Condeco Sense Gateway
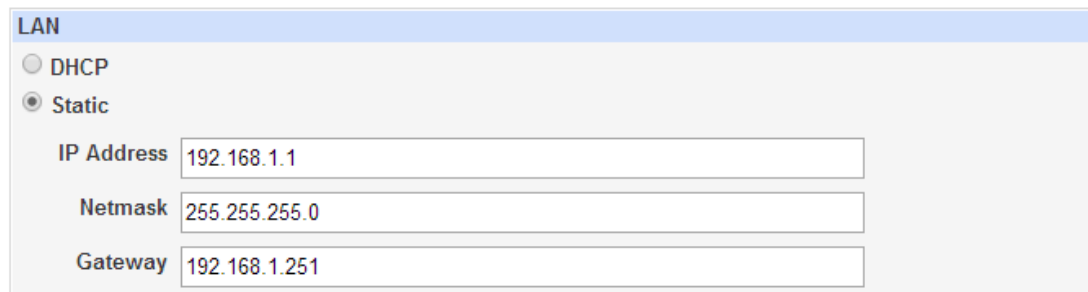## User Manual and Configuration

CONDECO

Contents

Overview

This guide will run through the basic configuration steps needed to implement a gateway for a sense installation. This focuses on setting a network connection using 3G, although you will have the option to set up a connection via LAN and Wifi.

To set a 3G connection, you will be required to insert a sim card onto the PCB. You will be required to remove the gateway casing. Make sure the gateway is not powered when exposing the PCB to insert the sim card.

Accessing the Gateway UI

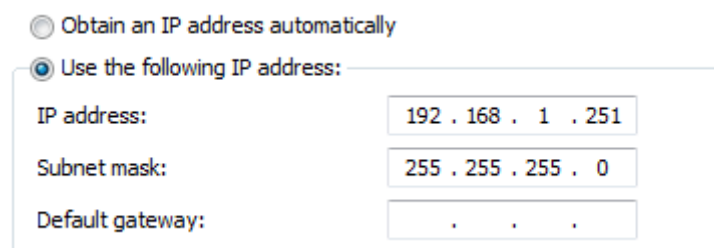The gateways are configured with this static address.

To access to UI run through the follow.

1) Power the gateway on and connect to a laptop/PC using a network cable.
2) On the Local Area Connection, open the properties for the Internet Protocol Version 4 (TCP/IPv4)
3) Set the Static address as
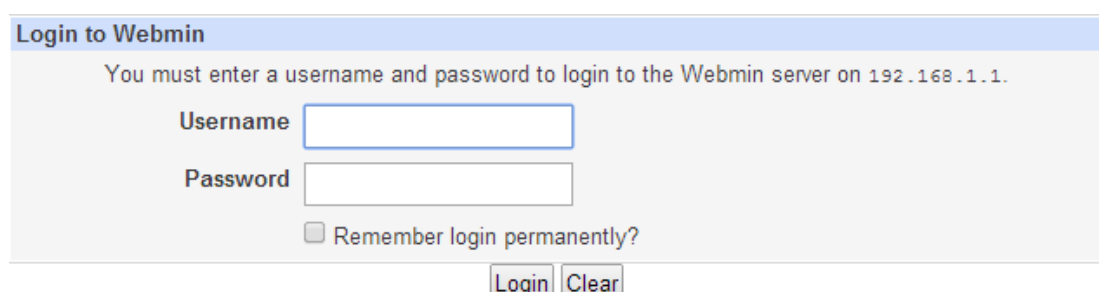
4) Save and close.
5) Open IE or Crome and browse to http://192.168.1.1:10000
6) Once you browse to the link above, you will reach the login to Webmin page. Use these credentials and select Login.

