West Virginia Purchasing Division

2019 Washington Street, East
Charleston, WV 25305
Telephone: 304-558-2306
General Fax: 304-558-6026
Bid Fax: 304-558-3970

The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at *wvOASIS.gov*. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at *WVPurchasing.gov* with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Welcome, Robert M Ross

Solicitation Response(SR) Dept: 0932 ID: ESR06082200000007732 Ver.: 1 Function: New Phase: Final Modified by batch , 06/09/2022

Header 🔗 5

List View

General Information | Contact | Default Values | Discount | Document Information | Clarification Request

Procurement Folder: 1028144

Procurement Type: Central Purchase Order

Vendor ID: VS0000038455

Legal Name: MXN CORPORATION

Alias/DBA:

Total Bid: $68,859.00

Response Date: 06/08/2022

Response Time: 14:44

Responded By User ID: insidesales

First Name: Shari

Last Name: Gayda

Email: insidesales@mxncorp.co

Phone: 770-926-1884

SO Doc Code: CRFQ

SO Dept: 0932

SO Doc ID: DRS2200000012

Published Date: 6/2/22

Close Date: 6/9/22

Close Time: 13:30

Status: Closed

Solicitation Description: Addendum No. 2 - Network Switches and Related Equipment

Total of Header Attachments: 5

Total of All Attachments: 5

Proc Folder:	1028144
Solicitation Description:	Addendum No. 2 - Network Switches and Related Equipment
Proc Type:	Central Purchase Order

Solicitation Closes	**Solicitation Response**	**Version**
2022-06-09 13:30	SR 0932 ESR06082200000007732	1

VENDOR
VS0000038455 MXN CORPORATION

Solicitation Number:	CRFQ 0932 DRS2200000012				
Total Bid:	68859	**Response Date:**	2022-06-08	**Response Time:**	14:44:09
Comments:					

FOR INFORMATION CONTACT THE BUYER
Toby L Welch
(304) 558-8802
toby.l.welch@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	48 PORT POE SWITCH, EXTREME NETWORKS, OR EQUAL	12.00000	EA	1236.000000	14832.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: FortiSwitch-148F-FPOE
L2+ management switch with 48x GE port + 4x SFP+ port + 1x RJ45 console

Extended Description:

X440-G2 X440-G248p-10GE

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	24 PORT POE SWITCH, EXTREME NETWORKS, OR EQUAL	15.00000	EA	790.000000	11850.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: FortiSwitch-124F-FPOE
L2+ managed POE switch with 24GE + 4SFP+,
24port POE with max 370W limit and smart fan
temperature control

Extended Description:

X440-G2 X440-G224p-10GE

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	1000BSX SFP MINI-GBIC TRANCEIVER , EXTREME NETWORKS,OR EQUAL	30.00000	EA	31.000000	930.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: 1GE SFP SX transceiver module

Extended Description:

1Gps - 10051H

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	STANDARD POWER CORD, EXTREME NETWORKS,OR EQUAL	27.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: Included in Fortinet switches

Extended Description:

13A-5601313-U1

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	ISR 4331, CISCO,OR EQUAL	1.00000	EA	2512.000000	2512.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: FortiGate-101F Hardware
22 x GE RJ45 ports (including 2 x WAN ports,
1 x DMZ port, 1 x Mgmt port, 2 x HA ports,
16 x switch ports with 4 SFP port shared media),
4 SFP ports, 2x 10G SFP+ FortiLinks, 480GB onboard
storage, dual power supplies redundancy.

Extended Description:

3GE,2NIM, 1SM,4G FLASH, 4G DRAM,IPB ISR4331/K9

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
6	SOLNSUPP 8X5XNBD,ISR4331, CISCO,OR EQUAL	1.00000	EA	4445.000000	4445.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: Line item consists of two Fortinet parts
FC-10-F101F-928-02-36 and FC-10-F101F-210-02-12
ATP Protection and ND Hardware
Replacement, 3 years

Extended Description:

3GE2NIM1SM4G FLASH 4G D CON-SSSNT-ISR4331K

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
7	ISR4321, CISCO,OR EQUAL	10.00000	EA	328.000000	3280.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: FortiGate-40F
5 x GE RJ45 ports (including , 1 x WAN Port, 4 x Internal Ports)

Extended Description:

2GE, 2NIM, 4G FLASH, 4G DRAM,IPB ISR4321/K9

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
8	STACKING CABLE, EXTREME NETWORKS,OR EQUAL	4.00000	EA	50.000000	200.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: 10GE SFP+ Passive Direct Attach Cable, 1 m

Extended Description:

250084-00 0.5M

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
9	SOLNSUPP 8X5XNBD, CISCO,OR EQUAL	10.00000	EA	889.000000	8890.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: Line item consists of two Fortinet parts
FC-10-0040F-928-02-36 and FC-10-0040F-210-02-12
ATP Protection and ND Hardware
Replacement, 3 years

Extended Description:

ISR4321 2GE2NIM4G FLASH4G D CON-SSSNT-ISR4321K

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
10	ISR 1101 4 PORTS GE ETHERNET WAN ROUTER - C1101-4P	10.00000	EA	698.000000	6980.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: FortiGateRugged-30D
Ruggedized, 4 x GE RJ45 ports,
2 x GE SFP slots, 2x DB9 Serial

Extended Description:

ISR 1101 4 PORTS GE ETHERNET WAN ROUTER - C1101-4P

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
11	SOLNSUPP 8X5XNBD ISR 1101 4 PORTS GE ETHERNET WAN ROUTER	10.00000	EA	1494.000000	14940.00

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: Line item consists of two Fortinet parts
FC-10-R030D-928-02-36 and FC-10-R030D-210-02-12
ATP Protection and ND Hardware
Replacement, 3 years

Extended Description:

CON-SSSNT-CISR1K4P

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
12	IP BASE LICENSE FOR CISCO ISR 1100 4P SERIES-SL-110-4P-IPB	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81112218			

Commodity Line Comments: Included with Fortinet products

Extended Description:

IP BASE LICENSE FOR CISCO ISR 1100 4P SERIES-SL-110-4P-IPB

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
13	1109 M2M POWER SUPPLY ITEMP, OR EQUAL, 30 WATT AC	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: Included with Fortinet products

Extended Description:

PWR-30W-I-AC

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
14	SECURITY LICENSE FOR CISCO, OR EQUAL, ISR 1100 4P SERIES	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81111801			

Commodity Line Comments: Included with Fortinet products

Extended Description:

SL-110-4PC-SEC

June 7, 2022

State of West Virginia Purchasing
2019 Washington St. E
Charleston, WV 25305

Mr. Welch,

We here propose alternatives to your request for Extreme 24- and 48-port PoE switches, gigabit fiber transceivers, stacking cables, and WAN routers/firewalls on solicitation CRFQ 0932 DRS2200000012. The first part merits only a short discussion; the second part deserves more explanation.

The Extreme switches you ask for are--by Extreme's description--edge switches, providing 24 or 48 PoE Layer 2 ports and having four SFP/SFP+ uplink ports.

We propose the Fortinet alternatives, with the same port capacities, PoE budgets, and switching performance. These switches are essentially plug-compatible, come with the same lifetime hardware warranties, and should only be considered if they cost less. (They do have some interesting security features the Extreme switches do not have, and we will discuss these if you want.)

We propose 1 meter DAC instead of the half-meter DAC that you request to stack the switches; this because the shortest Fortinet DAC is 1 meter.

You ask for Cisco ISRs in three capacities: one at the core with a capacity of 100 MBPS, and then ten edge routers with capacities of 35 MBPS (if you choose the regular version) or (if you choose the ruggedized version) 50 MBPS.

We here assume that you are planning to connect ten remote sites to one central (Nitro) site over a public Internet, using secure IPSEC tunnels carved into the Internet capacity of a public or State-affiliated Internet Services Provider (ISP). If that's the case, then the proposed Fortinet firewalls offer much better performance and much better security at a probable lower cost. If you plan to attach these 'routers' directly to straight data network circuits in the ten locations without the benefit of Internet termination and create your own private routed system, then stick with the Cisco routers as requested, and use them as true routers.

Back to the Internet connections: we offer the FortiGate 101F Next-Generation Firewall in lieu of the Cisco ISR4331 as your core 'router'. This firewall has many times the capacity of the Cisco ISR4331, and it also has much better security (Fortinet is, first and foremost, a security company). It comes with 480 GB of flash memory for the storage of statistics, instead of the 4 GB flash memory in

the ISR4331. This firewall (core router) comes with built-in redundant power supplies, which is a good thing to have in your network core. We also offer 24x7 manufacturer-direct support with next business-day hardware replacement, which is superior to the 8x5 Cisco support. We cover it with Fortinet's Advanced Threat Protection (ATP) security license. This firewall comes with twelve local gigabit Ethernet and two 10 gigabit Ethernet ports instead of the three local ports in the Cisco router. These additional local ports allow you to segment your local networks through this firewall, which can protect you against the lateral spread of malware and help protect your servers (if you have them) from attacks over your local networks in Nitro. Refer to the 100F/101F data sheet for more information.

We then offer two alternatives for the ten remote 'routers'--the FortiGate 40F in lieu of the Cisco ISR4321 and then the FortiGate Rugged 30D in lieu of the Cisco 1101. Both have much better security protection, higher throughput and (in the 40F) more local connection capacities. If you want the rugged routers at the edge, then the 30D is the choice, and if the remote environment is more of an office environment, then the 40F is the appropriate alternative. There is also a variant of the 40F with a built-in 3G/4G modem if you plan to use a cellular network for WAN backup.

