515RTAENI-N34

Use Cases

Revision 2.1
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Overview

This documentation is for the most common use cases. This will not go through all the configurable parameter within the 515RTAENI, please refer to the 515RTAENI user guide which can be found on the provided CD.

The following use cases are for the 515RTAENI-N34

- (Eth) = Ethernet connection
- (DF1) = Serial DF1 connection

For Peer to Peer messaging the first protocol is where the message instruction is in the application.

Ex. SLC (DF1) to CompactLogix (Eth). The SLC would have the message command.
RSLogix 5:

PLC5 (DF1)

1. Verify the serial setting in the “Network” tab of the 515RTAENI match the DF1 serial settings for your PLC5.
   a. To verify your PLC DF1 serial setting refer to “PLC Serial Setting” section of this guide.

2. Make sure using Allen-Bradley 1784-CP10 Cable (DB9 to DB25)

3. Load the latest EDS file.
   a. You can load the latest EDS for either the CD or the Utility tab on the Web based configuration. (Refer to How to load EDS file section of this guide if you need help.)

4. Create “Ethernet Device” driver in RSLinx
   a. Use IP Address of the 515RTAENI

   **Note: Use Ethernet Devices Drivers in RSLinx.**

   **PLC5 don’t work with the Ethernet/IP Driver.**

   b. Verify your PLC5 can be found in RSLinx:
Open RSLogix5

Select Comms -> System Comms -> Select your driver and the 515RTAENI -> Download, Upload or Online
RSLogix 500:

MicroLogix (DF1)

1. Verify the serial setting in the “Network” tab of the 515RTAENI match the DF1 serial settings for your MicroLogix PLC.
   a. To verify your PLC DF1 serial setting refer to “PLC Serial Setting” section of this guide.

2. Make sure using Allen-Bradley 1756-CP3 Cable (DB9 to DB9) or Allen-Bradley 1761-CBL-PM02 Ser. C (Mini din to DB9).

3. Load the latest EDS file.
   a. You can load the latest EDS for ether the CD or the Utility tab on the Web based configuration. (Refer to How to load EDS file section of this guide if you need help.)

4. Create “Ethernet Device” driver in RSLinx
   a. Use IP Address of the 515RTAENI

   **Note: Use Ethernet Devices Drivers in RSLinx.**
   
   SLC and MicroLogix will only show up as the 515RTAENI with the Ethernet/IP Driver. You can still use it for communications, but RTA recommends the Ethernet Devices Driver for all communications.

   b. Verify your MicroLogix can be found in RSLinx:

   ![RSLinx Interface](image)
Open RSLogix 500
Select Comms -> System Comms -> Select your driver and the 515RTAENI -> Download, Upload or Online
1. Verify the serial setting in the “Network” tab of the 515RTAENI match the DF1 serial settings for your SLC PLC.
   a. To verify your PLC DF1 Serial setting refer to PLC serial setting section of this guide.

2. Make sure using Allen-Bradley 1756-CP3 cable (DB9 to DB9)

   **Note:** Don’t use an Allen-Bradley 1761-CBL-PM02 Ser. C (Mini din to DB9) with a SLC 5/04. Channel 1 is used for DH+. It sends +/- 14 volts on some pins, thus will result in hardware failure.

3. Load the latest EDS file.
   a. You can load the latest EDS for ether the CD or the “Utility” tab on the web-based configuration. (Refer to How to load EDS file section of this guide if you need help.)

4. Create “Ethernet Device” driver in RSLinx
   a. Use IP Address of the 515RTAENI

   **Note:** Use Ethernet Devices Drivers in RSLinx.
   SLC and MicroLogix will only show up as the 515RTAENI with the Ethernet/IP Driver. You can still use it for communications, but RTA recommends the Ethernet Devices Driver for all communications.

