

Migrating from 5201-DFNT-DFCM to PLX51-DF1-ENI Document Code: TN_PLX51DF1ENI_Migration from 5201-DFNT-DFCM Manual Summary

In the proceeding labs, you will configure all the required software and hardware in order to migrate from 5201-DFNT-DFCM to PLX51-DF1-ENI.

The Lab will cover how to upload the PLC code from CompactLogix and ControlLogix , upload the configuration file from 5201-DFNT-DFCM , figure out the data mapping between CompactLogix and ControlLogix , setup and configure the PLX51-DF1-ENI for complete the migration process .



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Lab 1 – Upload the PLC code from CompactLogix and ControlLogix and study the data map.

- 1. Physical connection :
 - a. Ensure that the Ethernet/IP module in the ControlLogix rack is connected to the switch
 - b. Ensure that the Ethernet port on the CompactLogix processor is connected to the switch.
- 2. In the menu bar, go up to Communication and select Who Active
- 3. On the Who Active screen, expand the "AB_ETHIP-1" driver
- 4. Locate the Ethernet module in the ControlLogix rack (find it's IP address from the blue information sheet or the scrolling LCD display on the faceplate of the module.
- 5. Locate the IP address for the Ethernet port in the CompactLogix rack using the IP Address from the *blue information sheet.*
- 6. Select the processor and click upload.

🗄 💑 Linx Gateways, Ethernet	^	Go Online
AB_ETHIP-1, Ethernet		11-1-2-2
10.1.2.190, Unrecognized Device, 1756-EN21/A		Upioad
10.1.2.191, Onrecognized Device, 1756-ENB1/A 10.1.2.192, 1768-ENB1/A, 1768-ENB1/A		Download
2 10.1.2.193. Unrecognized Device. ILX56-MM		
10.1.2.202, 1756-ENBT/A, 1756-ENBT/A		Update Firmware
- 7 10.1.2.204, Unrecognized Device, 1734-AENTR Ethernet Adapter		Close
10.1.2.205, 1768-ENBT/A, 1768-ENBT/A		Liose
10.1.2.226, 1756-ENBT/A, 1756-ENBT/A		Help
10.1.2.235, 1756-ENBT/A, 1756-ENBT/A		-
10.1.2.243, 1756-ENBT/A, 1756-ENBT/A		
10.1.2.79, Unrecognized Device, ILX34-AENWG		
10.1.2.65, 1756-ENBT/A, 1756-ENBT/A		
Backplane, 1756-A4/A		
00, 1756-L55/A LOGIX5555, 1756-L55/A 1756-M12/A LOG	D/5555	Set Project Path
01, 1756-ENBT/A, 1756-ENBT/A		-
 		Clear Project Path
 03, 1756 module, MVI56 ProSoft Technology, Inc. 		
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- 7. Save CompactLogix and ControlLogix PLC code as different file name.
- 8. Study the data mapping between ControlLogix processor and CompactLogix processor.



- 9. For Below example :
 - a. To_Compact tag is the data from ControlLogix(EIP) to CompactLogix(DF1).
 - b. To_Control tag is the data from CompactLogix(DF1) to ControlLogix(EIP).



Lab 2 –The Next task is to upload the configuration file from 5201-DFNT-DFCM. So, to do this, open up a new project in ProSoft Configuration Builder and add the 5201-DFNT-DFCM module to the project

1. From the Start button, locate and launch ProSoft Configuration Builder under the



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ProSoft Technology folder.

- 2. Go to File and select New.
- 3. Select the DEFAULT MODULE in the tree view, and right-click to open a shortcut menu.
- 4. Select CHOOSE MODULE TYPE, which opens the Choose Module Type dialog box.

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- 5. In the tree view of PCB, click on the 5201-DFNT-DFCM module to select it.
- 6. On the menu bar, select PROJECT, and then choose Module > Upload from Device to PC.



