

RSLinx

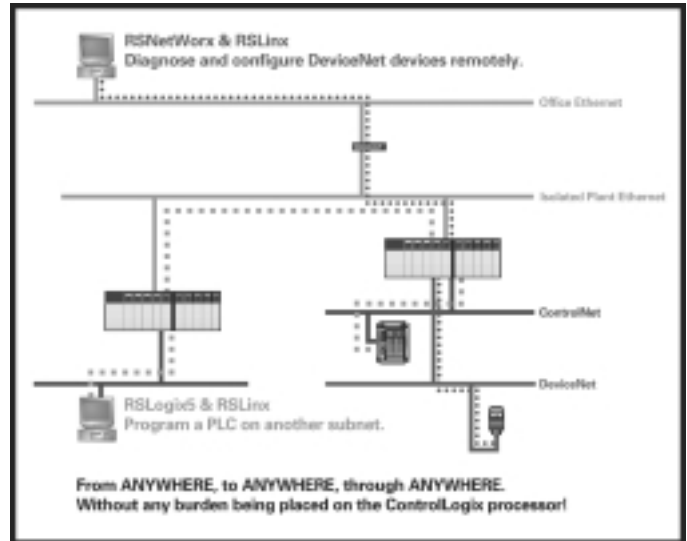
Technical Data

RSLinx™ is a complete communication server providing plant floor device connectivity for a wide variety of Rockwell Software applications such as RSLogix 5, RSLogix 500, RSLogix 5000, RSView32, and RSSql. In addition, several open interfaces are provided for third-party HMI, data collection and analysis packages or custom client application software.

RSLinx is an OPC® - compliant data server supporting the OPC Data Access 2.05 specifications. OPC is the standard for plant floor communications between data servers and client applications. RSLinx provides an OPC custom interface for C/C++ clients and an OPC Automation interface for VB/VBA clients. RSLinx also supports multiple DDE formats (AdvanceDDE, XL_TBL, CF_TXT) for clients such as Microsoft® Excel. RSLinx supports the integration of plant floor devices to supply chain and business decision software applications using products like RSSql. RSLinx can support multiple software applications simultaneously communicating to devices on many different networks.

From Anywhere to Anywhere

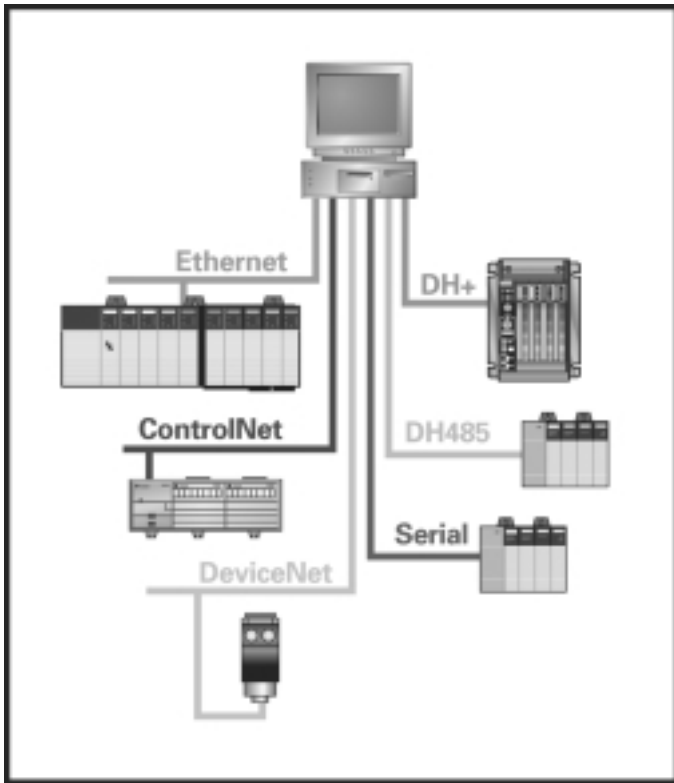
You can virtually communicate from anywhere to anywhere using RSLinx. The product provides a user-friendly graphical interface for navigating through your network hierarchy. This includes routing over the office Ethernet network through a ControlLogix Gateway to get to your control networks and devices on the plant floor. Select a device and right mouse click to access a variety of integrated configuration and monitoring tools such as configuration for the 1756-DHRIO module, Ladder Viewer for PLC-5®, SLC, or MicroLogix® family processors, or a Data Monitor for viewing data out of any ControlLogix, PLC-5, SLC-5, or MicroLogix family controllers. A complete set of communication drivers is provided for your networking needs from older legacy Allen-Bradley networks supported by remote routing through 1785-KA, 1785-KA5, 5130-KA, and 5820-EI to the



newer more capable ControlLogix Gateways. Communication hardware such as PCMCIA, serial port, or PC-based network card is supported.