You may or may not need the PoE and PoE+ that comes with the Cisco ISR 1101, and if you do we will add PoE+ injectors to your choice of edge router. This gives you the ability to pay for power-over-Ethernet on only the ports that need it. We here make a quote for one Fortinet PoE+ injector, and you can buy as many as you need.

You have not asked for implementation assistance. We can provide it if you need that--and even do remote assistance to save money.

There is another benefit to this combination of switches and routers (firewalls), and that's the fact that you are now dealing with one manufacturer, with one management pane of glass, and also that the proposed manufacturer is thoroughly in the security business in addition to providing network equipment. The core router proposed here--the FortiGate 101F--can also manage the switches and you can use it to secure them. This allows you to build one system and learn only one management environment--which, if you get serious about bulking up security, also becomes the managed security environment.

We attach our quote QT104037 so you can better see and understand the alternative we are quoting. We fit these same products into your line item pricing the best we can through the online solicitation response. This quote also includes the POE injector discussed above which you may or may not need.

Thank you for your time. Please reach out to us with any questions.

Very truly yours,

Bob Patrick

mxncorp

Quote

Date	5/26/2022
Quote #	QT104037
Expires	6/25/2022
Project	

Bill To

West Virginia Rehabilitation Division
Post Office Box 50890
Charleston WV 25305

Ship To

West Virginia Dept Rehabilitation
#10 McJunkin Road
Nitro WV 25143

Please submit PO to insidesales@mxncorp.com
or fax to 770-926-9448.
Thank you!

Item	Quantity	Description	Unit Price	Ext Amount	Tax Rate
FS148FFPOE	12	FortiSwitch-148F-FPOE L2+ management switch with 48x GE port + 4x SFP+ port + 1x RJ45 console	$1,236.00	$14,832.00	
FS124FFPOE	15	FortiSwitch-124F-FPOE L2+ managed POE switch with 24GE + 4SFP+, 24port POE with max 370W limit and smart fan temperature control	$790.00	$11,850.00	
FNTRANSX	30	1GE SFP SX transceiver module	$31.00	$930.00	
SPCABLEFSSFP+1	4	10GE SFP+ Passive Direct Attach Cable, 1 m for Systems with SFP+ and SFP/SFP+ slots	$50.00	$200.00	
FG101F	1	FortiGate-101F Hardware	$2,512.00	$2,512.00	
TSSFC10F101F9280236	1	FortiGate-101F Advanced Threat Protection (IPS, Advanced Malware Protection Service, Application Control, and FortiCare Premium), 3 years	$3,680.00	$3,680.00	
TSSFC10F101F2100212	3	FortiGate-101F Next Day Delivery Premium RMA Service (Requires FortiCare Premium or FortiCare Elite), 1 year	$255.00	$765.00	
FG40F	10	FortiGate-40F 5 x GE RJ45 ports (including , 1 x WAN Port, 4 x Internal Ports)	$328.00	$3,280.00	
TSSFC100040F9280236	10	FortiGate-40F Advanced Threat Protection (24x7 FortiCare plus Application Control, IPS and AMP Service), 3 years	$481.00	$4,810.00	
TSSFC100040F2100212	30	FortiGate-40F Next Day Delivery Premium RMA Service (Requires FortiCare Premium or FortiCare Elite), 1 year	$136.00	$4,080.00	

Materials will be billed upon shipment. Labor will be billed as incurred.

All credit card orders will incur a 2% processing fee.

Please visit www.mxncorp.com/services/technical-services-and-support for information on MXN Support Services.

We appreciate your business!

Quote

mxncorp

PMB306
1025 Rose Creek Dr., #620
Woodstock, GA 30189
770-926-1884
www.mxncorp.com
insidesales@mxncorp.com

	Date	5/26/2022
	Quote #	QT104037
	Expires	6/25/2022
	Project	

Item	Quantity	Description	Unit Price	Ext Amount	Tax Rate
FGR30D	10	FortiGateRugged-30D Ruggedized, 4 x GE RJ45 ports, 2 x GE SFP slots, 2x DB9 Serial	$698.00	$6,980.00	
TSSFC10R030D9280236	10	FortiGateRugged-30D Advanced Threat Protection (IPS, Advanced Malware Protection Service, Application Control, and FortiCare Premium), 3 years	$1,023.00	$10,230.00	
TSSFC10R030D2100212	30	FortiGateRugged-30D Next Day Delivery Premium RMA Service (Requires FortiCare Premium or FortiCare Elite), 1 year	$157.00	$4,710.00	
GPI130	1	Optional GPI-130 Gigabit PoE Injector	$99.00	$99.00	

Subtotal		$68,958.00
Tax (%)		$0.00
Total		$68,958.00

Materials will be billed upon shipment. Labor will be billed as incurred.

All credit card orders will incur a 2% processing fee.

Please visit www.mxncorp.com/services/technical-services-and-support for information on MXN Support Services.

We appreciate your business!

	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**

		Reason for Modification:
Proc Folder: 1028144		Addendum No 1 issued to modify the bid opening date
Doc Description: Addendum No. 1 - Network Switches and Related Equipment		
Proc Type: Central Purchase Order		

Date Issued	Solicitation Closes	Solicitation No	Version
2022-05-31	2022-06-09 13:30	CRFQ 0932 DRS2200000012	2

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name : MXN Corporation

Address :   PMB306

Street : 1025 Rose Creek Dr., #620

City :   Woodstock

State : Georgia   **Country :** USA   **Zip :** 30189

Principal Contact :   Bob Patrick

Vendor Contact Phone: 678-324-9256   **Extension:**

FOR INFORMATION CONTACT THE BUYER
Toby L Welch
(304) 558-8802
toby.l.welch@wv.gov

Vendor Signature X _SBPrush_   **FEIN#** 58-2487694   **DATE**   6/7/22

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

ADDITIONAL INFORMATION

Addendum No. 1 is issued for the following reasons:

1) To modify the bid opening date from 6/2/22 to 6/9/22 in order for the agency to have more time to answer questions.

--no other changes--

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	48 PORT POE SWITCH, EXTREME NETWORKS, OR EQUAL	12.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
X440-G2 X440-G248p-10GE

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	24 PORT POE SWITCH, EXTREME NETWORKS, OR EQUAL	15.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
X440-G2 X440-G224p-10GE

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	1000BSX SFP MINI-GBIC TRANCEIVER , EXTREME NETWORKS,OR EQUAL	30.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
1Gps - 10051H

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	STANDARD POWER CORD, EXTREME NETWORKS,OR EQUAL	27.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
13A-5601313-U1

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	ISR 4331, CISCO,OR EQUAL	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
3GE,2NIM, 1SM,4G FLASH, 4G DRAM,IPB ISR4331/K9

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	SOLNSUPP 8X5XNBD,ISR4331, CISCO,OR EQUAL	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
3GE2NIM1SM4G FLASH 4G D CON-SSSNT-ISR4331K

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON　　　WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO　　　WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	ISR4321, CISCO,OR EQUAL	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
2GE, 2NIM, 4G FLASH, 4G DRAM,IPB ISR4321/K9

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON　　　WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO　　　WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
8	STACKING CABLE, EXTREME NETWORKS,OR EQUAL	4.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
250084-00 0.5M

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
9	SOLNSUPP 8X5XNBD, CISCO,OR EQUAL	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
ISR4321 2GE2NIM4G FLASH4G D CON-SSSNT-ISR4321K

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
10	ISR 1101 4 PORTS GE ETHERNET WAN ROUTER - C1101-4P	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
ISR 1101 4 PORTS GE ETHERNET WAN ROUTER - C1101-4P

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON　　　　WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO　　　　WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
11	SOLNSUPP 8X5XNBD ISR 1101 4 PORTS GE ETHERNET WAN ROUTER	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
CON-SSSNT-CISR1K4P

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON　　　　WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO　　　　WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
12	IP BASE LICENSE FOR CISCO ISR 1100 4P SERIES-SL-110-4P-IPB	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81112218			

Extended Description:
IP BASE LICENSE FOR CISCO ISR 1100 4P SERIES-SL-110-4P-IPB

INVOICE TO	SHIP TO
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US	DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
13	1109 M2M POWER SUPPLY ITEMP, OR EQUAL, 30 WATT AC	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
PWR-30W-I-AC

INVOICE TO	SHIP TO
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US	DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
14	SECURITY LICENSE FOR CISCO, OR EQUAL, ISR 1100 4P SERIES	10.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81111801			

Extended Description:
SL-110-4PC-SEC

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Questions are due by 4:00 p.m.	2022-05-25

SOLICITATION NUMBER: CRFQ DRS2200000012
Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum No. 1 is issued for the following reasons:

1) To modify the bid opening date from 6/2/22 to 6/9/22 in order for the agency to have more time to answer questions.

