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Header @ 4

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- General Information**
- Contact
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- Clarification Request

Procurement Folder: 1298398

Procurement Type: Central Purchase Order

Vendor ID: VS0000020783

Legal Name: PRESIDIO NETWORKED SOLUTIONS LLC

Alias/DBA:

Total Bid: \$682,112.32

Response Date: 10/24/2023

Response Time: 13:02

Responded By User ID: dviemeier

First Name: Dan

Last Name: Vietmeier

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SO Doc Code: CRFQ

SO Dept: 0803

SO Doc ID: DOT2400000021

Published Date: 10/12/23

Close Date: 10/24/23

Close Time: 13:30

Status: Closed

Solicitation Description: ADDENDUM NO\_1 WVDOT Networking Equipment (81240012)

Total of Header Attachments: 4

Total of All Attachments: 4



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Solicitation Response**

**Proc Folder:** 1298398  
**Solicitation Description:** ADDENDUM NO\_1 WVDOT Networking Equipment (81240012)  
**Proc Type:** Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2023-10-24 13:30	SR 0803 ESR10242300000001982	1

**VENDOR**  
 VS0000020783  
 PRESIDIO NETWORKED SOLUTIONS LLC

**Solicitation Number:** CRFQ 0803 DOT2400000021  
**Total Bid:** 682112.3199999999487772583961 **Response Date:** 2023-10-24 **Response Time:** 13:02:21  
**Comments:**

**FOR INFORMATION CONTACT THE BUYER**  
 John W Estep  
 304-558-2566  
 john.w.estep@wv.gov

**Vendor Signature X** **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Cisco ISR 1101 4 Ports GE Ethernet WAN Router or equal	1.00000	EA	543.110000	543.11

Comm Code	Manufacturer	Specification	Model #
43222609			

**Commodity Line Comments:** Descriptions for all in attachment  
 -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.

**Extended Description:**  
 3.1.1 Cisco ISR 1101 4 Ports GE Ethernet WAN Router, part CP1101-4P or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Extr Ntwk 16x10/100/1000Base-T Ethernet Switch POE+ or equal	10.00000	EA	1203.270000	12032.70

Comm Code	Manufacturer	Specification	Model #
43222612			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.

**Extended Description:**  
 3.2.1 Extreme Networks 16x10/100/1000Base-T Ethernet Switch POE+, part 5320-16P-4XE or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Extr Ntwk 24x10/100/1000Base-T Ethernet Switch POE+ or equal	10.00000	EA	7032.780000	70327.80

Comm Code	Manufacturer	Specification	Model #
43222612			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.

**Extended Description:**  
 3.2.2 Extreme Networks  
 24x10/100/1000Base-T Ethernet Switch POE+, part 5320-24P-8XE or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Extr Ntwk 48x10/100/1000Base-T Ethernet Switch POE+ or equal	10.00000	EA	7032.780000	70327.80

Comm Code	Manufacturer	Specification	Model #
43222612			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.

**Extended Description:**  
 3.2.3 Extreme Networks  
 48x10/100/1000Base-T Ethernet Switch POE+, part 5320-48P-8XE or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	Extreme Networks 5420M Universal Switch - 24 Port or equal	1.00000	EA	5620.280000	5620.28

Comm Code	Manufacturer	Specification	Model #
43222612			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.

**Extended Description:**

3.2.4 Extreme Networks 5420M Universal Switch - 24 Port, part 5420M-24W-4YE or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
6	Extreme Networks 5420M Universal Switch - 48 Port or equal	65.00000	EA	7032.780000	457130.70

Comm Code	Manufacturer	Specification	Model #
43222612			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.2.5 Extreme Networks 5420M Universal Switch - 48 Port, part 5420M-48W-4YE or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
7	Extr Ntwk 5420M Univ Switch 48 Port (16 POE 90W) or equal	8.00000	EA	7032.780000	56262.24

Comm Code	Manufacturer	Specification	Model #
43222612			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.2.6 Extreme Networks 5420M Universal Switch - 48 Port (16 POE 90W Multi-rate/32 POW 30W), part 5420M-16W-32P-4YE or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
8	Networks Power Cord, 15A, USA,NEMA 5-15, IEC320-C15 or equal	54.00000	EA	0.000000	0.00

Comm Code	Manufacturer	Specification	Model #
43222500			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.1 Networks Power Cord, 15A, USA, NEMA 5-15, IEC320-C15, part 10099 or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
9	Proline- pwr ext cable- IEC 60320 C15 to IEC 60320 C14 or eq	104.00000	EA	7.250000	754.00

Comm Code	Manufacturer	Specification	Model #
43222500			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.2 Proline - power extension cable - IEC 60320 C15 to IEC 60320 C14 - 6 ft, part PRO-C142C1514AWG6FT or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
10	Extreme Switching Power Supply - AC - 920 Watt or equal	148.00000	EA	0.000000	0.00

Comm Code	Manufacturer	Specification	Model #
43222500			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.

**Extended Description:**

3.3.3 Extreme Switching Power Supply - AC - 920 Watt, part XN-ACPWR-920W or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
11	Extreme Networks 20GBase direct attach cable- 0.5 m or equal	64.00000	EA	52.060000	3331.84

Comm Code	Manufacturer	Specification	Model #
26121609			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.4 Extreme Networks 20GBase direct attach cable - 0.5 m, part 20G-DACP-SFPDDZ5M or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
12	Extreme Networks 20GBase direct attach cable- 3 m or equal	12.00000	EA	130.340000	1564.08

Comm Code	Manufacturer	Specification	Model #
26121609			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.5 Extreme Networks 20GBase direct attach cable - 3 m, part 20G-DACP-SFPDD3M or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
13	Extreme Networks 20GBase direct attach cable- 1 m or equal	2.00000	EA	52.060000	104.12

Comm Code	Manufacturer	Specification	Model #
26121609			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.6 Extreme Networks 20GBase direct attach cable - 1 m, part 20G-DACP-SFPDD1M or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
14	Extreme Networks - SFP+ transceiver module- 10 GigE or equal	24.00000	EA	68.040000	1632.96

Comm Code	Manufacturer	Specification	Model #
43222500			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.7 Extreme Networks - SFP+ transceiver module - 10 GigE, part 10301 or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
15	Ext Ntwrk 10302 Compatible 10GBASE-LR SFP+ Transceiver or eq	16.00000	EA	126.000000	2016.00

Comm Code	Manufacturer	Specification	Model #
43222500			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.

**Extended Description:**

3.3.8 Extreme Networks 10302 Compatible 10GBASE-LR SFP+ Transceiver Module, part 10302 or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
16	Ext Ntwk 10051H Compatible 1000BASE-SX SFP Transceiver or eq	5.00000	EA	41.710000	208.55

Comm Code	Manufacturer	Specification	Model #
43222500			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.9 Extreme Networks 10051H Compatible 1000BASE-SX SFP Transceiver Module, part 10051H or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
17	Ext Ntwk 10052H Compatible 1000BASE-LX SFP Transceiver or eq	3.00000	EA	85.380000	256.14

Comm Code	Manufacturer	Specification	Model #
43222500			

**Commodity Line Comments:** -Presidio is unable to give specific ETA. We are able to provide delivery between 0-90 days.**Extended Description:**

3.3.10 Extreme Networks 10052H Compatible 1000BASE-LX SFP Transceiver Module, part 10052H or equal



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Centralized Request for Quote  
 Info Technology

<b>Proc Folder:</b> 1298398			<b>Reason for Modification:</b> ADDENDUM NO_1 Bid Opening Moves to 10/24/2023
<b>Doc Description:</b> ADDENDUM NO_1 WVDOT Networking Equipment (81240012)			
<b>Proc Type:</b> Central Purchase Order			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2023-10-12	2023-10-24 13:30	CRFQ 0803 DOT2400000021	2

BID RECEIVING LOCATION	
BID CLERK DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION 2019 WASHINGTON ST E CHARLESTON WV 25305 US	

VENDOR	
<b>Vendor Customer Code:</b> 68968	
<b>Vendor Name :</b> Presidio Networked Solutions LLC	
<b>Address :</b> Presidio	
<b>Street :</b> 1 Penn Center West, Suite 210	
<b>City :</b> Pittsburgh	
<b>State :</b> PA	<b>Country :</b> United States
	<b>Zip :</b> 15276
<b>Principal Contact :</b> Daniel Vietmeier	
<b>Vendor Contact Phone:</b> 412-720-*5196	<b>Extension:</b>

FOR INFORMATION CONTACT THE BUYER	
John W Estep 304-558-2566 john.w.estep@wv.gov	

<b>Vendor Signature X</b>  Erik Hayko (Oct 24, 2023 08:18 CDT)	<b>FEIN#</b> 58-1667655	<b>DATE</b> 10/24/2023
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All offers subject to all terms and conditions contained in this solicitation



**ADDITIONAL INFORMATION**

ADDENDUM NO\_1

Addendum No\_1 issued to publish and distribute the attached information to the Vendor Community

**REQUEST FOR QUOTATION:**

The West Virginia Purchasing Division is soliciting bids on behalf of the Department of Transportation for a one-time purchase of Networking equipment - Routers, Switches and various components. Per the Bid Requirements, Specifications, Terms and Conditions attached to this solicitation.

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Cisco ISR 1101 4 Ports GE Ethernet WAN Router or equal (see extended description below for alternate part)	1.00000	EA	\$543.11	\$543.11

Comm Code	Manufacturer	Specification	Model #
43222609	Fortinet		FG-60F and FC-10-0060F-247-02-12

**Extended Description:**

3.1.1 FortiGate-60F 10 x GE RJ45 ports (including 7 x Internal Ports, 2 x WAN Ports, 1 x DMZ Port).  
FortiGate-60F 1 Year FortiCare Premium Support [for FG-60F]

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Extr Ntwk 16x10/100/1000Base-T Ethernet Switch POE+ or equal (see extended description below for alternate part)	10.00000	EA	\$1,203.27	\$12,032.70

Comm Code	Manufacturer	Specification	Model #
43222612	Fortinet		FS-424E-POE and FC-10-S424P-247-02-12

**Extended Description:**

3.2.1 FortiSwitch-424E-POE Layer 2/3 FortiGate switch controller compatible PoE+ switch with 24 x GE RJ45 ports, 4 x 10 GE SFP+, with automatic Max 250W POE output limit  
FortiSwitch-424E-POE 1 Year FortiCare Premium Support [for FS-424E-POE]

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Extr Ntwk 24x10/100/1000Base-T Ethernet Switch POE+ or equal (see extended description below for alternate part)	10.00000	EA	\$7,032.78	\$70,327.80

Comm Code	Manufacturer	Specification	Model #
43222612	Fortinet		FS-648F-FPOE and FC-10-648FF-247-02-12

**Extended Description:**

3.2.2 FortiSwitch-648F-FPOE Layer 2/3 FortiGate switch controller compatible PoE 802.3bt switch with 32x 2.5G RJ45 + 16x 5G RJ45 ports, 8x 25G SFP28 and MACSec. Max 1800 POE Output limit  
FortiSwitch-648F-FPOE 1 Year FortiCare Premium Support [for FS-648F-FPOE]

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Extr Ntwk 48x10/100/1000Base-T Ethernet Switch POE+ or equal (see extended description below for alternate part)	10.00000	EA	\$7,032.78	\$70,327.80

Comm Code	Manufacturer	Specification	Model #
43222612	Fortinet		FS-648F-FPOE and FC-10-648FF-247-02-12

**Extended Description:**

3.2.3  
FortiSwitch-648F-FPOE Layer 2/3 FortiGate switch controller compatible PoE 802.3bt switch with 32x 2.5G RJ45 + 16x 5G RJ45 ports, 8x 25G SFP28 and MACSec. Max 1800W POE Output limit  
FortiSwitch-648F-FPOE 1 Year FortiCare Premium Support [for FS-648F-FPOE]

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Extreme Networks 5420M Universal Switch - 24 Port or equal (see extended description below for alternate part)	1.00000	EA	\$5,620.28	\$5,620.28

Comm Code	Manufacturer	Specification	Model #
43222612	Fortinet		FS-624F-FPOE and FC-10-624FF-247-02-12

**Extended Description:**

3.2.4 FortiSwitch-624F-FPOE Layer 2/3 FortiGate switch controller compatible PoE 802.3bt switch with 24x 5G RJ45 ports, 4x 25G SFP28 and MACSec. Max 1400W POE output limit  
FortiSwitch-624F-FPOE 1 Year FortiCare Premium Support [for FS-624F-FPOE]

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	Extreme Networks 5420M Universal Switch - 48 Port or equal (see extended description below for alternate part)	65.00000	EA	\$7,032.78	\$457,130.70

Comm Code	Manufacturer	Specification	Model #
43222612	Fortinet		FS-648F-FPOE and FC-10-648FF-247-02-12

**Extended Description:**

3.2.5 FortiSwitch-648F-FPOE Layer 2/3 FortiGate switch controller compatible PoE 802.3bt switch with 32x 2.5G RJ45 + 16x 5G RJ45 ports, 8x 25G SFP28 and MACSec. Max 1800W Output limit  
FortiSwitch-648F-FPOE 1 Year FortiCare Premium Support [for FS-648F-FPOE]

