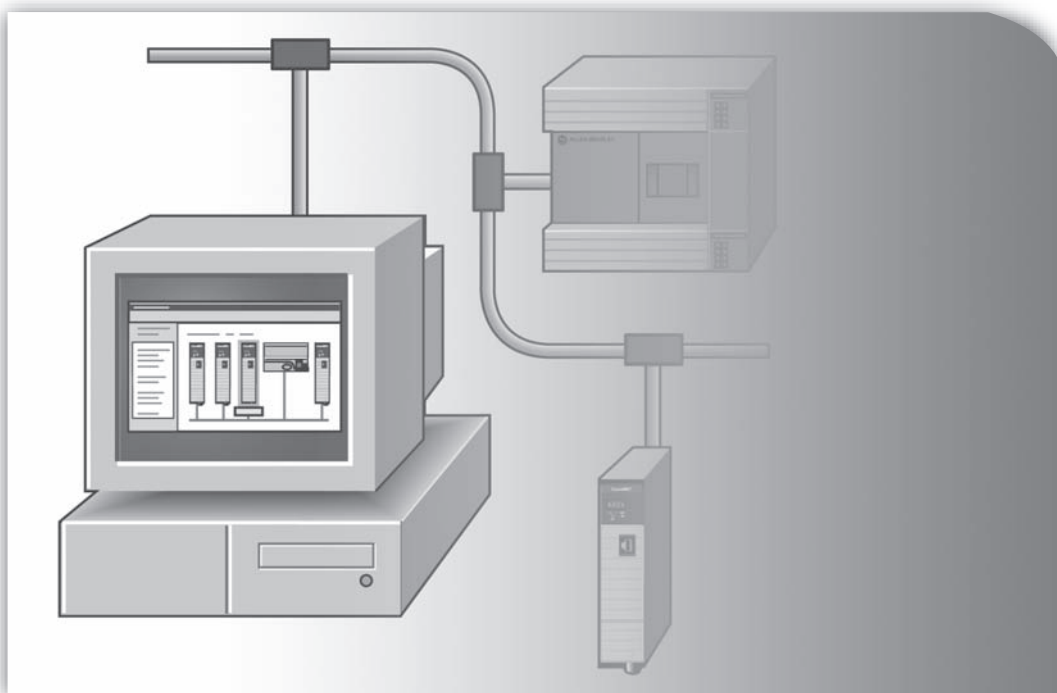


LISTEN.
THINK.
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RSNetWorx™



RSNETWORK FOR DEVICENET GETTING RESULTS GUIDE

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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 DeviceNet™ software. It explains how to effectively use the RSNetWorx for DeviceNet 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 DeviceNet* 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, Online Books, 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 DeviceNet, 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 DeviceNet* 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 DeviceNet are in portable document format (PDF), and must be viewed using the Adobe® Acrobat® Reader software included on your RSNetWorx for DeviceNet CD. You can install or run Acrobat Reader directly from the CD.

Tutorial

RSNetWorx for DeviceNet 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 DeviceNet Tutorial**.

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 RSNetWorx for DeviceNet

RSNetWorx for DeviceNet is a 32-bit Windows application program that allows you to configure DeviceNet devices. Using a graphical or spreadsheet representation of your network, you can configure all devices on the network.

This chapter contains the following sections:

- Features and benefits
- Understanding DeviceNet concepts
- Exploring RSNetWorx for DeviceNet
- Quick Start steps

Features

The current release of RSNetWorx for DeviceNet contains the following new features:

- Support for SmartGuard EIP hardware.
- Support for DeviceLogix 5.0.
- Support for third party DeviceNet scanners whose vendor IDs are not Rockwell. The third party DeviceNet scanner is supported if the EDS is licensed. Devices whose EDS are licensed and can pass the CRC License check are supported.
- Support for Molex Safety slave device and any safety static configuration device. There are no parameters or assemblies you need to configure. The Configuration Signature field in the device Safety page is enabled, allowing you to set the proper value. For the static safety I/O device, you must configure the Configuration Signature field before you can setup the connection with a scanner.
- DeviceLogix enhancements that include:
 - Logic Enable and Logic Disable menu options for selected DeviceLogix devices that are online and for all DeviceLogix devices on a network.
 - Remember the last project folder when a project is opened or a new project is created.
 - Display a logic enabled or logic disabled state icon of a DeviceLogix device when the device is online.
 - The duplicate device name is no longer changed to an EDS product name. Instead the node address is added to the head of the base device name to make the new device name unique.

Understanding DeviceNet concepts

The DeviceNet network is a control area network that logically connects input/output (I/O) devices to processors via DeviceNet scanners rather than directly to discrete I/O modules located in processor racks. Scanners reduce the burden placed on processors by handling all the I/O device management.

