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Cisco Catalyst Cellular Gateways

The Cisco® Catalyst® Cellular Gateways offer LTE Advanced Pro (4G LTE), Category 18 based gigabit-plus access for devices connecting to a wireless WAN network.

General

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What LTE network bands do the cellular gateways support?

The cellular gateway devices support the following LTE Advanced Pro (4G) and 3G networks:

LTE: 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17,18,19, 20, 25, 26, 28, 29, 30, 32, 38, 39, 40, 41, 42, 43, 46, 48, 66, 71
HSPA+: 1, 2, 4, 5, 8, 9, 19

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How do I access the command-line interface (CLI) via a Secure Shell (SSH) session on the gateway?

The cellular gateways can be accessed by a SSH session for initial configuration. Parameters for that initial connection are as follows:

IP address: 192.168.1.1

Default username: admin

Default password: device serial number

The serial number can be found on the bottom of the unit.

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How do I access the CLI via the console port on the gateway?

The cellular gateway can be accessed by console session for initial configuration. Parameters for that initial connection are as follows:

Baud rate: 9600, 19,200, 38,400, or 115,200 bits per second, 8 data bits, no parity, 1 stop bit (8N1). No flow control necessary.

Default username: admin

Default password: device serial number

The serial number can be found on the bottom of the unit.

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What is the quickest way to begin using the unit?

To begin using the cellular gateway, all you need to do is attach a device operating as a Dynamic Host Configuration Protocol (DHCP) client to the 2.5-Gbps Ethernet port. The port will drop back to 1 Gbps speed if necessary. Assuming that you are connecting to a public access point name (APN), the AutoSIM function will load the appropriate firmware and default APN values.

f custom APN values are necessary, instructions for providing those via the cellular gateway's CLI can be found later in this document.

The DHCP client will receive an IP address from the cellular gateway. That DHCP action will provide information to install a default route on the client that points back to the cellular provider. In addition, the DHCP server will send information to install a route to 192.168.1.1, which will point to the cellular gateway for management connectivity.

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Q **How do I change the gateway's password?**

A To change the password, access the CLI via SSH. Then enter configuration mode using "configure t" and use the following commands to update the password:

```
CellularGateway(config)# aaa authentication users
user admin change-password old-password

Value for 'old-password' (<string>): *********

Value for 'new-password' (<string>): ********

Value for 'confirm-password' (<string>): ********

CellularGateway(config)#

System message at 2020-06-01 22:07:57...

Commit performed by system via system using system.
```

Any customized passwords must meet the following criteria:

- At least one uppercase letter
- At least one lowercase letter
- At least one special character (|,\, and / are not supported characters)
- At least one number
- A minimum of 8 characters
- No more than 32 characters

Q **What routing functions are performed on the cellular gateway device?**

A No routing functions take place on the cellular gateway. The cellular gateway acts as an IP passthrough device. All Layer 3 and above routing functions will need to be handled by the client device attached to the gateway.

Q **Does the cellular gateway support IPv6 passthrough?**

A Yes. Support is available for IPv6 only, IPv4 only, or concurrent.

Q **How are custom APNs configured?**

A Custom APNs must be configured using the cellular gateway's CLI interface at this time. Use the following commands on the gateway's CLI to configure a custom APN profile:

```
CellularGateway# config t
Entering configuration mode terminal
CellularGateway(config)# controller cellular 1
CellularGateway(config-cellular-1)# sim slot 0
CellularGateway(config-slot-0)# profile id 1
apn broadband
```

The following options are also available for pdn-type:

- IPv4
- IPv4v6
- IPv6

Additionally, it is possible to configure authentication using the following methods:

- chap
- pap
- chap_or_pap

The following is an example of a full configuration:

```
CellularGateway# config t
Entering configuration mode terminal
CellularGateway(config)# controller cellular 1
CellularGateway(config-cellular-1)# sim slot 0
CellularGateway(config-slot-0)# profile id 1 apn
broadband pdn-type IPv4v6 authentication pap
username user001 password pw001
```

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Q **How are the cellular gateways powered?**

A The devices can be powered either by a Power over Ethernet Plus (PoE+) connection to the multigigabit interface or by a local power connection. The PoE+ cable run to the device should be no longer than 100m. The gateways can alternatively be powered by an AC power brick that connects to the 4-pin connector on the unit.

