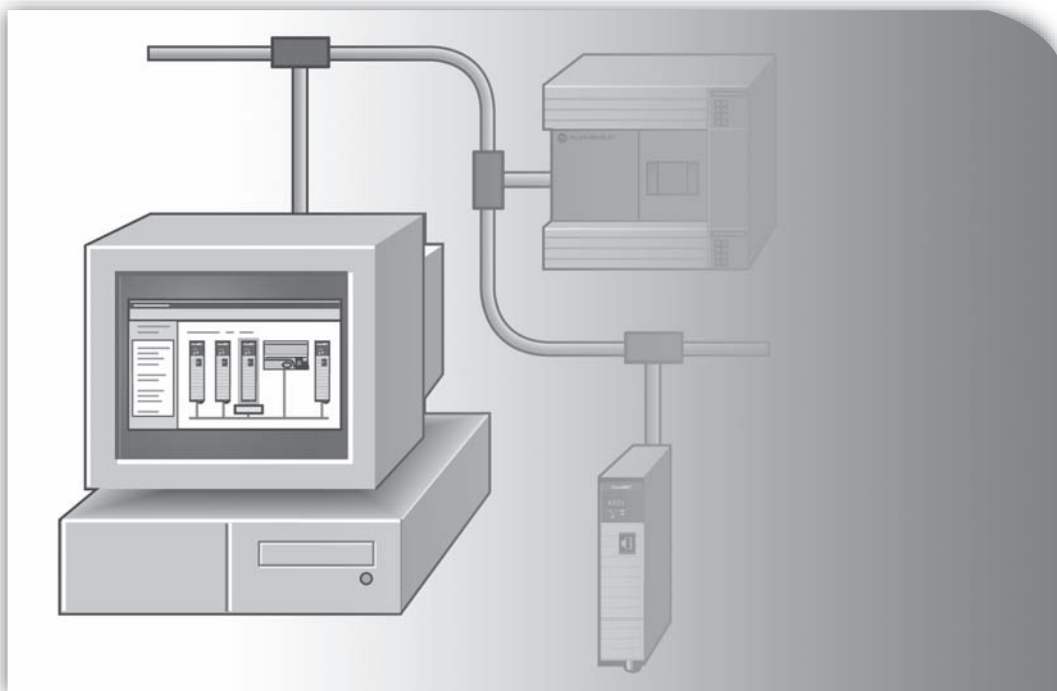


LISTEN.
THINK.
SOLVE.®

RSNetWorx™



RSNETWORX FOR ETHERNET/IP GETTING RESULTS GUIDE

PUBLICATION ENET-GR001G-EN-E—October 2015
Supersedes Publication ENET-GR001F-EN-E

ALLEN-BRADLEY • ROCKWELL SOFTWARE

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Preface

Purpose of this document

This getting results guide provides you with information on how to install and navigate the RSNetWorx™ for EtherNet/IP™ software. It explains how to effectively use the RSNetWorx for EtherNet/IP software and how to access and navigate the online help.

Intended audience

We assume that you are familiar with:

- IBM®-compliant personal computers
- Microsoft® Windows® operating systems
- RSLinx® Classic™ communications software

How does the Getting Results Guide fit in with other Rockwell Software product documentation?

The *Getting Results with RSNetWorx for EtherNet/IP* guide can be considered the entry point into Rockwell Software's documentation set for this product. Other components of the documentation set include online help, product manuals, a product tutorial, and electronic release notes.

The documentation set contains pertinent, easily accessible product information. This set ships with the software product, and is designed to free you from tedious paper shuffling and reduce information overload.

Online help

The online help includes all overview, procedural, screen, and reference information for the product. The help contains these basic components: overview topics, quick start topics, step-by-step procedures, troubleshooting topics, and screen element descriptions (for example, text boxes, drop-down lists, and option buttons). All of the help is context-sensitive with the application and provides you with immediate access to application tasks and screen element descriptions. Refer to the "Finding the information you need" chapter in this guide for a more detailed description of the online help.

Product Manuals

Within RSNetWorx for EtherNet/IP, we provide a Product Manuals feature that allows you to immediately access and search your product documentation from the Help menu. This feature includes the *Getting Results with RSNetWorx for EtherNet/IP* guide, as well

as several hardware product reference guides, in an electronic book format. As a part of the product installation, you have the option of installing these electronic books to your local hard drive during installation, or access them directly from the CD-ROM.



The Product Manuals included with RSNetWorx for EtherNet/IP are in portable document format (PDF), and must be viewed using the Adobe® Acrobat® Reader software included on your RSNetWorx for EtherNet/IP CD. You can install the Acrobat Reader, or run it directly from the CD.

Tutorial

RSNetWorx for EtherNet/IP contains a product tutorial, which includes basic overview information and specific tasks and examples for successfully working with the product. This tutorial is available from **Start > Programs > Rockwell Software > RSNetWorx > RSNetWorx for EtherNet-IP Tutorial**.



Due to Windows operating system constraints, we cannot include a front slash (/) in file or folder names. For file and folder names, the front slash is replaced with a dash (-).

Document conventions

The conventions used throughout this document for the user interface comply with those recommended by Microsoft. If you are not familiar with the Microsoft Windows user interface, we recommend that you read the documentation supplied with the operating system you are using before attempting to use this software.

Feedback

Please use the feedback form packaged with your software to report errors or let us know what information you would like to see added in future editions of this document. You can also send an email message to info@software.rockwell.com with any comments about Rockwell's products and services.

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Welcome to RSNNetWorx for EtherNet/IP

RSNetWorx™ for EtherNet/IP™ is a 32-bit Windows® application program that allows you to configure devices and lay out a network topology. From the graphical representation of your network, you can:



- view I/O data and configuration data for those devices that have EDS files that support this functionality (online only)
- display all connection information for all connections to/from a given device including all connections in scanners that are in the configuration
- configure scanners that adhere to the open EtherNet/IP specification for scanners, define scanlist entries for certain scanners, and map scanner memory onto the network and network data into the scanner memory (via the Scanlist Configuration Tool (SCT) that is bundled with RSNNetWorx for EtherNet/IP)
- leverage the connection information to diagnose the health of the connections, and thus the health of the devices that originate and receive those connections

This chapter contains the following sections:

- Features and benefits
- Understanding EtherNet/IP concepts
- Exploring RSNNetWorx for EtherNet/IP
- Quick Start steps

Features and benefits

RSNetWorx for EtherNet/IP has the following features:

- Support for Reduced Heartbeat feature of RSLogix5000 V16. The numbers on the Device Usage Properties dialog box in EtherNet/IP 8.0 will reflect the effect that Reduced Heartbeat calculations, from RSLogix 5000 V16, will have on your device's usage.
-  The Reduced Heartbeat feature helps in preserving bandwidth in large network installations by reducing the rate at which heartbeat is sent from the Consumer to the Producer device. Heartbeat is the name given to the way a Consumer device informs a Producer device of its presence.
- Support for Unicast feature of RSLogix5000 V16. The numbers on the Device Usage Properties dialog box in EtherNet/IP will reflect the effect that Unicast calculations, from RSLogix 5000 V16, will have on your device's usage.
-  In Unicast the Producer device sends individual packets to each Consumer device.

- Support for FactoryTalk Activation.
- RSNetWorx supports RSAssetSecurity™. RSAssetSecurity is intended to improve the security of your automation system by limiting access to only those with a legitimate need. RSAssetSecurity authenticates user identities and authorizes user requests to access a FactoryTalk-enabled system. These security services are fully integrated into the FactoryTalk Directory and are included as part of the FactoryTalk Automation Platform that installs with many products.
- Device usages view displays usage percentages for factors such as minimum and maximum CPU, and connection usage (when your device's EDS file contains capacity information) or raw transmission data information (when your device's EDS file does not contain capacity information). When edits are enabled, you will get to see both current and pending device usage information.
- Embedded EDS is supported. With this functionality, you can now change the state of your device from unknown to known by uploading and registering its EDS, instead of obtaining the EDS file from an external website or a CD.
- A Windows-based point and click interface that allows you to easily configure EtherNet/IP networks.
- Use of RSLinx Classic communication services, which allows you to browse online through various networks, devices, bridges, etc., to choose the network you want to view or edit.
- The ability to edit configurations either online or offline.
- Simple and complete network upload/download. You can upload a configuration directly from the network or download a configuration to the online network. When you upload or download a configuration, the scanlist for the open scanners is transferred.
- The Scanlist Configuration Tool configures both I/O and peer-to-peer data addresses. It also supports target devices for Rockwell Automation and third-party devices via EtherNet/IP standard Electronic Data Sheet (EDS) files.
- Reports generated in HTML format.
- Comprehensive context-sensitive online help, including additional information and troubleshooting hints on any message that appears in the Message View.
- The ability to interconnect several network configurations for navigation.
- With RSNetWorx MD, you will also be able to:
 - quickly detect and resolve conditions that arise when initially commissioning a system, minimizing initial start-up times and costs.
 - debug and correct network/device problems, thereby reducing network downtimes and related costs.
 - detect preventive maintenance needs within the devices on your network, thereby preventing system downtimes.



Understanding EtherNet/IP concepts

You begin configuring your EtherNet/IP network by determining how many devices will be connected to your network, what EtherNet topology will be used, and what addressing method will be used (IP addressing, Host name addressing, or a combination of both). Each device must be assigned a unique IP address/host name. You may allow the addresses to be automatically assigned, or choose to assign a unique address manually.

Finally, you finish creating the configuration by defining connections between the devices at IP addresses/host names on the network. To do this, you determine which data is to be consumed by each scanner, and you determine where in each scanner's data table this data is placed. You may also choose to determine which scanner will maintain the configuration for each adapter device. After you have defined these parameters, you use the Scanlist Configuration Tool (for integrated scanners) or RSLogix 5000 (for Rockwell Automation's Logix processors) to enter the connection into your configuration for each of your EtherNet/IP scanners.