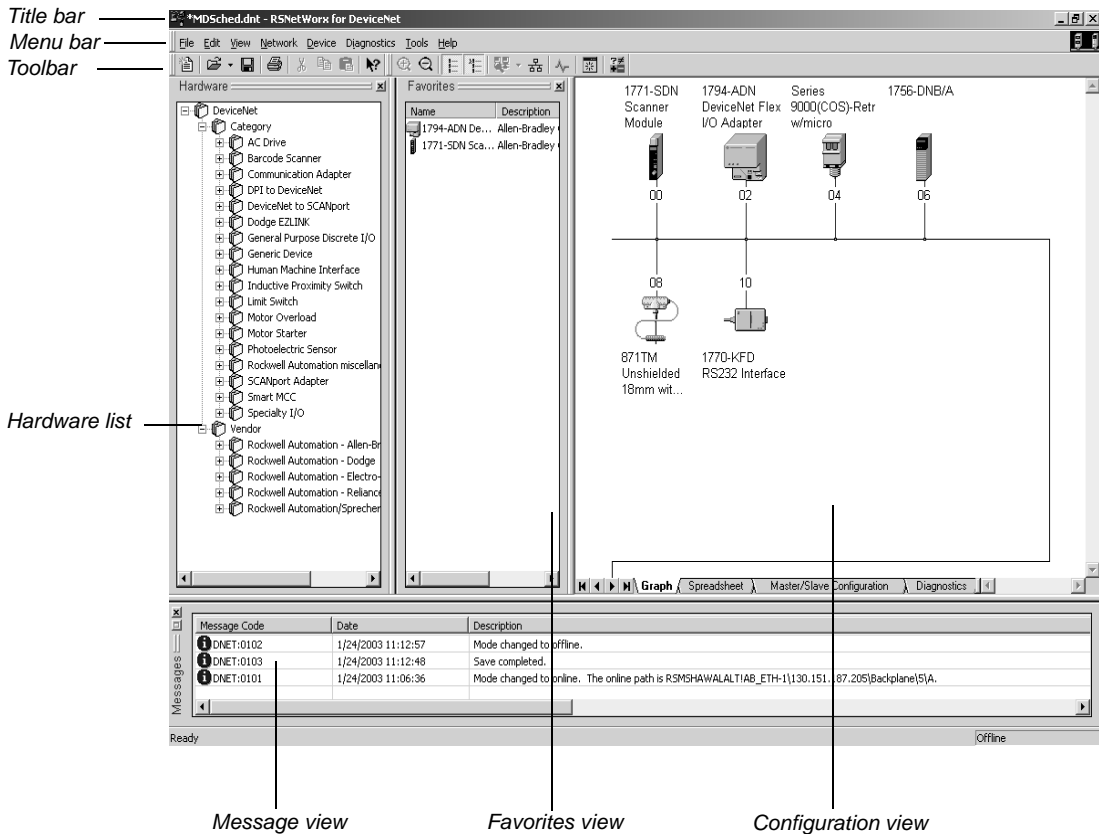
Each DeviceNet network supports up to 64 nodes. The data rate and node address of all the devices connected to the network are user-configurable. Both the signal and the power wires are bundled in the same cable. Several different types of connectors are available. The signal lines are terminated at each end to insure that the line remains balanced.

The topology of a DeviceNet network can be a drop line configuration (devices are connected to the network by drop lines and network taps), a trunk line configuration (devices are connected in a daisy chain fashion), or any combination of these configurations. For example, several devices could be daisy-chained together and then connected to the network via a network tap.

The DeviceNet specification is maintained by the Open DeviceNet Vendor's Association, Inc. (ODVA). ODVA is an independent organization of product suppliers. For more information about ODVA products and services, visit their web site at <http://www.odva.org>.

Exploring RSNetWorx for DeviceNet

When you start RSNetWorx for DeviceNet software, the RSNetWorx for DeviceNet window appears. It shows the current network (DeviceNet is the default name) in its view. The following illustration shows the RSNetWorx for DeviceNet window and the design elements associated with it. 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 DeviceNet), and the Minimize, Maximize, and Close buttons.



To view the Control Menu, 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 DeviceNet menu bar contains the following menus:

File Edit View Network Device Diagnostics Tools Help

Each menu contains options for performing the following tasks:









Menu	Description
File	Create, print, and save a network configuration, or exit RSNetWorx for DeviceNet.
Edit	Invoke actions such as cut, copy, and paste on selected items in the network configuration.
View	Set and change RSNetWorx for DeviceNet interface displays and access specialized tools.
Network	Choose browsing options, upload or download network information, view network properties, or enable or disable DeviceLogix devices that are online.
Device	Upload or download device information, resolve device mismatches, view device properties, or enable or disable DeviceLogix devices that are online.
Diagnostics	Start and stop diagnostics, add/remove devices from the diagnostic scan, select and troubleshoot a fault, specify diagnostic options, or generate a diagnostics report.
Tools	Access the EDS Wizard, the node commissioning tool, or the Faulted Address Recovery (FAR) wizard.
Help	View help options for RSNetWorx for DeviceNet and other Rockwell Software products and services.

Tool bars

The tool bars contain shortcuts to several commonly used functions. Each button on the tool bars is a graphical representation of a command (except the Symbol Legend) that is also available from the RSNetWorx for DeviceNet menu bar. RSNetWorx for DeviceNet contains the standard tool bar and the tools tool bar.

The following items appear on the RSNetWorx for DeviceNet standard tool bar.












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.
	Edit > Copy	Copies the selected device to the clipboard.
	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.



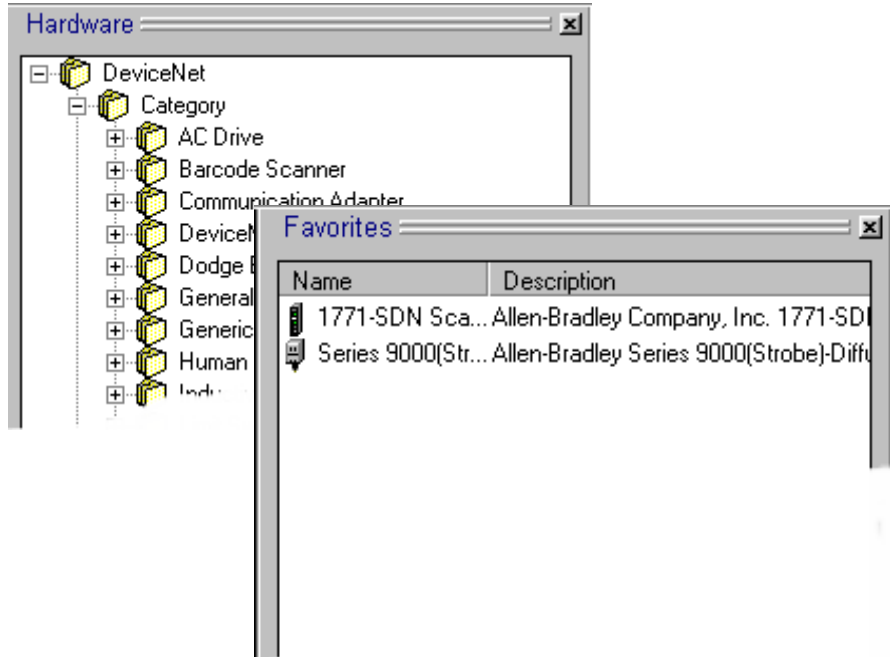
The following items appear on the RSNetWorx for DeviceNet tools tool bar.