INVOICE TO				SHIP TO			
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720				DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720			
CHARLESTON		WV		CHARLESTON		WV	
US				US			

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	Extr Ntwk 5420M Univ Switch 48 Port (16 POE 90W) or equal (see extended description below for alternate part)	8.00000	EA	\$7,032.78	\$56,262.24

Comm Code	Manufacturer	Specification	Model #
43222612	Fortinet		FS-648F-FPOE and FC-10-648FF-247-02-12

**Extended Description:**

3.2.6 FortiSwitch-648F-FPOE Layer 2/3 FortiGate switch controller compatible PoE 802.3bt switch with 32x 2.5G RJ45 + 16x 5G RJ45 ports, 8x 25G SFP28 and MACSec. Max 1800W Output limit  
FortiSwitch-648F-FPOE 1 Year FortiCare Premium Support [for FS-648F-FPOE]

INVOICE TO				SHIP TO			
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720				DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720			
CHARLESTON		WV		CHARLESTON		WV	
US				US			

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
8	Networks Power Cord, 15A, USA,NEMA 5-15, IEC320-C15 or equal (see extended description below for alternate part)	54.00000	EA	\$0.00	\$0.00
				Included in lines 3,4,5,6, and 7	

Comm Code	Manufacturer	Specification	Model #
43222500	Fortinet		N/A

**Extended Description:**

3.3.1 Networks Power Cord, 15A, USA,NEMA 5-15, IEC320-C15 or equal

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
9	Proline- pwr ext cable- IEC 60320 C15 to IEC 60320 C14 or eq (see extended description below for alternate part)	104.00000	EA	\$7.25	\$754.00

Comm Code	Manufacturer	Specification	Model #
43222500	CCX		PWR-C14C15L-06

**Extended Description:**

AC POWER CORD IEC 60320 C14 PLUG TO C15

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
10	Extreme Switching Power Supply - AC - 920 Watt or equal (see extended description below for alternate part)	148.00000	EA	\$0.00 Included in lines 3,4,5,6, and 7	\$0.00

Comm Code	Manufacturer	Specification	Model #
43222500	Fortinet		FS-PSU-920

**Extended Description:**

3.3.3 AC power supply for FS-548D-FPOE. Additional POE power capacity.

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
11	Extreme Networks 20GBase direct attach cable- 0.5 m or equal (see extended description below for alternate part)	64.00000	EA	\$52.06	\$3,331.84

Comm Code	Manufacturer	Specification	Model #
26121609	Fortinet		FN-CABLE-SFP28-1

**Extended Description:**

3.3.4 25 GE SFP28 passive direct attach cable 1m for systems with SFP28 slots.

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
12	Extreme Networks 20GBase direct attach cable- 3 m or equal (see extended description below for alternate part)	12.00000	EA	\$130.34	\$1,564.08

Comm Code	Manufacturer	Specification	Model #
26121609	Fortinet		FN-CABLE-SFP28-3

**Extended Description:**

3.3.5 25 GE SFP28 passive direct attach cable 3m for systems with SFP28 slots.

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
13	Extreme Networks 20GBase direct attach cable- 1 m or equal (see extended description below for alternate part)	2.00000	EA	\$52.06	\$104.12

Comm Code	Manufacturer	Specification	Model #
26121609	Fortinet		FN-CABLE-SFP28-1

**Extended Description:**

3.3.6 25 GE SFP28 passive direct attach cable 1m for systems with SFP28 slots.

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
14	Extreme Networks - SFP+ transceiver module- 10 GigE or equal (see extended description below for alternate part)	24.00000	EA	\$68.04	\$1,632.96

Comm Code	Manufacturer	Specification	Model #
43222500	Fortinet		FN-TRAN-SFP+SR

**Extended Description:**

3.3.7 10GE SFP+ transceiver module, short range for systems with SFP+ and SFP/SFP+ slots

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
15	Ext Ntwrk 10302 Compatible 10GBASE-LR SFP + Transceiver or eq (see extended description below for alternate part)	16.00000	EA	\$126.00	\$2,016.00

Comm Code	Manufacturer	Specification	Model #
43222500	Fortinet		FN-TRAN-SFP+LR

**Extended Description:**

3.3.8 10GE SFP+ transceiver module, 10km long range for systems with SFP+ and SFP/SFP+ slots

INVOICE TO		SHIP TO	
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720		DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
16	Ext Ntwk 10051H Compatible 1000BASE-SX SFP Transceiver or eq (see extended description below for alternate part)	5.00000	EA	\$41.71	\$208.55

Comm Code	Manufacturer	Specification	Model #
43222500	Fortinet		FN-TRAN-SX

**Extended Description:**

3.3.9 1GE SFP SX transceiver module for systems with SFP and SFP/SFP+ slots



INVOICE TO	SHIP TO
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DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720  CHARLESTON WV US	DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720  CHARLESTON WV US
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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
17	Ext Ntwk 10052H Compatible 1000BASE-LX SFP Transceiver or eq (see extended description below for alternate part)	3.00000	EA	\$85.38	\$256.14

Comm Code	Manufacturer	Specification	Model #
43222500	Fortinet		FN-TRAN-LX

**Extended Description:**  
 3.3.10 1GE SFP LX transceiver module, 10km range, -40C to 85C, over SMF, for systems with SFP and SFP/SFP+ slots.

SCHEDULE OF EVENTS
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<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Tech Questions due by 10:00am	2023-10-06

	Document Phase	Document Description	Page 11
DOT240000021	Final	ADDENDUM NO_1 WVDOT Networking Equipment (81240012)	

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

REQUEST FOR QUOTATION  
WVDOT Networking Equipment

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**SPECIFICATIONS**

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of the Department of Transportation for a one-time purchase of Networking equipment - Routers, Switches and various components.
2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
  - 2.1 **“Contract Item”** means components provided by a qualified manufacturer that is authorized to sell the equipment as more fully described by these specifications.
  - 2.2 **“Pricing Page”** means the pages, contained in wvOASIS or attached as Exhibit A, upon which Vendor should list its proposed price for the Contract Items.
  - 2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Department of Transportation.

3. **GENERAL REQUIREMENTS:**

**Contract Items and Mandatory Requirements:** Contract Items must meet or exceed the mandatory requirements as shown below.

3.1 **ROUTERS**

- 3.1.1 **Contract Item #1:** Cisco ISR 1101 4 Ports GE Ethernet WAN Router, C1101-4P or equal. Quantity: (1) One.

Each Cisco ISR Router or equal must include the following mandatory components:

- 3.1.1.1 SOLN SUPP 8X5XNBD ISR 1101 4 Ports GE Ethernet WAN Router, part number CON-SSSNT-CISR1K4P, or equal
- 3.1.1.2 IP Base License for Cisco ISR 1100 4P Series, part number SL-1100-4P-IPB, or equal.
- 3.1.1.3 1109 M2M Power Supply iTemp 30 Watt AC, part number PWR-30W-I-AC or equal
- 3.1.1.4 AC Power Cord (North America), C13, NEMA 5-15P, 2.1m, part number CAB-AC or equal.
- 3.1.1.5 Cisco ISR 1100 Series IOS XE Universal, part number SISR1100UK9-1610 or equal.
- 3.1.1.6 Micro USB Console cable, part number CAB-CON-USBRJ45 or equal.

REQUEST FOR QUOTATION  
WVDOT Networking Equipment

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- 3.1.1.7 Security License for Cisco ISR 1100 4P Series, part number SL-1100-4P-SEC or equal.
- 3.1.1.8 VPN Boost License for performance upgrade, part number FL-1100-4P-HSEC or equal.
- 3.1.1.9 IPsec Performance: Additional 100 Mbps for ISR 1100-4P, part number FL-VPERF-4P-100= or equal.
- 3.1.1.10 Vendor must attach licenses to Agency Account #1049238; State of West Virginia, Office of Technology; enetworking@wv.gov

### 3.2 SWITCHES

- 3.2.1 **Contract Item #2:** Extreme Networks 16x10/100/1000Base-T Ethernet Switch POE+, part number 5320-16P-4XE or equal. Quantity: (10) Ten.
- 3.2.2 **Contract Item #3:** Extreme Networks 24x10/100/1000Base-T Ethernet Switch POE+, part number 5320-24P-8XE or equal. Quantity: (10) Ten.
- 3.2.3 **Contract Item #4:** Extreme Networks 48x10/100/1000Base-T Ethernet Switch POE+, part number 5320-48P-8XE or equal. Quantity: (10) Ten.
- 3.2.4 **Contract Item #5:** Extreme Networks 5420M Universal Switch - 24 Port, part number 5420M-24W-4YE or equal. Quantity: (1) One.
- 3.2.5 **Contract Item #6:** Extreme Networks 5420M Universal Switch - 48 Port, part number 5420M-48W-4YE or equal. Quantity: (65) Sixty-five.
- 3.2.6 **Contract Item #7:** Extreme Networks 5420M Universal Switch – 48 Port (16 POE 90W Multi-rate/32 POW 30W), part number 5420M-16MW-32P-4YE or equal. Quantity: (8) Eight.

### 3.3 COMPONENTS

- 3.3.1 **Contract Item #8:** Networks Power Cord, 15A, USA, NEMA 5-15, IEC320-C15, part number 10099 or equal. Quantity: (54) Fifty-four.
- 3.3.2 **Contract Item #9:** Proline - power extension cable - IEC 60320 C15 to IEC 60320 C14 - 6 ft, part number PRO-C142C1514AWG6FT or equal. Quantity: (104) One hundred and four.

REQUEST FOR QUOTATION  
WV DOT Networking Equipment

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- 3.3.3 **Contract Item #10:** Extreme Switching Power Supply - AC - 920 Watt, part number XN-ACPWR-920W or equal. Quantity: (148) One hundred forty-eight.
- 3.3.4 **Contract Item #11:** Extreme Networks 20GBase direct attach cable - 0.5 m, part number 20G-DACP-SFPDDZ5M or equal. Quantity: (64) Sixty-four.
- 3.3.5 **Contract Item #12:** Extreme Networks 20GBase direct attach cable - 3 m, part number 20G-DACP-SFPDD3M or equal. Quantity: (12) Twelve.
- 3.3.6 **Contract Item #13:** Extreme Networks 20GBase direct attach cable - 1 m, part number 20G-DACP-SFPDD1M or equal. Quantity: (2) Two.
- 3.3.7 **Contract Item #14:** Extreme Networks - SFP+ transceiver module - 10 GigE, part number 10301 or equal. Quantity: (24) Twenty-four.
- 3.3.8 **Contract Item #15:** Extreme Networks 10302 Compatible 10GBASE-LR SFP+ Transceiver Module or equal. Quantity: (16) Sixteen.
- 3.3.9 **Contract Item #16:** Extreme Networks 10051H Compatible 1000BASE-SX SFP Transceiver Module or equal. Quantity: (5) Five.
- 3.3.10 **Contract Item #17:** Extreme Networks 10052H Compatible 1000BASE-LX SFP Transceiver Module or equal. Quantity: (3) Three.

**Alternate bids that are equal to, meet, or exceed the specifications and requirements listed are invited. In order to receive full consideration, such alternate bids must be accompanied by sufficient descriptive literature and/or samples to clearly identify the offer and allow for a complete evaluation.**

**The use of brand name or equal specifications is for describing the minimum standard of quality, technical performance and installation characteristics required and are not intended to limit or restrict competition.**

**Vendor shall provide technical specifications with bid documentation.**

#### 4. CONTRACT AWARD:

- 4.1 **Contract Award:** The Contract is intended to provide Agencies with a purchase price for the Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

REQUEST FOR QUOTATION  
WVDOT Networking Equipment

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- 4.2 Pricing Page:** Vendor shall complete the Pricing Page by providing a total cost for the Contract Items being requested. Failure to complete the Pricing Page in full or in its entirety will result in Vendor's bid being disqualified. The Pricing Page contains a list of the Contract Items and purchase quantity per item.

Vendor should type or electronically enter the information into the Pricing Page to prevent errors in the evaluation.

**5. ORDERING AND PAYMENT:**

- 5.1 Ordering:** Vendor shall accept orders through wvOASIS, regular mail, facsimile, e-mail, or any other written form of communication. Vendor may, but is not required to, accept on-line orders through a secure internet ordering portal/website. If the Vendor has the ability to accept on-line orders, it should include in its response a brief description of how Agencies may utilize the on-line ordering system. The Vendor shall ensure that its on-line ordering system is properly secured prior to processing Agency orders on-line.
- 5.2 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

**6. DELIVERY AND RETURN:**

- 6.1 Delivery Time:** Vendor shall deliver orders within (60) sixty working days after the order is received. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met.
- 6.2 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if the shipment of the Contract Items will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the Contract, and/or obtaining the Contract Items from a third party.

Any Agency seeking to obtain the Contract Items from a third party under this provision must first obtain approval of the Purchasing Division.

- 6.3 Delivery Payment/Risk of Loss:** Order delivery shall be F.O.B. destination to the Agency's location. Vendor shall include the cost of order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery.
- 6.4 Return of Unacceptable Items:** If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either make arrangements for the return within five (5) days of being notified that items are unacceptable, or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with

REQUEST FOR QUOTATION  
WVDOT Networking Equipment

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appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion.

