FortiSwitch Release Notes

Version 6.0.5

FORTINET DOCUMENT LIBRARY

http://docs.fortinet.com

FORTINET VIDEO GUIDE

http://video.fortinet.com

FORTINET BLOG

https://blog.fortinet.com

CUSTOMER SERVICE & SUPPORT

https://support.fortinet.com

http://cookbook.fortinet.com/how-to-work-with-fortinet-support/

FORTIGATE COOKBOOK

http://cookbook.fortinet.com

FORTINET TRAINING SERVICES

http://www.fortinet.com/training

FORTIGUARD CENTER

http://www.fortiguard.com

FORTICAST

http://forticast.fortinet.com

END USER LICENSE AGREEMENT

http://www.fortinet.com/doc/legal/EULA.pdf

FORTINET PRIVACY POLICY

https://www.fortinet.com/corporate/about-us/privacy.html

FEEDBACK

Email: techdocs@fortinet.com

FortiSwitch Release Notes

September 22, 2019

11-605-568703-20190922

TABLE OF CONTENTS

Change log

Date	Change Description
August 19, 2019	Initial release for FortiSwitchOS 6.0.5
September 22, 2019	Updated the feature matrix (TDR and split port rows).

Introduction

This document provides the following information for FortiSwitch 6.0.5 build: 0070.

- Supported models on page 5
- Special notices on page 6
- Upgrade information on page 13
- Product integration and support on page 14
- Resolved issues on page 15
- Known issues on page 17

See the Fortinet Document Library for FortiSwitch documentation.

Supported models

FortiSwitch 6.0.5 supports the following models:

FortiSwitch 1xx	FSW-108E, FSW-108E-POE, FSW-108E-FPOE, FSW-124E, FSW-124E-POE, FSW-124E-FPOE, FSW-148E, FSW-148E-POE
FortiSwitch 2xx	FSW-224D-FPOE, FSW-224E, FSW-224E-POE, FSW-248D, FSW-248E-POE, FSW-248E-FPOE
FortiSwitch 4xx	FSW-424D, FSW-424D-FPOE, FSW-424D-POE, FSW-448D, FSW-448D-FPOE, FSW-448D-POE
FortiSwitch 5xx	FSW-524D-FPOE, FSW-524D, FSW-548D, FSW-548D-FPOE
FortiSwitch 1xxx	FSW-1024D, FSW-1048D, FSW-1048E
FortiSwitch 3xxx	FSW-3032D, FSW-3032E
FortiSwitch Rugged	FSR-112D-POE, FSR-124D

What’s new in FortiSwitchOS 6.0.5

Release 6.0.5 provides the following new features and changes:

- You can now trigger EAP authentication by sending multiple EAP packets to “silent supplicants” that send non-EAP packets when they wake up from sleep mode. The `set mab-eapol-request` command controls how many EAP packets are sent.

Special notices

Supported features for FortiSwitchOS 6.0

The following table lists the FortiSwitch features in Release 6.0 that are supported on each series of FortiSwitch models. All features are available in Release 6.0.0, unless otherwise stated.

Feature	GUI supported	112D-POE	1xxE	200 Series 400 Series	500 Series	1024D 1048D 1048E	3032D 3032E
Management and Configuration							
CPLD software upgrade support for OS	—	—	—	—	—	1024D 1048D	—
Firmware image rotation (dual-firmware image support) (release 3.6.0)	—	✓	148E 148E-POE	✓	✓	✓	✓
HTTP REST APIs for configuration and monitoring	—	✓	✓	✓	✓	✓	✓
Support for switch SNMP OID	✓	✓	✓	✓	✓	✓	✓
IP conflict detection and notification	✓	✓	✓	✓	✓	✓	✓
Security and Visibility							
802.1x port mode	✓	✓	✓	✓	✓	✓	✓
802.1x MAC-based security mode	✓	✓	✓	✓	✓	✓	✓
User-based (802.1x) VLAN assignment	✓	✓	—	✓	✓	✓	✓

Feature	GUI supported	112D-POE	1xxE	200 Series 400 Series	500 Series	1024D 1048D 1048E	3032D 3032E
802.1x enhancements, including MAB (release 3.5.1)	✓	✓	✓	✓	✓	✓	✓
MAB reauthentication disabled (release 3.6.4)	—	✓	—	✓	✓	✓	✓
open-auth mode (release 6.0.0)	✓	✓	✓	✓	✓	✓	✓
Support of the RADIUS accounting server (release 3.6.3)	Partial	✓	—	✓	✓	✓	✓
Support of RADIUS CoA and disconnect messages (release 3.6.3)	—	✓	—	✓	✓	✓	✓
EAP Pass-Through (release 3.6.3)	✓	✓	—	✓	✓	✓	✓
Network device detection (release 3.6.2)	—	—	—	✓	✓	✓	✓
IP-MAC-Binding	✓	—	—	—	✓	✓	✓
sFlow	✓	✓	—	✓	✓	✓	✓
ACL	—	—	—	✓	✓	✓	✓
Multistage ACL (release 6.0.0)	—	—	—	—	✓	✓	✓
DHCP snooping	✓	✓	✓	✓	✓	✓	✓
DHCP blocking (release 6.0.0)	—	—	—	✓	—	—	—
Dynamic ARP inspection (release 3.6.0)	✓	—	—	✓	✓	✓	✓

