Overview of Cisco 5520 Wireless Controller

The Cisco 5520 Wireless Controller provides centralized control, management, and troubleshooting for high-scale deployments in service provider and large campus deployments. It offers flexibility to support multiple deployment modes in the same controller: for example, centralized mode for campus, Cisco FlexConnect mode for lean branches managed over the WAN, and mesh (bridge) mode for deployments where full Ethernet cabling is unavailable. As a component of the Cisco Unified Wireless Network, this controller provides real-time communications between Cisco Aironet access points, the Cisco Prime Infrastructure, and the Cisco Mobility Services Engine, and is interoperable with other Cisco controllers.

For more information about features and benefits, see the Cisco 5520 Wireless Controller Datasheet.

Figure 1: Cisco 5520 Wireless Controller

- Summary of Cisco 5520 Wireless Controller Features, on page 1
- Platform Components, on page 2

Summary of Cisco 5520 Wireless Controller Features

Table 1: Cisco 5520 Wireless Controller Features

Feature	Description
Chassis Height	One rack-unit (1RU)
Throughput	20 Gbps
AP Support	1500
Client Support	20000
Data Ports	2x SFP+
Storage Temperature	–40 to 149°F (–40 to 65°C)

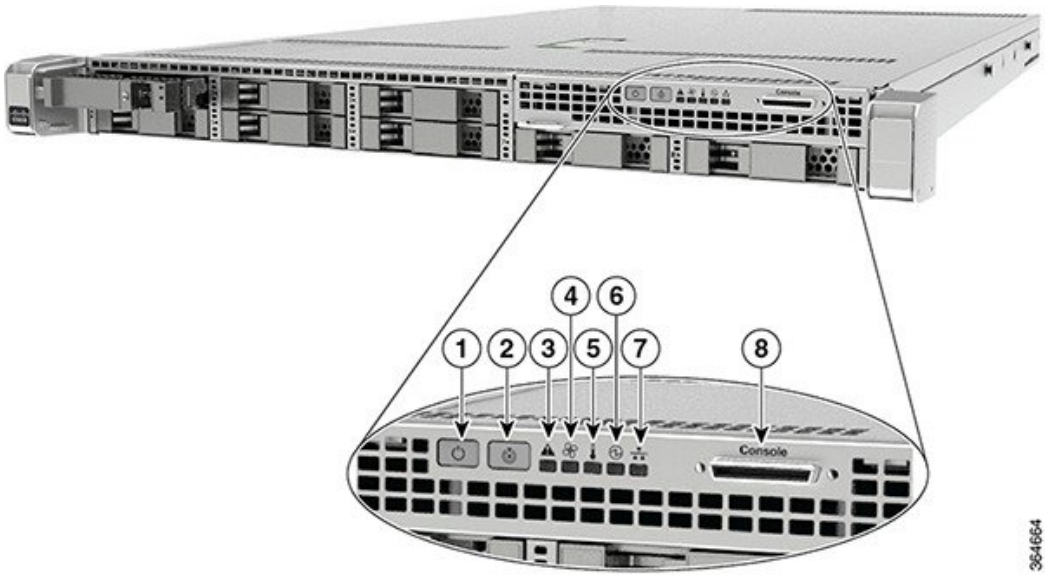
Feature	Description
Operating Temperature	41 to 104°F (5 to 40°C)
Operating Humidity	10–90% (noncondensing)
Power Options	770W AC

Platform Components

Cisco 5520 Wireless Controller Front Panel View

Cisco 5520 Wireless Controller has several buttons, LED indicators, and a KVM connector on the front panel.

Figure 2: Cisco 5520 Wireless Controller Front Panel View



1	Power button/power status LED	**5**	Temperature status LED
2	Locator (Unit identification) button LED	**6**	Power supply status LED
3	System status LED	**7**	Network link activity LED (this indicates the network activity only on Service port, RP port, and CIMC port)
4	Fan status LED	**8**	KVM connector (used with KVM cable that provides two USB 2.0, one VGA, and one serial connector)

Note The power supply, fan, and temperature status are periodically polled from the Cisco WLC software in the intervals of 600 seconds (10 minutes). Therefore, any change in the status of power supply, fan, or temperature can take up to 600 seconds to be reflected. However, the **show imm chassis** command can show the current status.