Icon	Menu Selection	Description
	View > Zoom-In	Increases the size of the 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 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 DeviceNet 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.

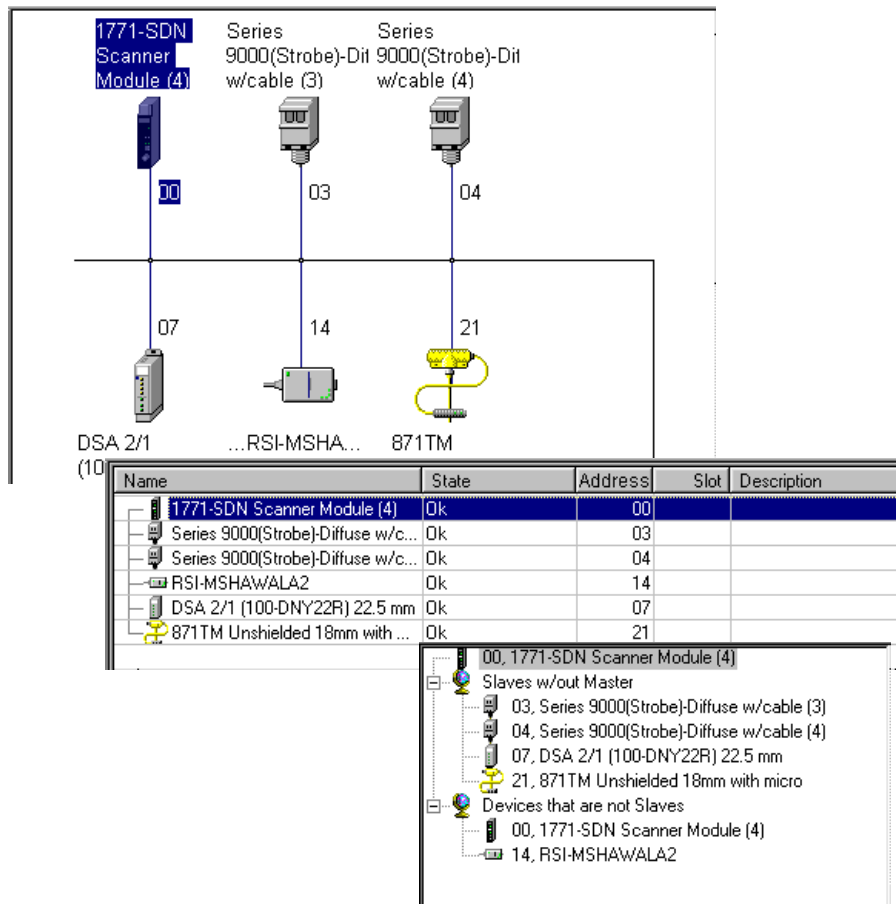
Hardware and Favorites lists

A device can be added to the network configuration by selecting it from the Hardware view and dragging it to the Configuration 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.



Configuration view

The Configuration view displays network information in a graphical, spreadsheet, or master/slave form. For example, this graphical application workspace shows the devices that currently exist on the network. The Spreadsheet view of the configuration displays the names of all devices on the network along with state, node, slot, and description information. You can add a device to the project by selecting it from the Hardware view and dragging it into the configuration view. The Master/Slave Configuration view displays any scanner to target device relationships that exist among the devices in your current DeviceNet configuration.



Diagnostics view

RSNetWorx MD provides a hierarchal view of the real-time status (or health) of a network. At a glance, you can quickly and easily determine the overall status of your 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

The screenshot shows the 'Network Health Monitor' window. On the left, there are 'Start' and 'Stop' buttons. Below them is a 'Diagnostic Results' table:

Diagnostic Results	
Normal	159
Warning	1
Error	0
No Read	0

The main area displays a tree view of devices. At the top is a 'DeviceNet' node with a warning icon. Below it are several device entries, each with a status icon and a description:

- Address 01, 1771-SDN Scanner Module (Warning icon)
- Address 03, 1798 DeviceNet Adapter (Normal icon)
- Address 04, Series 9000(COS)-Retrfective w/micro (Normal icon)
- Address 06, 1756-DNB/A (Warning icon)
- Address 08, 871TM Unshielded 18mm with micro (Normal icon)




The status bar at the bottom indicates 'Diagnosing Address 01, 1771-SDN Scanner M...' and shows a progress bar.






Message view

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

- an icon
- an error 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

Message Code	Date	Description
 DNET:0102	1/21/2003 15:56:52	Mode changed to offline.
 DNET:0001	1/21/2003 15:56:37	The browse operation has timed out. Verify that
 DNET:0101	1/21/2003 15:56:14	Mode changed to online. The online path is Γ

This view may contain informational, warning, and/or error 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, and/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 DeviceNet 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 DeviceNet software. For example when you highlight a device in the configuration view, a brief description of that device appears on the status bar.

The right portion of the status bar displays the following:

- Offline
- Online - Not Browsing
- Starting Browse...
- Browsing - Node address or Node, slot address



Quick Start steps

This section walks you through the tasks you will need to perform in order to use RSNetWorx for DeviceNet software. To remain focused on the high-level nature of each task and 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 DeviceNet software, you should follow the detailed procedures found in the Quick Start, which is located in the RSNetWorx for DeviceNet online help.