Feature	GUI supported	112D-POE	1xxE	200 Series 400 Series	500 Series	1024D 1048D 1048E	3032D 3032E
ARP timeout value (release 6.0.0)	—	✓	✓	✓	✓	✓	✓
Access VLANs (See Note 5.)	—	—	—	✓	✓	✓	✓
VLAN tag by ACL	—	—	—	✓	✓	✓	✓
Layer 2							
Link aggregation group size (maximum number of ports) (See Note 2.)	✓	8	8	8	24/48	24/48	24 (3.5.0) 64 (3.5.1)
LAG min-max-bundle	—	✓	✓	✓	✓	✓	✓
IGMP snooping	✓	—	—	✓	✓	✓	✓
IGMP querier (release 3.6.4)	—	—	—	✓	✓	✓	✓
LLDP transmit	—	✓	—	✓	✓	✓	✓
LLDP-MED	—	✓	✓	✓	✓	✓	✓
Per-port max for learned MACs	—	—	✓	✓	✓	—	—
MAC learning limit (release 3.6.0) (See Note 4.)	—	—	✓	✓	✓	—	—
Learning limit violation log (release 3.6.4) (See Note 4.)	—	—	—	✓	✓	—	—
set mac-violation-timer (release 6.0.0)	—	✓	—	✓	✓	✓	✓
Sticky MAC (releases 3.6.0 and 6.0.0)	✓	✓	✓	✓	✓	✓	✓
Total MAC entries (release 6.0.0)	—	✓	✓	✓	✓	✓	✓

Feature	GUI supported	112D-POE	1xxE	200 Series 400 Series	500 Series	1024D 1048D 1048E	3032D 3032E
MSTP	—	✓	✓	✓	✓	✓	✓
STP root guard (release 3.6.2)	—	✓	✓	✓	✓	✓	✓
STP BPDU guard (release 3.6.2)	—	✓	✓	✓	✓	✓	✓
'forced-untagged' or 'force-tagged' setting on switch interfaces (release 3.6.0)	—	✓	—	✓	✓	✓	✓
Private VLANs	✓	—	—	✓	✓	✓	✓
Multi-stage load balancing (release 3.5.1)	—	—	—	—	—	✓	✓
Priority-based flow control (release 6.0.0)	—	—	—	—	—	✓	✓
Storm control	✓	✓	✓	✓	✓	✓	✓
MAC/IP/protocol-based VLAN assignment	✓	✓	✓	✓	✓	✓	✓
Virtual wire	✓	—	—	✓	✓	✓	✓
Loop guard	✓	✓	✓	✓	✓	✓	✓
Percentage rate control (release 6.0.0)	✓	—	—	✓	✓	✓	✓
Layer 3							
Static L3/hardware-based routing	✓	—	—	✓	✓	✓	✓
Software routing only	✓	✓	✓	—	—	—	—
OSPF (release 3.6.0) (See Note 3.)	✓	—	—	✓	✓	✓	✓

Feature	GUI supported	112D-POE	1xxE	200 Series 400 Series	500 Series	1024D 1048D 1048E	3032D 3032E
RIP (release 3.6.0) (See Note 3.)	✓	—	—	✓	✓	✓	✓
VRRP (release 3.6.0) (See Note 3.)	✓	—	—	✓	✓	✓	✓
BGP (release 6.0.0)	—	—	—	—	✓	✓	✓
IS-IS (release 6.0.0)	—	—	—	—	✓	✓	✓
PIM (release 6.0.0)	—	—	—	—	✓	✓	✓
Hardware-based ECMP	—	—	—	—	✓	✓	✓
Static BFD	—	—	—	—	—	✓	✓
DHCP relay feature	✓	—	✓	✓	✓	✓	✓
High Availability							
MCLAG (multichassis link aggregation) (release 3.6.0)	Partial	—	—	✓	✓	✓	✓
STP supported in MCLAGs (release 3.6.4)	—	—	—	✓	✓	✓	✓
Quality of Service							
802.1p support, including priority queuing trunk and WRED (release 3.5.1)	✓	—	—	✓	✓	✓	✓
QoS queue counters (releases 3.6.2 and 3.6.3)	—	—	—	✓	✓	✓	✓
QoS marking (release 3.6.4)	—	—	—	✓	✓	✓	✓

