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HPE FlexNetwork 5510 HI Switch Series FAQ

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HPE FlexNetwork 5510 HI Switch Series FAQ

Introduction

This document contains the most frequently asked questions about HPE FlexNetwork 5510 HI Switch Series.

This document is not restricted to specific software or hardware versions.

Table 1 HPE FlexNetwork 5510 HI switches, power supplies, and interface cards

Product code	HPE description	Alias
HPE FlexNetwork 5510 HI switches		
JH145A	HPE FlexNetwork 5510 24G 4SFP+ HI 1-slot Switch	HPE 5510 24G 4SFP+ HI
JH146A	HPE FlexNetwork 5510 48G 4SFP+ HI 1-slot Switch	HPE 5510 48G 4SFP+ HI
JH147A	HPE FlexNetwork 5510 24G PoE+ 4SFP+ HI 1-slot Switch	HPE 5510 24G PoE+ 4SFP+ HI
JH148A	HPE FlexNetwork 5510 48G PoE+ 4SFP+ HI 1-slot Switch	HPE 5510 48G PoE+ 4SFP+ HI
JH149A	HPE FlexNetwork 5510 24G SFP 4SFP+ HI 1-slot Switch	HPE 5510 24G SFP 4SFP+ HI
Power supplies		
JD362A	HPE A5800/A5500 150W AC Power Supply	PSR150-A1
JD366A	HPE A5800/A5500 150W DC Power Supply	PSR150-D1
JG545A	HPE X362 1110W AC PoE Power Supply	PSR720-56A
JG544A	HPE X362 720W AC PoE Power Supply	PSR1110-56A
Interface cards		
JH155A	HPE 5510 2-port QSFP+ Module	LSWM2QP2P
JH156A	HPE 5130/5510 10GBASE-T 2-port Module	LSWM2XGT2PM
JH157A	HPE 5130/5510 10GbE SFP+ 2-port Module	LSWM2SP2PM

Hardware

This section contains the most frequently asked questions about the switch hardware.

Q. Does the switch support CF cards?

A. No.

Q. Does the switch provide USB ports?

A. Yes.

Q. Does the switch provide Mini USB console ports?

A. Yes.

Q. Can the console port and the Mini USB console port both be available if I connect both of them?

A. No. Only the Mini USB console port is activated when both of them are connected.

Q. Does the switch provide management Ethernet ports?

A. Yes.

Q. What is wire speed?

A. Wire speed means that data is transmitted on a physical medium at the maximum rate defined by the industry standard. For example, the wire speed of a fast Ethernet link is 100 Mbps.

Q. Does the switch provide 40G interfaces? What transceiver modules and cables are available for the 40G interfaces?

A. The following models support the LSWM2QP2P interface card:

- HPE 5510 24G 4SFP+ HI.
- HPE 5510 24G PoE+ 4SFP+ HI.
- HPE 5510 48G 4SFP+ HI.
- HPE 5510 48G PoE+ 4SFP+ HI.
- HPE 5510 24G SFP 4SFP+ HI.

Each LSWM2QP2P interface card provides two 40G QSFP+ ports.

For the transceiver modules and cables available for the 40G interfaces, see *HPE FlexNetwork 5510 HI Switch Series Installation Guide*.

Q. What transceiver modules and cables are available for the SFP+ ports on the switch?

A. For the transceiver modules and cables available for the SFP+ ports on the switch, see *HPE FlexNetwork 5510 HI Switch Series Installation Guide*.

Q. What are the power system features of the switch?

A. The following models support hot-swappable power supplies:

- HPE 5510 24G 4SFP+ HI.
- HPE 5510 24G PoE+ 4SFP+ HI.
- HPE 5510 48G 4SFP+ HI.
- HPE 5510 48G PoE+ 4SFP+ HI.
- HPE 5510 24G SFP 4SFP+ HI.

The power system of these switches has the following features:

- The power supplies are small in size but provide a large amount of power.
- You can install two power supplies on the switches for redundancy.

- The switches can operate correctly with only one power supply.
- The power system supports the intelligent power management feature.

Q. Can DC power supplies and AC power supplies be used on the same switch?

- A.** You can use AC and DC power supplies simultaneously on the HPE 5510 24G 4SFP+ HI, HPE 5510 48G 4SFP+ HI, and HPE 5510 24G SFP 4SFP+ HI switches.

You can only use AC power supplies for the HPE 5510 24G PoE+ 4SFP+ HI and HPE 5510 48G PoE+ 4SFP+ HI switches.

