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LGIPBRIDGE

Genesis TCP/IP Bridge



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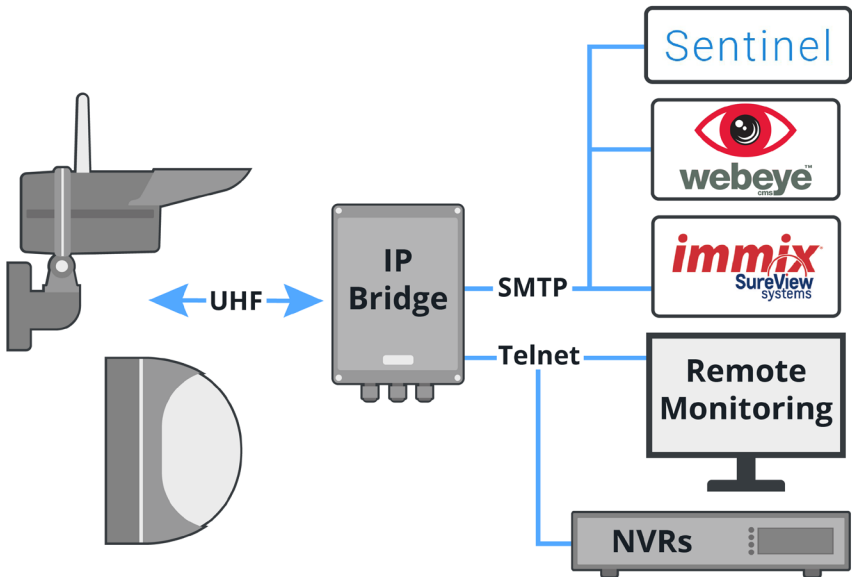
System Overview

The Genesis TCP/IP Bridge connects products that use the UHF network, such as Genesis PIR detectors, to the internet using the widely utilised Telnet protocol, allowing the system to be remotely monitored. The bridge can connect to third-party platforms via the SMTP protocol and is compatible with Immix, Sentinel, and Webeye ARC monitoring platforms.

The IP bridge is powered either by 5 volts DC (PSU part code = 5V.PS) or via Power over Ethernet (PoE). The bridge can be configured quickly over Bluetooth using a mobile smartphone, allowing users to obtain the IP address, set up the site and subnet, manage integrations, and connect the bridge to the local Wi-Fi network.

The IP bridge has a wireless range of up to 1km line of sight, which can be extended using an AE434 aerial to assist when dealing with difficult sites. Up to 64 PIR detectors can be programmed to transmit events to one IP bridge, and software updates can be administered remotely. The IP bridge is IP66 weather rated and is suitable for outdoor use.

Genesis IP Bridge Integrations



Powering the IP Bridge

5 volts DC

The IP bridge is typically powered via 5 volts DC. The power cable is inserted into the terminal in the bottom-left corner of the base circuit board; polarity is marked on the circuit board. Once powered, LED D13 will light up red.

Plug an Ethernet cable into the Ethernet connector to connect the bridge to the internet. When the bridge successfully connects to the internet, LED D2 will light up green and LED D1 will begin flashing red.

PoE

When powering the IP bridge via Power over Ethernet, ensure that you are connecting the bridge to the same network as your computer, otherwise you may end up receiving an incompatible IP address from the bridge.

Plug the PoE cable into the Ethernet connector; upon start-up, LED D13 will light up red to indicate power has been established. LED D2 will light up green and LED D1 will begin flashing red to indicate that a successful internet connection has been established.

Configuration via Bluetooth

You need to use a Bluetooth terminal app on your mobile smartphone in order to setup the IP bridge. In the Bluetooth terminal, you can obtain the IP address, set up the site number and subnet codes. You can also connect the IP masthead to WiFi, removing the need for the Ethernet cable.

Available Commands in BLE Terminal

site=<UHF Site ID>

This is used to configure the side code that the IP bridge will use from 1 to 32. The site code should be the same on the units and the bridge.

Example: site=1

subnet=<UHF Subnet ID>

This specifies the subnet on which the IP bridge will operate and should be the same on both the bridge and units. The number might range from 1 to 8, however, 1 is the desired value.

Example: subnet=1

passkey=<current pin>;<new pin>

This is done to set the IP bridge's BLE password. The pin can only be 6 digit ranging from 000000 to 999999. Values are separated by a semicolon.

