

NP Redundant ModBus TCP N+ System Configuration Example

© 2005 - 2020 RTP Corporation

Not for reproduction in any printed or electronic media without express written consent from RTP Corp.

All information, data, graphics and statements in this document are proprietary intellectual property of RTP Corp. unless otherwise indicated and are to be considered RTP Corp. confidential. This intellectual property is made available solely for the direct use of potential or licensed RTP Corp. customers in their application of RTP Corp. products, and any other use or distribution is expressly prohibited. If you have received this publication in error, immediately delete, discard or return all copies to RTP Corp.

RTP Corporation 2832 Center Port Circle Pompano Beach, FL 33064 Phone: (954) 597-5333 Internet: http://www.rtpcorp.com

File Name: NP Redundant ModBus TCP N+ System Configuration Example.pdf Last Updated: 12/11/20

NP Redundant ModBus TCP N+ System Configuration Overview

This document provides an example of how to configure the NP ModBus TCP Communications in the N+ system. The hardware configuration of this example consists of two nodes (Each node processor has a dedicated ModBus TCP port), one of the node will have a ModBus TCP port configured as Master and the other node will have a ModBus TCP port configured as Slave. This example will have four Point Groups: Master transmitting Boolean variables to Slave Coils and Master reading Integer values from the Slave Input Registers. In addition, we are going to show the redundant configuration for the NP Modbus. Other types of transfers can be configured similarly.

• Bool Point Groups: The Boolean Output Point Group (BO_), in the ModBus Master, writes Coil data starting at address 1000. Bool Input Point Group (BI_), in the ModBus Slave, receives the Coil data starting at address 1000.

• Integer Point Groups: The Integer Input Point Group (II_), in the ModBus Master, reads Input Registers starting at address 0. Integer Output Point Group (IO_), in the ModBus Slave, provides data in response to the Master's request starting at address 0.

Note: For some devices, the first ModBus address is 1 corresponding to 0 on the RTP ModBus Port on N+ System. If this is the case, the addressing will need to be adjusted to correspond.

Note: In the examples, all variables in the point groups are not used. We chose to configure the unused points as Disabled to demonstrate that all points in a group do not need to be used nor do they need to be in contiguous order. The unused points could have been left in and just not used. In any case, the Slave point group should be configured to include all of the variables in the Master's point group.

NP ModBus TCP – Node Processor Installation

Host Network Connections

• Connect an Ethernet cable from your PC or laptop computer to the Host Ethernet Switch.

• Connect an Ethernet cable from J1 on the first 3201T Node Processor to the Host Ethernet Switch.

• Connect an Ethernet cable from J1 on the second 3201T Node Processor to the Host Ethernet Switch.

I/O Network Connections

• Connect an Ethernet cable from J3 on the first 3201T Node Processor to the "A" I/O Ethernet Switch Node 1.

• Connect an Ethernet cable from J4 on the first 3201T Node Processor to the "B" I/O Ethernet Switch Node 1.

• Connect an Ethernet cable from J3 on the second 3201T Node Processor to the "A" I/O Ethernet Switch Node 2.

• Connect an Ethernet cable from J4 on the second 3201T Node Processor to the "B" I/O Ethernet Switch Node 2.

ModBus TCP System Ethernet Connections

The ModBus TCP N+ system Ethernet cables are connected as shown in the figure below.



NP ModBus Master TCP N+ System Configuration

Open NetArrays and log in. If you have not created a user account please refers to the file ugnetsuite.pdf found in the directory C:\RTP NetSuite\Manuals. After logging in, you are going to see the figure below

	Ne	tArrays Developer Studio - Re	egistered to RTP Corp Version 9.2.0.4	16 - Untitled Document
Fi	ile (View Properties Project	Compile Debug Device Tags V	Nindow Help
	2			🤌 💐 🛃 📠 单 🎬 🎦 🖳 📕
T		IOC		^
		🔁 Main		: F : F : F : F : F : F : F : F : F : F
11		Α	В	C
		1	Main	
1		-	• • • • • • • • • • • • • • • • • • •	
1		2	o-o Scan	E
		2	stop Scan	
L		4	B RTPDiag	
1		-		
1		5	Be MForm1	
1	\Box	6		
		-		
	Н	7		
	口	H		-
P		III	Device Circulates	
	_		Device=Simulator	User:HTP

• Click on the I/O Configuration Studio button in the NetArrays main toolbar . Maximize the I/O Configuration form using the Maximize Icon.

• Drag an icon **RTP3200T Node** from the I/O Configuration Toolbox **CPU Nodes->3200T Nodes->Domain->Simplex Nodes folder** to the "**Node=Empty**" position on the I/O Configuration Form. For this example, the **RTP3200T/00-D17 S 14 Slot Dual PS Node** was chosen. Select an RTP3200T Node that matches your configuration. (This example shows a domain configuration).



I/O Configuration Form



Add a NP ModBus TCP

• If required, in the I/O Configuration Form, expand the "RTP3200T/00-D17 S 14 Slot Dual **PS Node**" (left-click on the ⊞). In the I/O Configuration toolbox expand the **ModBus** branch (left-click on the ⊞). Drag the **NP Modbus TCP** icon to the "**MB=Empty**". The Auto Tag Generation dialogue box will appear. Type **Master** in the **User Card Specific Prefix** and click **OK**. The Prefix of the Tag names for the ModBus TCP Master will be set to "**Master**". This does not affect point group tag names.

I/O Configuration Form I/O Configuration Toolbox - 0 X 🗮 NetArrays Developer Studio - Registered to RTP Corp. - Version 9.2.0.46 🛛 - Untitled Document - [IOC] 14.18 📕 File View Properties Project Compile Debug Device Tags Window Help _ 8 × × 🚥 Auto Tag Generation for NP Modbus TCP 5. I/O Configuration 📃 New E- CPU Nodes (TimeStamp)= -Use <u>C</u>ard Specific Prefix: Use Project Prefix: <u>0</u>K 🖶 📆 RTP Digital Cards Master 🔲 <u>R</u>edundant ⊕ ∰, RTP Analog Cards ⊕ ∰, RTP Special Function Cards Cancel Logic=() Assign Channel Tag Names from Database Scan Rate=1 ms - ModBus - <u>F</u>iltered Unattached Database Tags 🔽 Used in Signal Validation Primary IP=192.168.0.1 Selected = 0 ABC V NP Modbus TCP 🕀 🔚 😳 Rack 14D 🗉 📕 3019 MBSerial ⊕– 🞒 Ports ⊕– 🎒 Nodes 🖅 🗃 PointGroups Destination Tag Status Destination ۲ User:RTP

7

Add a ModBus Master Port and Node

• Expand the "**MB=NP Modbus TCP**" branch on the I/O Configuration Form by clicking on the
. Expand the **Modbus TCP** by clicking on the
. Expand the **ModBus Port = NP ModBus TCP Master Port**" branch on the I/O Configuration Form by clicking on the
. Expand the **Nodes** branch on the I/O Configuration Toolbox by clicking on the
. Drag the **Node = NP ModBus TCP Node** from the I/O Configuration Toolbox to the "**Node = Empty**"
Slot in the I/O Configuration Form.