Verify your SLC can be found in RSLinx:
Open RSLogix 500

Select Comms -> System Comms -> Select your driver and the 515RTAENI -> Download, Upload or Online
RSLogix 5000:

CompactLogix (DF1) (L32E), ControlLogix (DF1) FlexLogix (DF1)

1. Verify the serial setting in the “Network” tab of the 515RTAENI match the DF1 serial settings for your SLC PLC.
   a. To verify your PLC DF1 serial setting refer to PLC Serial Setting section of this guide.

Note: By Default, the L32E CompactLogix serial port is set to BCC.

2. Make sure using Allen-Bradley 1756-CP3 cable (DB9 to DB9)

3. Load the latest EDS file.
   a. You can load the latest EDS for ether the CD or the “Utility” tab on the web-based configuration.

   a. Use IP Address of the 515RTAENI.

CompactLogix:

![RSLinx Classic Gateway - [RSWho - 1]](image)

- Linx Gateways, Ethernet
- AB_ETH-1, Ethernet
- AB_ETH-3, Ethernet
- AB_ETH-4, Ethernet
- 10.1.19.30 [255.255.255.255], 515RTAENI, 515RTAENI
- DF1 Port, DF1
- 00, 515RTAENI
- 01, CompactLogix Processor L32E to SLC 500
- Backplane, CompactLogix System
ControlLogix:

FlexLogix:

Open RSLogix 5000
Select Communications -> Who Active-> Select your driver and drill through the 515RTAENI to the 01, CompactLogix .... -> Download, Upload or Online.
Peer to Peer MSG:

MicroLogix (Eth) to SLC 5/03, 04, 05, MicroLogix (DF1)

Load up RSLogix 500 (Eth),
Create new program or modify program for MicroLogix (Eth).
Files to create:
    MG9 Elements 1
    R10 Elements 1

Note: How to Create Files: While offline Right Click Data Files and Add New.

Message Instruction:

![Image of the Read Setup]

Read Setup:
Write Setup:

<table>
<thead>
<tr>
<th>MSG - MG9:0 (1 Elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
</tr>
<tr>
<td>Channel: 1 (Integra)</td>
</tr>
<tr>
<td>Communication Command: 500 CPU Write</td>
</tr>
<tr>
<td>Data Table Address: N7:0</td>
</tr>
<tr>
<td>Size in Elements: 1</td>
</tr>
<tr>
<td><strong>MultiHop</strong></td>
</tr>
<tr>
<td>Target Device</td>
</tr>
<tr>
<td>Message Timeout: 33</td>
</tr>
<tr>
<td>Data Table Address: N7:0</td>
</tr>
<tr>
<td>Local / Remote: Local</td>
</tr>
<tr>
<td>Routing Information File(RI): RI/10:0</td>
</tr>
<tr>
<td>MultiHop: Yes</td>
</tr>
</tbody>
</table>

Select Comms -> System Comms -> Select your driver and the MicroLogix PLC -> Download

Load up a different RSLogix 500 for the serial PLC (DF1).

Make sure you have the target device data table address in your serial PLC, in the example that is “N7:0”

Select Comms -> System Comms -> Select your driver and the 515RTAENI -> Download

**Note: Make sure all PLC are in Run mode**
CompactLogix (Eth) to SLC 5/03, 04, 05, MicroLogix (DF1)

Load up RSLogix 5000 (CompactLogix)
Create new program or modify existing program for your CompactLogix (Eth).
Controller Scope Tags:
Add a tag for your message instruction and a tag for your data.
Message Instruction:

Read setup:

Use "1,1,2,<Ip Address of Gateway>" ex. 1,1,2,192.168.0.100
Write Setup:

Use "1,1,2,<Ip Address of Gateway>" ex. 1,1,2,192.168.0.100

Note: 1,1 will automatically convert into LocalENB in L32E PLC, L24ER will display Discrete IO and ignore the 1,1 portion.

Download to PLC
Select Communications -> Who Active-> Select your driver and drill through the CompactLogix till you get to the 01, CompactLogix ... -> Download.