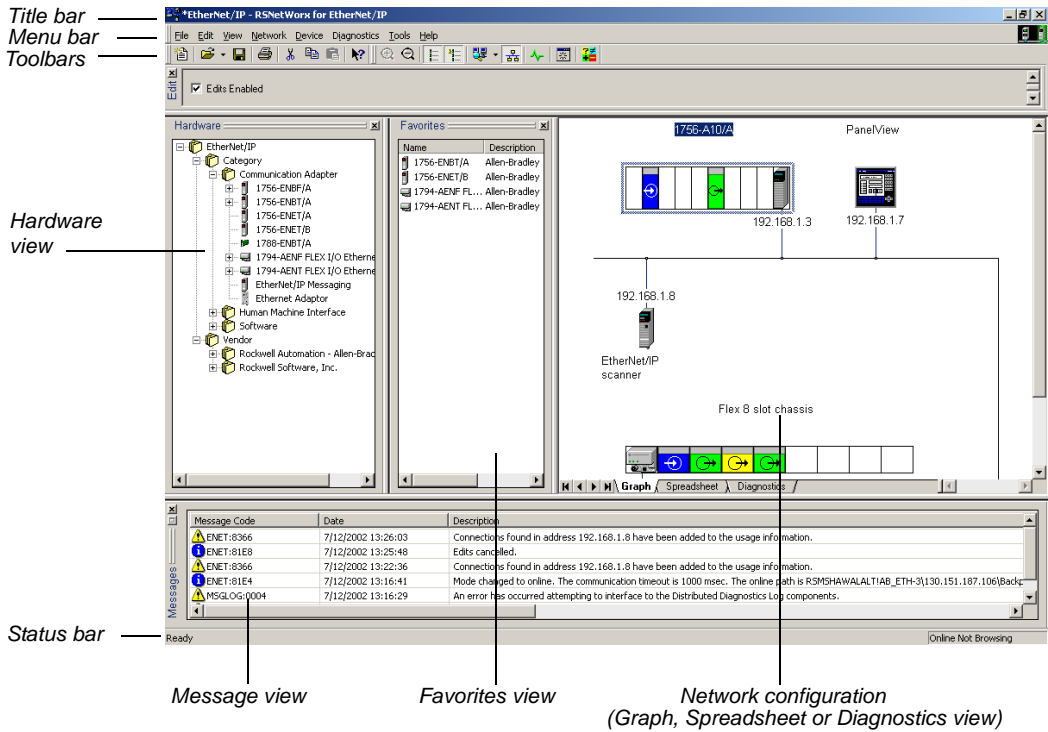
For many devices, you can also use the Scanlist Configuration Tool to configure how outputs are set in the event of a fault, such as loss of communication to the controlling scanner. Depending on the information contained in a device's EDS file, you may be able to configure other device parameters. These parameters may be found on the connection's property page from the Configuration Settings tab and/or the Advanced Settings tab depending on the device or module for which you are setting the parameters.



When you are online, enable edits, and save your configuration in RSNetWorx for EtherNet/IP version 4.0 or later, the software displays connections that are created in RSLogix 5000.

Exploring RSNetWorx for EtherNet/IP

When you start RSNetWorx for EtherNet/IP software, the RSNetWorx for EtherNet/IP window appears. It shows the current network (EtherNet is the default filename) in its view. The following illustration shows the RSNetWorx for EtherNet/IP window and the design elements associated with it. (The Message view and Favorites view will not be automatically shown in the default view, but may be chosen by selecting **View > Messages > Show** or **View > Favorites**.) Each of the design elements are described in the sections following this illustration.





Title bar

The title bar shows the RSNetworx icon, the name of the current RSNetWorx configuration, the name of the software product, i.e., RSNetWorx for EtherNet/IP, and the Minimize, Maximize, and Close buttons.



To view the Control Menu, right-click the RSNetWorx icon on the title bar. The following items appear on the Control Menu.

Item	Description
Restore	Restores the window to its former size after you enlarged it by using the Maximize command or shrunk it by using the Minimize command.
Move	Allows you to reposition the window on the desktop using the arrow keys on the keyboard.
Size	Allows you to resize the window by using the arrow keys on the keyboard.
Minimize	Shrinks the window to an icon, which is located on the task bar. This performs the same function as if you clicked the Minimize button on the title bar.
Maximize	Enlarges the window to occupy the entire screen. This performs the same function as if you clicked the Maximize button on the title bar.
Close	Exits the RSNetWorx application. This performs the same function as if you clicked the Close button on the title bar.

Menu bar

The RSNetWorx for EtherNet/IP menu bar contains the following menus:



Each menu contains options for performing the following tasks:

Menu	Description
File	New, print, open, and save a network configuration, generate reports, or exit RSNetWorx for EtherNet/IP.
Edit	Invoke actions such as cut, copy, and paste on selected items in the network configuration.
View	Set and change RSNetWorx for EtherNet/IP interface displays.
Network	Browse the network, toggle between online and offline mode, enable and cancel edits, and upload and download data to and from the network.
Device	Edit the properties of the selected device, chassis, or module.
Diagnostics	Start and stop the diagnostic scan, add or remove devices from the diagnostic scan, troubleshoot a diagnostic fault, and generate a network health report.
Tools	Launch the EDS Wizard and other optional tools.
Help	Access help options for RSNetWorx for EtherNet/IP, EtherNet/IP related hardware, and other Rockwell Software products and services.

Online icon

The online icon displays in the right side of the RSNetWorx for EtherNet/IP window at the same level as the menu bar.



This icon indicates whether or not RSNetWorx for EtherNet/IP is in the online mode. If you toggle the Online toolbar button to online, the Online icon becomes animated. If the icon is not animated, RSNetWorx for EtherNet/IP is in offline mode. When online, RSNetWorx for EtherNet/IP writes information to the devices and to the offline file when you save. When offline, RSNetWorx for EtherNet/IP only updates the offline file when you save.











Toolbars

The toolbars contain shortcuts to several commonly used functions. Each toolbar button is a graphical representation of a command (except Symbol Legend) that is also available from the RSNetWorx for EtherNet/IP menu bar. RSNetWorx for EtherNet/IP contains the standard toolbar and the tools toolbar.










The following items appear on the RSNetWorx for EtherNet/IP standard toolbar.



Icon	Menu Selection	Description
	File > New	Creates a new network configuration.
	File > Open	Opens an existing network configuration. The arrow to the right of the Open icon provides quick access to recently used files.
	File > Save	Saves the current network configuration.
	File > Print	Prints the current network configuration.
	Edit > Cut	Cuts the selected device from the network configuration and places it on the clipboard. If you cut a device, only the device, not its configuration, is retained.
	Edit > Copy	Copies the selected device to the clipboard. If you copy a device, only the device type, not its configuration, is retained.
	Edit > Paste	Pastes the device from the clipboard to the current network configuration.
	Help > What's This?	Places the cursor in What's This? help mode. Place the cursor on the control you want help with and right-click to see the context-sensitive help.

The following items appear on the RSNetWorx for EtherNet/IP tools toolbar.



Icon	Menu Selection	Description
	View > Zoom-In	Increases the size of images located in the current network configuration. The choices available are high, medium, and low. Zoom-In only applies to the graph view.
	View > Zoom-Out	Decreases the size of the images located in the current network configuration. The choices available are high, medium, and low. Zoom-Out only applies to the graph view.
	View > Hardware	Displays a list of all available hardware devices.
	View > Favorites	Displays a list of hardware devices that you have added to your favorites list.
	Network > Single Pass Browse or Network > Continuous Browse	Locates all currently available devices based on the drivers configured in RSLinx Classic. Allows you to browse once and stop (single pass) or browse continuously (continuous browse).
	Network > Online	Places RSNetWorx for EtherNet/IP in online mode. To go offline, click the button or choose Network > Online again.
	View > Diagnostics	Displays the Diagnostic view, allowing you to view the diagnostic parameters for all of the devices on your network, and indicates the current diagnostic status of your network.
	View > Refresh	Refreshes the window. This will reorder the graphic display by device address.
	No menu selection	Displays the Symbol Legend, which contains descriptions of the device comparison states. The Symbol Legend can also be accessed from the online help system by selecting Help > Contents and selecting symbol legend from the index tab.

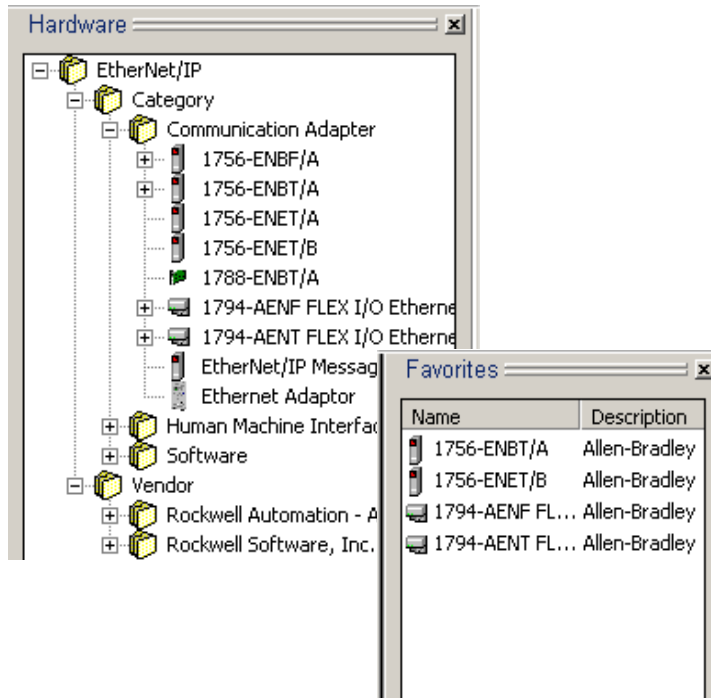
Edits enabled

The edits enabled area allows you to obtain the edit resource, enabling and disabling edits to the current EtherNet/IP offline configuration file (*.enet).



