ThingsPro Software User's Manual

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ThingsPro Software User's Manual

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This document explains the procedure to set up the ThingsPro software for the UC-8100 series and connect Modbus devices to the UC-8100-LX-CG. The current version ThingsPro V 1.1 supports the following hardware platforms in the UC-8100 series:

- UC-8112-LX-CG
- UC-8132-LX-CG

The ThingsPro gateway operations and the process of acquiring data from the Modbus devices connected to the gateway are discussed in detail in this user's guide, which is divided into the following sections:

Getting Started

Describes the basic steps to get you started on the ThingsPro Software.

Device Configuration

Describes how you can access a gateway using ThingsPro software and remotely configure devices that are connected to the gateway.

Modbus Management Framework

Describes how to create a Modbus device template in ThingsPro and connect to Modbus devices using this template. This section also describes the two different Modbus interfaces that you can configure for peripheral Modbus devices: Modbus/TCP and Modbus/RTU.

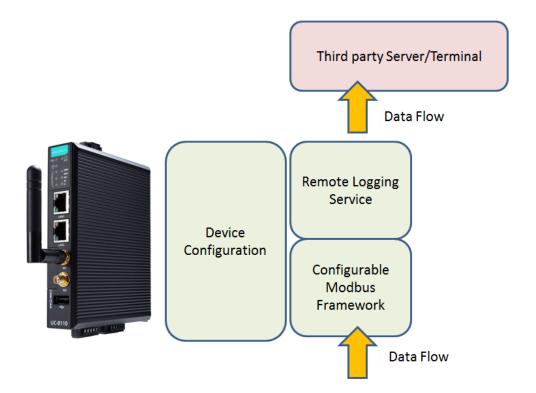
Remote Data Profile Service

After you have acquired data through the Ethernet, cellular, or serial ports and stored the data on the gateway, you can configure the *Remote Data Profile service* in ThingsPro to automatically send data from the gateway to a remote server or terminal that you specify.

Wireless Manager Relay Settings

If you have selected the Wireless Manager mode for your UC-8100-LX-CG, this chapter provides you information on how to configure the relay settings for the Wireless Manager.

The following system diagram shows an overview of the ThingsPro gateway platform:



ThingsPro gateway platform provides the framework to easily poll data from Modbus devices. The data is packed into files that are stored on the gateway in XML, CSV, or JSON format. The data files can then be transmitted from the gateway to a server that you specify based on a schedule that you can define.

Getting Started

This chapter describes the basic configuration steps to get you started on the ThingsPro software.

The following topics are covered in this chapter:

- Accessing the Gateway
- Editing User profiles
- Setting the Host Name

Accessing the Gateway

You can log in to a gateway using the web interface provided by ThingsPro.



IMPORTANT!

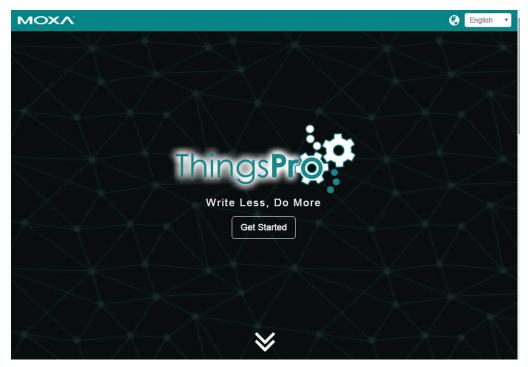
ThingsPro software works best with the Chrome browser. Some of the ThingsPro functions may not be available on other Web browsers. We recommend that you use the Chrome browser for ThingsPro software.

To log in to the gateway:

- 1. Access the ThingsPro web interface by connecting to the following URL on **eth1**: <u>https://192.168.4.127</u>
- **NOTE** The notebook computer or PC that you use to access the web interface of the device, and the device must be on the same network subnet.

2. Click **Get Started** to open the login page.

You can scroll down to learn more about the key features of ThingsPro Wireless Manager.



3. Use the following default user credentials to login:

Email: Password:	admin@moxa.com admin1234	
	- Login	<u>.</u>
	Email	
6	Password	
	Remember Me	
	Sign In	

After entering the ThingsPro homepage, you can select one of the following modes of operation:

- Data Logger
- Wireless Manager

MOXA		•	English •
		serial	
	Data Logger Rapid change mode to easy-to-use data logger. The data logger can allow you to enjoy the functionalities of data acquisition and sploading service with Modbus equipments easily	Ethernet Wireless Manager Rapidy change mode to viet-to-wireless converter. The wire interfaces can support serial communication (R3232/R5422/R548) and Etherner port. The vietess interface can support cellular network (GPRS/GS/LTE).	