--no other changes--

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ DRS22*12

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[✓] Addendum No. 1   [ ] Addendum No. 6

[ ] Addendum No. 2   [ ] Addendum No. 7

[ ] Addendum No. 3   [ ] Addendum No. 8

[ ] Addendum No. 4   [ ] Addendum No. 9

[ ] Addendum No. 5   [ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

MXN Corporation
_____
Company

_____
Authorized Signature

6/7/22
_____
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

Proc Folder:	1028144		Reason for Modification:
Doc Description:	Addendum No. 2 - Network Switches and Related Equipment		Addendum No 2 is issued to publish questions and answers
Proc Type:	Central Purchase Order		

Date Issued	Solicitation Closes	Solicitation No	Version
2022-06-02	2022-06-09 13:30	CRFQ 0932 DRS2200000012	3

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name :   MXN Corporation

Address :   PMB306

Street :   1025 Rose Creek Dr., #620

City : Woodstock

State : Georgia   **Country :**   USA   **Zip :** 30189

Principal Contact :   Bob Patrick

Vendor Contact Phone: 678-324-9256   **Extension:**

FOR INFORMATION CONTACT THE BUYER
Toby L Welch
(304) 558-8802
toby.l.welch@wv.gov

| Vendor
Signature X | | FEIN# 58-2487694 | DATE | 6/7/22 |

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

ADDITIONAL INFORMATION

Addendum No. 2 is issued for the following reasons:

1) To publish a copy of vendors questions with responses.

--no other changes--

INVOICE TO	SHIP TO
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US	DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	48 PORT POE SWITCH, EXTREME NETWORKS, OR EQUAL	12.00000	EA	$1,236.00	$14,832.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	FortiSwitch-148F-FPOE L2+ management switch with 48x GE port + 4x SFP+ port + 1x RJ45 console	FS-148F-FPOE

Extended Description:
X440-G2 X440-G248p-10GE

INVOICE TO	SHIP TO
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US	DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	24 PORT POE SWITCH, EXTREME NETWORKS, OR EQUAL	15.00000	EA	$790.00	$11,850.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	FortiSwitch-124F-FPOE L2+ managed POE switch with 24GE + 4SFP+, 24port POE with max 370W limit and smart fan temperature control	FS-124F-FPOE

Extended Description:
X440-G2 X440-G224p-10GE

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	1000BSX SFP MINI-GBIC TRANCEIVER , EXTREME NETWORKS,OR EQUAL	30.00000	EA	$31.00	$930.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	1GE SFP SX transceiver module	FN-TRAN-SX

Extended Description:
1Gps - 10051H

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	STANDARD POWER CORD, EXTREME NETWORKS,OR EQUAL	27.00000	EA		Included

Comm Code	Manufacturer	Specification	Model #
43221700	Text		

Extended Description:
13A-5601313-U1

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	ISR 4331, CISCO, OR EQUAL	1.00000	EA	$2,512.00	$2,512.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	FortiGate-101F Hardware 22 x GE RJ45 ports (including 2 x WAN ports, 1 x DMZ port, 1 x Mgmt port, 2 x HA ports, 16 x switch ports with 4 SFP port shared media), 4 SFP ports, 2x 10G SFP+ FortiLinks, 480GB onboard storage, dual power supplies redundancy.	FG-101F

Extended Description:
3GE,2NIM, 1SM,4G FLASH, 4G DRAM,IPB ISR4331/K9

INVOICE TO		SHIP TO	
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US		DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	SOLNSUPP 8X5XNBD,ISR4331, CISCO,OR EQUAL	1.00000	EA	$4,445.00	$4,445.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	ATP Protection and ND Hardware Replacement, 3 years	FC-10-F101F-928-02-36 and FC-10-F101F-210-02-12

Extended Description:
3GE2NIM1SM4G FLASH 4G D CON-SSSNT-ISR4331K

INVOICE TO		SHIP TO	
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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	ISR4321, CISCO,OR EQUAL	10.00000	EA	$481.00	$4,810.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	FortiGate-40F 5 x GE RJ45 ports (including , 1 x WAN Port, 4 x Internal Ports)	FG-40F

Extended Description:
2GE, 2NIM, 4G FLASH, 4G DRAM,IPB ISR4321/K9

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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
8	STACKING CABLE, EXTREME NETWORKS,OR EQUAL	4.00000	EA	$50.00	$200.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	10GE SFP+ Passive Direct Attach Cable, 1 m	SP-CABLE-FS-SFP+1

Extended Description:
250084-00 0.5M

INVOICE TO			SHIP TO			

INVOICE TO	SHIP TO
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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
9	SOLNSUPP 8X5XNBD, CISCO,OR EQUAL	10.00000	EA	$889.00	$8,890.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	ATP Protection and ND Hardware Replacement, 3 years	FC-10-0040F-928-02-36 and FC-10-0040F-210-02-12

Extended Description:
ISR4321 2GE2NIM4G FLASH4G D CON-SSSNT-ISR4321K

INVOICE TO	SHIP TO
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US	DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
10	ISR 1101 4 PORTS GE ETHERNET WAN ROUTER - C1101-4P	10.00000	EA	$698.00	$6,980.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	FortiGateRugged-30D Ruggedized, 4 x GE RJ45 ports, 2 x GE SFP slots, 2x DB9 Serial	FGR-30D

Extended Description:
ISR 1101 4 PORTS GE ETHERNET WAN ROUTER - C1101-4P

INVOICE TO			SHIP TO		
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US			DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US		

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
11	SOLNSUPP 8X5XNBD ISR 1101 4 PORTS GE ETHERNET WAN ROUTER	10.00000	EA	$1,494.00	$14,940.00

Comm Code	Manufacturer	Specification	Model #
43221700	Fortinet	ATP Protection and ND Hardware Replacement, 3 years	FC-10-R030D-928-02-36 and FC-10-R030D-210-02-12

Extended Description:
CON-SSSNT-CISR1K4P

INVOICE TO			SHIP TO		
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US			DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US		

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
12	IP BASE LICENSE FOR CISCO ISR 1100 4P SERIES-SL-110-4P-IPB	10.00000	EA		Included

Comm Code	Manufacturer	Specification	Model #
81112218			

Extended Description:
IP BASE LICENSE FOR CISCO ISR 1100 4P SERIES-SL-110-4P-IPB

INVOICE TO	SHIP TO
DIVISION OF REHABILITATION SERVICES STATE CAPITOL PO BOX 50890 CHARLESTON WV US	DIVISION OF REHABILITATION SERVICES #10 MCJUNKIN ROAD NITRO WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
13	1109 M2M POWER SUPPLY ITEMP, OR EQUAL, 30 WATT AC	10.00000	EA		**Included**

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:
PWR-30W-I-AC

INVOICE TO	SHIP TO
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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
14	SECURITY LICENSE FOR CISCO, OR EQUAL, ISR 1100 4P SERIES	10.00000	EA		**Included**

Comm Code	Manufacturer	Specification	Model #
81111801			

Extended Description:
SL-110-4PC-SEC

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Questions are due by 4:00 p.m.	2022-05-25

SOLICITATION NUMBER: CRFQ DRS2200000012
Addendum Number: 2

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[   ]   Modify bid opening date and time

[   ]   Modify specifications of product or service being sought

[✓]   Attachment of vendor questions and responses

[   ]   Attachment of pre-bid sign-in sheet

[   ]   Correction of error

[   ]   Other

Description of Modification to Solicitation:

Addendum No. 2 is issued for the following reasons:

1) To publish a copy of vendors questions with responses.

--no other changes--

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

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ATTACHMENT A

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ DRS22*12

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MXN Corporation
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Company

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Authorized Signature

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Revised 6/8/2012

CRFQ DRS2200000012
NETWORK SWITCHES AND RELATED EQUIPMENT
Vendor Questions

Q.1 How long is your requested support for the Cisco ISRs? One year or longer?

A.1 longer

Q.2 Do you need local PoE in your ISR 1101 'router'

A.2 yes but entire 1000 series routers support poe and poe+

Q.3 Are you seeking wireless network capability built into your remote routers?

A.3 no

Q.4 On line item number 12, you have listed IP BASE LICENSE FOR CISCO ISR 1100 4P SERIES-SL-110-4P-IPB. I am not seeing that as an option.

A.4 the ip base license ships with with the ISR 1000 series by default

CRFQ DRS2200000012
NETWORK SWITCHES AND RELATED EQUIPMENT
Vendor Questions

Q.5 In researching the requested items (and related requirements) for the network switches, we have an alternative brand that we would like to enter as an "... *or Equivalent*". There are two models which would suffice. The Routers that are requested we are leaving as Cisco-brand, so our question below is only in reference to the Extreme switches requested in line items 1-4.

Question: Are we able to provide two pricing pages back for consideration? In other words, the brand we would like to substitute has two different switch models that would fit the requirements. We would like to know if we can submit two pricing pages, one switch that meets the requirements, and another switch that exceeds the requirements and has greater functionality.

A.5 Yes, that would be fine but needs to meet all of the specifications. And they would need to be separate bids.

FortiCare Support and Operational Services

Helping Organizations to Deploy Quickly and Maintain Momentum Over Time

Executive Summary

Organizations that purchase Fortinet Security Fabric solutions seek an integrated, automated approach to network security. However, operational teams face challenges when deploying any new technology, and the complexities of today's enterprise networks make it increasingly important to architect and configure security solutions correctly. FortiCare Support and Operational Services help companies successfully accomplish their initial and ongoing objectives by offering a flexible set of support and operational offerings that meet the needs of any organization—from the smallest to the largest.

FortiCare Services support the entire Fortinet Security Fabric, resulting in multidisciplinary support and a single source for troubleshooting. FortiCare services, coupled with deployment support from Fortinet Professional Services, helps organizations achieve security and operational efficiency goals more quickly after deployment and set up the operational team for ongoing success.

Organizations that elect to invest in Fortinet Security Fabric solutions have made the strategic decision to take a holistic, integrated approach to protecting their critical assets while optimizing operational efficiency. But as with any new technology, the way the deployment is planned and executed is critical to the ultimate success of the project.