Note: Make sure your SLC 5/03, 04, 05, MicroLogix (DF1) is in run mode.
SLC (DF1) to MicroLogix (Eth)

Load up RSLogix 500 (SLC),
Create new program or modify existing program.
Files to create / verify:
N9 elements 10

**Note: How to Create Files: While offline, Right Click Data Files and Add New.**

Message Instruction:

**Read Setup:**

![Read Setup Diagram](image1)

**Write Setup:**

![Write Setup Diagram](image2)
Note: In Message Instruction, you can use any Node to talk to the MicroLogix

Load up RSLogix 500 (MicroLogix)

Create new program or modify existing program.
Make sure you have the target device data table address in your PLC, in the example that is “N7:0”.

SLC (DF1) to CompactLogix (Eth)

Load up RSLogix 500 (SLC),
Create new program or modify existing program.
Files to create / verify:
N9 elements 10

Note: How to Create Files: While offline, Right Click Data Files and Add New.

Message Instruction:
Read Setup:

![Message Instruction Diagram]
Write Setup:

Note: In Message Instruction, you can only use node 45-49 to talk to the CompactLogix

Load up RSLogix 5000 (CompactLogix)

Create new program or modify existing program.
Make sure you have the target device data table address in your PLC, in the example that is “N7:0”

Note: To link a File to Tag “Logic -> Map PLC/SLC Messages -> *select File you want to use* and * Tag you made*”
PLC5 (DF1) to MicroLogix (Eth)

Load up RSLogix 5 (PLC5),
Create new program or modify existing program.
Files to create / verify:
MG11 elements 1

Note: How to Create Files: While offline, Right Click Data Files and Add New.

Message Instruction:

Read Setup:
Note: In Message Instruction, you can use any Node to talk to the MicroLogix

Load up RSLogix 500 (MicroLogix)

Create new program or modify existing program.
Make sure you have the target device data table address in your PLC, in the example that is “N7:0”.
Load up RSLogix 5 (PLC5),
Create new program or modify existing program.
Files to create / verify:
MG11 elements 1

**Note: How to Create Files: While offline, Right Click Data Files and Add New.**

Message Instruction:

**Read Setup:**

![Diagram of Read Setup]

**Write Setup:**

![Diagram of Write Setup]

**Note: In Message Instruction, you can only use node 45-49 to talk to the CompactLogix**
Load up RSLogix/Studio 5000 (CompactLogix)

Create new program or modify existing program.
Make sure you have the target device data table address in your PLC, in the example that is “N7:0”

**Note:** To link a File to Tag “Logic -> Map PLC/SLC Messages -> *select File Number you want to use* and *Tag you made***”
Message Routing

How to setup 515RTAENI Node to IP Address Routing

Load the 515RTAENI's web-based configuration.
Navigate to the “Mapping” tab
Select the “Edit” icon on the right side, select the node you want add IP Address of the end device then “Save”.

Note: Make sure all PLC are in run mode
PLC Serial setting

Verify the Serial settings of your Serial PLC.

1. Connect a null modem cable from your PC to your PLC.

2. Open RSLinx and navigate to Communications -> Configure Drivers.

3. In the Dropdown select RS-232 DF1 devices then “Add New”.

4. Name your driver and select “OK”
5. Then select the correct “Comm Port” of your PC, click “Auto-Configure.”

6. If you did not get a successful message, verify your “Comm Port” using device manager.

7. PC device manager - Ports.

   ![Ports (COM & LPT)

   Communications Port (COM1)
   Intel(R) Active Management Technology -
   Prolific USB-to-Serial Comm Port (COM4)

   If still having issues verify you are using a null modem cable, if using an adapter verify that it is working or swap it out.
How to Load EDS File:

**EDS Hardware Installation Tool**

1. Move EDS File to desktop.
   a. EDS files can be found on provided CD or on the web-based configuration of the 515RTAENI, located on the “Utility” tab (Right click save .eds link as).

