# STRIDE MODBUS GATEWAY OPERATING MODE EXAMPLES



I٨	<u>I THIS CHAPTER</u>
	Example 1: TRANSPARENT Mode, with Modbus TCP Master (Client) Devices to Modbus RTU/ASCII Slave Devices
	Example 2: TRANSPARENT Mode, with Modbus RTU/ASCII Master Devices to Modbus TCP Slave (Server) Devices
	Example 3: AGENT Mode, with Modbus TCP Master (Client) Devices to Modbus RTU/ASCII Slave Devices
	Example 4: AGENT Mode, with Modbus RTU/ASCII Master Devices to Modbus TCP Slave (Server) Devices

## EXAMPLE 1: TRANSPARENT MODE, WITH MODBUS TCP MASTER (CLIENT) DEVICES TO MODBUS RTU/ASCII SLAVE DEVICES



Provide power to the *STRIDE* Modbus Gateway, connect to an Ethernet port and log on to the gateway configuration interface.

Our example assumes default values in the gateway. Click Load Factory Default.

Set the operation mode to Transparent Mode.

Browse to "Operating Settings" to select S1 and set its parameters, as shown in Figure 1.

$\leftrightarrow$ $\rightarrow$ O	192.168.0.2	249/index_v3.5.html					□ ☆	r∕≣	h is	›
				Strid	e				Exit	
									Help	
Device Information				Operating Settings						
<ul> <li>Network Settings</li> <li>Operating Settings</li> </ul>		S1		S2		\$3	S	4		
Serial Settings		Serial Port Mode	RTU Master	~						
Upgrade Firmware		Filter Enable								
Change Password		Filter ID Start	1							
<ul> <li>Load Factory Default</li> <li>System Reboot</li> </ul>		Filter ID End	247							
Data Diagnostics		Protocol	TCP 🗸							
		Gateway Modbus TCP Port	502							
					Save					

Figure 1. STRIDE Modbus Operating Settings.

Click Save.

Then browse to "Serial Settings" to configure serial port S1 as shown in Figure 2.

$\leftrightarrow$ $\rightarrow$ O	192.168.0	.249/index_v3.5.html					∿≣	l~	È	
			Stric	e					Exit	
									Help	
Device Information			S	erial Settings						
Network Settings     Operating Settings			S1	S2	S3	S4				
Serial Settings		Alias	UART_1	UART_2	UART_3	UART	4			
Import/Export     Upgrade Firmware		Baudrate	115200 ∨	115200 🗸	115200 ~	11520	0 ~			
Change Password		Databits	8 ~	8 ~						
Load Factory Default     System Report		Stopbits	1 ~	1 ~	1 ~	1 ~				
Data Diagnostics		Parity	None 🗸	None 🗸	None 🗸	None				
		RTS Control	Off ~	Off ~	Off ~	Off				
		Hardware Interface	RS-232 V	RS-232 ~	RS-232 ~	RS-23	2 ~			
		Protocol(selected on Operating Settings page)	RTU Master $~ \lor ~$	RTU Slave $\sim$						
				Save						

Click the Save button to save and apply the changes.

Figure 2. STRIDE Modbus Serial Settings.

Connect the *STRIDE* Modbus Gateway serial port S1 to your PC's serial port (possibly requiring a USB to serial converter), and run Modbus Slave software on the PC. The Modbus Slave parameters must be configured as shown in Figure 3.

Connection	_	
Serial Port	~	OK Cancel
Serial Settings		
Prolific USB-to-Serial Comm Port (CO)	(14) ~	
115200 Baud V Mode © RTU \OAS	CII	
8 Data bits V		
None Parity 🗸 🗌 DSR 🗌 C	TS 🗹 RTS Tog	gle
1 Stop Bit V [ms] R	TS disable delay	
TCP/IP Server		
IP Address	P	ort
192.168.0.226	× 5	502
Any Address IPv4		
Ignore Unit ID O IPv6		

Figure 3. Modbus Slave Configuration.

Click OK button (shown in Figure 3) to return to the data window shown in Figure 4.

Modbus Slave -	[Mbslave1] nnection Setup 크   브 直   💡	Display	View	Window	Help	_	× - 8 ×
Alias	00000						^
0	315						
1	232						
2	423						
3	0						
4	0						
5	0						
6	0						
7	0						~
For Help, press F1.		Port 4: 1152	200-8-1	N-1			

Figure 4. Modbus Slave.

