IoT Gateway Starter Kit

User's Manual



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Part No: 50-12205-1000

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Revision History

Revision	Release Date	Description of Change(s)
2.00	Dec.5, 2015	Initial Release

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Preface

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Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



Additional information, aids, and tips that help users perform tasks.



Information to prevent ***minor*** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.



Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

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1 Introduction

1.1 Overview

The ADLINK IoT Gateway Starter Kit provides a complete IoT connection solution, reducing development time and speeding deployment for any application environment. The IoT Gateway Starter Kit combines ADLINK's MXE-202i intelligent IoT gateway, based on Intel Atom E3826 processors, ADLINK's EdgePro IoT device & sensor management application, one light sensor and corresponding siren output, Modbus TCP module, and accessories, all utilizing industrial open standard protocol with security powered by Intel® IoT Gateway.

1.2 ADLINK EdgePro

ADLINK's EdgePro IoT device & sensor management application is enabled by the Intel® IoT Gateway, integrating the Wind River Intelligent Device Platform® (IDP) XT and McAfee® Embedded Control, for complete, pre-validated communication and security. EdgePro enables device and sensor management via plug-in(s) for field protocols including ZigBee (Home Automation Profile) and commonly adopted fieldbus Modbus TCP for industrial automation, all easily configured with sensors or I/O nodes. Interaction across devices/sensors is accomplished by an Event Execution Engine. A user-friendly Web-based dashboard allows remote monitoring of status and actuator control, with RESTFul Web-service APIs. In addition, EdgePro enables simple configuration of reliable and secure connectivity with Amazon Web Services (AWS) and Windows Azure Cloud. ADLINK EdgePro features:

- Device Joining:
  Newly connected devices are set up for each supported protocol and are immediately available to the remote server

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or Cloud, with no requirement for time-consuming configuration.

- Device Provision:
  Once detected, connected sensors and actuators are easily configured or renamed
- Device Diagnostic:
  When enabled, test procedures can provide readings and control, while confirming that devices and sensors are correctly connected
- Execution:
  Allows event definition based on sensor or actuator output, such as issuing an alert if temperature exceeds limits


NOTE:

Please download the most recent EdgePro version and documentation from ADLINK at
http://www.adlinktech.com/PD/web/PD_Driver.php?cp=Driver&PDNo=1589&kind=AS

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2 Getting Started

2.1 Unpacking Checklist

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from your dealer before returning any product to ADLINK. Ensure that the following items are included in the package.

- MXE-202i IoT gateway
- Pre-installed WiFi/BT minPCIe module
- ZigBee / 802.15.4 module USB adapter
- Modbus RTU module
- ZigBee light sensor
- ZigBee wireless siren
- Rotary control
- 2x LED (green & red)
- 40W AC-DC adapter
- 1m RJ45 Ethernet cable
- Modbus I/O connectors with cabling
- Quick Start Guide

2.2 Connecting Hardware to the MXE-202i

1. Plug the ZigBee adapter into the USB port

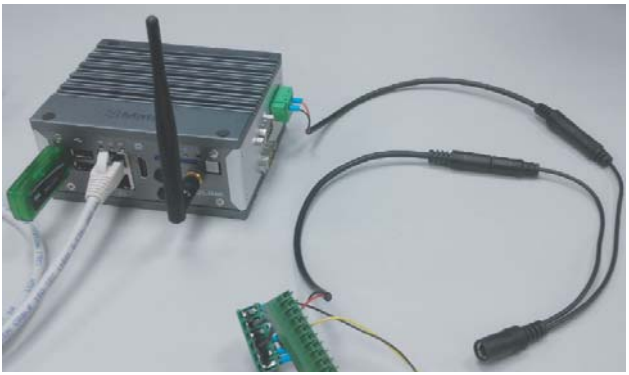
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2. Connect the network cable and Modbus TCP device as shown



3. Attach the power connector to the MXE-202i



4. Attach I/O connectors to the Modbus TCP module



5. Connect the cable to the adapter



6. Install batteries in the ZigBee Siren (2x Mercury battery type CR2450) and ZigBee Light Sensor (3x AAA battery).



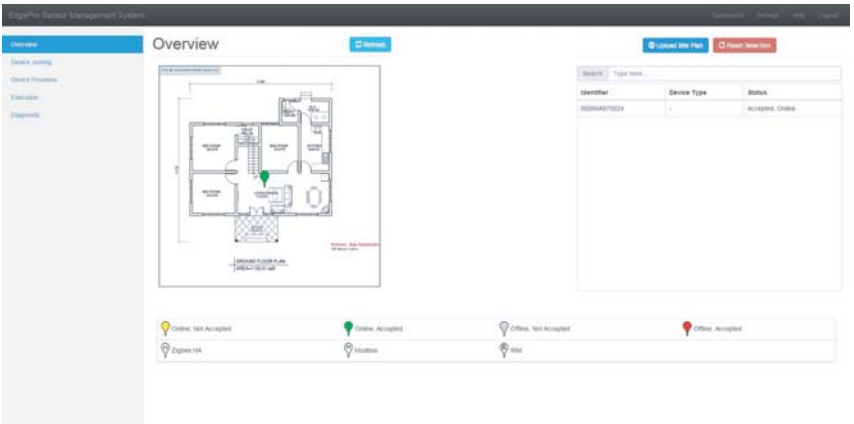
2.3 Configuring EdgePro

1. Power up the MXE-202i and wait about 2 minutes for boot to complete.

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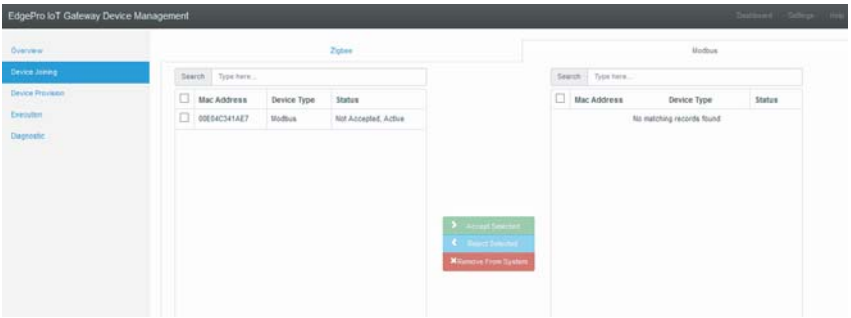


2. On the host computer, connect to gateway WIFI, with default gateway SSID **ADLINK-EDGEPRO** and default Security Key **adlinkedgepro**.
3. Open the browser and go to **http://10.0.0.254:8080**
4. Enter the default user name **admin** and password **admin** and select Login.
5. The Overview page appears.

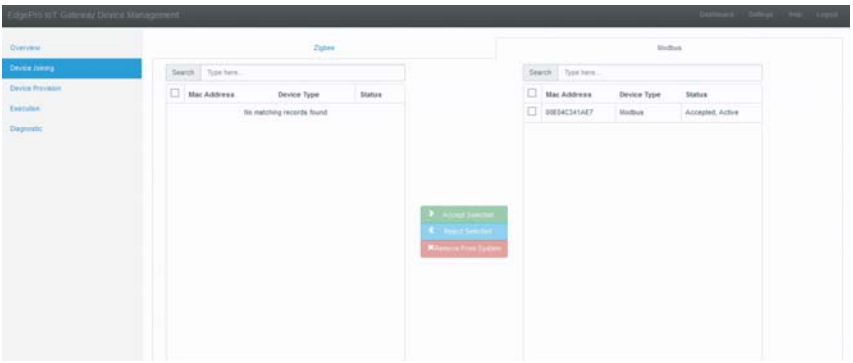


2.4 Configuring the Modbus TCP Module

1. Open the Device Joining page and select the Modbus tab. New devices appear in the left side list.



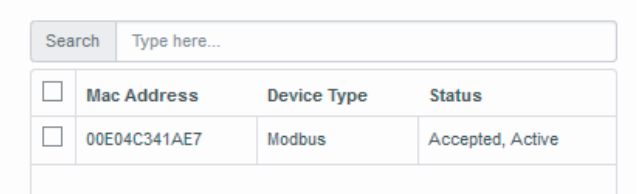
2. Select devices to be added and click Accept Selected. The devices appear in the right side list. Modbus devices are now ready to be activated and configured.



3. Select EX9017 MAC Address to add Red LED (Connected at Pin DO 0) and Green LED (Connected at Pin

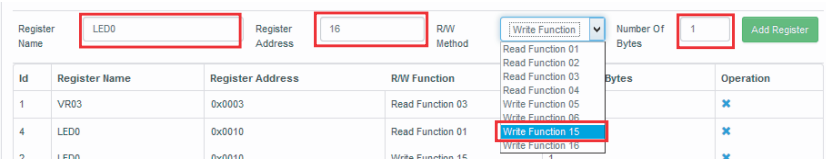
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DI 0).The MAC Address is printed on the exterior of the EX9017 module.



4. To configure the green LED, enter the information as shown and select Add Register.

Register Name	LED0
Register Address	16
R/W Method	Write Function 15 Read Function 01
Number of Bytes	1



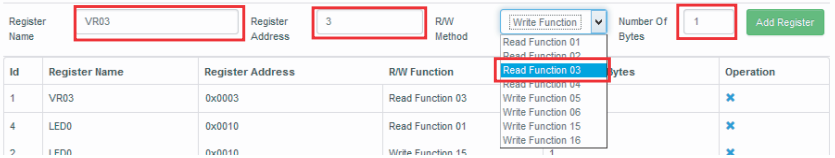
5. To configure the red LED, enter the information as shown and select Add Register.

Register Name	LED1
Register Address	17
R/W Method	Write Function 15 Read Function 01
Number of Bytes	1

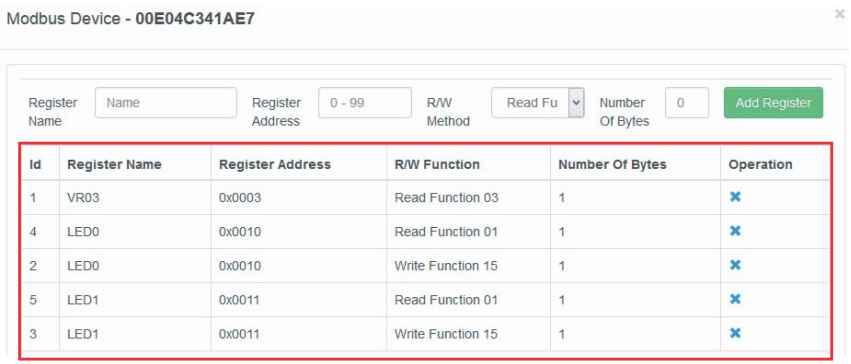


6. Select EX9017 MAC Address to add the rotary control (Connected at Pin Vin 3+). To configure the rotary control, enter the information as show and select Add Register

Register Name	VR03
Register Address	3
R/W Method	Read Function 3
Number of Bytes	1

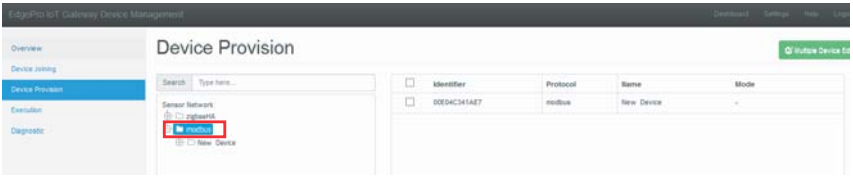


When configuration is complete, the Modbus TCP Module settings are displayed.



7. On the Device Provision Page, select the Modbus node.

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8. Select the first entry to rename the device.



9. Enter the new name as Modbus and select Save Changes.



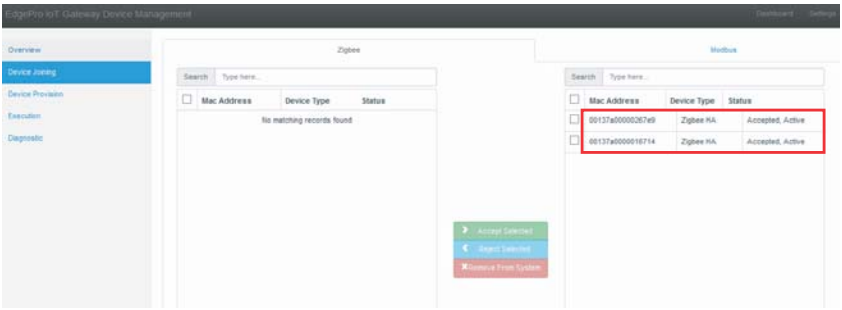
2.5 Configuring ZigBee Light Sensor & Siren

NOTE:

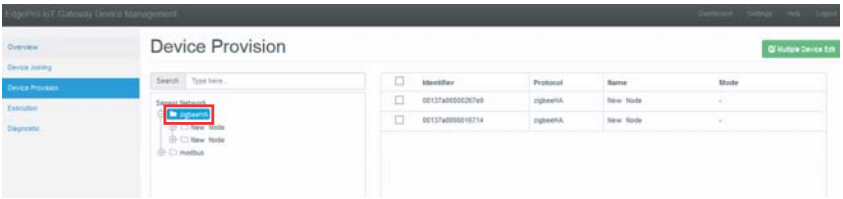
- For advanced configuration of ZigBee Light Sensor, please see “ZigBee Light Sensor Configuration” on page 73.
- For advanced configuration of ZigBee Siren please see “ZigBee Siren Configuration” on page 75.
- If the ZigBee dongle cannot connect to ZigBee Light Sensor and Siren, please see “Zigbee USB Module Configuration” on page 53.

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1. In the IoT Sensor Management System go to the Device Joining Page and select the ZigBee tab. Reset sensors and actuators. After reset, the sensors and actuators will appear on the screen. Refer to Step 3 in Appendix B ZigBee Light Sensor Configuration and in Appendix C ZigBee Siren Configuration. New sensors are listed on the left. Select the sensors to be added and select Accept Selected. The added sensors are now listed on the right.



2. On the Device Provision Page, select ZigBeeHA to expand the list.



3. Acquire the MAC address of the Wireless ZigBee Light Sensor from the device's IEEE label and select it from the identifier field.

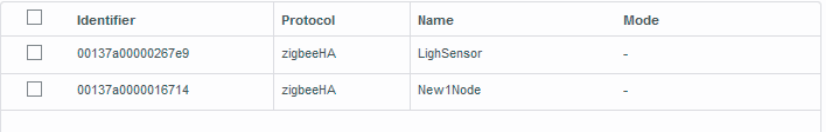
Identifier	Protocol	Name	Mode
00137a00000267e9	zigbeeHA	New1Node	-
00137a0000016714	zigbeeHA	New1Node	-

4. Enter the name LightSensor and select Save Changes.

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5. Acquire the MAC address of the Wireless ZigBee Siren from the device's IEEE label and select it from the identifier field.

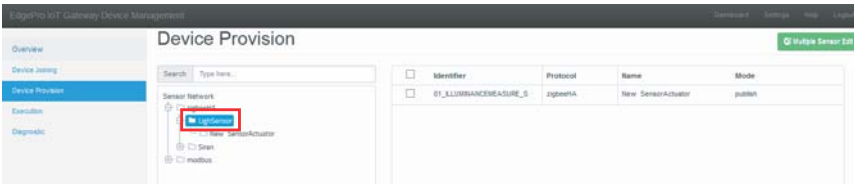


	Identifier	Protocol	Name	Mode
☐	00137a00000267e9	zigbeeHA	LighSensor	-
☐	00137a0000016714	zigbeeHA	New1Node	-

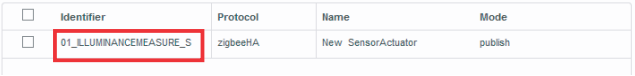
6. Enter the name Siren and select Save Changes.



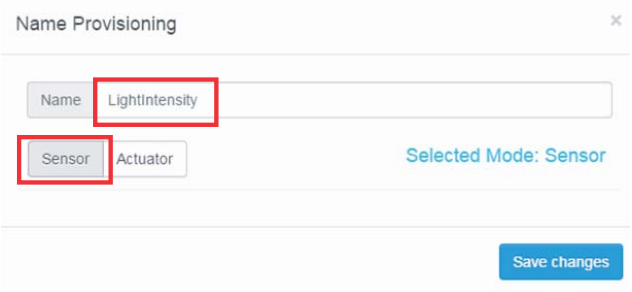
7. Select LightSensor in the Sensor Network tree to rename.



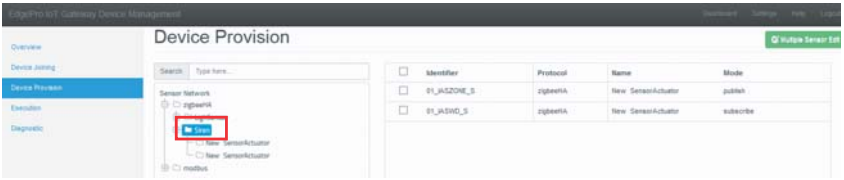
8. Select 01_ILLUMINANCEMEASURE_S in the identifier field.



9. Enter the name LightIntensity and select Sensor and then Save changes.



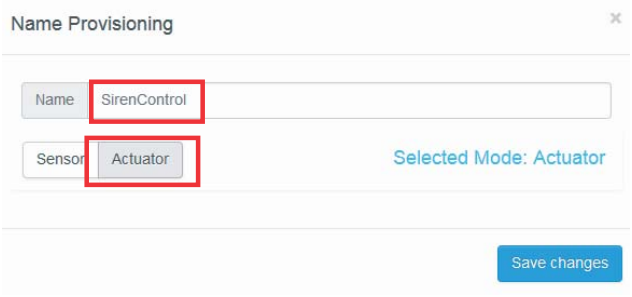
10. Select Siren in the Sensor Network tree to rename.



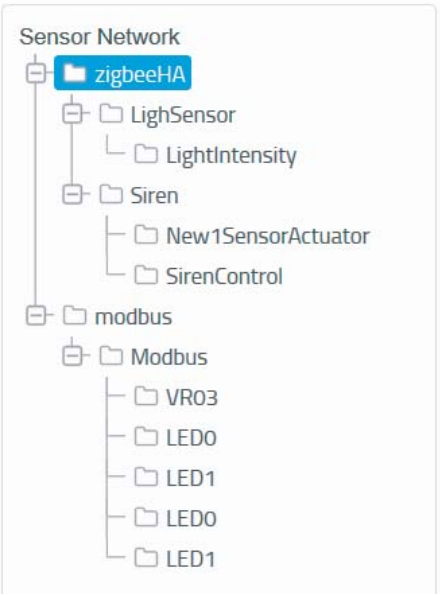
11. Select 01_IASWD_S from the Identifier list.



