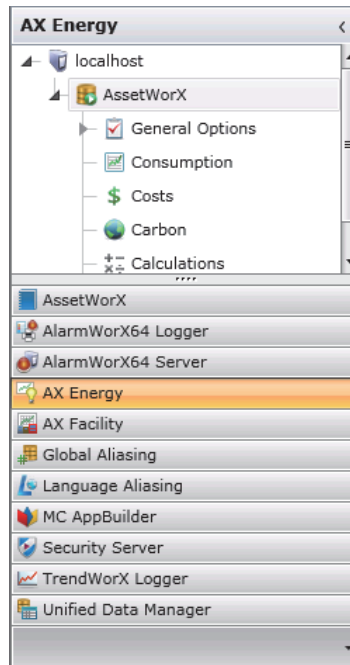
The ribbon for the Workbench-SL is designed to help you quickly find the commands you need to complete a task. Commands are organized into logical groups.



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



Development and runtime modes of all installed and licensed AX Application and MC Works64 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 AX Energy

AX Energy is an off-the-shelf Energy Management System (EMS) that focuses on energy data analysis to increase efficiency and reduce overall operational costs. It helps with improving energy usage patterns, monitoring energy reliability, and even forecasting energy consumption.



Information obtained from AX Energy can be used to:

- Optimize your energy management program
- Drill down to identify inefficient assets that consume too much energy
- Identify peak usage periods to load-balance assets and take advantage of off-peak rates
- Visualize energy usage per site, normalized by square foot or square meter
- Analyze carbon footprint per person / per site
- Monitor equipment energy usage trends and details
- Notify personnel with alerts when meters fail or energy usage is unexpectedly high
- Automatically email energy consumption and cost information to managers
- Quick to deploy and achieve ROI
- Realize cost-savings through informed decisions

To launch AX Energy, from the Windows **Start** menu, select **All Programs > MELSOFT > MC Works64 > Tools > Workbench-SL**. Then, select the AX Energy provider within the Project Explorer on the left.

5.3.1 Quick Start with AX Energy

The following is a checklist of the steps for getting started with AX Energy from a configuration and runtime operations standpoint. Note that much of AX Energy's configuration happens in the AssetWorX provider, so you will be using a combination of both AX Energy and AssetWorX to configure your energy information.

Before You Begin

1. An AssetWorX configuration database, which hosts all asset related and also AX Energy related information, must be in place and must be activated. For more information, refer to the “AX Energy Configuration Databases” Help topic (in the “AssetWorX” section).

Note: To access the Help for AX Application, click on the Help menu option within the application itself OR, from the Windows **Start** menu, select **All Programs > MELSOFT > MC Works64 > Help > Help**. See Chapter 6 of this guide, “Help and Technical Support”, for more info.

2. Energy AX Application must be installed to your AssetWorX configuration database. It can be installed via the AssetWorX provider's Available Solutions node. For more information, refer to the “Installing Available Solutions” Help topic for AssetWorX.
3. Plan the asset tree with your energy-related needs for AX Energy in mind. Refer to the “Strategies for Building the Asset Tree” Help topic (in the “AssetWorX” section).

Checklist for Implementing AX Energy

To configure AX Energy properly, you will need to follow these steps:

1. Configure the following **properties in AssetWorX**:
 - a. Units. For step-by-step instructions, refer to the “Defining Units of Measure” Help topic (in the “AssetWorX” section).
 - b. Temperature sources (optional). For step-by-step instructions, refer to the “Defining Temperature Sources” for AssetWorX.

2. Configure the following AX Energy **general options**:
 - a. Configure general options, including options for logging meter data, in the General Options' Settings tab. For information, refer to the "[Setting Options for Processing and Data Collection](#)" Help topic.
 - b. Use the General Options' AX Application Properties tab to define AX Application Properties for numeric or descriptive data you want to use in energy-related calculations, for generating or sorting AX Energy reports, or for otherwise categorizing your energy-related data. Refer to the "[Meta Data \(Bindings\)](#)" Help topic.
 - c. Use the General Options' Table Maintenance tab to "[Set Conditions for Removing Old Energy Data from Tables](#)" (see Help topic of same name).
 - d. Use the General Options' External Data Processing tab to manage the process of importing data from external sources. For more information, refer to the "[External Data Entry](#)" Help topic.
 - e. Use the General Options' MC Historian tab to integrate data from MC Historian for use in meters or bindings. For more information, refer to the "[Integrating with MC Historian](#)" Help topic.
 - f. Configure meter types using the Consumption node. For more information, refer to the "[Adding Meter Types](#)" Help topic.