Q. What protective measures do the switch power supplies use?

- A.** The switch power supplies use the following protective measures:

- **Input protection**—Input over-voltage protection and input under-voltage protection.
- **Output protection**—Output over-voltage protection, output over-current protection, and output over-temperature protection.

Q. Does the switch support power over Ethernet (PoE)?

- A.** The HPE 5510 24G PoE+ 4SFP+ HI and HPE 5510 48G PoE+ 4SFP+ HI switches support PoE.

The HPE 5510 24G 4SFP+ HI, HPE 5510 48G 4SFP+ HI, and HPE 5510 24G SFP 4SFP+ HI switches do not support PoE.

Q. How does the switch adjust the fan speed?

- A.** The switch automatically adjusts the fan speed to adapt to the temperature changes in the chassis. You can use the **display fan** command to display fan information.

Q. Does the switch support hot-swapping of fan trays and power supplies?

- A.** All HPE FlexNetwork 5510 HI switches support hot-swapping of fan trays and power supplies.

Do not power on the switch when the switch does not have any fan trays installed. To ensure good ventilation, follow these guidelines when you hot-swap fan trays:

- If both fan trays fail, replace the fan trays within 2 minutes.
- If one fan tray fails, perform either of the following tasks:
 - If the ambient temperature is not higher than 27°C (80.6°F), replace the fan tray within 24 hours and make sure the failed fan tray is in position before the replacement.
 - If the ambient temperature is higher than 27°C (80.6°F), replace the fan tray immediately.

Q. What is the operating temperature and upper and lower temperature thresholds of the switch?

- A.** The operating temperature of the switch is in the range of 0°C (32°F) to 45°C (113°F).

You can use the **display environment** command to display the switch temperature statistics, including the current temperature and temperature thresholds.

- When the temperature drops below the low-temperature threshold or reaches the high-temperature warning threshold, the switch displays a log message and a trap.
- When the temperature reaches the high-temperature alarming threshold, the switch repeatedly displays log and trap messages. It also alerts the user to the high-temperature condition through LEDs on the panel.

Q. What are the requirements for grounding the switch?

- A.** Before using the switch, connect the grounding cable correctly to guarantee lightning protection and anti-interference of the switch.

When you ground the switch, make sure the resistance between the chassis and the ground is less than 1 ohm.

Q. How do I ground the switch?

- A.** You can ground the switch by using the following methods:

- If a grounding strip is available at the installation site, use the grounding strip to ground the switch:
 - a.** Unpack the grounding cable provided with the switch.
 - b.** Remove the two grounding screws from the grounding point.
 - c.** Use the grounding screws to attach the two-hole grounding lug of the grounding cable to the grounding point.
 - d.** Connect the ring terminal of the grounding cable to a grounding post of the grounding strip, and use the hex nut to fasten the grounding cable to the grounding strip.
- If the switch is AC powered and no grounding strip is available at the installation site, you can ground the switch through the PE wire of the AC power cord. Make sure the following requirements are met:
 - A three-wire AC power cord with a PE wire is used.
 - The PE wire of the AC power cord is reliably grounded.
 - The PE connector on the switch is reliably connected to the PE wire of the AC power cord.

Q. How is the switch designed for high availability?

- A.** The switch is designed as follows for high availability:

- **Power system**—1+1 redundancy.
- **Power supplies and fan trays**—Field replaceable.
- **Software**—Failure locating, detection, and isolation.

All module designs are verified in environment simulation tests and HALTs.

Q. Does the switch support EEE?

- A.** Yes.

Q. Does the switch support FC interfaces?

- A.** No.

Q. I set the rate of an SFP+ port to 1000 Mbps and inserted a 10G transceiver module to the SFP+ port. Why does the system report that the SFP+ port is not operating at the rate I configured?

- A.** An SFP+ port operates at either of the following rates:

- **Without a transceiver module**—Operates at its maximum transmission rate by default.
- **With a transceiver module**—Operates at the transceiver module transmission rate.

Therefore, after you insert a 10G transceiver module to the SFP+ port, the SFP+ port operates at the transceiver module transmission rate 10 Gbps, not 1000 Mbps you configured.

Q. Can the 10G ports on the switch operate in 1000 Mbps?

A. All the fixed 10G ports on the switch can operate in 1000 Mbps.

For the 10G ports on the interface cards installed on the switch, The 10G ports on the LSWM2XGT2PM and LSWM2SP2PM interface cards can't operate in 1000 Mbps.

Software

This section contains the most frequently asked questions about device software.