12. Enter the name SirenControl and select Actuator type. Save changes.



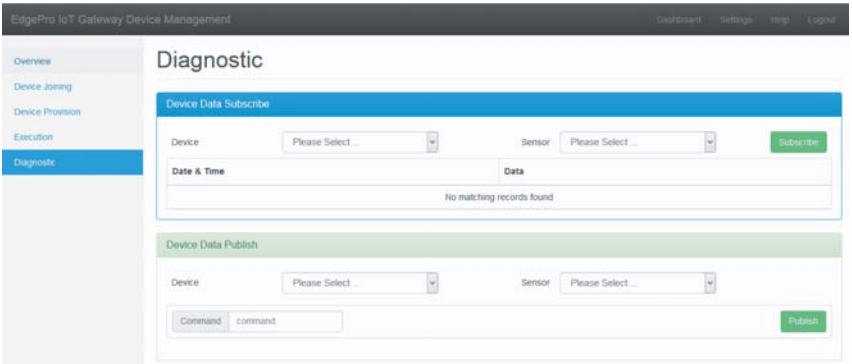
Sensor configuration should now be displayed as shown.



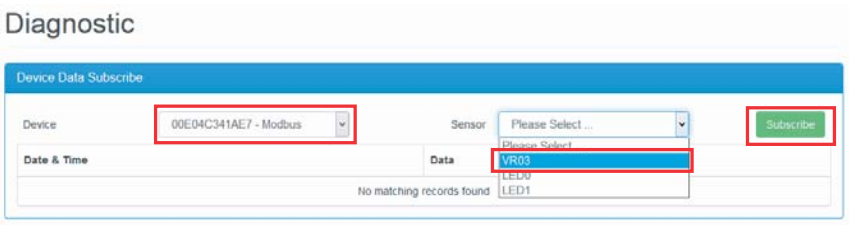
2.6 Working with EdgePro Diagnostics

2.6.1 Modbus TCP Module

1. Open the Diagnostic page.



2. To verify the rotary control, In the Device Data Subscribe window, select Modbus as the Device, select VR03 as the Sensor, and select Subscribe.

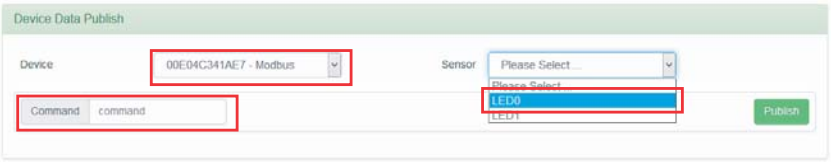


Polling of sensor status begins.

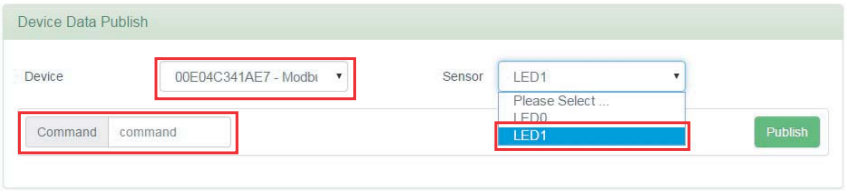
When polling is complete, the value appears in the Data field. For the rotary control, the value, ranging from 32768 (0V) to 65535 (10V), is determined by the control's position.

3. To verify the red LED, in Device Data Publish, select the Device as Modbus, and Sensor as LED0 and enter the Command value 1. Select Publish.

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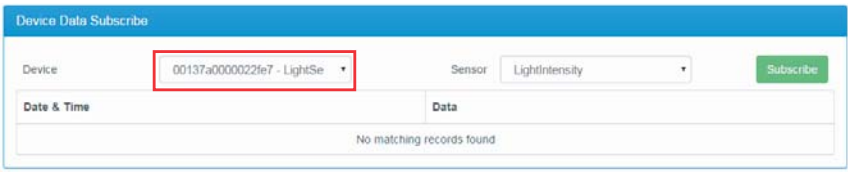


4. To verify the green LED, in Device Data Publish, select the Device as Modbus, and Sensor as LED1 and enter the Command value 1. Select Publish.



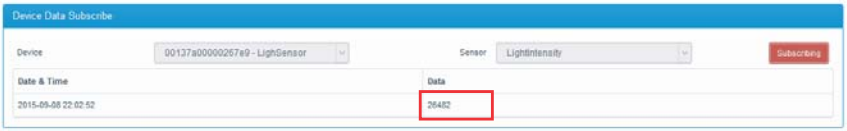
NOTE: For the LEDs, the Command value 1 configures the LED as ON. Command value 0 configures OFF.

5. To verify the light sensor, In the Device Data Subscribe window, select LightSensor as the Device, and select Subscribe.



Polling of sensor status begins.

When polling is complete, the value appears in the Data field. Values range from 1 to 34771, based on brightness detected.



6. To verify the siren, in Device Data Publish, select the Device as Siren, and Sensor as SirenControl and enter the desired Command value as shown. Select Publish.



Command Value	Alert Generated
0	OFF
1	Burglar Alarm
2	Fire Alarm
3	Ambulance Alarm
15	Doorbell
17	Burglar Alarm (With Light)
18	Fire Alarm (With Light)
19	Ambulance Alarm (With Light)
30	Silent (With Light)
31	Door Bell (With Light)

Table 2-1: Siren Alerts

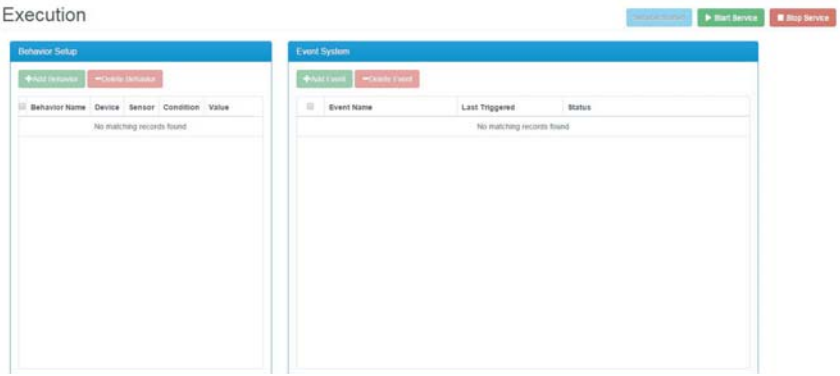
2.7 EdgePro Execution

Users can define events based on sensor and actuator output, such as issuing an alert if temperature readout exceeds a threshold.

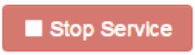
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2.7.1 Behavior, Condition, and Event Setup

1. Open the Execution page.



2. Select Stop Service before beginning.



3. Select Add Behavior.



4. To add LED_TURN_ON, enter values as shown and select Save changes.

Name	LED_TURN_ON
Device	Modbus
Sensor	LED0/LED1
Condition	==
Value	1

5. To add LED_TURN_OFF, enter values as shown and select Save changes.

Name	LED_TURN_OFF
Device	Modbus
Sensor	LED0/LED1
Condition	==
Value	0

6. To add ROTARY_CONTROL_ON, enter values as shown and select Save changes.

Name	ROTARY_CONTROL_ON
Device	Modbus
Sensor	VR03
Condition	>=
Value	45000

7. To configure ROTARY_CONTROL_OFF, enter values as shown and select Save changes.

Name	ROTARY_CONTROL_OFF
Device	Modbus
Sensor	VR03
Condition	<=
Value	44999

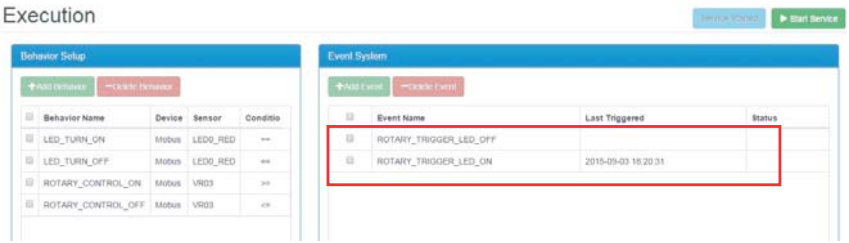
8. Select Add Event.



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9. Enter the Event Name as ROTARY_TRIGEER_LED_ON, select Behavior as ROTARY_CONTROL_ON and Action as LED_TURN_ON.
10. Enter the Event Name as ROTARY_TRIGGER_LED_OFF, select Behavior as ROTARY_CONTROL_OFF and Action as LED_TURN_OFF.

The Events appear in the right side list.



11. Select Start Service.

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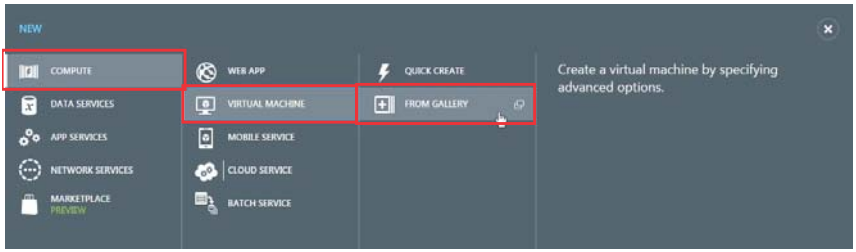
3 EdgePro Installation in Windows Azure/Amazon Cloud

3.1 Enabling VM in Windows Azure Cloud

1. Sign in to the Azure portal.
2. Select New in the command bar.



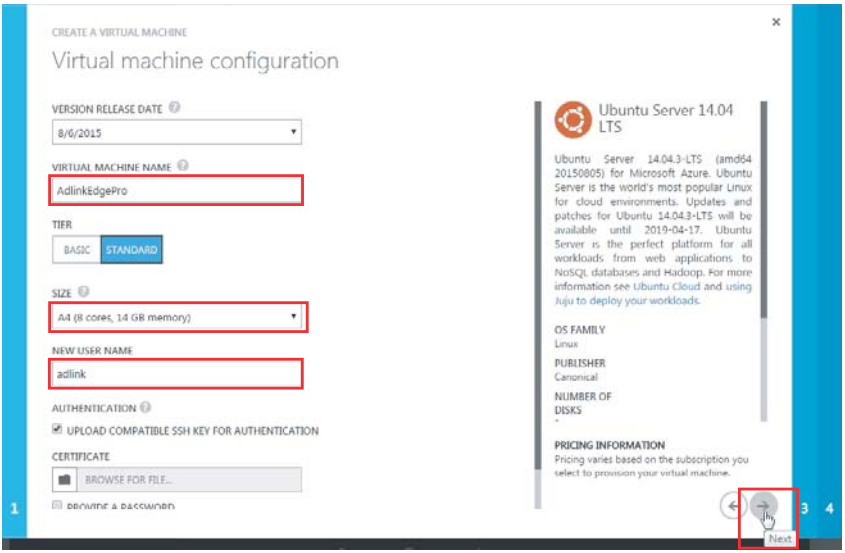
3. In Compute, select Virtual Machine and then From Gallery.



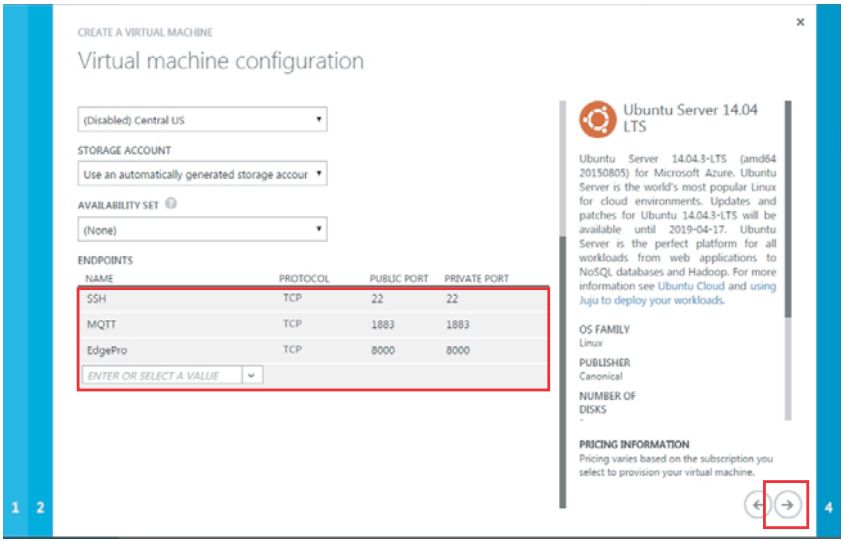
4. In Ubuntu, choose Ubuntu Server 14.04 LTS and select Next.



5. Enter a computer name, size, and administrative user name and password. Select Next.



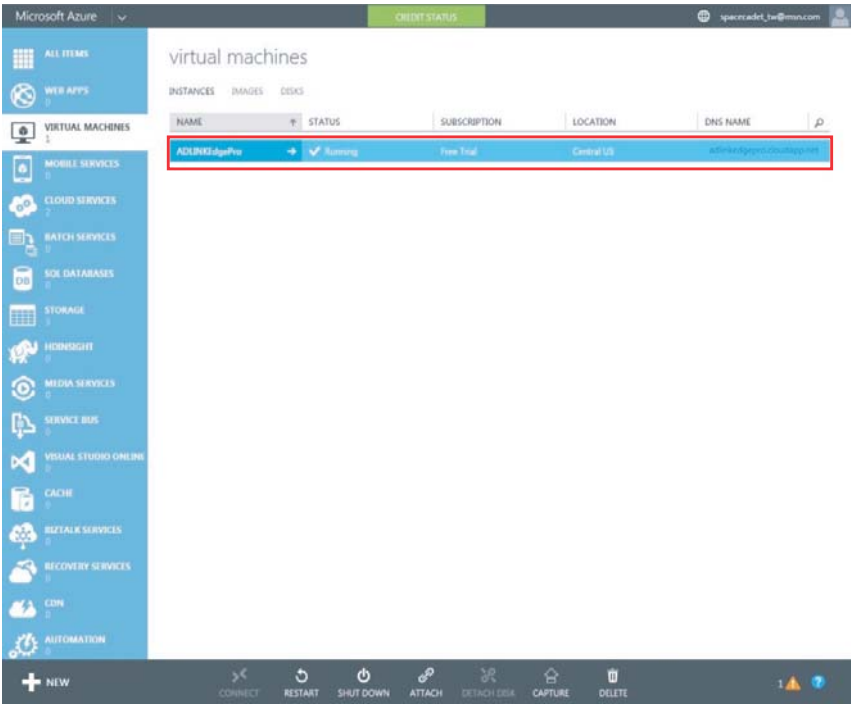
6. Add a new endpoint for MQTT and set ports to TCP 8000 and TCP 1883. Select Next.



7. The VN Configuration confirmation appears. Select Next.



Once the virtual machine is created, it appears in the portal under Virtual Machines, as do the created corresponding cloud service and storage account. Both the virtual machine and cloud service are started automatically with status shown as Running.



8. To connect to VM from Linux using SSH:

https://azure.microsoft.com/en-us/documentation/articles/virtual-machines-linux-tutorial/# connecting-to-your-vm

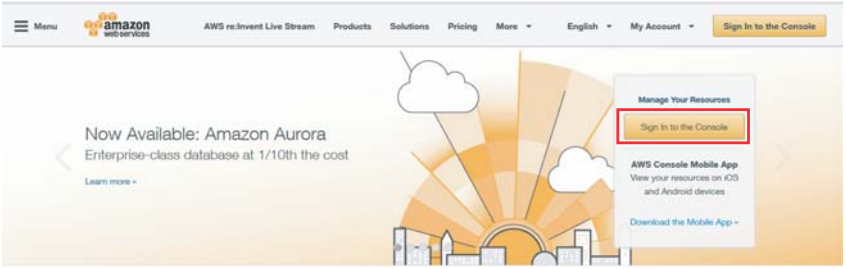
9. To connect to VM from Windows using SSH:

https://azure.microsoft.com/en-gb/documentation/articles/virtual-machines-linux-how-to-log-on/

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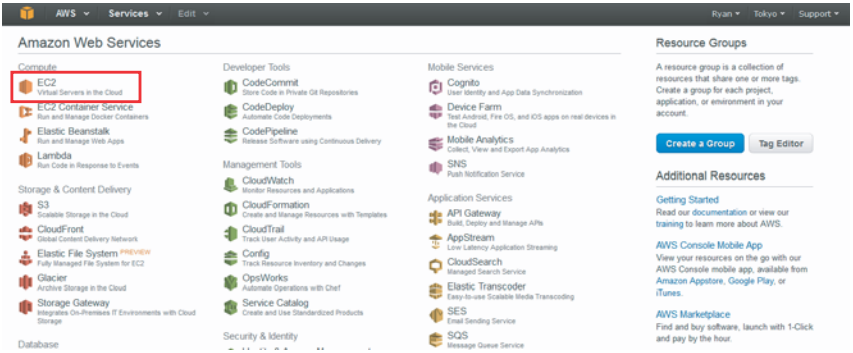
3.2 Enabling VM in Amazon Cloud