Example and default passkey=123456

wifi= <wifi SSID>; <Password>

This command can be used to input the WIFI credentials in the IP Bridge. The name of the Wi-Fi is the SSID. Values are separated by a semicolon.

Example wifi=Luminite;Test123123

version

Shows the current Bridge firmware version

help

Shows bridge information and general commands.

Networking

The IP bridge network interface supports IPv4 and is designed to work within a private network. By default, the IP bridge relies on DHCP to automatically acquire its IP and all the other network parameters. However, it is possible to manually assign an IP to the bridge if DHCP is not available or a static IP is required. Under IPv4 standard, a device IP address must be chosen from a subnet reserved for private networks. An assigned IP address on the IP bridge therefore should be within a subnet, chosen only from the following IPv4 address blocks:

IP BLOCK TYPE	IP ADDRESS BLOCK (CIDR)	STARTING IP ADDRESS	ENDING IP ADDRESS
Private Network IP's	10.0.0.0/8	10.0.0.0	10.255.255.255
	172.16.0.0/12	172.16.0.0	172.31.255.255
	192.168.0.0/16	192.168.0.0	192.168.255.255
Link-Local Addresses	169.254.0.0/16	169.254.0.0	169.254.255.255

The only exception to this rule is the assigned DNS IP address. You may assign an alternative or public DNS IP address, but such an IP address should NOT be within any of the IP address blocks as given below. These IP address blocks are reserved for special purposes and should not be used for any general network communication.

IP BLOCK TYPE	IP ADDRESS BLOCK (CIDR)	STARTING IP ADDRESS	ENDING IP ADDRESS
Reserved	0.0.0.0/8	0.0.0.0	0.255.255.255
Loopback	127.0.0.0/8	127.0.0.0	127.255.255.255
Reserved	240.0.0.0/4	240.0.0.0	255.255.255.255
Reserved	255.255.255.255/32	255.255.255.255	255.255.255.255
Multicast	224.0.0.0/4	224.0.0.0	239.255.255.255

To manually set the network interface, the following parameters must be defined:

- The unit assigned local IP address.
- The local network subnet, defined by its netmask.
- The local network Gateway IP address (i.e., the router/switch IP address)
- The local or public Domain Name Server (DNS) IP address

[NOTICE]

Changing the network interface parameters could render the bridge in operational if the network is restricted or there are IP address conflicts. Please contact the network administrator to ensure that the assigned network parameters are all valid for the local network. To define a local subnet and set a fixed/static IP on the bridge, you can use the following command:

ip=<IP in CIDR format>

To set a Static IP and Subnet mask for the bridge in CIDR format. The first IP is calculated 'automatically' and set as the Gateway and DNS IP address. The IP address must belong to a Private Network IP block (refer to Networking table). Example: ip=192.168.0.14/24

The unit is assigned a fixed/static local IP address of 192.168.0.14The local network netmask is 255.255.255.0, so the IP addresses start from 192.168.0.0 and end at 192.168.0.255

Both Gateway and DNS IP addresses are 'automatically' set to 192.168.0.0 which is the first IP If you need to specify the Gateway IP address manually, use the below command instead:

ip=<IP in CIDR format>;<Gateway IP address>

To set a Static IP and Subnet mask for the bridge in CIDR format. The IP address must belong to a Private Network IP block (refer to Networking table). However, the Gateway and DNS IP addresses are 'manually' specified and set to <Gateway IP address> instead (values are separated by a semicolon) Example: ip=192.168.0.14/24;192.168.0.10

The unit was assigned a fixed/static local IP address of 192.168.0.14
The local network netmask is 255.255.255.0, so the IP addresses start from 192.168.0.0 and end at 192.168.0.255

Both Gateway and DNS IP addresses are 'manually' set to 192.168.0.10 instead.

You may change the DNS IP address manually to a different IP address, e.g a public DNS IP address:

dns-ip=<A private or public DNS IP address>

Here the DNS IP is set to a private local DNS IP address on the current subnet, as assigned before.

Example: dns-ip=192.168.0.80

ip=dhcp

The manual settings will be erased and the network interface will reset with DHCP enabled.

Webeye Integration

webeye-server=<IP/URL>:<Port>

webeye-sserver=<IP/URL>:<Port>

Sets the Server and Port of the Webeye SMTP endpoint (values separated by a colon). The first command connects without SSL whereas the second command will connect securely via SSL.