To access the online quick start, select **Help > Quick Start** from the menu bar on the RSNetWorx for DeviceNet window. To view information about any control in the RSNetWorx for DeviceNet software, remember to use the What's This? help (available by positioning the cursor over a control and right-clicking the mouse).



Online mode

Before you start

Before you can add a device to a DeviceNet network, it may need to be commissioned. This means that the node address and the data rate must be programmed into the device. Node commissioning, which is also called device commissioning, is the process of assigning a node address and a data rate to a device for use on a DeviceNet network. The node address and data rate are referred to as the network parameters.

Most DeviceNet devices are factory commissioned with default values per the DeviceNet specification. Usually, the node address is set to 63 and the data rate is set to 125K baud. As long as the factory default parameters do not conflict with those of other devices already on the network, you can connect the new device to the network and then use the Node Commissioning tool within the RSNetWorx for DeviceNet software to change the node address and data rate. If the data rate conflicts, use a separate network to commission the device or a local connection between the device and the PC.

Some devices do not support software-based node commissioning. For those devices, the product will have some alternative way (for example, thumbwheel switches) to set the address and data rate. See the specific device's documentation for more information.

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

The first step in using RSNetWorx for DeviceNet in the online mode is to create a new DeviceNet configuration (by selecting **File > New**). Once you create the configuration, an empty network displays in the Configuration view.

Next, go online and select a communications driver using the RSWho browse utility. A graphical representation of the network appears in the Configuration view. If you would like to see a tabular view of the information, select the Spreadsheet tab or the Master/Slave tab.



At various times, you may want to save the work you have completed on your network configuration. To save a configuration file (*.dnt), click **File > Save**.

Step 2 – Upload and configure the online DeviceNet network

After creating your configuration and going online, you must upload the configuration of each device and the entire DeviceNet network. Once your configuration has been uploaded, you can then edit your network properties. Editing network properties includes entering a network name and description.

Step 3 – Configure the DeviceNet devices

After uploading and configuring the entire DeviceNet network, you must configure the devices on the network. To configure a device, select a device in the configuration view and choose **Device > Properties** from the main menu. Configuring your devices consists of tasks like:

- configuring general device properties
- editing and monitoring device parameters

In addition you can also view I/O message data and the contents of the EDS file.

As you configure each device, you may need to choose to upload from the device or download to the device before changing its configuration. This reconciliation process keeps the online device and the current configuration synchronized. When you are in online mode, the configuration displayed for the device represents the configuration in the online device.

Step 4 – Configure the DeviceNet scanner

When you have completed your device configuration(s), you can then configure the scanners on your DeviceNet network. To configure a scanner, select a scanner in the configuration view and choose **Device > Properties** from the main menu. Configuring your scanner includes advanced tasks like configuring a scanlist (a list of the devices that you want the scanner to scan), and mapping device input and output data. In addition, you may also want to configure general device properties, specify module parameters (including scan-time related items), or view a summary of the scanner configuration.

Step 5 – Save your network configuration

The final step is to save your DeviceNet configuration information to a file. To save your configuration file (*.dnt), select **File > Save**. Your DeviceNet devices are now configured and ready to use.

You can use the RSNetWorx for DeviceNet software to further customize your DeviceNet configuration. For example, you can re-assign node addresses, modify a device's configuration, etc. And, when you are not using these applications to configure your network, you can use RSNetWorx for DeviceNet software to monitor and troubleshoot the devices on your network. For information on how to accomplish these tasks, see the comprehensive online help.

Step 6 - 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.



Step 7 - Schedule network diagnostics

After diagnosing and troubleshooting your online network, you can schedule diagnostics to occur for each network that has an associated offline configuration file (*.dnt) developed in RSNetWorx, allowing you to support an unattended, background mode of diagnostic operation. Further, via the RSNetWorx MD Service Monitor, you can start, stop, and establish the startup mode for each network diagnostic schedule that you have configured.

Offline mode

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

The first step in using RSNetWorx for DeviceNet in the offline mode is to create a new DeviceNet configuration (by selecting **File > New**). Once you create the configuration, an empty network displays in the Configuration view.

Next, describe your network topology by dragging a device or scanner from the Hardware view and dropping it in the network configuration. Repeat this process until you have defined your entire DeviceNet network in the software. If you would like to see a tabular view of the information, select the Spreadsheet tab or the Master/Slave tab.



At various times, you may want to save the work you have completed on your network configuration. To save a configuration file (*.dnt), click **File > Save**.

Step 2 – Configure the DeviceNet network

After creating your configuration, you can edit your network properties. Editing network properties includes entering a network name and description.

Step 3 – Configure the DeviceNet devices

After configuring your DeviceNet network, you can configure the devices on the network. To configure a device, select a device in the configuration view and choose **Device > Properties** from the main menu. Configuring your devices consists of tasks like:

- configuring general device properties
- editing and monitoring device parameters

In addition you can also view I/O message data and the contents of the EDS file.

Step 4 – Configure the DeviceNet scanner

When you have completed your device configuration(s), you can then configure the scanners on your DeviceNet network. Configuring your scanner includes advanced tasks like configuring a scanlist (a list of the devices that you want the scanner to scan), and mapping device input and output data. In addition, you may also want to configure general device properties, specify module parameters (including scan-time related items), or view a summary of the scanner configuration.

Step 5 – Save your network configuration

The final step is to save your DeviceNet configuration information to a file. To save your configuration file (*.dnt), select **File > Save**. Your DeviceNet devices are now configured and ready to use.

You can use the RSNetWorx for DeviceNet software to further customize your DeviceNet configuration. For example, you can re-assign node addresses, modify a device's configuration, etc.