1. Sign in or register at the Amazon console.

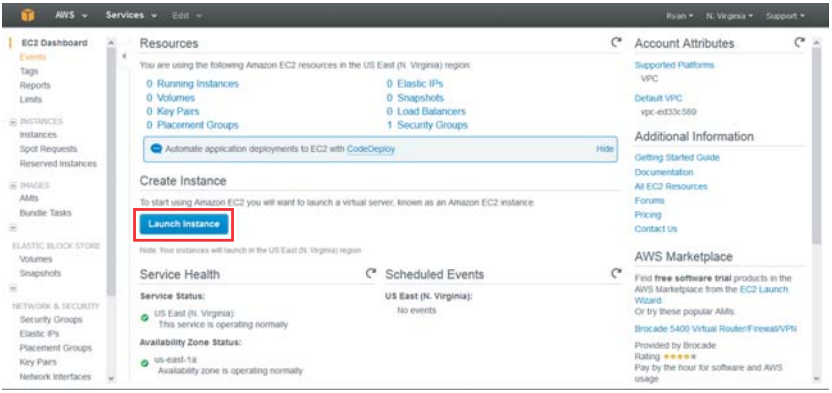




2. The Amazon console appears. Select EC2.

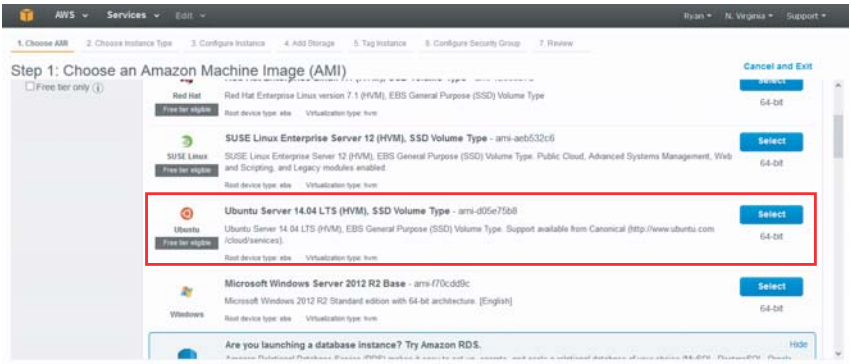


3. Select Launch Instance to enable VM.

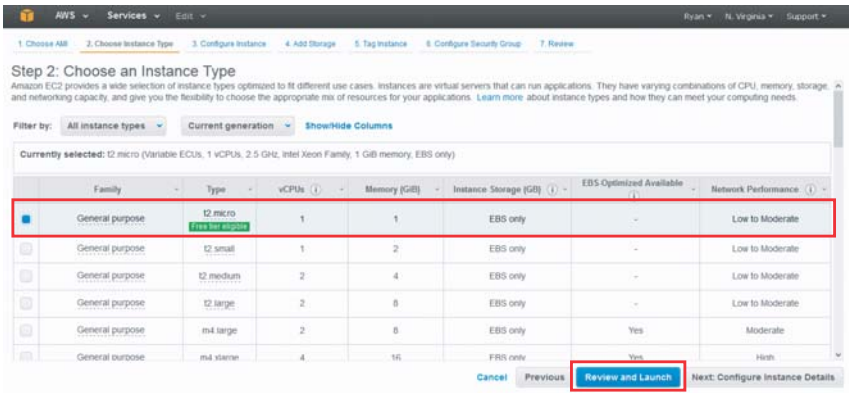


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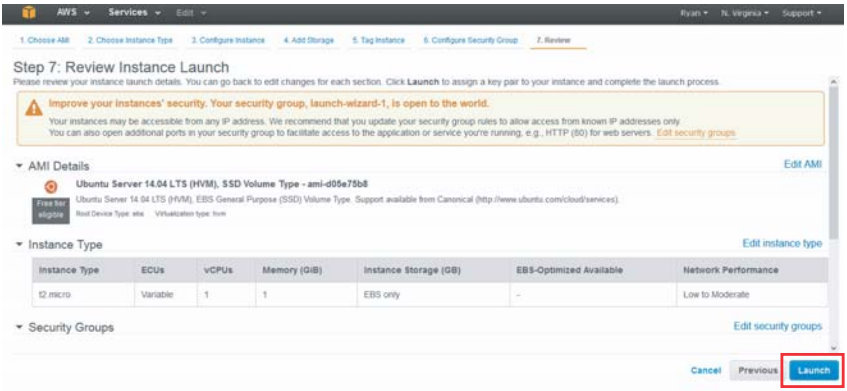
4. For the AMI, select Ubuntu Server 14.04 LTS (HVM), SSD Volume Type.



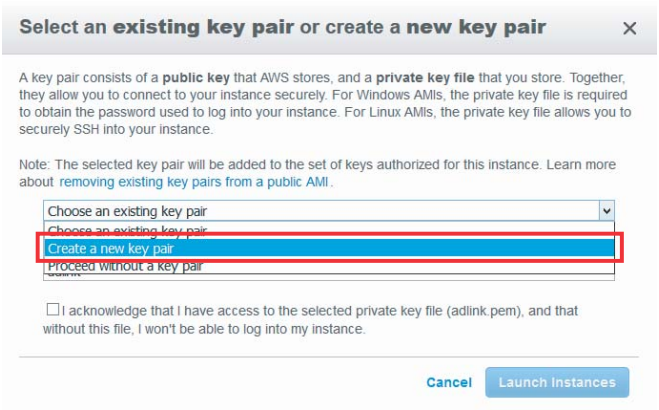
5. For Instance Type, select General purpose/Free tier eligible. Select Review and Launch.



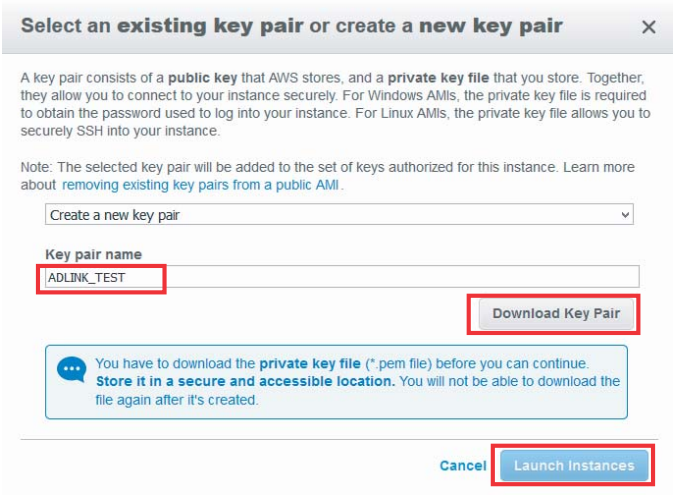
6. Review Instance details and select Launch.



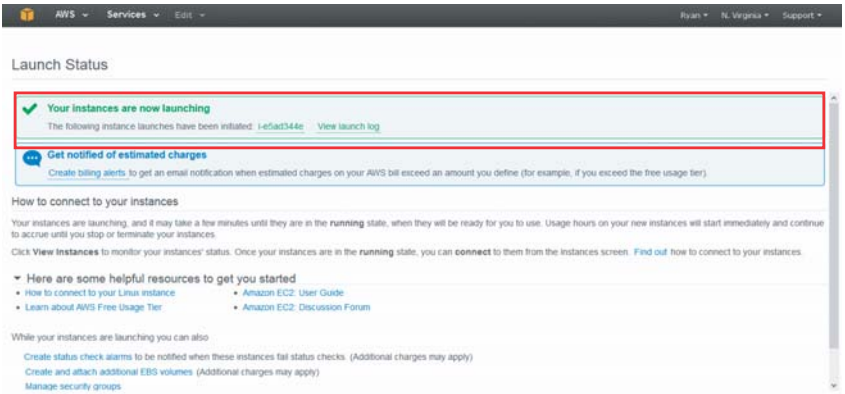
7. Select Create a new key pair for SSH usage.



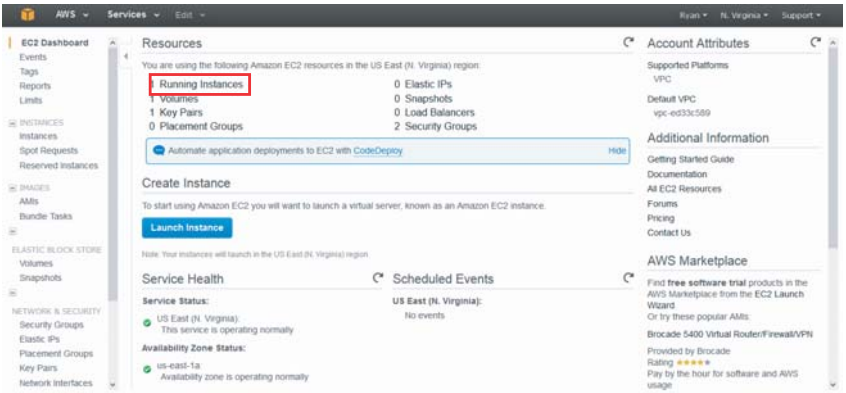
8. Enter a key pair name. Select Download Key Pair and save to a secure and accessible local drive. Select Launch instance.



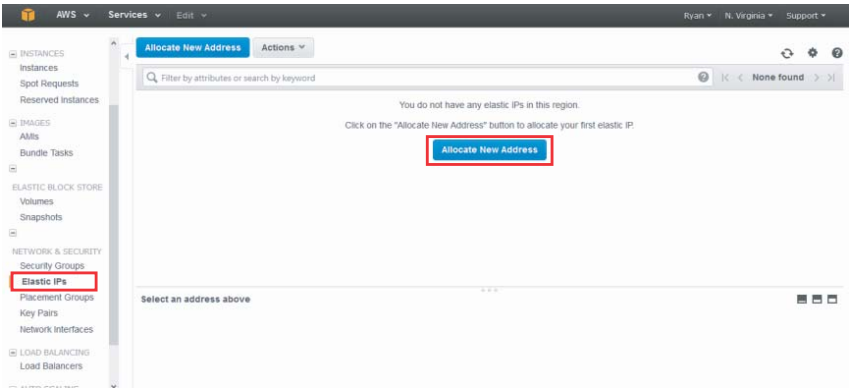
9. After successful creation, the instance status is displayed.



10. Return to the EC2 console page, where the running instance is now listed.

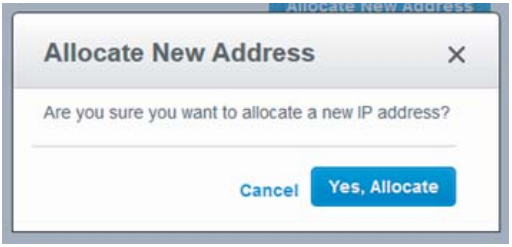


11. Select Elastic IPs and select Allocate New Address.

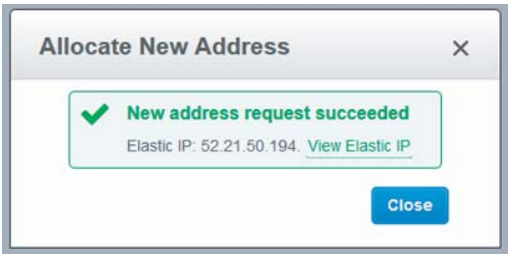


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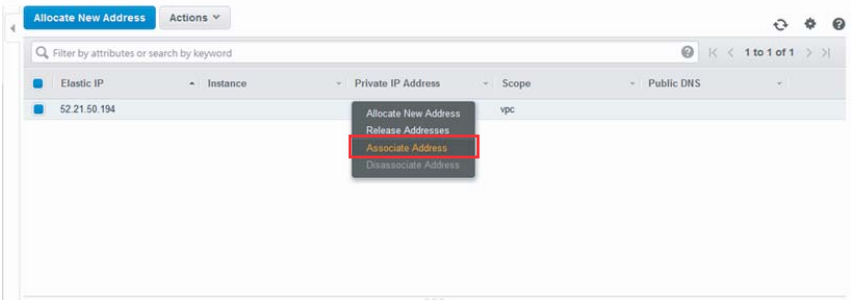
12. Select Yes, Allocate when prompted.



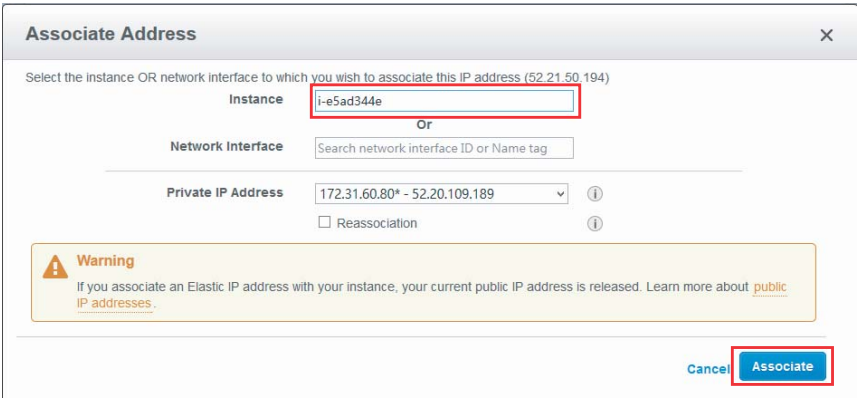
13. A notice appears confirming successful allocation.



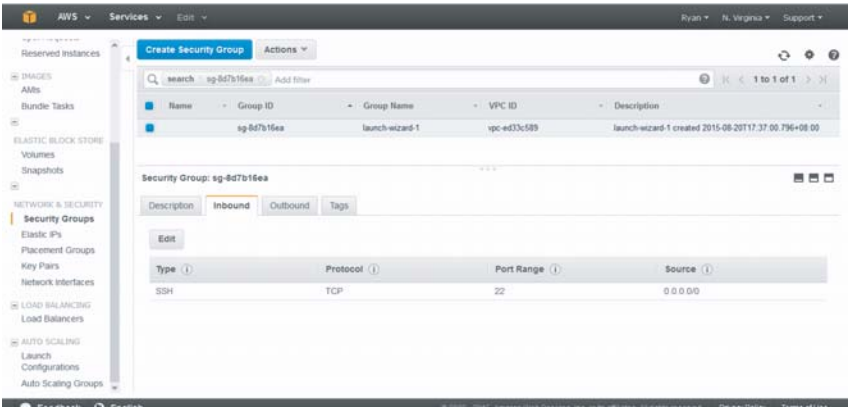
14. Right click Private IP address and select Associate Address.



15. Select the newly created instance and select Associate.



16. Open the Inbound/Outbound connection in the Security Groups page.



17. Enter type and port ranges, TCP 8000 and TCP 1883, for the instance.

Type	Protocol	Port Range	Source
Custom TCP Rule	TCP	8000	0.0.0.0/0
Custom TCP Rule	TCP	1883	0.0.0.0/0
SSH	TCP	22	0.0.0.0/0

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18. To connect to the instance from Linux using SSH:

http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AccessingInstancesLinux.html

To connect to the instance from Windows using SSH:

https://azure.microsoft.com/en-gb/documentation/articles/virtual-machines-linux-how-to-log-on/

3.3 EdgePro Installation in Windows Azure and Amazon Cloud

1. After enabling SSH connection, to install nodejs and mongodb, enter the following commands:

```
sudo apt-get update
sudo apt-get install nodejs mongodb
```

2. To install mosquito, enter the following commands:

```
sudo apt-add-repository ppa:mosquito-dev/mosquito-ppa
sudo apt-get update
sudo apt-get install mosquito
```

3. To download the EdgePro installer from the ADLINK website, go to

http://www.adlinktech.com/PD/web/PD_Driver.php?cp=Driver&PDNo=1589&kind=AS

4. Select Associated Software.



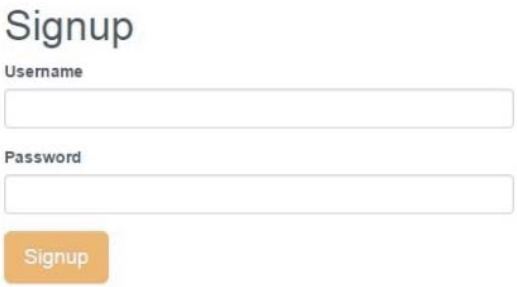
5. When download is complete, upload the installer into the home directory under the VM instance.
6. Enter the following commands:

```
chmod +x EdgePro1.0_Installer
sudo ./EdgePro1.0_Installer
```

7. Reboot the VM instance to enable EdgePro service.
8. After reboot, go to

http://your cloud ip:8000/user/signup

and register the account and password in EdgePro.



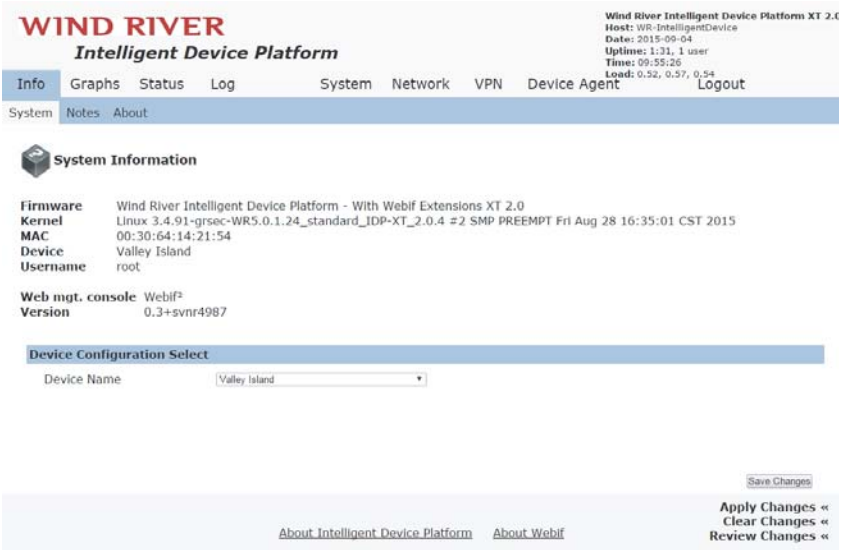
9. Once complete, EdgePro prompts Login, enter account information.