The table below lists the supported device/networks:

- Ethernet to PLC-5 / SLC-5 / 5820-EI / 1756-ENB
- Ethernet/IP CIP Protocol
- 1784-KTX(D) / PKTX(D) / PCMK / KT / KT2 to DH+
- 1784-KTX(D) / PKTX(D) / PCMK to DH-485
- 1784-KTCX to ControlNet™
- 1784-PCC to ControlNet
- 1784-PCIC(S) to ControlNet
- 1784-PCD / PCIDS to DeviceNet™ (Windows NT®)
- RS-232 Serial (DF1) to 1770-KF2 / 1785-KE to DH+
- RS-232 Serial (DF1) to 1770-KF3 / 1747-KE / 1747-PIC to DH-485

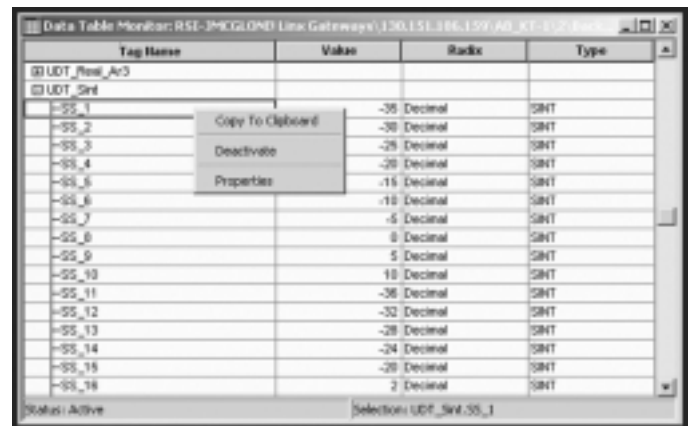


device, right-click, and a context-sensitive menu is displayed to perform such actions as Configure New DDE/OPC topic or displaying diagnostic information. This component has been integrated into many of the Rockwell Software products to provide a consistent, easy to use, graphical interface for device selection.

- RS-232 Serial (DF1) to PLC-5, SLC-5, MicroLogix, PanelView™
- RS-232 Serial (DF1) to 1770-KFC to ControlNet
- RS-232 Serial (DF1) to 1770-KFD to DeviceNet
- RS-232 Serial (DF1) to ControlLogix
- DF1 Polling Master (RS-232 serial)
- DF1 Slave (RS-232 Serial)
- SoftLogix 5™ Controller
- SoftLogix 5800 Controller
- Remote Devices via RSLinx Gateway™

Data Table Monitor

You can use RSLinx to view data values in a PLC-5, SLC-5, MicroLogix, CompactLogix, FlexLogix or ControlLogix processors. For a PLC-5 / SLC-5 / MicroLogix device, select a



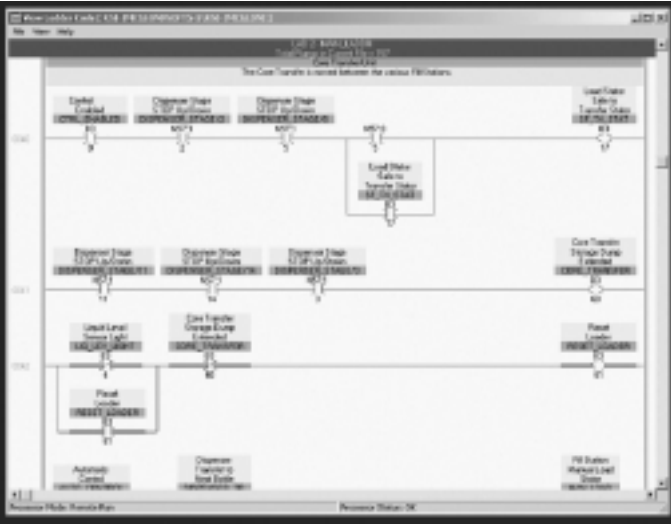
RSWho

RSWho is the network browse interface providing a single window to view all configured network drivers. The multi-pane window allows navigation through network hierarchy in the left pane while displaying device icons along with their status in the right pane. A device that appears with a red X through it indicates a communication status error, such as loss of power to a device or disconnected communication cable. Select a

data table file to view from a list of available data table files in the controller. For a ControlLogix processor, view tag information in a hierarchical list as the tags are defined in the target device. Multiple data monitor windows can be displayed at the same time providing an effective trouble-shooting tool. Data Monitor functionality is only available with RSLinx Professional and Gateway.