2

Installing and Starting RSNetWorx for DeviceNet

This chapter explains how to install and start RSNetWorx for DeviceNet 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 DeviceNet, and then choose **Help > Release Notes** from the main menu.

Before you begin

Before you begin to install RSNetWorx for DeviceNet software, you should know about some activation

Considerations when using RSLinx Classic

Before you can use RSNetWorx for DeviceNet software, you must install RSLinx Classic software. To ensure that you are using the most current and compatible version of RSLinx Classic, it is also included on the RSNetWorx for DeviceNet DVD.



If the installation program encounters an incompatible and/or previous version of RSLinx Classic on your computer, it will notify you to install the version of RSLinx Classic included on the RSNetWorx for DeviceNet DVD.

Activation

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 DeviceNet, your system must meet the following minimum hardware and software requirements:

Hardware requirements

To run RSNetWorx for DeviceNet, your system must meet the following hardware requirements:

- an Intel Pentium™ 4 processor (2.4 GHz or faster)
- 1 GB of RAM
- 16 GB of maximum disk space (EDS files take 811 MB). These sizes are based on a Microsoft FAT file system. A Microsoft NTFS file system will use much less space.
- a DVD-ROM drive
- True Color VGA graphics device with a minimum resolution of 1024 x 768
- a mouse or other Windows compatible pointing device is recommended

If you will be using a 1784-PCIDS adapter card, it must have version 1.08 or later firmware and you will need to install version 1.10 or later of the PCIDS device driver software. For further information about installing the 1784-PCIDS adapter card or device driver, refer to the DeviceNet PCI Communication Interface Card Installation Instructions, publication number 1784-5.31. Also, for more information about the communications interfaces supported, refer to the online help.

Software requirements

To run RSNetWorx for DeviceNet, 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 DeviceNet v25 is a component aligned to Studio 5000 Logix Designer™ v28. RSNetWorx for DeviceNet 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 DeviceNet

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



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

x:\Program Files\Rockwell Software\RSNetWorx

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 DeviceNet software, perform the following steps:

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

If autorun is: Then:

enabled	The Setup program starts automatically and the RSNetWorx for DeviceNet opening screen appears. Proceed to step 3.
---------	---



disabled

Perform the following steps:

1. Click **Start**, and then click **Run**. The Run dialog box appears.
2. In the Open field, type `x:\setup.exe`, where *x* is the letter of the drive containing the RSNetWorx for DeviceNet DVD-ROM.
3. Click **OK**. The RSNetWorx for DeviceNet selection dialog box appears.

-
4. In the Product Selection page, select **RSNetWorx for DeviceNet** 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.

5. In the Customer Information page, enter the user name and organization, and click **Next**.
6. In the License Agreement page, read the end-user license agreement, select **I accept the terms in the license agreement**, and click **Next**.
7. In the Installation Location page, click **Next**. You can also click Change to select another location.
8. In the **Feature Selection** page, select the appropriate installation type and click **Next**.
9. In the Configuration Summary page, review the information. If the information is correct, click **Install** to continue.
10. 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.
11. 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 DeviceNet 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 DVDcontents, 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 DeviceNet Software” section in this chapter.

Updating an existing installation

Perform the following steps to update an existing installation to a newer version:

1. From the Start menu, select **Settings > Control Panel**.
2. To remove the existing installation, double-click the Add/Remove Programs icon, select RSNetWorx for DeviceNet from the list, and click **Add/Remove**. Click **OK** to close the Add/Remove Programs dialog box.
3. Insert the RSNetWorx for DeviceNet 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 4.
disabled	Perform the following steps: <ol style="list-style-type: none"> 1. Click Start, and then click Run. The Run dialog box appears. 2. In the Open field, type <code>x:\autorun</code>, where <i>x</i> is the letter of the drive containing the RSNetWorx for DeviceNet DVD-ROM. 3. Click OK. The selection dialog box appears.

4. Follow the instructions that appear on the screen. For more information, see the “Installing RSNetWorx for DeviceNet Software” section in this chapter.



If activation was previously installed, it is not necessary to move the activation. If activation was not previously installed, insert the Master disk into the 3.5-inch disk drive and follow the instructions that appear on the screen. For more information on activation, see Appendix A.

Starting RSNetWorx for DeviceNet software

To start RSNetWorx for DeviceNet software, click **Start**, and then select **Programs > Rockwell Software > RSNetWorx (folder) > RSNetWorx for DeviceNet** (executable).

To create a desktop icon, click **Start**, and then select **Programs > Rockwell Software > RSNetWorx for DeviceNet shortcuts**, and drag the RSNetWorx for DeviceNet 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 DeviceNet does not start up or run properly, consider the following:

- Do you have the correct version of RSLinx Classic installed? RSNetWorx for DeviceNet requires RSLinx Lite 2.2 Service Pack 1 or later.
- Does your computer have enough memory? Running RSNetWorx for DeviceNet 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 DeviceNet 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 DeviceNet.

3

Advanced Concepts

This chapter contains the following sections:

- EDS-based devices
- EDS library
- DeviceNet node commissioning tool
- Faulted Address Recovery wizard
- Class Instance Editor

EDS-based devices

RSNetWorx for DeviceNet relies on an electronic data sheets (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 DeviceNet software, you can configure its target connection configuration (attributes) and how it will communicate with other devices on the DeviceNet network. Although the procedure for configuring a device is basically the same for all devices, each device will have 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 DeviceNet. The EDS files, which are provided by the device manufacturers, contain configuration and identification information for the devices.