Examples: webeye-server=192.168.0.120:1234

Connect without SSL to 192.168.0.120 over port 1234

Example: webeye-sserver=192.168.0.200:4321

Connect securely using SSL to 192.168.0.200 over port 4321

webeye-sender=<Sender Address>

This sets the sender address for the Webeye to connect via SMTP. This value must be a properly formatted email address.

Example: webeye-sender=sender@test.com

webeye-recipient=<Recipient Address>

This sets the recipient address for the Webeye to connect via SMTP. This value must be a properly formatted email address.

Example: webeye-recipient=recipient@test.com

webeye-test

You can generate a TEST alarm to verify the SMTP integration.

webeye-reset

Removes all the Webeye settings saved from the bridge.

Sentinel Integration

sentinel-server=<IP/URL>:<Port>

sentinel-sserver=<IP/URL>:<Port>

Sets the Server and Port of the Sentinel endpoint (values separated by a colon). The first command connects without SSL whereas the second command will connect securely via SSL.

Examples: sentinel-server=192.168.0.120:1234

Connect without SSL to 192.168.0.120 over port 1234

Example: sentinel-sserver=192.168.0.200:4321

Connect securely using SSL to 192.168.0.200 over port 4321

sentinel-id=<ID>

This is the Sentinel transmitter ID for your site.

sentinel-test

You can generate and send a TEST alarm to verify the Sentinel integration

sentinel-reset

Removes all the Sentinel settings saved from the bridge.

Immix Integration

immix-server=<IP/URL>:<Port>

immix-sserver=<IP/URL>:<Port>

Sets the IP and Port of the IMMIX SMTP server (values separated by a colon)

Example: immix-server=192.168.0.120:1234

immix-sender=<Sender Address>

This sets the sender address for the IMMIX to connect via SMTP. This value must be a properly formatted email address.

Example: immix-sender=sender@test.com

immix-recipient=<Recipient Address>

[OPTIONAL, NO NEED TO SET] This sets the recipient address for the IMMIX to connect via SMTP. This value must be a properly formatted email address. In the most Immix set ups, this is the same as the Sender address value. If not set, the bridge will set it automatically to the same value as the Sender address above.

Example: immix-recipient=recipient@test.com

immix-test

You can generate a TEST alarm to verify the SMTP integration.

immix-reset

Removes all the IMMIX settings saved from the bridge.

Dahua PTZ Integration

ptz-host=<IP>:<Port>

Description: Sets the IP and Port of the PTZ camera (values separated by a semicolon)

Example: ptz-host=192.168.0.120;1234

ptz-login=<Username>;<Password>

Description: This will set the Username and Password of the PTZ camera in order to control it remotely (separated by a semicolon)

Example: ptz-login=admin;pass

ptz-preset-add=<Genesis unit No>;<Dahua Preset No>;<Dahua Video Channel>

Description: The command above will set preset values for a given Genesis unit. The values are separated by semicolons.

Example: ptz-preset-add=15;4;1 (the bridge will move the PTZ camera to 'preset 4, video channel 1' on any PIR events from Genesis unit 15)

This command can also be used to update the preset values for a Genesis unit. For the main video stream, simply set the video channel to 1.

Example: ptz-preset-add=15;3;1 (updates the previously defined value from preset 4 to preset 3 for unit 15)

ptz-preset-test=<Genesis unit No>

Description: You can test a defined preset for a Genesis unit using the command above:

Example: ptz-preset-test=15 (moves the PTZ camera to saved preset for Genesis unit 15 in the previous step)

ptz-preset-remove=<Genesis unit No>

Description: The command above will remove a previously defined preset value for a given Genesis unit.

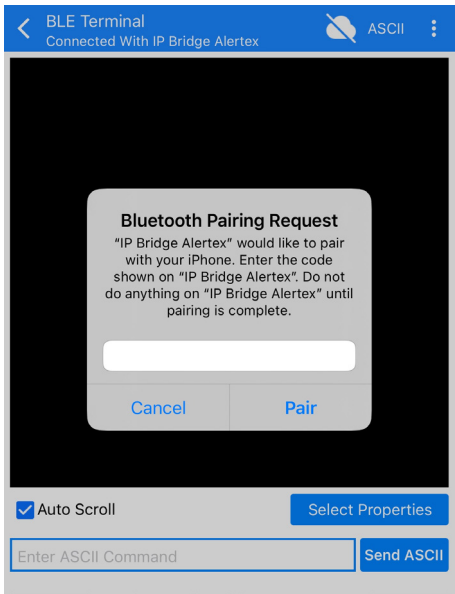
Example: ptz-preset-remove=15 (Removes any preset made for Genesis unit 15)

ptz-reset

Description: Removes all the PTZ settings saved from the bridge.