Front Panel LEDs: Definitions of States

Table 2: Cisco 5520 Wireless Controller Front Panel LEDs: Definitions of States

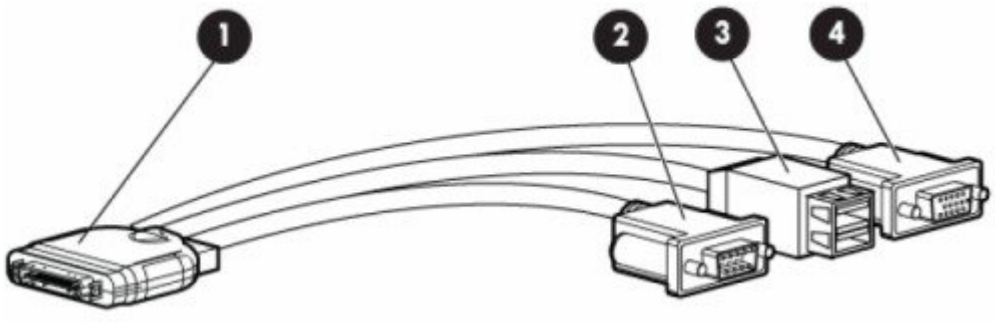
LED Name	Function	State
Power Button	Indicates the system power status	Off—System power is off Amber On—Soft off Green On—System power is on
Locator (Unit Identification) Button	A Unit Identify push button with integrated LED is available on the front panel and rear panel. Each press on the button toggles between active and non-active states	Off—The unit identification function is not in use Blue—The unit identification function is activated
System Status	Indicates the overall system health	Green On—System is in normal operating condition Amber On—System is in a degraded operational state Amber Blinking—Critical Fault State
Fan Status	Indicates the fan health	Green On—Fans are operating and no error condition has been detected Amber On—Fans are in a degraded operational state. One of N fans has a fault Amber Blinking—Critical fault state. Two or more fans have a fault
Temperature Status	Indicates whether or not the system is operating within acceptable temperature limits.	Green On—System is operating at normal temperature Amber On—One or more temperature sensors reaches UCR threshold Amber Blinking—One or more temperature sensors reaches UNR threshold

LED Name	Function	State
Power Supply Status	Indicates the functioning of the power supply	Green On—AC power supplies are operating and no error condition has been detected Amber On—One or more power supplies are in a degraded operational state Amber Blinking—One or more power supplies are in a critical fault state
Network Link Activity	Indicates the network activity only on Service port, RP port, and CIMC port	Green On—Link on any of the ports, but no activity Green Blinking—Activity on any of the ports

Front Panel KVM Breakout Connector

A single female connector provides access to video, two USB ports for keyboard and mouse, and an RS-232C console serial port. An external breakout connector to industry standard interfaces is required. The following figure shows a sample cable.

Figure 3: Front Panel KVM Breakout Connector

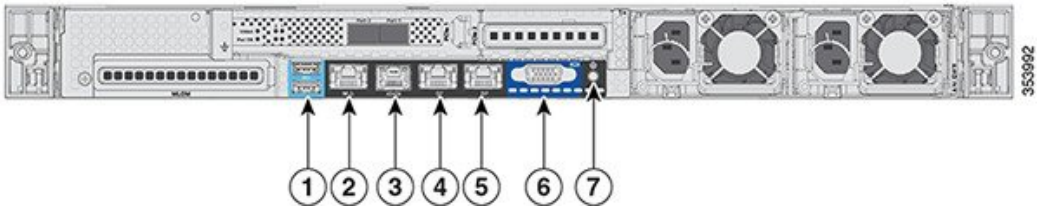


The interfaces for the cable are as follows:

- Front panel KVM/Console connector
- DB9 serial port connector
- Dual Type-A USB 2.0 connectors
- DB15 Video connector (does not show anything once the Cisco WLC software starts except the initial BIOS parameters. All the prints from this point onwards are available on the serial console)