Challenges in Achieving Meaningful Outcomes

A number of challenges confront companies as they plan their Fortinet deployment:

1. **The need to hit the ground running.** Executive management and the finance team expect their investments to pay quick dividends, the CISO wants to report an improved security posture as soon as possible, and the risk management team wants timely alignment with its priorities. As a result, achieving quick wins out of the gate can help establish momentum for the project and ensure its success over time.

2. **The need to equip network and security technical teams.** If an organization is new to Fortinet technology, it is likely that there is little expertise with the platform among existing team members, and the cybersecurity skills shortage[2] means that hiring new staff is difficult and expensive. This means that existing staff members must be trained—including those who might play a backup role with the technology. Over time, the team needs to increase its proficiency in order for planned operational efficiencies to be realized.

3. **The need for a programmatic approach to complex and sophisticated operations.** The team must establish best practices and maintenance routines that align with organizational priorities. At the same time, they must keep pace with environmental changes in the organization's infrastructure and tackle internal corporate and industrial compliance.

> A recent estimate pegs the average cost of downtime at $100,000 per hour.[1]

FortiCare Services: Flexible Options for Each Organization's Needs

To address these challenges, just as they are diligent about solution selection, organizations need to be strategic about how and when they engage support and operational services. Fortinet partners with its customers to create a plan that meets their specific business needs with a flexible menu of options. Customers can also elect to overlay FortiCare services with deployment and operational assistance from Fortinet Professional Services (see Figure 1).

For **business operators**, FortiCare services can be customized according to an organization's unique business needs, its tolerance for downtime, and whether a particular piece of hardware is protecting business-critical assets. And to protect an entire enterprise, FortiCare services can be purchased as an Enterprise Support Agreement. This enables in-house team members to spend their time in strategic pursuits rather than in reactive troubleshooting.

For **communications, security, and managed services providers**, FortiCare services enable a comprehensive go-to-market strategy for their customers that are protected by Fortinet solutions. Dedicated staff members are available to learn the provider's infrastructure—and its customer base—enabling the most effective and timely support.

FortiCare services include:

- **On-demand and Premium Support.** This includes the ASE FortiCare service (Advanced Support Engineer), which provides direct access to the best support resources. Premium RMA services provide expedited delivery and optional onsite assistance when hardware needs to be replaced. And the Fortinet Secure RMA service supports customers that cannot return replaced hardware due to physical data protection requirements.

- **Active Support and Direct Engagement.** Customers can leverage multiple levels of personalized engagement, often with designated experts who get to know the customer's infrastructure. These services provide enhanced services such as detailed recommendations on best practices, training for team members, and regular reviews of results.

- **Fortinet Professional Services.** Expert engineers on the Professional Services team can provide a customized engagement that includes service design, transition, and operational services for Fortinet solutions. Deployment assistance can range from full quick-start deployment services to architectural design to migration assistance. Operational services include health checks, knowledge transfer, and process definition.
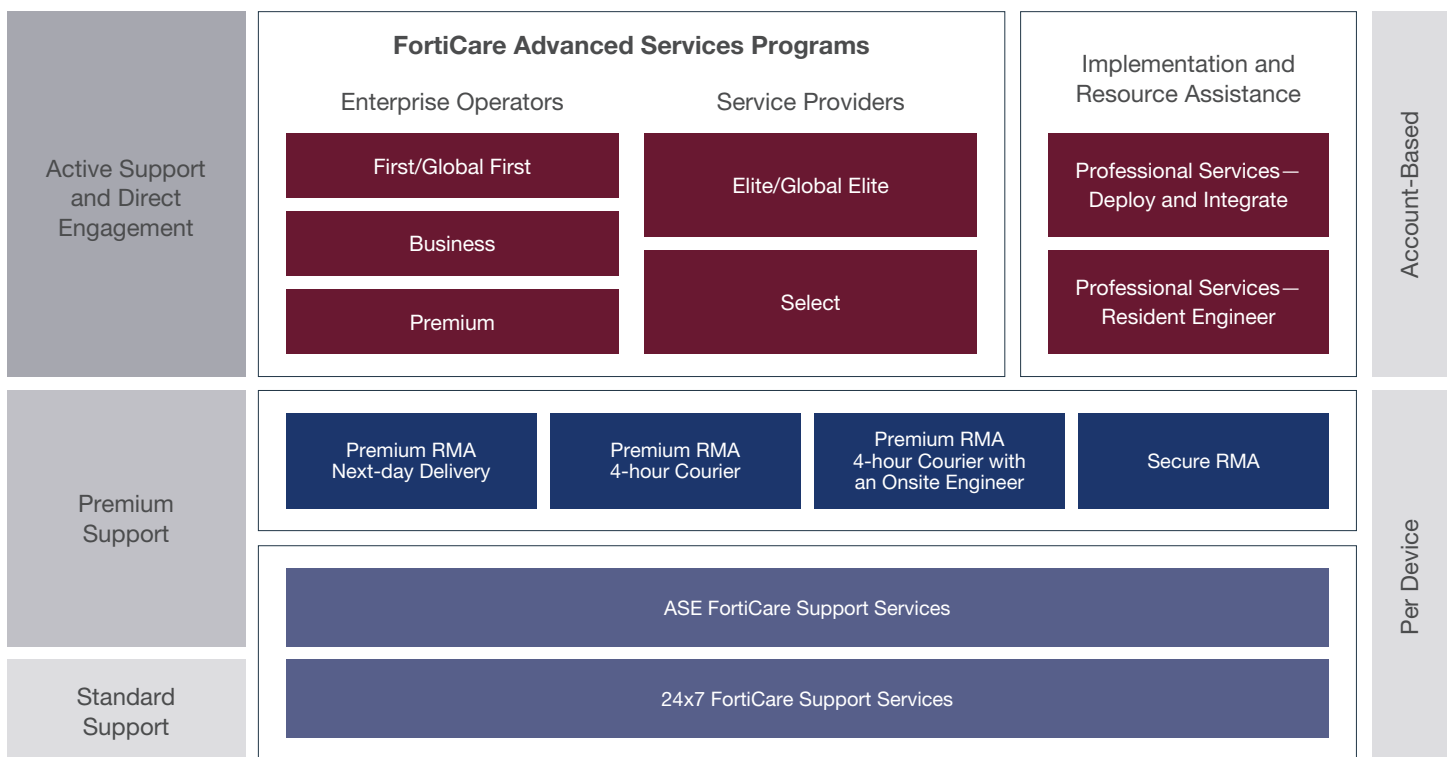
Figure 1: Overview of FortiCare Support and Operational Services.

Supporting Key Use Cases

FortiCare services are flexible and can be combined with Fortinet Professional Services to meet the needs of businesses and service providers of all sizes. Following are the services we recommend for several common use cases:

1. Small Businesses

Small businesses with fewer than 50 employees and only a few sites, and that rely on their IT infrastructure to conduct client transactions. For these clients, outages result in lost business because the entire site is unable to process transactions.

Key FortiCare Solutions:

- 24x7 FortiCare Support
- FortiCare Premium RMA: Next-day Delivery
- Professional Services: Quick-start Implementation

Consequences of Inadequate Support:

Inability to access FortiCare support resources when needed and a standard hardware replacement when urgently needed.

2. Midsize Businesses

Midsize businesses with fewer than 1,000 employees, a few locations, and business-to-business commerce. For these clients, downtime is measured in hours and outages impact employee productivity and customer deliverables.

Key FortiCare Solutions:

- ASE FortiCare
- FortiCare Premium RMA: 4-hour Courier
- Advanced Services: Business Service
- Professional Services: Configuration Transfer, Policy Design, Redundancy

Consequences of Inadequate Support:

Potentially longer downtime costing thousands of dollars and impact to brand value and perception.

3. Large Organizations

Large organizations with fewer than 5,000 employees, less than 100 sites, and critical business-to-business transactions. For these organizations, downtime is measured in seconds and outages can have a severe impact on a department or site.

Key FortiCare Solutions:

- Enterprise Support Agreement
- FortiCare Premium RMA: 4-hour Courier with an Onsite Engineer
- Advanced Services: First Service
- Professional Services: Knowledge Transfer, Integration, Continuity Planning

Consequences of Inadequate Support:

Unnecessary operational impacts from lack of pre-planning, missing organizationwide state of operations, and not realizing original objectives.

4. Cloud Service Providers or Large Enterprises

Cloud service providers or large enterprises with Fortinet technology used for internal operations. For these organizations, downtime is measured in seconds and outages impact multiple business units.

Key FortiCare Solutions:

- FortiCare ASE
- FortiCare Premium RMA: 4-hour Courier with an Onsite Engineer
- Advanced Services: Elite or First Service
- Professional Services: Automation, Dynamic Routing, Authentication

Consequences of Inadequate Support:

Manual integration, change, and incident response processes resulting in more staffing hours and inconsistent applications.

5. Service Providers

Service providers using Fortinet technologies to bring services to market. For these organizations, their downtime is measured according to contractual service-level agreements (SLAs), and outages can affect multiple customers.

Key FortiCare Solutions:

- FortiCare ASE

- FortiCare Premium RMA: 4-hour Courier with an Onsite Engineer

- Advanced Services: Elite Service

- Professional Services: Staff Augmentation, Process Definition, Knowledge Transfer

Consequences of Inadequate Support:

Time to resolution extended due to lack of an assigned, directly accessed FortiCare Advanced Services team member or problems unresolved due to lack of structured processes.

Benefits of FortiCare Services

Investing in FortiCare Services helps companies achieve their goals more quickly while enabling their team members to focus on strategy. Organizations can realize the following benefits:

- **Achieving an optimal security posture** in a short time by leveraging Fortinet's expertise in architecting and deploying the Fortinet Security Fabric and implementing security best practices.