2. Launch Allen-Bradley’s EDS Hardware Installation Tool. (Might need to run as administrator)

3. Select “Add”

4. Select “Browse” and navigate to the desktop where you saved off the EDS file in step 1. Then select “Next”
5. Verify that the path is correct. Select “Next”

6. Verify that the graphic is correct. Select “Next”
7. Verify task. Select “Next”

8. You have now installed the EDS file successfully. Select “Finish”.
How to Discover Legacy PLC in Scada

**Ignition:**
1. **MicroLogix / SLC**
   a. Create new device:

   ![Image of Ignition device setup](image1)

   b. MicroLogix use the following device type.

   ![Image of MicroLogix device type](image2)

   c. SLC use the following device type.

   ![Image of SLC device type](image3)

   d. Device Setup: Fill in the “Name” and “Hostname” (IP address of the 515RTAENI).
e. Connection: Status should say “Connected: Protocol EIP”

2. CompactLogix/ControlLogix
   a. Create new device:

   ![New Device Table]

   b. Compact Logix use the following device type.

   ![CompactLogix Options]

   c. ControlLogix use the following device type.
d. Device Setup: Fill in the “Name”, “Hostname” (IP address of the 515RTAENI), and “Connection Path”.

<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Enabled</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connectivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostname</td>
</tr>
<tr>
<td>Timeout</td>
</tr>
<tr>
<td>Connection Path</td>
</tr>
<tr>
<td>Concurrent Requests</td>
</tr>
</tbody>
</table>

e. Connection: Status should say “Connected: Protocol EIP – Run Mode”
**Kepware Version 6:**

1. **Create a channel:** Choose Allen-Bradley ControlLogix Ethernet.

   ![Add Channel Wizard](image1)

2. **Channel Device:** For SLC PLC and MicroLogix PLC types, choose MicroLogix 1100.

   ![Add Device Wizard](image2)

3. **Enter in the IP of the 515RTAENI:** Navigate through the “Next” till you reach “ID” then fill in the IP address of the 515RTAENI.
4. **Verify Driver:** Your driver should look like this when reviewing the driver.

5. **Tag Generation:** Select tag generation then add tag. Fill in your tag you want to read or write. This is an example of reading an integer from a SLC5/03.
**InduSoft:**

1. Driver selection: Navigate to Comm, right click the “Drivers” and add “ABENI” driver.

f. Driver Setup: Fill in a tag name with correct data type. (If you don’t have a tag in Indusoft yet, then just fill Tag Name in and one will be generated for you).
g. Database Spy can be used to test out if the tag is getting your data: Just type in the tag you are wanting to verify. Then set Indusoft into “Run mode”.

```
<table>
<thead>
<tr>
<th>Tag/Expression</th>
<th>Value</th>
<th>Quality</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReadStatus[1]</td>
<td>-2138439680</td>
<td>GOOD</td>
<td></td>
</tr>
<tr>
<td>ReadMessage[1]</td>
<td>Bad - Not Conn.</td>
<td>GOOD</td>
<td></td>
</tr>
<tr>
<td>RTA460BoolTest[0]</td>
<td>0</td>
<td>BAD</td>
<td></td>
</tr>
<tr>
<td>RTA460BoolTest[1]</td>
<td>0</td>
<td>BAD</td>
<td></td>
</tr>
<tr>
<td>hello</td>
<td>1023</td>
<td>GOOD</td>
<td></td>
</tr>
</tbody>
</table>
```
PanelView Plus:

PanelView (Eth) to MicroLogix / SLC (DF1)

The following instructions are for communications setup in RSView. The 515RTAENI EDS file must be installed. Use the Rockwell EDS Hardware Installation Tool to install the EDS file supplied on the product CD. The EDS file may need to first be copied off the CD to your computer for the EDS installation tool to successfully install the file. Once the EDS file is installed and the ethernet and serial settings have been set, you should be able to discover the 515RTAENI gateway in RSLinx.