Q. Does every physical port have a unique MAC address?

A. Yes. Every physical port has a unique MAC address.

Q. Does every VLAN interface have a unique MAC address?

A. No. The device provides 32 MAC addresses for VLAN interfaces. VLAN interfaces are organized in to 32-member groups in order of the VLAN interface number, starting from VLAN-interface 1. VLAN interfaces in each group are assigned the 32 MAC addresses in order of the VLAN interface number.

Q. How do I view the current system version?

A. Use the **display version** command. The command displays the current system version information, including the current software version and Boot ROM version.

Q. Can I delete the image files that the device is using?

A. Yes, you can. As a best practice, specify new image files immediately so the device can reboot correctly. Deleting the image files that the device is using does not affect the operation of the device.

Q. How can I view and save important device operation information in an easy way?

A. Use the **display diagnostic-information** command. This command displays the operating statistics for multiple feature modules, eliminating the requirements for using the **display** commands for features one by one.

Q. What are the differences between the interface card operating modes?

A. An interface card can operate in one of the following operating modes:

- **0**—All interfaces on the interface card are not available.
- **1**—The operating mode is not supported.
- **2**—Interfaces GigabitEthernet 1/0/41 through GigabitEthernet 1/0/48 on the front panel are not available.

For HPE 5510 48G 4SFP+ HI and HPE 5510 48G PoE+ 4SFP+ HI switches, the operating modes supported by the interface cards are as shown in [Table 1](#).

Table 2 Operating modes supported by interface cards

Interface card	Supported operating modes	Remarks
LSWM2QP2P	0 and 2 .	The operating modes take effect only on 10-GE breakout interfaces split from a QSFP+ interface.

For more information about the interface card operating modes, see *HPE FlexNetwork 5510 HI Switch Series Layer 2—LAN Switching Command Reference*.

Q. What is the maximum number of equal-cost multi-path (ECMP) route groups supported by the HPE FlexNetwork 5510 HI Switch Series?

A. The maximum number of ECMP route groups supported by the HPE FlexNetwork 5510 HI Switch Series is 511.

Q. How many monitor ports does the switch support?

A. The switch supports a maximum of four monitor ports. The switch has four port mirroring resources. Each of the unidirectional port mirroring, inbound or outbound, uses one resource. A bidirectional port mirroring uses two resources.

For example, the switch supports four monitor ports when you use four mirroring groups to separately mirror unidirectional packets on four source ports.

The switch supports two monitor ports when you use two mirroring groups to separately mirror bidirectional packets on two source ports.

Service functions

This section contains the most frequently asked questions about service functions.

Q. How many member devices can an HPE FlexNetwork 5510 HI IRF fabric have?

A. An HPE FlexNetwork 5510 HI IRF fabric can have a maximum of nine member devices.

Q. What ports can be used as IRF physical interfaces?

A. You can use 10-GE ports and 40-GE ports as IRF physical interfaces. If 10-GE ports are used, you must make sure the ports are operating at 10 Gbps. If 40-GE ports are used, you must make sure the ports are operating at 40 Gbps. You cannot use the 10-GE breakout ports of a 40-GE port for IRF connections.

Q. What are the restrictions for binding IRF physical interfaces to an IRF port?

A. On any HPE FlexNetwork 5510 HI switches, the IRF physical interfaces bound to the same IRF port must operate at the same rate.

Q. How is an IRF master elected?

A. An IRF fabric uses the following rules to elect a master in descending order:

1. Current master, even if a new member has higher priority.
 - When an IRF fabric is being formed, all members consider themselves as the master, and the system skips to rule 2.
 - When two active IRF fabrics merge, the master in each IRF fabric considers itself as the master, and the system skips to rule 2.

2. Member with higher priority.

3. Member with the longest system uptime.

Two members are considered to start up at the same time if the difference between their startup times is equal to or less than 10 minutes. For members starting up at the same time, rule 4 applies.

4. Member with the lowest bridge MAC address.

Q. What IRF fabric topologies does the switch support?

A. The switch supports ring and daisy-chain topologies.

Q. What benefits does the IRF ring topology provide?

A. The IRF ring topology provides the following benefits:

- **Increased forwarding capacity**—In a daisy-chain topology, any two IRF members have only one forwarding path. In a ring topology, any two IRF member devices have two forwarding paths. Traffic is distributed over the paths depending on the hop count between the ingress and egress devices.
- **High availability**—The failure of one IRF link does not cause the IRF fabric to split as in a daisy-chain topology. Instead, the IRF fabric changes to a daisy-chain topology without interrupting network services.

Q. Why can't IRF physical interfaces forward data traffic at the wire speed across chassis in an IRF fabric?

A. The IRF physical interfaces add an HG header to each packet before they forward the packets to the neighbor IRF member. The HG header uses part of the bandwidth.