- **Realizing maximum employee productivity** by tapping subject-matter experts for guidance and support rather than solving problems by trial and error.

- **Taking a proactive rather than a reactive approach to security** via smoothly deployed, integrated solutions.

- **Setting the operational team up for success** with system knowledge, best practice recommendations, and optimal maintenance procedures.

Conclusion

FortiCare Services can be structured in multiple ways to meet the needs of any business. Selecting the right support plan for an organization's needs can help make the transition to a Fortinet infrastructure smooth and successful. It can also optimize the success realized with an existing Fortinet deployment.

In deciding which FortiCare Services to purchase, organizations should ask a number of questions, including:

1. What are the business objectives of the Fortinet deployment, and what will be required to achieve them?

2. What is the deployment timeline for the new Fortinet technology?

3. What is the cost of downtime to the organization? What length of downtime can the organization tolerate?

4. What risks are posed by an interruption in real-time threat detection and response?

5. What is the resource availability of the in-house technical team for the initial deployment and integration?

Whatever the answers to those questions, FortiCare Operational and Support Services can help organizations meet their business goals more successfully—whether their infrastructure is small or exceedingly complex.

---

[1] Kolton Andrus, "Why CTOs And CIOs Should Care More About The Cost Of Downtime," Forbes, April 26, 2018.

[2] Jon Oltsik, "The cybersecurity skills shortage is getting worse," CSO, January 10, 2019.

F⊟RTINET®

FortiGate® Rugged Series

Available in

Appliance

Mission Critical Security Solutions for Harsh Environments

While traditional security solutions are designed and intended for the world of offices and corporations, the FortiGate Rugged Series offers industrially-hardened, all-in-one security appliance that delivers specialized threat protection for securing critical industrial and control networks against malicious attacks.

Ruggedized Design

Fanless and use of robust components ensure reliable operation in harsh industrial environments.

Consolidated Security Architecture

FortiGate running FortiOS consolidated security offers better protection and lower cost of ownership than multiple point products. Coupled with FortiGuard Industrial Security Service, it ensures that critical networks receive real-time protection.

SD-WAN Capable

Supports reliable connectivity with lower costs via SD-WAN technologies.

Ease of Management

Robust management systems that allow rapid provision and deployment, monitoring of device and threat status while providing actionable reports.

PRODUCT OFFERINGS

FGR-30D

Ruggedized compact security appliance with DIN mounting kit

FGR-35D

Security appliance with IP67 rating for outdoor environment

FGR-60F

New SPU SoC4-powered for rugged and harsh environments

FGR-60F-3G4G

Integrated 3G4G modem for ruggedized and mission-critical applications

HARDWARE

FortiGate Rugged 60F/-3G4G
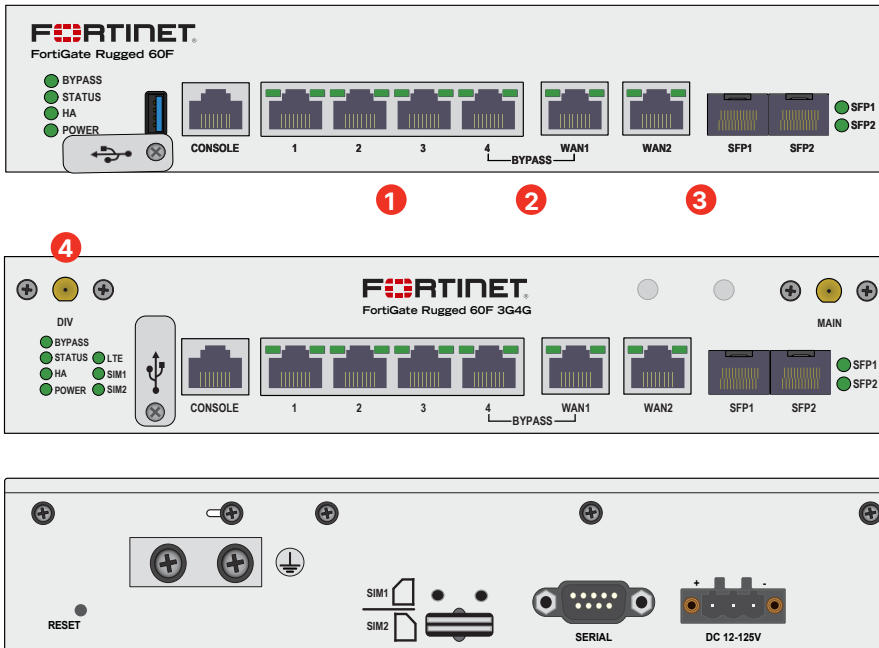
Interfaces

1. 4x GE RJ45 Ports
2. 1x Bypass GE RJ45 Port Pair (WAN1 & Port4, default setting)*
3. 2x GE RJ45/SFP Shared Media Pairs
4. Integrated 3G4G Modem

*NOTE: WAN1/WAN2 and SFP1/SFP2 are shared interfaces

FortiGate Rugged 30D
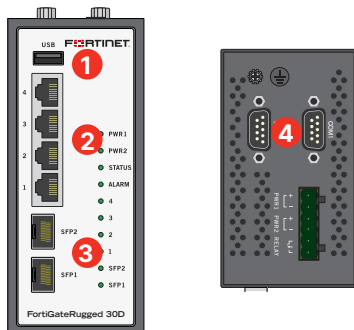
Interfaces

1. 1x USB Port
2. 4x GE RJ45 Ports
3. 2x GE SFP Slots
4. 2x DB9 Serial Port/Console

FortiGate Rugged 35D
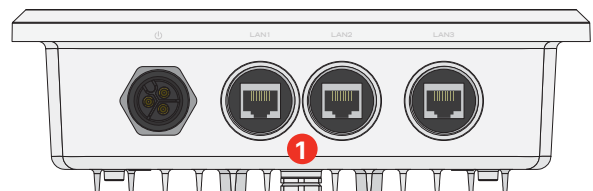
Interfaces

1. 3x GE RJ45 Ports

FORTINET SECURITY FABRIC

Security Fabric

The industry's highest-performing cybersecurity platform, powered by FortiOS, with a rich ecosystem designed to span the extended digital attack surface, delivering fully automated, self-healing network security.

- **Broad**: Coordinated detection and enforcement across the entire digital attack surface and lifecycle with converged networking and security across edges, clouds, endpoints and users

- **Integrated**: Integrated and unified security, operation, and performance across different technologies, location, deployment options, and the richest Ecosystem

- **Automated**: Context aware, self-healing network & security posture leveraging cloud-scale and advanced AI to automatically deliver near-real-time, user-to-application coordinated protection across the Fabric

The Fabric empowers organizations of any size to secure and simplify their hybrid infrastructure on the journey to digital innovation.

FortiOS™ Operating System

FortiOS, Fortinet's leading operating system enable the convergence of high performing networking and security across the Fortinet Security Fabric delivering consistent and context-aware security posture across network endpoint, and clouds. The organically built best of breed capabilities and unified approach allows organizations to run their businesses without compromising performance or protection, supports seamless scalability, and simplifies innovation consumption.

The release of FortiOS 7 dramatically expands the Fortinet Security Fabric's ability to deliver consistent security across hybrid deployment models consisting on appliances, software and As-a-Service with SASE, ZTNA and other emerging cybersecurity solutions.

SERVICES

FortiGuard™ Security Services

FortiGuard Labs offers real-time intelligence on the threat landscape, delivering comprehensive security updates across the full range of Fortinet's solutions. Comprised of security threat researchers, engineers, and forensic specialists, the team collaborates with the world's leading threat monitoring organizations and other network and security vendors, as well as law enforcement agencies.

FortiCare™ Services

Fortinet is dedicated to helping our customers succeed, and every year FortiCare services help thousands of organizations get the most from their Fortinet Security Fabric solution. We have more than 1,000 experts to help accelerate technology implementation, provide reliable assistance through advanced support, and offer proactive care to maximize security and performance of Fortinet deployments.

SPECIFICATIONS

	FGR-30D	FGR-35D	FGR-60F / -3G4G
Interfaces and Modules			
GE RJ45 Interfaces	4	3	4
Bypass GE RJ45 Port Pair*	–	–	1*
GE SFP Slots	2	–	–
GE RJ45/SFP Shared Media Pairs	–	–	2
DB9 Serial Interface	2	–	1
USB (Client / Server)	1	–	1
RJ45 Console Port	–	–	1
Trusted Platform Module (TPM)	–	–	Yes
Cellular Modem	–	–	3G4G / LTE
Transceivers Included	–	–	–
System Performance and Capacity			
IPv4 Firewall Throughput (1518** / 512 / 64 byte UDP packets)	900 Mbps**	550 Mbps**	6/6/5.95 Gbps
Firewall Latency (64 byte, UDP)	70.00 μs	90.00 μs	3.10 μs
Firewall Throughput (Packets Per Second)	87 Kpps	52.5 Kpps	8.9 Mpps
Concurrent Sessions (TCP)	750,000	750,000	600,000
New Sessions/Second (TCP)	5,000	5,000	19,000
Firewall Policies	5,000	5,000	5,000
IPsec VPN Throughput (512 byte) [1]	45 Mbps	45 Mbps	3.5 Gbps
Gateway-to-Gateway IPsec VPN Tunnels	200	200	200
Client-to-Gateway IPsec VPN Tunnels	250	250	500
SSL-VPN Throughput	25 Mbps	25 Mbps	400 Mbps
Concurrent SSL-VPN Users (Recommended Maximum)	80	80	100
SSL Inspection Throughput (IPS, avg. HTTPS) [3]	50 Mbps	55 Mbps	460 Mbps
SSL Inspection CPS (IPS, avg. HTTPS) [3]	75	75	300
SSL Inspection Concurrent Session (IPS, avg. HTTPS) [3]	45,000	45,000	70,000
Application Control Throughput (HTTP 64K)	210 Mbps	230 Mbps	1.3 Gbps
Virtual Domains (Default / Maximum)	5 / 5	5 / 5	10 / 10
Maximum Number of FortiAPs (Total / Tunnel)	2 / 2	2 / 2	30 / 10
Maximum Number of FortiTokens	20	20	500
Maximum Number of FortiSwitches	8	8	16
High Availability Configurations	Active-Active, Active-Passive, Clustering		
System Performance — Enterprise Traffic Mix			
IPS Throughput [2]	180 Mbps	210 Mbps	950 Mbps
NGFW Throughput [2, 4]	45 Mbps	65 Mbps	550 Mbps
Threat Protection Throughput [2, 5]	16 Mbps	16 Mbps	500 Mbps

