ıl|ı.ı|ı.
CISCO
The bridge to possible

Cisco Catalyst Cellular Gateways

Contents

Figure 1.
Cisco Catalyst Cellular Gateway

Cisco Catalyst Cellular Gateways combine the latest in cellular technology with deployment flexibility, investment protection, and ease of management, with both traditional and SD-WAN deployments.

Hyperconnectivity with steady performance, exponential growth of Internet of Things (IoT) devices, and next-generation cloud-scale applications – these trends are causing enterprises to look beyond traditional connectivity to cellular solutions, especially high-speed 5G and 4G technologies, to connect hard-to-reach areas and to securely support global operations. Powered by gigabit-class 5G and 4G standards, the Cisco® Catalyst® Cellular Gateways bring blazing-fast cellular connection to virtually any Cisco host platform.

Connected to the host router via Ethernet and available with Power over Ethernet (PoE), the cellular gateways can be placed wherever cellular reception is strongest, making installation much easier and more reliable than traditional coaxial cable antenna extensions. The ability to support new applications, either cloud hosted or on-premises, and to connect more devices reliably and flexibly, can make it easier to migrate to a wireless WAN with guaranteed Quality of Service (QoS). The cellular gateways' faster 5G and 4G speeds mean that wireless could be considered for primary connectivity, alongside internet and Multiprotocol Label Switching (MPLS) modes of transport.

Cisco Catalyst Cellular Gateways connect your users and devices to trusted cloud and enterprise applications using 5G and 4G LTE Advanced Pro technologies. When combined with Cisco Catalyst SD-WAN, they enable you to automate deployment, manage policies, and monitor network traffic over a cellular WAN with greater flexibility.

Figure 2.
Cisco Catalyst Cellular Gateway

Table 1.   Business benefits

Benefits	Features/description
High-speed connectivity	• Multigigabit 5G or 4G connectivity allows the gateways to be used for primary or failover high-speed cellular WAN. • 2.6 Gbps 5G Sub-6 GHz, 4x4 Multiple Input, Multiple Output (MIMO) • 1.2 Gbps LTE Advanced Pro, 4x4 Multiple Input, Multiple Output (MIMO)
Lightweight, compact size with low power consumption	• Can be deployed in many different environments where space, heat dissipation, and low power consumption are critical factors
Flexible deployment	• Connect to virtually any Cisco host router via Ethernet • Deploy up to 100 m from host router via Ethernet • Multiple mounting options • PoE and AC power options • Support for external antenna
Ease of management	• Command-Line Interface (CLI), local WebUI, and Cisco Catalyst SD-WAN Manager management options • Seamless extension of business policy from the branch to the cloud • Zero-touch provisioning • IP passthrough mode using a single Packet Data Network (PDN), for operational simplicity • Console port for out-of-band management • Upgrade firmware remotely on all devices from SD-WAN Manager
Investment protection	• Upgrade cellular capability without a full router refresh • Ability to upgrade host router and continue to use the same cellular gateway
WAN versatility	• Cost-effective connectivity of branches to cloud using LTE Advanced Pro • Ability to leverage cellular for public cloud and internet access • Dual SIMs for multiple connection options
Security and reliability	• Integrated security with Cisco Anti-Counterfeit Technology (ACT2) for Secure Unique Device Identifier (SUDI) • Dying Gasp for failure recovery

*5G version roadmap

Overall platform benefits

These gateways enable secure, scalable cellular deployments from any location, using your existing infrastructure for primary or failover connectivity. The Cisco Catalyst Cellular Gateways deliver a bridge to a 5G or 4G wireless WAN (WWAN) with multigigabit class access, Cisco Catalyst SD-WAN management, and high availability.

- **Flexible, scalable deployment:** Don't be limited to a server room or closet for WWAN support. The cellular gateways' compact size and compatibility with your existing infrastructure make it easy to deploy from any location where cellular reception is strongest.

- **Simplified, central management:** These plug-and-play devices offer zero-touch provisioning and can be easily managed from a single user interface. The gateways come with preconfigured profiles and remote management capabilities, making them easy to provision for a distributed workforce.

- **Secure by design:** Catalyst cellular gateway platforms come with a trustworthy solutions infrastructure that secures them against threats and vulnerabilities with integrity verification and remediation of threats.