- **Username:** condeco
- **Password:** cond3cogw

Network Configuration

Once logged in to the UI expand **Others** on the left to open up the available options as highlighted below. Navigate to Condeco Network Settings
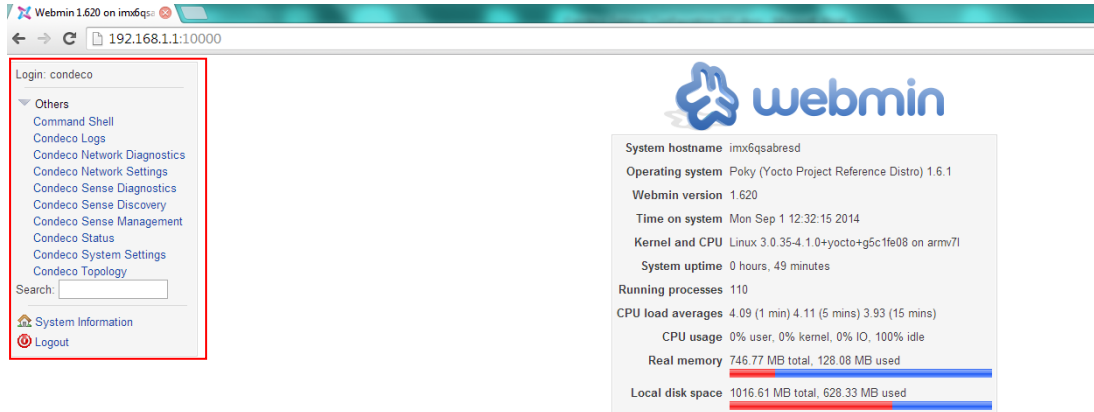
Condeco Network Settings

Under network settings, the option to set a connection via LAN, Wifi and 3G are available. The purpose of this guide is to set up a 3G connection. Once the 3G sim card has been inserted, the options will need to be configured in the following order for them to update successfully.

1) Under LAN set your DNS1 entry to 8.8.8.8 and then Update.
2) At the end of the page, the default routing preference will be set to **unknown.** Change this order to: **GSM-WIRED-WIFI** and then Update.
3) Go online and find the APN details for the 3G network provider you are using. Change this to the correct details and select Update.
4) After you update each section, you will be promt to Restart to use the new settings. Navigate to **Condeco System Settings** on the left.
5) Navigate to the end of the page. You will have Reboot and Shutdown available here. Select Reboot for the changes to take affect.
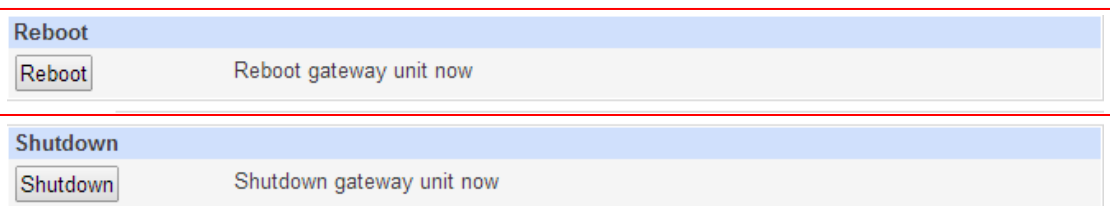

6) After the reboot, navigate back to Condeco Network Settings and ensure the settings saved successfully.

Provisioning Certificates for the VPN tunnel

After the reboot, navigate back to Condeco Network Settings and ensure the changes saved successfully.

Next, the VPN connection needs to be established. Navigate to the end of the page to find VPN Settings. By default, VPN settings should be enabled.

As highlight below, OpenVPN should be provisioned for this gateway. Select Provision Certificates and wait for confirmation to reboot to use the new configuration. Navigate to System Settings to reboot.
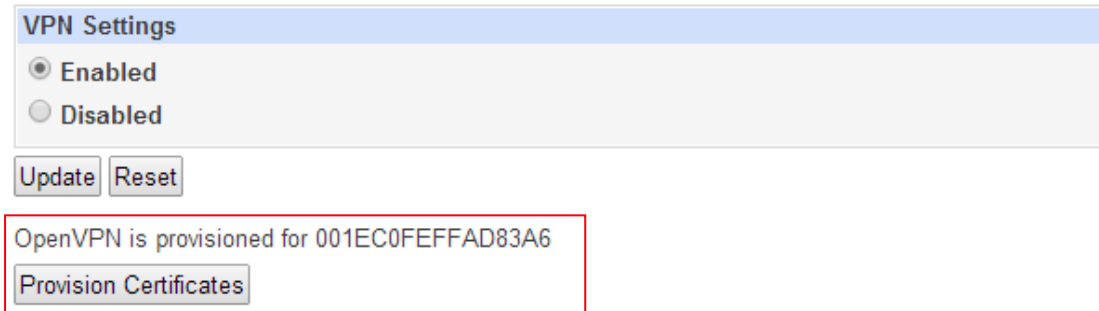
Note: If this does not appear on the gateway being configured, there could be two reasons why.