7. Below is the sample configuration file of 5201-DFNT-DFCM.

Untitled - ProSoft Configuration Builder		
File View Project Tools Help		
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🖃 🧰 Default Project	Name	Status
 □-Imile Default Location □-Imile Statut Location	START END [DFNT UClient 0] Minimum Command Delay Response Timeout Retry Count ARP Timeout [DFNT UClient 0 Commands START END	: 50 : 1000 : 3 : 1
DF1 Port 0 Commands SLC DF1 Port 0 Commands SLC DF1 Port 0 Commands PLC DF1 Port 0 Commands PLC DF1 Port 0 Commands Basi DF1 Port 0 Commands Basi DF1 PassThrough DF1 Pass-Through Server CommonNet Ethernet Configuration	[DF1 Port 0] Enabled Type Local Station ID Protocol Termination Type Baud Rate Parity Data Bits Stop Bits Min Response Delay RTS Off Use CTS Line Response Timeout Retry Count ENQ Delay Minimum Command Delay Error Delay Counter Command Control Reg First File File Size File Offset	: Yes : Slave : I : Full-Duplex : BCC : 19200 None : 8 : 1 : 3 : 5 : 0 No : 00 : 00 : 1000 : 3 : 1 : 10 : 0 : -1 : 10 : 0 : 0 : 0 : 0 : 0 : 0 : 0 :
	[DF1 Port 0 Commands] START END [DF1 Pass-Through Port] Enabled Local Station ID Protocol Baud Rate Parity Data Bits Stop Bits RTS On RTS Off Use CTS Line Refuest Timeout Busy Timeout Busy Timeout ACK Timeout	: NO : 1 : Full-Duplex : 19200 : None : 8 : 1 : 0 : 0 : NO : 3 : 1000 : 500 : 100
	[DF1 Pass-Through Server Enabled Service Port Number Busy Timeout	r] : No : 15000 : 500
	[DATA MAP] START END	



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Lab 3 –Configure the PLX51-DF1-ENI .

This task is to configure how the PLX51-DF1-ENI will act as gateway between DF1 and Ethernet/IP. So, to do this, initiate ProSoft PLX50 Configuration Utility.

1. Setup the network parameter.



 Use the DHCP server in the PLX50 Configuration Utility to assign the IP address to PLX51. Once opened, the DHCP server will listen on PLX51 for DHCP requests and display their corresponding MAC addresses



NOTE: If the DHCP requests are not displayed in the DHCP Server, it may be due to the local PC's firewall. During installation, the necessary firewall rules are automatically created for the Windows firewall.

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3. To assign an IP address, click on the corresponding "Assign" button. The IP Address Assignment window opens. Below example is set the IP address = 192.168.1.172 with Enable static.

				Recent	
192 .	168 .	1.	172		
Enat	ole Static (Disable DH0	P)		

4. The successful assignment of the IP address by the device is indicated by the green background of the associated row.

MAC Address	Vendor	Requests	Elapsed	Assigned IP	Assign	Status	Identity
0:0D:8D:F0:D7:00	-	56	3	192.168.1.172	Assign	Complete	DF1 Router
		ALC: NOW ALC: N	10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -				-1 Contraticities



5. Before you configure the module, a new PLX50 Configuration Utility project must be created. Under the File menu, select New.



6. A PLX50 Configuration Utility project will be created, showing the Project Explorer tree view. Selecting Add under the Device menu.



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7. In the Add New Device window, select the DF1 Router, and click the Ok button.

nage	Device Name	 Description 	
1	Data Logger	Data Logger Module	
	Data Logger Plus	Data Logger Module - Historian	
1	DF1 Messenger	DF1 Messenger Communication Module	
1	DF1 Router	DF1 to Logix Communication Module	