Depending on the operation mode that you select for your gateway, you can find the configuration instructions in the following sections of this guide:

Data Logger	Chapter 3, Chapter 4, and Chapter 5
Wireless Manager	Chapter 2 (this chapter) and Chapter 6



IMPORTANT!

At the moment, the UC-8100 device can only be used as a data logger or as a relay. If you want to switch between the data logger and the relay functions, you need to first reset the computer to factory default, and then select the function that you want to set for your device.

Editing User profiles

The user profile page contains login credentials and personal information of the user who has logged in to the gateway. You can access the user profile page by selecting the **My Profile** option from the dropdown list at the top right side of the login page.

🄇 English 🗸	🧶 admin@moxa.com 👻
Settings	▲ My Profile ► Logout
Edit the user profile details and click Save .	
Edit User Profile	×
My Picture:	
Choose File No file chosen	
Email:	
admin@moxa.com	
Password:	
	🖺 Save

1-4

Setting the Host Name

You can set the host name of the gateway on the main page of the ThingsPro web interface.

To set the host name of the gateway, do the following:

- 1. Log in to the gateway.
- 2. Click on the **Edit** button next to the **Host Name** field.
- 3. Specify a host name and click **Save.**

		Host Name Version		Edit Host Name	×	Settin	ıgs
		Uptime Disk Usage	Host Name:	Moxa			
Log Prof	file Manageme	ent			Save Cancel		8
	Name	Target URL	File Format	Storage Size	Upload T	ag Setting	

Device Configuration

This chapter describes how to remotely configure the settings of peripheral devices from the gateway using ThingsPro web interface.

The following topics are covered in this chapter:

- **Configuring Ethernet**
 - Configuring IPv4 Settings for eth1
 - > Configuring DHCP Server Settings
- Configuring the Cellular Network
- Configuring DNS
- Configuring Serial Ports
- Setting the System Time
- Configuring Port Mapping
- Configuring Reverse Port Mapping
- Configuring OpenVPN Client
- Configuring System Control Settings

Configuring Ethernet

To configure the Ethernet settings:

- (1) Click on the **Settings** button on the top left of the Main page.
- (2) In the **Settings** panel that is displayed on the left, select **Ethernet**.
- (3) Click on the Edit button in the Ethernet section to open the configuration in the edit mode. You can configure eth0 and eth1 parameters such as the network Type, IP, Netmask, Gateway, DNS1, and DNS2 here.
- (4) Update the Ethernet details.
- (5) Click Save.

	Host Name	Моха	Edit		← Back
	Version	1.2 Build 16040814			
-10	Uptime	a day			
	System Disk Usage	73 %			
Settings	Ethernet				Θ
Ethernet	eth0	eth1			C Edit
Cellular		euri			
DNS					
Serial			Туре:	Server Street Street	
Time				192.168.31.39 255.255.255.0	
Port Mapping				192.168.31.254	
Reverse Port Mapping				192.168.50.33	
OpenVPN Client			DNS 2:	192.168.50.36	
System					

Configuring IPv4 Settings for eth1

To configure the IPv4 settings:

- (1) Click on the **eth1** link on the **Settings** > **Ethernet** page.
- (2) Select IPv4.
- (3) Enter the **IP** address and the **Netmask** for eth1.
- (4) (Optional) Select the **Enable DCHP** option, if you want to use the DHCP function.
- (5) Click Save.

Settings	Ethernet					Θ
Ethernet	-11-0	alle d				
Cellular	eth0	eth1	_			
DNS	IPv4			Enable DHCP		
Serial	DHCP Server		IP:	192.168.4.127		
Time						
Port Mapping			Netmask:	255.255.255.0		
Reverse Port Mapping					B Save	
OpenVPN Client					Boave	
System						
	🗲 Back					

Configuring DHCP Server Settings

To configure the DHCP Server settings:

- (1) Click on the **eth1** link on the **Settings** > **Ethernet** page.
- (2) Select DHCP Server.
- (3) Provide all the necessary information in the fields.
- (4) Click Save.

Settings	Ethernet					Θ
Ethernet	eth0	eth1				
Cellular	ethu –	etni				
DNS	IPv4			Enable		
Serial	DHCP Server		Start IP Address:	192.168.4.200		
Time						
Port Mapping			End IP Address:	192.168.4.250		
Reverse Port Mapping			Netmask:	255.255.255.0		
OpenVPN Client						
System			Lease Time:	3600	sec.	
			Primary DNS:	8.8.8.8		
			Secondary DNS 1:	8.8.4.4		
			Secondary DNS 2:	8.8.8.8		
			Domain Name:			
					Save	
	← Back					

Configuring the Cellular Network

To access the cellular configuration, click on **Cellular** in the **Settings** panel. You can view the status of the cellular connection. To edit the configuration settings of the cellular network, click **Edit**.