• After adding the Node, the I/O Configuration will be as shown below.



Add 2 ModBus Master Point Groups

• Move the mouse pointer to the "**MB** = **NP ModBus TCP Node**" icon on the I/O Configuration Form and expand it by clicking on the **H**. Then, expand the Port=NP Modbust TCP Master port and Node= NP Modbus Master TCP node. Expand the **Point Groups** on the I/O Configuration Toolbox by clicking on the **H**. Select the **Bool Output** Point Group icon in the I/O Configuration toolbox and drag it to the "**PointGroup=Empty**" placeholder under the Node in the I/O Configuration form. The Auto Tag Generation dialogue box will appear. In response enter **BO**_ in the **Use Card Specific Prefix**, and click **OK**.

• Similarly, drag an Integer Input point group and use II_ for the Use Card Specific Prefix.





The ModBus Master I/O Configuration should look as pictured below.

On the following pages you will be configuring the ModBus Master TCP Port and Point Group properties. Note that when you enter text or a number into the **Property Manager**, it <u>must</u> be followed by **Enter**.

ModBus Master TCP Properties

• Left click on the **MB** = **NP ModBus TCP Node** to view the "Modbus tcp" icon. Then, Left click on the Port=NP ModBus TCP Master Port .and right click to it to display its **Property Manager**. Expand the window as required to edit all applicable parameters.

- The Tag assigned to the Integer Error Detection is MasterEDA.
- The Tag assigned to the Integer Status is MasterESA.

• A set of **IP** address must be entered so that the ModBus Master TCP can communicate with the ModBus Slave Port. In this example we chose **89.8.5.67** as the Primary IP address of the port and **90.8.5.67** as the secondary IP address. These are the addresses of the ModBus Slave TCP that the Modbus Master TCP will be communicating to.

- Specify a Response TimeOut(ms) value of 10 milliseconds between message retries.
- Close the Property Manager display.

NetArrays Developer Studio - Registered to RTP Corp Ve	ersion 9.2.0.46	- Untitled Docume	ent 💼			x
File View Properties Project Compile Debug Devic	ce Tags Wir	ndow Help				
	🔿 🔳 🖉	88	• 🚻 🖞	i 🔃 📖		
Пос						-
New	Property Man	ager - NP ModBus	TCP Maste	er Port()	8	
Node=3200T/00-D17 S 14 Slot Dual PS Node	Type Desc	ription	Param/Tag	- Due TCD Master Det		
	Param		Node-NP M	Iddbus TCP Master Port		
Scan Bate=1 ms	Param Re	sponseTimeOut(ms)	10			
Primaru IP-192 168 0 1	Param Pri	mary IP	89.8.5.67		1	
Coconday ID-102.100.0.1	Param Se	condary IP	90.8.5.67			
	Param Ur	iit ID	0 DeixtCours	Deel Outeut		
H giiiiig Hack 14D	Card		PointGroup	=Booi Uu(pu(=Integer Input		
	Card		PointGroup	=Empty		Ξ
🖻 📕 Modbus TCP	Param		Node=Empl	by .		
→ 🖸 Integer Error Detection=(MasterEDA)						
Port=NP ModBus TCP Master Port						
🖨 🛋 Node=NP ModBus TCP Node						
ResponseTimeOut(ms)=1	000					
Secondary IP-90.85.67						
PointGroup=Integer Input						
PointGroup=Empty						
Node=Empty						
🗄 🗊 💳 Port=NP ModBus TCP Slave Port						
				Signal Valida	ation	= . I
·						F.
Device=MBSerial				User:RTP		11.

Redundancy in NP Modbus TCP:

As shown in the figure above the NP Modbus TCP Master port has the ability to use as destination port either of the two configured IP addresses (Primary and Secondary) This feature permits system redundancy when any of the destination ports is not available. In addition of these two addresses for the destination ports, NP Modbus TCP Master Port also includes two redundant sourcing ports. In the example illustrated in this document, which shows a simple node, the two sourcing ports are the same as the ports of the node processor. This allows the NP Modbus to communicate for any of the two ports. In the case of different node configuration, for instance Triple and Quad redundant configuration, the NP Modbus TCP will transmit and receive data from Primary Node's port.

ModBus Bool Output Point Group

This Point Group will be writing four Bool outputs into the Coils buffer starting at address 1000.

- Select the ModBus Bool Output Point Group and right click to display its **Property Manager**. Select **Properties**.
- A **StartAddress** of **1000** is entered for the starting point for this Point Group's data in the ModBus Slave Data Image.
- An InterScan Delay of 100 milliseconds is specified. This is the default value.
- The **Register Type** of this point group is "**Coil**". We will be writing Coil Inputs to the ModBus slave.
- The Tag assigned to the Integer Status is BO_ESA".
- Bool Send Request Enabled is Disabled. This is the default value.
- The I/O Tags assigned are "BO_O00A", "BO_O01A", "BO_O02A", and "BO_O03A".
- Channel Output 04 through Output 15 are disabled by selecting "Disabled".
- Close the **Property Manager** display.