RSNetWorx for DeviceNet software can access only those devices that have been registered. You must use the EDS 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 DeviceNet software, there may be a time when you need to acquire/create additional EDS files. The most common ways of getting these files are to:

- obtain them on distribution diskettes that accompany the devices.
- download them from DeviceNet 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.ab.com/networks/eds> (Allen-Bradley technical support site)
 - <http://www.ab.com/drives/1305index.html> (Allen-Bradley Standard Drive Products site)
 - <http://www.odva.org> (Open DeviceNet Vendor's Association site)
- create the EDS file using the EDS Wizard.

DeviceNet node commissioning tool

The DeviceNet node commissioning tool lets you commission, that is, set the node address and the data rate parameters of, devices that are either connected:

- to a DeviceNet network, or
- via a point-to-point connection.

Commissioning devices on a DeviceNet network

Before you can add any node to a live DeviceNet network, it must be commissioned. This means that a node address and a data rate must be programmed into the device. Most devices are preset with a node address, which is usually set to 63, and a data rate, which is usually set to 125K baud. These default preset values will need to be changed to meet your application needs. Once a device has been commissioned and attached to a network, you can use the RSNetWorx for DeviceNet node commissioning tool to edit the node address that was set previously.



Some devices do not permit software setting of the node address or data rate. Refer to the device documentation for specific information.



Exercise caution while editing node addresses when on a network. When you apply a new node address, it immediately overwrites the node address data in the device currently specified. If you re-assign node addresses, first determine the order in which this needs to be done so that all the devices will still have unique node addresses throughout the address assigning process. If your scanner supports Automatic Device Replacement (ADR), your system may automatically perform this commissioning.



For example, if two of the devices on your network are a photoelectric sensor and a hand controller and you accidentally change the node address of the hand controller to be the same as that of the photoelectric sensor, then the hand controller will no longer have a unique address, which means that it will not be able to communicate on the network. If you cannot access a device, because you have used its node address for another device, you will have to remove it from the network, recommission it, then reinstall it on the network. For information on how to recover a faulted device, see the Faulted Address Recovery wizard in this chapter.

Commissioning a device via a point-to-point connection

When the baud rate of a device does not match the DeviceNet network (for example, when adding a new device [out of the box] or when moving a device from one DeviceNet network to another) and the dip switches are not provided, it may be necessary to establish a point-to-point connection to that device and prepare it for integration onto your existing DeviceNet network. Using the Node Commissioning Tool, you can establish a point-to-point connection to a device and change the node address and/or the data rate parameters to match your existing DeviceNet network.



You should not change the data rate of devices while they are connected to a network; otherwise, erratic operation may result. We recommend that if you need to change the data rate of a device, that you complete the following:

1. Remove it from the network.
 2. Establish a point-to-point connection between the PC, which hosts the RSNetWorx for DeviceNet software, and the target device.
 3. Recommission the device.
 4. Reconnect the device to the network.
-

Faulted Address Recovery Wizard

The Faulted Address Recovery wizard allows you to recover select faulted devices with duplicate node addresses on your DeviceNet network. In addition, you can detect faulted devices on your DeviceNet network and "flash" the LEDs on those devices to locate them in your application.



The faulted address recovery function is not supported by all devices. For more information, consult your hardware documentation or contact your hardware vendor.

The Faulted Address Recovery feature requires RSLinx 2.20, Service Pack 1 or later.

Class Instance Editor

The Class Instance Editor is a tool that allows you to send data to, and read data from, a DeviceNet device that is not otherwise configurable with RSNetWorx for DeviceNet. Using the Class Instance Editor, you can 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 available 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

Use this chapter to review the sources of additional information about RSNetWorx for DeviceNet software. This chapter helps you to find what you need efficiently by describing how to:

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

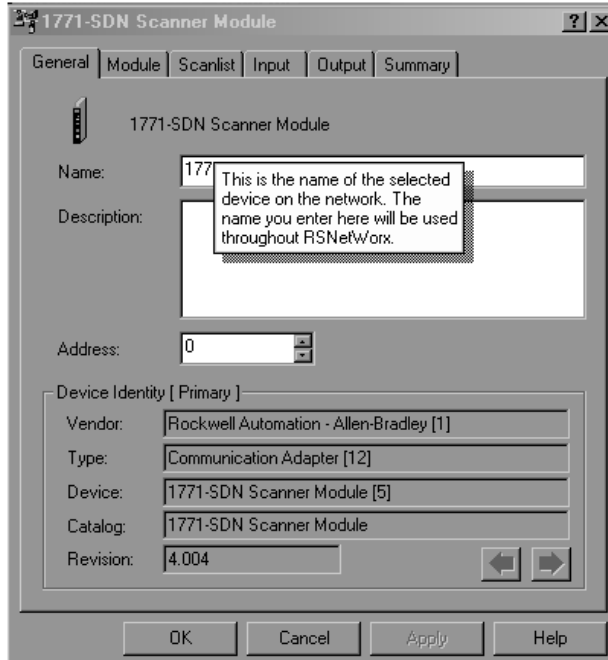
Using the online help

RSNetWorx for DeviceNet 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 DeviceNet:

- choose Contents from the Help menu on the RSNetWorx for DeviceNet main window
- click **Help** on any RSNetWorx for DeviceNet dialog box or property page
- position the cursor over any 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 Name control was selected.