Settings	Cellular			(
Ethernet				C? Edit
Cellular	wwan0			U CON
ONS			_	
Serial		Connection Status:	internet	
Time		Mode:		
Port Mapping		Location Area Code:		
Reverse Port Mapping		Cell ID:	0x860a	
Open/VPN Client		IMEI:	356853050222092	
System		Signal:	-82 dBm	
			al in the	
		IP:	n/a	
		Gateway:		
		PIN Remain Times:		
		Operator Name:	Telecom	
		Transmit Usage:		
		Receive Usage:	26 MB	
wwan0				
		Enable		
		✓ Use Static APN		
	APN:	internet		
	Pin Code:			
		✓ Keep Alive		
	Target Host:	8.8.8.8		
	Ping Interval:	60		sec.
				Save
			E	1 Save
🗲 Back				

You can configure the following cellular network parameters:

Parameter	Description
Enable	Enables the cellular network
Use Static APN	Selected by default. This option enables you to use the APN (access point name) of the
	cellular carrier.
PDP CID	Packet Data Protocol Context ID- Instead of using a static APN, you can specify a number in
	the range 1 to 16 here. Your cellular carrier will set an APN based on the PDP CID that you
	specify. For example, the PDP CID value for Verizon's private network service is "3".
Pin Code	Specifies a numeric access code for the device. This code is used to restrict access to the
	device provided the PIN (Personal Identification Number) security feature in the device is
	turned ON.

Parameter	Description
Keep Alive	Check this option to activate connection checks to the target host
	NOTE : When you select this option and click on the Save button, the cellular connection will be reconnected.
Target Host	Specifies the target host to connect to
Ping Interval	Specifies the interval between the connection checks (ping commands)

Update the cellular details and click **Save**.

When cellular communication has been activated and connected, the WAN interface switches to the cellular network. If you do not activate the cellular connection, the WAN interface will be on the eth0 Ethernet network.

Configuring DNS

To access the DNS configuration, click on **DNS** in the **Settings** panel. Check the **Enable Fixed DNS** if you want to use a fixed DNS and type in the **Primary DNS** and **Secondary DNS**. Click **Save** to save the configuration.

Settings	DNS	Θ
Ethernet		C Enable Fixed DNS
Cellular		
DNS	Primary DNS:	192.168.50.33
Serial	Secondary DNS:	192.168.50.36
Time		
Port Mapping		🖺 Save
Reverse Port Mapping		
OpenVPN Client	← Back	
System		

Configuring Serial Ports

To access the serial port configuration, click on **Serial** in the **Settings** panel. Click **Edit** to change the configuration settings. You can choose one of the following serial communication protocols for PORT 1 and PORT 2 of the serial interface: RS-232, 2-wire RS-485, 4-wire RS422/RS485

Settings	Serial				Θ
Ethernet	DODT (DODT			C C Edit
Cellular	PORT 1	PORT 2			
DNS					
Serial			Interface: /dev/ttyM0 Mode: RS232		
Time			Mode. R3232		
Port Mapping					
Reverse Port Mapping					
OpenVPN Client					
System					
Settings	Serial				Θ
Ethernet					
Cellular	PORT 1	PORT 2			
DNS		Mode:	RS232	*	
Serial			RS232		
Time			RS485-2W RS422/RS485-4W		
Port Mapping			L		
Reverse Port Mapping	← Back				
OpenVPN Client					
System					

Setting the System Time

You can set the system time manually by editing the time zone or set up automatic time synchronization with a time server. For automatic time synchronization, the UC-8100-LX-CG can sync-up with a specified time server, at intervals that you specify.

To access the time zone configuration, click on **Time** in the **Settings** panel.

Settings	Time
Ethernet	
Cellular	
DNS	2016-04-14 15:52:05
Serial	
Time	
Port Mapping	
Reverse Port Mapping	Vicio Martin
OpenVPN Client	Time Zone: (+08:00) Beijing, Hong Kong, Singapore, Taipei
System	Synchronization: Manual

Click Edit to change the configuration settings.

Settings	Time		Θ
Ethernet	Time Zone:	(+08:00) Beijing, Hong Kong, Singapore, Taipei	×
Cellular	The Lone.	(100.00) beijing, nong Kong, olingapore, raiper	
DNS		Carable NTP	
Serial	Time Server:	pool.ntp.org	
Time			
Port Mapping	Time Interval:	7200	sec.
Reverse Port Mapping			Save
OpenVPN Client			
System			
	← Back		

Update the time details and click **Save**.

Configuring Port Mapping

Port mapping is a network address translation (NAT) technique, which is most commonly used to make services on a host residing within a protected or internal network available to hosts on the opposite side of the gateway (external network) by remapping the destination IP address and port number to the internal host.

To access the port mapping configuration, click on **Port Mapping** in the **Settings** panel. Click **Edit** to change the configuration settings.