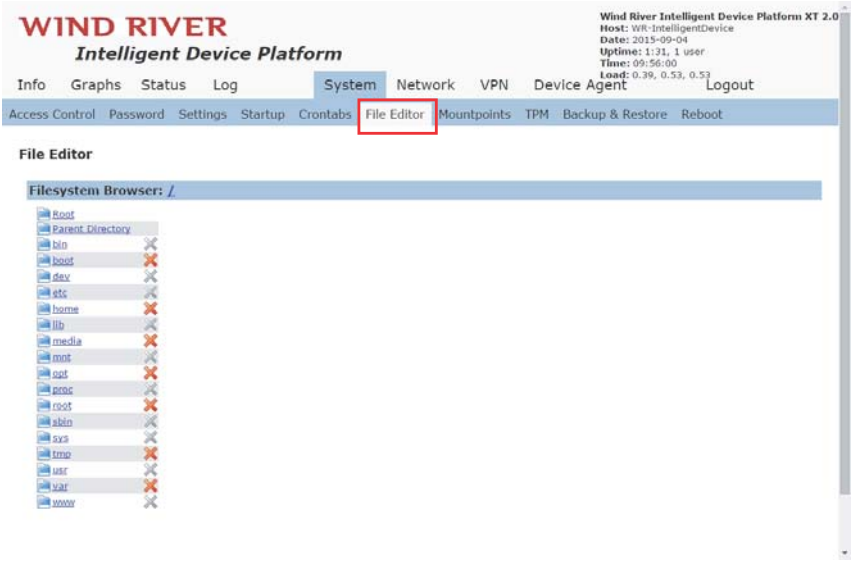
3.4 Configuration of Cloud IP Address in EdgePro

To add the Cloud IP to the MXE-202i gateway device:

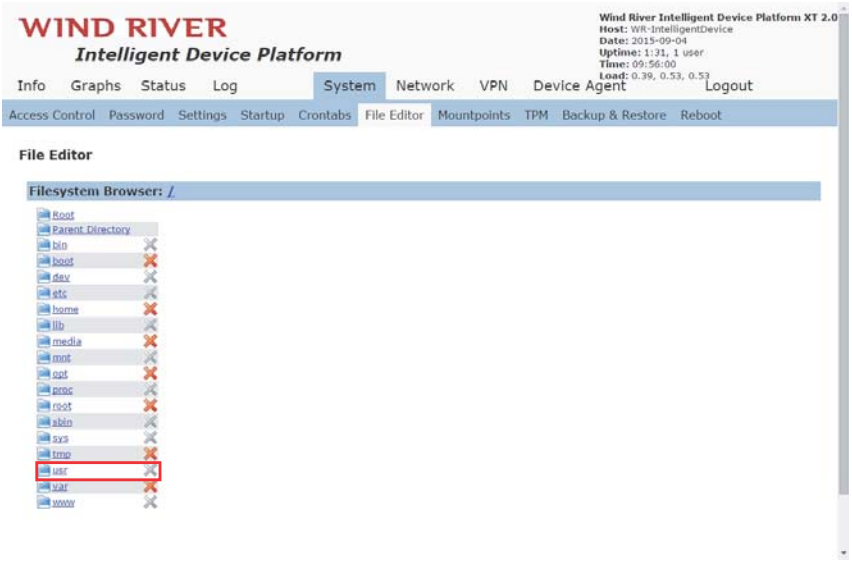
1. Go to https://10.0.0.254. the System Information page appears.



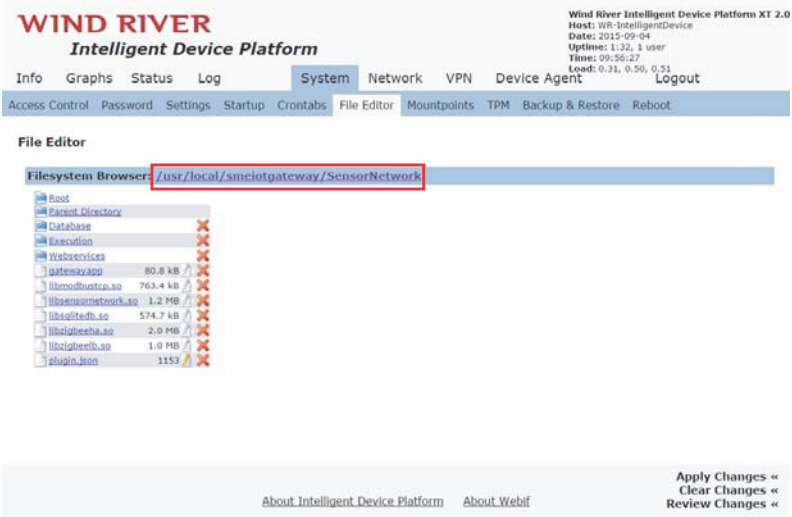
2. In the System tab, select File Editor.



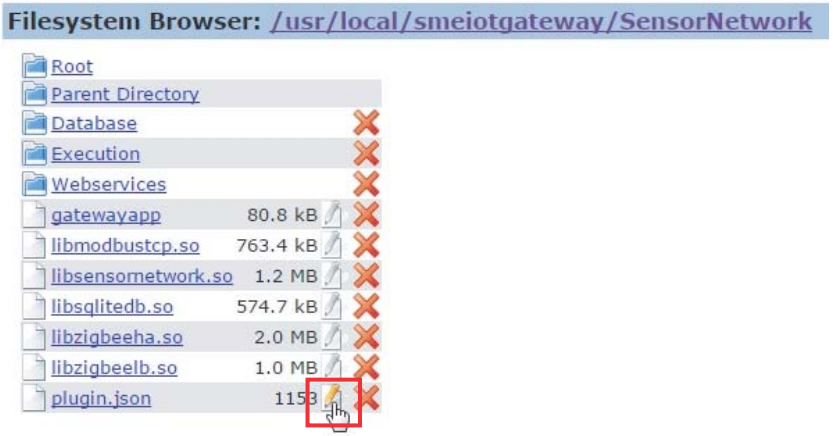
3. Go to the address /usr/local/smeiotgateway/SensorNetwork.



4. The path appears in the Filesystem Browser address bar



5. Select the Edit icon for the plugin.json listing.

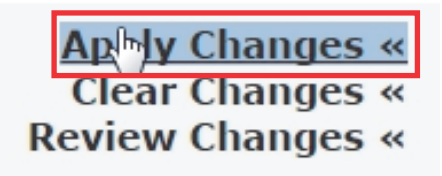


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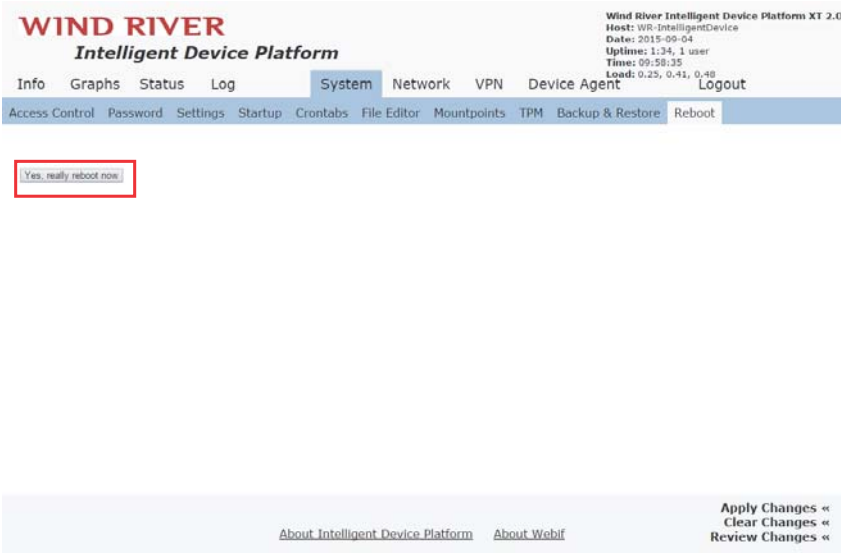
6. Enter the cloud server IP (inside “”) in the hostname field of the brokermosquitto listing. Select Save Changes.



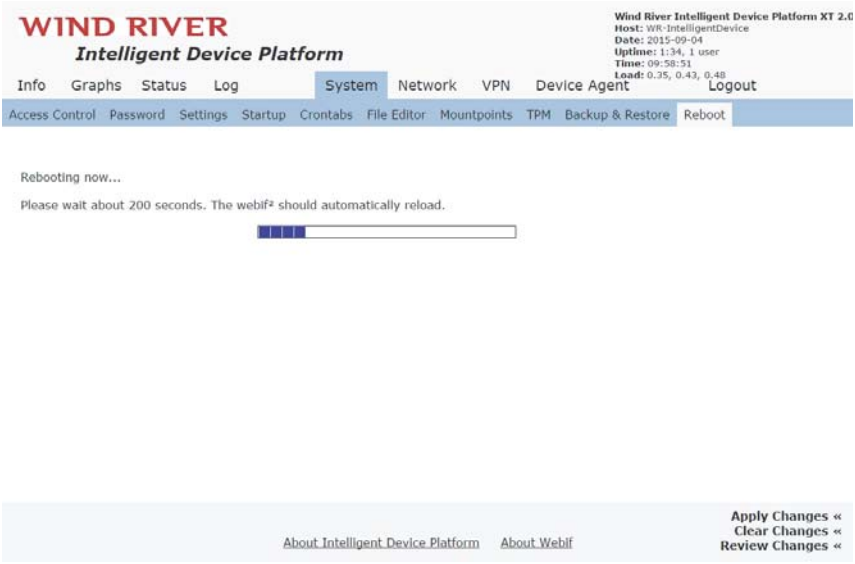
7. Select Apply Changes from the lower right menu.



8. When the Reboot prompt appears, confirm.



The gateway reboots.



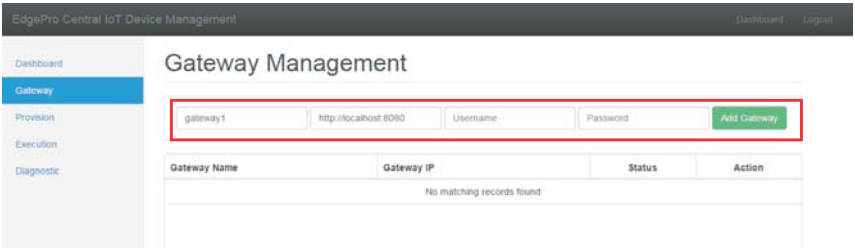
3.5 Linking Devices & Sensors to EdgePro Dashboard

1. At initial login, a notification of no gateway found appears. Select OK.



2. The Gateway Management page appears. Enter the configuration information as shown to add the gateway device.

Name	Gateway1 (any name can be used)
Location	http://gateway ip:8080
Usename	admin
Password	admin

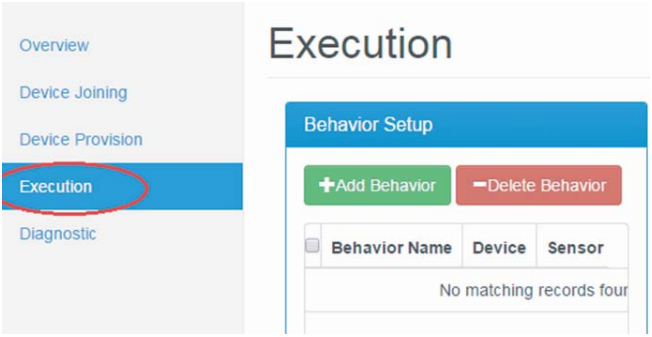


The new entry is listed in Gateway Management.

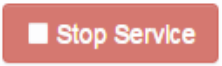


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3. Open the Execution page.



4. Select Stop Service.



5. Select Add Behavior.



6. To add Behavior for SirenOFF, on the Behavior Setup page, enter the configuration as shown and select Save changes.

Name	SirenOFF (required)
Gateway	(added Gateway name)
Device	Siren
Sensor	SirenControl
Condition	==
Value	0

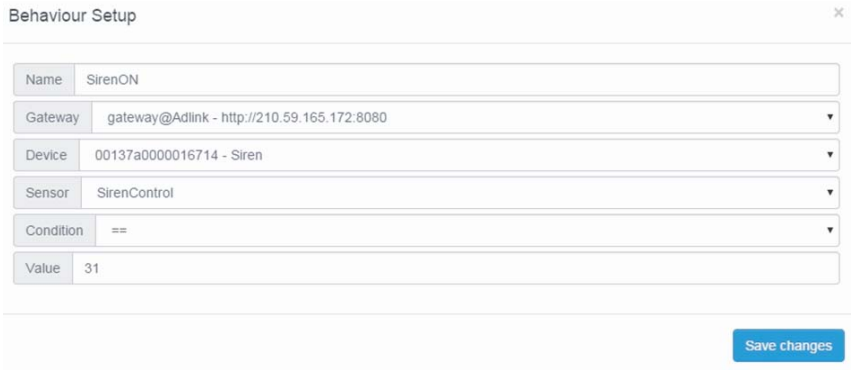
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7. To add Behavior for SirenON, on the Behavior Setup page, enter the configuration as shown and select Save changes.

Name	SirenON (required)
Gateway	(added Gateway name)
Device	Siren
Sensor	SirenControl
Condition	==
Value	31

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8. To add Behavior for LightSensorON, on the Behavior Setup page, enter the configuration as shown and select Save changes.

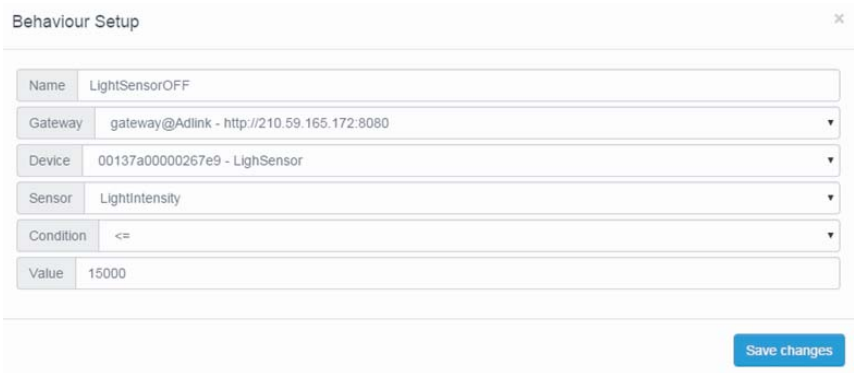
Name	LightSensorON (required)
Gateway	(added Gateway name)
Device	LightSensor
Sensor	LightIntensity
Condition	>=
Value	20000

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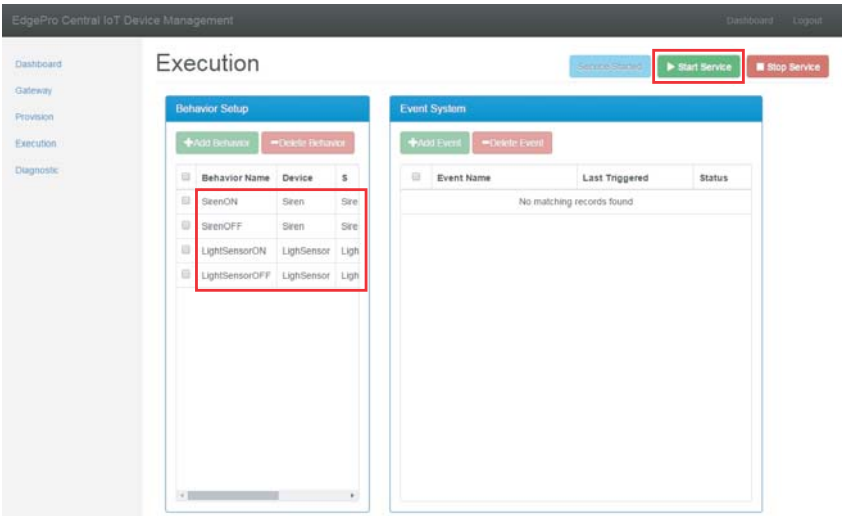
9. To add Behavior for LightSensorOFF, on the Behavior Setup page, enter the configuration as shown and select Save changes.

Name	LightSensorOFF (required)
Gateway	(added Gateway name)
Device	LightSensor
Sensor	LightIntensity
Condition	<=
Value	15000

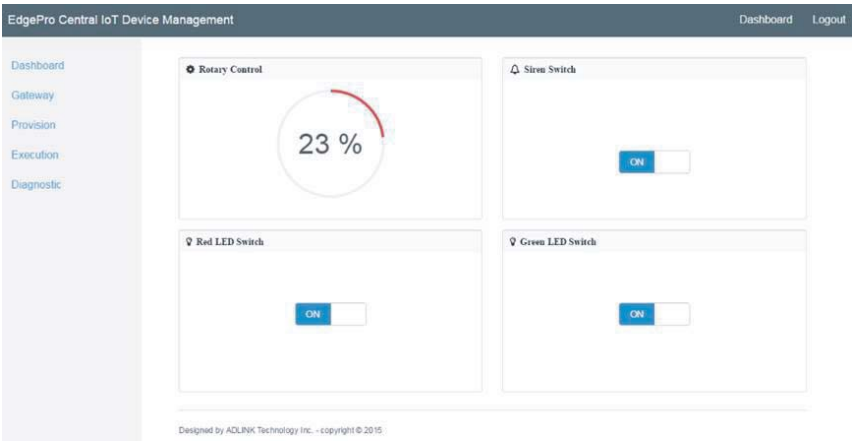


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10. The added behaviors are now listed. Select Start Service.



