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Introduction

The Rockwell Automation Allen-Bradley SLC 500/Micrologix family provides a proven approach for industrial control. Different SLC 500/Micrologix products may use different protocols for communication, some may use EtherNet/IP while others use the DF1 protocol. MOXA's MGate EIP 3000 Series serves as a gateway for the SLC 500/Micrologix family using either EtherNet/IP or the DF1 protocol.

The following section demonstrates the configuration of the MGate EIP 3270 to enable communications between RSLinx and the SLC 5/03 or the SLC 5/05.

Moxa's Solution

The MGate EIP 3000 series provides serial to Ethernet connectivity between DF1 and EtherNet/IP protocols.

In the diagram below, the RS-232 port of the SLC 5/05 is connected to serial port 1 of the MGate EIP 3270 using the DF1 protocol. On the SLC 5/03, the RS-232 port is connected to the MGate EIP 3270, using the DF1 protocol. The Ethernet port of the SLC 5/05 is connected to the LAN directly, using the EtherNet/IP protocol.

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About Moxa

Moxa manufactures one of the world's leading brands of device networking solutions. Products include serial boards, USB-to-serial hubs, media converters, device servers, embedded computers, Ethernet I/O servers, terminal servers, Modbus gateways, industrial switches, and Ethernet-to-fiber converters. Our products are key components of many networking applications, including industrial automation, manufacturing, POS, and medical treatment facilities.

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When installing the MGate EIP 3270, MGate Manager is used as the configuration tool on the host PC. The MGate EIP 3270 has an IP address for each of its Ethernet uplink ports. EtherNet/IP commands received by port IP1 will be routed to serial port 1, which is connected to the SLC 5/05. And commands received by port IP2 will be relayed to serial port 2, which is connected to the SLC 5/03. Default settings meet the requirement so we don't need to change it.

The RSLinx is an interface for SCADA software (RSView) to communicate with different devices that may use different protocols. MOXA provides two solutions for RSLinx to communicate with a DF1 device via the MGate EIP 3000 series:

- EtherNet/IP protocol
- DF1 protocol

Using the EtherNet/IP protocol:

 First, to configure RSLinx, add a new driver for the MGate EIP 3270. Please choose Ethernet devices as the driver type. Then input a name for it, the default name is AB_ETH-1.

Configure Drivers	? 🛛
Available Driver Types:	<u>C</u> lose
Ethernet devices	<u>H</u> elp

Add New RSLinx Classic Driver	
Choose a name for the new driver. (15 characters maximum)	OK
AB_ETH-1	Cancel

 To configure the driver, please input the IP address of the MGate EIP 3270. The IP1 port of the MGate EIP 3270 is used for serial port 1, which is the RS-232 port of the first SLC 5/05 in this example.

Сог	ifigure d	river: AB_ETH-1	? 🔀
St	ation Mapp	ing	
	Station	Host Name	Add New
	0	192.168.35.119	Delete
1	63	Driver	

3) When finished, you can see the status of the driver you just configured:

Configure Drivers		2 🛛
Available Driver Types: RS-232 DF1 devices	Add New	<u>C</u> lose <u>H</u> elp
Configured Drivers: Name and Description	Status	I
AB_ETH-1 A-B Ethernet RUNNING	Running	Configure Startup

4) In RSLinx, we can execute RSWho to verify if the driver is working properly.

🗞 RSLinx Classic Gateway - [RSWho - 1]	
💑 Eile Edit View Communications Station DDE/OPC Security Window Help	- 8 ×
≥ # \$ @ ® < K?	
Autobrowse Refresh Pa m Browsing - node 192.168.35.120 found	
Image: Second	
AB_ETH-1, Ethernet UNTITLED	

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Using the DF1 protocol:

 MGate EIP 3270 provides a ProCOM function to support RSLinx by using the DF1 protocol over Ethernet to communicate with a Rockwell Automation Allen-Bradley SLC 500/Micrologix family. To enable it, please run the MGate Manager on the host PC.
 Select the MGate EIP 3270 and then click the ProCOM Mapping button:

	Name	Model		MAC Address		IP/COM	Status	Firmware \	lersion	
	MG-EIP3270_642	MGate EIP3270		00:90:E8:1A:0F:	C3	192.168.35.119		Ver. 1.1 Bu	ld 09061619	
					-					Ŧ
										t
							-			t
		<u></u>								
										t
										t
De	vice Identification	ן ר	Device Fur	nction			_	_		
	Search		Con	figuration		Monitor	ProCOM	Mapping	Import	
	Locate		Loa	d Default		Diagnose	Upgrade	Firmware	Export	
	Language							[Exit	1

- 2) To configure ProCOM:
 - a. Choose the model name (it's EIP 3270 in this case)
 - b. Click Add button and you will see the 4 default ProCOM ports
 - c. Click **OK** to finish it

Remote	e IP Address	92 . 168 . 35	. 119 Model EIP3270 Pn	otocol DF1	Y
No.	Model	Protocol	IP Address	СОМ	Add
1	EIP3270	DF1	192.168.35.119 Port 3 (ProCOM)	3	3
2	EIP3270	DF1	192.168.35.119 Port 4 (ProCOM)	5	Remove
3	EIP3270	DF1	192.168.35.119 Port 5 (ProCOM)	6	
4	EIP3270	DF1	192.168.35.119 Port 6 (ProCOM)	7	
				c	Const

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In this example, the requests to port 3 of MGate EIP 3270, which is also COM 3 of the host PC, will be passed to serial port 1 of the MGate EIP 3270. Port 4 of the MGate EIP 3270 (COM 5 of the host PC) will be passed to serial port 2 of the MGate EIP 3270.

3) After configuring the ProCOM function, we can apply the settings to RSLinx. Please add a new driver for **RS-232 DF1 devices** as the device type, then give it a name, default name is AB_DF1-1.

Configure Drivers		? 🛛
Available Driver Types: RS-232 DF1 devices	Add New	<u>C</u> lose <u>H</u> elp
Add New RSLinx Classic Driver Choose a name for the new driver. (15 characters maximum) AB_DF1-1	OK Cancel	

4) To configure the serial parameters, select the COM port (COM 5 on the host PC), device name, baudrate, and other serial parameters. Or you may click **Auto-Configure** to let RSLinx detect them automatically.

Configure RS-232 DF1 Devices
Device Name: AB_DF1-1
Comm Port: COM5 Device: SLC-CH0/Micro/PanelView
Baud Rate: 19200 Station Number: 01 (Decimal)
Parity: None Error Checking: CRC
Stop Bits: 1 Protocol: Full Duplex
Auto-Configure Auto Configuration Successful!
Use Modem Dialer Configure Dialer
OK Cancel Delete Help

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5) When finished, you can see the status of the driver you just configured.

Configure Drivers		? 🛛
Available Driver Types: RS-232 DF1 devices	Add New	<u>C</u> lose <u>H</u> elp
Configured Drivers:		
AB_DF1-1 DH485 Stat 1 COM5: RUNNING	Running	Configure
		Starţup

6) In RSLinx, we can execute RSWho to verify that the driver is working properly.



Why Moxa

- Easy configuration when setting up the MGate EIP 3000 Series
- PCCC project for Rockwell Automation networks supported
- Use ProCOM via COM port mapping

Related Products

MGate EIP 3000 Series.

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