- 6.5 Return Due to Agency Error:** Items ordered in error by the Agency will be returned for credit within 40 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

**7. VENDOR DEFAULT:**

**7.1** The following shall be considered a vendor default under this Contract.

**7.1.1** Failure to provide Contract Items in accordance with the requirements contained herein.

**7.1.2** Failure to comply with other specifications and requirements contained herein.

**7.1.3** Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

**7.1.4** Failure to remedy deficient performance upon request.

**7.2** The following remedies shall be available to Agency upon default.

**7.2.1** Immediate cancellation of the Contract.

**7.2.2** Immediate cancellation of one or more release orders issued under this Contract.

**7.2.3** Any other remedies available in law or equity.

**8. MISCELLANEOUS:**

**8.1 No Substitutions:** Vendor shall supply only Contract Items submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

**8.2 Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.

REQUEST FOR QUOTATION  
**WVDOT Networking Equipment**

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9. **Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

**Contract Manager:** Haymanot Cummings

**Telephone Number:** 804-767-3274

**Fax Number:** \_\_\_\_\_

**Email Address:** hcummings@presidio.com



# FortiGate FortiWiFi 60F Series

FG-60F, FG-61F, FWF-60F, and FWF-61F



## Highlights

**Gartner Magic Quadrant Leader** for both Network Firewalls and SD-WAN.

**Security-Driven Networking** with FortiOS delivers converged networking and security.

**Unparalleled Performance** with Fortinet's patented SoC processors.

**Enterprise Security** with consolidated AI / ML-powered FortiGuard Services.

**Simplified Operations** with centralized management for networking and security, automation, deep analytics, and self-healing.

## Converged Next-Generation Firewall (NGFW) and SD-WAN

The FortiGate Next-Generation Firewall 60F series is ideal for building security-driven networks at distributed enterprise sites and transforming WAN architecture at any scale.

With a rich set of AI/ML-based FortiGuard security services and our integrated Security Fabric platform, the FortiGate FortiWiFi 60F series delivers coordinated, automated, end-to-end threat protection across all use cases.

FortiGate has the industry's first integrated SD-WAN and zero-trust network access (ZTNA) enforcement within an NGFW solution and is powered by one OS. FortiGate FortiWiFi 60F automatically controls, verifies, and facilitates user access to applications, delivering consistency with a seamless and optimized user experience.

IPS	NGFW	Threat Protection	Interfaces
1.4 Gbps	1 Gbps	700 Mbps	Multiple GE RJ45   Variants with internal storage   WiFi variants



Available in



Appliance



Virtual



Hosted



Cloud



Container

## FortiOS Everywhere

### FortiOS, Fortinet's Advanced Operating System

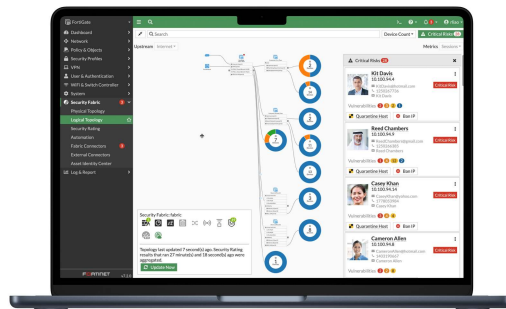
FortiOS enables the convergence of high performing networking and security across the Fortinet Security Fabric. Because it can be deployed anywhere, it delivers consistent and context-aware security posture across network, endpoint, and multi-cloud environments.

FortiOS powers all FortiGate deployments whether a physical or virtual device, as a container, or as a cloud service. This universal deployment model enables the consolidation of many technologies and use cases into organically built best-of-breed capabilities, unified operating system, and ultra-scalability. The solution allows organizations to protect all edges, simplify operations, and run their business without compromising performance or protection.

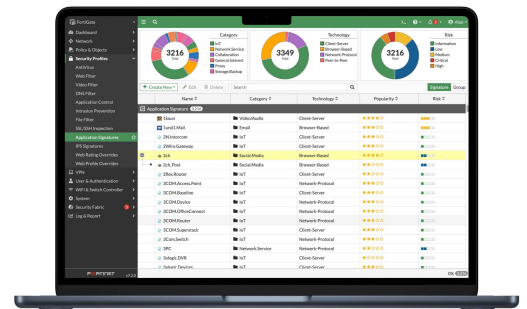
FortiOS dramatically expands the Fortinet Security Fabric's ability to deliver advanced AI/ML-powered services, inline advanced sandbox detection, integrated ZTNA enforcement, and more. It provides protection across hybrid deployment models for hardware, software, and Software-as-a-Service with SASE.

FortiOS expands visibility and control, ensures the consistent deployment and enforcement of a simplified, single policy and management framework. Its security policies enable centralized management across large-scale networks with the following key attributes:

- Interactive drill-down and topology viewers that display real-time status
- On-click remediation that provides accurate and quick protection against threats and abuses
- Unique threat score system correlates weighted threats with users to prioritize investigations



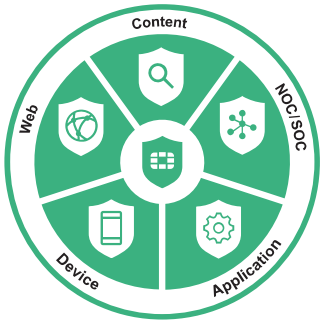
*Intuitive easy to use view into the network and endpoint vulnerabilities*



*Visibility with FOS Application Signatures*

### FortiConverter Service

FortiConverter Service provides hassle-free migration to help organizations transition from a wide range of legacy firewalls to FortiGate Next-Generation Firewalls quickly and easily. The service eliminates errors and redundancy by employing best practices with advanced methodologies and automated processes. Organizations can accelerate their network protection with the latest FortiOS technology.



## FortiGuard Services

### FortiGuard AI-Powered Security

FortiGuard's rich suite of security services counter threats in real time using AI-powered, coordinated protection designed by FortiGuard Labs security threat researchers, engineers, and forensic specialists.

### Web Security

Advanced cloud-delivered URL, DNS (Domain Name System), and Video Filtering providing complete protection for phishing and other web born attacks while meeting compliance.

Additionally, its dynamic inline CASB (Cloud Access Security Broker) service is focused on securing business SaaS data, while inline ZTNA traffic inspection and ZTNA posture check provide per-sessions access control to applications. It also integrates with the FortiClient Fabric Agent to extend protection to remote and mobile users.

### Content Security

Advanced content security technologies enable the detection and prevention of known and unknown threats and file-based attack tactics in real-time. With capabilities like CPRL (Compact Pattern Recognition Language), AV, inline Sandbox, and lateral movement protection make it a complete solution to address ransomware, malware, and credential-based attacks.

### Device Security

Advanced security technologies are optimized to monitor and protect IT, IIoT, and OT (Operational Technology) devices against vulnerability and device-based attack tactics. Its validated near-real-time IPS intelligence detects, and blocks known and zero-day threats, provides deep visibility and control into ICS/OT/SCADA protocols, and provides automated discovery, segmentation, and pattern identification-based policies.

### Advanced Tools for SOC/NOC

Advanced NOC and SOC management tools attached to your NGFW provide simplified and faster time-to-activation.

### SOC-as-a-Service

Includes tier-one hunting and automation, log location, 24x7 SOC analyst experts, managed firewall and endpoint functions, and alert triage.

### Fabric Rating Security Best Practices

Includes supply chain virtual patching, up-to-date risk and vulnerability data to deliver quicker business decisions, and remediation for data breach situations.



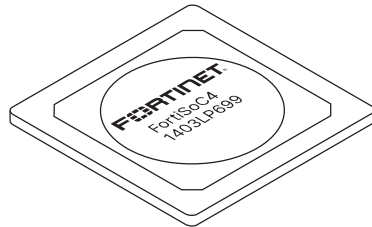
## Secure Any Edge at Any Scale



### Powered by Security Processing Unit (SPU)

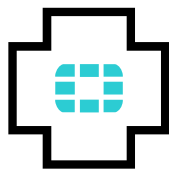
Traditional firewalls cannot protect against today's content- and connection-based threats because they rely on off-the-shelf hardware and general-purpose CPUs, causing a dangerous performance gap. Fortinet's custom SPU processors deliver the power you need—up to 520Gbps—to detect emerging threats and block malicious content while ensuring your network security solution does not become a performance bottleneck.

### ASIC Advantage



### Secure SD-WAN ASIC SOC4

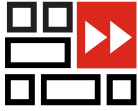
- Combines a RISC-based CPU with Fortinet's proprietary Security Processing Unit (SPU) content and network processors for unmatched performance
- Delivers industry's fastest application identification and steering for efficient business operations
- Accelerates IPsec VPN performance for best user experience on direct internet access
- Enables best of breed NGFW Security and Deep SSL Inspection with high performance
- Extends security to access layer to enable SD-Branch transformation with accelerated and integrated switch and access point connectivity



### FortiCare Services

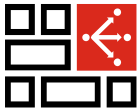
Fortinet is dedicated to helping our customers succeed, and every year FortiCare Services help thousands of organizations get the most from our Fortinet Security Fabric solution. Our lifecycle portfolio offers Design, Deploy, Operate, Optimize, and Evolve services. Operate services offer device-level FortiCare Elite service with enhanced SLAs to meet our customer's operational and availability needs. In addition, our customized account-level services provide rapid incident resolution and offer proactive care to maximize the security and performance of Fortinet deployments.

## Use Cases



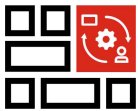
### Next Generation Firewall (NGFW)

- FortiGuard Labs' suite of AI-powered Security Services—natively integrated with your NGFW—secures web, content, and devices and protects networks from ransomware and sophisticated cyberattacks
- Real-time SSL inspection (including TLS 1.3) provides full visibility into users, devices, and applications across the attack surface
- Fortinet's patented SPU (Security Processing Unit) technology provides industry-leading high-performance protection



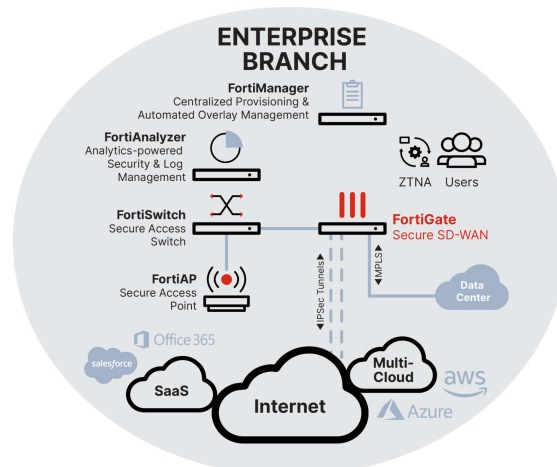
### Secure SD-WAN

- FortiGate WAN Edge powered by one OS and unified security and management framework and systems transforms and secures WANs
- Delivers superior quality of experience and effective security posture for work-from-anywhere models, SD-Branch, and cloud-first WAN use cases
- Achieve operational efficiencies at any scale through automation, deep analytics, and self-healing



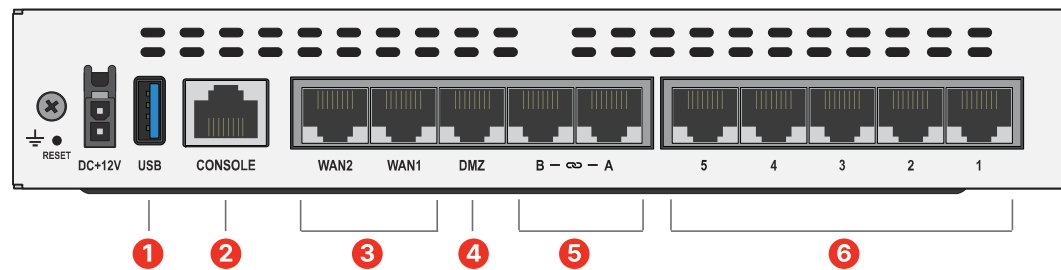
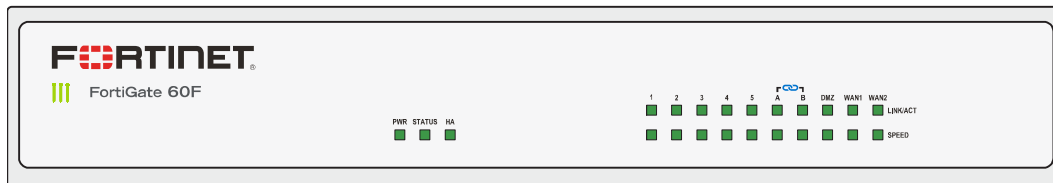
### Universal ZTNA

- Control access to applications no matter where the user is and no matter where the application is hosted for universal application of access policies
- Provide extensive authentications, checks, and enforce policy prior to granting application access - every time
- Agent-based access with FortiClient or agentless access via proxy portal for guest or BYOD



## Hardware

### FortiGate FortiWiFi 60F/61F



#### Interfaces

1. 1 x USB Port
2. 1 x Console Port
3. 2 x GE RJ45 WAN Ports
4. 1 x GE RJ45 DMZ Port
5. 2 x GE RJ45 FortiLink Ports
6. 5 x GE RJ45 Internal Ports

#### Hardware Features



#### Compact and Reliable Form Factor

Designed for small environments, you can place it on a desktop or wall-mount it. It is small, lightweight, yet highly reliable with a superior MTBF (Mean Time Between Failure), minimizing the chance of a network disruption.