Table 2.   Product specifications

Feature	CG522-E	CG418-E
Cellular category	• 5G Sub-6 GHz • Backward compatible with LTE technologies such as CAT18, CAT 6 and CAT 4	• CAT18 LTE Advanced Pro • Backward compatible with LTE technologies such as CAT 4 and CAT 6
Passthrough Download/upload bandwidth	• 3.4 Gbps/300 Mbps	• 1.2 Gbps/150 Mbps
Ports and interfaces	• 1x 2.5/10 multigigabit RJ45 • 1x RJ45 console port • 1x RJ45 aux port[*] • 4x SMA antenna ports (4x4 MIMO)	• 1x 2.5/10 multigigabit RJ45 • 1x RJ45 console port • 1x RJ45 aux port[*] • 4x SMA antenna ports (4x4 MIMO) • 1x SMA GPS port[*]
Management	• CLI • Local WebUI (Cisco web-based GUI) • SD-WAN Manager	• CLI • Local WebUI (Cisco web-based GUI) • SD-WAN Manager
SIM card	• Dual micro-SIMs (active/standby)	• Dual micro-SIMs (active/standby)
Antennas	• 4 included SMA-type dipole antennas (5G-ANTM-SMA-D), 4X4 MIMO	• 4 included SMA-type dipole antennas (5G-ANTM-SMA-D), 4X4 MIMO
GPS	• Software support	• SMA-type GPS antenna port (antenna not included)
Power consumption	• 21W • AC (802.03at PoE optional)	• 15W • AC (802.03at PoE optional)
Dimensions	• 7.6 x 7.6 x 1.5 in. (19.3 x 19.3 x 3.8 cm) –without antennas • 9.9 x 9.9 x 8.3 in. (25.1 x 25.1 x 21.1 cm) – with antennas	• 7.6 x 7.6 x 1.5 in. (19.3 x 19.3 x 3.8 cm) – without antennas • 9.9 x 9.9 x 8.3 in. (25.1 x 25.1 x 21.1 cm) – with antennas
Supported platforms	• Cisco IOS® XE based platforms, including Cisco 1000 and 4000 Series Integrated Services Routers and Cisco Catalyst 8300 Series Edge Platforms	• Cisco IOS® XE based platforms, including Cisco 1000 and 4000 Series Integrated Services Routers and Cisco Catalyst 8300 Series Edge Platforms

Feature	CG522-E	CG418-E
Frequency bands	• 5G FR1: n1, n2, n3, n5, n28, n41, n66, n71, n77, n78, n79 • 4G LTE bands: 1-5, 7, 8, 12-14, 17-20, 25, 26, • 28-30, 32, 34, 38-43, 46, 48, 66 and 71 • 3G WCDMA: 1, 9, 19	• 4G LTE bands 1-5, 7, 8, 12-14, 17-20, 25, 26, 28-30, 32, 38-43, 46, 48, 66, and 71 • FDD LTE 600 MHz (band 71), 700 MHz (bands 12, 13, 14, 17, 28, and 29), 800 MHz (band 20), 850 MHz (bands 5, 18, 19, and 26), 900 MHz (band 8), 1500 MHz (band 32), 1700 MHz (bands 4 and 66), 1800 MHz (band 3), 1900 MHz (bands 2 and 25), 2100 MHz (band 1), 2300 MHz (band 30), and 2600 MHz (band 7) • TDD LTE 1900 MHz (band 39), 2300 MHz (band 40), 2500 MHz (band 41), 2600 MHz (band 38), 3500 MHz (bands 42 and 48), 3700 MHz (band 43), and 5200 MHz (band 46)
Indicators	• A tricolor red-green-blue LED displays the cellular gateway status (boot, SIM, OS, signal strength) • A LED displays 5G signal strength	• A tricolor red-green-blue LED displays the cellular gateway status (boot, SIM, OS, signal strength)
Environmental	• Nonoperating (storage) temperature: -40° to 158°F (-40° to 70°C) • Nonoperating (storage) humidity: 5% to 95% relative humidity (noncondensing) • Nonoperating (storage) altitude: 0 to 15,000 ft (0 to 4570 m) • Operating temperature: 32° to 113°F (0° to 45°C) • Operating humidity: 10% to 85% relative humidity (noncondensing) • Operating altitude: 0 to 10,000 ft (0 to 3000 m); no temperature de-rating required	• Nonoperating (storage) temperature: -40° to 158°F (-40° to 70°C) • Nonoperating (storage) humidity: 5% to 95% relative humidity (noncondensing) • Nonoperating (storage) altitude: 0 to 15,000 ft (0 to 4570 m) • Operating temperature: 32° to 113°F (0° to 45°C) • Operating humidity: 10% to 85% relative humidity (noncondensing) • Operating altitude: 0 to 10,000 ft (0 to 3000 m); no temperature de-rating required
System memory	• 1024 MB DRAM • 4096 MB EMMC	• 1024 MB DRAM • 4096 MB EMMC
Mean Time Between Failures (MTBF)	• 1,048,340 hours	• 680,990 hours

