# FortiSwitch Release Notes

**Version 6.0.6**

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FortiSwitch Release Notes

February 4, 2020

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# TABLE OF CONTENTS

# Change log

| Date | Change Description |
|---|---|
| November 26, 2019 | Initial release for FortiSwitchOS 6.0.6 |
| February 4, 2020 | Updated the “Common vulnerabilities and exposures” section. |

# Introduction

This document provides the following information for FortiSwitch 6.0.6 build: 0076.



See the Fortinet Document Library for FortiSwitch documentation.

## Supported models

FortiSwitch 6.0.6 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 6.0.6

FortiSwitch 6.0.6 is a patch release only. No new features or enhancements have been implemented in this release.

# 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 6.0.6 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 6.0.6 support

The following table lists 6.0.6 product integration and support information.

| | |
|---|---|
| **Web browser** | • Microsoft Internet Explorer version 11<br>• Mozilla Firefox version 52<br>• Google Chrome version 56<br>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 6.0.6. For inquiries about a particular bug, please contact Customer Service & Support.

| Bug ID | Description |
|---|---|
| 571242 | Enabling network monitoring causes switches to go offline randomly, and the offline switches cannot be accessed. |
| 577403 | Some applications stop responding randomly. |
| 580684 | FortiSwitch Cloud is reporting an “SSL verify Code : unable to get issuer certificate” error. |
| 581484 | Micro-segmentation does not work correctly when the “access VLAN” feature is enabled. |
| 583436 | There are SFP recover messages for 3032D ports. |
| 585824 | There's a memory leak when LLDP applies port changes. |
| 586358 | Changing the native VLAN or allowed VLAN in the FortiSwitch GUI results in an “Invalid data received for "private VLAN".” error. |
| 586363 | When an access control list (ACL) is deleted, the port range used for the ACL needs to be freed. |
| 586650 | The CLI stops responding after deleting a virtual wire. |
| 586762 | After upgrading managed FortiSwitch units, the output of the `execute switchcontroller get-sync-status all` command includes HTTPS commands. |
| 588561 | The REST API can lose nondefault values. |
| 589026 | Sometimes when an access switch that is part of an MCLAG trunk becomes the root bridge, the access VLAN blocks traffic to the FortiGate unit for that access VLAN. |
| 589099 | The physical port’s link stays down when a USB 2.0 to Fast Ethernet Adapter is connected to a FortiSwitch 108E port with the speed set to auto and the Energy-efficient Ethernet enabled. |
| 591141 | A DHCP host cannot get the DHCP IP address. |
| 591542 | Spanning Tree Protocol (STP) is not stable when using Siemens Relay Siprotec 5. |
| 592559 | Ping fails after the speed configuration of an FS-1048E port is changed and the switch is rebooted. |
| 594255 | In some FortiLink loop topologies in FortiGate HA mode, periodic high CPU usage cause the HA status to flap. |

# Common vulnerabilities and exposures

FortiSwitchOS 6.0.6 is no longer vulnerable to the following CVEs:

- CVE-2007-6750
- CVE-2019-17657

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

# Known issues

The following known issues have been identified with 6.0.6. 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.<br><br>**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).<br><br>**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.<br><br>**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.<br><br>**Workarounds:**<br>—Use a static IP address in the SVI when DHCP snooping is enabled on that VLAN.<br>—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.<br><br>**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.<br><br>**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.<br><br>**Workaround:** Upgrade to FortiSwitchOS 6.2.1 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.<br><br>**Workaround:** Use passwords with a maximum of 15 characters for FortiSwitchOS 3.x and 6.x. |