11. Return to the Dashboard page. All added sensors can now be controlled from here.

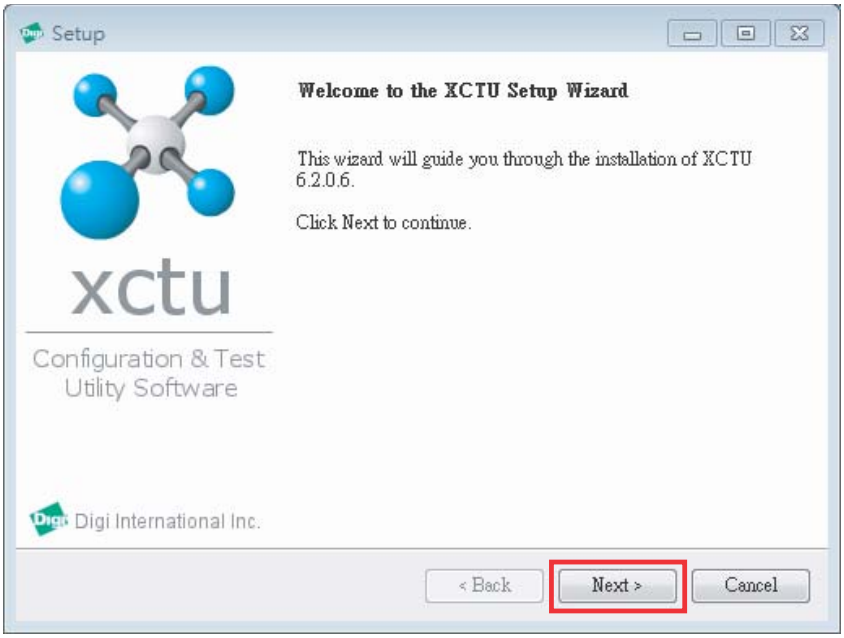


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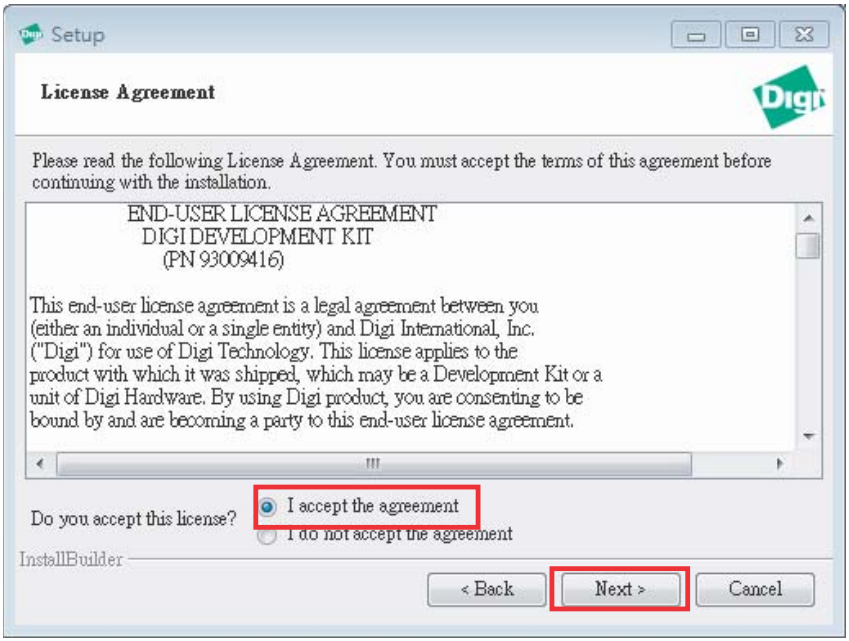
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Appendix A Zigbee USB Module Configuration

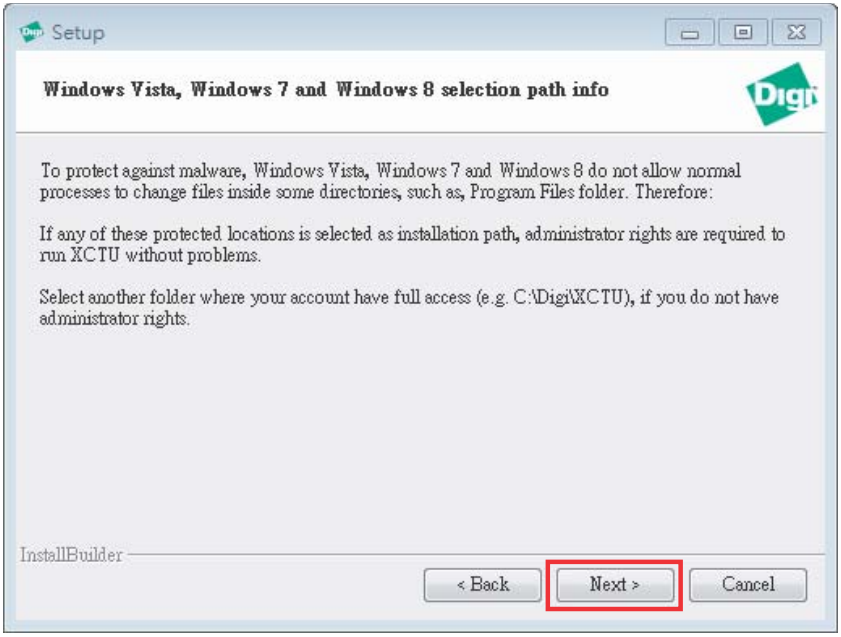
1. Download the XCTU Next Gen Installer, Windows x32/x64 (for Windows) or XCTU Next Gen Installer, Mac OS X (for Mac) from http://www.digi.com/support/productdetail?pid=3352&type=utilities
2. Run the EXE file in Administrator mode. The Welcome screen appears. Select Next.



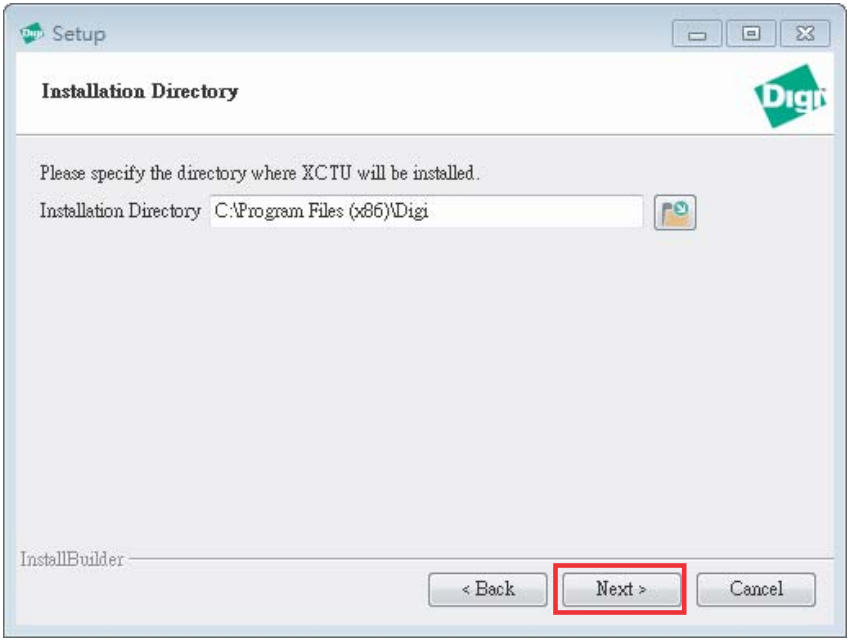
3. Accept the licencing agreement and select Next.



4. Read the installation information and Select Next

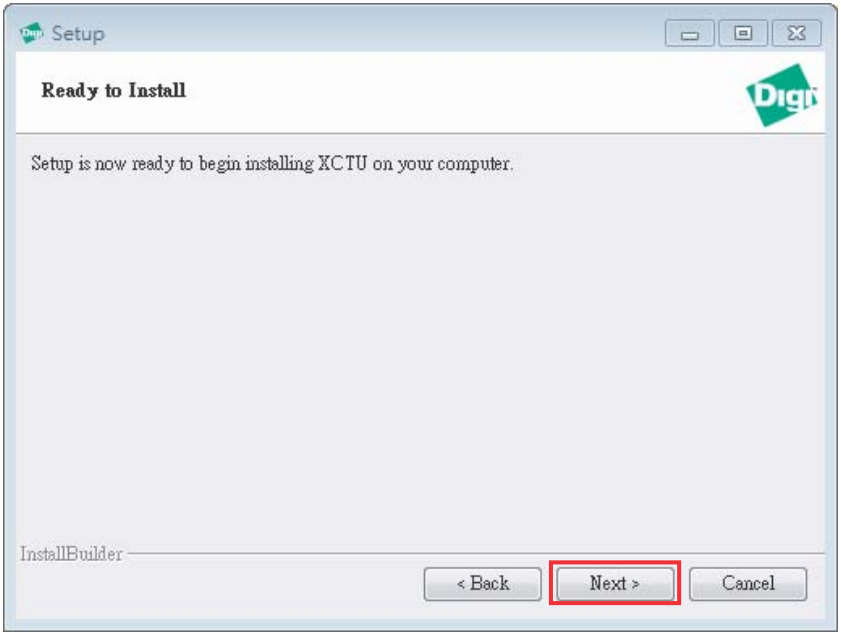


5. Choose an installation directory and select Next.

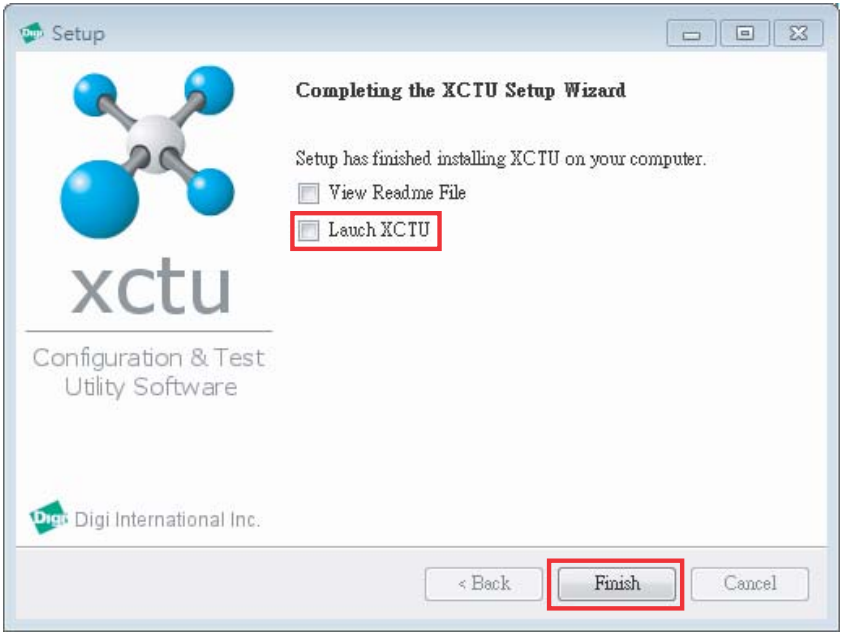


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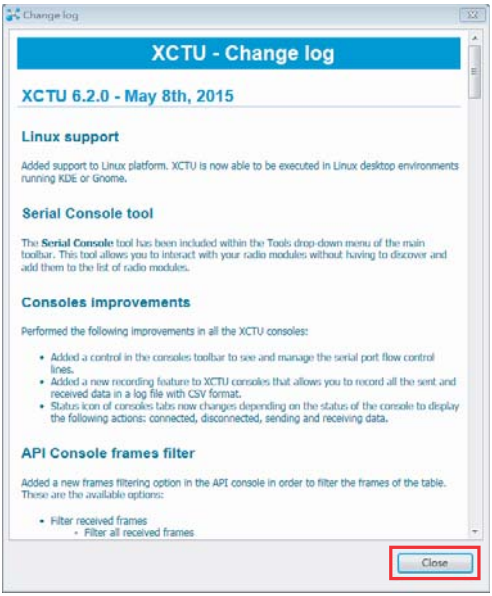
6. The Ready to Install dialog appears. Select Next. Installation begins.



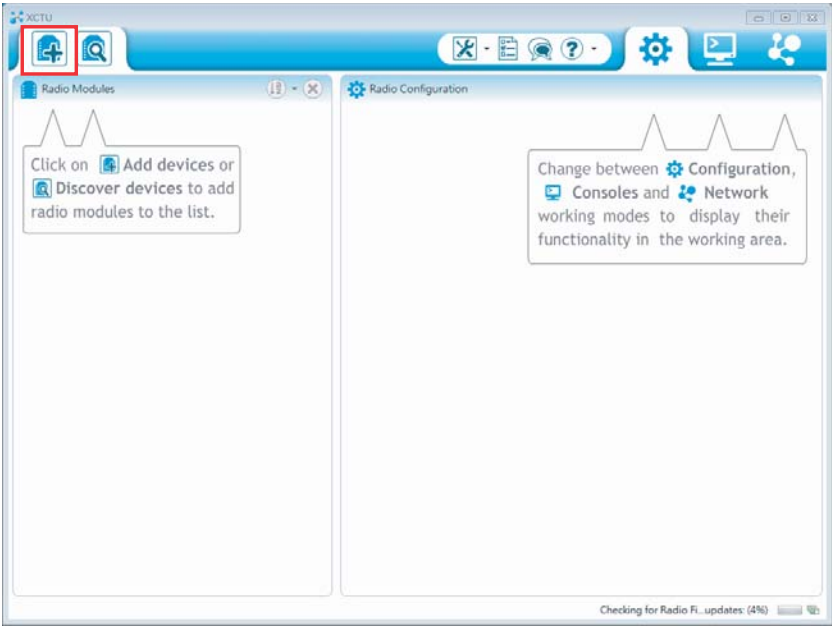
7. Clear Launch XCTU and select Finish to complete installation.



8. Install the ZigBee Coordinator into a vacant USB port on the computer.
9. Run XCTU as administrator, and close the Change log dialog box.

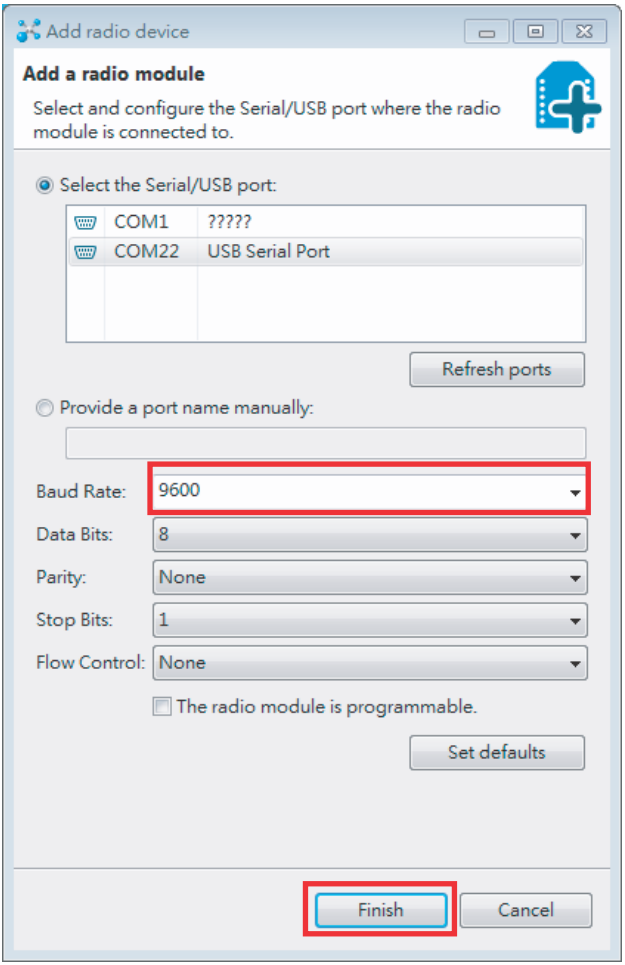


10. Select the Add Devices button.



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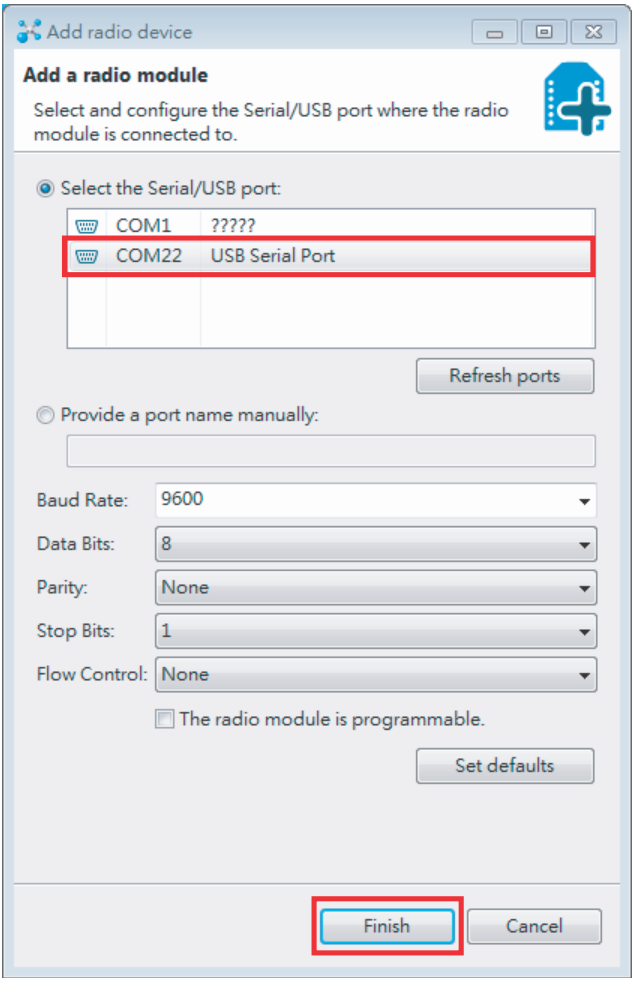
11. The Add Radio Module dialog appears. For first-time setup of the ZigBee Coordinator, set Baud Rate to 9600 and select Finish.



NOTE:

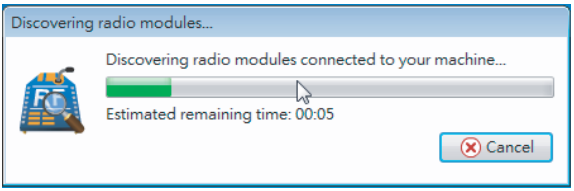
If the ZigBee Coordinator is not listed in the Serial/USB ports, see “Installing missing FTDI driver” on page 71.