#### Access Layer Security

FortiLink protocol enables you to converge security and the network access by integrating the FortiSwitch into the FortiGate as a logical extension of the NGFW. These FortiLink enabled ports can be reconfigured as regular ports as needed.



## Specifications

	FORTIGATE 60F	FORTIGATE 61F	FORTIWIIFI 60F	FORTIWIIFI 61F
<b>Hardware Specifications</b>				
GE RJ45 WAN / DMZ Ports	2 / 1	2 / 1	2 / 1	2 / 1
GE RJ45 Internal Ports	5	5	5	5
GE RJ45 FortiLink Ports (Default)	2	2	2	2
Wireless Interface	–	–	Single Radio (2.4GHz/5GHz), 802.11 a/b/g/n/ac-W2	Single Radio (2.4GHz/5GHz), 802.11 a/b/g/n/ac-W2
USB Ports	1	1	1	1
Console (RJ45)	1	1	1	1
Internal Storage	–	1 × 128 GB SSD	–	1 × 128 GB SSD
<b>System Performance — Enterprise Traffic Mix</b>				
IPS Throughput <sup>2</sup>			1.4 Gbps	
NGFW Throughput <sup>2,4</sup>			1 Gbps	
Threat Protection Throughput <sup>2,5</sup>			700 Mbps	
<b>System Performance</b>				
Firewall Throughput (1518 / 512 / 64 byte UDP packets)			10/10/6 Gbps	
Firewall Latency (64 byte UDP packets)			3.3 μs	
Firewall Throughput (Packets Per Second)			9 Mpps	
Concurrent Sessions (TCP)			700 000	
New Sessions/Second (TCP)			35 000	
Firewall Policies			5000	
IPsec VPN Throughput (512 byte) <sup>1</sup>			6.5 Gbps	
Gateway-to-Gateway IPsec VPN Tunnels			200	
Client-to-Gateway IPsec VPN Tunnels			500	
SSL-VPN Throughput			900 Mbps	
Concurrent SSL-VPN Users (Recommended Maximum, Tunnel Mode)			200	
SSL Inspection Throughput (IPS, avg. HTTPS) <sup>3</sup>			630 Mbps	
SSL Inspection CPS (IPS, avg. HTTPS) <sup>3</sup>			400	
SSL Inspection Concurrent Session (IPS, avg. HTTPS) <sup>3</sup>			55 000	
Application Control Throughput (HTTP 64K) <sup>2</sup>			1.8 Gbps	
CAPWAP Throughput (HTTP 64K)			8 Gbps	
Virtual Domains (Default / Maximum)			10 / 10	
Maximum Number of FortiSwitches Supported			24	
Maximum Number of FortiAPs (Total / Tunnel Mode)			64 / 32	
Maximum Number of FortiTokens			500	
High Availability Configurations			Active-Active, Active-Passive, Clustering	
<b>Dimensions</b>				
Height x Width x Length (inches)			1.5 × 8.5 × 6.3	
Height x Width x Length (mm)			38.5 × 216 × 160 mm	
Weight			2.23 lbs (1.01 kg)	
Form Factor			Desktop	
<b>Radio Specifications</b>				
Multiple User (MU) MIMO	–	–	3×3	
Maximum Wi-Fi Speeds	–	–	1300 Mbps @ 5 GHz, 450 Mbps @ 2.4 GHz	
Maximum Tx Power	–	–	20 dBm	
Antenna Gain	–	–	3.5 dBi @ 5 GHz, 5 dBi @ 2.4 GHz	

Note: All performance values are “up to” and vary depending on system configuration.

<sup>1</sup> IPsec VPN performance test uses AES256-SHA256.

<sup>2</sup> IPS (Enterprise Mix), Application Control, NGFW and Threat Protection are measured with Logging enabled.

<sup>3</sup> SSL Inspection performance values use an average of HTTPS sessions of different cipher suites.

<sup>4</sup> NGFW performance is measured with Firewall, IPS and Application Control enabled.

<sup>5</sup> Threat Protection performance is measured with Firewall, IPS, Application Control and Malware Protection enabled.



## Specifications

	FORTIGATE 60F	FORTIGATE 61F	FORTIWIFI 60F	FORTIWIFI 61F
<b>Operating Environment and Certifications</b>				
Power Rating	12Vdc, 3A			
Power Required	Powered by External DC Power Adapter, 100–240V AC, 50/60 Hz			
Maximum Current	100Vac/1.0A, 240Vac/0.6A			
Power Consumption (Average / Maximum)	10.17 W / 12.43 W	17.2 W / 18.7 W	17.2 W / 18.7 W	17.5 W / 19.0 W
Heat Dissipation	42.4 BTU/hr	42.4 BTU/hr	63.8 BTU/hr	64.8 BTU/hr
Operating Temperature	32°–104°F (0°–40°C)			
Storage Temperature	-31°–158°F (-35°–70°C)			
Humidity	Humidity 10%–90% non-condensing			
Noise Level	Fanless 0 dBA			
Operating Altitude	Up to 7400 ft (2250 m)			
Compliance	FCC, ICES, CE, RCM, VCCI, BSMI, UL/cUL, CB			
Certifications	USGv6/IPv6			





## SUBSCRIPTIONS

Service Category	Service Offering	A-la-carte	Bundles		
			Enterprise Protection	Unified Threat Protection	Advanced Threat Protection
Security Services	FortiGuard IPS Service	•	•	•	•
	FortiGuard Anti-Malware Protection (AMP) — Antivirus, Mobile Malware, Botnet, CDR, Virus Outbreak Protection and FortiSandbox Cloud Service	•	•	•	•
	FortiGuard Web Security — URL and web content, Video and Secure DNS Filtering	•	•	•	
	FortiGuard Anti-Spam		•	•	
	FortiGuard IoT Detection Service	•	•		
	FortiGuard Industrial Security Service	•	•		
	FortiCloud AI-based Inline Sandbox Service <sup>1</sup>	•			
NOC Services	FortiGate Cloud (SMB Logging + Cloud Management)	•			
	FortiGuard Security Fabric Rating and Compliance Monitoring Service	•	•		
	FortiConverter Service	•	•		
	FortiGuard SD-WAN Underlay Bandwidth and Quality Monitoring Service	•			
SOC Services	FortiAnalyzer Cloud	•			
	FortiAnalyzer Cloud with SOCaas	•			
Hardware and Software Support	FortiCare Essentials	•			
	FortiCare Premium	•	•	•	•
	FortiCare Elite	•			
Base Services	FortiGuard Application Control				
	FortiCloud ZTNA Inline CASB Service <sup>1</sup>				
	Internet Service (SaaS) DB Updates				
	GeoIP DB Updates				included with FortiCare Subscription
	Device/OS Detection Signatures				
	Trusted Certificate DB Updates				
	DDNS (v4/v6) Service				

<sup>1</sup> Available when running FortiOS 7.2



### FortiGuard Bundles

FortiGuard Labs delivers a number of security intelligence services to augment the FortiGate firewall platform. You can easily optimize the protection capabilities of your FortiGate with one of these FortiGuard Bundles.

### FortiCare Elite

FortiCare Elite services offers enhanced service-level agreements (SLAs) and accelerated issue resolution. This advanced support offering provides access to a dedicated support team. Single-touch ticket handling by the expert technical team streamlines resolution. This option also provides Extended End-of-Engineering-Support (EoE's) of 18 months for added flexibility and access to the new FortiCare Elite Portal. This intuitive portal provides a single unified view of device and security health.

### Fortinet CSR Policy

Fortinet is committed to driving progress and sustainability for all through cybersecurity, with respect for human rights and ethical business practices, making possible a digital world you can always trust. You represent and warrant to Fortinet that you will not use Fortinet's products and services to engage in, or support in any way, violations or abuses of human rights, including those involving illegal censorship, surveillance, detention, or excessive use of force. Users of Fortinet products are required to comply with the [Fortinet EULA](#) and report any suspected violations of the EULA via the procedures outlined in the [Fortinet Whistleblower Policy](#).

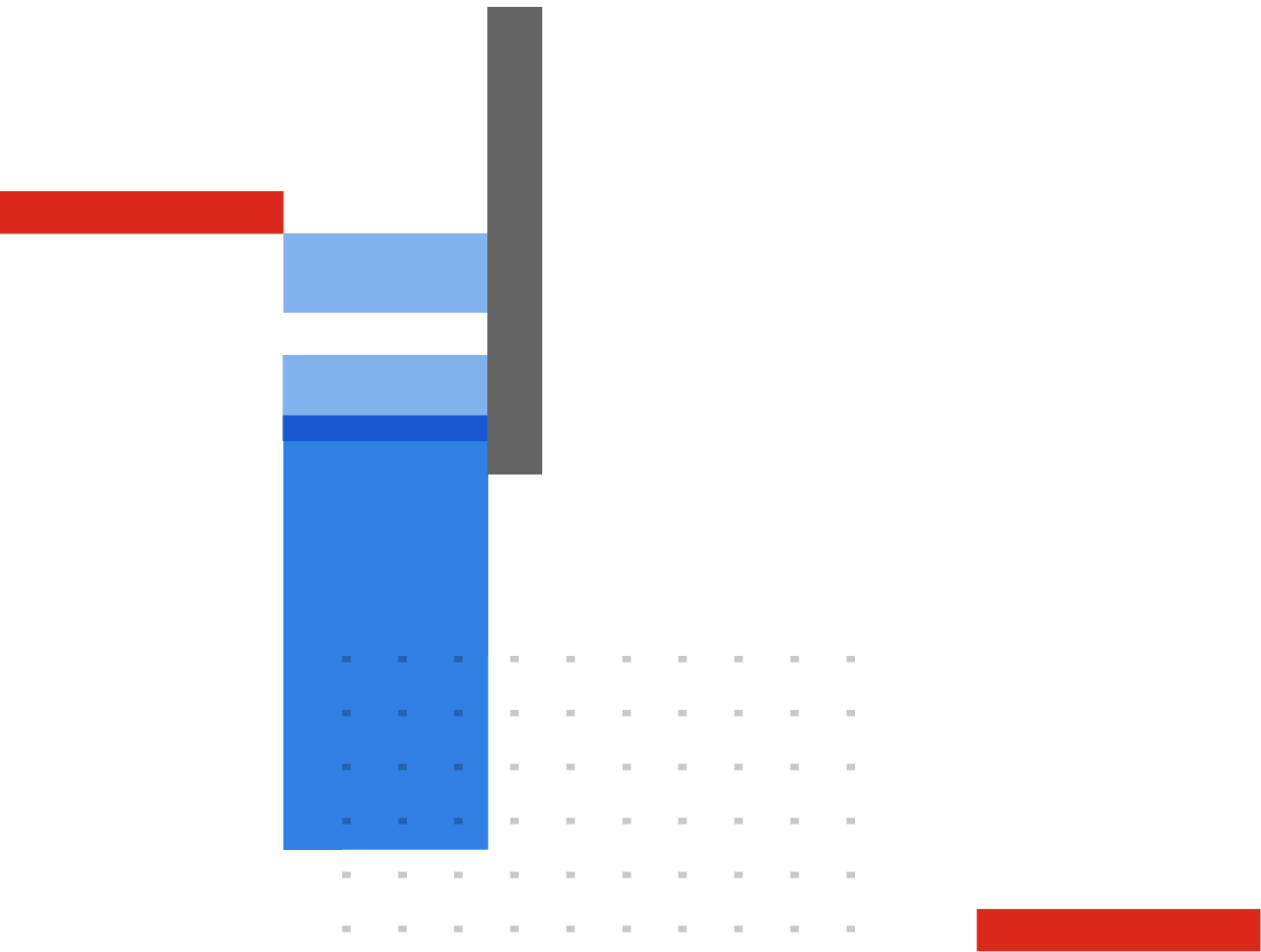


## Ordering Information

Product	SKU	Description
FortiGate 60F	FG-60F	10x GE RJ45 ports (including 7x Internal ports, 2x WAN ports, 1x DMZ port)
FortiGate 61F	FG-61F	10x GE RJ45 ports (including 7x Internal ports, 2x WAN ports, 1x DMZ port), 128 GB SSD onboard storage
FortiWiFi 60F	FWF-60F-[RC]	10x GE RJ45 ports (including 7x Internal Ports, 2x WAN Ports, 1x DMZ Port), Wireless (802.11 a/b/g/n/ac-W2)
FortiWiFi 61F	FWF-61F-[RC]	10x GE RJ45 ports (including 7x Internal Ports, 2x WAN Ports, 1x DMZ Port), Wireless (802.11 a/b/g/n/ac-W2), 128GB SSD onboard storage
<b>Optional Accessories</b>		
Rack Mount Tray	SP-RACKTRAY-02	Rack mount tray for all FortiGate E series and F series desktop models are backwards compatible with SP-RackTray-01. For list of compatible FortiGate products, visit our Documentation website, docs.fortinet.com
AC Power Adaptor	SP-FG60E-PDC-5	Pack of 5 AC power adaptors for FG/FWF 60E/61E, 60F/61F, and 80E/81E
Wall Mount Kit	SP-FG60F-MOUNT-20	Pack of 20 wall mount kits for FG/FWF-60F and FG/FWF-80F series