🗧 NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - Untitled Document							
File View Properties Project Compile Debug Device Tags Window Help							
	🔗 😹 🚺 🖬 🗕 🎬 🎬 🛃 🔍 🔍						
IOC	Property Manager - Bool Output()						
New							
	Card Properties						
(Version)=1	Type Description Param/Tag						
□- "" Holde=3200T/00-D17 S 14 Slot Dual PS Node	Paral StartAddress 1000						
	Parai InterScanDelay(ms) 100						
Scan Hate=1 ms	Paral RegisterType Coil						
	Disat - Bool Send Request BO_SRA						
	I/O Channel Properties						
	Bool Output 00 BO 000A						
	Bool Output 01 B0_001A						
	Bool Output 02 80_002A Bool Output 03 80_003A						
- D- Port=NP ModBus TCP Master Port	Disabled Output 04 B0_004A						
🖶 🛁 Node=NP ModBus TCP Node	Disabled Output 05 BO_005A						
ResponseTimeOut(ms)=1000	Disabled Output 07 B0_007A						
Primary IP=89.8.5.67	Disabled Output 08 B0_008A						
Secondary IP=90.8.5.67	Disabled Output US BU_UUSA Disabled Output 10 BO 010A						
Unit ID=0	Disabled Output 11 BO_011A						
PointGroup=Bool Output	Disabled Output 12 BO_012A Disabled Output 12 BO_012A						
PointGroup=Integer Input	Disabled - Output 14 B0_014A						
PointGroup=Empty	Disabled Output 15 B0_015A						
⊡- ■ Port=NP ModBus TCP Slave Port							
	Signal Validation						
Destination Tag Status HW #1 Tag	HW #2 Tag HW #3 Tag HW #4 Tag Default Tag						
· · · · · · · · · · · · · · · · · · ·							
Device=MBS	erial User:RTP						

ModBus Integer Input Point Group

This Point Group will be reading three Integer inputs from the Input Registers starting at address 0.

• Select ModBus Integer Input Point Group and right click to display its **Property Manager**. Select **Properties**.

• A **StartAddress** of **0** is specified for the starting point for this Point Group's data in the ModBus Slave Data Image. This is the default value.

• An InterScan Delay of 100 milliseconds is specified. This is the default value.

• The **Register Type** of this point group is "**Holding Register**". We will be reading input data from the ModBus slave.

- The Tag assigned to the Integer Status is "II_ESA".
- Bool Send Request Enabled is Disabled. This is the default value.
- The I/O Tags assigned are "II_I00A", "II_I01A", and "II_I15A".
- Channel Input 02 through Input 14 are disabled by selecting "Disabled".
- Close the **Property Manager** display.

🗮 NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - Untitled Document						
File View Properties Project Compile Debug Device Tags Window Help						
ПОС	Property Manager - Integer Input()					
New (TimeStamp)= (Version)=1 Node=3200T/00-D17 S 14 Slot Dual PS Node Cogic=() Scan Rate=1 ms Primary IP=192.168.0.1 Secondary IP=192.168.1.1 MB=NP Modbus TCP MB=NP Modbus TCP Integer Error Detection=(MasterEDA) TCP Integer Status=(MasterESA) Port=NP ModBus TCP ModBus TCP ModBus TCP ModBus TCP Node Port=NP ModBus TCP ModBus TCP ModBus TCP Node Primary IP=89.8.5.67 Primary IP=89.8.5.67 Unit ID=0 PointGroup=Bool Output	Card Properties Type Description Param/T ag Card PointGroup=Integer Input Param StartAddress 0 Param InterScanDelay(ms) 100 Param RegisterType Holding Register Image: Common term Int Integer Status II_ESA Disable Bool Send Request II_SRA Int Channel I/O Tag Comment Integer Input 00 II_00A Integer Input 00 Input 03 Input 04 Input 04 Input 05 Input 04 Input 05 Input 05 Input 04 Input 05 Input 05 <t< th=""></t<>					
PointGroup=Integer Input PointGroup=Empty Node=Empty	Disabled - Input 14 II_114A Integer Input 15 II_115A					
Port=NP ModBus TCP Slave Port						
I III Device=MBSerial	Ilser RTP					
	User:RTP					

Save the Project

• Before proceeding, save the project. From the NetArrays File menu select Save New **Project As...** type the project name in File name: and click Save (We used "ModbusTCPMaster.dbn").

Open a new instance of NetArrays and add a 3200T Node and Rack to the I/O Configuration

• Click on the I/O Configuration Studio button in the NetArrays main toolbar . Maximize the I/O Configuration form using the Maximize Icon.

• Drag an icon **RTP3200T Node** from the I/O Configuration Toolbox **CPU Nodes->3200T Nodes->Domain->Simplex Nodes folder** to the "**Node=Empty**" position on the I/O Configuration Form. For this example, the **RTP3200T/00-D17 S 14 Slot Dual PS Node** was chosen. Select an RTP3200T Node that matches your configuration. (This example shows a domain configuration).



Add a NP ModBus TCP

• If required, in the I/O Configuration Form, expand the "**RTP3200T/00-D17 S 14 Slot Dual PS Node**" (left-click on the ⊞). In the I/O Configuration toolbox expand the **ModBus** branch (left-click on the ⊞). Drag the **NP Modbus TCP** icon to the "**MB=Empty**". The Auto Tag Generation dialogue box will appear. Type **Slave** in the **User Card Specific Prefix** and click **OK**. The Prefix of the Tag names for the ModBus Master Card will be set to "**Slave**". This does not affect point group tag names.

I/O Configuration Form			I/O Configurat	ion Toolbox				
NetArrays Developer Studio - Registered to	RTP Corp Version 9.2.0.46 -	Untitled Document - [IOC]						
File View Properties Project Comp	File View Properties Project Compile Debug Device Tags Window Help							
Image: Status Image: Status Image: Status Image: Status <t< th=""><th>Auto Tag Generation for Use Eroject Prefix: RTP Assign Channel Tag Nam Eiltered Unattached Databe</th><th>NP Modbus TCP</th><th></th><th>I/O Configuration I/O Configur</th></t<>	Auto Tag Generation for Use Eroject Prefix: RTP Assign Channel Tag Nam Eiltered Unattached Databe	NP Modbus TCP		I/O Configuration I/O Configur				
Destination	HW#1 HW#2	<> HW #3 <> HW	#4 Default	•				
		Device=Simula	or	User:RTP				

Add a ModBus TCP Point Groups to the I/O Configuration in the slave port.

Add 2 ModBus Slave Point Groups

• Move the mouse pointer to the "Node=ModBus TCP Node" icon on the I/O Configuration Form and expand it by clicking on the I. Then, expand the Port=NP Modbust TCP slave port and Node= NP Modbus Slave TCP node. Expand the **Point Groups** on the I/O Configuration Toolbox by clicking on the I. Select the **Bool Input** Point Group icon in the I/O Configuration toolbox and drag it to the "**PointGroup=Empty**" placeholder under the Node in the I/O Configuration form. The Auto Tag Generation dialogue box will appear. In response enter **BI**_ in the **Use Card Specific Prefix**, and click **OK**.

