

Guidance Document:

Ethernet Connected LoRaWAN Gateways - ChirpStack

This document is meant to provide guidance for customers that connect their gateway via Ethernet because they prefer it or are unable to connect via cellular due to poor cellular environments.

1.1 Reasons why cellular SHOULD be used as an internet source:

- **Easier installation:** Gateways are equipped with a cellular SIM card installed, which makes installation as simple as plugging the device in, provided it is in a location with adequate cellular coverage.
- **No configuration necessary:** If the gateway is located in an area with adequate cellular coverage, there is no configuration or setting changes required on the gateway.
- **No additional equipment:** The gateway automatically connects to the internet via cellular without the need for additional equipment or connections.
- **No connection interruptions due to power outage:** In the event of a power outage, the gateway will switch to back-up battery power and the cellular connection will be maintained until the battery power runs out.

1.2 If your LoRaWAN Gateway doesn't have a good cellular connection, here are things to keep in mind:

- **Loss of battery back-up power:** If there is a power outage, the gateway's internet connection will be lost. One exception is if there is a working back-up generator.
- **Configuration is necessary:** Depending on the internet service and the system setup, configuration may be required in order to connect the gateway to the internet.
- **Additional equipment needed:** In order to connect the gateway to the internet via Ethernet, an Ethernet cable is required in addition to internet equipment such as a router.
- **Data usage:** If the gateway is connected via Ethernet, it will use data on the customer's network. The amount of data is dependent on the amount of sensors at that particular location.

1.3 Where we find this most prevalent:

- Schools, commercial businesses, hospitals, etc.
- This will require your IT person getting involved to ensure proper configuration and operation.

1.4 Important information for Ethernet set-up:

- In order to get a successful internet connection while using Ethernet, IP configuration must be set to DHCP. The gateway will not work on a static IP address.
 - TCP/UPD Protocol Port 53, local DNS Server

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Required gateway back-end resources & information

The table below provides settings that need to be changed or verified on the customer's network, and that are required for the gateway to function and communicate data properly.

FQDN (Fully Qualified Domain Name)	Data being transmitted	Protocol	Source	Port
www.google.com	Ping keep alive monitoring	IP / ICMP	{tektelic gateway}	
*.amazonaws.com	Network server connection data	TCP/IP	{tektelic gateway}	
mqtt.meshify.com	Gateway Data	TCP/IP	{tektelic gateway}	8883
cs01.meshify.com	Sensor data	TCP/IP	{tektelic gateway}	8884
ntp.org	Time synchronization	UDP	{tektelic gateway}	123
sshproxy-atun.meshify.com	Reverse connection troubleshooting	TCP/IP	{tektelic gateway}	8443