Default Passwords

Default BLE terminal password: 123456



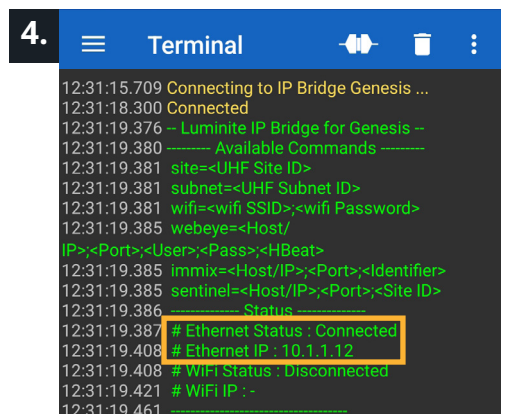
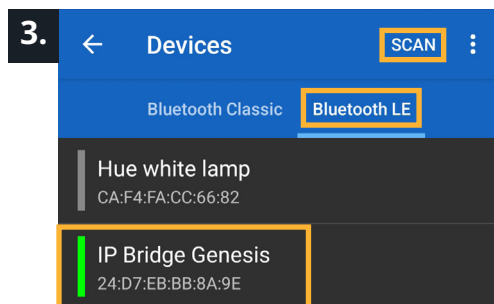
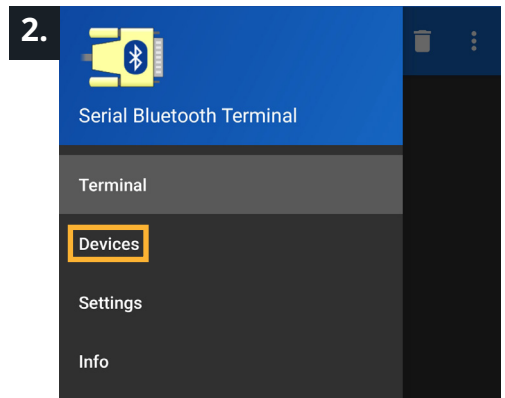
Android

You must use a Bluetooth terminal app on your Android device to configure the IP bridge over Bluetooth. For Android, we are using Serial Bluetooth Terminal which is available on the Play Store:

https://play.google.com/store/apps/details?id=de.kai_morich.serial_bluetooth_terminal&gl=GB

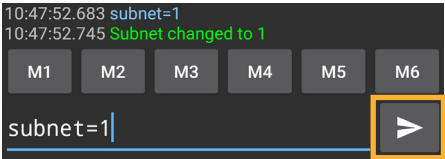
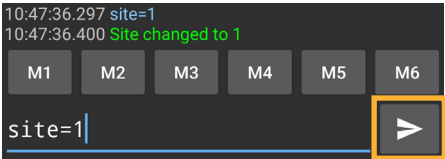
Connecting to the IP Bridge

1. Open the app and click the 3 horizontal lines in the top left corner to open the menu and select Devices
2. Switch to the Bluetooth LE window and press SCAN
3. 'IP Bridge Genesis' should show in the list of devices – select it to open the Terminal
4. Once the IP bridge has connected, the Ethernet IP address will be visible in the terminal window



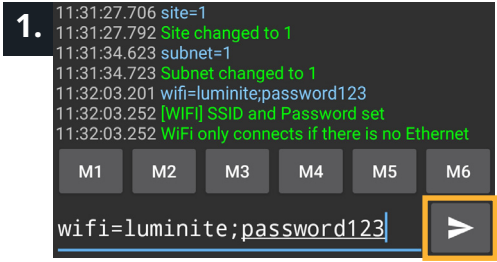
Setting the Site and Subnet Codes

1. To set the site code (1-32), type
site=(1-32) and press the 'send'
arrow
2. To set the subnet code (0 / 1), type
subnet=(0 / 1) and press the 'send'
arrow