[RC] = regional code: A, B, D, E, F, I, J, N, P, S, V, and Y





**FORTINET**<sup>®</sup>

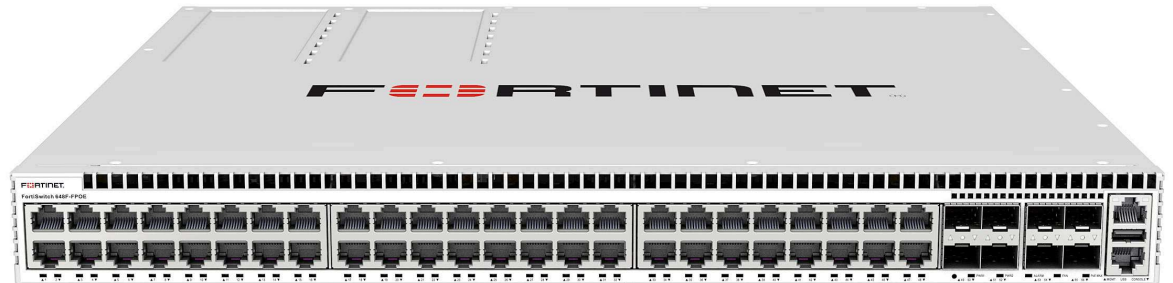
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April 18, 2023

FGWF-60F-DAT-R36-20230419

# FortiSwitch™ Secure Campus



## Highlights

- Standalone or Integrated FortiLink deployment option
- On premise and cloud-based management options
- Zero-touch deployment
- Entry level network access control at no cost
- Role and device-based access control and policy enforcement
- Dynamic segmentation and Micro Segmentation
- Secure access service edge (SASE) support
- Up to 48 access ports in a compact 1 RU form factor
- Stacking up to 300 switches per FortiGate
- Wire-speed switching with up to 40GE uplinks

## Security, Performance, and Manageability

The FortiSwitch™ campus family offers an unparalleled combination of security, performance, and manageability, making it the ideal choice for the enterprise campus that prioritize safeguarding against threats.

As campus network design continues to adapt to emerging technologies and evolving business requirements, the FortiSwitch enterprise campus switching architecture empowers network administrators with enhanced visibility, control, and manageability. The platform's scalability, agility, and ease of management contribute to a highly secure environment, providing a robust foundation for any sized campus.

Available in



Appliance

## Secure Networking through FortiLink

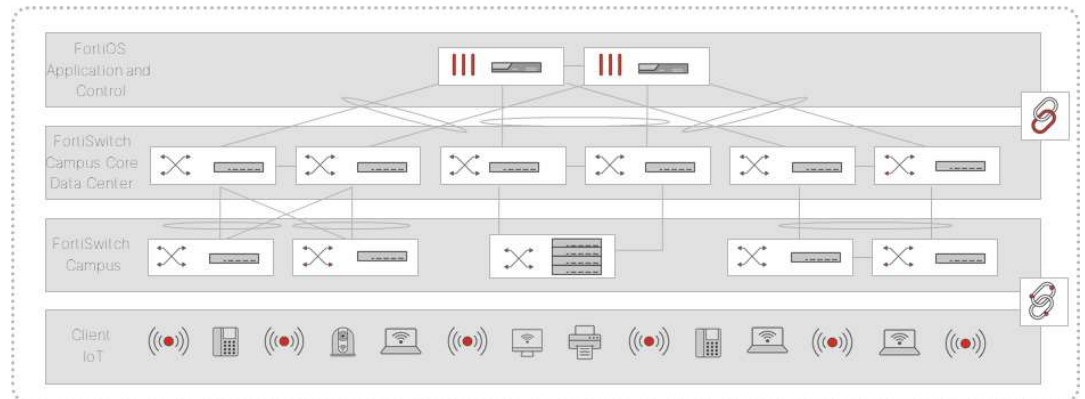
FortiLink is an innovative proprietary management protocol that enables seamless integration and management between a FortiGate Next-Generation Firewall and the FortiSwitch Ethernet switching platform. By using FortiLink, the FortiSwitch becomes a logical extension of the FortiGate, allowing for centralized management of both network security and access layer functions through a single interface.

## Native Entry-Level Network Access Control at No Cost

FortiLink integration enables basic Network Access Control (NAC) functionality to profile and securely onboard devices as they connect. FortiLink NAC offers visibility, automated segmentation, and microsegmentation of IoT devices, quarantine if compromised, and virtual patching to help protect against threats.

### Dynamic Segmentation and Policy Enforcement

Implementing dynamic port-level security in a large campus Ethernet switching environment traditionally requires hands-on effort and ongoing maintenance. FortiSwitch campus switching architecture automates dynamic segmentation through FortiLink, empowering IT administrators to control traffic within segments, limiting the scope of threats. The automation of segmentation makes making policy enforcement easier and more efficient, while NGFW-level policies ensure granular control and zero-trust access for users and devices.



### Role and Device-based Access Control and Policy Enforcement

Whether leveraging Fortinet Identity Access Management (IAM) or third-party identity providers, FortiLink automation can leverage identity to make granular role-based policy decisions.

### Secure Access Service Edge (SASE)

This FortiSwitch enterprise architecture offers a built-in foundation for zero-trust network access (ZTNA) and secure access service edge (SASE), allowing you the flexibility to easily deploy the type and level of security you need at the edge of your network.

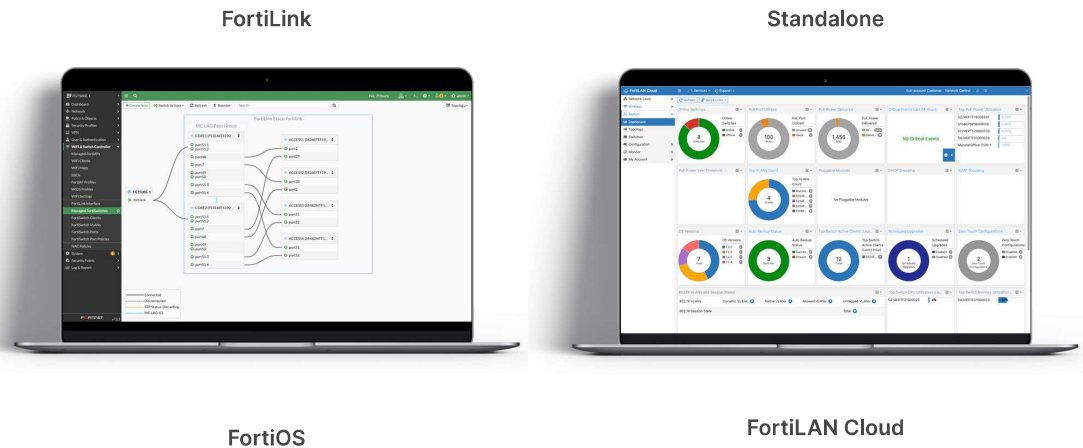


## Operational Simplicity

Deploying, managing, and optimizing an Ethernet switching infrastructure has traditionally been challenging and time-consuming.

FortiSwitch switching architecture can be securely deployed and managed in minutes through zero-touch deployment. Whether FortiSwitch is deployed in standalone mode or FortiLink mode, automation and orchestration offer intuitive workflows and unified views to provision, manage, and optimize your campus. This is available through both FortiCloud and on-premises management.

Centralized management delivers a unified, single view of both the LAN and security. This provides a consistent user experience for optimal operational efficiency, simplifying management, optimization, and troubleshooting. The result is a shorter mean time to repair both network and security issues.



## Scalable Flexible Campus

FortiSwitch campus architecture scales to meet the need of today's next-generation campus without sacrificing security. Supporting up to 48 ports in a compact 1 RU form factor, FortiSwitch can deliver the performance and scale you require.

### Eliminate Bottlenecks

Dedicated uplinks capable of speeds up to 25GE through SFP+ and SFP28 slots can support your choice of media utilizing through a wide variety of transceivers.

### Next Generation Power over Ethernet Support

With PoE+ support in all models and next-generation 90W 802.3bt PoE support in specific models, FortiSwitch delivers and manages power where needed for devices such as cameras, sensors, and wireless access points



## Product Offerings

### Model Numbers

400 Series: FS-424E-FIBER, FS-M426E-FPOE, FS-424E, FS-424E-POE, FS-424E-FPOE, FS-448E, FS-448E-POE, FS-448E-FPOE

500 Series: FS-524-D, FS-524D-FPOE, FS-548D, FS-548D-FPOE

600 Series: FS-624F, FS-624F-FPOE, FS-648F, FS-648F-FPOE

## Features

Refer to the FortiSwitch Feature Matrix for details about the features supported by each FortiSwitch model.

FORTISWITCH FORTILINK MODE (WITH FORTIGATE)	FORTISWITCH FORTILINK MODE (WITH FORTIGATE)
<b>Management and Configuration</b>	<b>Security and Visibility</b>
Auto Discovery of Multiple Switches	802.1X Authentication (Port-based, MAC-based, MAB)
8 to 300 Managed Switches depending on FortiGate model	Syslog Collection
FortiLink Stacking (Auto Inter-Switch Links)	DHCP Snooping
FortiLink Secure Fabric	Device Detection
Software Upgrade of Switches	MAC Black/White Listing (FortiGate)
Centralized VLAN Configuration	Policy Control of Users and Devices (FortiGate)
Switch POE Control	Block Intra-VLAN Traffic
Link Aggregation Configuration	Network Device Detection
Spanning Tree	Host Quarantine on Switch Port
LLDP/MED	Integrated FortiGate Network Access Control (NAC) function
IGMP Snooping	FortiGuard IoT identification
L3 Routing and Services (FortiGate)	FortiSwitch recommendations in Security Rating
Policy-Based Routing (FortiGate)	Switch Controller traffic collector
Virtual Domain (FortiGate)	Port Statistics
Automated detection and recommendations	Clients Monitoring
Dynamic Port Profiles for FortiSwitch ports	<b>UTM Features</b>
Provision firmware upon authorization	Firewall (FortiGate)
Health Monitoring	IPC, AV, Application Control, Botnet (FortiGate)
<b>High Availability</b>	
Support FortiLink FortiGate in HA Cluster	
LAG support for FortiLink Connection	
Active-Active Split LAG from FortiGate to FortiSwitches for Advanced Redundancy	



## Features

Refer to the FortiSwitch Feature Matrix for details about the features supported by each FortiSwitch model.

FORTISWITCH	FORTISWITCH
<b>Layer 2</b>	<b>Layer 3</b>
Jumbo Frames	Static Routing (Hardware-based)
Auto-negotiation for Port Speed and Duplex	Dynamic Routing Protocols: OSPFv2, RIPv2, VRRP, BGP, ISIS *
MDI/MDIX Auto-crossover	Multicast Protocols: PIM-SSM *
IEEE 802.1D MAC Bridging/STP	ECMP
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)	Bidirectional Forwarding Detection (BFD)
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)	DHCP Relay
STP Root Guard	IP conflict detection and notification
STP BPDU Guard	DHCP server
Edge Port / Port Fast	Unicast Reverse Path Forwarding - uRPF
IEEE 802.1Q VLAN Tagging	IPv6 route filtering
Private VLAN	Filtering routemaps based on routing protocol
IEEE 802.3ad Link Aggregation with LACP	<b>Security and Visibility</b>
Unicast/Multicast traffic balance over trunking port (dst-ip, dst-mac, src-dst-ip, src-dst-mac, src-ip, src-mac)	Port Mirroring
IEEE 802.1AX Link Aggregation	Admin Authentication Via RFC 2865 RADIUS
Spanning Tree Instances (MSTP/CST)	IEEE 802.1X Authentication Port-based
IEEE 802.3x Flow Control and Back-pressure	IEEE 802.1X Authentication MAC-based
IEEE 802.3 10Base-T	IEEE 802.1X Guest and Fallback VLAN
IEEE 802.3u 100Base-TX	IEEE 802.1X MAC Access Bypass (MAB)
IEEE 802.3z 1000Base-SX/LX	IEEE 802.1X Dynamic VLAN Assignment
IEEE 802.3ab 1000Base-T	Radius CoA (Change of Authority)
IEEE 802.3ae 10 Gigabit Ethernet	Radius Accounting
IEEE 802.3az Energy Efficient Ethernet	MAC-IP Binding
IEEE 802.3bz Multi Gigabit Ethernet	sFlow
IEEE 802.3 CSMA/CD Access Method and Physical Layer Specifications	ACL
Storm Control	IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
MAC, IP, Ethertype-based VLANs	IEEE 802.1ab LLDP-MED
Virtual-Wire	IEEE 802.1ae MAC Security (MAC Sec)
Split Port (QSFP+ breakout to 4×10G SFP+ or 4×1G SFP)	DHCP-Snooping
Time-Domain Reflectometry (TDR) Support	Dynamic ARP Inspection
LAG min/max bundle	Sticky MAC and MAC Limit
Rapid PVST interoperation	IEEE 802.1X open auth
Ingress Pause Metering	IEEE 802.1X EAP pass-through
Loop Guard	Flow Export (NetFlow and IPFIX)
Per-port storm control	ACL Multistage
Priority-based Flow Control (802.1Qbb)	ACL Multiple Ingress
IEEE 802.1ad QinQ	ACL Schedule
VLAN Mapping	IP source guard
IEEE 802.3ba, 802.3bj, and 802.3bm 40 and 100 Gigabit Ethernet	IPv6 RA Guard
Auto topology	LLDP-MED ELIN support
Dynamically shared packet buffers	Per-port and per-VLAN MAC learning limit
<b>Services</b>	Assign VLANs via Radius attributes (RFC 4675)
IGMP proxy / querier	Wake on LAN
MLD Snooping	
MLD proxy / querier	
IGMP Snooping	

\*Requires 'Advanced Features' License.