• Similarly drag an Integer Output point group and use IO_ for the Use Card Specific Prefix.



18



The ModBus Slave I/O Configuration should look as pictured below.

On the following pages you will be configuring the NP ModBus Slave TCP and Point Group properties. Note that when you enter text or a number into the **Property Manager**, it <u>must</u> be followed by **Enter**.

ModBus Slave TCP Properties

• Left click on the "**MB=NP Modbus TCP**"
 to view the icon . Then, expand "Modbus TCP" by left clicking on
 . Right click on Port=NP Modbus TCP slave port and click on properties to display its **Property Manager**. Expand the window as required to edit all applicable parameters.

- The Tag assigned to Integer Error Detection is SlaveEDA.
- The Tag assigned to Integer Status is SlaveESA.

• An **IP** address must be entered so that the ModBus Slave TCP Port can communicate with the ModBus Master TCP Port. Enter **89.8.5.67** for the Primary IP (the same as the NP ModBus TCP Master port Address) and **90.8.5.67** for the Secondary IP.

- Specify an I/O Timeout(ms) value of 200 milliseconds between messages retries.
- Close the Property Manager display.

KetArrays Developer Studio - Registered to RTP Corp Version	ion 9.2.0.46 - Untitled Document	
File View Properties Project Compile Debug Device	Tags Window Help	
) II 🤌 💐 🖬 🖬 🖷 🖼 🖳 🔍	
IOC (Version)=1 Version)=1	Property Manager - NP ModBus TCP Slave Port() Type Description Param/Tag Param Port=NP ModBus TCP Slave Port Param Port=NP ModBus TCP Slave Port Param Port=NP ModBus Slave TCP Node Param Node=NP ModBus Slave TCP Node Param I/O Timeout(ms) 200 Card PointGroup=Bool Input Card PointGroup=Empty	
	User:RTP	+

ModBus Slave Bool Input Point Group

This Point Group will be reading four Bool inputs from the Coils buffer starting at address 1000.

• Select ModBus Slave Input Point Group and right click to display its **Property Manager**. Select **Properties**.

• A **StartAddress** of **1000** is entered for the starting point for this Point Group's data in the ModBus Slave Data Image.

• An InterScan Delay of 100 milliseconds is specified. This is the default value.

• The **Register Type** of this point group is "**Coil**". We will be reading Coils from the ModBus Master.

- The Tag assigned to the Integer Status is "BI_ESA".
- Bool Send Request Enabled is Disabled. This is the default value.
- The I/O Tags assigned are "BI_I00A", "BI_I01A", "BI_I02A", and "BI_I03A".
- Channel Input 04 through Input 15 are disabled by selecting "Disabled".
- Close the **Property Manager** display.

NetArrays Developer Studio - Registered to RTP Corp Version 9.2.	0.46 - Untitled Document - [IOC]
🗮 File View Properties Project Compile Debug Device T	ags Window Help – 🗗 🗙
	I 🔗 📚 🛐 📊 😐 🎬 🎬 🔛 🔍 🔍
	Property Manager - Bool Input()
□	Card Properties
	Type Description Param/Tag
Scan Rate=1 ms	Param StartAddress 1000
	Param InterScanDelay(ms) 100
Secondary IP=192.168.1.1	Int Integer Status BI_ESA
⊕ Builling Rack 14D	Disable Bool Send Request BI_SRA
	//// Channel Properties
ModDus TLP	Channel I/O Tag Comment
→	Bool Input 00 BI_100A
	Bool Input 02 BI_102A
Port=NP ModBus TCP Slave Port	Bool Input 03 BI_103A
	Disabled Input 05 BI_105A
Secondary IP=90.8.5.67	Disabled Input 06 BI_106A
🖻 🛁 Node=NP ModBus Slave TCP Node	Disabled Input 08 BI_108A
	Disabled Input 09 BI_109A
	Disabled Input 10 BI_110A
	Disabled Input 12 BI_I12A
	Disabled Input 13 BI_I13A
	Disabled - Input 15 BI_I15A
Device=Simulator	User:RTP

ModBus Slave Integer Output Point Group

This Point Group will be writing three Integer outputs into the Input Registers starting at address 0.

• Select ModBus Integer Point Group and right click to display its **Property Manager**. Select **Properties**.

• A **StartAddress** of **0** is specified for the starting point for this Point Group's data in the ModBus Slave Data Image.

• An InterScan Delay of 100 milliseconds is specified. This is the default value.

• The **Register Type** of this point group is "**Holding Register**". We will be writing data to the Input Registers.

- The Tag assigned to the Integer Status is "IO_ESA".
- Bool Send Request Enabled is Disabled. This is the default value.
- The I/O Tags assigned are "IO_O00A", "IO_O01A", and "IO_O15A".
- Channel Output 02 through Output 14 are disabled by selecting "Disabled".
- Close the **Property Manager** display.

📱 NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 🛛 - Untitled Document - [IOC]							
File View Properties Project Compile Debug Device Tags Window Help							
	🔗 😹 🗐 📊 💌 🎬 🎏 🖽 📖						
in New	Descent: Manager, Jahaner Outsut0						
	Card Properties						
Scan Bate-1 ms	Type Description Param/Lag Card PointGroup=Integer Output						
Primaru IP=192 168 0 1	Param StartAddress 0						
	Param InterScanDelay(ms) 100 Param RegisterTupe Holding Register						
+ Elilie Back 14D	Int Integer Status IO_ESA						
	Disable Bool Send Request IO_SRA						
🖾 🔤 Modbus TCP							
→ □ Integer Error Detection=(SlaveEDA)	Channel I/O Tag Comment						
	Integer Output 00 10_0004						
⊕- []] → Port=NP ModBus TCP Master Port	Integer Output 01 IO_001A						
- D- Port=NP ModBus TCP Slave Port	Disabled Output 03 10_003A						
	Disabled Output 04 10_004A						
	Disabled Output 05 10_006A						
🖻 💶 🛱 Node=NP ModBus Slave TCP Node	Disabled Output 07 10_007A						
I/O Timeout(ms)=200	Disabled Output 08 10_008A						
PointGroup=Bool Input	Disabled Output 10 10_010A						
PointGroup=Integer Output	Disabled Output 11 10_011A						
PointGroup=Empty	Disabled Output 12 IO_012A						
	Disabled - Output 14 IO_014A						
	Integer Output 15 IO_015A						
Device=Simulat	or User BTP						
Device-simula	0361.111						

Save the Project

• Before proceeding, save the project. From the NetArrays File menu select Save New **Project As...** type the project name in File name: and click Save (We used "ModbusTCPSlave.dbn").