3. Configure information for doing **energy-related calculations**:
 - a. Configure cost centers for monitoring energy costs for business units. Refer to the “Defining Cost Centers” Help topic.
 - b. Configure utilities' rate models for use in cost allocation and various energy cost-based reports. Refer to the “Defining Rate Models for Utility Sources” Help topic.
 - c. Configure your energy-related calculations and calculation categories. Refer to the “Defining a Library of Calculation Templates” Help topic.
4. In AssetWorX, define to the asset tree all of your **AX Energy assets**. To understand this process, refer to the “Configuring the Asset Tree for AX Energy” Help topic. The asset tree must include: your energy assets, meters for your energy assets, and your utility sources.

To configure your AX Energy assets in the asset tree:

- a. Define the **utilities** that supply energy to your corporate and business resources. Refer to the “What Is a Utility Source and How Is It Used?” Help topic for information. To configure your utility sources, follow these steps (that correspond with their Help topic titles):
 - i. “Configure Your Utility Sources”
 - ii. “Specify the Utility Source's Cost Center”
 - iii. “Configure the Utility Source's Meter Type and Rate Model”
 - iv. “Define the Utility Source's Bindings”
 - v. “Activate the Utility Source for Energy Analysis”

- b. Define your **meters** that measure your energy consumption (these can be real or virtual meters); and meters that measure inputs, outputs, and loss for systems such as water flow or air flow. Refer to the “What Is a Meter and How Is It Used?” Help topic for important information.

To configure your meters, follow these steps (that correspond with their Help topic title):

- i. “Configure Your Meters”
 - ii. “Specify a Meter's Cost Center”
 - iii. “Define a Meter's Bindings”
 - iv. “Activate a Meter for Energy Analysis”
- c. Identify the **energy assets** in the asset tree. An energy asset is any equipment for which you want to collect and aggregate energy data. Refer to the “What Is an Energy Asset?” topic for critical information. To configure your energy assets, you will follow these steps:
 - i. “Identify Your Energy Assets”
 - ii. “Define an Energy Asset's Bindings”
 - iii. “Specify an Energy Asset's Cost Center and Energy Budget” (optional)
 - iv. “Configuring Calculations for an Energy Asset”
 - v. “Activate Energy Analysis for an Energy Asset”

5. At this point you should be ready to start up your AX Energy service to begin collecting and analyzing data for your configured meters and energy assets. Once the service is started you can of course continue to add to your configuration and make runtime changes as your application needs evolve. Before starting up the service you should do the following:
 - a. Verify that your service settings for processing and data collection are appropriate for your application. For more information, refer to the “Setting Options for Processing and Data Collection” Help topic.
 - b. Review some tips and tricks related to optional optimizations that can be enabled or disabled via server-side configuration files. For more information, refer to the “Optimization” Help topic.
 - c. Start up the AX Energy service either by clicking on the traffic light in the Workbench, or by launching “Services” from the Windows Control Panel, Administrative Tools, and starting the AX Energy service.
6. Upon service startup, AX Energy will verify that you have an appropriate license for the number of enabled Meters. For more information, refer to the “Validating an AX Energy License” Help topic.

7. Now that the AX Energy service is running and collecting data, you can then focus on creating runtime views and dashboards for role-based visualization and analysis. This involves:
 - a. Configuring charts, grids and drill-down analysis within the AX Energy Viewer, as outlined in the [“Configuring the AX Energy Viewer - Quick Start”](#) Help topic
 - b. Configuring right-click menu items, as described in the [“Setting up Commands for Runtime Navigation”](#) Help topic, so that runtime users can run or access the reports they need to be able to use.
 - c. Making those available for viewing within one or more of the powerful visualization platforms.

You can utilize your AX Energy Viewer configurations and right-click commands within the following environments:

- i. GraphWorX64 (WPF or Silverlight displays)
- ii. AX Portal-SL (thin client dashboard)
- iii. AX Portal-SP (SharePoint-based portal)

For further information, see the [“Overview of AX Energy”](#) and [“How AX Energy Works”](#) Help topics.

5.4 AX Facility

AX Facility is a predictive building automation solution that leverages 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, AX Facility 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.