8. The device appears in the Project Explorer tree as shown below, and its configuration window opened.

Jona - DF I	Bridge [UF1 Slave (Deabled) [Scheduled (Deabled)
Instance Name	DF1 Router
Description	
IP Address	0 . 0 . 0 . 0 Major Revision 1 •
ENIP Retry Limit	5 [0-5]
ENIP TimeOut	1000 ms
Operating Mode	
O DF1 Save	DF1 Master sends message to PLX51. PLX51 maps DF1 message to Logix tag.
Scheduled	DF1 Commands are configured in the PLX51. PLX51 acts as a DF1 master and executes commands as defined in the configuration software.
Unschedul	ed Logix message is routed through the PLXS1 to target DF1 node Note: DF1 node ID and communication path, is defined in RSLogix.
Bridge	Remote Programming of DF1 PLC's from Bhernet PC's. Remote programming of BhertHet/IP PLC's from DF1 PC's. Communication between DF1 HMI's and BhertHet/IP PLC's

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9. Select the second tab at the top Serial-DF1. Copy the serial port setting in 5201-DFNT-DFCM then set to Serial-DF1.

eral Serial · DF1 Bridge	DF1 Slave (Disabled)	Scheduled (Disabled)
Protocol	Full Duplex 👻	Node Address 0 ~
BAUD Rate	1200 -	Enable Duplicate Detection
Parity	None -	Enable Store and Forward
Error Detection	BCC -	- Store and Forward Repeat Delay 5 (c.10 ms)
Embedded Responses	Auto 🔸	Nodes to Repeat Nodes
Retry Limit	3 [0-10]	
ACK Timeout	20 [2-60] (4	50 ms)
Reply Msg Wait	5 [2-60] ¢	10 ms)
	Ok	Apply Cancel

10. Configure the bridge mode for redirecting the message between DF1 and Ethernet port. For below example: MSG from CompactLogix PLC serial port that point to node 4 will be reroute by PLX51 to the device IP 192.168.1 over EIP. The module can emulate more than one destination DF1 Node Address, and thus route multiple messages to different Ethernet devices. For this reason it is important to enter the correct associate DF1 Node address in each mapping record. Please Identify the DF1 target node on CompactLogux MSG path and target IP.

DF1 Router - Configuration	Y			0.00
General Serial - DF1 Broge	DF1 Save (Daabled) Sc	heduled (Daabled)		1
Enable CIP over DF1	PCCC Address	1 •	Logix Connection	Case3 +
Enable PCCC Direct	PCCC IP Address	0.0.0		

Configuration" Communication" Ta	260	
· Patr 2.4		Erowse.
2.4 © Broadcast		
Communication Method CIP © DH+ Channel © DP With Source ID Counce Links	W W Destination Leik Destination Kinde D Destination Kinde	
Connected	🕼 Cache Connectiona 🔹 🔹	C Lage Convection
O Enable O Enable Walling	Q Stat Q Done Do	ne Length: 0
O Encr Code Extended Encr Path Encr Text:	Eiror Code: 👘	Timed Out +
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11. The last part of the Bridge routing map setup is to map the DF1 request received by the Logix controller to a Logix tag. This must be done in Rockwell Automation's RSLogix5000. Check the DF1 MSG in the CompactLogix PLC. Then do the same mapping to ControLogix.

onfiguration" Comm	unication Tag		Configuration" Comm	unication Tag		-
Message Type:	PLC3 Typed Write	•	Message Type:	PLC3 Typed Read	٠	
iource Element	Ta_Control(0) -	New Tag	Source Element	11		
lumber Of Elements:	10 4		Number Of Elements	10		
estination Element	10		Destination Element	To_Compact[0]		New Tag
Enable 🔾 Enab	Ne Waiting O Start O Done Extended Error Code:	Done Length: 0	⊙ Enable ○ Enabl	le Wating 🔾 Statt Extended Error Code:	O Done	Done Length: 0 Timed Out +

12. Ensure the ControlLogix also have the same data mapping.

File Number	∆ Name	
10	To_Control	
11	To_Compact	✓ Help
	Delete Map	



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13. When confirm the mapping of EIP IP address Vs DF1 node address and DF1 data address Vs EIP data address then download the configuration file into the PLX51-DF1-ENI.