Q. What is the maximum frame length allowed by the ports?

A. The maximum frame length is four bytes longer than the frame length set by using the **jumboframe enable** *value* command for the ports.

This limit applies to all packets, regardless of whether they are tagged. The default value is 10004 bytes.

Q. Does flow mirroring support mirroring outbound broadcast packets of a VLAN?

A. No. Flow mirroring mirrors only known unicast packets of the VLAN in the outbound direction.

Q. How can I determine whether or not packets are dropped on a port?

A. Perform one of the following tasks:

- Use the **display packet-drop interface** command to display the dropped packet statistics on an interface.
- Use the **display packet-drop summary** command to display the dropped packet statistics on all interfaces.
- Use the **display qos queue-statistics** command to display statistics collected for an interface on a per-queue basis.

Q. Why is the mirrored outgoing packet different from the copied packet?

A. When the device mirrors an outgoing multicast or broadcast packet of a source port, the device mirrors the packet before the packet is copied. When the device copies the packet, the device might change the source MAC address and VLAN tag of the packet. As a result, the mirrored outgoing packet might be different from the copied packet.

During a port mirroring or traffic mirroring process:

- When the device mirrors an incoming packet of a source port, the device mirrors the packet received on the port.

- When the device mirrors an outgoing packet of a source port, the mirrored packet is the packet before the device processes the VLAN tag of the packet.

Q. Why does the number of learned dynamic MAC addresses on an IRF fabric exceed the maximum number of MAC address entries allowed?

A. This issue occurs when dynamic MAC addresses are out of synchronization among IRF member devices.

In the output from the **display mac-address statistic** command:

- The **Dynamic Unicast Address (Learned) Count** field displays the total number of dynamic MAC addresses learned by all IRF member devices.
- The **Total Unicast MAC Addresses Available** field displays the maximum number of MAC address entries allowed on the IRF fabric. It is the largest maximum number of table entries allowed among all IRF member devices.

The **Dynamic Unicast Address (Learned) Count** field displays a higher count than the **Total Unicast MAC Addresses Available** field if the out-of-synchronization situation has occurred.

This issue does not affect the forwarding services because the IRF fabric floods unknown frames. You do not need to handle this issue.

Q. Why don't the MAC address table and the ARP table update the entry for a MAC address immediately after the device receives an ARP request from the MAC address on a different port than the existing one?

A. There is a delay for the software to update the displayed MAC address table or ARP table.

Delay to update the displayed MAC address table is introduced to conserve resources. The delay does not affect forwarding services, because the data plane updates the entries in hardware immediately after the change occurs.

Delay to update the ARP table is introduced because of the interval for ARP to detect the movement of MAC addresses between ports. This delay does not affect forwarding services on a network that has infrequent MAC address movement. For the ARP table to update quickly after a MAC address is moved, execute the **mac-address mac-move fast-update** command.

Q. Why is the rule failed to be applied not a rule in the ACL applied for packet filter?

A. If your application of ACLs fails, the system feeds back the first rule failed to be applied for diagnosis.

When you apply an ACL beyond the specification of the device, the system re-applies all ACLs, including the packet filter ACL and existing pre-defined ACLs. Because the packet filter ACL takes precedence over pre-defined ACLs, the packet filter ACL is applied first. So the first ACL rule failed to be applied might be a pre-defined ACL rule, rather than a packet filter ACL rule.

Q. Why does IP source guard allow a packet to pass through when the VLAN ID in the static binding entry is not matched?

A. IP source guard does not use the VLAN ID in a static binding entry as a matching criterion. Packet filtering is not affected even you specify a VLAN for the static binding entry.

Q. How do I set the notification and log message sending interval for ARP rate limit?

A. To set the notification and log message sending interval, perform the following tasks:

1. Enable ARP packet rate limit.
2. Enable sending notifications or log messages for ARP packet rate limit.

3. Execute the **arp rate-limit log interval** command to set an interval in seconds.

The sending interval does not take effect if ARP packet rate limit or sending of notifications or log messages is disabled.

Q. Can I enable uRPF after configuring static routes or dynamic routing protocols?

A. As a best practice, do not enable uRPF after configuring static routes or dynamic routing protocols. The uRPF feature will decrease the routing table size by half and cause network flapping. It is a good practice to enable uRPF before configuring static routes or dynamic routing protocols.