Open Modbus Poll on your PC and set the parameters as shown in Figure 5.

Connection Setup	$\searrow$	>
Connection		OK
Modbus TCP/IP	~	
Serial Settings		Cancel
Prolific USB-to-Serial Co	omm Port (COM4)	Mode
115200 Baud $ \smallsetminus$		● RTU ○ ASCII
8 Data bits $\sim$		Response Timeout
None Parity $\sim$		- Delau Between Polls
1 Stop Bit 👘 🖂	Advanced	10 [ms]
Remote Modbus Server		
IP Address or Node Nar	me	
192.168.0.249		~
Server Port	Connect Timeout	<li>IPv4</li>
502	3000 [ms]	O IPv6

Figure 5. Modbus Poll Configuration.

Click OK button (shown in Figure 5) to return to the data window shown in Figure 6.

ł,	* Modbus Poll - [Mbpoll1] ー ロ ×								
200	File Edit Co	onnection Setup	Functions Display View Window Help 🗕 🗗 🗙						
Ľ	) 🖻 🖥 🎒 🛛	×  🗖   🖳 🏚	1   J.   05 06 15 16 17 22 23   TC 🗵   🤋 📢						
Тх	Tx = 38: Err = 0: ID = 1: F = 03: SR = 1000ms								
	Alias	00000	^						
Г	71103	315							
1		232							
2		423							
3		0							
4		0							
5		0							
6		0							
7		0							
8		0	¥						
For Help, press F1. [192.168.0.249]: 502									

Figure 6. Modbus Poll.

Now let's experiment with our master reading data from our slave. Enter data in address 1 and address 2 in Modbus Slave and watch as Modbus Poll reads that data, as shown in Figure 7.

📲 Modbus Slave - [Mbslave1]		Nodbus Poll - [	[Mbpoll1]					
📴 File Edit Connection Setu	p Display View Window	👺 File Edit Co	onnection Setup	Functions Display \	View			
D 📽 🖬 🚳 🛅 🗒 🎰 '	₹ <b>№</b> ?	🗅 🖻 🖥 🎒	×  🗖   🖳 🏚		17			
ID = 1: F = 03	D = 1: F = 03 Tx = 224: Err = 0: ID = 1: F = 03: SR = 1000ms							
Alias 0000	)	Alias	00000					
0 500		0	500					
1 15	)	1	150					
2 2	5	2	25					
3	)	3	0					
4	)	4	0					
5	)	5	0					
6	)	0	0					
7	)	8	0					
For Help, press F1.	Port 4: 115200-8-N-1	For Help, press F1.		[192.168.0.249]: 502				

Figure 7. Data Test Result.

## EXAMPLE 2: TRANSPARENT MODE, WITH MODBUS RTU/ASCII MASTER DEVICES TO MODBUS TCP SLAVE (SERVER) DEVICES



Provide power to the *STRIDE* Modbus Gateway, connect to an Ethernet port and log on to the gateway configuration interface.

Our example assumes default values in the gateway. Click Load Factory Default.

Set the operation mode to Transparent Mode. Browse to "Operating Settings" to configure serial port S1 as shown in Figure 9. Note that the Remote IP Address is your PC's IP address, since the PC (Modbus Slave) is the slave device for this example.

Click Save.



Figure 9. STRIDE Modbus Gateway Serial Settings.

Browse to *STRIDE* Modbus "Serial Settings" to select S1 and set its parameters, as shown in Figure 10. Click Save to save and apply the changes.

$\leftarrow$ $\rightarrow$ O	192.168.0.249/index_v3.5.html				🗆 🛨 🖕 🗠	<u>e</u>
		Strid	e		Ex	cit
		2			He	lp
Device Information		5	Serial Settings			
Network Settings     Operating Settings		S1	S2	S3	S4	
Serial Settings	Alias	UART_1	UART_2	UART_3	UART_4	
Import/Export     Upgrade Firmware	Baudrate	115200 ~	115200 ~	115200 ~	115200 ~	
Change Password	Databits	8 ~	8 ~			
Load Factory Default     System Dehast	Stopbits	1 ~	1 ~	1 ~	1 ~	
Data Diagnostics	Parity	None 🗸	None 🗸	None 🗸	None 🗸	
	RTS Control	Off ~	Off ~	Off ~	Off ~	
	Hardware Interface	RS-232 ~	RS-232 V	RS-232 ~	RS-232 ~	
	Protocol(selected on Operating Settings page	RTU Slave V	RTU Slave V			
			Save			

Figure 10. STRIDE Modbus Gateway Serial Settings.