Settings	Port Map	ping					
Ethernet							0
Cellular	#	Enable	Name	Internal IP	Protocol	Start Port	End Port
DNS							
Serial							
Time							
Port Mapping							
Reverse Port Mapping							
OpenVPN Client							
System							

Fill in the port mapping details and click $\stackrel{\bullet}{\checkmark}$ to add the mapping details to the database.

NOTE If you want to enable a port mapping entry, select the **Enable** checkbox in the port mapping details.

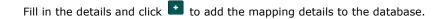
Ethernet	Enable	Name	Internal IP	Protocol	Start Port	End Port
Cellular NNS				Pick (
Serial						
īme						
Port Mapping	🗲 Back					
Reverse Port Mapping						
OpenVPN Client						

NOTE An **Internal IP** is the destination IP of a device that is connected to the gateway. The **Start Port** and **End Port** specify the designated port range that an external device can connect to. The port range setting for the different **Internal IP**s should be totally exclusive that is, there should not be any overlap of the port numbers.

Configuring Reverse Port Mapping

To access the reverse port mapping configuration page, click **Reverse Port Mapping** in the **Settings** panel. Click **Edit** to change the configuration settings.

Settings	Reverse Por	t Mapping				
Ethernet						C Edi
Cellular	#	Enable	Name	Internal IP	Protocol	Port
DNS						
Serial						
Time						
Port Mapping						
Reverse Port Mapping						
OpenVPN Client						
System						



NOTE If you want to enable a reverse port mapping entry, select the **Enable** checkbox.

Ethernet	Enable	Name	Internal IP	Protocol	Port
Cellular	_				
DNS				Pick One-	•
Serial					
Time					
Port Mapping	← Back				
Reverse Port Mapping					
OpenVPN Client					

NOTE The NAT function is enabled by default.

The **Internal IP** is the source IP of the device connected to the gateway. And, the **Port** is the source port number. We do not recommend using the same port number for different **Internal IP**s.

Configuring OpenVPN Client

OpenVPN is an open-source software application that implements virtual private network (VPN) techniques to create secure network connections. ThingsPro offers an OpenVPN Client function that helps you connect to an OpenVPN server to establish secure data communication.

To configure the OpenVPN client in ThingsPro, do the following:

- 1. Click on **OpenVPN Client** in the **Settings** panel.
- 2. On the **OpenVPN Client** page, select the **Enable** option and then click **Choose File** to browse to and upload an OpenVPN configuration file.

NOTE The configuration file must contain the certificate and key information and must be saved in the ***.ovpn** format. You can click on **Download** to view a sample OpenVPN configuration file.

3. Click Save.

2042 D	
Ethernet	V Enable
Cellular	
DNS	Please embedded your crt and key in .ovpn file as sample config does.
Serial	
Time	Sample File: Download
Port Mapping	Sample File. Download
Reverse Port Mapping	Configuration File: Choose File No file chosen
OpenVPN Client	E) Save
System	El Save

A message indicating that the OpenVPN client has been successfully updated is displayed as shown below:

Settings	OpenVPN Client		Θ
Ethernet			C C Edit
Cellular			
DNS		Connection Status: Disconnected	
Serial		VPN Remote IP: n/a	
Time		VPN Local IP: n/a	
Port Mapping			
Reverse Port Mapping			
OpenVPN Client			
System			
			OpenVPN has been updat successfully.

If you want to update the OpenVPN client settings, click on the Refresh button.

Settings	OpenVPN Client
Ethernet	
Cellular	
DNS	Connection Status: Disconnected
Serial	VPN Remote IP: n/a
Time	VPN Local IP: n/a
Port Mapping	
Reverse Port Mapping	
OpenVPN Client	
System	

If you want to delete the configuration file, click on **Delete**, or click on the **Download** button next to the Delete button to replace the configuration file.

Settings	OpenVPN Client
Ethernet	✓ Enable
Cellular	✓ Linduc
DNS	Please embedded your crt and key in .ovpn file as sample config does.
Serial	
Time	Sample File: Download
Port Mapping	Sample File. Download
Reverse Port Mapping	Configuration File: Choose File No file chosen
DpenVPN Client	Delete Download
iystem	Delete Download
	🖺 Save
	e Back

After you have successfully updated the configuration file, you can view the connection status of the client in the **Connection Status** field.