Ladder Viewer

RSLinx includes an extremely valuable Ladder Viewer for PLC-5, SLC-5, or MicroLogix controller. Based on the RSLogix™ family of programming software, it allows viewing of the ladder code including symbols, address descriptions and rung



comments for an effective and complete diagnostic tool when used on your HMI or data collection station on the production floor. To view a ladder program, simply right-click on a processor and select "View Ladder Code" from the context menu. The control program is uploaded from the device and displayed on the screen. If the matching offline program file exists on the PC, then all associated comments and symbols are also displayed. The Ladder Viewer has the capability to select different program files to view. Use this capability in conjunction with the ability to display multiple viewing windows for effective trouble-shooting. Ladder Viewer functionality is only available with RSLinx Professional and Gateway.

Remote Gateway Connectivity

RSLinx Gateway extends communications throughout the enterprise. RSLinx clients such as RSLogix 5/500/5000 can connect over Ethernet through an RSLinx Gateway and seamlessly go online to a PLC-5, SLC-5, MicroLogix, or ControlLogix processor residing on a control network accessible by the gateway machine. Another key usage of RSLinx Gateway is to optimize communications between



multiple OPC clients and plant floor devices. The benefit of using RSLinx Gateway is that overlapping data requests from multiple clients are consolidated into one request to the controller thus reducing the overall network traffic and burden on the target controller. From a cost perspective, you no longer need a copy of RSLinx running on each client machine.

Open Interfaces

RSLinx provides connectivity for client applications using OPC or DDE. OPC is the preferred interface for data acquisition applications because it is the standard for factory communications.



OLE for Process Control (OPC) OPC is based on Microsoft's OLE technology and is defined and managed by the OPC Foundation, a coalition of industrial/manufacturing companies of which Rockwell Software is a prominent member. The charter of this group is to provide an industry-standard exchange mechanism optimized for performance. RSLinx is an OPC Data Access 2.05 compliant server providing an OPC custom interface for C/C++ client applications and an OPC Automation interface for VB/VBA client applications. The added benefit provided from RSLinx is its ability to provide several DDE formats in addition to OPC and its DDE/OPC diagnostic information.

RSLinx also supports multiple DDE formats (AdvanceDDE, XL_Table, CF_Text) for client connectivity. These interfaces are

provided mainly for applications developed prior to the incorporation of OPC in RSLinx and are still the primary mechanism for creating DDE Hot Links in Excel.

Data Collection Modes

In RSLinx, you create a DDE/OPC Topic as a named alias to a targeted device. This alias name is used when requesting data in a client application through the OPC or DDE interfaces. Each topic has parameters to specify poll rate, communication timeout, and the data collection mode (Polled or Unsolicited). In polled mode, RSLinx does all of the work, so it is easy to make changes and control the communications. Polled mode does however, add to the CPU usage on the PC since RSLinx is constantly polling and increases the communication traffic volume compared to unsolicited mode.

In Unsolicited mode, data is sent to RSLinx by a message instruction in the processor. RSLinx waits for a packet from the processor instead of polling. The advantage of this mode is that communication traffic is typically reduced due to the controller determining how often to send the data. Unsolicited mode is a good method of transferring large amounts of data that changes infrequently like when a product or batch completes and the record data needs to be transferred to the client. The disadvantage is that unsolicited mode requires ladder programming to gather and send the data.

Custom Applications through SDK (Software Development Kit)

RSLinx SDK™ is the Software Development Kit used for creating custom applications utilizing the open interfaces built into RSLinx. It contains development files, sample programs, online documentation, and a copy of RSLinx OEM; everything needed to create custom applications to communicate with devices connected to RSLinx. RSLinx provides a migration patch forward for existing INTERCHANGE™ Software applications. In most cases, an INTERCHANGE software application can be ported to RSLinx directly with minimal changes.

Operational Tools

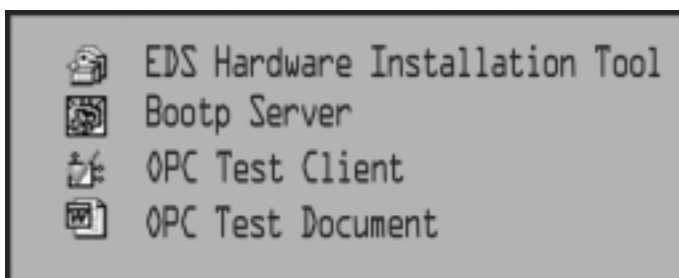
RSLinx includes a Backup/Restore utility accessible from the Start menu. This tool saves configured drivers, topics, and configuration settings. This allows you to restore your



application in case of a hardware failure or even deploy the configuration to another PC.