1) Check you have a valid network connection. If you have run through the steps above and have set your 3G connection up successfully, proceed to step 2.
2) The Condeco Support team have not provisioned a connection for this gateway. Send an email with the gateway EUI64 number to sense.support@condecosoftware.com

Updating time and date

NOTE: Once you have successful set your network settings, navigate back to the System Information page. Ensure that the Time on system has updated. The time will be in UTC(0) for all locations. If the time has not automatically updated, proceed and run through steps 1 – 4.
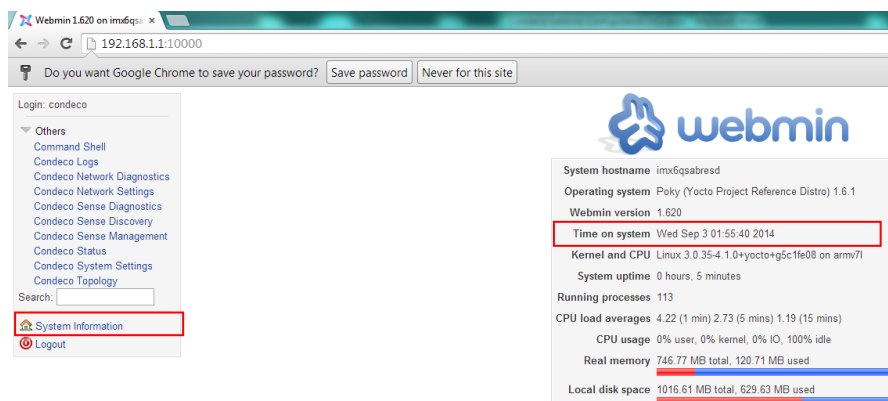
1) Navigate to Condeco Network Settings
2) Locate the **Time Settings** section and Update.

Time Settings

NTP1	0.uk.pool.ntp.org
NTP2	1.uk.pool.ntp.org

Update Reset

Updated NTP settings successfully. Restart to use new settings

3) Once successfully updated, navigate to Condeco System Settings and locate Reboot.
4) Reboot the gateway.

Condeco System Settings

Under the system settings, you will be able to:

- Change the gateway password
- Configure the mesh settings for sense
- Reset the sense database
- Create, Restore, Download and Upload a database backup
- Reboot and Shutdown

As the Condeco Support team will be managing the gateway, it is recommended that the password is left as default.

Sense Network Settings

Update your Sense Channel and PAN ID to allow the sensors to join. The Channel number of the sensor will be on the sensors. The PAN ID will be the hex value of the channel.

Update your Survey ID supplied. If an ID was not supplied, please contact the support team, stating the client that the gateway is for. Sense.support@condecosoftware.com

The reporting URL is:
http://data.sense.condeco.co.uk/services/sensemanager.asmx/HandleBaseUnitInfo

NOTE: Do not configure the URL until you are ready to send data.

Once all the sensors have joined this gateway, untick Allow New Nodes to Join. This will prevent the gateway from picking up any unnecessary sensors.

Sense Network Settings	
PAN ID	0020
Channel	20
Allow New Nodes to Join	☑
Survey ID	1
Reporting URL	

Condeco Sense Discovery

The sense discovery will display all the sensors that are on the channel that was configured previously. The sensors need to be registered to the gateway before they start collecting and sending data. Select **Register** to join the sensors to the gateway.