Cisco Catalyst Software-Defined WAN

Cisco Catalyst SD-WAN is a set of intelligent software services that allow you to connect users, devices, and branch office locations reliably and securely across a diverse set of WAN transport links. Customers can unite public internet, cellular, and private MPLS network links to any location with ease. They can customize their enterprise's bandwidth and connectivity to deliver specific network services with guaranteed QoS. With support for Cisco Catalyst SD-WAN and programmable interfaces, one can effectively scale cellular gateways across thousands of locations for various deployment types.

For more information on Cisco Catalyst SD-WAN,
Please refer to: https://www.cisco.com/c/en/us/products/software/one-wan-subscription/index.html.

Smart operations

The Cisco WebUI is an embedded GUI-based device-management tool that provides the ability to provision a device to simplify device deployment and manageability and to enhance the user experience. A GUI-based device-management tool simplifies WAN and cellular configuration through easy-to-use wizards. You can use the WebUI to build configurations and to monitor and troubleshoot a device without having CLI expertise.
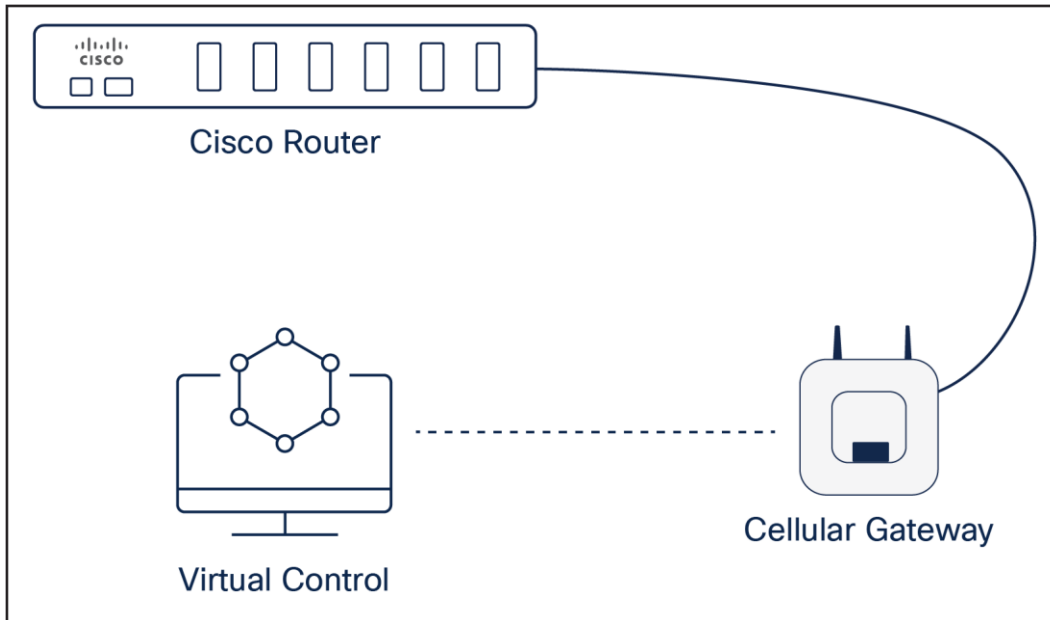
Figure 3.
Local WebUI management (Cisco web-based GUI)

Secure infrastructure

Trustworthy systems built with Cisco Trust Anchor Technologies provide a highly secure foundation for Cisco products. In the Catalyst cellular gateways, these technologies enable assurance of hardware and software authenticity for supply chain trust and strong mitigation against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include:

- **Image signing:** Cryptographically signed images provide assurance that the firmware, BIOS, and other software are authentic and unmodified. As the system boots, its software signatures are checked for integrity.

- **Secure Boot:** Cisco Secure Boot technology anchors the boot sequence chain of trust to immutable hardware, mitigating threats against a system's foundational state and the software that is to be loaded, regardless of a user's privilege level. It provides layered protection against the persistence of illicitly modified firmware.

- **Cisco Trust Anchor module:** A tamper-resistant, strong cryptographic, single-chip solution provides assurance of hardware authenticity to uniquely identify the product so that its origin can be confirmed to Cisco. This provides assurance that the product is genuine.