Settings	OpenVPN Client	Θ
Ethernet	0 7	Edit
Cellular		
DNS	Connection Status: Connected	
Serial	VPN Remote IP: 192.168.31.113	
Time	VPN Local IP: 192.168.255.138	
Port Mapping		
Reverse Port Mapping		
OpenVPN Client		
System		
0,000	Open"	VPN has be

Configuring System Control Settings

To access the system configuration, click on the **Settings** option in the left pane of the ThingsPro main page and then select **System.** You can configure the following system control settings: **Reboot, Upgrade Firmware, Export Syslog, and Export/Import Configuration.**

Settings	System
Ethernet	
Cellular	Enable SSH Enable Syslog Enable Access Web from Wan
DNS	
Serial	O Reboot
Time	
Port Mapping	▲ Upgrade Firmware
Reverse Port Mapping	
OpenVPN Client	● Export System logs
System	Chort of dram lago
	Sexport Configuration

NOTE The SSH server will be activated by default. If you have any security concern, we suggest you disable the SSH server by clicking on the **Enable SSH** button.

In addition, if you want to access the web from a WAN interface, you must enable Access Web from WAN function.

Modbus Management Framework

This chapter describes how you can use templates and tags in ThingsPro to configure and manage Modbus devices that are connected to a gateway.

The following topics are covered in this chapter:

- Equipment Template and Data Tag Management
- Downloading a Template
- Uploading a Template
 - Defining a Device Tag
 - > Defining a New Template
 - > Deleting a Template
 - Adding a Modbus/TCP Device
- **D** Retrieving the Current Information of the Remote Modbus/TCP Device
 - Managing Modbus/RTU devices

Equipment Template and Data Tag Management

You can use Modbus compatible templates to configure field devices in ThingsPro, and connect the devices to the gateway. By default, ThingsPro software includes preconfigured templates for Moxa's ioLogik series. You can modify the ioLogik templates to set up connections to Modbus /RTU or Modbus /TCP devices.

You can add, remove, or update equipment templates in the **Equipment Template List** section on the **Settings** page.

To configure a Modbus device in ThingsPro and connect it to the gateway, do the following:

- 1. Select a template from the Equipment Template List
 - or

Create a new template in the Equipment Template List.

- 2. Define a tag for the device in the template, and specify the device details.
- 3. Add the device to the ThingsPro system.

Downloading a Template

To download an equipment template, do the following:

In the **Equipment Template List**, click the ⁱ button to download the current template to your local computer.

		🛎 🕹 🕈 🗎
	Name	
	ioLogik-E1210	
	ioLogik-E1211	
	ioLogik-E1212	
	ioLogik-E1213	
	ioLogik-E1214	
	ioLogik-E1240	
	ioLogik-E1241	
	ioLogik-E1242	
	ioLogik-E1260	
	ioLogik-E1261H-T	
1 2 »		

NOTE To download a specific template or a set of templates, select the template (s) in the **Equipment Template List**

and click 🔺.

Uploading a Template

To upload your equipment template to the database, click in the **Equipment Template List**, browse to the location of the template in your local folder and click on the **Upload** button to complete the upload process.

NOTE Only upload templates that you have previously downloaded from ThingsPro. Uploading templates from external systems might corrupt your equipment data.

Use the **Override on conflict** and **Append on conflict** options to avoid uploading duplicate templates.

	Import Templates	1
	Override on conflict O Append on conflict	
Configuration File:	Choose File No file chosen	

Defining a Device Tag

To set up a template and define a tag for a Modbus device, do the following:

1. In the **Equipment Template List**, click the *interview* button corresponding to the template that you want to configure.

			* * + 🔒 :
	Name		
	ioLogik-E1210		
	ioLogik-E1211	6	
	ioLogik-E1212	ØD	
	ioLogik-E1213	6	
	ioLogik-E1214		
	ioLogik-E1240		
	ioLogik-E1241		
	ioLogik-E1242		
	ioLogik-E1260		
	ioLogik-E1261H-T		
1 2 »			

2. Click $\stackrel{\bullet}{\frown}$ to add a tag in the template for the Modbus device.

	Template Name: ioLogik-E1210		ioLogik-E1210								🖺 Save	+
]	Tag Name	Func	tion	Address	Unit	Туре	Quantity	Byte Order	Invalid Value	Scaling	Description	
	diO	read-	discrete-inputs	0		boolean	1					6
	di1	read-	discrete-inputs	1		boolean	1					6
	di2	read-	discrete-inputs	2		boolean	1					6
	di3	read-	discrete-inputs	3		boolean	1					6
	di4	read-	discrete-inputs	4		boolean	1					0
	di5	read-	discrete-inputs	5		boolean	1					0
	di6	read-	discrete-inputs	6		boolean	1					0
	di7	read-	discrete-inputs	7		boolean	1					0
	di8	read-	discrete-inputs	8		boolean	1					0
]	di9	read-	discrete-inputs	9		boolean	1					0
	1 2 »											

For details on creating a new template, see *Defining a New Template*.