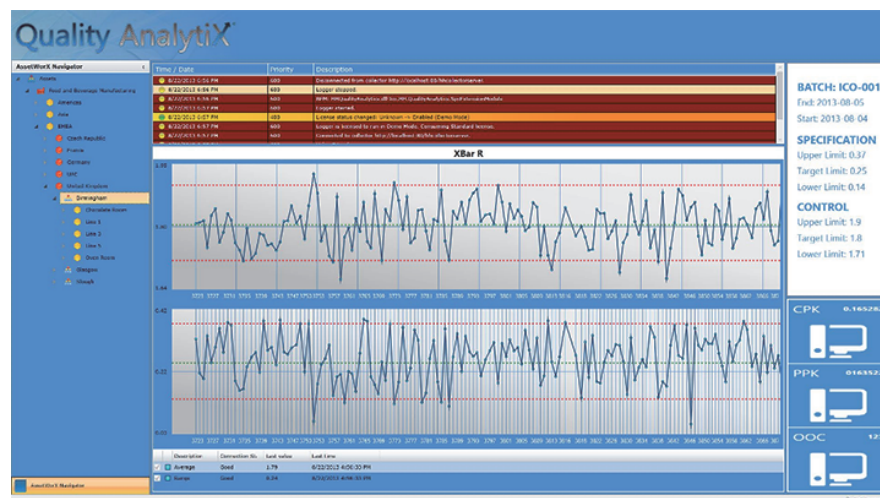
Information obtained from AX Facility can be used to:

- 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 AX Facility, from the Windows **Start** menu, select **All Programs > MELSOFT > MC Works64 > Tools > Workbench-SL**. Then, select the AX Facility provider within the Project Explorer on the left.

5.5 AX Quality

AX Quality is part of the AX Application product suite from Mitsubishi Electric. With AX Quality, 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 AX Application suite allows you to access and configure SPC tags, distribution rules, and statistical calculations in MC Historian. You can also create and view trends and alarms associated with SPC tags and calculated tags within TrendWorX64 or AlarmWorX64.

AX Quality also supports:

- New chart types in TrendWorX64 (Histogram and SPC)
- Integration with ReportWorX Express and ReportWorX 365
- Dashboard customization in AX Portal-SL

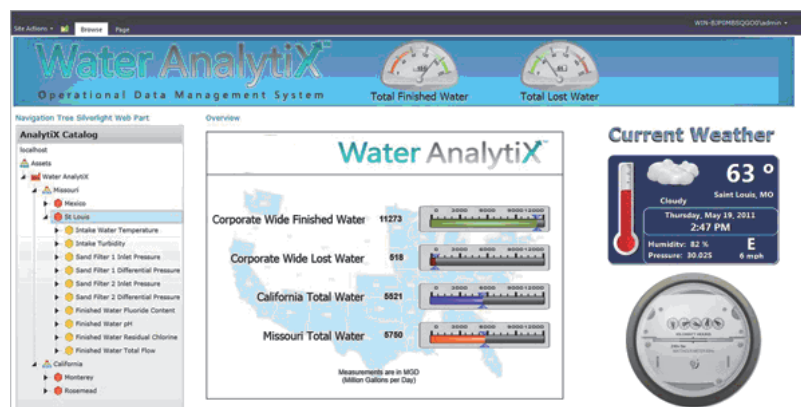
AX Quality delivers charts, KPIs, data, and alerts to any device, any time. It also provides an extensive set of viewing options to create dazzling displays and dashboards for your device. These views allow you to monitor your processes, identify issues, and fix them in a proactive manner to achieve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

5.6 AX Portal

AX Portal is real-time collaboration and visualization dashboard technology that allows users to easily create and manage custom manufacturing portals, business portals and visualization dashboards that provide single sign-on collaboration for optimization of key performance indicators (KPI). AX Portal offers users the power of choice when it comes to deployment options, via the AX Portal-SL and AX Portal-SP products.

AX Portal-SL requires virtually no administration, is easy to configure and delivers data anytime and anywhere through a standard Internet connection. It is included as part of Platform Services, and can be deployed to any browser using Silverlight technology.

AX Portal-SP enables deployment of any visualization controls within a SharePoint environment. Standard Web parts from Microsoft's SharePoint Server and customized Web parts for nearly every facet of manufacturing intelligence ensure you have everything you need to create a portal for your real-time historical plant and business information.



AX Portal-SP offers native support for SharePoint 2010 as well as manufacturing intelligence Web Parts for AX Application and MC Works64 solutions.