*Default bypass pair configuration is WAN1 and Port4
**Measured using 1518 byte UDP packets

Note. All performance values are "up to" and vary depending on system configuration.
1. IPsec VPN performance test uses AES256-SHA256.
2. IPS (Enterprise Mix), Application Control, NGFW and Threat Protection are measured with Logging enabled.
3. SSL Inspection performance values use an average of HTTPS sessions of different cipher suites.
4. NGFW performance is measured with Firewall, IPS and Application Control enabled.
5. Threat Protection performance is measured with Firewall, IPS, Application Control and Malware Protection enabled.

SPECIFICATIONS

	FGR-30D	FGR-35D	FGR-60F / -3G4G	
Dimensions and Power				
Height x Width x Length (inches)	5.49 × 4.13 × 2.36	3.07 × 10.04 × 10.04	1.68 × 8.50 × 6.50	
Height x Width x Length (mm)	139.5 × 105 × 60	78 × 255.09 × 255.09	42.7 × 216 × 165	
Weight	1.46 lbs (0.668 kg)	3.986 lbs (1.808 kg)	3.85 lbs (1.75 kg)	
Form Factor	Desktop/DIN/Wall Mount	Outdoor mountable	Desktop/DIN/Wall Mount	
IP Rating	IP20	IP67	IP20	
Power Supply	Dual input, total 6 pin terminal block (12–48V DC) DC cables are not included.[6]	Terminal block (12–48V DC) DC cables are not included.[7]	Terminal block, supports negative (+12V to +125V DC) and positive ground (-12V to -125V DC) sources, cables are not included.[7]	
Power Consumption (Average / Maximum)	15.55 W / 15.92W	10.2 W / 10.5 W	15 W / 21 W	17 W / 24W
Maximum Current	1.19A	0.83A	12V DC / 2A	
Heat Dissipation	54.29 BTU/h	35.81 BTU/h	72 BTU/h	82 BTU/h
Operating Environment and Certifications				
Operating Temperature	-40–158°F (-40–70°C)	-40–140°F (-40–60°C)	-40–167°F (-40–75°C)	
Storage Temperature	-58–185°F (-50–85°C)	-58–185°F (-50–85°C)	-40–167°F (-40–75°C)	
Humidity	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing	
Operating Altitude	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)	
Compliance	FCC Part 15 Class A, RCM VCCI Class B, CE, UL/cUL, CB	FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/cUL, CB	FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/cUL, CB	
Industry Certifications				
	61850-3 and IEEE 1613 Emission Compliant	IEC 61850-3 and IEEE 1613 Emission Compliant	IEC 61850-3 and IEEE 1613 Certified	
Regional Compatibility			**FGR-60F-3G4G**	
Maximum Tx Power			20 dBm	
Regions			All Regions	
Modem Model			Sierra Wireless EM7565 (2 SIM Slots, Active/Passive)	
LTE			B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B18, B19, B20, B26, B28, B29, B30, B32, B41, B42, B43, B46, B48, B66	
UMTS/HSPA+			B1, B2, B3, B4, B5, B6, B8, B9, B29	
WCDMA			—	
CDMA 1xRTT/EV-DO Rev A			—	
GSM/GPRS/EDGE			—	
Module Certifications			FCC, ICES, CE, RCM, VCCI, BSMI, UL/cUL, CB	
Diversity			Yes	
MIMO			Yes	
GNSS Bias			Yes	

6. AC adapter not supported.
7. AC adapter not supported. Requires fabricated DC cables (refer to QuickStart Guide).

SUPPORTED PROTOCOLS

IPS and Application Control Support for Operational Technology / Industrial Control System

- ADDP
- Allen-Bradley PCCC
- BACnet
- CC-Link
- CIP
- CN/IP (EIA/CEA-852)
- CoAP
- DICOM
- DNP3 / RealPort DNP3
- ECHONET Lite
- ELCOM 90
- Emerson DeltaV
- Ether-S-Bus
- EtherCAT Automation Protocol (EAP)
- Ethernet Global Data (EGD)
- Ethernet Powerlink
- EtherNet/IP
- FL-net
- GE SRTP (GE Fanuc)
- HART-IP
- HL7
- IEC 60870-5-104 (IEC 104)*
- IEC 60870-6 (TASE.2/ICCP)
- IEC 61850 MMS
- IEC 61850 R-GOOSE
- IEC 61850 R-SV

- IEEE 1278.2 Distributed Interactive Simulation
- IEEE C37.118 Synchrophasor
- KNXnet/IP (EIBnet/IP)
- LonTalk/EIA-709.1
- Mitsubishi MELSEC
- Modbus TCP / MOXA Modbus RTU*
- MOXA
- MQTT
- MTConnect
- Net C/X (Digi RealPort)
- Niagara Fox
- OPC Classic (DA, HDA, AE)
- OPC UA
- IEC 62056 (DLMS/COSEM)
- OpenADR
- OSIsoft PI System
- PROFINET
- RTPS
- SafetyNet p
- Siemens S7, S7Plus, LOGO
- STANAG 4406
- STANAG 5066
- TriStation
- Vedeer-Root

* Additional parameters supported for the signatures in the GUI (requires FortiOS v6.4 and above).

FortiGate Rugged 30D

FortiGate Rugged 35D

FortiGate Rugged 60F

Trusted Platform Module (FG-60F Series)

The FortiGate Rugged 60F Series features an integrated hardware security module, also known as Trusted Platform Module (TPM), that hardens physical networking appliances by generating, storing, and authenticating cryptographic keys. Hardware-based security mechanisms protect against malicious software and phishing attacks.
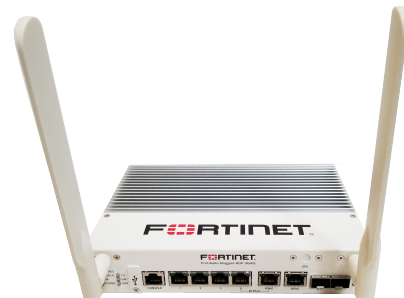
FortiGate Rugged 60F-3G4G

ORDERING INFORMATION

Product	SKU	Description
FortiGate Rugged 30D	FGR-30D	Ruggedized, 4x GE RJ45 ports, 2x GE SFP slots, 2x DB9 Serial. Maximum managed FortiAPs (Total / Tunnel) 2 / 2.
FortiGate Rugged 35D	FGR-35D	Ruggedized, IP67 rating for outdoor environment, 3x GE RJ45 Switch ports. Maximum managed FortiAPs (Total / Tunnel) 2 / 2.
FortiGate Rugged 60F	FGR-60F	Ruggedized, 4 x GE RJ45 Switch ports, 2 x Shared Media pairs (Including 2 x GE RJ45 ports, 2 x SFP slots). 1x RJ45 by-pass can be set up between WAN1 and PORT4. DB9 Serial.
FortiGate Rugged 60F-3G4G	FGR-60F-3G4G	Ruggedized, 4 x GE RJ45 Switch ports, 2 x Shared Media pairs (Including 2 x GE RJ45 ports, 2 x SFP slots). 1x RJ45 by-pass can be set up between WAN1 and PORT4. DB9 Serial, embedded 3G/4G/LTE wireless wan module.
Optional Accessories		
1 GE SFP LX transceivers, SMF, -40–85°C operation	FN-TRAN-LX	1 GE SFP LX transceiver module, -40–85°C, over SMF, for all systems with SFP and SFP/SFP+ slots.
1 GE SFP SX transceivers, MMF, -40–85°C operation	FR-TRAN-SX	1 GE SFP SX transceiver module, -40–85°C, over MMF, for all systems with SFP and SFP/SFP+ slots.
1 GE SFP transceivers, 90km range, -40–85°C operation	FR-TRAN-ZX	1 GE SFP transceivers, -40–85°C operation, 90km range for all systems with SFP slots.

BUNDLES

FortiGuard Bundle

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.