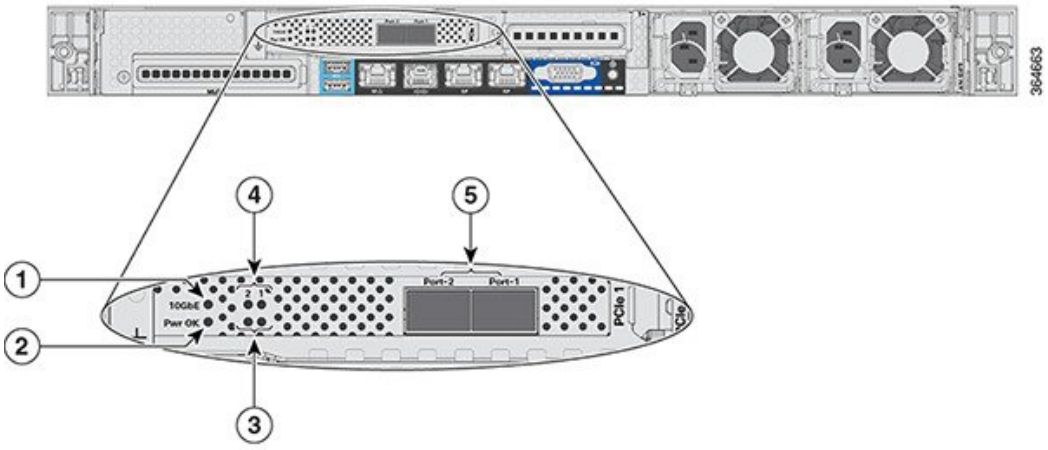
Cisco 5520 Wireless Controller Rear Panel View

Figure 4: Cisco 5520 Wireless Controller Rear Panel View



1	Two Type A 3.0 USB ports	**5**	Redundancy Port (RP)
2	CIMC port 10/100/1000 Base-T	**6**	VGA Connector—Rear panel has a standard VGA port using a female D-Sub-15 Connector (does not show anything once the Cisco WLC software starts except the initial BIOS parameters. All the prints from this point onwards are available on the serial console)
3	SerialCOM Connector—Standard RS-232 Serial COM port using RJ-45 connector	**7**	ID Switch and LED
4	Ethernet Service Port (SP)—Management 10/100/1000 Base-T		

Figure 5: Cisco 5520 Wireless Controller Rear Panel SFP Ports and LEDs



1	10 G	**4**	Port-n Link Activity
2	Pwr OK	**5**	Two 1/10 G SFP/SFP+ Ports
3	Port-n Link Status		

Rear Panel LEDs: Definitions of States

Table 3: Cisco 5520 Wireless Controller Rear Panel LEDs: Definitions of States

LED Name	Function	State
Pwr OK	—	Amber On—Power is good
10 G	—	Amber On—10 G mode Amber Off—1 G mode
Port-n Link Status	—	Green On—Link is up in 10 GbE mode Amber On—Link is up in 1 GbE mode Off—Link status is down
Port-n Link Activity	—	Green blinking—Link activity
Service Port and Redundancy Port LED (present on the port)	Interface Port Speed (the left LED on the port)	Off—Link Speed = 10 Mbps Amber On—Link Speed = 100 Mbps Green On—Link Speed = 1 Gbps
	Interface Port Status (the right LED on the port)	Off—No link Green On—Link Blinking—Traffic present

Setting Up the CIMC Interface

Perform these tasks to set up the CIMC interface:

Step 1 Connect the CIMC cable to the CIMC management port.

The CIMC management port is shown in Figure 1-3 on page 1-4 .

Step 2 Press the Power On button in front of the unit, and wait until you see the login prompt.

Step 3 Enter the username as admin and password as either password or Cisco1234 respectively to get to the Cisco WLC CLI prompt, and follow the CIMC setup step.

Example:

```
(Cisco Controller)
Enter User Name (or 'Recover-Config' this one-time only to reset configuration to factory defaults)

User: admin
Password:********
```

Note You can also set up CIMC via console during bootup from power reset. You can use the F8 key to configure the CIMC.