These Web Parts allow you to “SharePoint-enable” your existing application to easily expose information to a variety of user roles, including operations management, quality management and executive level users. extensive library of Web parts includes:

- AssetWorX Navigator – for browsing your ISA-95 standard hierarchy
- AlarmWorX64 Viewer – for viewing and managing alarms
- AX Energy Viewer – allows you to visualize data from the AX Energy solution by exposing information from the cost, consumption and carbon calculations
- AX Facility Viewer – to visualize faults and diagnose probable causes from powerful FDD technology
- GraphWorX64 Viewer – for interactive HMI/ SCADA displays
- GridWorX Viewer – for viewing and interacting with data in a grid format
- Report Executor – for executing reports with powerful user-defined parameters
- Report Viewer– for visualizing reports in Excel, PDF, or HTML format
- Schedule Control - for viewing set schedules within the AX Portal-SL Runtime environment
- Smart Tile Viewer - for viewing useful, at-a-glance graphic visualization tools
- TrendWorX64 Viewer – for real-time and historical trends and charts
- Image Viewer - to add a preferred graphic to the AX Portal-SL Runtime environment

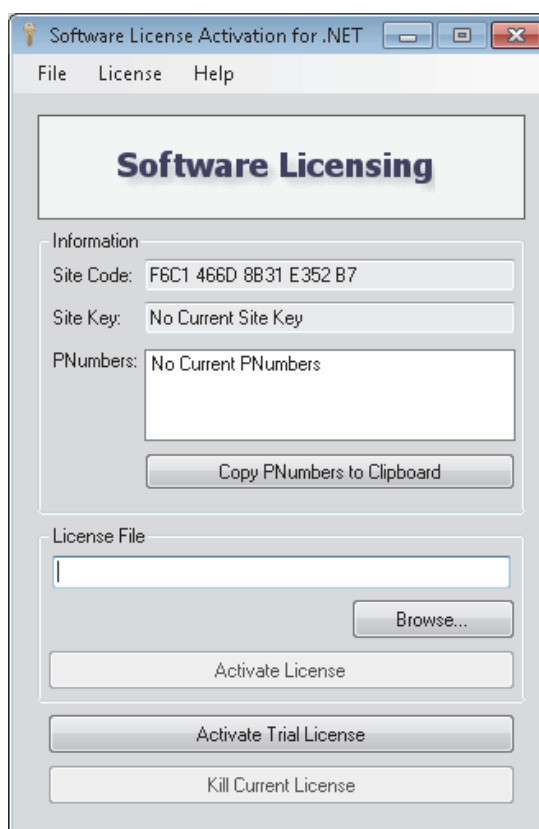
Note: For additional information, be sure to read the Mitsubishi Electric Application Note, “AX Portal-SP - SharePoint 2010 Integration”, located on the AX Application installation disc.

5.7 Additional Tools and Utilities

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

5.7.1 License Utility

License Utility (Start > All Programs > MELSOFT > MC Works64 > .NET Licensing > License Utility) provides full authorization for use of any purchased AX Application product and its available options. See page 4-2 for more information.



5.7.2 MonitorWorX Viewer

MonitorWorX Viewer (Start > All Programs > MELSOFT > MC Works64 > .NET Licensing > MonitorWorX Viewer) allows users to review the status of Mitsubishi Electric licenses. See page 4-1 for additional information.

The screenshot shows the MonitorWorX64 Viewer application window. It has a title bar with the text "MonitorWorX64 Viewer" and standard window controls. Below the title bar is a tabbed interface with "Licensing" selected. The main content area is divided into two sections. The top section, labeled "Overview", contains a table of license details. The bottom section contains two tables showing usage statistics.

License Server Node Name:	WIN-C3TNSOUDEU0
License Mode:	Demo Mode
Tag Count Mode:	On-Demand Tags
License Start Time:	12/22/2015 10:05:53 PM
Information Updated at Time:	12/23/2015 1:27:59 AM
Grace Period Expiration Time:	12/23/2015 1:23:51 PM
Grace Period Available:	12 hours (Activated)
Product Version:	10.91.171.00
Serial Number/Sitekey:	License needs to be programmed
Key Type:	License needs to be programmed

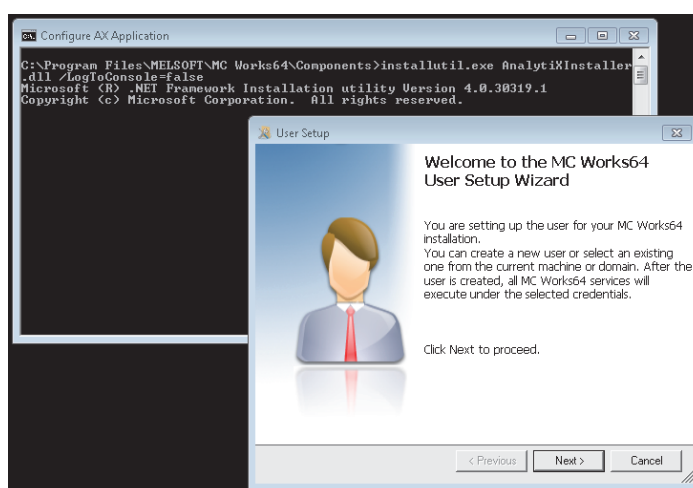
	In Use Standard	Total Standard	Total
MC Works64 Tags	17	64	64
MC Historian Tags	0	64	64