Connect the *STRIDE* Modbus Gateway serial port S1 to your PC's serial port (possibly requiring a USB to serial converter), and run Modbus Poll software on the PC. The Modbus Poll parameters must be configured as shown in Figure 11.

[]	Connection Setup	×
This value is the COM port assigned by your PC. It can be found in the Device Manager.	Connection Serial Port Serial Settings Prolific USB-to-Serial Comm Port (COM4) 115200 Baud 8 Data bits None Parity 1 Stop Bit Advanced	OK Cancel Mode RTU ASCII          Response Timeout         1000         [ms]
	Remote Modbus Server       IP Address or Node Name       192.168.0.249       Server Port       Connect Timeout       502     3000	<ul> <li>IPv4</li> <li>IPv6</li> </ul>

Figure 11. Modbus Poll Configuration.

Click OK in Figure 11 to return to the Modbus Poll main window.

Select Setup - Read/Write Definition.

Read/Write	Definition	×
Slave ID:	1	OK
Function:	03 Read Holding Registers (4x) $\smallsetminus$	Cancel
Address:	0 Protocol address. E.g. 400	11 -> 10
Quantity:	10	
Scan Rate:	1000 [ms]	Apply
Disable	Write Disabled	
🗌 Disabl	e on error Re	ad/Write Once
View Rows		antitu
Hide A	Alias Columns PLC Addresse ss in Cell Enron/Daniel	is (Base 1) Mode

Figure 12. Modbus Poll Read/Write Definition.

Enter the Slave ID of the Gateway as shown in Figure 12. This is the Slave ID you assigned to the Gateway in its "Operating Settings" configuration.

Click OK shown in Figure 12 to return to the application interface shown in Figure 13.

Ľ	Modbus Poll - [	Mbpoll1]		×					
<b>.</b>	File Edit Co	onnection Setup	Functions Display View Window Help	e ×					
	) 🖻 🖪 🎒 🛛	×   🗂   🖳 🌢	1   Л   05 06 15 16 17 22 23   TC 🖭   🤋	<b>N</b> ?					
Tx Tir	Tx = 14: Err = 14: ID = 1: F = 03: SR = 1000ms Timeout Error								
	Alias	00000		^					
0		0							
1		0							
2		0							
3		0							
4		0							
5		0							
6		0							
7		0							
8		0		~					
For	Help, press F1.		Port 4: 115200-8-N-1						

Figure 13. Modbus Poll Initial Connection.

The Modbus Poll software will indicate a Timeout Error until the Modbus Slave software is connected in the next step.

Run the Modbus Slave software on your PC and set the parameters shown in Figure 14.

Modbus TCP/IP	~	UN
		Cancel
Serial Settings		
Prolific USB-to-Seri	ial Comm Port (COM4) 👘 🖂	
115200 Baud $\smallsetminus$	Mode RTU O ASCII	
8 Data bits $\sim$	Flow Control	
None Parity 🔍 🗸	DSR CTS RTST	oggle
None Parity 🛛 🖂 1 Stop Bit 🚽 🖂	DSR CTS RTST	oggle IV
None Parity V 1 Stop Bit V ICP/IP Server	DSR CTS RTST	oggle V
None Parity V 1 Stop Bit V I CP/IP Server P Address	DSR CTS RTST	Port
None Parity 1 Stop Bit I CP/IP Server P Address 192.168.0.226	DSR CTS RTST	Port 502
None Parity 1 Stop Bit I CP/IP Server P Address 192.168.0.226 Any Address	OSR CTS ♥ RTS T 1 [ms] RTS disable dela	Port 502

Figure 14. Modbus Slave Configuration.

Click OK shown in Figure 14 to return to the Modbus Slave main window.

Select Setup - Slave Definition.

Slave Definition	<
Slave ID: 11 OK Function: 03 Holding Register (4x)  Cancel Address: 0 Quantity: 10 View Rows ① 10 0 20 0 50 0 100 0 Fit to Quantity	
Hide Alias Columns PLC Addresses (Base 1)	
Error Simulation Skip response (Not when using TCP/IP) (ms] Response Delay Return exception 06, Busy	

Figure 15. Modbus Poll Read/Write Definition.