12. Select the corresponding Serial/USB port for the ZigBee coordinator and select Finish.

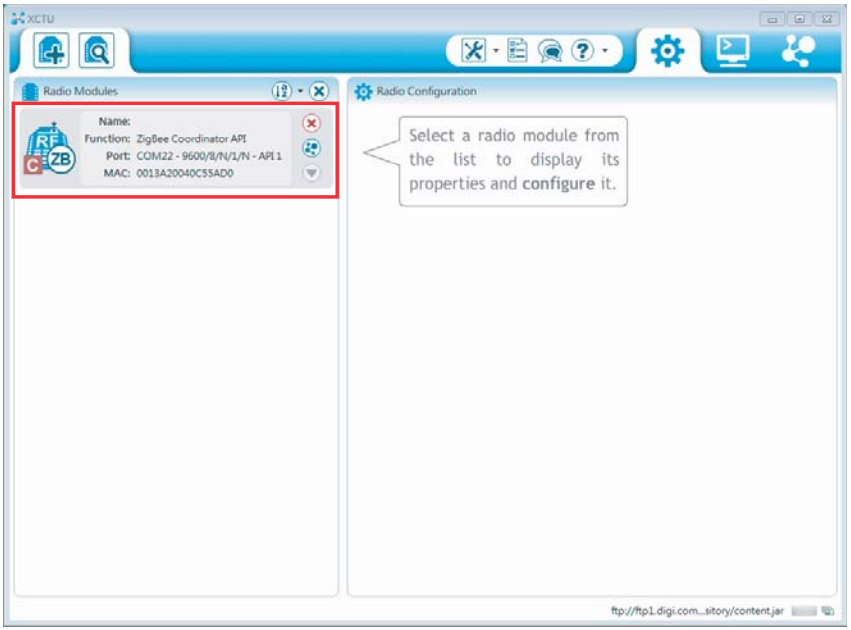


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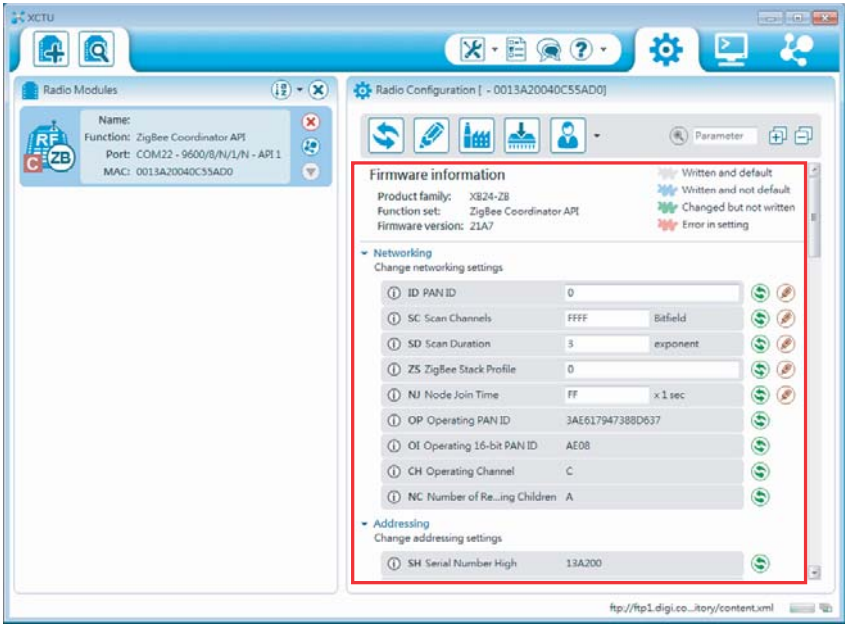
13. The Discovering Radio Modules progress notification appears.



14. After the radio module is added, it appears in the Radio Modules list.

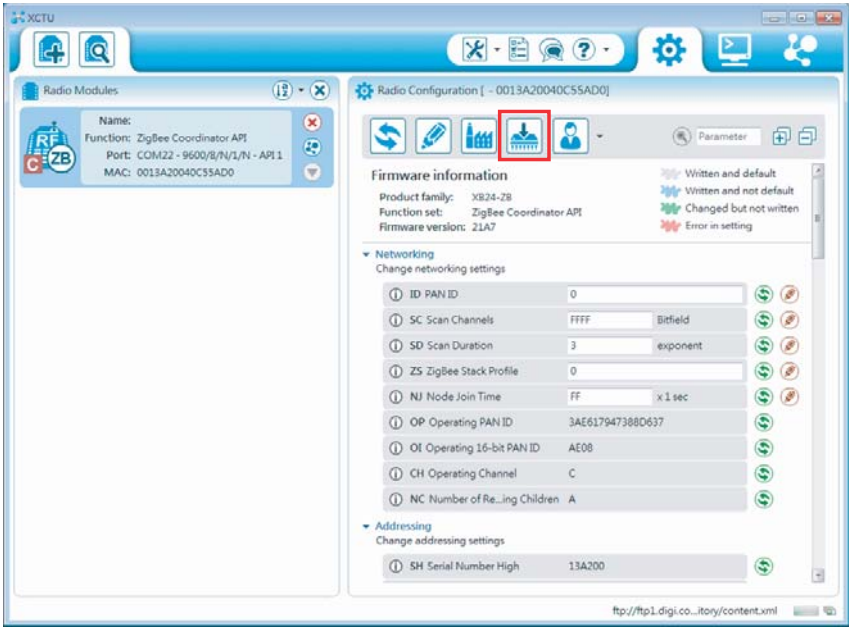


15. Selecting the listed radio module to displays its configuration.

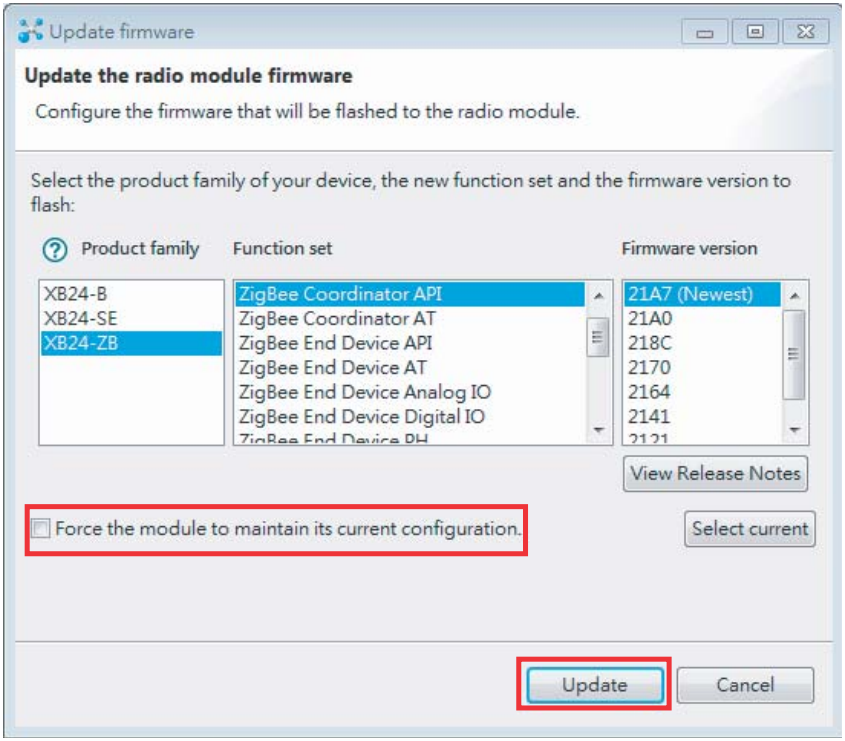


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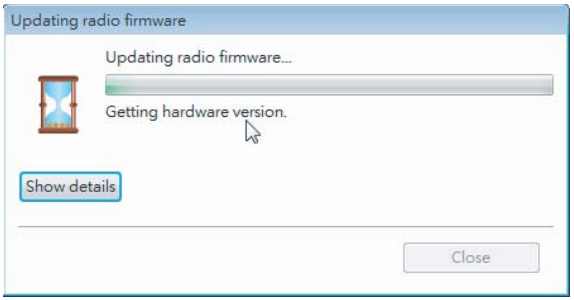
16. Select the update radio module firmware button.



17. Clear Force the module to maintain its current configuration, and select Update.

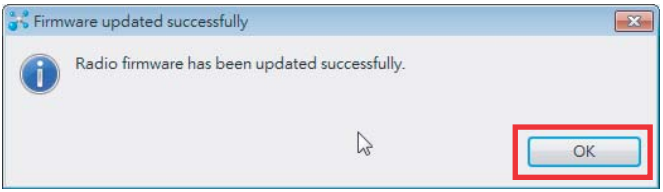


18. The firmware update progress notification appears.

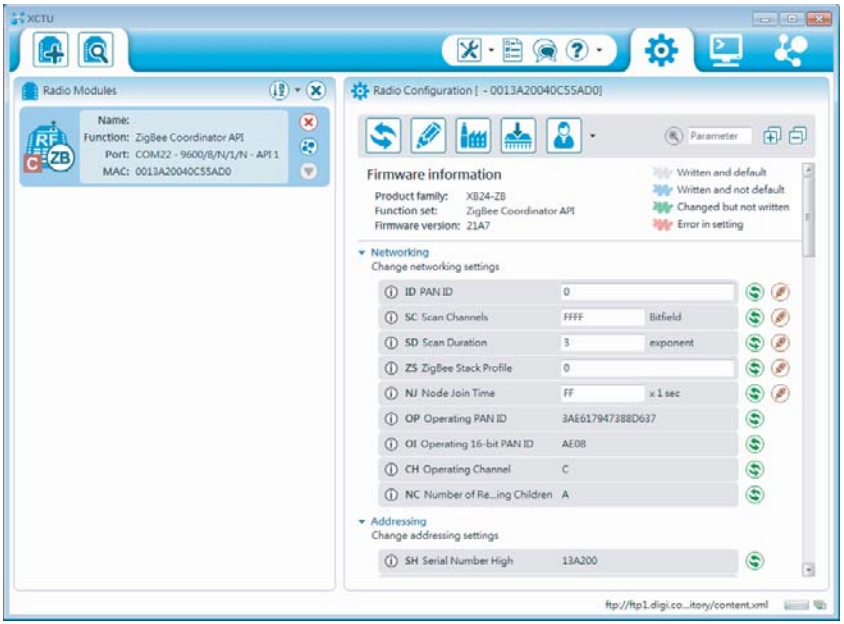


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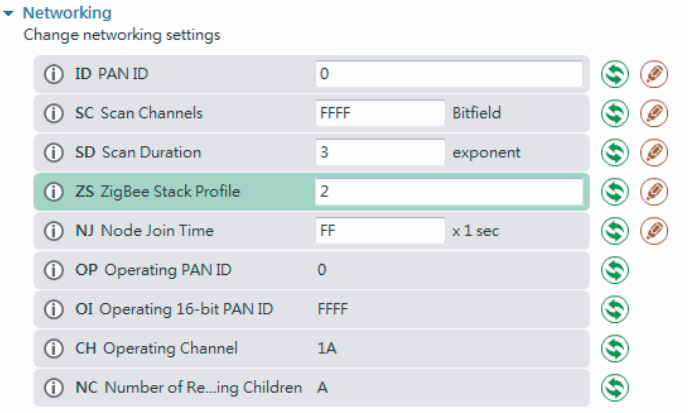
19. When the update is complete, a notification appears. Select OK.



The Radio Configuration dialog appears



20. In Networking, configure the ZS ZigBee Stack Profile as shown.

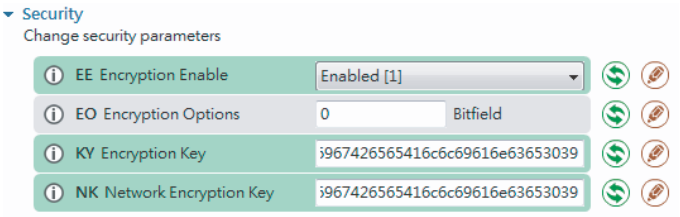


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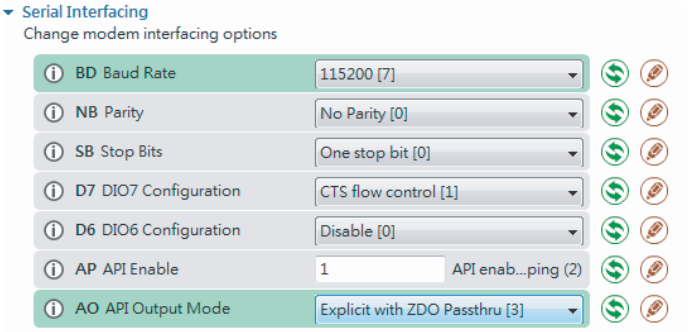
21. In Addressing, configure NH Maximum Hops and NO Node Discovery Options as shown.



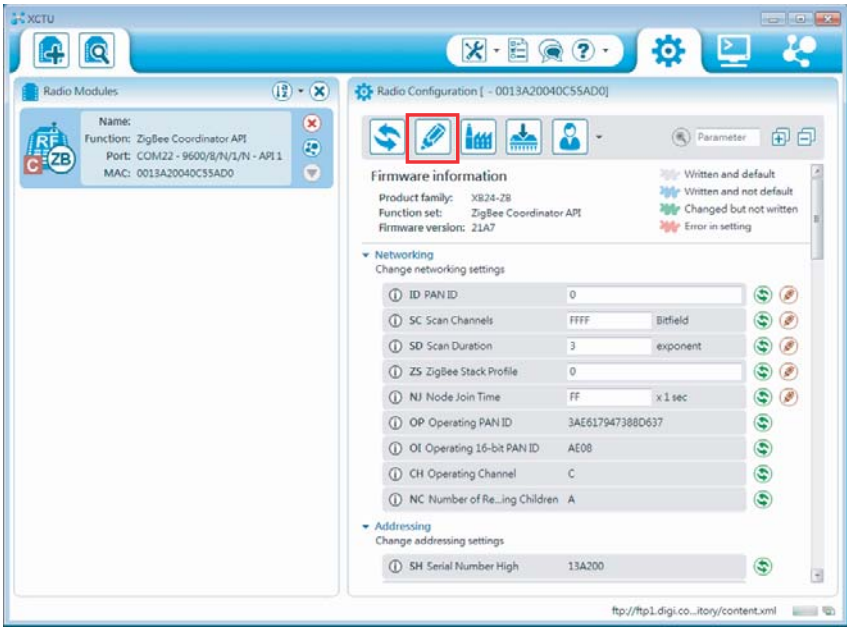
22. In Security, configure EE Encryption Enable, KY Encryption Key, and NK Network Encryption Key as shown (Key: 5a6967426565416c6c69616e63653039).



23. In Serial Interfacing, configure BD Baud Rate and AO API Output Mode as shown.



24. Select the Update Settings button. The ZigBee Coordinator is successfully configured.



NOTE:

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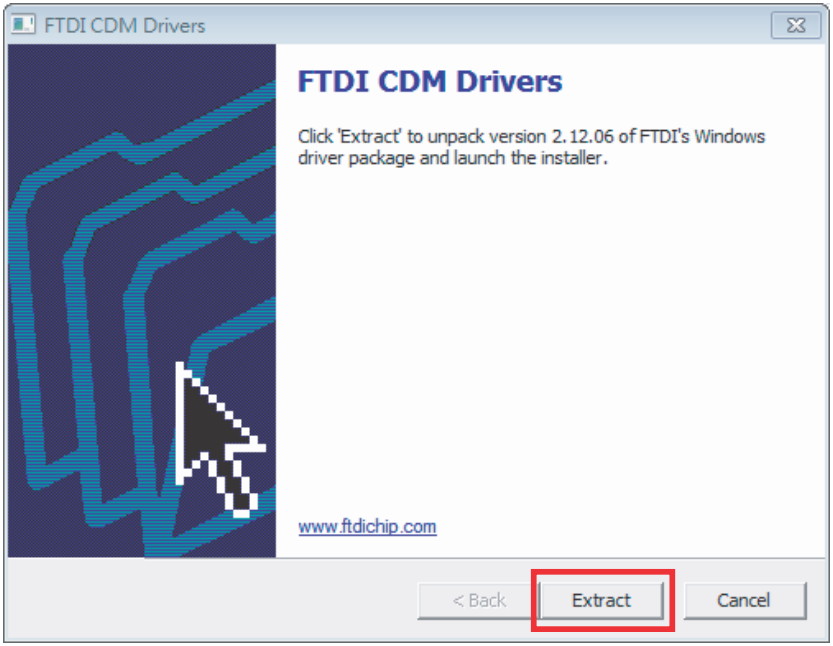
If sensor devices fail to connect, re-flash the ZigBee Coordinator by re-

A.1 Installing missing FTDI driver

1. Go to http://www.ftdichip.com/Drivers/VCP.htm. Download the FTDI driver (CDM v2.12.06 WHQL Certified.exe) compatible with the computer.

		Processor Architecture							
Operating System	Release Date	x86 (32-bit)	x64 (64-bit)	PPC	ARM	MIPSII	MIPSIV	SH4	Comments
Windows*	2015-07-28	2.12.06	2.12.06	-	-	-	-	-	2.12.06 WHQL Certified Available as setup executable Release Notes
Linux	2009-05-14	1.5.0	1.5.0	-	-	-	-	-	All FTDI devices now supported in Ubuntu 11.10, kernel 3.0.0-19 Refer to TN-101 if you need a custom VCP VID/PID in Linux
Mac OS X 10.3 to 10.8	2012-08-10	2.2.18	2.2.18	2.2.18	-	-	-	-	Refer to TN-105 if you need a custom VCP VID/PID in MAC OS
Mac OS X 10.9 and above	2015-04-15	-	2.3	-	-	-	-	-	This driver is signed by Apple
Windows CE 4.2-5.2**	2012-01-06	1.1.0.20	-	-	1.1.0.20	1.1.0.10	1.1.0.10	1.1.0.10	
Windows CE 6.0/7.0	2012-01-06	1.1.0.20 CE 6.0 CAT CE 7.0 CAT	-	-	1.1.0.20 CE 6.0 CAT CE 7.0 CAT	1.1.0.10	1.1.0.10	1.1.0.10	For use of the CAT files supplied for ARM and x86 builds refer to AN_319
Windows CE 2013	2015-03-06	BETA			BETA				BETA VCP Driver Support for WinCE2013

2. Run the file CDM v2.12.00 WHQL Certified.exe in Administrator mode.
3. Select Extract to unpack the FTDI package driver and launch the installer.



4. After Device Driver Installation is complete, return to step #16 and continue.XCTU setup.

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Appendix B ZigBee Light Sensor Configuration

1. Press the Binding Key once. Indicators blink red once, and the device is ready for use.
2. To turn off, press the Binding Key once. The indicator flashes 10 times in 5 seconds. Press the Binding Key once more within the 10 flashes.
3. To restore factory defaults, press and hold both Binding Key and Auxiliary Key for 5 seconds. Release both buttons once the indicator rapidly blinks red. After indicator blinks red 20 times, the restoration is complete.
4. When the unit is turned on, it searches and joins the network. If not detected, power off the Z-602A ZigBee siren by removing the battery, power off the ZigBee light sensor, and restart.
   - ▷ Diagnostic – Subscribe Value (01_ILLUMINANCEMEASURE_S)
   - ▷ Value 0 to 34771 for brightness.