Hardware and Favorites views

A device can be added to the network configuration by selecting it from the Hardware view and dragging it to the configuration (graph or spreadsheet view). Once a device is added, it will display in the appropriate configuration. The Favorites view displays all hardware devices that you have defined as favorites by selection from the Hardware list. To add an item from the Hardware list to the Favorites list, select the item, right-click and choose Add to Favorites.



Graph or Spreadsheet view

The application workspace displays network information in either a graphic or a spreadsheet view. Click the appropriate tab in the network configuration to display the desired view.



network, or any device on your network, by viewing a single status indicator. Click the Diagnostics tab in the network configuration to display this view.

Starts or stops the diagnostic scan

Displays any network and/or device problems that are detected on your network

Displays the troubleshooting page for warning or error diagnostics

Displays a count of diagnostics by state

Diagnostic Results	
Normal	35
Warning	0
Error	0
No Read	0

Network Health Monitor

- EtherNet/IP
 - 1756-A10/A
 - Address 192.168.1.7, PanelView
 - Device ID Check
 - Identity
 - Address 192.168.1.8, EtherNet/IP scanner
 - Device ID Check
 - Identity
 - ScannerSignature
 - Flex 8 slot chassis

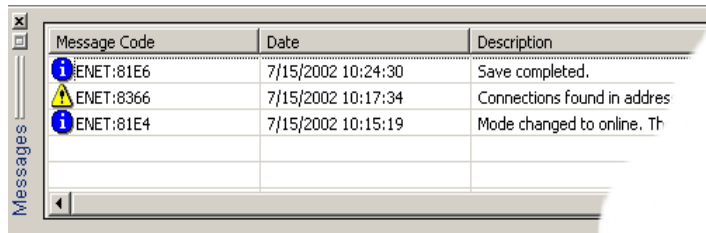
Diagnosing Address 192.168.1.8, EtherNet/IP test scanner


Graph \ Spreadsheet \ Diagnostics

Message view




The message view, which appears in the bottom portion of the workspace displays a log of messages. Each message consists of four parts:


- an icon
- an error message code (including a distinguishing software component designator and a 16-bit numeric designator)
- a timestamp that displays the date and time the message is generated
- a description of the message



 If **View > Messages** has not been previously selected, the Message View will automatically appear when a message is logged by RSNetWorx for EtherNet/IP.

This view may contain error, warning, and/or informational messages as indicated in the following table:

Icon	Description
	Error
	Warning
	Informational

 If you want more information on any particular message, you can select the message and press the F1 key to access the online help. You can Show, Clear, Copy, or Clear and Hide messages by making the appropriate selection from the **View > Messages** command on the main menu, or by right-clicking and selecting the Message option while in the Message view.



Status bar

The status bar, which is located at the bottom of the RSNetWorx for EtherNet/IP main window, provides information about the status of the software.

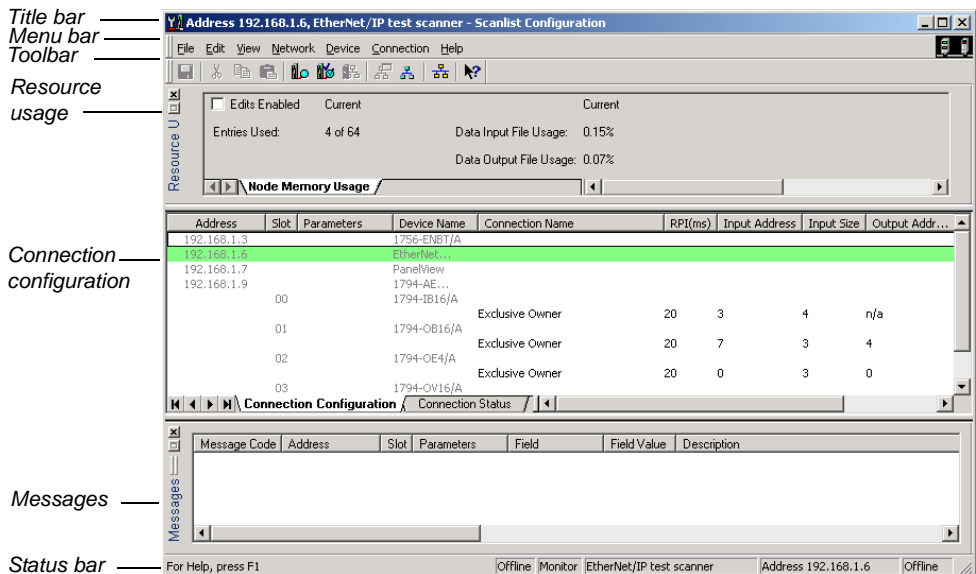
The left portion of the status bar displays informational messages about the operation of RSNetWorx for EtherNet/IP software. For example, when you highlight a device in the application workspace, a brief description of that device appears on the status bar.

The right portion of the status bar displays the current state of the browsing operation.



Exploring the Scanlist Configuration Tool

The Scanlist Configuration Tool is an extension of the RSNetWorx software that allows you to create, modify, and delete connection entries within a scanlist (an EtherNet/IP scanner). Using the Scanlist Configuration Tool, you can establish connections among devices and their respective I/O components (identifying connection types, sizes, and timing intervals) and then map that information to the data table. The following illustration shows the Scanlist Configuration Tool window and the design elements associated with it. (The Message view will not be automatically shown in the default view, but may be chosen by selecting **View > Messages > Show.**) Each of the design elements are described in the sections following this illustration.



Title bar

The title bar shows the Scanlist Configuration Tool icon, the name of the selected scanner, the name of the software product, i.e., Scanlist Configuration, and the Minimize, Maximize, and Close button.

For more information on the title bar, refer to the Exploring RSNetWorx for EtherNet/IP section in this chapter.

Menu bar

The Scanlist Configuration Tool menu bar contains the following menus:



Each menu contains options for performing the following tasks:

Menu	Description
File	Save a configuration, generate a report for this scanner, or exit the Scanlist Configuration Tool.
Edit	Invoke actions such as cut, copy, and paste on selected items in the configuration.
View	Set and change the Scanlist Configuration Tool interface displays.
Network	Toggle between online and offline mode, and enable or cancel edits.
Device	Change mode of the scanner from, for example, run to program mode or download to device.
Connection	Insert connections or change connection parameters.
Help	View help options for the Scanlist Configuration Tool and other Rockwell Software products and services.



Online icon

The online icon displays in the right side of the Scanlist Configuration Tool at the same level as the menu bar.








This icon indicates whether or not RSNetWorx for EtherNet/IP is in the online mode. If you toggle the Online toolbar button to online, the Online icon becomes animated. If the icon is not animated, RSNetWorx for EtherNet/IP is in offline mode. When online, RSNetWorx for EtherNet/IP writes information to the devices and to the offline file when you save. When offline, RSNetWorx for EtherNet/IP only updates the offline file when you save.







Toolbar

The toolbars contain shortcuts to several commonly used functions. Each button on the toolbars is a graphical representation of a command that is also available from the Scanlist Configuration Tool menu bar.

The following items appear on the Scanlist Configuration Tool toolbar:

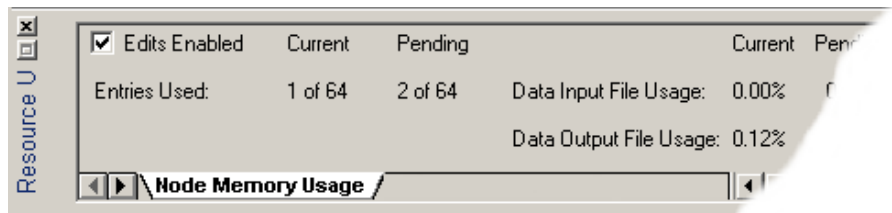


Icon	Menu Selection	Description
	File > Save	Saves the current network configuration.
	Edit > Cut	Cuts the selected field value and places it on the clipboard.
	Edit > Copy	Copies the selected field value to the clipboard.
	Edit > Paste	Pastes the field value from the clipboard to the current network configuration.
	Scanlist > Auto Insert > All Devices	Interrogates all devices that can have connections in the EtherNet/IP configuration and adds connections to the scanlist.

Icon	Menu Selection	Description
	Scanlist > Auto Insert > Selected Devices	Interrogates selected devices that can have connections in the EtherNet/IP configuration and adds connections to the scanlist.
	Scanlist > Auto Address > All Entries	Auto maps all unmapped addresses in all entries.
	View > Connection Configuration	Displays information respective to the selected connection.
	View > Connection Status	Switches the view to a display of the status of each connection.
	Network > Online	Places the Scanlist Configuration Tool in online mode. To go offline, click the button or choose Network > Online again. This button is unpressed when in online mode.
	Help > What's This?	Places the cursor in What's This? help mode. Place the cursor on the control you want help with and right-click to see the context-sensitive help.

Resource usage

Within the Scanlist Configuration Tool, you can also view the memory usage.





Scanlist entries

The scanlist entries enable you to perform tasks such as defining the connection targets and inserting connections for the selected devices.

Address	Slot	Parameters	Device Name	Connection Name
192.168.1.3			1756-ENBT/A	
192.168.1.6			EtherNet...	
192.168.1.7			PanelView	
192.168.1.9			1794-AE...	
	00		1794-IB16/A	
	01		1794-OB16/A	
	02		1794-OE4/A	
				Exclusive Owner
	03		1794-OV16/A	

⏪ ⏩ ⏴ ⏵ \ Connection Configuration

Status bar

The status bar, which is located at the bottom of the Scanlist Configuration Tool window, provides information about the status of the software and the scanner.