3. Fill in the Modbus device details.

Field	Description
Tag Name	Assigns a tag name for the device
Function	Selects the Modbus read function for the device. The read functions supported
	include read-coils, read-input-registers, read-discrete-inputs, and
	read-holding-registers.
Address	Specifies the read address of the device
Туре	Specifies the data type of the read operation for the device. For example:
	uint16, uint8, uint32, float32, float64
Quantity	Specifies the amount of data read per read operation
Enable Invalid Value	Sets the specified number as an invalid value.
	First select the Enable Invalid Value option and then specify the value that
	you want to set as invalid in the field.
Unit	Specifies the unit for the invalid value
Description	Provides additional description for the tag.
Enable Byte Order	Enables byte ordering of the composite data frame.
Enable Auto Scaling	Enables auto scaling of the value read from the device.

Equipment Template List		Θ
Tag Name:		
Function:	read-coils •	
Address:		
Туре:		
Quantity:	1	
	Enable Invalid Value	
Unit:		
Description:		
	_	
	Enable Byte Order	
	Enable Auto Scaling	
	+ Add	
← Back		

- 4. Click to add the tag that you just defined to the template.
- 5. Click ^{Save}.

Defining a New Template

You can define a new template and use it to configure devices in ThingsPro. The new template that you define is empty and contains no device tags. Before you can use the template, you must add data tags for the type of devices that you want to configure in the template.

To create a new template, do the following:

- 1. Click on the
 button in the Equipment Template List.
- 2. Enter the **Template Name** and click **1**.

	ent Template List Template Name:									🖺 Save 🕇 🕇
	Tag Name	Function	Address	Unit	Туре	Quantity	Byte Order	Invalid Value	Scaling	Description
	_									
← Bao	ck									

- 3. Enter the device details and click +Add
- 4. Click Save

The new template is saved and available in the **Equipment Template List**.

NOTE You can use an existing equipment template to define a new template as follows: Click the D button next to an existing template to create a copy of the template. Specify a **Template Name** and click seve.

5. Define data tags for the devices that you want to configure in the template.

Deleting a Template

To delete a template, select the template from the **Equipment Template List** and click

			± ± + 🗎
	Name		
\checkmark	ioLogik-E1210		
	ioLogik-E1211		
	ioLogik-E1212		
	ioLogik-E1213	6	
	ioLogik-E1214	6	
	ioLogik-E1240	6	
	ioLogik-E1241	8	
	ioLogik-E1242	0	
	ioLogik-E1260		
	ioLogik-E1261H-T		

Updating a Template or a Tag

To update a template or a tag,

- 1. Select the template or the tag from the Equipment Template List
- 2. Click 🦉
- 3. Edit the device details.



Adding a Modbus/TCP Device

You can add Modbus/TCP devices with different interfaces to the ThingsPro gateway platform.

To add a Modbus/TCP device, do the following:

1. Click 💶 in the **Modbus Management** section of the **Settings** page.

MODBUS / TCP							
Name	Interval Period	Host	Port	Conn	ected Equipm	ent	
MODBUS / RTU							
		D -4	Baud Rate	Parity	Stopbits	Connected Equipment	
lame	Interval Period	Port					
Name Nodbus_Gateway_1	Interval Period 5 sec.	PORT 1 (Mode Setting)	115200	none	1	View	Ø

2. Enter the device details.

Field	Description
Interface Name	Specifies the name of the Modbus /TCP interface to be used to connect with the
	Modbus device
Host	Host IP address
Port	Specifies a TCP listen port.
Interval Period	Polling time for the Modbus device
Equipment Name	Specifies the name of the device/equipment that will connect to this interface.
Model	Selects a model from a list of existing template
Unit ID	The identification of the connecting data channel

3. Select the equipment template for the device from the list of templates in **Model**.

Interface Name:		#	Equipment Name	Model	Unit ID	Torres of
Host:				•		∳ Test
Port:						
Response Timeout:	sec.					
Interval Period:	sec.					
	🖺 Save					

- 4. (optional) Click on **Test** to check if the device is valid.
- 5. Click \blacksquare to add the device to the gateway using the template specified in **Model.**
- 6. Click Save to add the Modbus/TCP interface data to the gateway.

To update a specific Modbus/TCP device, select the device from the list and click <a>[

completed the changes, click Bave to update ThingsPro.

To delete a device, select the device and click

Retrieving the Current Information of the Remote Modbus/TCP Device

To retrieve information regarding a Modbus/TCP device, click on the 📧 button corresponding to the device.

MODBUS / TCP

Name	Interval Period	Host	Port	Connected Equipment	
E1210	1 sec.	192.168.250.51	502	View	
E1211	1 sec.	192.168.250.52	502	View	
E1212	1 sec.	192.168.250.53	502	View	
E1213	1 sec.	192.168.250.54	502	View	
E1240	1 sec.	192.168.250.55	502	View	
E1241	1 sec.	192.168.250.56	502	View	
E1260	1 sec.	192.168.250.57	502	View	
E1262	1 sec.	192.168.250.58	502	View	
E1261W-T	1 sec.	192.168.250.59	502	View	
E1261H-T	1 sec.	192.168.250.60	502	View	

Click the **Test** button to update the device information.