NetArrays Project Programs

You have completed the I/O configuration of the ModBus Master TCP project and the ModBus Slave TCP project. The next step is to add some logic to the NetArrays projects program to test the Modbus TCP operation.



• Right click on the **MForm1** and select **Properties** from the pop-up menu. In the Property Manager display, type in the Tag name **MasterMBTCP**, followed by **Enter**. Close the Property Manager display

Construct the MasterMBTCP Form

• Double-click on the **MasterMBTCP Form** to display the module form. When prompted, answer **Yes** to display the Module Form.



	NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - ModbusTC	x
2	File View Properties Project Compile Debug Device Tags Window Help	. 8 ×
	▆▆▆▆▆▆▆	
Г	А В С	<u> </u>
1	Main	ſ
⊩		
2	s-a Scan	
3	∎ ⁷ ∎ Stop Scan	
4		
5	Bie MasterMBTCP	
E		
6	NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - Mod	
7		
	Form does not exist. Do you want to create it?	
Ļ		
9	Yer No.	
10		
11		
j,		
	Device=Simulator	User:F

Right click in a blank area of the page and select **Properties**.

NetArrays Develop	per Studio - Registere	d to RTP Corp	Version 9.2.	0.46	
Pro File View Pro	perties Project Co	ompile Debug	Device T	ags Window	Help
🛎 🖬 🗈 🗈		¥ 🗧 🚮 🤄		1 🤌 😹 🚦	III. •
Α	В	С	D		E •
1.					1
1	Properties				
	Watch Plate				
2	Copy As Is		Ctrl+C		
	Copy As New				
3	Copy Tag Nam	ie(s)			
	Cut		Ctrl+X		
4	Delete		Del		
	Paste		Ctrl+V		
5	Select All		Ctrl+A		
	Find Tag(s) in I	Browser			
6	Trace Input Co	nnection(s)			
-	Help				•
		Circulator			
	Device	e=5imulator			///

• Set "**PartOfSIF**" and "**VariablesROnly**" **False**. Close the **Property Manager** Window. This will allow placing the Non-SIL MODBUS variables on this MForm.

Net	Arrays Dev	eloper Studio -	Registered to F	RTP Corp	Version	9.2.0.46			x
📴 Fil	e View	Properties Pr	oject Compile	e Debug	Device	Tags	Window	Help	
		B• (++ 🔳 (A 6 🐺 🖥		╞╺		8		
	A		в	С		D		E	
1	Property	/ Manager - ()		B					
2	Туре	Description	Param/Tag						
	Form	(Tag) Deck/Calas	MForm1	- 11					
	Param	ForeColor	&HFFFFFF &H8000012	- 11					
3	Param	FrameColor	&H80000002						
	Param	DisplayValue	True						
	Param	ExecutionMode	Horizontal						
4	Param	VariablesROnly	False						
	Param	PartOfSIF	False						
5									
			Device=Sim	ulator					

• Place the objects into the Module Form and connect the inputs to the outputs as shown in the following figures. Note: When entering a Tag name, you can either type the entire name or start typing the name and select the name from the available existing Tags. All of the I/O Tags on the 2 module forms will already exist as a function of the Auto Tag Generator. The Tag Prefix will be Master for BO_,and II_.

• Add variables to the **MasterMBTCP** MForm as shown below. These variables will drive the ModBus source variables.

Note: comments have been added to the MForms for clarification. They are not needed for program operation.

NetArrays Developer Studio - Reg	istered to RTP Corp Version 9.2.0.46 -	ModbusTCPMaster.dbn - [MasterMBTCP]
Ҏ File View Properties Projec	t Compile Debug Device Tags V	Nindow Help
	₽₩₩ 20	🗞 🔡 💷 🖷 🔛 🔳 📖
A B		
ModBus Boolean Master Or	Itouts	
Max BO ESA	BO SRA	
2 K - 15 - 1 - 1	∎┥╷-(▼)∎	T-1 FIG TA FEL J SIN COS tan tañ e* X ³ In
	Output	10g 🔽 🎑 TPC PIO 4 🗹 🔀 1844 PST PIÕ k
		+ - × + 🔤 🖻 🔂 🗠 🖬 🌆
	F-i	
		💦 🗗 🔼 🔍 🔱 👯 🛈 🕄 🗗
		방 🎨 🖸 🚾 🗠 판 🀺 🏧 💷 💽 🚺
Output BO_002A	F- I	14 18 14 14 14 14 14 14 14 14 14 14 14 14 14
		📴 🚮 💼 🏧 🎫 🎫 🏧 🏧 💽 🐽 🕫 🖎
Output BO_003A	⊢ ⊣ II	
8 ModBus Integer Master Inpu	ts	
	■-4	
	-	
	-	
IL II5A		
	- ·	
	Device=Simulator	User:RTP

Construct the ModBus Module Form in Slave TCP Project.

• In ModbusTCPSlave.dbn project, return to the Main Form by clicking on the ⁴/₁ button in the Main Toolbar.



• Right click on the **MForm1** and select **Properties** from the pop-up menu. In the Property Manager display, type in the Tag name **SlaveMBTCP**, followed by **Enter**. Close the Property Manager display

• Double-click on the **SlaveMBTCP**, object to create a new Module Form. When prompted, answer **Yes** to display the Module Form.

	NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - ModbusTCPSI 💻 💻 🗙
	占 File View Properties Project Compile Debug Device Tags Window Help 📃 🗗 🗙
	Image: A the answer and A the
T	A B C
Ĩ	1 Main
ŀ	
	2 Scan
	3 Stop Scan
ŀ	
	5 SlaveMBTCP
ŀ	
	NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - Mod
	7
	Form does not exist. Do you want to create it?
	9 Yes No
ľ	
	Device=Simulator User:RTf

Right click in a blank area of the page and select **Properties**.