Enter the Slave ID as shown in Figure 15. This is the Slave ID you assigned to the Modbus TCP Client in the "Operating Settings" configuration.

Click OK shown in Figure 15 to return to the application interface shown in Figure 16.

5	Modbus Slave	- [Mbslave1]					$\times$
	File Edit Co	onnection Setup	Display View Wi	indow	Help		- 8 ×
Ē	) 🖻 🖬 🎒	- 15 1 ?	№?				C2
ID	= 1: F = 03						
	Aller	00000					^
	Allas	00000					
0		0					
1		0					
2		0					
3		0					
4		0					
5		0					
6		0					
7		0					~
For	Help, press F1.		[Any IP Address]: 502	2			

Figure 16. Modbus Slave.

Now let's experiment with our master reading data from our slave. Enter data in address 2 and address 3 in Modbus Slave and watch as Modbus Poll reads that data, as shown in Figure 17.

Modbus Slave - [Mbslave1]     Modbus Poll - [Mbpoll1]												
🛒 File Edit O	Connection Setup	Display View	Window	Help	📴 Fi	le Edit	Connection	Setup	Functions	Display	View	Wind
🗅 🖻 🖬 🎒	1 🗄 👜 💡	<b>k?</b>				ê 🛛 🖨	X 🗖		05	06 15 10	6 17	22 23
ID = 1: F = 03			Tx = 1	197: Err	= 642: ID	= 1: F =	= 03: SR =	1000ms	S			
Alia	s 00000					Ali	as	00000				
0	0				0			0				
1	322				1			322				
2	46				2			46				
3	0				3			0				
4	0				5			0				
5	0				6		_	0				
6	0				7			0				
7	0				8			0				
For Help, press F1.		[Any IP Address]	: 502		For He	p, press F1.			Port 4: 1152	00-8-N-1		

Figure 17. Data Test Result.

#### EXAMPLE 3: AGENT MODE, WITH MODBUS TCP MASTER (CLIENT) DEVICES TO MODBUS RTU/ASCII SLAVE DEVICES



Provide power to the *STRIDE* Modbus Gateway, connect to an Ethernet port and log on to the gateway configuration interface.

Our example assumes default values in the gateway. Click Load Factory Default.

Set the operation mode to Agent Mode. Browse to "Operating Settings" to configure serial port S1 as shown in Figure 18. Click Save.

$\leftrightarrow$ $\rightarrow$ $\circlearrowright$ 192.16	8.0.249/index_v3.5.html				□ ☆	ৌ	r b	·
		St	de				Exit	
							Help	1
Device Information			Operating	Settings				
Network Settings     Operating Settings	S1	S2		\$3	S4	ł		
Serial Settings	Serial Port Mode	RTU Master 🗸						
Agent Settings     Gateway Settings	Filter Enable							
• Message List	Filter ID Start	1						
Oata in Gateway Memory     Import/Export	Filter ID End	247						
Upgrade Firmware	Protocol	TCP $ \smallsetminus $ ( Note: In Agent m	de, you can mod	ify the Modbus port on the 'Gateway S	ettings' page. )			
Change Password     Load Factory Default	Gateway Modbus TCP Port	502	( Note: In Agen	t mode, you can modify the Modbus po	ort on the 'Gateway Se	ettings' pa	ge.)	
<ul> <li>System Reboot</li> <li>Data Diagnostics</li> </ul>								
-			Sav	ve				

Figure 18. STRIDE Modbus Operating Settings.

Browse to "Serial Settings" to select S1 and set its parameters, as shown in Figure 19.

Click Save to save the changes.

$\leftrightarrow$ $\rightarrow$ Ö 192.168.0	249/index_v3.5.html			* <b>v</b>		∑ ≣	h	Ŕ		
		<b>Str</b> ic	e					Exit		
								Help		
Device Information	Serial Settings									
Network Settings     Operating Settings		S1	52	53	54					
Serial Settings	Alias	UART_1	UART_2	UART_3	UART	_4				
Agent Settings     Gateway Settings	Baudrate	115200 ∨	115200 ~	115200 ~	11520	- 0				
Message List	Databits	8 ~	8 ~	8~	8 ~					
Data in Gateway Memory	Stopbits	1 ~	1 ~	1 ~	1 ~					
Upgrade Firmware	Parity	None 🗸	None 🗸	None 🗸	Niome	~				
Change Password	Flow Control	None ~	None ~	None ~	Niome	~	5			
Load Factory Default     System Reboot	Hardware Interface	RS-232 ~	RS-232 ~	RS-232 ~	Rt8-21	2 ~				
	Protocol(selected on Operating Settings page)	RTU Master $$	Disabled V	Disabled ~	Disabl	led .	4			
			*							
			Save							

Figure 19. Serial Settings Configuration.