![Figure xx - 515RTAENI RSLinx EDS file and Icon file](image)

For PanelView Plus communications setup in RSView, verify RSLinx Enterprise finds the 515RTAENI gateway. Unplug the ethernet cable to the 515RTAENI gateway. Right click the unit, and delete it from the communications tree, see the visual below.

![Figure xx - Rockwell RSLinx EDS Hardware Installation Tool](image)
Right click the ethernet driver and select “Add Device”. From the Device Selection tool, select the NetENI-connected PCCC devices, select the appropriate processor family folder, and then choose your PLC from the list in the processor folder and press “OK”. The example screens below show the selection of a MicroLogix 1200 controller.

Enter in the IP address assigned to the 515RTAENI gateway, and press “Apply”.

---

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The RSView software should now be able to communicate over ethernet to the serial input of the controller using the 515RTAENI gateway. If this procedure doesn’t work the first time, delete the original target and rebuild the comms as described above.

Remember to “Copy From Design to Runtime.”

**IMPORTANT:** When using a PanelView Plus terminal the Duplicate Packet Detect option in the serial controller must be DISABLED, otherwise there may be a loss of communications.

**PanelView (Eth) to CompactLogix / ControlLogix (DF1)**

Make sure the EDS file is installed and the ethernet and serial settings have been set, you should be able to discover the 515RTAENI gateway in RSLinx.

Open your Communication Setup. Expand the EtherNet and drill down through the DF1 Port and select the Processor then your shortcut and Press Apply (if greyed out it is already linked).

Remember to Copy from Design to Runtime.

**PanelView (DF1) to PLC (Eth)**

The following instructions are for communications setup in RSView. The 515RTAENI EDS file must be installed. Use the Rockwell EDS Hardware Installation Tool to install the EDS file supplied on the product CD. The EDS file may need to first be copied off the CD to your computer for the EDS installation tool to successfully install the file. Once the EDS file is installed and the ethernet and serial settings have been set, you should be able to discover the 515RTAENI gateway in RSLinx.

*Figure xx - 515RTAENI RSLinx EDS file and Icon file*
Go to Communication Setup:

Add a Serial DF1 Driver:

Right click “Factory Talk Linx …” and press Add Driver

Select Serial DF1 press “OK”
Setup your General and Link Tabs

Add a Device to the Driver:
Right Click Driver and Add Device
I am adding a Micrologix 1400 so my PLC is Located under: PCCC DH485 devices -> SLC DH485 devices -> MicroLogix 1400

In the setup of the device, there is an “Address” this will be used for the message routeing in the 515RTAENI.
Navigate to the 515RTAENI’s Mapping page and fill in the Node number above with the IP address of the PLC you are wanting.

### Configurable Mapping

<table>
<thead>
<tr>
<th>Node #</th>
<th>Config</th>
<th>IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>1</td>
<td>101</td>
<td>192.168.1.22</td>
</tr>
<tr>
<td>2</td>
<td>102</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>3</td>
<td>103</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>4</td>
<td>104</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>5</td>
<td>105</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>6</td>
<td>106</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>7</td>
<td>107</td>
<td>n n n n</td>
</tr>
</tbody>
</table>

**Converting your PanelView 6 Project to PanelView 7**

Before you begin it is recommended to create a copy of your project before converting. As if you convert to the wrong project size it will cause issues and not load into the New PanelView.

Make sure the project you want to copy is closed. Click Tools then “Application Manager.”
Choose the “Copy application” and press “Next”.

You will be prompted to choose the application to copy, and press “Next”.

Give the new copy a name and press “Finish”.

Open the copy of the legacy project and navigate through System and select Project Settings.

The Project Window size controls the graphic size for all the screens. Adjusting this from your old PanelView screen size to the new PanelView screen size.
After changing the Project window size and pressing “Ok” you will be prompted with a Graphic Display Scaling. Just keep all checked and press “Ok”.

After you press “Ok” then wait for Factory talk to convert your program.

You have just converted the PanelView project. If the new PanelView has the same ports, then everything should be good to go. If not, will need to reassign the communication setup.