The left portion of the status bar displays informational messages about the operation of the configuration software. For example, when you mouse over a toolbar icon, a brief description of that icon appears on the status bar.

The right portion of the status bar displays the following information:

- Online mode - Offline or Online
- Edit mode - Monitor or Edit
- Scanner type
- IP address/host name
- Scanner mode - Remote Idle, Idle, Remote Run, Run, or Offline

Quick Start steps

The fastest way to configure your EtherNet/IP network is to specify an EtherNet/IP driver in RSLinx Classic and let the RSNetWorx for EtherNet/IP software browse your online network for EtherNet/IP devices and automatically add them into your configuration; and then, let the Scanlist Configuration Tool automatically configure connections to your target devices. You can follow this same procedure for configuring your network in the offline mode by manually dragging and dropping devices from your Hardware tab into your network configuration.

For some devices, you need additional RSLogix software to complete your network configuration (for example, if you have ControlLogix processors on your network, then you must use RSLogix 5000 to complete your configuration).



There is no offline mode when working with ControlLogix processors. Also, for more information on using RSLogix 5000 and ControlLogix processors, refer to the online help for the Scanlist Configuration Tool.

This section walks you through the tasks you will need to perform to use RSNetWorx for EtherNet/IP software in both the online and offline modes. To remain focused on the high-level nature of each task and on the flow of these tasks, the following steps do not include the step-by-step procedure for accomplishing each task. When you are ready to use RSNetWorx for EtherNet/IP software, you should follow the detailed procedures found in the Quick Start, which is located in the RSNetWorx for EtherNet/IP online help.

To access the software's quick start, select **Help > Quick Start** from the RSNetWorx for EtherNet/IP window. To see information about any control on the RSNetWorx for EtherNet/IP or Scanlist Configuration Tool windows, remember to use the What's This? help.



Online mode

Step 1 - Create a new configuration and browse for an online network

The first step in using RSNetWorx for EtherNet/IP in the online mode is to create a new EtherNet/IP configuration (**File > New**). Once you create the configuration, an empty network displays in the network configuration.



These steps assume that you have configured a communication driver in RSLinx Classic for communication to the EtherNet/IP network.

Next, go online and select an EtherNet/IP network using the RSWho Browse utility. A graphical representation of the selected network appears in the network configuration. If you would like to see a tabular view of the information instead of the graphical view, click the Spreadsheet tab.

Step 2 - Start the Scanlist Configuration Tool and insert a connection

The Scanlist Configuration Tool is a software tool used to create, modify, and delete scanlist entries in a scanner. This tool also allows you to define how particular devices communicate on the network. To configure devices that contain an internal scanlist, use the Scanlist Configuration Tool. Once you open the Scanlist Configuration Tool, you can either insert connections to other devices on the network manually, or you can use the auto insert feature within the Scanlist Configuration Tool to automatically insert the scanlist entries.

Step 3 - Define a connection target and save your network configuration

To provide data from the scanner to other devices on the network, you must define a connection target. You can define the connection target for the scanner IP address/host name on your network manually. After defining your connection targets, the final step is to save your network configuration and exit the Scanlist Configuration Tool.

Step 4 - Diagnose and troubleshoot your online network

Once you save your configuration, you can diagnose the network and determine the status of all of the devices on that network. If any of the devices are exhibiting diagnostics problems, you can troubleshoot those devices and return your network to proper operating condition.

Offline mode

Step 1 - Create a new configuration and describe your network topology

The first step in using RSNetWorx for EtherNet/IP in the offline mode is to create a new EtherNet/IP configuration (**File > New**). Once you create the configuration, an empty network displays in the network configuration.

Next, you can describe your network topology by double-clicking on an available device or by dragging it from the Hardware tab and dropping it into the network configuration. When you are finished, a graphical representation of the selected network appears in the network configuration. If you would like to see a tabular view of the information instead of the graphical view, click the Spreadsheet tab.

Step 2 - Start the Scanlist Configuration Tool and insert a connection

The Scanlist Configuration Tool is a software tool used to create, modify, and delete scanlist entries in a scanner. This tool also allows you to define how particular devices communicate on the network. To configure devices that support the open standard for EtherNet/IP scanners, use the Scanlist Configuration Tool. Once you open the Scanlist Configuration Tool, you can either insert connections for the scanner IP addresses/host names on your network manually, or you can use the auto insert feature within the Scanlist Configuration Tool to automatically insert the scanlist entries.

Step 3 - Define a connection target and save your schedule

To provide data from the scanner to other devices on the network, you must define a connection target. You can define the connection target device for the scanner IP address/host name on your network manually. After defining your connection targets, the final step is to save your configuration and exit the Scanlist Configuration Tool.

2

Installing and Starting RSNetWorx for EtherNet/IP

This chapter explains how to install and start RSNetWorx™ for EtherNet/IP™ software. This chapter includes information on the following:

- system requirements
- software compatibility
- installation methods
- installation procedure
- starting procedure
- troubleshooting

After installing the software, we recommend that you read the release notes located in the online help. The release notes may contain more up-to-date information than was available when this document was published. To view the release notes, start RSNetWorx for EtherNet/IP, and then choose **Help > Release Notes** from the main menu.

Before You Begin

Rockwell Software uses a software key to implement copy protection for Windows-based software products. Every software product has a unique key. Although, you can install the software on any number of computers, you are only licensed to run the software on one computer at a time. After you install the RSNetWorx software, the Setup program will prompt you to activate your software. For more information about moving software keys, copy protection, and software activation, refer to Appendix A in this guide.

System requirements

To run RSNetWorx for EtherNet/IP, your system must meet the following hardware and software requirements:

Hardware requirements

To run RSNetWorx for EtherNet/IP, your system must meet the following hardware requirements:

- an Intel Pentium™ 4 processor (2.4 GHz or faster)
- 1 GB of RAM; more memory is required for large networks
- 16 GB of maximum disk space (EDS files take 20.2 MB). These sizes are based on a Microsoft FAT file system. A Microsoft NTFS file system will use much less space.
- True Color VGA graphics device with a minimum resolution of 1024 x 768

- a DVD-ROM drive
- a mouse or other Windows compatible pointing device is recommended

Software requirements

To run RSNetWorx for EtherNet/IP, you require one of the following operating systems:

- Windows 8.x
- Windows 7 Professional with Service Pack 1 and Windows 7 Home Premium with Service Pack 1
- Windows Server 2012 Standard
- Windows Server 2012 R2
- Windows Server 2008 Standard with Service Pack 2
- Windows Server 2008 R2 Standard with Service Pack 1

Software Compatibility

RSNetWorx for EtherNet/IP v25 is a component aligned to Studio 5000 Logix Designer™ v28. This version of RSNetWorx for EtherNet/IP has been tested with, and is compatible with the following products:

- FactoryTalk Activation Manager (version 3.62)
- FactoryTalk Services Platform (version 2.80)
- RSLinx Classic (version 3.80)
- RSLogix 5 (version 8.00)
- RSLogix 5000 (version 28.00)



It is recommended that you use all products from the same CPR release.



Installing RSNetWorx for EtherNet/IP software

You can install one or more Rockwell Software products on a single personal computer. Select the required Rockwell Software product and each required component for installation.



While installing RSNetWorx for EtherNet/IP software, you will have the opportunity to specify a directory. The suggested default directory is:

x:\Program Files\Rockwell Software\RSNetWorx\I

where *x* is the drive where the operating system is installed.

We recommend that you use the default directory whenever possible. This subdirectory contains all of the application files required to run the product.

In procedures that appear throughout this document, it is assumed that you used the default name. If you did not use the default name, substitute the actual name you specified for the default name shown.

To install RSNetWorx for EtherNet/IP software, perform the following steps:

1. Start your operating system if it does not start automatically.
2. Insert the RSNetWorx for EtherNet/IP DVD-ROM into the DVD-ROM drive.

If autorun is:	Then:
enabled	The installation program starts automatically and the selection dialog box appears. Proceed to step 3.
disabled	Perform the following steps: Click Start , and then click Run . The Run dialog box appears. In the Open field, type <i>x:\setup.exe</i> , where <i>x</i> is the letter of the drive containing the RSNetWorx for EtherNet/IP CD-ROM. Click OK . The selection dialog box appears.

3. In the Product Selection page, select **RSNetWorx for EtherNet** checkbox, and Click **Next**.

You can click **View Release Notes for Selected Product** to ensure your system meets the minimum requirements, and to learn about new features included with this version.

4. In the Customer Information page, enter the user name and organization, and click **Next**.
5. In the License Agreement page, read the end-user license agreement, select **I accept the terms in the license agreement**, and click **Next**.

6. In the Installation Location page, click **Next**. You can also click Change to select another location.
7. In the **Feature Selection** page, select the appropriate installation type and click **Next**.
8. In the Configuration Summary page, review the information. If the information is correct, click **Install** to continue.
9. When the installation completes,
 - To activate RSNetWorx, select the **Activate products** check box.
 - To set up security in RSNetWorx, select **Enable FactoryTalk Security** and select the FactoryTalk directory that will be used to authenticate and authorize user access.
10. Click **Finish** to exit.

Installing a client copy from a dedicated server

As a client to a client-server installation, you can install one or more Rockwell Software products from the dedicated server location to an end-user destination. To install the RSNetWorx for EtherNet/IP software from the server, perform the following steps:

1. Map a network drive to the dedicated server location provided by your system administrator. The system administrator must have copied the entire DVD contents and provided only Read and Execute permissions of the files. Users installing the software cannot have write access to the files.
2. Double-click autorun.exe in the client installation directory.
3. See the “Installing RSNetWorx for EtherNet/IP software” section in this chapter.