Browse to "Gateway Settings" and configure the parameters as shown in Figure 20.

Click Save to save and apply the changes.

$\leftarrow \ \rightarrow \ \heartsuit$	192.168	3.0.249/index_v3.5.html					□ ☆	h	È	
				Stric	le			E	Exit	
								H	lelp	
Device Information				(	Gateway Settings					
Network Settings     Operating Settings		Gateway Modbus ID	1	]						
Serial Settings		Protocol	TCP V							
Agent Settings     Gateway Settings		Gateway Modbus Port	502	]					-	
• Message List		Default Timeout(ms)	1000	]						
• Data in Gateway Me	mory	Inter-packet TX Delay(ms)	100	]						
Upgrade Firmware										
Change Password										
Load Factory Default     System Reboot					Save					

Figure 20. STRIDE Modbus Gateway Operating Settings.

Browse to Message List-Add Message to add a message, shown in Figure 21.

$\leftarrow$ $\rightarrow$ D	192.168.0.2	249/index_v3.5.html							Ń	h	Ŕ	
				S	tride						Exit	<b>₽</b>
Device Information							Add Message	Delete Message	Modify	Message	Help	
Network Settings     Operating Settings     Serial Settings     Agent Settings		Display 50 V per page	Refresh				¥	Search:				
Gateway Settings		Item Serial Port Slave ID Allas Message Configuration										
·····● Message List ·····● Data in Gateway Men	nory				Slave Alias	Device_Alias					T	
Import/Export     Lingrade Firmware					Serial Port	S1 ~					}	
Change Password		Refresh to get latest status.			Slave ID	1						
<ul> <li>Load Factory Default</li> <li>System Reboot</li> </ul>					Function	03 Holding Regis	ster(4x) ∨					
					Data Start Addr	0					]	
					Data Length	10						
					Mapping Addr	0	Assign	n next available add	ress			
						OK		Cance			1	

Figure 21. Add Message.

Connect the *STRIDE* Modbus Gateway's serial port S1 to PC's serial port (possibly requiring a USB to serial converter), and run the Modbus Slave software on PC. The Modbus Slave parameters must be configured as shown in Figure 22.

	Connection Setup $ imes$
This value is the COM port assigned by your PC. It can be found in the Device Manager.	Connection OK Serial Port Cancel
	Serial Settings
	Prolific USB-to-Serial Comm Port (COM4)
	115200 Baud       Mode         8 Data bits <ul> <li>RTU ASCII</li> <li>Flow Control</li> <li>DSR CTS RTS Toggle</li> <li>Image: Image: Im</li></ul>
	TCP/IP Server       Port         IP Address       Port         192.168.0.226       ✓         ✓ Any Address       ● IPv4         Ignore Unit ID       ○ IPv6

Figure 22. Modbus Slave Configuration.

Click OK as shown in Figure 22 to return to the application interface shown in Figure 23.

📓 Modbus Slave	- [Mbslave1]					×
🕎 File Edit C	onnection Setup	Display View	Window	Help		- 8 ×
🗅 🛸 🖬 🎒	- 1 🗄 👜 💡	₩?				
ID = 1: F = 03						
Alias	00000					
0	315					
1	232					
2	423					
3	0					
4	0					
5	0					
6	0					
7	0					~
For Help, press F1.		Port 4: 115200-8-	N-1			

Figure 23. Modbus Slave.

Open Modbus Poll on your PC and set the parameters as shown in Figure 24.

Connection Setup	$\searrow$	2
Connection		OK
Modbus TCP/IP	$\sim$	
Serial Settings		Cancel
Prolific USB-to-Serial Co	omm Port (COM4)	Mode
115200 Baud $\smallsetminus$		● RTU ○ ASCII
8 Data bits $\sim$		Response Timeout 1000 [ms]
None Parity $-\sim$		- Delau Between Polls
1 Stop Bit 👘 🖂	Advanced	10 [ms]
Remote Modbus Server		
IP Address or Node Nar	me	
192.168.0.249		~
Server Port	Connect Timeout	IPv4
502	3000 [ms]	

Figure 24. Modbus Poll Configuration.