High-speed connectivity

With Cisco's Multigigabit technology, you can use your existing Category 5e or 6 cabling, allowing for higher throughputs with minimum cost. Cisco Catalyst Cellular Gateways' multigigabit port supports 2.5 Gbps in addition to 1 Gbps. All speeds are supported on Category 5e cabling as well as 10GBASE-T (IEEE 802.3bz) cabling.

- The cellular gateways have the option to be powered via PoE (along with an external power option), which enables flexible deployment in remote locations with no external power source. Users can enable the PoE option by selecting the CG-POE-AT model. If the host router does not support PoE on the WAN port that the gateway will be connected to, a power injector (AIR-PWRINJ6) can be purchased to provide that power in order to use PoE on the gateway. For more ordering details, please refer to the ordering guide.

Software requirements

Cisco continues to offer a fully programmable software architecture with API support on these devices.

Table 3.   Minimum software requirements

Platform product ID (PID)	Description	Minimum software requirement
CG522-E	Cisco Catalyst Cellular Gateway, supporting 5G Sub6, external antenna	Cisco SCG522-EIPS-174 (download link below)
CG418-E	Cisco Catalyst Cellular Gateway, supporting LTE Advanced Pro, external antenna	Cisco SCG418-EIPS-173 (download link below)

https://software.cisco.com/download/find/CG418-E.

Safety and compliance

Table 4.   Safety and compliance specifications

Description	Specification
Safety certifications	UL 60950-1
	CAN/CSA-C22.2 No. 60950-1
	EN 62368-1
	IEC 62368-1
	EN 60950-1
	IEC 60950-1
	AS/NZS 60950-1
	IEC/EN 60825 Laser Safety
	FDA: Code of Federal Regulations Laser Safety

Description	Specification
EMC (emissions)	47 CFR Part 15 Class A ICES 003 Class A AS/NZS CISPR 32 Class A CISPR 32 Class A EN55032 Class A VCCI-CISPR 32 Class A IEC/EN 61000-3-2: Power Line Harmonics IEC/EN 61000-3-3: Voltage Fluctuations and Flicker
EMC (immunity)	IEC/EN-61000-4-2: Electrostatic Discharge Immunity IEC/EN-61000-4-3: Radiated Immunity IEC/EN-61000-4-4: Electrical Fast Transient Immunity IEC/EN-61000-4-5: Surge AC, DC, and Signal Ports IEC/EN-61000-4-6: Immunity to Conducted Disturbances IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions, and Voltage Variations
EMC (ETSI/EN)	EN300 386: Telecommunications Network Equipment (EMC) EN55032: Multimedia Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN55035: Multimedia Equipment (Immunity) ETSI EN301 489-1: Common technical requirements for radio equipment ETSI EN301 489-19: GNSS receivers ETSI EN301 489-52: Cellular Communication radio and ancillary equipment EN61000-6-1: Generic Immunity Standard

Additional information

For more information about the Cisco Catalyst Cellular Gateways,
Visit: https://www.cisco.com/c/en/us/products/routers/catalyst-cellular-gateways/index.html or contact your local Cisco account representative.

For the Cisco Catalyst Cellular Gateway Hardware and Software Installation Guide,
Visit: https://www.cisco.com/c/en/us/td/docs/routers/wireless-wan/Cisco-Catalyst-Cellular-Gateways/b-cisco- catalyst-cellular-gateways-hig.html.

https://www.cisco.com/c/en/us/td/docs/routers/wireless-wan/Cisco-Catalyst-Cellular-Gateways/cisco_catalyst_cellular_gateway_swcfg.html

Ordering information

For ordering details, please refer to the ordering guide. To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

Warranty information

The Cisco Catalyst Cellular Gateways come with a 1-year warranty that provides coverage of the hardware for the original end user. For more details, visit https://www.cisco.com/go/warranty.

Cisco and Partner Services

Services from Cisco and our certified partners can help you reduce the cost and complexity of branch office deployments. Cisco Smart Net Total Care® technical support for the Cisco Catalyst Cellular Gateways is available on a one-time or annual contract basis. Support options range from help-desk assistance to proactive, onsite consultation.

For more information, visit https://www.cisco.com/go/services.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environmental Sustainability Approach" section of Cisco's Corporate Social Responsibility (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environmental Sustainability Approach" section of the CSR Report) are provided in the following table.

Table 5.   Links to environmental sustainability information

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.

Document history

New or revised topic	Described in	Date
5G Sub6 Cellular Gateway		
Initial draft		July 14, 2020

Printed in USA

C78-744210-03   10/23