Feature	GUI supported	112D-POE	1xxE	200 Series 400 Series	500 Series	1024D 1048D 1048E	3032D 3032E
Summary of configured queue mappings (release 6.0.1)	✓	—	✓	✓	✓	✓	✓
Miscellaneous							
PoE-pre-standard detection (See Note 1.)	—	✓	FS-1xxE POE	✓	✓	—	—
PoE modes support: first come, first served or priority based (PoE models) (release 3.6.0)	—	✓	FS-1xxE POE	✓	✓	—	—
Control of temperature alerts (release 3.6.4)	—	✓	—	✓	✓	✓	✓
Split port	Partial	—	—	—	✓	1048E	✓
TDR (time-domain reflectometer)/cable diagnostics support (release 3.6.0)	✓	—	—	✓	✓	—	—
Auto module max speed detection and notification	✓	—	—	—	✓	✓	—
Monitor system temperature (threshold configuration and SNMP trap support) (release 3.6.0)	—	✓	—	✓	✓	✓	✓
Cut-through switching (release 3.6.4)	—	—	—	—	—	✓	✓

Feature	GUI supported	112D-POE	1xxE	200 Series 400 Series	500 Series	1024D 1048D 1048E	3032D 3032E
Add CLI to show the details of port statistics (release 3.6.0)	—	✓	✓	✓	✓	✓	✓
Configuration of the QSFP low-power mode (release 3.6.4)	—	—	—	—	✓	1048D	✓
Energy-efficient Ethernet (release 6.0.1)	—	✓	✓	✓	✓	—	—

Notes

1. PoE features are applicable only to the model numbers with a POE or FPOE suffix.
2. 24-port LAG is applicable to 524D, 524-FPOE, 1024D, and 3032D models. 48-port LAG is applicable to 548D, 548-FPOE, and 1048D models.
3. To use the dynamic layer-3 protocols, you must have an advanced features license.
4. The per-VLAN learning limit and per-trunk learning limit are not supported on dual-chip platforms (448 series).

Connecting multiple FSW-R-112D-POE switches

The FSW-R-112D-POE switch does not support interconnectivity to other FSW-R-112D-POE switches using the PoE ports. Fortinet recommends using the SFP ports to interconnect switches.

Upgrade information

FortiSwitch 6.0.5 supports upgrading from FortiSwitch 3.5.0 and later.

Cooperative Security Fabric upgrade

FortiOS 5.4.1 greatly increases the interoperability between other Fortinet products. This includes:

- FortiClient 5.4.1
- FortiClient EMS 1.0.1
- FortiAP 5.4.1
- FortiSwitch 3.4.2

The upgrade of the firmware for each product must be completed in a precise order so the network connectivity is maintained without the need of manual steps. Customers must read the following two documents prior to upgrading any product in their network:

- *Cooperative Security Framework - Upgrade Guide*
- *FortiOS 5.4.0 to 5.4.1 Upgrade Guide for Managed FortiSwitch Devices*
  This document is available in the Customer Support Firmware Images download directory for FortiSwitch 3.4.2.

Product integration and support

FortiSwitch 6.0.5 support

The following table lists 6.0.5 product integration and support information.

Web browser	• Microsoft Internet Explorer version 11 • Mozilla Firefox version 52 • Google Chrome version 56 Other web browsers may function correctly, but are not supported by Fortinet.
FortiOS (FortiLink Support)	FortiLink is supported on all FortiSwitch models when running FortiOS 5.4.0 and later and FortiSwitchOS 3.2.1 and later.

Resolved issues

The following issues have been fixed in 6.0.5. For inquiries about a particular bug, please contact Customer Service & Support.

Bug ID	Description
559073	The 1xxE models do not support DHCP snooping, IGMP snooping, or 802.1x authentication.
542650	After a resetting the PoE on the port or rebooting the phone, the connected PC does not allow traffic to pass until the authentication is cleared.
543921	The `diagnose debug app wire` command lists unnecessary MAB MAC lookup processes.
544879	The *Switch* > *Port* > *Physical* page incorrectly displays split ports as having PoE interfaces.
545063	Overloading a PoE port causes an “all_ports_switch_poe_status:err bad index:120” error.
546016	Disabling split ports should disable PoE for those ports as well.
551173	SNMP crashes happen when 448Ds are in the second tier of an MCLAG
559090	In an MCLAG topology, a group learned on the ICL trunk should time out after a host joins or leaves.
560796	LEDs are lit in the wrong ports after downgrading switches to 6.0.4.
561107	After changing the 802.1x mode from port-based authentication to MAC-based authentication, MAB does not get triggered.
561833	After MAB reauthorization, MAB does not get triggered.
562870	When networking monitoring is enabled, managed switches become unstable and stop forwarding traffic to the FortiGate unit.
562971	The `set substitute` command for OSPF ranges does not work.
565416	OSPF does not handle Link State Update packets or Link State Acknowledgment packets well when deleting routes.
567318	When editing ports on the *Switch* > *Interface* > *Physical* page, the *Trust 802.1p* and *Trust IP-DSCP* settings cannot be changed.
567984	When a managed FortiSwitch unit is restarted, the lldp profile configuration for the ports changes from “default” to “default-auto-isl” briefly.