Bundles	Enterprise Protection	SMB Protection	Unified Threat Protection	Advanced Threat Protection
FortiCare	24×7	24×7	24×7	24×7
FortiGuard App Control Service	•	•	•	•
FortiGuard IPS Service	•	•	•	•
FortiGuard Advanced Malware Protection (AMP) — Antivirus, Mobile Malware, Botnet, CDR, Virus Outbreak Protection and FortiSandbox Cloud Service	•	•	•	•
FortiGuard Web and Video[1] Filtering Service	•	•	•	
FortiGuard Antispam Service	•	•	•	
FortiGuard Security Rating Service	•			
FortiGuard IoT Detection Service	•			
FortiGuard Industrial Service	•			
FortiConverter Service	•			
FortiGate Cloud Subscription		•		

1. Available when running FortiOS 7.0

FFORTINET

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FortiGate® 100F Series

FG-100F and FG-101F

Next Generation Firewall
Secure SD-WAN
Secure Web Gateway

The FortiGate 100F series provides an application-centric, scalable, and secure SD-WAN solution with Next Generation Firewall (NGFW) capabilities for mid-sized to large enterprises deployed at the campus or branch level. Protects against cyber threats with system-on-a-chip acceleration and industry-leading secure SD-WAN in a simple, affordable, and easy to deploy solution. Fortinet's Security-Driven Networking approach provides tight integration of the network to the new generation of security.

Security

- Identifies thousands of applications inside network traffic for deep inspection and granular policy enforcement
- Protects against malware, exploits, and malicious websites in both encrypted and non-encrypted traffic
- Prevent and detect against known and unknown attacks using continuous threat intelligence from AI-powered FortiGuard Labs security services

Performance

- Delivers industry's best threat protection performance and ultra-low latency using purpose-built security processor (SPU) technology
- Provides industry-leading performance and protection for SSL encrypted traffic

Certification

- Independently tested and validated best security effectiveness and performance
- Received unparalleled third-party certifications from NSS Labs

Networking

- Delivers advanced networking capabilities that seamlessly integrate with advanced layer 7 security and virtual domains (VDOMs) to offer extensive deployment flexibility, multi-tenancy and effective utilization of resources
- Delivers high-density, flexible combination of various high-speed interfaces to enable best TCO for customers for data center and WAN deployments

Management

- Includes a management console that is effective, simple to use, and provides comprehensive network automation and visibility.
- Provides Zero Touch Integration with Security Fabric's Single Pane of Glass Management
- Predefined compliance checklist analyzes the deployment and highlights best practices to improve overall security posture

Security Fabric

- Enables Fortinet and Fabric-ready partners' products to provide broader visibility, integrated end-to-end detection, threat intelligence sharing, and automated remediation

Firewall	IPS	NGFW	Threat Protection	Interfaces
20 Gbps	2.6 Gbps	1.6 Gbps	1 Gbps	Multiple GE RJ45, GE SFP and 10 GE SFP+ slots

Refer to specification table for details

DEPLOYMENT

Next Generation Firewall (NGFW)

- Reduce the complexity and maximize your ROI by integrating threat protection security capabilities into a single high-performance network security appliance, powered by Fortinet's Security Processing Unit (SPU)

- Full visibility into users, devices, and applications across the entire attack surface, and consistent security policy enforcement irrespective of asset location

- Protect against network exploitable vulnerabilities with industry-validated IPS that offers low latency and optimized network performance

- Automatically block threats on decrypted traffic using the industry's highest SSL inspection performance, including the latest TLS 1.3 standard with mandated ciphers

- Proactively block newly discovered sophisticated attacks in real-time with AI-powered FortiGuard Labs and advanced threat protection services included in the Fortinet Security Fabric

Secure Web Gateway (SWG)

- Secure web access from both internal and external risks, even for encrypted traffic at high performance

- Enhanced user experience with dynamic web and video caching

- Block and control web access based on user or user groups across URLs and domains

- Prevent data loss and discover user activity to known and unknown cloud applications

- Block DNS requests against malicious domains

- Multi-layered advanced protection against zero-day malware threats delivered over the web
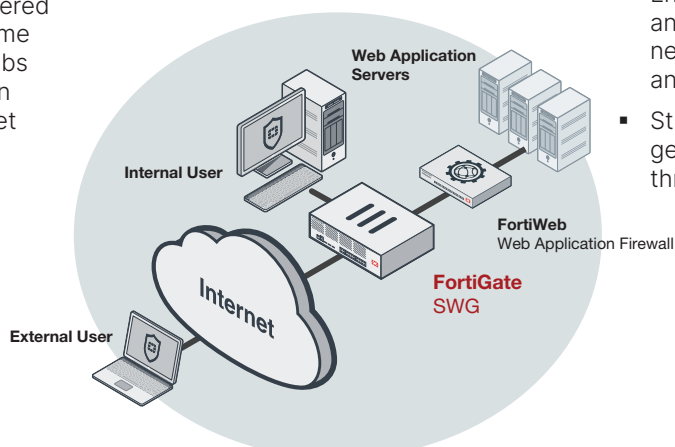
Secure SD-WAN

- Consistent business application performance with accurate detection, dynamic WAN path steering on any best-performing WAN transport

- Accelerated multi-cloud access for faster SaaS adoption with cloud-on-ramp

- Self-healing networks with WAN edge high availability, sub-second traffic switchover-based and real-time bandwidth compute-based traffic steering

- Automated overlay tunnels provide encryption and abstracts physical hybrid WAN making it simple to manage

- Simplified and intuitive workflow with FortiManger for management and zero touch deployment

- Enhanced analytics both real-time and historical provides visibility into network performance and identifies anomalies

- Strong security posture with next generation firewall and real- time threat protection

Secure Web Gateway Deployment
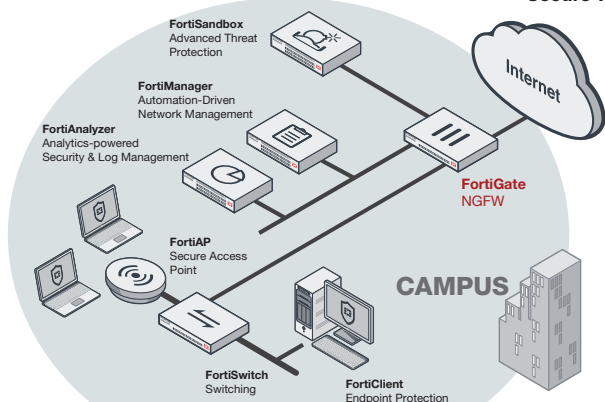
Campus Deployment (NGFW)
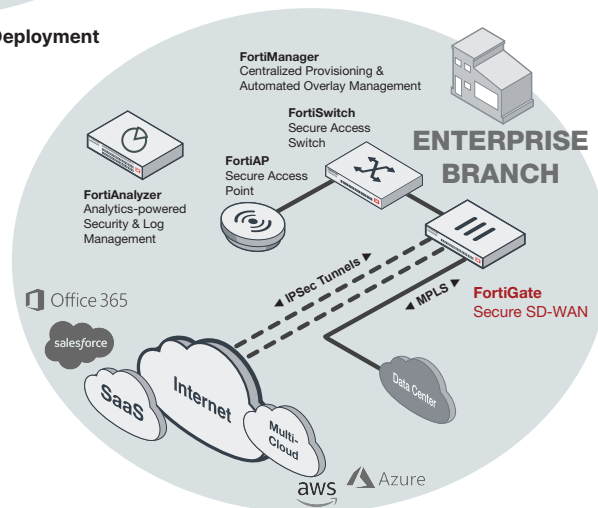
Enterprise Branch Deployment (Secure SD-WAN)

HARDWARE

FortiGate 100F/101F
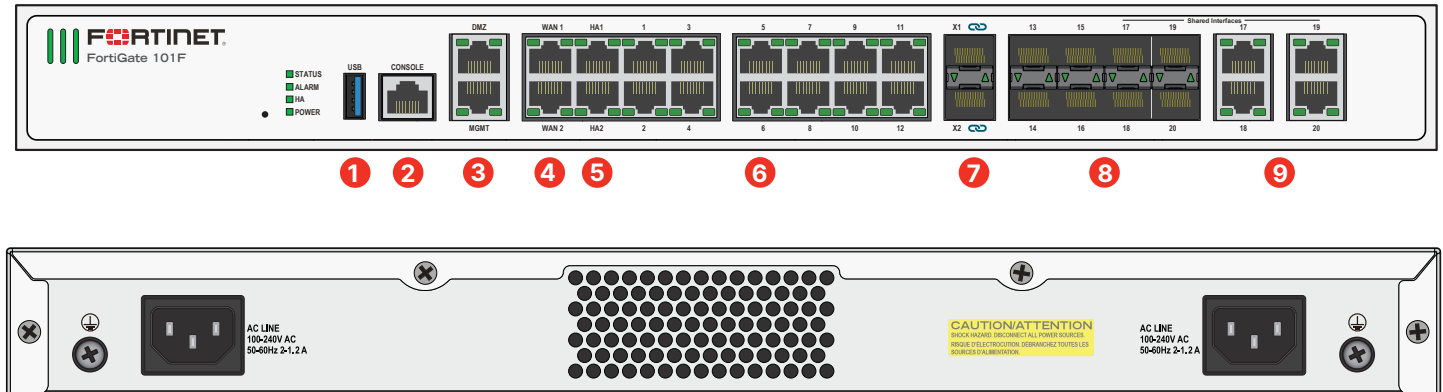
Interfaces

1. 1x USB Port
2. 1x Console Port
3. 2x GE RJ45 MGMT/DMZ Ports
4. 2x GE RJ45 WAN Ports
5. 2x GE RJ45 HA Ports
6. 12x GE RJ45 Ports
7. 2× 10 GE SFP+ FortiLink Slots
8. 4x GE SFP Slots
9. 4x GE RJ45/SFP Shared Media Pairs

Hardware Features
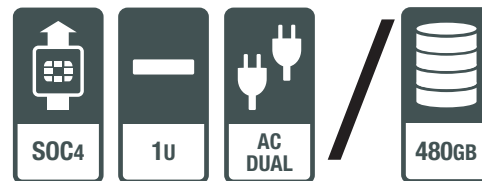
SOC4   1U   AC DUAL   /   480GB

Powered by Purpose-Built Secure SD-WAN ASIC SOC4

SPU

- 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
- Reduces environmental footprint by saving on average over 60% in power consumption compared to previous generation of FortiGate models

Dual Power Supplies

Power supply redundancy is essential in the operation of mission-critical networks. The FortiGate 100F Series offers dual built-in non-hot swappable power supplies.