Condeco Discovered Sensors

Discovered Sensors

		NodeID	NetworkID	EUI64	Type	LastHop	Hops	Alarm	Version	Signal	Battery	Count	LastRx	Name	
Register	Remove	2	3	0004A3FEFF9993FB	Sensor	0	1	Alarm		-88	8.4	-	01/09/2014 15:47:24		Update
Register	Remove	3	28168	0004A3FEFF9972CE	Sensor	0	1	Alarm	1.17.15.0	-99	8.3	-	01/09/2014 15:50:33		Update
Register	Remove	4	7	0004A3FEFF9937C8	Sensor	0	1	Normal	1.17.15.0	-96	8.3	-	01/09/2014 15:50:24		Update
Register	Remove	5	28256	0004A3FEFF99A719	Sensor	0	1	Alarm	1.17.15.0	-97	8.6	-	01/09/2014 15:51:38		Update
Register	Remove	6	5	0004A3FEFF99A63E	Sensor	0	1	Alarm	1.17.15.0	-97	8.2	-	01/09/2014 15:44:26		Update
Register	Remove	7	28234	0004A3FEFF99596E	Sensor	0	1	Normal	1.17.15.0	-95	8.6	-	01/09/2014 15:50:44		Update
Register	Remove	8	6	0004A3FEFF996DFB	Sensor	0	1	Alarm	1.17.15.0	-100	8.1	-	01/09/2014 15:52:14		Update
Register	Remove	9	4	0004A3FEFF999814	Sensor	0	1	Normal	1.17.15.0	-99	8.3	-	01/09/2014 15:51:14		Update

Refresh

View registered sensors

Condeco Sense Management

The Condeco sense management will show all your sensors currently connected to the gateway. Deregister/remove any sensors that should not be connected to this gateway. Once the URL has been configured, the sensors listed here will start sending data.

Condeco Registered Sensors

Registered Sensors

		NodeID	NetworkID	EUI64	Type	LastHop	Hops	Alarm	Version	Signal	Battery	Count	LastRx	Name	
		1	0	001EC0FEFFADB099	Gateway	0	n/a	Normal	1.18.7.0	n/a	3.2	-	02/09/2014 09:28:11		Update
Deregister	Remove	2	127	0004A3FEFFA0DDA3	Sensor	52	3	Normal	1.21.2.0	-72	8	-	01/09/2014 14:59:32		Update
Deregister	Remove	3	58	001EC0FEFF8475B0	Sensor	52	3	Normal	1.21.2.0	-62	7.9	-	01/09/2014 14:51:29		Update
Deregister	Remove	4	102	0004A3FEFFA0D95F	Sensor	107	4	Normal	1.21.2.0	-63	7.9	-	01/09/2014 15:01:47		Update
Deregister	Remove	5	30	001EC0FEFF84727F	Sensor	96	2	Normal	1.21.2.0	-60	8.5	-	01/09/2014 14:56:30		Update
Deregister	Remove	6	67	0004A3FEFFA09AFD	Sensor	96	2	Normal	1.21.2.0	-66	7.9	-	01/09/2014 14:59:19		Update
Deregister	Remove	7	124	001EC0FEFF8474F5	Sensor	107	4	Normal	1.21.2.0	-82	8	-	01/09/2014 15:01:20		Update
Deregister	Remove	8	120	0004A3FEFF990ADF	Sensor	52	3	Alarm	1.21.2.0	-60	8	-	01/09/2014 15:02:45		Update
Deregister	Remove	9	112	001EC0FEFF848DC8	Sensor	107	4	Normal	1.21.2.0	-64	8	-	01/09/2014 15:03:23		Update
Deregister	Remove	10	115	001EC0FEFF845DC1	Sensor	107	4	Normal	1.21.2.0	-68	7.9	-	01/09/2014 14:53:33		Update
Deregister	Remove	11	61	001EC0FEFF84718D	Sensor	52	3	Alarm	1.21.2.0	-70	7.9	-	01/09/2014 14:51:10		Update
Deregister	Remove	12	62	0004A3FEFFA0D963	Sensor	52	3	Normal	1.21.2.0	-60	7.9	-	01/09/2014 14:55:02		Update