Starting RSNetWorx for EtherNet/IP software

To start RSNetWorx for EtherNet/IP software, click **Start**, and then select **Programs > Rockwell Software > RSNetWorx (folder) > RSNetWorx for EtherNet-IP** (executable) from the Start menu.

To create a desktop icon, click **Start**, and then select **Programs > Rockwell Software > RSNetWorx for EtherNet-IP shortcuts**, and drag the RSNetWorx for EtherNet/IP shortcut to the location of your choice.



We assume that you used the default names for the directory and program group. If you did not use the default names, substitute the actual names that you specified for the default names shown.



Troubleshooting installation

If RSNetWorx for EtherNet/IP does not start up or run properly, consider the following:

- Do you have the correct version of RSLinx Classic installed? RSNetWorx for EtherNet/IP requires the RSLinx Lite 2.4 (or later) release.
- Does your computer have enough memory? Running RSNetWorx for EtherNet/IP requires a minimum of 32 MB of RAM.
- Have you reinstalled an earlier Service Pack, or removed a component, such as DCOM, that RSNetWorx for EtherNet/IP requires?
- Have you checked the RSNetWorx support on the web for troubleshooting information? Go to <http://www.rockwellautomation.com/support>, click **Knowledgebase**, and search for Tech Notes on RSNetWorx for EtherNet/IP.

3

Advanced Concepts

This chapter contains the following sections:

- EDS-based devices
- EDS library
- Class Instance Editor

EDS-based devices

RSNetworx for EtherNet/IP™ relies on an electronic data sheet (EDS) for configuring devices. An electronic data sheet is an ASCII file that is created by the manufacturer and supplied with the device.

As long as the EDS file for the device you want to configure is registered with the RSNetWorx for EtherNet/IP software, you can configure its target connection configuration (attributes) and how it will communicate with other devices on the EtherNet/IP network. Although the procedure for configuring a device is basically the same for all devices, each device has a unique set of properties.

EDS library

The electronic data sheet (EDS) library is a collection of EDS files that have been registered with RSNetWorx for EtherNet/IP. The EDS files, which are provided by the device manufacturers, contain configuration and identification information for the devices.

RSNetWorx for EtherNet/IP software can access only those devices that have been registered. You must use the EDS Registry Wizard for registering EDS files for unknown devices, or if you have updated EDS files to install. To access the EDS Wizard, select **Tools > EDS Wizard**.

Although you get a large number of electronic data sheet (EDS) files with the RSNetWorx for EtherNet/IP software, there may be a time when you need to acquire/create additional EDS files. The most common ways to get these files are to:

- obtain them on distribution diskettes that accompany the devices.
- download them from EtherNet/IP sites on the world wide web. You can either select the device in the network configuration, right-click the mouse and select Re-register Device, and click **Download EDS File** in the EDS Wizard or access one of the following world wide web sites from which EDS files are available:
 - <http://www.ethernet-ip.org> (EtherNet/IP International web site)
 - <http://www.ab.com/networks/eds> (Allen-Bradley technical support site)
- download them from a different manufacturer's site.

Class Instance Editor

The Class Instance Editor is a tool that allows you to send data to, and read data from, an EtherNet/IP device that is not otherwise configurable with RSNetWorx for EtherNet/IP. Using the Class Instance Editor, you can either enter raw data and download it to the device, or read the data from the device.



We do not recommend configuring devices with the Class Instance Editor unless you are instructed to do so by technical support personnel for the hardware product.

To use the editor, you will need to know the service code, class, instance, and attribute by their appropriate hexadecimal codes within the device. This information may be on the printed data sheet accompanying the device.



For further information about configuring a device with the Class Instance Editor, contact the manufacturer of the device. For more information on how to enter data into the Class Instance Editor, contact Rockwell Software technical support.

4

Finding the Information You Need

This chapter describes how to:

- Use the online help
- Access product manuals
- Complete the product tutorial
- Participate in Rockwell Software training courses
- Contact technical support

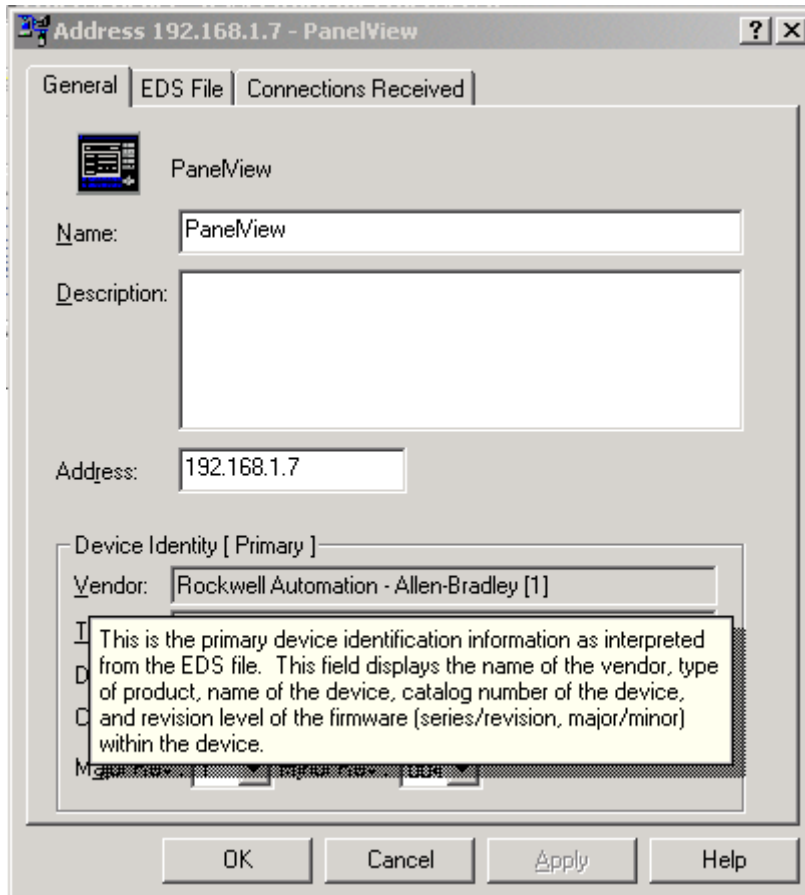
Using the online help

RSNetWorx for EtherNet/IP™ online help provides general overview information, comprehensive step-by-step procedures, and context-sensitive, dialog box control definitions for working with all of the features in the software. To view online help while running RSNetWorx for EtherNet/IP:

- choose Contents from the Help menu on the RSNetWorx for EtherNet/IP main window
- click Help on any RSNetWorx for EtherNet/IP dialog box or property page
- position the cursor over a control with which you want help and right-click
- press F1
- click the What's This? icon located in the toolbar or in the upper right corner of dialog boxes, then click any control

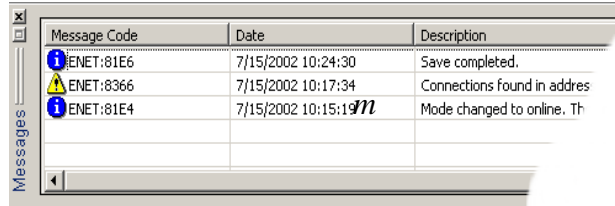
Accessing help for a control or field

- To display a definition for a control or a field, click the What's This? icon in the upper right corner of the dialog box, drag the cursor to the selected area, and then click to display the definition. You can also right-click on a control to display the definition. In this example, the PanelView properties page was selected.



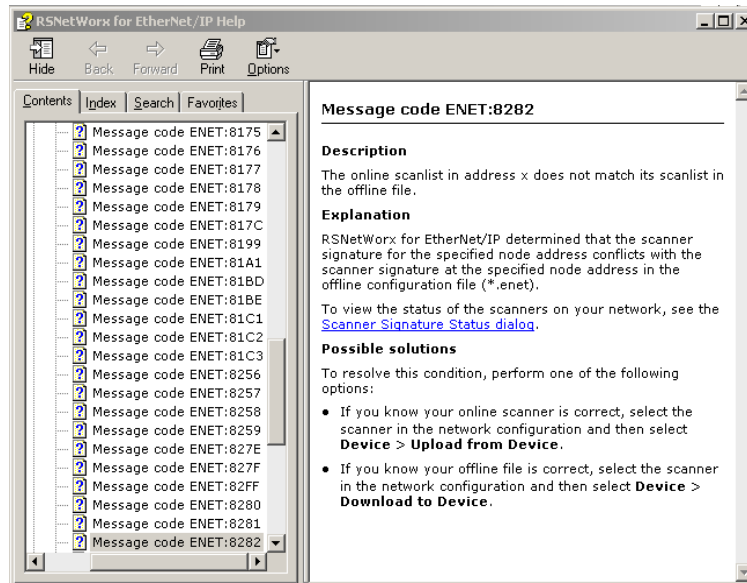
Accessing help for messages

The Message view, which appears in the bottom portion of the workspace, displays a log of messages. This view may contain informational, warning, and/or error messages.



Message Code	Date	Description
ENET:81E6	7/15/2002 10:24:30	Save completed.
ENET:8366	7/15/2002 10:17:34	Connections found in address
ENET:81E4	7/15/2002 10:15:19	Mode changed to online. Th

To troubleshoot a particular message, you can select the message and press the F1 key or right-click on the message and select **Troubleshoot** to access the online help. For example, if you select the ENET:8282 message code shown here and press F1, the “The online scanlist in address 192.168.1.6 does not match its scanlist in the offline file” troubleshooting help topic displays.