## Features

Refer to the FortiSwitch Feature Matrix for details about the features supported by each FortiSwitch model.

FORTISWITCH
<b>High Availability</b>
Multi-Chassis Link Aggregation (MCLAG)
<b>Quality of Service</b>
IEEE 802.1p Based Priority Queuing
IP TOS/DSCP Based Priority Queuing
IEEE 1588 PTP (Transparent Clock)
Explicit Congestion Notification
Egress priority tagging
Percentage Rate Control

FORTISWITCH
<b>Management</b>
IPv4 and IPv6 Management
Telnet / SSH
HTTP / HTTPS
SNMP v1/v2c/v3
SNTP
Standard CLI and Web GUI Interface
Software download/upload: TFTP/FTP/GUI
Managed from FortiGate
Support for HTTP REST APIs for Configuration and Monitoring
Dual Firmware Support
RMON Group 1
Packet Capture
SPAN, RSPAN, and ERSPAN
Link Monitor
POE Control Modes
System Temperature and Alert
Syslog UDP/TCP
Provide warning if L2 table is getting full
Display Average Bandwidth and Allow Sorting on Physical Port / Interface Traffic
System alias command
SNMP v3 traps
Automation Stitches



## Features

ALL FORTISWITCH MODELS
<b>RFC and MIB Support*</b>
<b>BFD</b>
RFC 5880: Bidirectional Forwarding Detection (BFD)
RFC 5881: Bidirectional Forwarding Detection (BFD) for IPv4 and IPv6 (Single Hop)
RFC 5882: Generic Application of Bidirectional Forwarding Detection (BFD)
<b>BGP</b>
RFC 1771: A Border Gateway Protocol 4 (BGP-4)
RFC 1965: Autonomous System Confederations for BGP
RFC 1997: BGP Communities Attribute
RFC 2545: Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
RFC 2796: BGP Route Reflection – An Alternative to Full Mesh IBGP
RFC 2842: Capabilities Advertisement with BGP-4
RFC 2858: Multiprotocol Extensions for BGP-4
RFC 4271: BGP-4
RFC 6286: Autonomous-System-Wide Unique BGP Identifier for BGP-4
RFC 6608: Subcodes for BGP Finite State Machine Error
RFC 6793: BGP Support for Four-Octet Autonomous System (AS) Number Space
RFC 7606: Revised Error Handling for BGP UPDATE Messages
RFC 7607: Codification of AS 0 Processing
RFC 7705: Autonomous System Migration Mechanisms and Their Effects on the BGP AS_PATH Attribute
RFC 8212: Default External BGP (EBGP) Route Propagation Behavior without Policies
RFC 8654: Extended Message Support for BGP
<b>DHCP</b>
RFC 2131: Dynamic Host Configuration Protocol
RFC 3046: DHCP Relay Agent Information Option
RFC 7513: Source Address Validation Improvement (SAVI) Solution for DHCP
<b>IP/IPv4</b>
RFC 2697: A Single Rate Three Color Marker
RFC 3168: The Addition of Explicit Congestion Notification (ECN) to IP
RFC 5227: IPv4 Address Conflict Detection
RFC 5517: Cisco Systems' Private VLANs: Scalable Security in a Multi-Client Environment
RFC 7039: Source Address Validation Improvement (SAVI) Framework
<b>IP Multicast</b>
RFC 2362: Protocol Independent Multicast-Sparse Mode (PIM-SM): Protocol Specification
RFC 2710: Multicast Listener Discovery (MLD) for IPv6 (MLDv1)
RFC 4541: Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches
RFC 4605: Internet Group Management Protocol (IGMP)/Multicast Listener Discovery (MLD)-Based Multicast Forwarding ("IGMP/MLD Proxying")
RFC 4607: Source-Specific Multicast for IP

ALL FORTISWITCH MODELS
<b>RFC and MIB Support*</b>
<b>IPv6</b>
RFC 2464: Transmission of IPv6 Packets over Ethernet Networks: Transmission of IPv6 Packets over Ethernet Networks
RFC 2474: Definition of the Differentiated Services Field (DS Field) in the and IPv6 Headers (DSCP)
RFC 2893: Transition Mechanisms for IPv6 Hosts and Routers
RFC 4213: Basic Transition Mechanisms for IPv6 Hosts and Router
RFC 4291: IP Version 6 Addressing Architecture
RFC 4443: Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
RFC 4861: Neighbor Discovery for IP version 6 (IPv6)
RFC 4862: IPv6 Stateless Address Auto configuration
RFC 5095: Deprecation of Type 0 Routing Headers in IPv6
RFC 6724: Default Address Selection for Internet Protocol version 6 (IPv6)
RFC 7113: IPv6 RA Guard
RFC 8200: Internet Protocol, Version 6 (IPv6) Specification
RFC 8201: Path MTU Discovery for IP version 6
<b>IS-IS</b>
RFC 1195: Use of OSI IS-IS for Routing in TCP/IP and Dual Environments
RFC 5308: Routing IPv6 with IS-IS
<b>MIB</b>
RFC 1213: MIB II parts that apply to FortiSwitch 100 units
RFC 1354: IP Forwarding Table MIB
RFC 1493: Bridge MIB
RFC 1573: SNMP MIB II
RFC 1643: Ethernet-like Interface MIB
RFC 1724: RIPv2-MIB
RFC 1850: OSPF Version 2 Management Information Base
RFC 2233: The Interfaces Group MIB using SMIPv2
RFC 2618: Radius-Auth-Client-MIB
RFC 2620: Radius-Acc-Client-MIB
RFC 2665: Definitions of Managed Objects for the Ethernet-like Interface Types
RFC 2674: Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN extensions
RFC 2787: Definitions of Managed Objects for the Virtual Router Redundancy Protocol
RFC 2819: Remote Network Monitoring Management Information Base
RFC 2863: The Interfaces Group MIB
RFC 2932: IPv4 Multicast Routing MIB
RFC 2934: Protocol Independent Multicast MIB for IPv4
RFC 3289: Management Information Base for the Differentiated Services Architecture
RFC 3433: Entity Sensor Management Information Base
RFC 3621: Power Ethernet MIB
RFC 6933: Entity MIB (Version 4)

\* RFC and MIB supported by FortiSwitch Operating System. Check FortiSwitch Feature Matrix for model specific support.



## Features

### ALL FORTISWITCH MODELS

#### RFC and MIB Support\*

##### OSPF

RFC 1583: OSPF version 2
RFC 1765: OSPF Database Overflow
RFC 2328: OSPF version 2
RFC 2370: The OSPF Opaque LSA Option
RFC 2740: OSPF for IPv6
RFC 3101: The OSPF Not-So-Stubby Area (NSSA) Option
RFC 3137: OSPF Stub Router Advertisement
RFC 3623: OSPF Graceful Restart
RFC 5340: OSPF for IPv6 (OSPFv3)
RFC 5709: OSPFv2 HMAC-SHA Cryptographic Authentication
RFC 6549: OSPFv2 Multi-Instance Extensions
RFC 6845: OSPF Hybrid Broadcast and Point-to-Multipoint Interface Type
RFC 6860: Hiding Transit-Only Networks in OSPF
RFC 7474: Security Extension for OSPFv2 When Using Manual Key Management
RFC 7503: OSPF for IPv6
RFC 8042: CCITT Draft Recommendation T.4
RFC 8362: OSPFv3 Link State Advertisement (LSA) Extensibility

##### OTHER

RFC 2030: SNTP
RFC 3176: InMon Corporation's sFlow: A Method for Monitoring Traffic in Switched and Routed Networks
RFC 3768: VRRP
RFC 3954: Cisco Systems NetFlow Services Export Version 9
RFC 5101: Specification of the IP Flow Information Export (IPFIX) Protocol for the Exchange of Flow Information
RFC 5798: VRRPv3 (IPv4 and IPv6)

### ALL FORTISWITCH MODELS

#### RFC and MIB Support\*

##### RADIUS

RFC 2865: Admin Authentication Using RADIUS
RFC 2866: RADIUS Accounting
RFC 4675: RADIUS Attributes for Virtual LAN and Priority Support
RFC 5176: Dynamic Authorization Extensions to Remote Authentication Dial In User Service (RADIUS)

##### RIP

RFC 1058: Routing Information Protocol
RFC 2080: RIPng for IPv6
RFC 2082: RIP-2 MD5 Authentication
RFC 2453: RIPv2
RFC 4822: RIPv2 Cryptographic Authentication

##### SNMP

RFC 1157: SNMPv1/v2c
RFC 2571: Architecture for Describing SNMP
RFC 2572: SNMP Message Processing and Dispatching
RFC 2573: SNMP Applications
RFC 2576: Coexistence between SNMP versions

\* RFC and MIB supported by FortiSwitch Operating System. Check FortiSwitch Feature Matrix for model specific support.



## Specifications

	FORTISWITCH-424E-FIBER	FORTISWITCH-M426E-FPOE
<b>Hardware Specifications</b>		
Total Network Interfaces	24x GE SFP and 4x 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	16x GE RJ45, 8x 2.5 GE RJ45 ports, 2x 5 GE RJ45, and 4x 10 GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP
Dedicated Management 10/100 Port	1	1
RJ-45 Serial Console Port	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	N/A	24 [16x 802.3af/at, 8x 802.3af/at/UPOE (60W)]
PoE Power Budget	N/A	420 W
Mean Time Between Failures	> 10 years	> 10 years
<b>System Specifications</b>		
Switching Capacity (Duplex)	128 Gbps	172 Gbps
Packets Per Second (Duplex)	204 Mpps	255 Mpps
MAC Address Storage	32 K	16 K
Network Latency	< 1μs	< 1μs
VLANs Supported	4 K	4 K
Link Aggregation Group Size	8	8
Total Link Aggregation Groups	Up to number of ports	Up to number of ports
Packet Buffers	4 MB	2 MB
Memory	1 GB DDR4	1 GB DDR4
Flash	256 MB	256 MB
ACL	1.5k	1k
Spanning Tree Instances	16	16
Route Entries (IPv4)	16k	1000
Host Entries	16k	5k
<b>Dimensions</b>		
Height x Depth x Width (inches)	1.75 x 7.87 x 17.3	1.73 x 16.14 x 17.3
Height x Depth x Width (mm)	44 x 200 x 440	44 x 410 x 440
Weight	5.62 lbs (2.55 kg)	13.00 lbs (5.9 kg)
<b>Environment</b>		
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC built in	AC built in
Redundant Power	Redundant AC	Redundant AC
Power Consumption* (Average / Maximum)	36 W / 38 W	441 W / 442 W
Heat Dissipation	132.5 BTU/h	132.734 BTU/h
Operating Temperature	32°–122°F (0°–50°C)	32°–122°F (0°–50°C)
Storage Temperature	-4°–158°F (-20°–70°C)	-4°–158°F (-20°–70°C)
Humidity	5%–95% non-condensing	5%–95% non-condensing
Air-Flow Direction	side-to-back	side-to-back
Noise Level	32.8 dBA	35 dBA
<b>Certification and Compliance</b>		
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
<b>Warranty</b>		
Fortinet Warranty	Limited lifetime** warranty on all models	