Condeco Status

When the 3G connection has been updated, and the VPN certificates have been provisioned, the Condeco Status will show all the links that have been established. The two main ones for 3G and VPN connections are:

- Pppo link – Established a 3G connection
- Tuno Link – Established a VPN connection

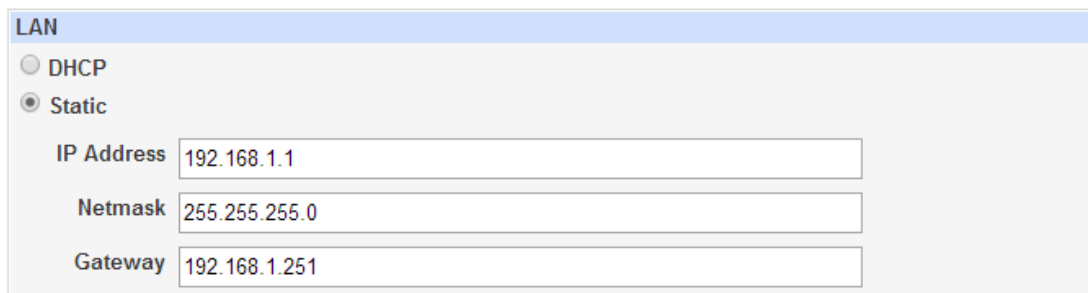| Status	
Network interfaces	eth0 Link encap:Ethernet HWaddr 00:1E:C0:AD:E0:5F inet addr:192.168.1.1 Bcast:192.168.1.255 Mask:255.255.255.0 inet6 addr: fe80::21e:c0ff:fead:e05f/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:341 errors:0 dropped:0 overruns:0 frame:0 TX packets:204 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:38856 (37.9 KiB) TX bytes:87708 (85.6 KiB) lo Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 inet6 addr: ::1/128 Scope:Host UP LOOPBACK RUNNING MTU:16436 Metric:1 RX packets:33 errors:0 dropped:0 overruns:0 frame:0 TX packets:33 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:2175 (2.1 KiB) TX bytes:2175 (2.1 KiB) ppp0 Link encap:Point-to-Point Protocol inet addr:10.33.96.224 P-t-P:10.33.96.224 Mask:255.255.255.255 UP POINTOPOINT RUNNING NOARP MULTICAST MTU:1500 Metric:1 RX packets:160 errors:0 dropped:0 overruns:0 frame:0 TX packets:166 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:3 RX bytes:15725 (15.3 KiB) TX bytes:15420 (15.0 KiB) tun0 Link encap:UNSPEC HWaddr 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00 inet addr:172.27.234.21 P-t-P:172.27.234.21 Mask:255.255.248.0 UP POINTOPOINT RUNNING NOARP MULTICAST MTU:1500 Metric:1 RX packets:0 errors:0 dropped:0 overruns:0 frame:0 TX packets:0 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:100 RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

De-installation

Once a sense study has finished, the gateway will need to be reset back to its default settings ready for the next sense deployment.

Before resetting the database, make a backup of both the logs and database. Run through these steps to take your backups and reset back to defaults.

1) Navigate to Condeco Logs
2) Select Download Log Archive
3) Take a copy of the download
4) Navigate to Condeco System Settings
5) Locate Create Backup Archive and select Backup
6) Locate Download Backup Archive and download a copy of the database backup
7) Locate Reset SNG Database and reset the database
8) Locate the Sense Network Settings on the same page
9) Delete the Channel, PAN ID, Survey ID, and Reporting URL.
10) Select Update for these changes to take effect

Now the sense settings have been reset, navigate to Condeco Network Settings. Make sure the LAN settings are set to the static address of:

Change the Routing Preference to **none.** Make sure you update the changes you make for them to take effect.

Caution:

This device must be installed by Condeco authorised technical professionals.

FCC Statements:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure Statements;

The distance between human bodys and this product shall be no less than 20 cm during the normal operations.