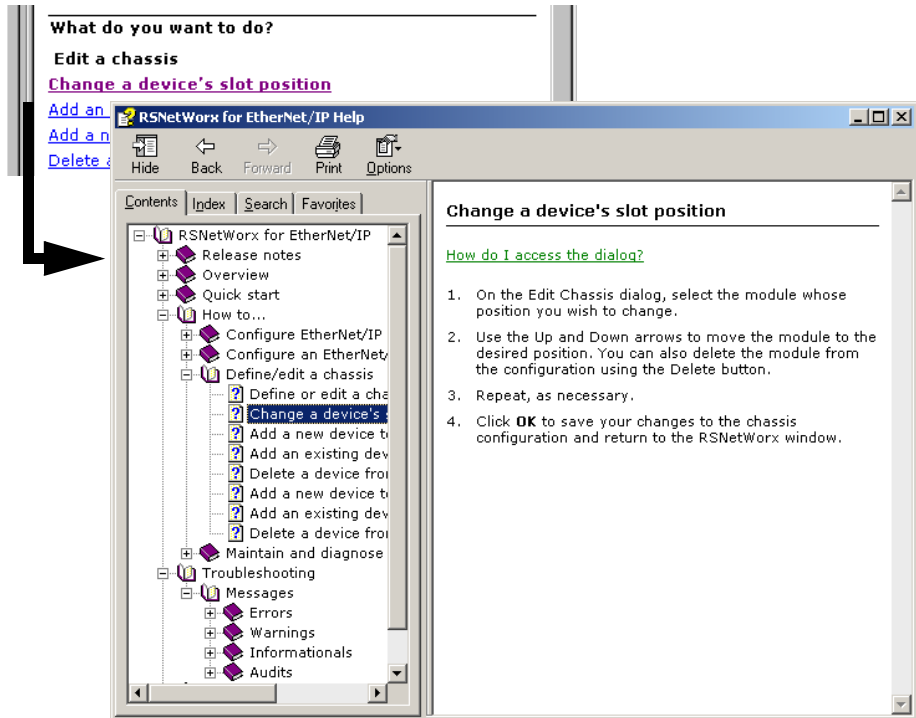


From the message view, you can also select a message and choose **View > Messages > Troubleshoot** to display online help for the message. You can also show, clear, and/or clear and hide messages by making the appropriate selection from the **View > Messages** command on the main menu. The copy menu item copies the selected message to the Windows clipboard so it can be pasted into other applications (for example, an e-mail message).

Finding step-by-step procedures

To view a list of tasks related to the task-based topic, move to the What do you want to do? section at the bottom of the help window and select one of the listed tasks. The contents pane of the help window is updated, displaying a step by step procedure for completing the selected task.

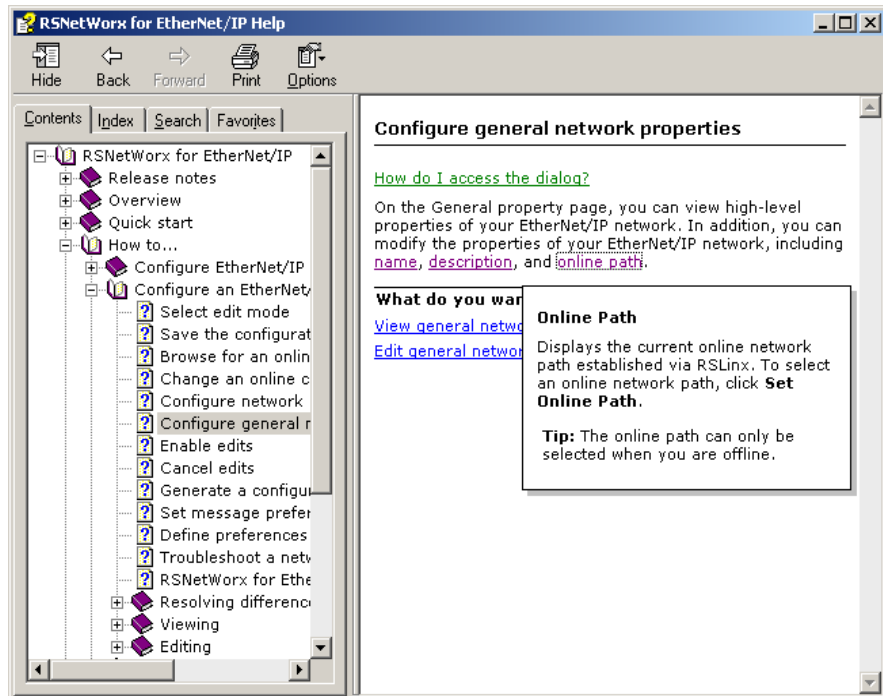
For example, from the Define or Edit a chassis help topic, if you select Change a device's slot position under the What do you want to do? section, the help topic that describes how to change a device's slot position replaces the original help topic. Also, in the Change a device's slot position help topic, How do I access the dialog? is a drop down navigational tip.





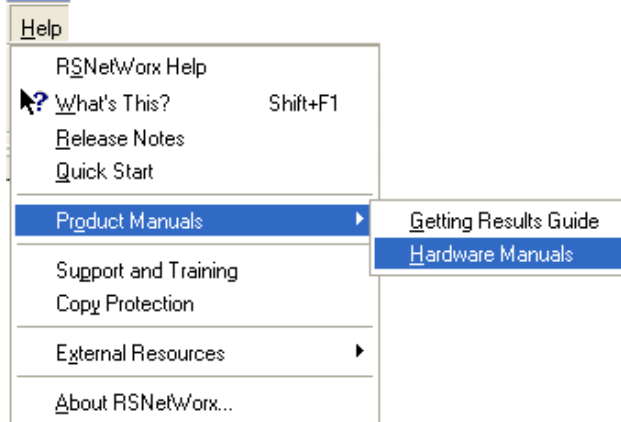
Finding definitions

Within the RSNetWorx for EtherNet/IP help, blue highlighted text with an underline indicates a pop-up definition or a link to a related topic. For example:



Accessing the Product Manuals

You can gain immediate access to product documentation through the Online Books feature in RSNetWorx for EtherNet/IP. Product Manuals includes this Getting Results Guide, as well as many reference guides, in an electronic book format. Select **Help > Product Manuals** to access this documentation.



Tutorial

RSNetWorx for EtherNet/IP contains a product tutorial, which includes basic overview information and specific tasks and examples for successfully working with the product. This tutorial is available from **Start > Programs > Rockwell Software > RSNetWorx > RSNetWorx for EtherNet-IP Tutorial**.



Training

One of the best ways to increase your proficiency at using Rockwell Software products is to attend a Rockwell Software training program. Our training programs can help you master the basics and show you how to unleash the full potential of our software.

We offer a wide range of training programs, from regularly scheduled classes conducted at Rockwell Software facilities, to custom-tailored classes conducted at your enterprise. The size of each class is kept small intentionally to maximize student engagement.

If you would like more information about our training programs, visit the Rockwell Software site on the World Wide Web or contact the Rockwell Software Training Coordinator. Our World Wide Web address and telephone numbers appear on the inside front cover of this document.



For more information on Rockwell Software training, go to the **Training Services** web site: <http://www.rockwellautomation.com/services/training/>

Technical support

If you cannot find answers to your questions in the *Getting Results with RSNetWorx for EtherNet/IP* guide, the online help, or the Online Books documentation, you can call Rockwell Software Technical Support at the numbers listed on the inside front cover of this guide.

When you call

When you call, you should be at your computer and prepared to give the following information:

- product serial number and product version number
- The product serial numbers and version number can be found in the software by selecting **Help > About RSNetWorx**
- hardware you are using
- operating system plus service packs, and version of Internet Explorer (if any) installed
- exact wording of any errors or messages that appeared on your screen
- description of what happened and what you were doing when the problem occurred
- description of how you attempted to solve the problem



For more information on Rockwell Software training, go to the **Services & Support** web site: <http://www.rockwellautomation.com/services/>



Activation

RSNetWorx for EtherNet/IP supports only FactoryTalk activation.

If you are a new user, you will need to activate your software using FactoryTalk Activation because RSNetWorx no longer ships with a physical *master disk* for activating software. For more information, read the “Activate RSNetWorx with FactoryTalk Activation” section of this appendix.

Activate RSNetWorx with FactoryTalk Activation

RSNetWorx for EtherNet/IP supports the following types of activation:

Node-locked activation

This type of activation can be either locked to a particular piece of hardware, such as an EtherNet card or a harddisk of a stand-alone computer, or to a hardware dongle. Depending upon the kind of device (stand-alone computer or hardware dongle) you want to activate, you can purchase either

- Local “node-locked” activation: This kind of activation activates software only on a single computer. If the activation file is copied to another computer, the software will not run on that other computer, or
- Mobile “node-locked” activation: This kind of activation is locked to hardware dongle. A dongle is a security or copy protection device that must be connected to the computer while the program runs. The activation files can be copied to multiple computers, but the software activates only on the computer where the dongle is connected.

Concurrent activation

This type of activation allows multiple computers across a network to use Rockwell Software products at the same time. There are two kinds of concurrent activations:

- Floating activations: activations that “float” from an activation server to any computer that needs them.
- Borrowed activations: activations that are retrieved from a server for a specific period of time before expiring and returning automatically to the pool of available activations on the server.

How to activate RSNetWorx

To activate your copy of RSNetWorx, perform the following steps:

1. Install the FactoryTalk Activation Client available from the Optional Steps screen of the Install program.
2. Once FactoryTalk Activation Client is installed, it will load the FactoryTalk Activation Wizard which will guide you through the steps of downloading the activation from the Internet. You can download the activation to your stand-alone computer or hardware dongle.