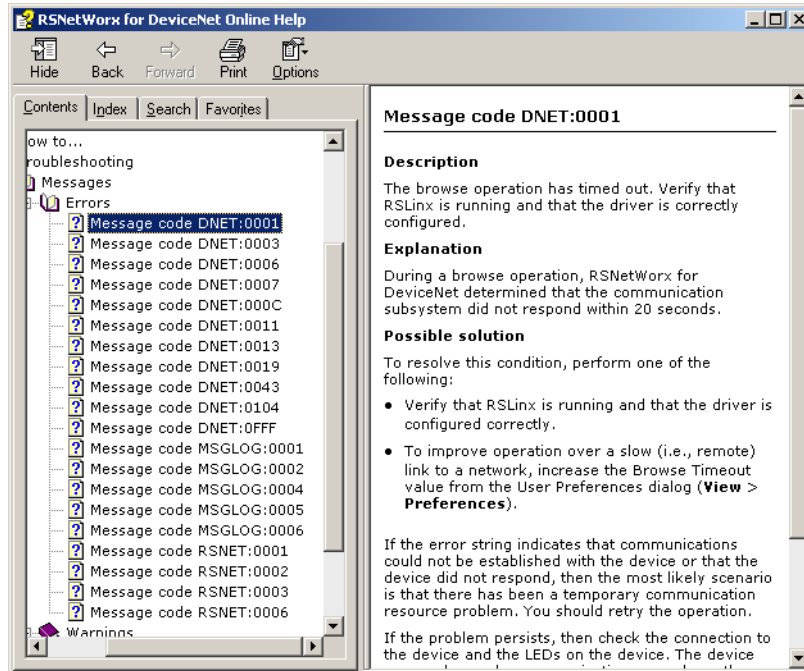
Accessing help for error messages

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
i DNET:0102	1/21/2003 15:56:52	Mode changed to offline.
x DNET:0001	1/21/2003 15:56:37	The browse operation has timed out. Verify that
i DNET:0101	1/21/2003 15:56:14	Mode changed to online. The online path is F

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 DNET:0001 error code shown here and press F1, the browse operation has timed out help topic displays:

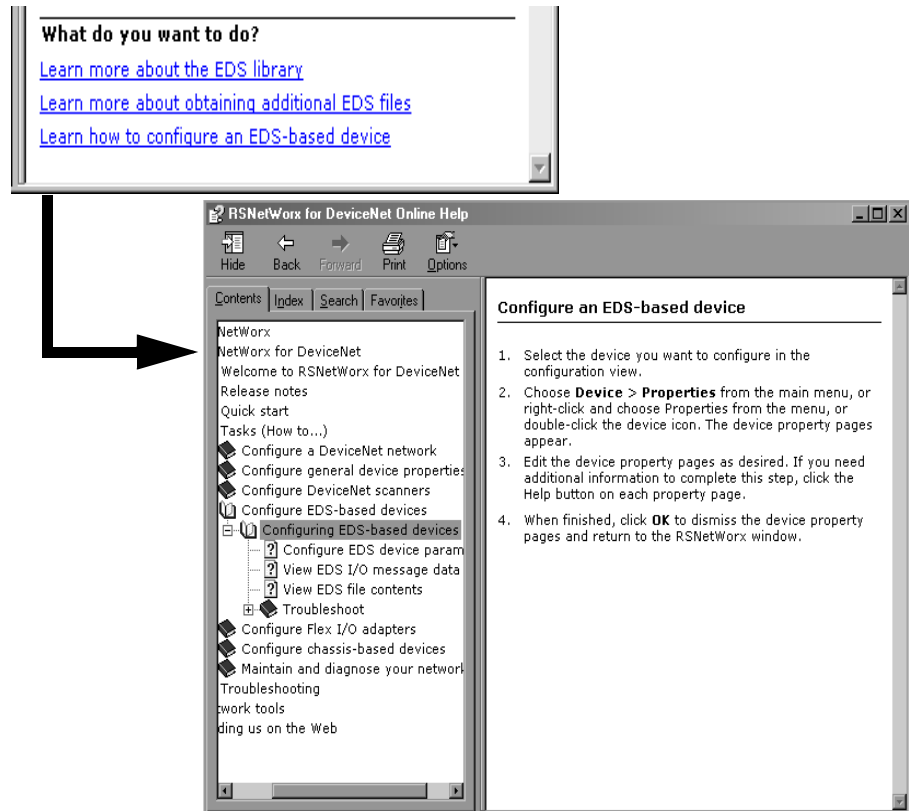


From the message view, you can also select a message and choose **View > Messages > Troubleshoot** to display online help for the message. You can also show, clear, copy, and/or clear and hide messages by making the appropriate selection from the **View > Messages** command on the main menu. The copy 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 current 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.

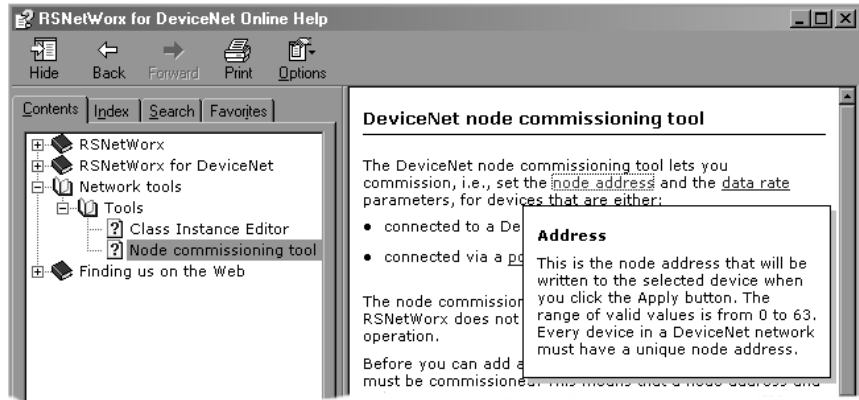
For example, from the Configuring EDS-based devices topic, if you select Learn how to configure EDS devices under the What do you want to do? section, the help topic that describes how to configure an EDS-based device appears.