Step 4 Enable DHCP to set the IP by entering the **imm dhcp enable** command.

Step 5 If DHCP is not available, use the **imm address** *ip-addr net-mask gateway-ip-addr* command.

Step 6 View the IP and details by entering the **imm summary** command.

Example:

```
(Cisco Controller) >imm ?
address              IMM Static IP Configuration
dhcp                 Enable | Disable | Fallback DHCP
restart              Saves settings and Restarts IMM Module
summary              Displays IMM Parameters
username             Configures Login Username for IMM
(Cisco Controller) >show imm chassis ?
bios                      Fetch Chassis BIOS information
current                   Fetch Chassis Current information
fan                       Fetch Chassis Fan information
mac                       Fetch Chassis MAC information
memory                    Fetch Chassis Memory information
power-s                   Fetch Chassis Power Supply information
sol-info                  Fetch Chassis Serial Over LAN information
temperature               Fetch Chassis Temperature information
```

Note CIMC web interface is for advanced debugging for TAC and escalation use only. Changing of settings in the CIMC by customers can cause adverse impact on controller software and functionality.

Switching Between 10 G and 1 G

- The SFP installed in port 1 determines the modes for port 2 at power-up; the mode cannot be changed after power-up. The default modes for both the ports is 10G when no SFP is installed in port 1.
- Conversely, if an SFP module is installed and the user wants to switch to 2x 10G mode, then an SFP+ module must be installed in port 1 and the WLC rebooted.
- Thus, Online Insertion and Removal (OIR) of SFP and SFP+ between 10G and 1G is not possible.
- OIR of 10G to 10G and 1G and 1G is possible.

Note We do not recommend a mix of 1G and 10G SFPs. In case they are different, port 1 SFP determines the mode of operation and functionality on the other SFPs may not work.The SFP/SFP+ must be MSA-compliant for the units to configure the 1G/10G modes correctly.

Table 4: Functionality of Cisco 5520 WLC when OIR Occurs

Hot Swap of SFP/SFP+	Port1	Port2	Remarks
1G to 1G	No	Yes	Cisco 5520 WLC requires reboot for Port1 OIR in 1G
1G to 10G	No	No	Cisco 5520 WLC requires reboot between 1G and 10G
10G to 1G	No	No	Cisco 5520 WLC requires reboot between 10G and 1G
10G to 10G	Yes	Yes	No reboot required

SFP Support

Network ports for Cisco 5520 Wireless Controllers support the following Cisco SFP/SFP+ modules:

- GLC-T
- SFP-10G-SR
- SFP-10G-LR
- SFP-10G-LRM
- SFP-H10GB-CU1M
- SFP-H10GB-CU2M
- SFP-H10GB-CU2-5M
- SFP-H10GB-CU3M
- SFP-H10GB-CU5M
- SFP-H10GB-ACU7M
- SFP-H10GB-ACU10M
- SFP-10G-AOC7M
- SFP-H10GB-CU1-5M
- SFP-10G-AOC3M
- SFP-10G-AOC1M
- SFP-10G-AOC2M
- SFP-10G-AOC5M
- SFP-10G-AOC10M
- GLC-LH *
- GLC-EX-SMD *
- GLC-SX-MMD *
- SFP-10G-SR-S
- SFP-10G-LR-S

Note * Needs GLC-T on Port 1.

Customer Replaceable Units

Cisco 5520 Wireless Controller has a minimal amount of separate orderable items, including all of the following:

- Power supply (AIR-PSU1-770W=)
- SSD Hard Disk Drive (HDD) (AIR-SD240G0KS2-EV=)
- Option to add a redundant power supply on the Cisco 5520 WLC (AIR-PSU1-770W=)

References

- For instructions about how to replace the power supplies, see the "Replacing Power Supplies" section at: http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M4/install/C220M4/replace.html
- For instructions about how to replace the SSD Hard Disk Drive (HDD), see the "Replacing Hard Drives or Solid State Drives" section at: http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M4/install/C220M4/replace.html

Note Only the HDD01 drive on the 8-drive version is applicable to the Cisco 5520 Wireless Controller.