Click the OK button shown in Figure 24.

Now let's experiment with watching data as it is read from Modbus Slave by the gateway then read from the Gateway by Modbus Poll. Enter data in address 1 and address 2 in Modbus Slave and watch the values change in Modbus Poll, as shown in Figure 25.

📲 Modbus Slave - [Mbslave1]		📲 Modbus Poll - [	[Mbpoll1]				
📴 File Edit Connection Setur	Display View Window	📴 File Edit Co	onnection Setup	Functions Display View			
D 🗳 🖬 🎒 🗂 🖳 👜 🐧	? <b>N</b> ?	🗅 🖻 🖥 🎒	×  🗖   🖳 🏚				
D = 1: F = 03 Tx = 224: Err = 0: ID = 1: F = 03: SR = 1000ms							
Alias 00000		Alias	00000				
0 500		0	500				
1 150		1	150				
2 25		2	25				
3 0		3	0				
4 0		4	0				
5 0		5	0				
6 0		7	0				
7 0		8	0				
For Help, press F1.	Port 4: 115200-8-N-1	For Help, press F1.		[192.168.0.249]: 502			

Figure 25. Data Test Result.

Now let's take a look at the data as it's stored in the gateway.

In the gateway User Interface, browse to the Data in Gateway Memory page.

Enter the Mapping Address (found on the "Message List" page) and the quantity of values you'd like to view. For our example, these values are 0 and 4, respectively.

$\leftrightarrow$ $\supset$ $\bigcirc$	(i) 192.168.0.249/index_v3.5.html			
		Stride	Exit	
Device Information     Network Settings     Operating Settings     Serial Settings     Agent Settings	03 Holding Register(4x) \ Gateway Memory Address	✓ 0 Value (decimal)	Help       4       Value (hexadecimal)	
• Message List	0	500	0x1F4	
Import/Export	1	150	0×96	
Upgrade Firmware     Change Password	2	25	0×19	
Load Factory Default     System Reboot	3	0	0×00	

Figure 26. STRIDE Modbus Data in Gateway Memory.

Make changes in the Modbus slave user interface and watch the values change in the gateway's memory.

#### EXAMPLE 4: AGENT MODE, WITH MODBUS RTU/ASCII MASTER DEVICES TO MODBUS TCP SLAVE (SERVER) DEVICES



Provide power to the *STRIDE* Modbus Gateway, connect to an Ethernet port and log on to the gateway configuration interface.

Our example assumes default values in the gateway. Click Load Factory Default.

Set the operation mode to Agent Mode. Browse to "Operating Settings" and select S1. Setup parameters for one Modbus TCP server as shown in Figure 27. Note that the Remote IP Address is your PC's IP address, since the PC (Modbus Slave) is the slave device for this example. Remember the Slave ID you assign here.

Click Save.

$\leftarrow$ $\rightarrow$ O	192.16	58.0.249/index_v3.5.html					• 📩 י	<u>⊾</u> <i>L</i>	Ŕ	
				Stride					Exit	
									Help	
Device Information				Operating	Settings					
Network Settings     Operating Settings		S1		S2	\$3		S4			
Serial Settings     Agent Settings		Serial Port Mode	RTU Slave $~~$							
Gateway Settings		Slave ID	Remote IP	Remote Port	Protocol	Local Port	Ethernet Port B	nd		
- • Message List		2	192.168.0.226	502	TCP 🗸	NA	E1 🗸	+		
• Data in Gateway Mem     import/Export     • Upgrade Firmware     • Change Password     • Load Factory Default     • System Reboot	R SI	emember this ave ID number	This is you IP addre	r PC SS	a .					

Figure 27. STRIDE Modbus Operating Settings.

Browse to "Serial Settings" to configure the gateway shown in Figure 28.

Click Save to save the changes.