🗮 NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 🛛 💷 💷 💻 🏧									
Prop File View Prop	erties Project Compile	e Debug Device	Tags	Window	Help				
				8	lik 🟓				
A	В	С	D		E •				
Ĩ									
1	Properties								
	Watch Plate								
2	Copy As Is	Ctrl+C							
3	Copy As New								
	Copy Tag Name(s)								
	Cut	Ctrl+X							
4	Delete	Del							
	Paste	Ctrl+V							
5	Select All	Ctrl+A							
	Find Tag(s) in Brows	er							
6	Trace Input Connect	tion(s)							
	Help				·				
	Device=Simu	ulator	_						

• Set "**PartOfSIF**" and "**VariablesROnly**" **False**. Close the **Property Manager** Window. This will allow placing the Non-SIL MODBUS variables on this MForm.

NetA	rrays Dev	eloper Studio -	Registered to R	۲Р Corp ۱	/ersion 9.2.0.46	🕒 🖸	
P File	View	Properties Pro	oject Compile	Debug	Device Tags	Window	Help _ & ×
2	J 🔁	8- (+ 📰 🗉	a 🖻 🐺 🔚] 🔏 💠	• 🛶 🔳 🥔	8	111.
[A	6	3	С	D		E
1	Property	y Manager - ()		B			
2	Type Form	Description (Tag)	Param/Tag MForm1				
3	Param Param Param Param	ForeColor FrameColor DisplayValue	&HFFFFF &H80000012 &H80000002 True				
4	Param Param Param	ExecutionMode VariablesROnly PartOfSIF	Horizontal False False				
5							<u>-</u>
			Device=Simul	ator			

• Add variables to the **SlaveMBTCP** as shown below. These variables will show ModBus inputs, ModBus outputs and ModBus status.



The following addresses are going to be used for the two nodes in this example:

Device Name	Туре	IP Address1	IP Address 2
MBTCPMaster	Single	89.5.7.77	90.5.8.77
MBTCSlave	Single	89.5.8.78	90.5.8.78

Enter Node IP Address and Save File for the Master ModBus TCP Node.

• Left Click on Node=3200T/00-D17 S 14 Slot Dual PS Node, select Properties, and enter the IP Addresses of your RTP3201T Node Processor (Primary IP 89.5.7.77 and Secondary IP 90.5.7.77 as shown in the picture below.)

🧱 NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 🛛 - Modb 💶 💷	x										
🗮 File View Properties Project Compile Debug Device Tags Window Help 🗕 🖞	2										
	×										
	6 3										
New											
(TimeStamp)=10/1/2020 9:53:39 PM											
⊡– ⁹⁰ g ⁰⁰ Node=3200T/00-D17 S 14 Slot Dual PS Node											
Logic=()											
Scan Rate=1 ms											
⊕ Back 14D											
Property Manager - 3200T/00-D17 S 14 Slot Dual PS Node()											
Type Description Param/Tag											
Param Node Node=3200T/00-D17 S 14 Slot Dual PS Node											
Param Scan Bate 1 ms											
Param Primary IP 89.5.7.77											
Param Secondary IP 90.5.7.77											
Param Rack Rack 14D											
Cianal Validation											
Device=Simulator											

• Click on **Properties**, select **Project ModbusTCPMaster.dbn** (name of the NetArrays project) **Properties**, and enter the IP Address of your RTP3201T Node Processor (89.5.7.77 is shown as an example) in the **IPAddress** field in the **Property Manager** window.



- Note that **PassWordDebug** and **PassWordDownload** are set to "**rtp**" by default. If your RTP32001T Node has different passwords, change the **Properties** to match. Then use **your** passwords for the download and debug steps instead of "**rtp**".
- Save the project. From the NetArrays **File** menu select **Save ModbusTCPMaster.dbn** (note that the name will be different if you saved the project file under another name).

Enter Node IP Address and Save File for the Slave ModBus TCP Node.

• Left Click on Node=3200T/00-D17 S 14 Slot Dual PS Node, select Properties, and enter the IP Addresses of your RTP3201T Node Processor (Primary IP 89.5.8.78 and Secondary IP 90.5.8.78 as shown in the picture below.) Having two IP Addresses allows the system to have a redundant port in case that communication is not possible in one of the two networks.

1	VetArr	ays Develop	er Studio	- Registe	red to	RTP Cor	p Ve	ersion 9.2	.0.46	- ModbusTCPS	. 🗆 🗙
	File V	iew Propertie	s Project	Compile	Debug	Device	Tags	Window	Help		- 8 ×
	· 🔒	◆ 3 C ++	= - -	9 🕸 🗧) 😹 🛃	hh	🏓 🎬 🔛 📕	
	New New Prope	TimeStamp)=10/ Version)=2 Node=3200T/00- V Logic=() V Scan Rate= V Primary IP=8 V Secondary I B Rack 14D MB=NP Mod	1/2020 11:20 D17 S 14 Slo 1 ms 99.5.8.78 P=90.5.8.78 dbus TCP - 3200T/(1:07 AM It Dual PS No 10-D17 S	ode 14 SIo	t Dual P				I/O Configuration CPU Nodes CPU Nodes TAS No TAS No <	des Nodes Cards 32 Channel DI 32 Channel DI 32 Channel DI 12 Channel Re 12 Channel Re 12 Channel Re
F	Tvpe	Description	Param/Tag				_				16 Channel AC 32 Channel DI
E	Param	Node Logic	Node=3200	T/00-D17 S	14 Slot D	ual PS Noc	je	2 Tag		3128 -	16 Channel DO 24 Channel DO
ŀ-	Param	Primary IP	1 ms 89.5.8.78					——	+	3134 -	32 Channel Re
	Param	Secondary IP	90.5.8.78 Back 14D							3138-	24 Channel DO
	Card	Master	MB=NP Mod	dbus TCP					+	3140 -	18 Channel DO
										3216 -	32 Channel DI
l-	-								+	3238 -	32 Channel DO
										3147 -	32 Channel DI
	_								-	3147 - 2	32 Channel AC
	-								+		32 Channel DI
	Des	tination		H	łw/#1		HW#	12	\diamond	 3159	32 Channel DO
									►	 3160 - 1	16 Channel DO
			De	evice=Simula	tor					User:RTP	//

• Click on **Properties**, select **Project ModbusTCPSIave.dbn** (name of the NetArrays project) **Properties**, and enter the IP Address of your RTP3201T Node Processor (**89.5.8.78** is shown as an example) in the **IPAddress** field in the **Property Manager** window.