An EDS Hardware Installation tool is provided for registering a new Electronic Data Sheet (EDS). Electronic Data Sheets are used by RSLinx to determine what to display in RSWho and to resolve device properties.

An OPC Test Client is included with RSLinx for the purpose of



testing OPC communications. This simple tool allows you to test and validate OPC data communications through RSLinx as an HMI or data-based client would interact.

Diagnostic Tools

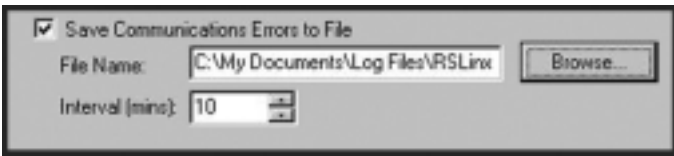
RSLinx includes a wealth of diagnostic information to assist you in analyzing your system. Whether it's troubleshooting a communication problem or analyzing network throughput, RSLinx provides the information you need. Diagnostics fall into three major categories: Networks, Station, and OPC/ DDE.

Networks – Diagnostic counters track server information such as messages sent, messages received, messages acknowledged, communication errors, and timeouts.

Performance counters give throughput in terms of packets/second.

Station – Diagnostic counters indicate information for a selected station such as messages sent and received, message retries, and packet errors.

OPC/DDE – Multiple dialogs for DDE clients, OPC Groups, Optimized Packets, and OPC/ DDE server connections display diagnostic information specific to the category. A Communication event log displays information specific to an OPC/DDE transaction. You can configure RSLinx to save communication events automatically at a specified interval thus providing better diagnostic information when troubleshooting communication problems.



Selecting the Right Package

RSLinx is available in multiple packages to meet the demand for a variety of cost and functionality requirements. The following table contains specific information on features supported in each package.

FEATURES	LITE	SINGLE NODE	OEM	SDK	PROFESSIONAL	GATEWAY
Communication Drivers	X	X	X	X	X	X
Integrated ControlLogix Gateway Configuration Tool	X	X	X	X	X	X
Driver and Station Diagnostics	X	X	X	X	X	X
Device Properties	X	X	X	X	X	X
Data Monitor					X	X
Ladder Viewer					X	X
DDE Support (CF_Text, XL_Table, AdvanceDDE)		X*	X	X	X	X
Runtime support for local OPC Client Connection		X*	X	X	X	X
Runtime support for custom 'C' API application			X	X	X	X
OPC Automation Interface Documentation, Samples				X		
Remote OPC Client capability						X
Remote Gateway Client Connection						X
*Can only communicate with one device.						

RSLinx Single Node includes the required functionality to supply communications services for all Rockwell Software products. OPC and DDE interfaces are supported, but to only one device. It does not support applications developed for the RSLinx C Application Programming Interface (API) or direct drivers in HMI applications.

RSLinx Single Node is used for the following:

- Data acquisition using OPC or DDE to only one device. This includes clients such as RSView32, Microsoft Office™, Visual Basic®, and Web pages.
- Ladder logic programming using RSLogix products.
- Network and device configuration and diagnostics using RSNetWorx
- Configuring 1756-ENET, 1756-ENB, 1756-DHRIO, and 1757-SRM modules.
- Browsing networks and getting device information such as firmware revision
- Supports client applications using OPC (custom or automation) or DDE (AdvanceDDE, XL_TBL, and CF_TXT).

RSLinx OEM includes the required functionality to supply communications services for all Rockwell Software products. OPC and DDE clients are supported for any number of devices. It also supports applications developed for the RSLinx C Application Programming Interface (API). RSLinx OEM Versions 2.30 or later support DDE formats XL_TBL and CF_TXT in addition to AdvanceDDE.

RSLinx OEM is used for the following:

- Data acquisition using OPC or DDE to any number of devices. This includes clients such as RSView32, RSSql, Microsoft Office, Visual Basic, and Web pages.
- Ladder logic programming using RSLogix products.
- Network and device configuration and diagnostics using RSNetWorx

- Configuring 1756-ENET, 1756-ENB, 1756-DHRIO, and 1757-SRM modules.
- Browsing networks and getting device information such as firmware revision
- Supports client applications using OPC (custom or automation), DDE (AdvanceDDE, XL_TBL, and CF_TXT), or custom applications developed for the RSLinx C API.