$\leftrightarrow$ $\rightarrow$ $\circlearrowright$ 192.168.0	0.249/index_v3.5.html				🗆 📩 烽 🛙	l e	
		Strid	e			Exit	
						Help	
Device Information			Serial Settings				
Network Settings     Operating Settings		S1	S2	S3	S4		
Serial Settings	Alias	UART_1	UART_2	UART_3	UART_4		
Agent Settings     Gateway Settings	Baudrate	115200 ~	115200 ~	115200 ~	115200 ~		
- • Message List	Databits	8 ~	8 ~				
• Data in Gateway Memory	Stopbits	1 ~	1 ~	1 ~	1 ~		
Upgrade Firmware	Parity	None ~	None 🗸	None 🗸	None 🗸		
Change Password	RTS Control	Off ~	Off ~	Off 🗸	Off 🗸		
Load Factory Default     System Reboot	Hardware Interface	RS-232 ~	RS-232 ~	RS-232 ~	RS-232 ~		
Data Diagnostics	Protocol(selected on Operating Settings page)	RTU Slave V	RTU Slave 🗸				
			Save				

Figure 28. Serial Settings Configuration.

Browse to the "Gateway Settings" page to configure the gateway as shown in Figure 29. Click Save to save and apply the changes.

$\leftarrow$ $\rightarrow$ O	192.168	.0.249/index_v3.5.html				[	□ ☆	∽≣	l~	È	
				Strid	le					Exit	
									H	lelp	
Device Information				G	Gateway Settings						
Network Settings     Operating Settings		Gateway Modbus ID	1								
Serial Settings		Protocol	TCP 🗸							-	
Agent Settings		Gateway Modbus Port	502							-	
Message List		Default Timeout(ms)	1000	]						-	
• Data in Gateway Memo	ory	Inter-packet TX Delay(ms)	100	]						-	
Upgrade Firmware     Change Password											
System Reboot					Save						

Figure 29. Gateway Settings Configuration.

Browse to Message List-Add Message to add a message, shown in Figure 30. The Slave ID is the ID you assigned to the slave device in the Operating Settings configuration in Figure 27.

$\leftarrow$ $\rightarrow$ D	192.168.0.249/index_v3.5.html	💷 ★ 🍃 💪 🖻 …
	Str	ride Exit
		Help
Device Information     Network Settings		Add Message Delete Message Modify Message
Operating Settings		L
Serial Settings	Display 50 ∨ per page Refresh	Search:
<ul> <li>Agent Settings</li> </ul>		
Gateway Settings	Item Serial Port Slave ID Alias	Message Configuration
Message List	Slav	lave Alias Device Alias
Data In Gateway Men		
Upgrade Firmware	Seri	erial Port S1 ~
Change Password	Refresh to get latest status. Slav	lave ID 2
<ul> <li>Load Factory Default</li> </ul>	Fun	unction 03 Holding Register(4x) $\checkmark$
System Reboot		
	Data	lata Start Addr 0
	Data	lata Length 10
	Мар	Iapping Addr         0         Assign next available address
		OK

Figure 30. Add Message.

Connect the *STRIDE* Modbus Gateway serial port S1 to your PC's serial port (possibly requiring a USB to serial converter), and run Modbus Poll software on the PC. The Modbus Poll parameters must be configured as shown in Figure 31.

[]	Connection Setup	×
This value is the COM port assigned by your PC. It can be found in the Device Manager.	Connection Serial Port Serial Settings Prolific USB-to-Serial Comm Port (COM4) 115200 Baud 8 Data bits None Parity 1 Stop Bit Remote Modbus Server	OK Cancel Mode TU ASCII Response Timeout 1000 [ms] Delay Between Polls 10 [ms]
	IP Address or Node Name	
	192.168.0.249	~
	Server Port Connect Timeout	IPv4
	502 3000 [ms]	O IPv6

Figure 31. Modbus Poll Configuration.

Click OK in Figure 29 to return to the application interface shown in Figure 32.

	Modbus Poll - [	Mbpoll1]	>	<
<b>P</b>	File Edit Co	onnection Setup	Functions Display View Window Help _ &	x
	) 🖻 🖬 🎒 🛛	×  🗂   🖳 🏟	1   Л   05 06 15 16 17 22 23   TC 🖂   🤋 🎀	
Tx	= 4: Err = 0: II	D = 1: F = 03: \$	SR = 1000ms	
	Alias	00000		^
6	Allda	00000		
1		0		
2		0		
3		0		
4		0		
5		0		
6		0		
7		0		
8		0		~
For	Help, press F1.		Port 4: 115200-8-N-1	

Figure 32. Modbus Poll Initial Connection.

The Modbus Poll software will return zero values for all data from the Modbus Gateway Agent until the Modbus Slave software is connected to the gateway in the next step.