Connecting to the IP Bridge over WiFi

1. To connect the IP bridge to the
WiFi network, type wifi=(enter
the wifi name);(enter the wifi
password) and press the 'send'
arrow
2. Unplug the Ethernet cable from
the IP bridge and disconnect it in
the terminal window by clicking
the 'connect / disconnect' button
in the top right of the window



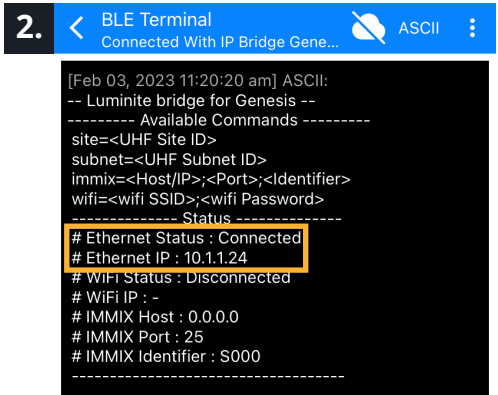
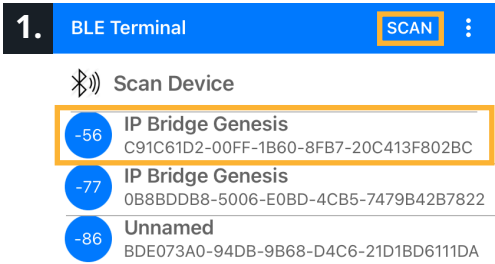
3. Reconnect to the IP bridge by
clicking the 'connect / disconnect'
button. Notice that Ethernet IP
address is now blank, and the WiFi
IP address is populated
4. Please note that the Ethernet IP
address and the WiFi IP address
will be different values
3.
-
- A screenshot of a terminal window showing a log of events. It includes timestamps and messages such as '11:31:27.706 site=1', '11:31:27.792 Site changed to 1', '11:31:34.623 subnet=1', '11:31:34.723 Subnet changed to 1', '11:32:03.201 wifi=luminite;password123', '11:32:03.252 [WiFi] SSID and Password set', '11:32:03.252 WiFi only connects if there is no Ethernet', '12:33:17.757 Disconnected', '12:33:19.109 Connecting to IP Bridge Genesis ...', '12:33:20.225 Connected', '12:33:21.384 - Luminite IP Bridge for Genesis --', '12:33:21.384 ----- Available Commands -----', '12:33:21.440 site=<UHF Site ID>', '12:33:21.442 subnet=<UHF Subnet ID>', '12:33:21.442 wifi=<wifi SSID>;<wifi Password>', '12:33:21.444 webeye=<Host/ IP>;<Port>;<User>;<Pass>;<HBeat>', '12:33:21.445 immix=<Host/IP>;<Port>;<Identifier>', '12:33:21.446 sentinel=<Host/IP>;<Port>;<Site ID>', '12:33:21.448 ----- Status -----', '12:33:21.450 # Ethernet Status : Disconnected', '12:33:21.451 # Ethernet IP : -', '12:33:21.452 # WiFi Status : Connected to luminite', '12:33:21.452 # WiFi IP : 10.1.1.44', and '12:33:21.470'. The last two lines are highlighted with an orange box.

You must use a Bluetooth terminal app on your iOS device to configure the IP bridge over Bluetooth. For iOS, we are using BLE Terminal HM-10 which is available on the App Store:

<https://apps.apple.com/us/app/ble-terminal-hm-10/id1398703795>

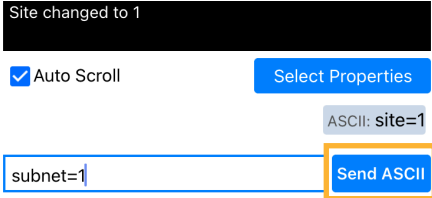
Connecting to the IP Bridge

1. Open the app and select 'IP Bridge Genesis' to open the terminal window. If it does not show in the list of Bluetooth devices, tap 'scan' in the top right corner
2. Once the IP bridge has connected, the Ethernet IP address will be visible in the terminal window



Setting the Site and Subnet Codes

1. To set the site code (1-32), type site=(1-32) and press the 'Send ASCII' button
2. To set the subnet code (0 / 1), type subnet=(0 / 1) and press the 'Send ASCII' button