NetArrays Developer Studio - Re	egistered to RTP Corp Vers	ion 9.2.0.46	- Modbus	TCPSI							
File View Properties Proj	ect Compile Debug De	vice Tags	Window	Help	_ 8 ×						
Project Moo	busTCPSlave.dbn Properties		8	lu () 🚻 🛗 🔛						
Form IOC P	operties										
New For all other	objects Mouse Right Click i	t									
(Version)=3											
D- Node=3200T/00-D17 S 14	Slot Dual PS Node										
Logic=()											
Scan Rate=1 ms											
Primary IP=89.5.8.78											
Secondary IP=90.5.8	.78										
🕀 🕀 📴 🕀 🕀 🕀											
🛨 🛃))										
		5									
Property Manager - ()	8										
Type Description	Param/Tag										
Param Default Tag Prefix	RTP										
Param (TimeStamp)	10/1/2020 5:05:41 PM										
Param (Version)	/ No										
	&HDEDEDE										
Param DebugSimColor	&HD5FFDB										
Param PassWordDebug	×××										
Param PassWordDownLoa	d ×××										
Param IPAddress	89.5.8.78										
2											
-1	Device=Simulator				User:RT						

• Save the project. From the NetArrays **File** menu select **Save ModbusTCPSIave.dbn** (note that the name will be different if you saved the project file under another name).

Verification

Downloading the Program to the node containing the master Modbus TCP node.

- Make sure that the Node processor is configured and Ethernet cables are connected.
- Connect power to the chassis power supply.
- In NetArrays, select the target node containing the Master ModBus TCP from the **Device Select** menu.



• Download the project to the Node by clicking **Device**, then **Download Project** from the **Main** Menu.

NetArrays Developer Studio - Registered to RTP Co	rp Version 9.2.0.46 - ModbusTCPMaster.dbn	
NetArrays Developer Studio - Registered to RTP Co File View Properties Project Compile Debug File View Project Compile Debug Fi	rp Version 9.2.0.46 - ModbusTCPMaster.dbn Device Tags Window Help Select Configure Status Time Synchronize Node Information Download Project Download Project w/Online Update Upload Project Update Project	
< III Device=MBTCE	Master	↓ UserBTP

• Enter the Download Password **rtp** and select **OK**.

	NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - ModbusTCPMaster.dbn 📃 💻 🗵	×
File	View Properties Project Compile Debug Device Tags Window Help	
	÷ 🖬 🖻 📼 🖬 🖬 🔚 🥻 🛶 💷 🧶 🛤 💷 🖳 🔍	
	■ IOC New (TimeStamp)=10/1/2020 9:53:39 PM (Version)=4 ■ Vode=3200T/00-D17 S 14 Slot Dual PS Node ■ Logic=() ■ Scan Rate=1 ms ■ Primary IP=89.5.7.77 ■ Secondary IP=90.5.7.77 ■ Rack 14D ■ MB=NP Modbus TCP	
	Device=MBTCPMaster User:RTP	

• Click "**Yes**" to overwrite to the current Target Node.

	NetArrays Developer Studio - Registered to RTP Corp	Version 9.2.0.46 - ModbusTCPMaster.dbn
F	ile View Properties Project Compile Debug De	evice Tags Window Help
	(TimeStamp)=10/1/2020 9:53:39 PM	Download : MBTCPMaster
		Perform download and overwrite MBTCPMaster target node ?
		<u>Y</u> es <u>No</u>
j	<	Pan-MPTCPM pater

- Click on the
 (Run) button in the Main Toolbar to enter Debug Mode.
- Enter the Debug Password **rtp** and select **OK**.

NetArrays Developer Studio - Registered to RTP Corp Version 9.2.0.46 - ModbusTCPMaster.dbn	
File View Properties Project Compile Debug Device Tags Window Help	
IOC Image: Wew Image: Westion]=4 Image: Wode=32007/00-D17 S 14 Slot Dual PS Node Image: Wode=32007/00-D17 Slot Dual PS Node <td< th=""><th></th></td<>	
Device=MBTCPMaster IP=89.5.7.77 User: BTF	•

• The background color of the Module and Flow Chart forms will change to color light blue to indicate that debug is active. While in debug mode, the Run button is disabled and the End button is enabled.

Downloading the Program to the node containing the slave Modbus TCP node.

- Make sure that the Node is configured and Ethernet cables are connected.
- Connect power to the chassis power supply.
- In NetArrays, select the target node containing the Slave ModBus TCP from the **Device Select** menu.

	NetArrays De	veloper Stud	io - Regist	tered to RTF	Corp	Versi	on 9.2.0.46 - Modbus	TCPSlave.dbn - [Ma	ain]			• ×
	🗅 File View	Properties	Project	Compile	Debug	Dev	ice Tags Window	Help				- 8 ×
	🖻 🔒 💽	B• C++ 🖿	I 🛃 🗗	1 🏦 📕			Select		•		None	
두		A			3		Configure				Default	
ł.							Status				MBTCPMaster	
1			\geq	Main			Time Synchronize			\checkmark	MBTCSlave	
				+			Node Information				Simulator	
2			0	Scan			Download Project			Г		_
II.							Download Project w/	Online Update				
3				Stop Sca	an		Haland Desired					
II.	1						Upload Project					
1			B	RTPDiag	l		Update Project		•	J		
IF												
l t			-	SlaveME	<u>BTCP</u>							
IF												
e												i
				[Device=M	IBTCS	ilave				User:RTP	

• Download the project to the Node by clicking **Device**, then **Download Project** from the **Main** Menu.

NetArrays Developer Studio - Registered to RTP Corp 1	/ersion 9.2.0.46 - ModbusTCPSlave.dbn - [Main]	
🔁 File View Properties Project Compile Debug	Device Tags Window Help	
	Select >	
A B	Configure	Ε
	Status	
1 Main	Time Synchronize	
	Node Information	
2 Scan	Download Project	
3 Stop Scan	Download Project w/Online Update	
	Upload Project 🕨	
4 RTPDiag	Update Project 🕨	
5 SlaveMBTCP		
6		İ
Device=M	BTCSlave	User:RTP

• Enter the Download Password **rtp** and select **OK**.