\* POE models power consumption is similar to non-POE model if POE is not in use

\*\* Fortinet Warranty Policy: <http://www.fortinet.com/doc/legal/EULA.pdf>



FortiSwitch 424E-Fiber



FortiSwitch M426E-FPOE



## Specifications

	FORTISWITCH 424E	FORTISWITCH 424E-POE	FORTISWITCH 424E-FPOE
<b>Hardware Specifications</b>			
<b>Total Network Interfaces</b>	24x GE RJ45 and 4x10 GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	24x GE RJ45 and 4x10 GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	24x GE RJ45 and 4x10 GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP
<b>Dedicated Management 10/100 Port</b>	1	1	1
<b>RJ-45 Serial Console Port</b>	1	1	1
<b>Form Factor</b>	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
<b>Power over Ethernet (PoE) Ports</b>	—	24 (802.3af/at)	24 (802.3af/at)
<b>PoE Power Budget</b>	N/A	250 W	421 W
<b>Mean Time Between Failures</b>	> 10 years	> 10 years	> 10 years
<b>System Specifications</b>			
<b>Switching Capacity (Duplex)</b>	128 Gbps	128 Gbps	128 Gbps
<b>Packets Per Second (Duplex)</b>	204 Mpps	204 Mpps	204 Mpps
<b>MAC Address Storage</b>	16 K	16 K	16 K
<b>Network Latency</b>	< 1µs	< 1µs	< 1µs
<b>VLANS Supported</b>	4 K	4 K	4 K
<b>Link Aggregation Group Size</b>	8	8	8
<b>Total Link Aggregation Groups</b>	Up to number of ports	Up to number of ports	Up to number of ports
<b>Packet Buffers</b>	2 MB	2 MB	2 MB
<b>Memory</b>	1 GB DDR4	1 GB DDR4	1 GB DDR4
<b>Flash</b>	256 MB	256 MB	256 MB
<b>ACL</b>	1k	1k	1k
<b>Spanning Tree Instances</b>	16	16	16
<b>Route Entries (IPv4)</b>	1000	1000	1000
<b>Host Entries</b>	5k	5k	5k
<b>Dimensions</b>			
<b>Height x Depth x Width (inches)</b>	1.75 × 10.23 × 17.3	1.75 × 16.14 × 17.3	1.75 × 16.14 × 17.3
<b>Height x Depth x Width (mm)</b>	44 × 260 × 440	44 × 410 × 440	44 × 410 × 440
<b>Weight</b>	6.83 lbs (3.1 kg)	11.57 lbs (5.25 kg)	12.72 lbs (5.77 kg)
<b>Environment</b>			
<b>Power Required</b>	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
<b>Power Supply</b>	AC built in	AC built in	AC built in
<b>Redundant Power</b>	Redundant AC	Redundant AC	Redundant AC
<b>Power Consumption* (Average / Maximum)</b>	22.3 W / 23.6 W	281.3 W / 283.5 W	431.2 W / 433.7 W
<b>Heat Dissipation</b>	76.04 BTU/h	102.64 BTU/h	117.2 BTU/h
<b>Operating Temperature</b>	32°–122°F (0°–50°C)	32°–122°F (0°–50°C)	32°–122°F (0°–50°C)
<b>Storage Temperature</b>	-40°–158°F (-40°–70°C)	-4°–158°F (-40°–70°C)	-40°–158°F (-40°–70°C)
<b>Humidity</b>	5%–95% non-condensing	5%–95% non-condensing	5%–95% non-condensing
<b>Air-Flow Direction</b>	side-to-back	side-to-back	side-to-back
<b>Noise Level</b>	32.3 dBA	31.8 dBA	30.9 dBA
<b>Certification and Compliance</b>			
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2		
<b>Warranty</b>			
<b>Fortinet Warranty</b>	Limited lifetime** warranty on all models		

\* POE models power consumption is similar to non-POE model if POE is not in use

\*\* Fortinet Warranty Policy: <http://www.fortinet.com/doc/legal/EULA.pdf>



FortiSwitch 424E



FortiSwitch 424E-POE



FortiSwitch 424E-FPOE



## Specifications

	FORTISWITCH 448E	FORTISWITCH 448E-POE	FORTISWITCH 448E-FPOE
<b>Hardware Specifications</b>			
<b>Total Network Interfaces</b>	48x GE RJ45 and 4x 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	48x GE RJ45 and 4x 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	48x GE RJ45 and 4x 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP
<b>Dedicated Management 10/100 Port</b>	1	1	1
<b>RJ-45 Serial Console Port</b>	1	1	1
<b>Form Factor</b>	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
<b>Power over Ethernet (PoE) Ports</b>	—	48 (802.3af/at)	48 (802.3af/at)
<b>PoE Power Budget</b>	—	421 W	772 W
<b>Mean Time Between Failures</b>	> 10 years	> 10 years	> 10 years
<b>System Specifications</b>			
<b>Switching Capacity (Duplex)</b>	176 Gbps	176 Gbps	176 Gbps
<b>Packets Per Second (Duplex)</b>	262 Mpps	262 Mpps	262 Mpps
<b>MAC Address Storage</b>	32 K	32 K	32 K
<b>Network Latency</b>	<1µs	<1µs	<1µs
<b>VLANS Supported</b>	4 K	4 K	4 K
<b>Link Aggregation Group Size</b>	8	8	8
<b>Total Link Aggregation Groups</b>	Up to number of ports	Up to number of ports	Up to number of ports
<b>Packet Buffers</b>	4 MB	4 MB	4 MB
<b>Memory</b>	1GB DDR4	1GB DDR4	1GB DDR4
<b>Flash</b>	256 MB	256 MB	256 MB
<b>ACL</b>	1.5k	1.5k	1.5k
<b>Spanning Tree Instances</b>	16	16	16
<b>Route Entries (IPv4)</b>	16k	16k	16k
<b>Host Entries</b>	16k	16k	16k
<b>Dimensions</b>			
<b>Height x Depth x Width (inches)</b>	1.75 × 12.2 × 17.3	1.73 × 16.1 × 17.3	1.73 × 16.1 × 17.3
<b>Height x Depth x Width (mm)</b>	44 × 310 × 440	44 × 410 × 440	44 × 410 × 440
<b>Weight</b>	9.17 lbs (4.16 kg)	13.8 lbs (6.26 kg)	14.04 lbs (6.37 kg)
<b>Environment</b>			
<b>Power Required</b>	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
<b>Power Supply</b>	AC built in	AC built in	AC built in
<b>Redundant Power</b>	Redundant AC	Redundant AC	Redundant AC
<b>Power Consumption* (Average / Maximum)</b>	46.5 W / 47.81 W	440.12 W / 442.234 W	921.4 W / 923.6 W
<b>Heat Dissipation</b>	163.032 BTU/h	163.066 BTU/h	163.1 BTU/h
<b>Operating Temperature</b>	32°–122°F (0°–50°C)	32°–122°F (0°–50°C)	32°–122°F (0°–50°C)
<b>Storage Temperature</b>	-4°–158°F (-20°–70°C)	-4°–158°F (-20°–70°C)	-4°–158°F (-20°–70°C)
<b>Humidity</b>	10%–90% non condensing	10%–90% non condensing	10%–90% non condensing
<b>Air-Flow Direction</b>	side-to-back	side-to-back	side-to-back
<b>Noise Level</b>	35.5 dBA	38.3 dBA	50.7 dBA
<b>Certification and Compliance</b>			
FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2			
<b>Warranty</b>			
<b>Fortinet Warranty</b>	Limited Lifetime** warranty on all models		

\* POE models power consumption is similar to non-POE model if POE is not in use

\*\* Fortinet Warranty Policy: <http://www.fortinet.com/doc/legal/EULA.pdf>



FortiSwitch 448E



FortiSwitch 448E-POE



FortiSwitch 448E-FPOE



## Specifications

	FORTISWITCH 524D	FORTISWITCH 524D-FPOE
<b>Hardware Specifications</b>		
<b>Total Network Interfaces</b>	24 GE/RJ45 ports, 4× 10 GE SFP+ ports and 2× 40 GE QSFP+ Note: SFP+ ports are compatible with 1G SFP	24 GE/RJ45 ports, 4× 10 GE SFP+ ports and 2× 40 GE QSFP+ Note: SFP+ ports are compatible with 1G SFP
Dedicated Management 10/100/1000 Ports	1	1
RJ-45 Serial Console Port	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	N/A	24 (802.3af/at)
PoE Power Budget (single/dual PSU)	N/A	400 W / 720 W
Mean Time Between Failures	> 10 years	> 10 years
<b>System Specifications</b>		
Switching Capacity (Duplex)	288 Gbps	288 Gbps
Packets Per Second (Duplex)	428 Mpps	428 Mpps
MAC Address Storage	36 K	36 K
Network Latency	< 2µs	< 2µs
VLANs Supported	4 K	4 K
Link Aggregation Group Size	24	24
Total Link Aggregation Groups	Up to number of ports	Up to number of ports
Packet Buffers	4 MB	4 MB
Memory	2 GB DDR3	2 GB DDR3
Flash	128 MB	128 MB
ACL	1k	1k
Spanning Tree Instances	32	32
Route Entries (IPv4)	16k	16k
Multicast Route Entries	8k	8k
Host Entries	16k	16k
<b>Dimensions</b>		
Height x Depth x Width (inches)	1.75 × 13.8 × 17.3	1.75 × 13.8 × 17.3
Height x Depth x Width (mm)	44 × 350 × 439	44 × 350 × 439
Weight	13.6 lbs (6.2 kg)	15.74 lbs (7.14 kg)
<b>Environment</b>		
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	150 W AC PSU*	600 W AC PSU*
Redundant Power	Optional FS-PSU-150*	Optional FS-PSU-600*
Power Consumption** (Average / Maximum)	73 W / 75 W	570 W / 579 W (full PoE load for single power supply)
Heat Dissipation	247 BTU/h	296 BTU/h (full PoE load for single power supply)
Operating Temperature	32°–113°F (0°–45°C)	32°–113°F (0°–45°C)
Storage Temperature	-40°–158°F (-40°–70°C)	-40°–158°F (-40°–70°C)
Humidity	5%–95% non-condensing	5%–95% non-condensing
Air-Flow Direction	front-to-back	front-to-back
Noise Level	57.3 dBA	57.3 dBA
<b>Certification and Compliance</b>		
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2
<b>Warranty</b>		
Fortinet Warranty	Limited lifetime*** warranty on all models	Limited lifetime*** warranty on all models

\*FS-524D, FS-524D-FPOE, FS-548D, FS-548D-FPOE Power Supply Units are Hot-Swappable.

\*\* POE models power consumption is similar to non-POE model if POE is not in use

\*\*\* Fortinet Warranty Policy: <http://www.fortinet.com/doc/legal/EULA.pdf>



FortiSwitch 524D



FortiSwitch 524D-FPOE



## Specifications

	FORTISWITCH 548D	FORTISWITCH 548D-FPOE
<b>Hardware Specifications</b>		
<b>Total Network Interfaces</b>	48x GE/RJ45 ports, 4x 10 GE SFP+ ports and 2x 40 GE QSFP+ Note: SFP+ ports are compatible with 1G SFP	48x GE/RJ45 ports, 4x 10 GE SFP+ ports and 2x 40 GE QSFP+ Note: SFP+ ports are compatible with 1G SFP
Dedicated Management 10/100/1000 Ports	1	1
RJ-45 Serial Console Port	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	N/A	48 (802.3af/at)
PoE Power Budget (single/dual PSU)	N/A	750 W / 1440 W
Mean Time Between Failures	> 10 years	> 10 years
<b>System Specifications</b>		
Switching Capacity (Duplex)	336 Gbps	336 Gbps
Packets Per Second (Duplex)	512 Mpps	512 Mpps
MAC Address Storage	36 K	36 K
Network Latency	< 2μs	< 2μs
VLANs Supported	4 K	4 K
Link Aggregation Group Size	48	48
Total Link Aggregation Groups	Up to number of ports	Up to number of ports
Packet Buffers	4 MB	4 MB
Memory	2 GB DDR3	2 GB DDR3
Flash	128 MB	128 MB
ACL	1k	1k
Spanning Tree Instances	32	32
Route Entries (IPv4)	16k	16k
Multicast Route Entries	8k	8k
Host Entries	16k	16k
<b>Dimensions</b>		
Height x Depth x Width (inches)	1.75 x 13.8 x 17.3	1.75 x 13.8 x 17.3
Height x Depth x Width (mm)	44 x 350 x 439	44 x 350 x 439
Weight	14.1 lbs (6.4 kg)	15.74 lbs (7.14 kg)
<b>Environment</b>		
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	150 W AC PSU*	920 W AC PSU*
Redundant Power	Optional FS-PSU-150*	Optional FS-PSU-920*
Power Consumption** (Average / Maximum)	74 W / 77 W	925 W / 961 W (full PoE load for single power supply)
Heat Dissipation	252 BTU/h	318 BTU/h (full PoE load for single power supply)
Operating Temperature	32°–113°F (0°–45°C)	32°–113°F (0°–45°C)
Storage Temperature	-40°–158°F (-40°–70°C)	-40°–158°F (-40°–70°C)
Humidity	5%–95% non-condensing	5%–95% non-condensing
Air-Flow Direction	front-to-back	front-to-back
Noise Level	57.3 dBA	57.3 dBA
<b>Certification and Compliance</b>		
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2
<b>Warranty</b>		
Fortinet Warranty	Limited lifetime*** warranty on all models	Limited lifetime*** warranty on all models

\*FS-524D, FS-524D-FPOE, FS-548D, FS-548D-FPOE Power Supply Units are Hot-Swappable.