Modbus Manageme	ent							Θ
Interface Name:	E1210		#	Equipment Name	Model		Unit ID	
			1	E1210	ioLogik-E1210	T	0	4 Test
Host:	192.168.25	50.51						Ê
Port:	502							
Response Timeout:	0.5	sec.						
Interval Period:	1	sec.						
		Save						
← Back								

The results are displayed as follows:

A Test Result				
∗ Object				
<pre>* data: Object</pre>				
di11: "0"				
di6: "0"				
di14: "0"				
di7: "0"				
di15: "0"				
di4: "0"				
di12: "0"				
di5: "0"				
di13: "0"				
di9: "0"				
di10: "0"				
di8: "0"				
di0: "0"				
di1: "0"				
di2: "0"				
di3: "0"				
elapsedMS: "289"				

To exit the screen, click anywhere outside the **Test Result** box.

Managing Modbus/RTU devices

The UC-8100 platform supports only two Modbus/RTU interfaces. You can manage multiple Modbus/RTU devices using these two Modbus/RTU interfaces.

odbus Management							: :
MODBUS / TCP							
Name	Interval Period	Host	Port	Conr	nected Equipm	ent	
MODBUS / RTU							
Name	Interval Period	Port	Baud Rate	Parity	Stopbits	Connected Equipment	
Name Modbus_Gateway_1	Interval Period	Port PORT 1 (Mode Setting)	Baud Rate	Parity none	Stopbits	Connected Equipment	
				-			Ø
Modbus_Gateway_1	5 sec.	PORT 1 (Mode Setting)	115200	none	1	View	

To update the Modbus/RTU interface details or add devices to the interface, do the following:

1. In the **Modbus Management** section of the **Settings** page, click the *button* next to the Modbus/RTU interface that you want to update.

2. Update the Modbus/RTU interface details for the serial port.

Interface	Modbus_Gateway_1		#	Equipment Name	Model	Unit ID	
Name:			1	Equpment1	ioLogik-E1240 🔻	33	
Port:	PORT 1						
	(Mode Setting)			•		
Baud Rate:	115200	•					
Parity:	None	•					
Stopbits:	1	¥					
Response Timeout:	0.5	sec.					
Interval Period:	5	sec.					
Inter-char Timeout:	100	ms					
		🖺 Save					

- 3. Specify the **Equipment Name**, **Model**, and **Unit ID** of the device(s) that you want to add, and click to add the device(s) to the Modbus/RTU interface.
- 4. Click ^{B Save}.

Remote Data Profile Service

This chapter describes how to configure the remote data profile service in ThingsPro. You can use this service to send data log files from the UC-8100-LX-CG to remote servers. The formats supported are XML, JSON, and CSV.

The following topics are covered in this chapter:

Managing Log Profiles

- > Adding a Log Profile
- > Updating a Log Profile
- > Uploading a Log Profile

Managing Log Profiles

Log profiles are used to configure storage instructions for data files generated by ThingsPro. Once you have created a log profile, you can use it to automatically send data log files to a specified remote server. For example, you can connect a Modbus I/O module to a gateway, pull in data from the field devices and censors connected to the I/O module, and store the data in the gateway. You can configure a log profile in ThingsPro to specify the remote server to which the data log files should be sent and the interval at which to send them. ThingsPro will send the log files to the remote server at the intervals that you have specified in the log profile.

To configure a log profile, update an existing one, or delete a log profile, go to the **Log Profile Management** section of the main page.

Log Profile	Management						Θ
						+	2
	Name	Target URL	File Format	Storage Size	Upload Tag Setting		
	Name	Target URL	File Format	Storage Size	Upload Tag Setting		

Adding a Log Profile

To create a new log profile, do the following:

1. Click • on the Log Profile Management page.

Log Profile Management	Θ
Profile Name:	
Target URL:	Connection Test
	Enable HTTP Basic Authentication
Storage Size:	Minimum is 10 MB
Schedule:	Every: Hour • at 0 • past the hour
File Format:	Y
	Enable Compression
Equipment:	
	巴 Save
← Back	

2. Enter the following details for the new log profile:

Field	Description
Profile Name:	Specify a name for the new log profile.
	Length: 3-255 characters
	Format: a-z, A-Z, 0-9, '_', '-'
Target URL:	Specify the complete URL of the remote server to which the data log files
	associated with this profile should be uploaded.
Enable HTTP Basic	Select this option to enable HTTP basic authentication
Authentication	
No Check Certificate	Select this option to skip the certificate check on the HTTPS connection.
Storage Size:	Set the maximum data pool size
	Configure a data pool size based on the number and size of the data profiles
	that will be used concurrently in the ThingsPro system.
Schedule:	Set an upload schedule for the data log files. For example, daily at a specified
	time, hourly, or even every minute.
File Format	Select a file format: XML, JSON, or CSV
	NOTE: These formats are not that of the device log file, but are the file formats
	that you can use to download/upload data from the data logger.
Enable Compression	Enable file compression of the data files.
Equipment	Select the field equipment whose data should be polled.
	For details on adding equipment to the ThingsPro gateway platform, see
	Equipment Template and Data Tag Management.