Q **Does the cellular gateway have to be directly attached to the client device, or can it be attached via a traditional Ethernet infrastructure with switches?**

A The recommended deployment is for the cellular gateway to be directly attached to the client device via a dedicated Ethernet cable. However, attachment via a switched Ethernet infrastructure is possible, while not recommended, provided the following criteria are met:

- A dedicated VLAN is used for connectivity between the cellular gateway and the client device
- No other devices are on that VLAN
- No other DHCP servers have access to that VLAN (directly or via DHCP helpers)

Q **Are the cellular gateways rated for outdoor usage?**

A No, the cellular gateways are not rated for outdoor deployments. It is possible to attach antennas to the gateway and position those antennas outdoors if absolutely necessary.

Q **Are specific models of the hardware available for certain geographies?**

A No, there is only one product ID (PID), which is intended for global support.

Q **Will there be a field upgrade to 5G capabilities?**

A No, future products supporting 5G cellular will be a different PID. The cellular gateways will not be upgradable to 5G support.

Q **Which platforms can support the Cisco Catalyst Cellular Gateways?**

A All Cisco IOS® XE platforms with an available WAN Ethernet port can support the cellular gateways.

Q **Does the device support remote failure recovery?**

A Yes. There is a reset button which can be pressed with a paper clip or similar tool. The reset button can be pressed after the box has started it's boot sequence. Hold the reset button for approximately 10 seconds. The LED on the top of the unit will change colors. Once the reset button is released, the unit will reboot with a blank configuration using the last bootable image. At this point, the box will have the default username and password and attempt to do any factory standard auto deployment that is appropriate.

Q **Does the device support dual SIMs in active/active mode?**

A The cellular gateways offer dual SIMs in active/standby mode only. This is a single-radio device.

Q **Are the Cisco Catalyst Cellular Gateways supported in SD-WAN mode?**

A Yes. Full LTE functionality will be available in release 17.4.1.

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Q **Besides the external gateway option, are there other ways to support failover cellular?**

A Cisco provides a variety of cellular options, including platforms with embedded cellular modems (such as select models of the Cisco 900 and 1000 Series ISRs), and also modular solutions (such as the Cisco 1000 and 4000 Series ISRs and the Cisco Catalyst 8300 Series Edge Platforms) that support cellular modules that can be inserted directly into the host platform.

Q **What are the considerations for deploying the Cisco Catalyst Cellular Gateways versus a router with a pluggable module or integrated LTE?**

A The first consideration is the cellular signal strength where your host router is located. If there is sufficient cellular signal where the host router is located, an integrated solution or a router that accepts a pluggable module may suffice. In this scenario, using a module provides potential upgradability in the future without replacing the entire host router. Integrated cellular solutions, however, are not upgradable.

If signal strength is not sufficient where the host router is located (i.e., basement, storage closet, etc.), a cellular gateway is likely your best option. You can place the gateway wherever signal strength is greatest and connect to your host router via Ethernet (up to 100m). This capability provides much more deployment flexibility in comparison to traditional coaxial antennas (which are limited to a range of 50 to 70 feet).

Another consideration is compatibility. Solutions using pluggable modules require a host router and module that are compatible with each other. The cellular gateways, on the other hand, are compatible with all Cisco IOS XE host routers, as long as there is an available WAN Ethernet port.

Q **What are the antenna options?**

A The four default antennas that come with the cellular gateways are 4G/5G compatible SMA-type dipole antennas (5G-ANTM-SMA-D). For greater range and potential outdoor antenna deployments, Cisco also offers a 4-in-1 dome antenna (5G-ANTM-O-4-B).

Q **Can the gateways be cloud managed?**

A Yes. SD-WAN customers will have full cloud-management functionality for the cellular gateways (roadmap 17.4 release).

Q **How can I order the device?**

A Instructions for ordering the Cisco Catalyst Cellular Gateways are available via the ordering guide located at the link below:

https://www.cisco.com/c/en/us/products/collateral/routers/catalyst-cellular-gateways/guide-c07-744211.html