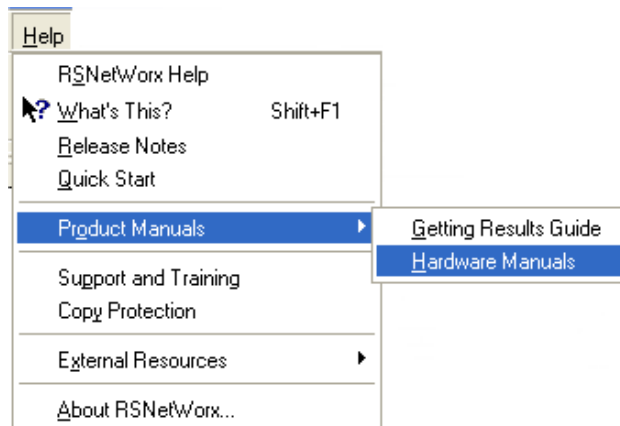
Finding definitions

Within the RSNetWorx for DeviceNet help, blue text highlighted with an underline indicates a pop-up definition or a link to a related topic. For example, in the DeviceNet node commissioning tool help topic, node address is a pop-up definition. Click the link to see the definition of a node address.



Accessing the Product Manuals

You can gain immediate access to product documentation through the Product Manuals feature in RSNetWorx for DeviceNet. Product Manuals include 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 DeviceNet 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 DeviceNet 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 DeviceNet* 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. You can also access the Rockwell Software Online Support Library and receive information about Autofax Product Information System from the web site 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 numbers
- 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
- 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 DeviceNet only supports 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 DeviceNet 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 DeviceNet v10.00.00 (CPR 9 Service Release 2) 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.



Systems attached to extensive networks can take quite a while to search for activation files on all available drives. You can use the CHECKDRIVES environment variable to specify and/or limit the drives your software checks for activation files and to specify the order in which they are checked. Refer to the activation utilities online help file by selecting **Help > Copy Protection**.

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).

B 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 DeviceNet Online Help

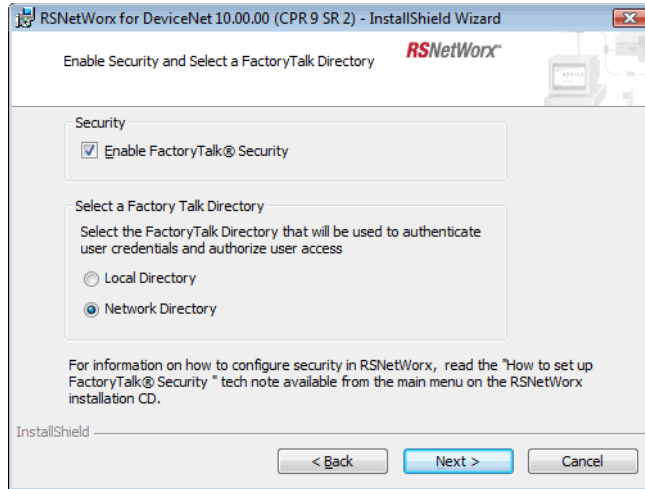
Follow the steps below to set up security in RSNetWorx:

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"> ■ 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. ■ 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. ■ To upload information into a new project file, you need Go Online (to go online to upload) securable action.

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.



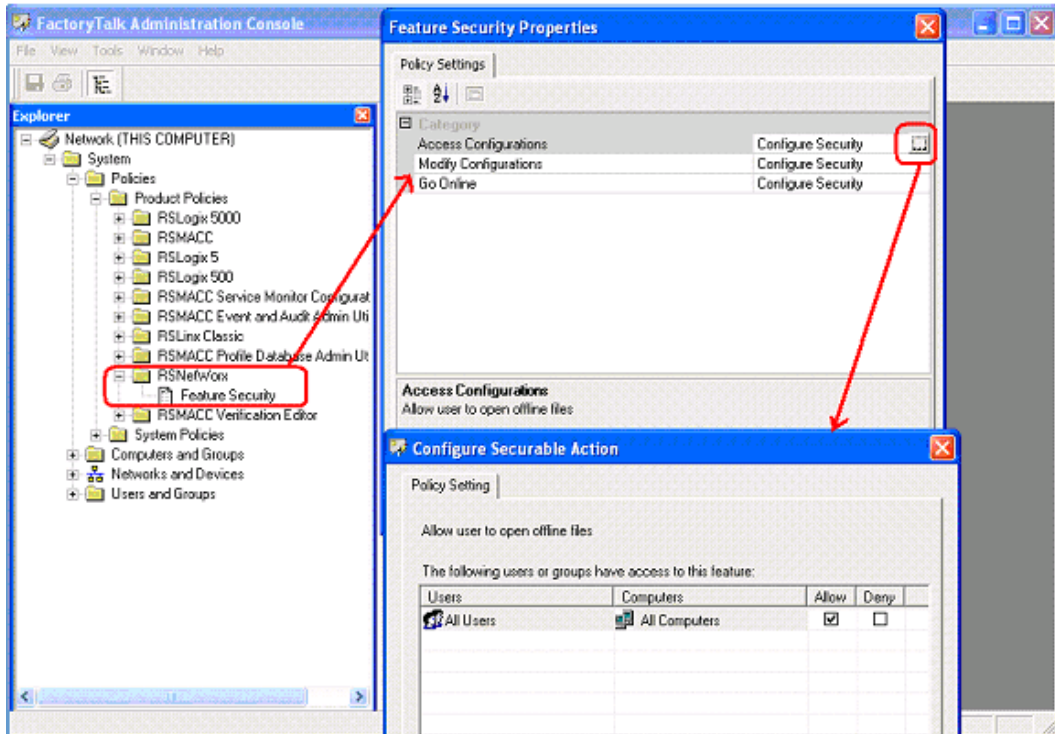
2. Enter your username and password, and select the directory you want to log on to. (The username and password were set when you set up an account during FactoryTalk Directory configuration.)

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 DeviceNet 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.

DeviceNet network — A topology for industrial automation networks.

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.

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 the activation file 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.

RSNetWorx configuration — A collection of user-defined parameters for networks.

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