	In Use Standard	Total Standard	In Use Reserved	Total Reserved	Total
MC Works64 Application Servers	1	1	-	-	1
Advanced Stations	0	1	0	0	1
Client Stations	0	3	0	0	3

Close

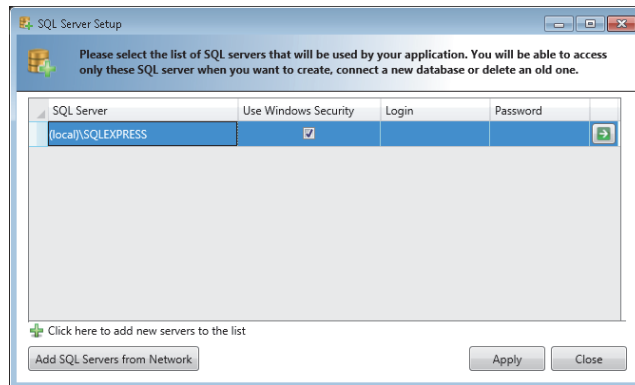
5.7.3 Configure AX Application

Configure AX Application (Start > All Programs > MELSOFT > MC Works64 > Tools > Configure System) 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 AX Application” on page 3-2 for detailed steps.



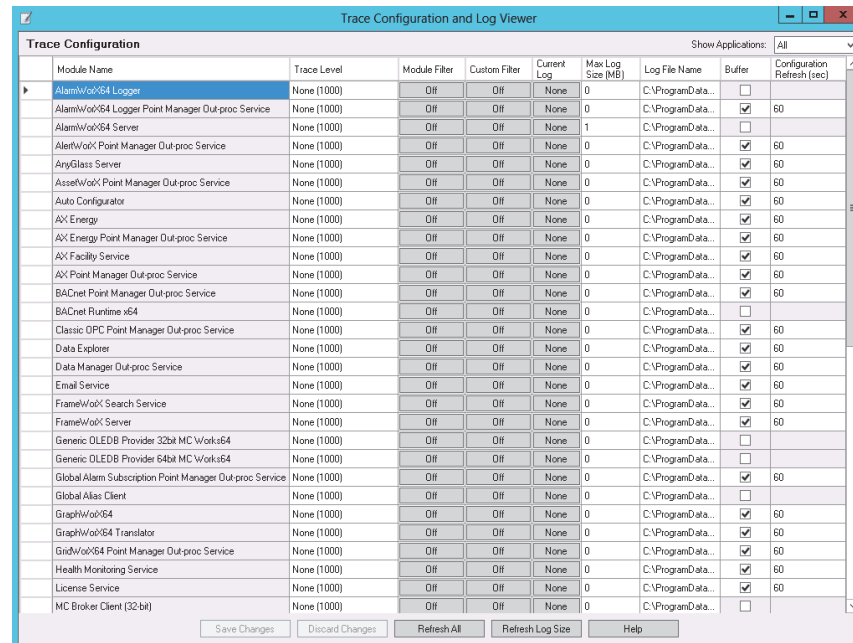
5.7.4 SQL Server Setup

SQL Server Setup (Start > All Programs > MELSOFT > MC Works64 > Tools > SQL Server Setup) allows you to select the SQL Server(s) that will be used by the applications. The added SQL Servers will then appear in Workbench to assist in the creation of, or connection to, databases.



5.7.5 TraceWorX

TraceWorX (Start > All Programs > MELSOFT > MC Works64 > Tools > TraceWorX) provides online diagnostics and tuning of applications. TraceWorX is intended for use by systems integrators, OEMs and customers who want to have tools for doing their own troubleshooting and diagnostics.




[illegible]

6 *Help and Technical Support*

6.1 Online Help

AX Application provides online help with descriptions and explanations of each application. Help is available throughout MC Works64. 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.

MEMO

[illegible]

7 Notes

- Depending on the application settings, operation of the application may be unstable because the memory allocated by the operating system has been consumed up to the upper limit. Please configure the setting properly to prevent it.

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