Finding more information about FactoryTalk Activation

For help with FactoryTalk Activation at any point, you can click:

- the Help button on any FactoryTalk Activation Tool dialog or FactoryTalk Activation Transfer Tool dialog
- the Help link on the Rockwell Software Activation website:
<http://licensing.software.rockwell.com>
- View How to Activate Rockwell Software Products on the Required Steps of the Install program

If you cannot connect to the Internet, call Technical Support for help creating an activation file from an e-mail or a fax.

Phone: 440-646-3434 in North America. Outside of North America, call your local support organization.

Grace period

In RSNetWorx for EtherNet/IP v9.00.00 (CPR 9 Service Release 1) and later, the software supports a seven day activation grace period when a valid activation is not found. During grace period:

- If RSNetWorx is started and an activation key is not present, the software shall enter grace period and run with full functionality.
- Once RSNetWorx has entered grace period, the software shall check for an activation key every four hours. If the activation is not found, a message will be generated to FactoryTalk Diagnostics.
- RSNetWorx can be started an unlimited number of times while in grace period and be able to run with full functionality. If the grace period ends and a valid activation has not been found, RSNetWorx shall run in Demo mode.
- While RSNetWorx is running, the software cannot change modes. RSNetWorx can only change to Demo mode when the software is restarted and/or grace period has already expired.



If RSNetWorx is unable to successfully obtain valid activations (for example, a network failure occurs), the software will attempt run in grace period for up to seven days.



Some common questions

Following are some common problems that people encounter with activation and their solutions.

MY ACTIVATION FILES WERE DAMAGED. WHAT SHOULD I DO?

If you have lost the activation because the activation file is damaged, you need to reset activation. Follow the Reset Codes instructions on the Rockwell Software Technical Support web page, or call the technical support telephone number. The web page and telephone number are both listed on the inside front cover of this guide.

I ACCIDENTALLY DELETED THE SOFTWARE DIRECTORY ON MY HARD DRIVE. DO I NEED TO CALL ROCKWELL SOFTWARE FOR REPLACEMENT ACTIVATION FILES?

No. Deleting the program files does not delete your activation. The activation files are not stored in the program directory; they are located in the root directory. Your activation files will not be lost unless you format the hard drive, tamper with hidden files in the root directory, or perform certain other hard drive operations (refer to the “Protecting your activation files” section in this chapter for more information).

To get the software running again, simply reinstall the software, but do not move the activation when given the opportunity.

Finding more information about activation

The online help (COPYPROT.HLP) provides more extensive information on activation including subjects such as:

CHECKDRIVES. Specify which drives to search for activation

network activation. Move activation to a network server to allow multiple users access to the activation

moving activation. See detailed instructions for moving activation

resetting activation. See detailed instructions for using the Reset utility to repair a damaged activation file

troubleshooting. Look up error messages, get problem-solving suggestions

You can access online help:

- from the **Help** button on one of the EvMove or Reset dialog boxes.
- from RSNetWorx by selecting **Help > Copy Protection** from the main menu.
- without running either RSNetWorx or the activation utilities. From the Windows Start menu, select **Programs > Rockwell Software > Utilities > Activation Help** (if you accepted the default directory location during installation).

Security

FactoryTalk Security™ is intended to improve the security of your automation system by limiting access to those with a legitimate need. FactoryTalk Security authenticates user identities and authorizes user requests to access a FactoryTalk-enabled system. These security services are fully integrated into the FactoryTalk Directory and are included as part of the FactoryTalk Services Platform that installs with many products.

For more information on how to use security services, refer to FactoryTalk Security's Online help.

How do I set up security in RSNetWorx?

RSNetWorx supports FactoryTalk Security. FactoryTalk Security™ is intended to improve the security of your automation system by limiting access to those with a legitimate need. FactoryTalk Security authenticates the identities of users and authorizes user requests to access a FactoryTalk-enabled system against a set of defined user accounts and access privileges held in the FactoryTalk Directory. For more information on FactoryTalk Security, refer to the 'About FactoryTalk Security' topic in RSNetWorx for EtherNet/IP Online Help

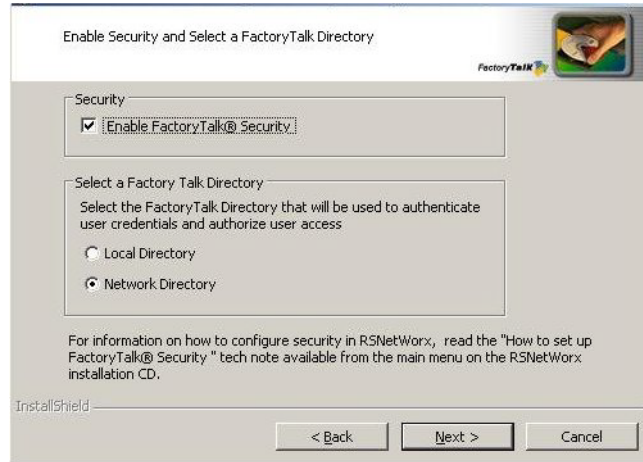
Follow the steps below to set up security in RSNetWorx:

1. Install FactoryTalk Services Platform from RSNetWorx Optional Steps Install screen. (Following the install, open the FactoryTalk Administration Console and configure the FactoryTalk Directory that you want to use.)
2. Install RSNetWorx from RSNetWorx Required Steps Install screen.



For more information on FactoryTalk, FactoryTalk Automation Platform, FactoryTalk Administration Console, and FactoryTalk Directory, refer to the Glossary.

3. While running RSNetWorx's installation wizard, you will see the Enable Security and Select a FactoryTalk Directory install screen. On this screen, select the 'Enable security' option. And then select the FactoryTalk directory (Network or Local) that will be used to authenticate and authorize user access



4. Click **Next**, and then click **Install** to continue the RSNetWorx installation.
5. When the install is complete, click **Finish**.



What can I secure in RSNetWorx?

RSNetWorx implements FactoryTalk Security through three securable actions: Access, Modify, and Go Online. These securable actions let you restrict user access to actions, such as opening a project file, creating a new project file, making changes to a project file, uploading or downloading to a device, browsing to a device from the network, viewing the properties of a device, etc., in RSNetWorx.

Securable action	Description
Access	The Access securable action allows you to perform actions such as opening an offline project file for viewing, viewing the properties of a device, etc.
Modify	The Modify securable action allows you to perform actions such as creating a project file, making changes to a project file, saving any pending edits, etc. <i>Note: To modify a project file, you need both Access (to open the file) and Modify (to make changes) securable actions.</i>
Go Online	The Go Online securable action allows you to download information saved in a project file or upload information into a project file, as well as browse to a device on the network. <i>Note:</i> <ul style="list-style-type: none"> <li data-bbox="662 968 1279 1065">■ <i>To download information saved in an existing project file, you need Access (to open the file), Go Online (to go online to prepare to download), and Modify (to download) securable actions.</i> <li data-bbox="662 1090 1279 1170">■ <i>To upload information into an existing project file, you need Access (to open the file), Go Online (to go online to prepare to upload), and Modify (to upload) securable actions.</i> <li data-bbox="662 1183 1279 1229">■ <i>To upload information into a new project file, you need Go Online (to go online to upload) securable action.</i>

To allow or deny user access to one or more of the above securable actions, you will need to:

1. Start FactoryTalk Administration Console from **Start > Programs > Rockwell Software > FactoryTalk Administration Console**. You will see the Log On to FactoryTalk screen, as shown below.



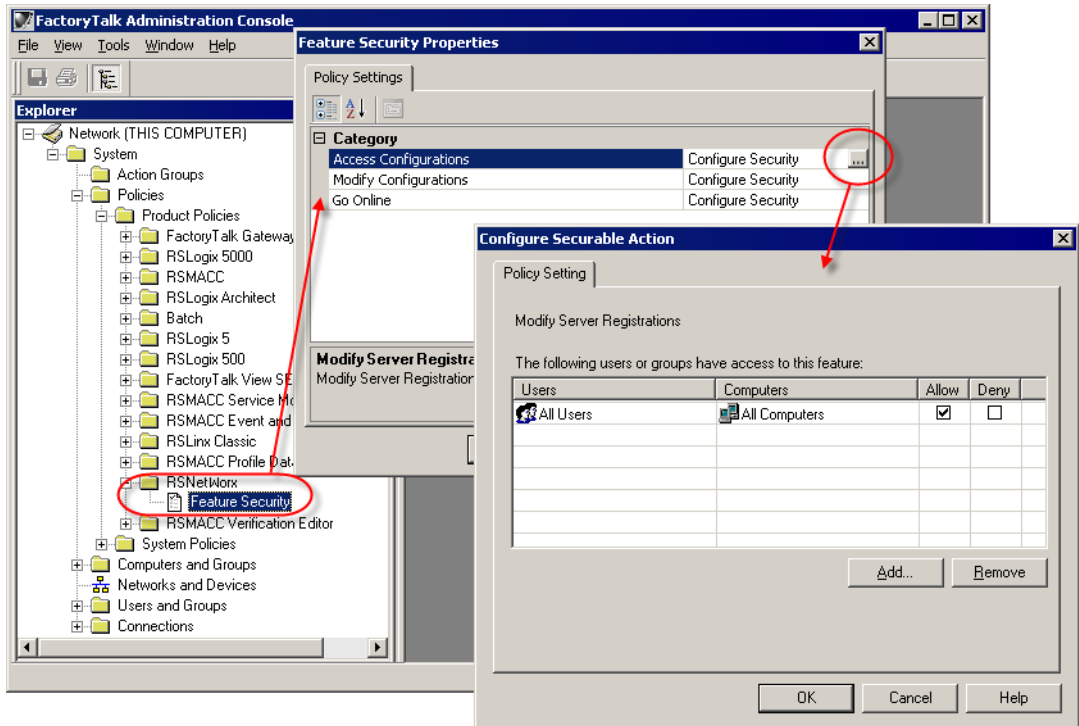
2. Enter your username and password, and select the directory you want to log on to. (The username and password were set when you set up an account during FactoryTalk Directory configuration.)