\*\* POE models power consumption is similar to non-POE model if POE is not in use

\*\*\* Fortinet Warranty Policy: <http://www.fortinet.com/doc/legal/EULA.pdf>



FortiSwitch 548D



FortiSwitch 548D-FPOE





## Specifications

	FORTISWITCH 624F	FORTISWITCH 624F-FPOE
<b>Hardware Specifications</b>		
Total Network Interfaces	24× 1GE/2.5GE/5GE RJ45 ports and 4× 10GE/25GE SFP+/SFP28 ports	24× 1GE/2.5GE/5GE RJ45 ports and 4× 10GE/25GE SFP+/SFP28 ports
Dedicated Management 10/100/1000 Ports	1	1
RJ-45 Serial Console Port	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	—	24 (802.3 af/at/bt type 4)
PoE Power Budget	—	1440 W
Mean Time Between Failures	> 10 years	> 10 years
<b>System Specifications</b>		
Switching Capacity (Duplex)	440 Gbps	440 Gbps
Packets Per Second (Duplex)	654 Mpps	654 Mpps
MAC Address Storage	64 k	64 k
Network Latency	<1µs	<1µs
VLANs Supported	4 k	4 k
Link Aggregation Group Size	28	28
Total Link Aggregation Groups	Up to number of ports	Up to number of ports
Packet Buffers	8 MB	8 MB
Memory	4GB DDR4	4GB DDR4
Flash	32 MB	32 MB
Drive	32G SSD	32G SSD
ACL	36k	36k
Spanning Tree Instances	32	32
Route Entries (IPv4)	16 k	16 k
Host Entries (IPv4)	192 k	192 k
Multicast route entries	12 k	12 k
<b>Dimensions</b>		
Height x Depth x Width (inches)	1.75 × 13.8 × 17.3	1.75 × 13.8 × 17.3
Height x Depth x Width (mm)	44 × 350 × 440	44 × 350 × 440
Weight (kg)	6.925	7.407
<b>Environment</b>		
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Consumption (Maximum)	240W	1680W
Power Supply	2× 350W	2× 1200W
Redundant Power	Dual hot swappable AC	Dual hot swappable AC
Heat Dissipation	423 BTU/h	969 BTU/h
Operating Temperature	32°–113°F (0°–45°C)	32°–113°F (0°–45°C)
Storage Temperature	–40°–158°F (–40°–70°C)	–40°–158°F (–40°–70°C)
Humidity	5%–95% RH non-condensing	5%–95% RH non-condensing
Air-Flow Direction	front-to-back	front-to-back
Noise Level	54.88 dBA	54.88 dBA
<b>Certification and Compliance</b>		
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2
<b>Warranty</b>		
Fortinet Warranty	Limited lifetime** warranty on all models	

\*\* Fortinet Warranty Policy <http://www.fortinet.com/doc/legal/EULA.pdf>



## Specifications

	FORTISWITCH 648F	FORTISWITCH 648F-FPOE
<b>Hardware Specifications</b>		
Total Network Interfaces	32× 1GE/2.5GE, 16× 1GE/2.5GE/5GE RJ45 ports and 8× 10GE/25GE SFP+/SFP28 ports	32× 1GE/2.5GE, 16× 1GE/2.5GE/5GE RJ45 ports and 8× 10GE/25GE SFP+/SFP28 ports
Dedicated Management 10/100/1000 Ports	1	1
RJ-45 Serial Console Port	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	—	48 (802.3 af/at/bt type 4)
PoE Power Budget	—	1800 W
Mean Time Between Failures	> 10 years	> 10 years
<b>System Specifications</b>		
Switching Capacity (Duplex)	720 Gbps	720 Gbps
Packets Per Second (Duplex)	1071 Mpps	1071 Mpps
MAC Address Storage	64 k	64 k
Network Latency	<1µs	<1µs
VLANs Supported	4 k	4 k
Link Aggregation Group Size	56	56
Total Link Aggregation Groups	Up to number of ports	Up to number of ports
Packet Buffers	8 MB	8 MB
Memory	4GB DDR4	4GB DDR4
Flash	32 MB	32 MB
Drive	32G SSD	32G SSD
ACL	36k	36k
Spanning Tree Instances	32	32
Route Entries (IPv4)	16 k	16 k
Host Entries (IPv4)	192 k	192 k
Multicast route entries	12 k	12 k
<b>Dimensions</b>		
Height x Depth x Width (inches)	1.75 × 13.8 × 17.3	1.75 × 13.8 × 17.3
Height x Depth x Width (mm)	44 × 350 × 440	44 × 350 × 440
Weight (kg)	7.149	7.834
<b>Environment</b>		
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Consumption (Maximum)	300W	2100W
Power Supply	2× 350W	2× 1200W
Redundant Power	Dual hot swappable AC	Dual hot swappable AC
Heat Dissipation	590 BTU/h	1272 BTU/h
Operating Temperature	32°–113°F (0°–45°C)	32°–113°F (0°–45°C)
Storage Temperature	–40°–158°F (–40°–70°C)	–40°–158°F (–40°–70°C)
Humidity	5%–95% RH non-condensing	5%–95% RH non-condensing
Air-Flow Direction	front-to-back	front-to-back
Noise Level	57.97 dBA	57.97 dBA
<b>Certification and Compliance</b>		
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2
<b>Warranty</b>		
Fortinet Warranty	Limited lifetime** warranty on all models	

\*\* Fortinet Warranty Policy <http://www.fortinet.com/doc/legal/EULA.pdf>



## Ordering Information

Product	SKU	Description
<b>FortiSwitch Models</b>		
FortiSwitch 424E-Fiber	FS-424E-Fiber	Layer 2/3 FortiGate switch controller compatible switch with 24x GE SFP and 4x 10 GE SFP+ Uplinks
FortiSwitch M426E-FPOE	FS-M426E-FPOE	Layer 2/3 FortiGate switch controller compatible switch with 16x GE RJ45 PoE 802.3af/at, 8x 2.5 RJ45 PoE 802.3af/at/UPOE (60W), 2x 5 GE RJ45 and 4x 10 GE SFP+, with maximum 420 W PoE limit.
FortiSwitch 424E	FS-424E	Layer 2/3 FortiGate switch controller compatible switch with 24 GE RJ45, 4x 10 GE SFP + ports.
FortiSwitch 424E-POE	FS-424E-POE	Layer 2/3 FortiGate switch controller compatible switch with 24 GE RJ45, 4x 10 GE SFP + ports, 24 port PoE+ with maximum 283.5 W limit.
FortiSwitch 424E-FPOE	FS-424E-FPOE	Layer 2/3 FortiGate switch controller compatible switch with 24 GE RJ45, 4x 10 GE SFP + ports, 24 port PoE+ with maximum 433.7 W limit.
FortiSwitch 448E	FS-448E	Layer 2/3 FortiGate switch controller compatible switch with 48 GE RJ45, 4x 10 GE SFP + ports.
FortiSwitch 448E-POE	FS-448E-POE	Layer 2/3 FortiGate switch controller compatible switch with 48 GE RJ45, 4x 10 GE SFP + ports, 48 port PoE+ with maximum 421 W limit.
FortiSwitch 448E-FPOE	FS-448E-FPOE	Layer 2/3 FortiGate switch controller compatible switch with 48 GE RJ45, 4x 10 GE SFP + ports, 48 port PoE+ with maximum 772 W limit.
FortiSwitch 524D	FS-524D	Layer 2/3 FortiGate switch controller compatible switch with 24 GE RJ45, 4x 10 GE SFP+ and 2x 40 GE QSFP+ ports.
FortiSwitch 524D-FPOE	FS-524D-FPOE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45, 4x 10 GE SFP+, 2x 40 GE QSFP+ ports, 24 port PoE with maximum 400 W limit.
FortiSwitch 548D	FS-548D	Layer 2/3 FortiGate switch controller compatible switch with 48 GE RJ45, 4x 10 GE SFP+ and 2x 40 GE QSFP+ ports.
FortiSwitch 548D-FPOE	FS-548D-FPOE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 48 GE RJ45, 4x 10 GE SFP+ and 2x 40 GE QSFP+ ports, 48 port PoE with maximum 750 W limit.
FortiSwitch 624F	FS-624F	Layer 2/3 FortiGate switch controller compatible switch with 24x 5G RJ45 ports, 4x 25G SFP28 and MACSec
FortiSwitch 624F-FPOE	FS-624F-FPOE	Layer 2/3 FortiGate switch controller compatible PoE 802.3bt switch with 24x 5G RJ45 ports, 4x 25G SFP28 and MACSec. Max 1400W POE output limit
FortiSwitch 648F	FS-648F	Layer 2/3 FortiGate switch controller compatible switch with 32x 2.5G RJ45 + 16x 5G RJ45 ports, 8x 25G SFP28 and MACSec
FortiSwitch 648F-FPOE	FS-648F-FPOE	Layer 2/3 FortiGate switch controller compatible PoE 802.3bt switch with 32x 2.5G RJ45 + 16x 5G RJ45 ports, 8x 25G SFP28 and MACSec. Max 1800W POE output limit



## Ordering Information

Product	SKU	Description
<b>Licenses</b>		
<b>FortiLAN Cloud Management License*</b>	FC-10-FSW10-628-02-DD	FortiSwitch 200-400 Series (incl all FSW Rugged Models) FortiLAN Cloud Management SKU Including Forticare 24x7. (Note, FortiCare only applicable when used with FortiLAN Cloud)
	FC-10-FSW20-628-02-DD	FortiSwitch 500-900 Series FortiLAN Cloud Management SKU Including Forticare 24x7. (Note, FortiCare only applicable when used with FortiLAN Cloud)
<b>FortiSwitch Manager Subscription License</b>	FC1-10-SWMVM-258-01-DD	Subscription license for 10 FortiSwitch Units managed by FortiSwitchManager VM. 24x7 FortiCare support (for FSWM VM) included.
	FC2-10-SWMVM-258-01-DD	Subscription license for 100 FortiSwitch Units managed by FortiSwitchManager VM. 24x7 FortiCare support (for FSWM VM) included.
	FC3-10-SWMVM-258-01-DD	Subscription license for 1000 FortiSwitch Units managed by FortiSwitchManager VM. 24x7 FortiCare support (for FSWM VM) included.
<b>FortiSwitch Advanced Features License</b>	FS-SW-LIC-400	SW License for FS-400 Series Switches to activate Advanced Features.
	FS-SW-LIC-500	SW License for FS-500 Series Switches to activate Advanced Features.
	FS-SW-LIC-600	SW License for FS-600 Series Switches to activate Advanced Features.
<b>Accessories</b>		
<b>Redundant AC Power Supply</b>	FS-PSU-150	AC power supply for FS-548D and FS-524D.
	FS-PSU-600	AC power supply for FS-524D-FPOE.**
	FS-PSU-920	AC power supply for FS-548D-FPOE.**

\* When managing a FortiSwitch with a FortiGate via FortiGate Cloud, no additional license is necessary.

\*\* Provides additional PoE capacity.

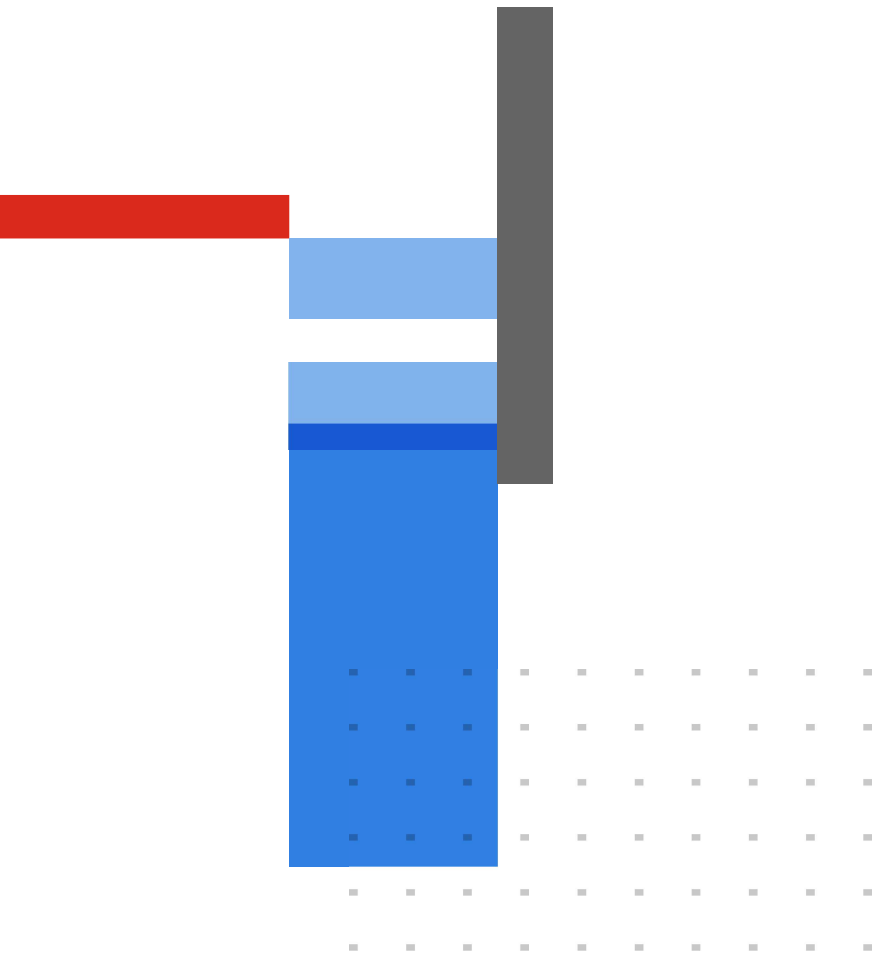
For details of Transceiver modules, see the [Fortinet Transceivers datasheet](#).

Note that all PoE FortiSwitches are Alternative-A.

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