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Appendix C ZigBee Siren Configuration

1. The ZigBee siren is powered on automatically when the battery is installed. Removing the battery powers the siren off.
2. Press the Setting key to search and join the network.
3. To restore factory defaults, power off the ZigBee siren. Press and hold the Setting key and restart the siren while holding. After 2 doorbell tones sound and the indicator flashes rapidly, release the key. Restoration is complete.
4. When the unit is turned on, it searches and joins the network. If not detected, power off the Z-602A ZigBee siren by removing the battery, power off the ZigBee light sensor, and restart. Repeat Step 2.

   ▷ Diagnostic – Publish Value (01_IASWD_S)

Command Value	Alert Generated
0	OFF
1	Burglar Alarm
2	Fire Alarm
3	Ambulance Alarm
15	Doorbell
17	Burglar Alarm (With Light)
18	Fire Alarm (With Light)
19	Ambulance Alarm (With Light)
31	Doorbell (With Light)

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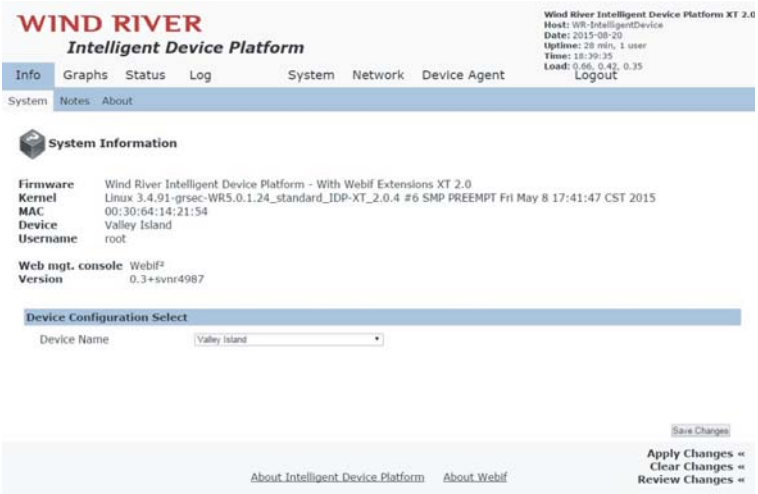
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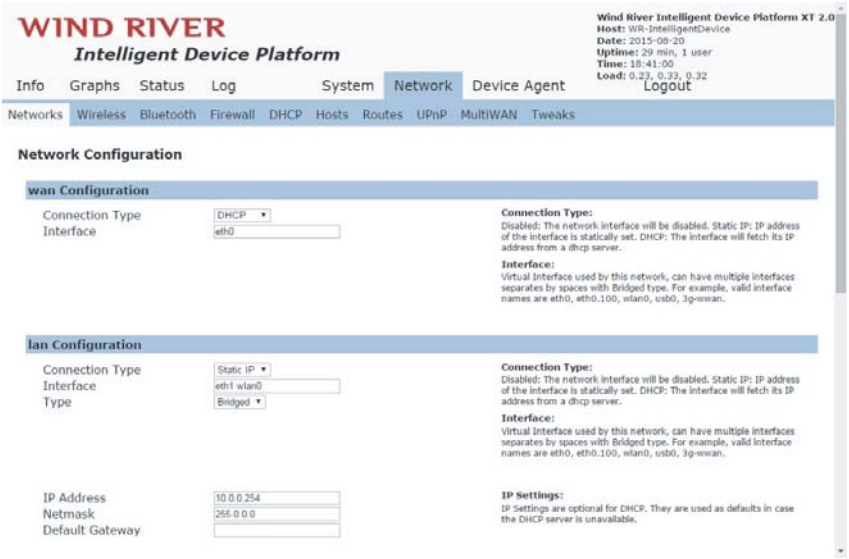
Appendix D Wireless Mode Switch, SSID, and Security Configuration

D.1 Switching Wireless AP mode to Client Mode

1. Log in to WEBIF management console with username/ password.

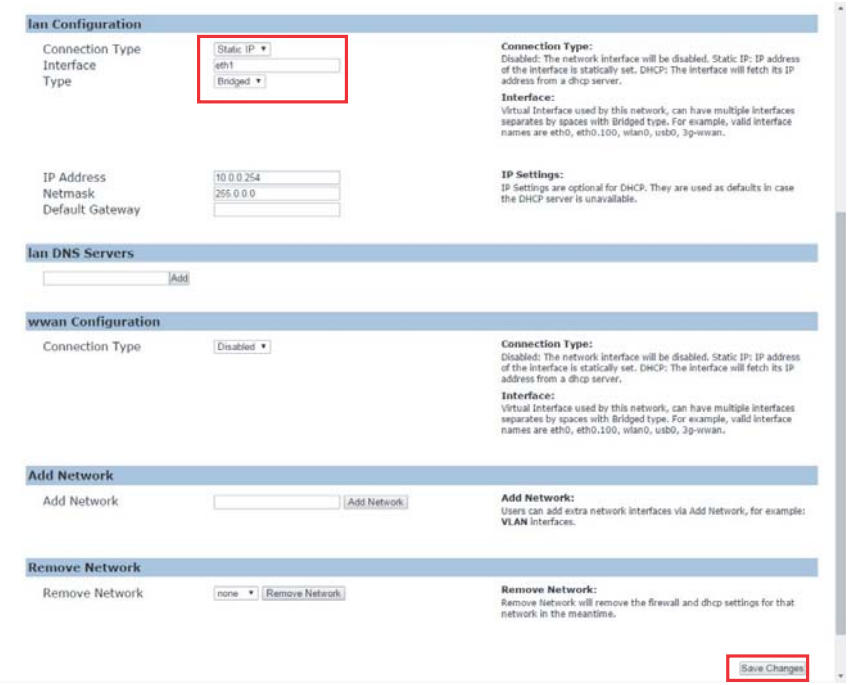


2. Open the Network tab and the Networks page.



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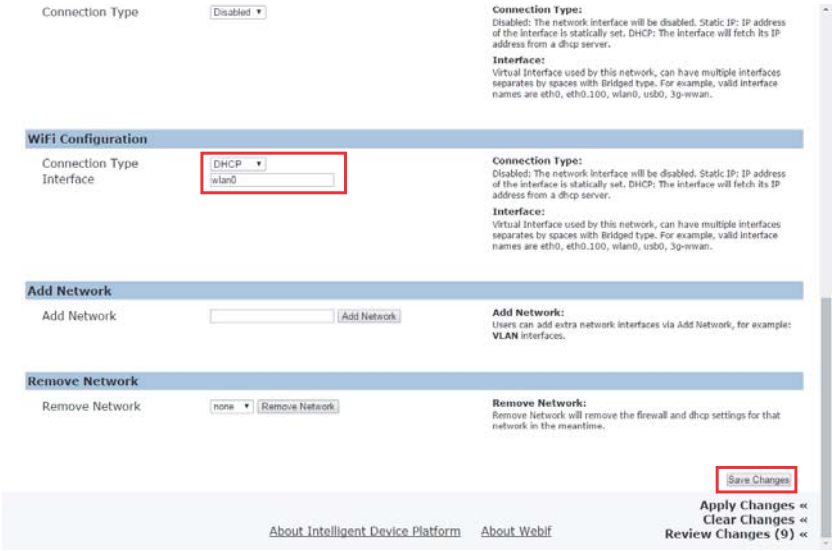
3. Delete wlan0 from the LAN Configuration section and Save Changes.



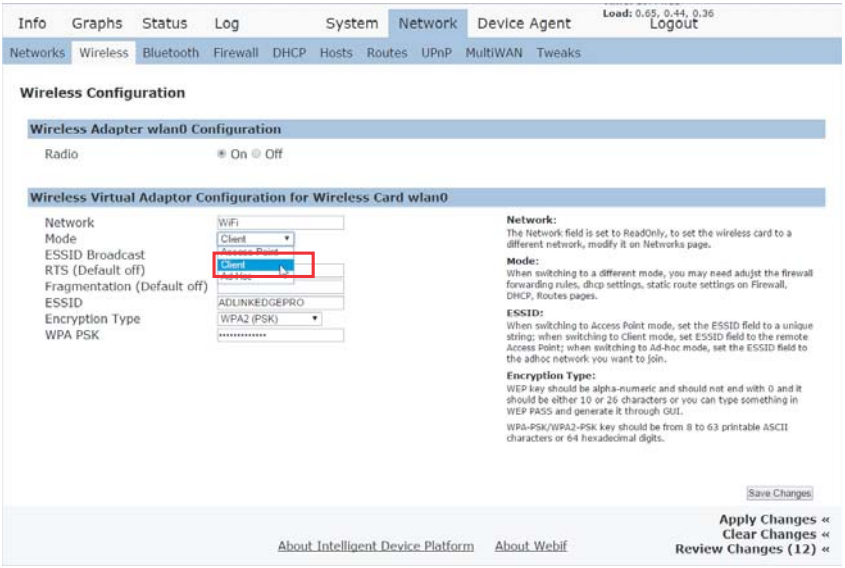
4. Add a new network (e.g. WiFi) from the Add Network section and select Add Network.



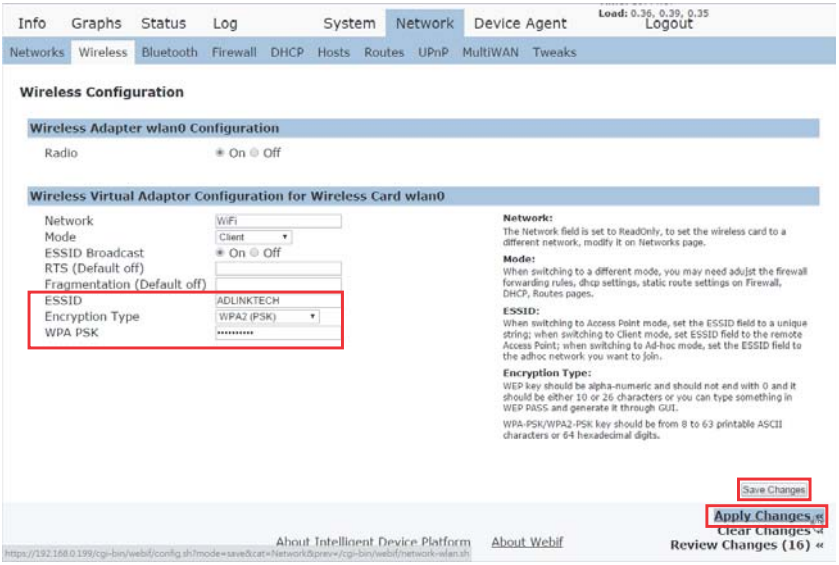
5. WiFi Configuration appears in the Add Network section. Select Connection Type (e.g. DHCP) and enter wlan0 in Interface, and Save Changes.



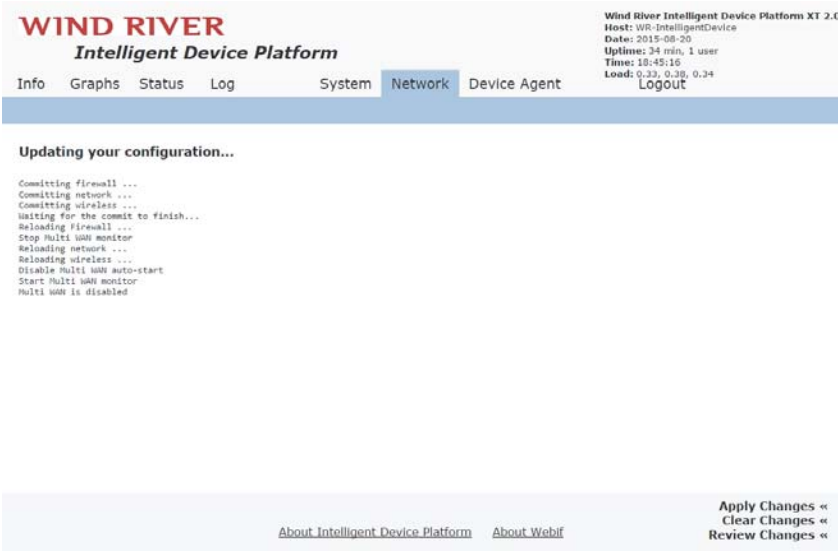
6. From the Wireless page, under Wireless Virtual Adaptor Configuration for Wireless Card wlan0, select Client from the Mode menu.



7. Enter ESSID, encryption type, and WPA PSK of the wireless network and Save Changes, and then Apply Changes when finished.

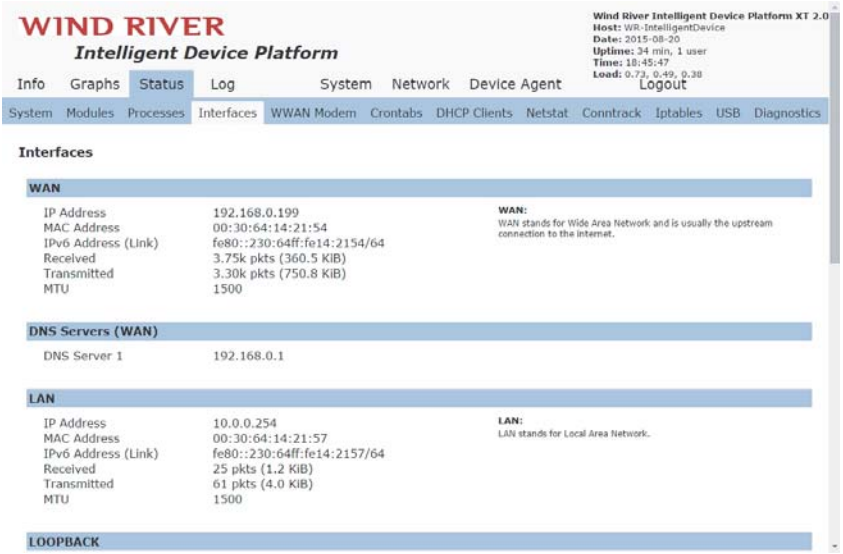


8. Update commences.



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9. To confirm settings, open the Interfaces page in the Status tab.



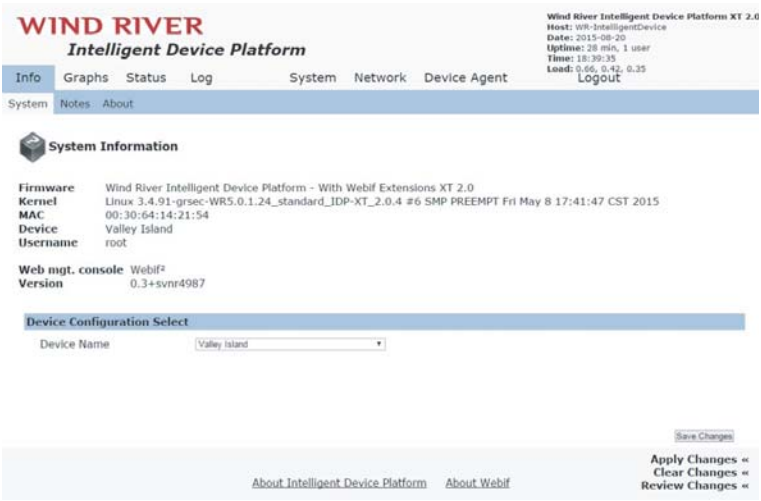
10. The settings appear in the WiFi section of the page.



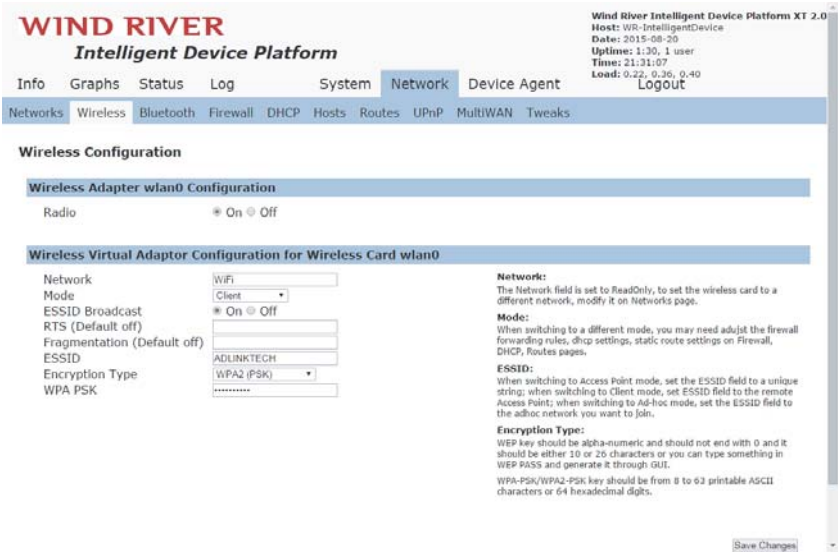
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D.2 Switching Wireless Client Mode to AP mode

1. Log in to WEBIF management console with username/ password.

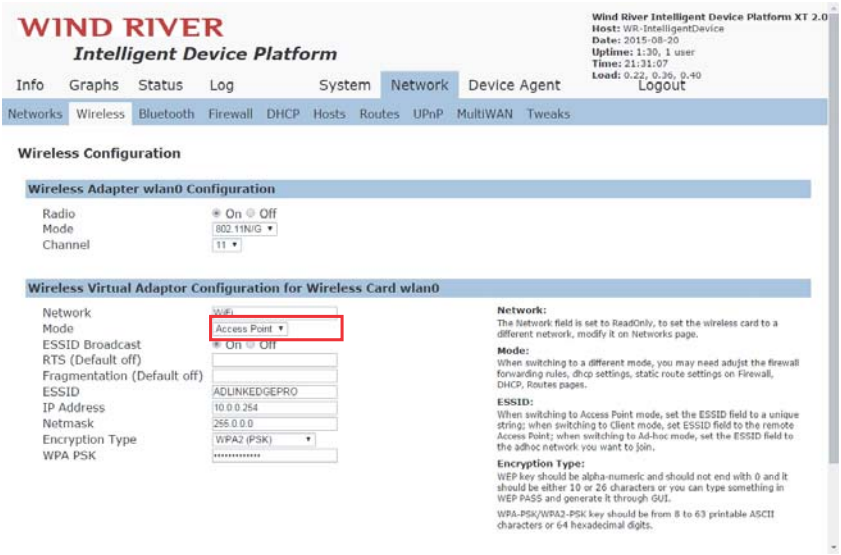


2. Open the Network tab and the Wireless page.

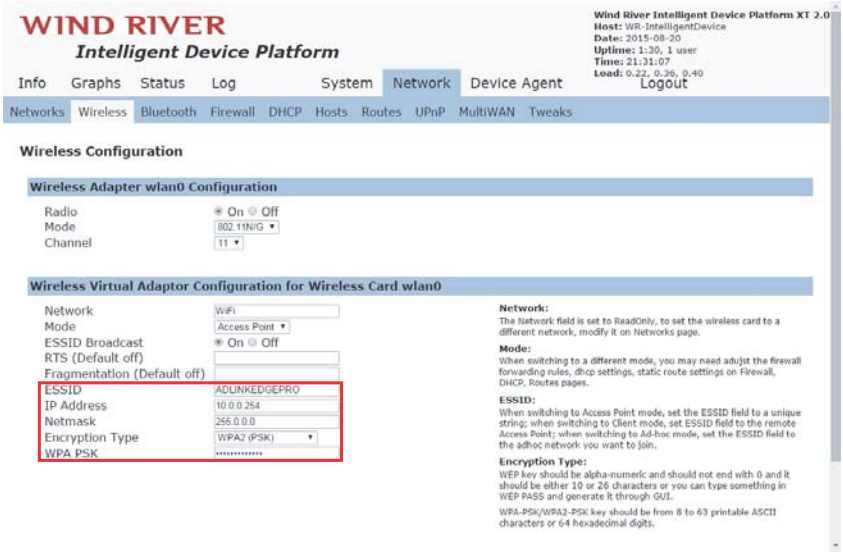


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3. Under Wireless Virtual Adaptor Configuration for Wireless Card wlan0, select Access Point from the Mode menu.