3. Click Connection Test to make sure that the target URL is valid.

4. Click Save.

To delete a specific log profile, select it from the list of profiles and click \blacksquare .

						+ 🔒 S
	Name	Target URL	File Format	Storage Size	Upload Tag Setting	
/	upload	https://192.168.31.78:20443/upload/mass	CSV	10 MB	View	🛓 Upload Now 🕼
	upload-xml	https://192.168.31.73:20043	xml	10 MB	View	土 Upload Now 🕼

Updating a Log Profile

To update an existing log profile, do the following:

Scroll to the log profile and click on the $\boxed{\square}$ icon at the end of the row.

						ء 📄 🕈
	Name	Target URL	File Format	Storage Size	Upload Tag Setting	
/	upload	https://192.168.31.78:20443/upload/mass	CSV	10 MB	View	🛓 Upload Now 🕼
	upload-xml	https://192.168.31.73:20043	xml	10 MB	View	🛓 Upload Now

- 1. Update the profile data.
- 2. Click Save.

Uploading a Log Profile

To upload a log profile to a specific device, do the following:

1. Select the log profile in the **Log Profile Management** page.

og Pro	g Profile Management					
	Name	Target URL	File Format	Storage Size	Upload Tag Setting	
\checkmark	upload	https://192.168.31.78:20443/upload/mass	CSV	10 MB	View	ᆂ Upload Now
	upload-xml	https://192.168.31.73:20043	xml	10 MB	View	1 Upload Now

2. Click **Upload Now** to upload the log profile file to the database.

Wireless Manager Relay Settings

This chapter describes how to configure the relay settings for the Wireless Manager function in the UC-8100-LX-CG.

The following topics are covered in this chapter:

Configuring Relay Settings

Configuring Relay Settings

After you have completed the initial configuration of the device and have selected the **Wireless Manager** mode, select the **Relay** tab and click on **Edit** to configure relay settings.

Relay	Θ
Relay-1 Relay-2	C C Edit
Status	OFF
Upstream	
Туре	server
Protocol	udp
Port	4001
Downstream	
Туре	client
Host	192.168.0.100
Protocol	tcp
Port	4001

Select **Enable** to activate the relay and provide all necessary information for both upstream and downstream communication. To enable the source port, check the **Enable Source Port** option. Click on **Save** to complete the configuration and save the information.

Relay-1	Relay-2		
	La d	Enable	
		Upstream	
		Type: 🔘 Server 🔿 Client	
		Protocol: UDP	
		Port: 4001	
		Downstream	
		Network O Serial	
		Type: 🔿 Server 🍥 Client	
		Protocol: TCP	Ŧ
		Port: 4001	
		Host: 192.168.0.100	
		Enable Source Port	
			🖺 Save

ThingsPro API Reference

The UC-8112-LX-CG is provided with RESTful APIs that give you access to the gateway configuration. Developers can use these APIs to interact with and to integrate their software with ThingsPro. Excluding web account operations, you can use these RESTful APIs for all other gateway operations.

The following topics are covered in this appendix:

API Reference

API Reference

This section gives you an overview of the ThingsPro configuration RESTful APIs. For full details on using the APIs such as the resources available, the HTTPS methods supported, and the content of the requests and responses, refer to the *ThingsPro REST API Documentation*. You can download the documentation from the product page on <u>www.moxa.com</u>.

Name	Description	
bootstrap	A resource bundle used to select the gateway mode: Data Logger and Wireless	
	Manager.	
	NOTE: You must use this API to set the gateway mode when you use ThingsPro	
	for the first time.	
cellular	Provides the cellular configuration interface	
Custom-equipment	Manages customized equipment tags	
dhcpd	Handles the DHCP configuration	
dns	Handles the gateway DNS settings	
ethernet	Handles the Ethernet interfaces	
firmware	Manages the firmware upgrade function	
import-export	Manages the import/export of configuration files	
iptables	Manages iptables rules	
logprofile	Handles log profile configuration	
modbus	Handles Modbus framework configuration	
openvpn	Handles the configuration of the OpenVPN service	
relay	Provides the relay service	
route	Handles the routing table	
serial	Provides the utility to set the serial mode	
service	Manages the system service configuration	
system-status	Provides system status information	
time	Provides the system-time management function	