RSLinx Professional includes the required functionality to supply communications services for all Rockwell Software products. OPC and DDE clients are supported for any number of devices. It also supports applications developed for the RSLinx C Application Programming Interface (API). Additionally, RSLinx Professional contains a data monitor for PLC, SLC, MicroLogix and ControlLogix-based controllers and a ladder logic viewer for PLC and SLC based controllers. RSLinx Professional is great for maintenance and diagnostics. Access your data and ladder logic within RSLinx!

RSLinx Professional is used for the following:

- Monitoring PLC, SLC, MicroLogix, or ControlLogix data table value directly from RSLinx.
- Monitoring ladder logic of PLC, SLC, or MicroLogix family processors directly from RSLinx.
- Data acquisition using OPC or DDE to any number of devices. This includes clients such as RSView32, RSSql, Microsoft Office, Visual Basic, and Web pages running on the same PC.
- Ladder Logic programming using RSLogix products.
- Network and device configuration and diagnostics using RSNetWorx.
- Configuring 1756-ENET, 1756-ENB, 1756-DHRIO, and 1757-SRM modules.
- Supports client applications using OPC (custom or automation), DDE (AdvanceDDE, XL_TBL, and CF_TXT), or custom applications developed for the RSLinx C API.

RSLinx Gateway extends RSLinx-based communications throughout the enterprise by connecting clients over TCP/IP networks. Programming and configuration products such as RSLogix and RSNetWorx use a local RSLinx connection via RSLinx Gateway to communicate to plant floor networks and devices. Remote HMI applications such as RSView32 can use remote OPC to communicate through RSLinx Gateway for data collection. This allows you to have multiple distributed computers performing data collection through an RSLinx Gateway to automatically optimize all OPC communications on the subnets connected to the processors.

In addition to the capabilities provided in the RSLinx Professional version, RSLinx Gateway offers remote connectivity to:

- Multiple RSView32 clients accessing data through one RSLinx Gateway (remote OPC).
- Remote PC running RSLogix connecting to a plant network over a modem for online program changes.
- Remote Microsoft Office applications displaying plant floor data such as Excel.
- A web page displaying plant floor data when the web server and RSLinx are on separate computers.
- Supports client applications using local or remote OPC (custom or automation)
- Local DDE (AdvanceDDE, XL_TBL, and CF_TXT), or custom applications developed for the RSLinx C API.

RSLinx Software Development Kit (SDK) includes documentation and technical support for developing OPC or C-API clients to RSLinx. OPC clients are developed for data acquisition, while C-API clients are typically used for device configuration. A copy of RSLinx OEM is also supplied with RSLinx SDK.

When developing OPC clients to RSLinx, you can use the OPC automation interface for developing a VB/VBA client application or the OPC custom interface for developing a C/C++ client application.

RSLinx SDK is used to:

- Develop a VB/VBA client using the OPC Automation Interface. With SDK you get documentation on how to use Automation Interface, development support, and samples.
- Develop a C/C++ client using the OPC Custom interface.
- Develop a client using RSLinx C-API by providing access to libraries and documentation.
- Build solutions using RSLinx, which makes it a great resource for OEMs.
- Supports direct programming to RSLinx OEM, RSLinx Professional, and RSLinx Gateway.
- Supports OPC programming to RSLinx Single Node, RSLinx OEM, RSLinx Professional, and RSLinx Gateway

Web Based Answer Station

RSLinx Answer Station has been added to the RSLinx "Help" menu. This site is a handy resource to the most up-to-date information about RSLinx products and their use. You can reach this site directly at <http://www.software.rockwell.com/assistance/rslinx/>.

Catalog Numbers

RSLinx Lite	This item is only available with other appropriate products
9355-WABSNENE	RSLinx Single Node
9355-WABOEMENE	RSLinx OEM
9355-WABENE	RSLinx Professional
9355-WABGWENE	RSLinx Gateway
9355-WABCENE	RSLinx SDK

Updates are also available by calling Technical Services

Technical Specifications

- Pentium® 100 MHz processor (faster processors will improve performance)
- 32 MB of RAM minimum (64 MB or more recommended)
- 35 MB of available hard disk space (or more based on specific application requirements)
- 16-color SVGA display with 800 x 600 or greater resolution
- Windows-compatible pointing device

RSLink can be used on any of the following Microsoft operating systems:

- Windows XP, Windows 2000 (Workstation, Advanced Server), Windows NT SP3 or later (Workstation or Server), Windows ME, or Windows 98.
- RSLink supports Windows 2000 Terminal Services and Citrix

Rockwell Software

For more information on the latest pricing or a demonstration of any Rockwell Software package, please contact your local Rockwell Automation sales office or Allen-Bradley distributor. For the very latest on Rockwell Software products, visit our website at:

www.software.rockwell.com

www.rockwellautomation.com

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