Run the Modbus Slave software on your PC and set the parameters shown in Figure 33.

onnection Setup	×
Connection Modbus TCP/IP ~	ОК
Serial Settings	Cancel Slave Definition
Prolific USB-to-Serial Comm Port (COM4)	Slave ID: 2
115200 Baud V OASCII	Function: 03 Holding Register (4x)
8 Data bits V	Address: U
None Parity DSR CTS RTS 1	iggle View
1 Stop Bit V [ms] RTS disable del	Bows ● 10 ○ 20 ○ 50 ○ 100 ○ Fit to Quantity
TCP/IP Server	Hide Alias Columns PLC Addresses (Base 1)
192.168.0.226	502 Ever Simulation
Any Address  IPv4 Ignore Unit ID IPv6	Error Simulation     Skip response     (Not when using TCP     [ms] Response Delay     Return exception 06.

Figure 33. Modbus Slave Port Configuration.

Figure 34. Modbus Slave Definition.

Click OK shown in Figure 33 to return to the Modbus Slave main window.

Select Setup - Slave Definition.

Enter the Slave ID of the Gateway as shown in Figure 34. This is the Slave ID you assigned to the Gateway in its "Operating Settings" configuration.

Click OK shown in Figure 34 to return to the application interface shown in Figure 35.

1	Modbus Slave -	[Mbslave1]					-	$\times$
Doc C	File Edit Co	onnection Setup	Display \	/iew	Window	Help		- 8 ×
E	) 🖻 🖬 🎒 🛛	- 1 🗄 👜 💡	N?					
ID	= 2: F = 03							
L								
	Alias	00000						^
0		0						
1		0						
2		0						
3		0						
4		0						
5		0						
6		0						
7		0						~
For	Help, press F1.		[Any IP Add	ress]:	502			

Figure 35. Modbus Slave.

Now let's experiment with watching data across our network. Enter data in address 2 and address 3 in Modbus Slave and watch as that data is stored in the Agent then read by Modbus Poll, shown in Figure 36.

📓 Modbus	s Slave -	[Mbslave1]					Ъ,	Modb	us Poll	- [Mbpoll	1]					
📴 File Ed	dit Co	nnection Setup	Display	View	Window	Help	<b>**</b>	File	Edit	Connectio	n Setu	p Fu	nctions	Display	View	/ Wind
🗅 🚔 🖪	1 🚳   [	-   <u>!</u>     ?	₩?				Ľ	i 🖻	- 6	$ \mathbf{X} $		1/1	05	06 15 1	6 17	22 23
ID = 2: F =	03						Тх	= 119	7: Err	= 642: I	D = 1: F	= 03	3: SR :	= 1000m	IS	
	Alias	00000							Ali	as	00000					
0	Anda	0					0				0					
1		322					1				322					
2		46					2				46					
3		0					3				0					
4		0					5			_	0					
5		0					6				0					
0		0					7				0					
Ear Help, pro	cc E1	U	[Any ID A	ddrorel	502		8  For	Help p	ross E1	2	0	Dor	+ 1, 1153	00.0.N.1		

Figure 36. Agent Test Result.

Now let's take a look at the data as it's stored in the gateway.

In the gateway User Interface, browse to the Data in Gateway Memory page.

Enter the Mapping Address (found on the Gateway Settings page) and the quantity of values you'd like to view. For our example, these values are 0 and 4, respectively.

$\leftrightarrow$ ) $\diamond$ ) $\diamond$	(i) 192.168.0.249/index_v3.5.html		
		<b>Str</b> ide	Exit
Device Information     Network Settings     Operating Settings     Serial Settings	03 Holding Register(4x) ∨	0 [4_	Help
Gateway Settings	Gateway Memory Address	Value (decimal)	Value (hexadecimal)
• Message List • Data in Gateway Memory	0	0	0×00
Import/Export     Lingrade Firmware	1	322	0×142
<ul> <li>Import/Export</li> <li>Upgrade Firmware</li> <li>Change Password</li> </ul>	1	322 46	0x142 0x2E
Import/Export     Upgrade Firmware     Change Password     Load Factory Default     System Reboot	1 2 3	322 46 0	0×142 0×2E 0×00

Figure 37. Data Stored in Gateway Modbus Registers.

Make changes in the Modbus slave user interface and watch the values change in the gateway's memory.