File View Properties Project Compile Debug Device Tags Window Help Image: Compile Debug Device Tags Window Help<	📕 NetArrays Dev	veloper Studio - R	egistered to RTP Corp Version	n 9.2.0.46 - Modbus	TCPSlave.dbn - [Main]	
A B C D A B C D A B C D A B C D B Scan B Sca	🐴 File View	Properties Proj	ect Compile Debug Devic	e Tags Window	Help	_ 8 ×
A B C D Main Main B-G Scan J B RTPDiag B SlaveMBTCP	🖻 🖬 💽	📴 C++ 🧱 🛒	IEI\\$E <mark>\</mark> {⇔ ⇒	II 🤌 😹 🚼	📊 单 🎬 🏙 🗷	
1 2 3 4 5		А	В	С	D	i
4 5 S S S S S S S S S S S S S S S S S S	1 2 3		Main Scan Scan Stop Scan	Download	Password	
Device=MBTCSIave Utser:BTP	4		Back RTPDiag		Liser BTP	

• Click "**Yes**" to overwrite to the current Target Node.

	NetArrays Developer Studio - Registered to RTP Corp	Version 9.2.0.46 - ModbusTCPSlave.	dbn - [Main]	
•	File View Properties Project Compile Debug	Device Tags Window Help		_ 8 ×
	≱∎ ∎∎⊨■⊠⊟¥≡ <mark>∕</mark> ∢		• 🌇 🔛 🖳 🕷	*
T	A B	С	D	E
1 2 3	Main Scan Scan	Download : MBTCSlave	nload and overwrite MBTC	Slave target node ?
4	Bie <u>RTPDiag</u> Bie <u>SlaveMBTCP</u>		Yes	
		Device=MBTCSlave		User:RTP

- Click on the 📕 (Run) button in the Main Toolbar to enter Debug Mode.
- Enter the Debug Password **rtp** and select **OK**.

NetArrays Developer Studio - Registered to RTP Corp.	Version 9.2.0.46 - ModbusTCPSlave	.dbn - [Main]	
웜 File View Properties Project Compile Debug	Device Tags Window Help		_ 8 ×
	(==) II (> (% 1 (() () () () () () () () () () () () () ()	• 🌃 🔛 📖 🖦	
A B	С	D	E
1 2 3 4 5 Bio	Debug Pr	assword	
	Device=MBTCSlave IP=89.5.8.78		User:RTP

Verify Module Forms: Master and Slave

• In the Project **ModbusTCPMaster.dbn**, return to the Main Form of this project by clicking on the difference button in the Main Toolbar.

- double-click on the MasterMBTCP object to open the Module Form.
- Observe that the ModBus card and Point Group status variables equal zero.

Observe that the values from the Bool Output Point Group (BO) and Integer Input Point Group (II) are changing.

• In the Project **ModbusTCPSIave.dbn**, return to the Main Form of this project by clicking on the $\stackrel{\frown}{\Box}$ button in the Main Toolbar.

- double-click on the **SlaveMBTCP** object to open the Module Form.
- Observe that the ModBus card and Point Group status variables equal zero.

Observe that the values from the Bool Input Point Group (BI) and Integer Output Point Group (IO); are changing.

• Place the ModbusTCPMaster.dbn and ModbusTCPSlave.dbn projects side to side to compare the changing variable values.

• Observe* that the values from the Bool Input Point Group (BI) are equal to the values of Bool Output Point Group (BO); the variable BI_I00_A matches the variables BO_O00_A. The same should be true for the other three sets of points.

• Observe* that the values from the Integer Input Point Group (II) are equal to the values of Integer Output Point Group (IO); the variable II_I00_A matches the variables IO_O00_A. The same should be true for the other two sets of points.

* Note: Due to transmission delays, there will be short periods of time when the output variables are being driven before the input variables are updated. However, the inputs should match the outputs most of the time.

• A typical run of the two project simultaneously is shown below.

• If any inputs do not match the outputs, carefully check the configuration of the ModBus card and the Point Groups.



Status Window

The Status Window should show the RTP3201T Node's **Device Status:** = "**Running**". The bottom panel should be empty to indicate that there are no I/O Errors. The top panel shows historical messages and should not be of concern.

	NetArray	ys Developer Studio - Registered to RTP Corp Version 9.2.0.46 - ModbusTCPMaster.dbn - [
•	占 File V	/iew Properties Project Compile Debug Device Tags Window Help	_ 8 ×
	2		: 🛃 🔍 🐘
Ē		A B Disabled: Forward C	D
Í.		Main	
Ľ			
2		Scan	
ŀ			
3		stop Scan	
II.			
4			
5		Bo MasterMBTCP	
⊩			
6		MBTCPMaster	×
		Device Name: MBTCPMaster Primary: Nonredundant Program: ModbusTCPMaster	
Ľ		Device Address: 89.5.7.77 Pass/Sec: 1000	
8		Device Version: 9.2.8.39 Device Status: Running	
Ŀ		I♥ UpdateHelp	
9		10/01/20 16:09:04:625 P.N. 3200T[2] D00 Built Sep 30 2020 SW A9.2.8.39 BL A9.2.0.39 HW 11 10/01/20 16:09:04:628 C C Rack 0. CP3200T Built Sep 30 2020 SW A9.2.8.39 HW 57	
E		10/01/20 16:10:54:606 P N New File Received GPROG.PGM	
10			
11			
ŀ			
12	:		
┣			
13		¢	>
14			
Ē			
15			
┣			
16			
		Device=MBTCPMaster Use	cBTP

Status of ModbusTCPMaster.dbn project

🗮 NetArrays Developer Studio - Registered to RTP Corp. - Version 9.2.0.46 🛛 - ModbusTCPSlave.dbn - [Main] 🔁 File View Properties Project Compile Debug Device Tags Window Help _ 8 X 🗃 🖬 🖪 🖿 🖬 🖬 🖬 🖉 🧧 Select ■, ۲ Configure ... Status 😽 Main Time Synchronize Node Information ø-ø Scan Download Project Download Project w/Online Update Stop Scan Upload Project ۲ B RTPDiag Update Project ۲ MBTCSlave Device Name: MBTCSlave Primary: Nonredundant Program: ModbusTCPSlave Device Address: 89.5.8.78 Pass/Sec: 1000 Device Version: 9.2.8.39 Device Status: Running ✓ Update Help 10/01/20 13:06:50:677 P.N. 3200T[2] D00 Built Sep 30 2020 SW A9.2.8.39 BL A9.2.0.39 HW 11 10/01/20 13:06:50:680 C C Rack 0 CP3200T Built Sep 30 2020 SW A9.2.8.39 HW 56 10/01/20 13:07:45:980 P.N. New File Received GPR0G.PGM < > Device=MBTCSlave User:RTP

Status of ModbusTCPSlave.dbn project