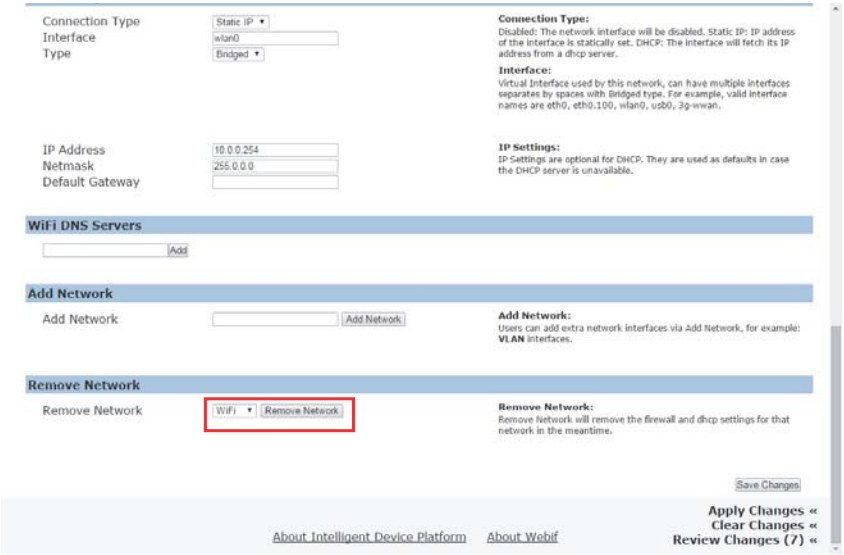


4. In ESSID, enter the wireless network server ESSID. In IP Address, enter the default WiFi module IP address. In Netmask, enter the subnet mask. From Encryption Type, select the encryption type, enter the associated password, and Save Changes.

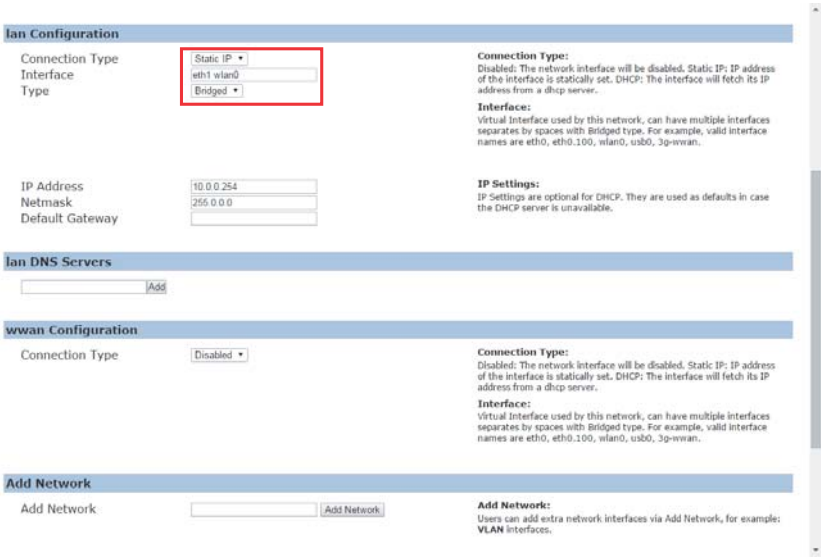


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5. In the Network tab, open the Networks page. From Remove Network, select the network associated with the current client mode, for example WiFi, and select Remove Network.

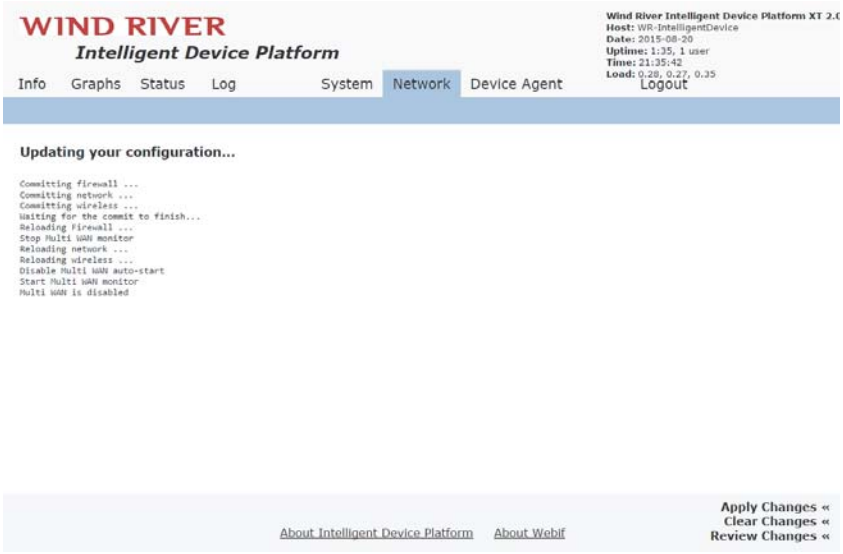


6. Under LAN Configuration, in Interface, enter the wireless LAN to connect to AP mode. Save Changes, and Apply Changes when finished.

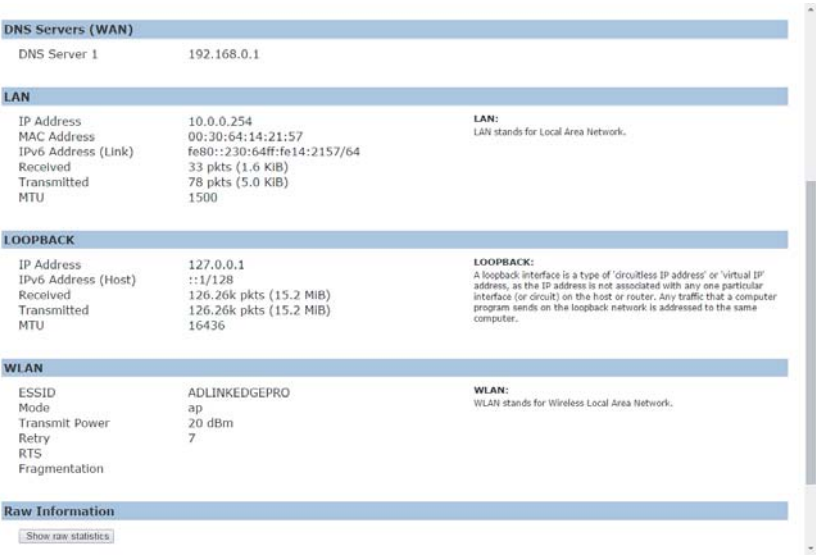


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7. Update commences.



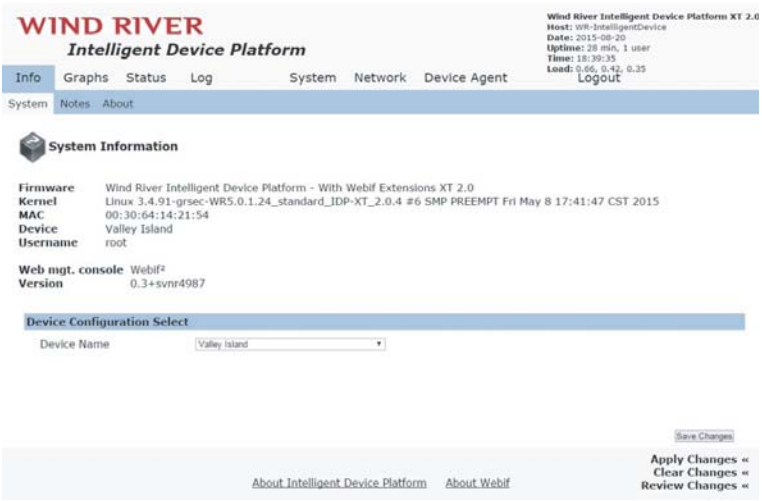
8. To confirm, open the Status tab and select the Interfaces page.



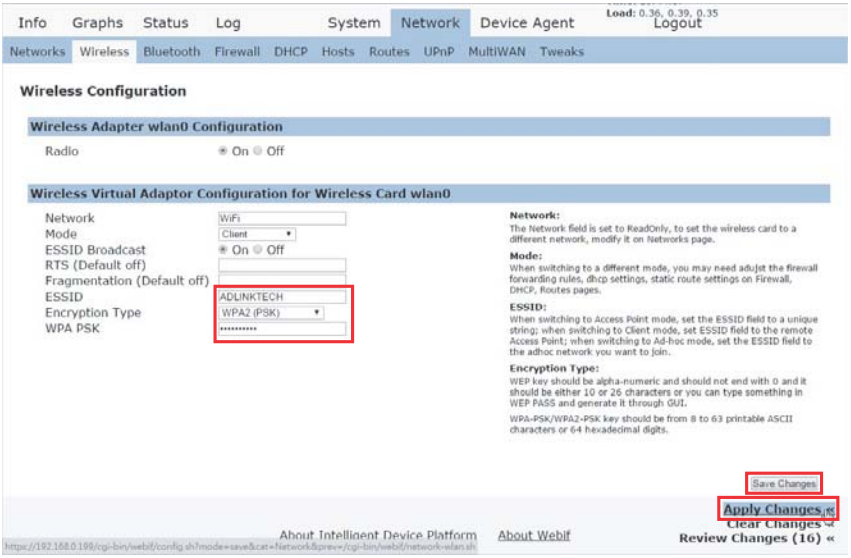
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D.3 Configuring SSID and Security

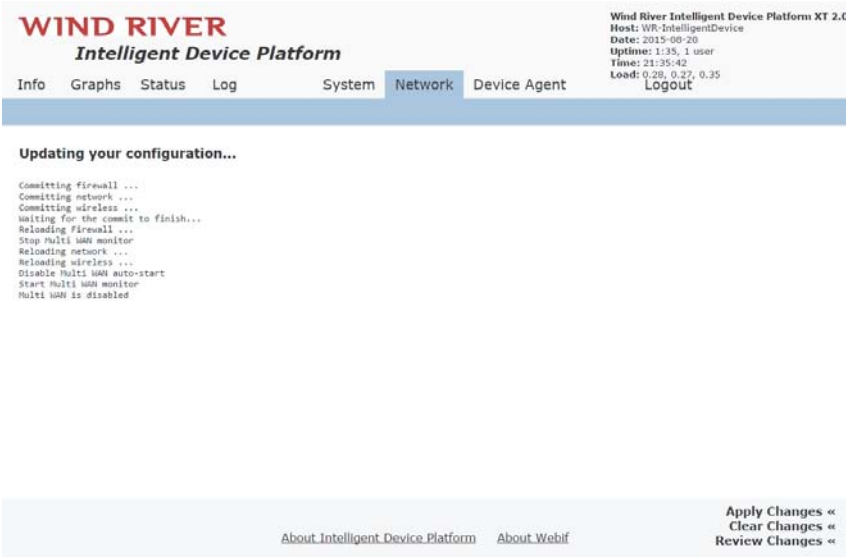
1. Log in to the WEBIF management console with user-name/password.



2. In ESSID, enter wireless network server ESSID. In Encryption Type, select the encryption type, enter associated password, and Save Changes.



3. Update commences.



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Important Safety Instructions

For user safety, please read and follow all **instructions**, **WARNINGS**, **CAUTIONS,** and **NOTES** marked in this manual and on the associated equipment before handling/operating the equipment.

- Read these safety instructions carefully.
- Keep this user's manual for future reference.
- Read the specifications section of this manual for detailed information on the operating environment of this equipment.
- When installing/mounting or uninstalling/removing equipment:
  - Turn off power and unplug any power cords/cables.
- To avoid electrical shock and/or damage to equipment:
  - Keep equipment away from water or liquid sources;
  - Keep equipment away from high heat or high humidity;
  - Keep equipment properly ventilated (do not block or cover ventilation openings);
  - Make sure to use recommended voltage and power source settings;
  - Always install and operate equipment near an easily accessible electrical socket-outlet;
  - Secure the power cord (do not place any object on/over the power cord);
  - Only install/attach and operate equipment on stable surfaces and/or recommended mountings; and,
  - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.

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- Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.
- A Lithium-type battery may be provided for uninterrupted, backup or emergency power.

WARNING:

Risk of explosion if battery is replaced with an incorrect type; please dispose of used batteries appropriately.

- Equipment must be serviced by authorized technicians when:
  - The power cord or plug is damaged;
  - Liquid has penetrated the equipment;
  - It has been exposed to high humidity/moisture;
  - It is not functioning or does not function according to the user's manual;
  - It has been dropped and/or damaged; and/or,
  - It has an obvious sign of breakage.

Please pay strict attention to all warnings and advisories appearing on the device, to avoid injury or damage.



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Getting Service

Contact us should you require any service or assistance.

ADLINK Technology, Inc.
Address: 9F, No.166 Jian Yi Road, Zhonghe District
New Taipei City 235, Taiwan
新北市中和區建一路 166 號 9 樓
Tel: +886-2-8226-5877
Fax: +886-2-8226-5717
Email: service@adlinktech.com

Ampro ADLINK Technology, Inc.
Address: 5215 Hellyer Avenue, #110
San Jose, CA 95138, USA
Tel: +1-408-360-0200
Toll Free: +1-800-966-5200 (USA only)
Fax: +1-408-360-0222
Email: info@adlinktech.com

ADLINK Technology (China) Co., Ltd.
Address: 上海市浦东新区张江高科技园区芳春路 300 号 (201203)
300 Fang Chun Rd., Zhangjiang Hi-Tech Park
Pudong New Area, Shanghai, 201203 China
Tel: +86-21-5132-8988
Fax: +86-21-5132-3588
Email: market@adlinktech.com

ADLINK Technology Beijing
Address: 北京市海淀区上地东路 1 号盈创动力大厦 E 座 801 室(100085)
Rm. 801, Power Creative E, No. 1 Shang Di East Rd.
Beijing, 100085 China
Tel: +86-10-5885-8666
Fax: +86-10-5885-8626
Email: market@adlinktech.com

ADLINK Technology Shenzhen
Address: 深圳市南山区科技园南区高新南七道 数字技术园
A1 栋 2 楼 C 区 (518057)
2F, C Block, Bldg. A1, Cyber-Tech Zone, Gao Xin Ave. Sec. 7
High-Tech Industrial Park S., Shenzhen, 518054 China
Tel: +86-755-2643-4858
Fax: +86-755-2664-6353
Email: market@adlinktech.com

LiPPERT ADLINK Technology GmbH
Address: Hans-Thoma-Strasse 11, D-68163
Mannheim, Germany
Tel: +49-621-43214-0
Fax: +49-621 43214-30
Email: emea@adlinktech.com

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

ADLINK Technology, Inc. (French Liaison Office)
Address: 6 allée de Londres, Immeuble Ceylan
91940 Les Ulis, France
Tel: +33 (0) 1 60 12 35 66
Fax: +33 (0) 1 60 12 35 66
Email: france@adlinktech.com

ADLINK Technology Japan Corporation
Address: 〒101-0045 東京都千代田区神田鍛冶町 3-7-4
神田 374 ビル 4F
KANDA374 Bldg. 4F, 3-7-4 Kanda Kajicho,
Chiyoda-ku, Tokyo 101-0045, Japan
Tel: +81-3-4455-3722
Fax: +81-3-5209-6013
Email: japan@adlinktech.com

ADLINK Technology, Inc. (Korean Liaison Office)
Address: 137-881 서울시 서초구 서초대로 326, 802 (서초동, 모인터빌딩)
802, Mointer B/D, 326 Seocho-daero, Seocho-Gu,
Seoul 137-881, Korea
Tel: +82-2-2057-0565
Fax: +82-2-2057-0563
Email: korea@adlinktech.com

ADLINK Technology Singapore Pte. Ltd.
Address: 84 Genting Lane #07-02A, Cityneon Design Centre
Singapore 349584
Tel: +65-6844-2261
Fax: +65-6844-2263
Email: singapore@adlinktech.com

ADLINK Technology Singapore Pte. Ltd. (Indian Liaison Office)
Address: #50-56, First Floor, Spearhead Towers
Margosa Main Road (between 16th/17th Cross)
Malleswaram, Bangalore - 560 055, India
Tel: +91-80-65605817, +91-80-42246107
Fax: +91-80-23464606
Email: india@adlinktech.com

ADLINK Technology, Inc. (Israeli Liaison Office)
Address: 27 Maskit St., Corex Building
PO Box 12777
Herzliya 4673300, Israel
Tel: +972-54-632-5251
Fax: +972-77-208-0230
Email: israel@adlinktech.com

ADLINK Technology, Inc. (UK Liaison Office)
Tel: +44 774 010 59 65
Email: UK@adlinktech.com

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000