Q. Does the switch support VXLAN?

A. No.

Q. Does the switch support NetStream?

A. No.

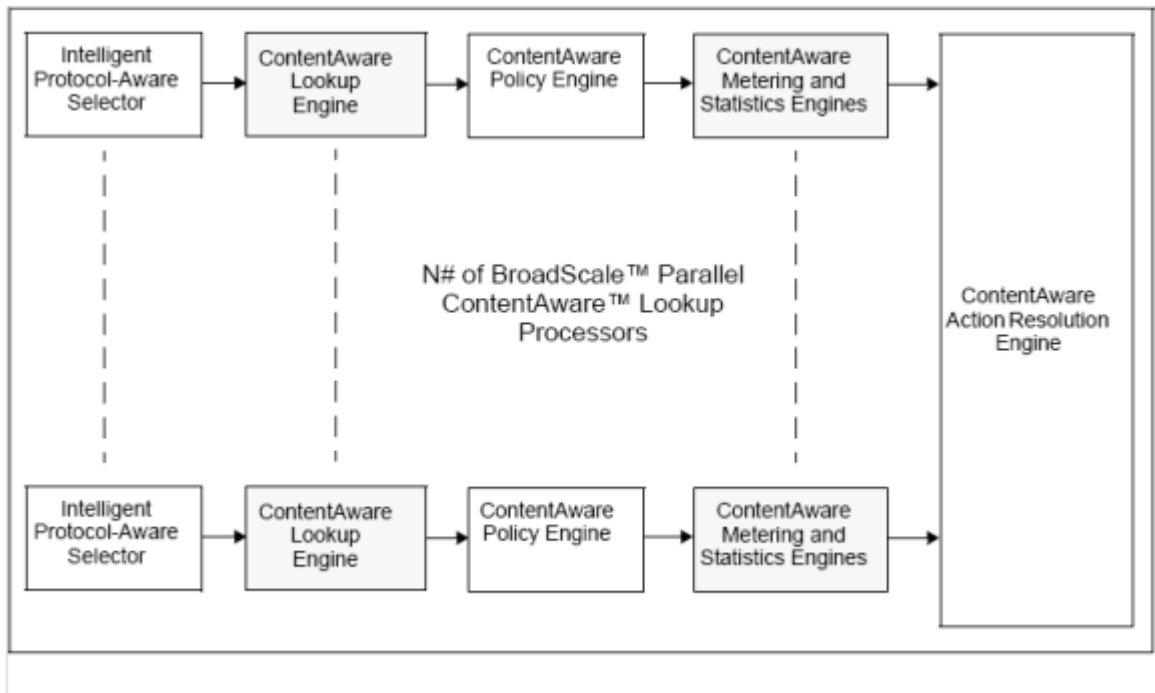
Specifications

This section contains the most frequently asked questions about specifications.

Q. How are the ACL resources of the switch distributed?

A. The HPE FlexNetwork 5510 HI Switch Series uses the following ACL lookup process, as shown in Figure 1.

Figure 1 ACL lookup process



The chip processor for ACLs has the following engines:

- ContentAware lookup engine.
- Policy engine.

- Metering engine.
- Statistics engine.

The ContentAware lookup engine is organized by using the memory-based ternary content addressable memory (TCAM) method. The ContentAware lookup engine can provide bit-level packet content filtering. The TCAM is organized by slice. The HPE FlexNetwork 5510 HI Switch Series provides 12 slices with 3072 entries. Each slice provides 256 entries.

You can use the **display qos-acl resource** command to display the QoS and ACL resource usage. For more information about the command, see *HPE FlexNetwork 5510 HI Switch Series ACL and QoS Command Reference*.

Miscellaneous

This section contains the most frequently asked questions about other problems.

Q. When outbound traffic mirroring is configured on a port, why cannot some packets sent by the CPU, for example, LACP packets, cannot be mirrored?

A. These packets are not sent according to the packet sending logic, so they cannot be mirrored.

Q. Why does not the switch count a broadcast or multicast frame?

A. Not all received broadcast or multicast frames are counted. After receiving a broadcast or multicast frame, the switch checks the total frame length and does one of the following:

- If the total frame length is less than 64 bytes, the switch drops the frame.
- If the total frame length equals to 64 bytes, the switch increases the broadcast or multicast frame counter.
- If the total frame length is greater than 64 bytes, the switch checks the Type/Length field and does one of the following:
 - If the field value is less than 0x600 and does not equal to the number of received data bytes, the switch increases the RFLR counter.
 - If the field value is less than 0x600 and equals to the number of received data bytes, the switch increases the broadcast or multicast frame counter.
 - If the field value equals to or is greater than 0x600, the switch increases the broadcast or multicast frame counter.

Q. Does the switch support half-duplex?

A. No.