Bug ID	Description
568918	The user cannot authenticate using 802.1x when running 548Ds in FortiLink mode.
570837	A memory leak needs to be fixed.
573294	The native VLAN cannot be assigned in the GUI.
574563	When two WAN ports are physically connected to FortiSwitch unit, a loop is created.

Common vulnerabilities and exposures

FortiSwitchOS 6.0.5 is no longer vulnerable to the following CVEs:

- CVE-2019-11478
- CVE-2019-11479
- CVE-2019-11477

Visit https://fortiguard.com/psirt for more information.

Known issues

The following known issues have been identified with 6.0.5. For inquiries about a particular bug or to report a bug, please contact Fortinet Customer Service & Support.

Bug ID	Description
380239	IGMP-snooped multicast groups are not immediately flushed out of the snooping table when the querier port is shut down. **Workaround:** Upgrade to FortiSwitchOS 6.2.0 or later.
382518, 417024, 417073, 417099, 438441	DHCP snooping and dynamic ARP inspection (DAI) do not work with private VLANs (PVLANs).
391607	Switch does not send gratuitous ARP for IP conflict when the system boots up and adds a new switch virtual interface (SVI). **Workaround:** Upgrade to FortiSwitchOS 6.2.0 or later.
414972	IGMP snooping might not work correctly when used with 802.1x Dynamic VLAN functionality.
416655	When using DHCP, the IPv6 address cannot be configured. Also, the automatic configuration of the global address does not work. **Workaround:** Upgrade to FortiSwitchOS 6.2.0 or later.
480605	When DHCP snooping is enabled on the FSR-112D-POE, the switched virtual interface (SVI) cannot get the IP address from the DHCP server. **Workarounds:** —Use a static IP address in the SVI when DHCP snooping is enabled on that VLAN. —Temporarily disable dhcp-snooping on vlan, issue the `execute interface dhcpclient-renew <interface>` command to renew the IP address. After the SVI gets the IP address from the DHCP server, you can enable DHCP snooping.
488044	On a Protocol Independent Multicast (PIM) topology using the assert mechanism, when the assert winner lost the route to the source, no multicast route was created, and the multicast traffic stopped. **Workaround:** Upgrade to FortiSwitchOS 6.2.0 or later.

Bug ID	Description
510943	When using the cable diagnostics feature on a port (with the `diagnose switch physical-ports cable-diag <physical port name>` CLI command), ensure that the physical link on its neighbor port is down. You can disable the neighbor ports or physically remove the cables. **Workaround:** When using the cable diagnostics feature on a port (with the `diagnose switch physical-ports cable-diag <physical port name>` CLI command), ensure that the physical link on its neighbor port is down. You can disable the neighbor ports or physically remove the cables.
520954	When a “FortiLink mode over a layer-3 network” topology has been configured, the FortiGate GUI does not always display the complete network.
528983	When IGMP snooping is enabled on a VLAN, reserved multicast packets are forwarded twice on the 124D, 224D-FPOE, 248D, 424D, 424D-POE, 424D-FPOE, 448D, 448D-POE, 448D-FPOE, 224E, 224E-POE, 248E-POE, 248E-FPOE models. **Workaround:** Upgrade to FortiSwitchOS 6.2.1 or later.

535736	If a FortiSwitch firmware image is an even multiple of 1024 bytes, it will not upgrade properly using the default FortiLink upgrade mechanism. The following builds are known to be affected:
	
	version 3.x
	build 0415/FSW_124D_POE
	
	version 6.x
	build 0039/FSW_1048E
	build 0043/FSW_124E
	build 0141/FSW_224D_FPOE
	build 0052/FSW_548D_FPOE
	
	Workarounds:
	
	—Change to HTTPS mode using the following commands:
	
	`config switch-controller global`
	`     set https-image-push enable`
	`end`
	
	—Upgrade to FortiOS 6.0.5 (build 0243 or later) or FortiOS 6.2.0 (build 0794 or later).

572052	Backup files from FortiSwitchOS 3.x that have 16-character-long passwords fail when restored on FortiSwitchOS 6.x. In FortiSwitchOS 6.x, file backups fail with passwords longer than 15 characters. **Workaround:** Use passwords with a maximum of 15 characters for FortiSwitchOS 3.x and 6.x.