Tips for choosing a directory:

- Click **Network** to access Network (also called Distributed) applications on the Network Directory Server.
- Click **Local** to access Local (also called Stand-alone) applications on the Local Directory. Local applications are always located on your local computer. You cannot access local applications remotely.
- If you cannot log on to a particular directory on your computer, it may be because it has not yet been configured. For more information, refer to the Right FactoryTalk Directory is not configured on this computer topic in FactoryTalk help. You can launch FactoryTalk Help from FactoryTalk Administration Console.



3. In FactoryTalk Administration Console, click on the **RSNetWorx** folder (located under **System > Policies > Product Policies**), to expand it. You will see the Feature Security file.
4. Double-click the Feature Security file to launch the Feature Security Properties dialog box.



5. In the Feature Security Properties dialog box, click the securable action you want to grant the user access to.
6. In the Configure Securable Action dialog box, from the list of users, select the user you want to grant access to, and click **Add**.



For more information on FactoryTalk and FactoryTalk Security, refer to RSNetWorx for EtherNet/IP Online Help.

Glossary

Activation file — A hidden, read-only, system file that “activates” a Rockwell Software product. The software will run only if your system can find the correct activation file.

Activation key — Activation files contain a database of activation keys. Each key is particular to a certain product and must be accessible on a local or remote drive for that product to run.

Bridge — A multi-port device that connects network segments that use different physical media. Bridges also monitor network traffic, building and maintaining internal tables that list the port on which each Ethernet address resides. When a bridge receives a packet destined for a particular address, the bridge transmits the packet again only on the port at which the device resides. Each port on a bridge represents a separate collision domain.

Connection — An open, logically binding communication path between two devices on a EtherNet/IP network. Connections can be either point to point or multicast connection.

Connection ID — An identifier assigned to a particular connection between producers and consumers that specifies select application information.

Connection type — The connection type indicates the data ownership of a node. It defines the rule for how the connection entry controls outputs to the rack, module, or device. The following are standard connection types:

- **Exclusive Owner** - specifies an independent connection where a single device controls the output states in the target device. If you have an existing Exclusive Owner connection to a target device, you cannot specify another Exclusive Owner or Redundant connection to that same target device.
- **Input Only** - specifies an independent connection where a device receives inputs from the target device and sends configuration data to the network. An Input Only connection does not send outputs; it only receives inputs. You can specify multiple Input Only connections to the target device from different originators.

- **Listen Only** - specifies a dependent connection where a device receives inputs from the target device, but does not send configuration data with the network. A Listen Only connection only functions properly when another non-Listen Only connection exists to the same target device. A Listen Only connection does not send outputs; it only receives inputs. You can specify multiple Listen Only connections to the target device from different originators.



All Listen Only connections will be terminated when all non-Listen Only connections are terminated.

Consumer — A node that receives data from a producer on a EtherNet/IP link.

Cut-through switching — Cut-through switching starts sending packets as soon as they enter a switch and their destination address is read. The entire frame is not received before a switch begins forwarding it to the destination port. This reduces transmission latency between ports, but it can propagate bad packets and broadcast storms to the destination port.

EtherNet/IP network — An industrial automation network standard that is sponsored by EtherNet/IP International.

FactoryTalk is a manufacturing information platform that integrates plant-wide control systems and connects the enterprise with the production facility.

The FactoryTalk Automation Platform:

- provides common services (such as diagnostic messages and access to real-time data) and shares plant resources (such as tags and graphic displays) throughout a production facility
- allows defining plant-floor resources once, and then allows simultaneous access to those resources across product boundaries
- supports centralized security services

FactoryTalk Administration Console — Part of the FactoryTalk Automation Platform, FactoryTalk Administration Console is an optional, stand-alone tool that allows you to:

- Create and configure application, area, and data server elements in the FactoryTalk Directory.
- Back up and restore an entire directory or an individual application.
- Set up redundancy for OPC data servers.
- Configure client computers to recognize the location of a FactoryTalk Directory Server computer.
- Configure options for routing and logging diagnostic messages.



- View system-wide diagnostic messages.
- Configure system-wide policy settings.
- Secure your FactoryTalk-enabled system with FactoryTalk Security™ services.

Run FactoryTalk Administration Console from the Windows Start menu: **Start > Programs > Rockwell Software > FactoryTalk Administration Console.**

FactoryTalk Directory — FactoryTalk Directory provides a central lookup service for software products participating in a FactoryTalk-enabled automation system.

The FactoryTalk Automation Platform includes two separate directories: a Local Directory and a Network Directory. Either directory, or both directories, can be configured on the same computer. Project information, including security settings, cannot be shared between a Local Directory and Network Directory, even if both directories are configured on the same computer. Create and configure application, area, and data server elements in the FactoryTalk Directory.

- **Local Directory** — all project information and participating software products are located on a single computer, and the FactoryTalk-enabled system cannot be shared across a network or accessed remotely.
- **Network Directory** — organizes project information from multiple software products across multiple computers on a network.

Some FactoryTalk-enabled products require a Network directory, others require only a Local directory, and some require that both directories be configured.

Gateway — The term gateway has many different meanings. For example: a device that performs protocol conversion between different types of networks or applications. Such gateway function at the transport layer and above. They perform complete conversions from one protocol to another rather than simply supporting one protocol from within another. Sometimes router can implement such gateway functions; and a device that acts as a go-between connecting two or more networks that use the same protocols. In this case, the gateway functions as an entry/exit point to the network. Transport protocol conversion may not be required, but some form of processing is typically performed.

Hub — A hub is a common wiring point for star-topology networks. Hubs have multiple ports to attach the different cable runs. Some hubs include electronics to generate and time the signal between each hub port. Others act as signal splitters, similar to the multi-tap cable-TV splitters you might use on your antenna coax. Some route the network signals to each active device in series, while other hubs distribute received signals out all ports simultaneously.

Internet Group Management Protocol (IGMP) snooping — This protocol constrains the flooding of IP multicast traffic by dynamically configuring the switch interfaces so that multicast traffic is forwarded only to those interfaces associated with IP multicast devices.

License — Authorization to use a specified number of instances of software. A product's activation key contains a license for each copy of the software you have purchased. For example, if you bought seven copies of RSLogix 5, then the RSLogix 5 key on the Master Disk contains seven "licenses" of RSLogix 5. You can move an activation key for RSLogix 5 to seven different computers.

Master disk — This disk is supplied with the software. It contains a database of keys in an "activation file" that enables the software to run. Be sure to store your Master Disk in a safe place. If your activation file becomes damaged, the only way you can run your software (until the activation is reset) is with your Master Disk.

Multicast connection — A connection made from one node to many nodes. Multi-cast connections allow multiple consumer nodes the ability to receive data from a single producer node.

Node — A node is a EtherNet/IP address. When a device is added to the network, it is assigned a node address..

Offline Configuration File — In RSNetWorx for EtherNet/IP, the offline configuration file (*.enet) contains network configuration information (including scanlist data, device and chassis definitions, rack size and density, etc.). When online, the download operation applies all of the offline configuration information to the online network and the upload operation applies all of the network configuration information obtained from the online network to the offline configuration file.

Point-to-point connection — A connection made between two nodes only.

Producer — A node that is responsible for transmitting data on a EtherNet/IP link.

Requested Packet Interval — The requested packet interval (RPI) value is determined by how often you want a particular piece of I/O or scheduled peer-to-peer data to be transmitted within the scheduled bandwidth of the NUI.

Router — A router is a device that forwards traffic between networks based on the network layer information in the data and on the routing tables that it maintains. The router builds up a logical picture of the overall network in its routing tables, and then uses this information to choose the best path for forwarding network traffic.

Scanlist Configuration Tool (SCT) — A program that maps processor memory onto the network and network data into processor memory. SCTs are scanner-specific; therefore, a unique SCT is required for each type of scanner.



Scanner — A EtherNet/IP device that is a connection originator.

Scanner class device — A device that initiates connections and contains a scanlist. Refer to the RSNetWorx for EtherNet/IP online tutorial for more information.

Scanner signature — Indicates a hexadecimal value, unique to the open scanner, that is assigned to scanner devices that originate scheduled connections. This value is stored in the open scanner and in the offline configuration, and is used to determine if the offline configuration is synchronized.

Segment — A section of a local area network (LAN) that is used by a particular workgroup or department and separated from the rest of the LAN by a bridge, router, or switch. Networks are divided into multiple segments for security and to improve traffic flow by filtering out packets that are not destined for the segment.

Switch — A switch evolved from the bridge. Like traditional bridges, switches build and maintain internal tables that map Ethernet addresses to a port. A packet received on one port is rapidly switched to the appropriate output port (typically within microseconds). Each port on the switch is its own collision domain, so collisions between devices attached to the switch do not occur.

A switch segments a network into many parallel dedicated lines to produce a contentionless, scalable architecture. The switch establishes a direct line of communication between two ports and maintains multiple simultaneous links between various ports. The switch uses addressing information in each Ethernet frame to forward data only to the port connected to the destination device. The switch manages network traffic by reducing media sharing since the traffic is directed only to the segment for which it is destined.

There are two basic methods of switching: cut-through and store-and-forward.

Store and forward switch — Store-and-forward switching buffers incoming packets in memory until they are fully received and a cyclic redundancy check (CRC) is performed. This reduces bad packets and collisions that can adversely effect the overall performance of the segment. However, the buffering adds latency to the processing time. The latency increases in proportion to the frame size.

Cut-through switch — Cut-through switching starts sending packets as soon as they enter a switch and their destination address is read. The entire frame is not received before a switch begins forwarding it to the destination port. This reduces transmission latency between ports, but it can propagate bad packets and broadcast storms to the destination port.

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