Connecting to the IP Bridge over WiFi

1. To connect the IP bridge to the WiFi network, type wifi=(enter the wifi name);(enter the wifi password) and press the ‘Send ASCII’ button
2. Unplug the Ethernet cable from the IP bridge and disconnect it in the terminal window by clicking the ‘connect / disconnect’ button in the top right of the window

1.

```
-----
Site changed to 1
Subnet changed to 1
[WIFI] SSID and Password set
WiFi only connects if there is no Ethernet
```

☒ Auto Scroll Select Properties

ASCII: site=1

ASCII: subnet=1

ASCII: wifi=luminite;password123

wifi=luminite;password123

Send ASCII

Btn 1

Btn 2

Btn 3


Btn 4

Btn 5

2.

BLE Terminal

Connected With IP Bridge Gene...




ASCII

IP Bridge Connected

BLE Terminal

Disconnected From IP Bridge G...



ASCII


IP Bridge Disconnected

3. Reconnect to the IP bridge by clicking the ‘connect / disconnect’ button. Notice that Ethernet IP address is now blank, and the WiFi IP address is populated
4. Please note that the Ethernet IP address and the WiFi IP address will be different

3.

BLE Terminal

Connected With IP Bridge Gene...



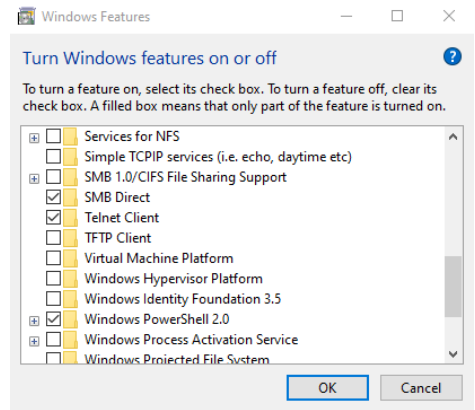
ASCII

```
WiFi only connects if there is no Ethernet

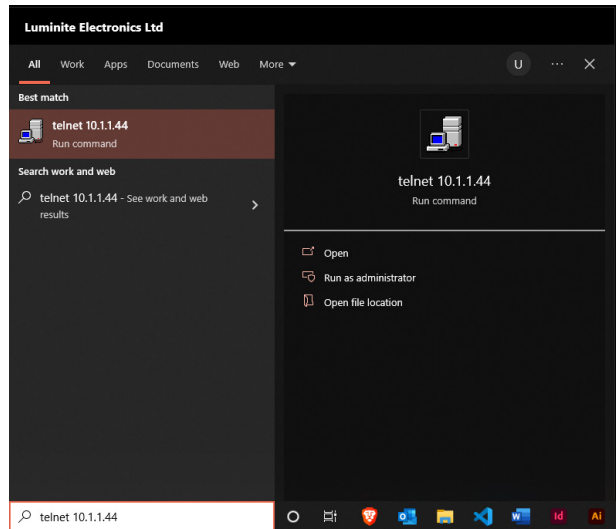
[Feb 03, 2023 11:55:32 am] ASCII:
-- Luminite bridge for Genesis --
----- Available Commands -----
site=<UHF Site ID>
subnet=<UHF Subnet ID>
immix=<Host/IP>;<Port>;<Identifier>
wifi=<wifi SSID>;<wifi Password>
----- Status -----
# Ethernet Status : Disconnected
# Ethernet IP : -
# WiFi Status : Connected to luminite
# WiFi IP : 10.1.1.28
# IMMIX Host : 0.0.0.0
# IMMIX Port : 25
# IMMIX Identifier : S000
-----
```

Connecting to Windows via Telnet

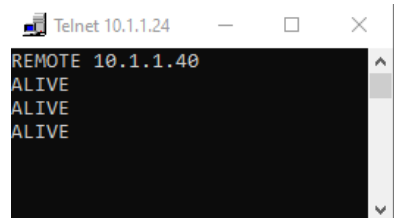
1. Make sure that the Telnet Client is enabled in Windows Features
2. To access Windows Features, search 'Turn Windows features on or off' in the Windows search bar



3. Open the Telnet terminal by searching for 'telnet', followed by the IP address of the IP bridge in the Windows search bar ie. telnet 10.1.1.44



4. Once the terminal is open, any transmitter on the same site code as the IP bridge will begin sending status messages





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