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.

FORTINET SECURITY FABRIC

Security Fabric

The industry's highest-performing cybersecurity platform, powered by FortiOS, with a rich ecosystem designed to span the extended digital attack surface, delivering fully automated, self-healing network security.

- **Broad**: Coordinated detection and enforcement across the entire digital attack surface and lifecycle with converged networking and security across edges, clouds, endpoints, and users

- **Integrated**: Integrated and unified security, operation, and performance across different technologies, location, deployment options, and the richest ecosystem

- **Automated**: Context aware, self-healing network and security posture leveraging cloud-scale and advanced AI to automatically deliver near-real-time, user-to-application coordinated protection across the Fabric

The Fabric empowers organizations of any size to secure and simplify their hybrid infrastructure on the journey to digital innovation.

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The release of FortiOS 7 dramatically expands the Fortinet Security Fabric's ability to deliver consistent security across hybrid deployment models of Hardware, Software, and Software As-a-Service with SASE and ZTNA, among others.

SERVICES

FortiGuard™ Security Services

FortiGuard Labs offer real-time intelligence on the threat landscape, delivering comprehensive security updates across the full range of Fortinet's solutions. Comprised of security threat researchers, engineers, and forensic specialists, the team collaborates with the world's leading threat monitoring organizations and other network and security vendors, as well as law enforcement agencies.

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Fortinet is dedicated to helping our customers succeed, and every year FortiCare services help thousands of organizations get the most from their Fortinet Security Fabric solution. We have more than 1000 experts to help accelerate technology implementation, provide reliable assistance through advanced support, and offer proactive care to maximize security and performance of Fortinet deployments.

SPECIFICATIONS

	FORTIGATE 100F	FORTIGATE 101F
Interfaces and Modules		
Hardware Accelerated GE RJ45 Ports	12	
Hardware Accelerated GE RJ45 Management/ HA/ DMZ Ports	1 / 2 / 1	
Hardware Accelerated GE SFP Slots	4	
Hardware Accelerated 10 GE SFP+ FortiLink Slots (default)	2	
GE RJ45 WAN Ports	2	
GE RJ45 or SFP Shared Ports *	4	
USB Port	1	
Console Port	1	
Onboard Storage	0	1× 480 GB SSD
Included Transceivers	0	
System Performance — Enterprise Traffic Mix		
IPS Throughput [2]	2.6 Gbps	
NGFW Throughput [2, 4]	1.6 Gbps	
Threat Protection Throughput [2, 5]	1 Gbps	
System Performance and Capacity		
IPv4 Firewall Throughput (1518 / 512 / 64 byte, UDP)	20 / 18 / 10 Gbps	
Firewall Latency (64 byte, UDP)	4.97 μs	
Firewall Throughput (Packet per Second)	15 Mpps	
Concurrent Sessions (TCP)	1.5 Million	
New Sessions/Second (TCP)	56 000	
Firewall Policies	10 000	
IPsec VPN Throughput (512 byte) [1]	11.5 Gbps	
Gateway-to-Gateway IPsec VPN Tunnels	2000	
Client-to-Gateway IPsec VPN Tunnels	16 000	
SSL-VPN Throughput	1 Gbps	
Concurrent SSL-VPN Users (Recommended Maximum, Tunnel Mode)	500	
SSL Inspection Throughput (IPS, avg. HTTPS) [3]	1 Gbps	
SSL Inspection CPS (IPS, avg. HTTPS) [3]	1800	
SSL Inspection Concurrent Session (IPS, avg. HTTPS) [3]	135 000	
Application Control Throughput (HTTP 64K) [2]	2.2 Gbps	
CAPWAP Throughput (HTTP 64K)	15 Gbps	
Virtual Domains (Default / Maximum)	10 / 10	
Maximum Number of FortiSwitches Supported	32	
Maximum Number of FortiAPs (Total / Tunnel)	128 / 64	
Maximum Number of FortiTokens	5000	
High Availability Configurations	Active-Active, Active-Passive, Clustering	

	FORTIGATE 100F	FORTIGATE 101F
Dimensions and Power		
Height x Width x Length (inches)	1.73 × 17 × 10	
Height x Width x Length (mm)	44 × 432 × 254	
Weight	7.25 lbs (3.29 kg)	7.56 lbs (3.43 kg)
Form Factor (supports EIA/non-EIA standards)	Rack Mount, 1 RU	
AC Power Supply	100–240V AC, 50/60 Hz	
Power Consumption (Average / Maximum)	35.1 W / 38.7 W	35.3 W / 39.1 W
Current (Maximum)	100V / 1A, 240V / 0.5A	
Heat Dissipation	119.77 BTU/h	121.13 BTU/h
Redundant Power Supplies	Yes	
Operating Environment and Certifications		
Operating Temperature	32–104°F (0–40°C)	
Storage Temperature	-31–158°F (-35–70°C)	
Humidity	10–90% non-condensing	
Noise Level	40.4 dBA	
Forced Airflow	Side to Back	
Operating Altitude	Up to 7400 ft (2250 m)	
Compliance	FCC Part 15B, Class A, CE, RCM, VCCI, UL/cUL, CB, BSMI	
Certifications	ICSA Labs: Firewall, IPsec, IPS, Antivirus, SSL-VPN; IPv6	

ORDERING INFORMATION

Product	SKU	Description
FortiGate 100F	FG-100F	22x GE RJ45 ports (including 2x WAN ports, 1x DMZ port, 1x Mgmt port, 2x HA ports, 16x switch ports with 4 SFP port shared media), 4 SFP ports, 2× 10 GE SFP+ FortiLinks, dual power supplies redundancy.
FortiGate 101F	FG-101F	22x GE RJ45 ports (including 2x WAN ports, 1x DMZ port, 1x Mgmt port, 2x HA ports, 16x switch ports with 4 SFP port shared media), 4 SFP ports, 2× 10 GE SFP+ FortiLinks, 480GB onboard storage, dual power supplies redundancy.

Optional Accessories	SKU	Description
1 GE SFP RJ45 Transceiver Module	FN-TRAN-GC	1 GE SFP RJ45 transceiver module for all systems with SFP and SFP/SFP+slots.
1 GE SFP SX Transceiver Module	FN-TRAN-SX	1 GE SFP SX transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP LX Transceiver Module	FN-TRAN-LX	1 GE SFP LX transceiver module for all systems with SFP and SFP/SFP+ slots.
10 GE SFP+ RJ45 Transceiver Module	FN-TRAN-SFP+GC	10 GE SFP+ RJ45 transceiver module for systems with SFP+ slots.
10 GE SFP+ Transceiver Module, Short Range	FN-TRAN-SFP+SR	10 GE SFP+ transceiver module, short range for all systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ Transceiver Module, Long Range	FN-TRAN-SFP+LR	10 GE SFP+ transceiver module, long range for all systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ Transceivers, Extended Range	FN-TRAN-SFP+ER	10 GE SFP+ transceiver module, extended range for all systems with SFP+ and SFP/SFP+ slots.

BUNDLES

FortiGuard Bundle

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.

Bundles	Enterprise Protection	Unified Threat Protection	Advanced Threat Protection
FortiCare	24×7	24×7	24×7
FortiGuard App Control Service	•	•	•
FortiGuard IPS Service	•	•	•
FortiGuard Advanced Malware Protection (AMP) — Antivirus, Mobile Malware, Botnet, CDR, Virus Outbreak Protection and FortiSandbox Cloud Service	•	•	•
FortiGuard Web and Video[1] Filtering Service	•	•	
FortiGuard Antispam Service	•	•	
FortiGuard Security Rating Service	•		
FortiGuard IoT Detection Service	•		
FortiGuard Industrial Service	•		
FortiConverter Service	•		

1. Available when running FortiOS 7.0

F::RTINET.

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FORTINET

FortiGate® FortiWiFi 40F Series

FG-40F and FWF-40F

Next Generation Firewall
Secure SD-WAN

The FortiGate/FortiWiFi 40F series provides a fast and secure SD-WAN solution in a compact fanless desktop form factor for enterprise branch offices and mid-sized businesses. Protects against cyber threats with system-on-a-chip acceleration and industry-leading secure SD-WAN in a simple, affordable, and easy to deploy solution. Fortinet's Security-Driven Networking approach provides tight integration of the network to the new generation of security.

Security

- Identifies thousands of applications inside network traffic for deep inspection and granular policy enforcement
- Protects against malware, exploits, and malicious websites in both encrypted and non-encrypted traffic
- Prevent and detect against known and unknown attacks using continuous threat intelligence from AI-powered FortiGuard Labs security services

Performance

- Delivers industry's best threat protection performance and ultra-low latency using purpose-built security processor (SPU) technology
- Provides industry-leading performance and protection for SSL encrypted traffic

Certification

- Independently tested and validated for best-in-class security effectiveness and performance
- Received unparalleled third-party certifications from NSS Labs

Networking

- Delivers advanced networking capabilities that seamlessly integrate with advanced layer 7 security and virtual domains (VDOMs) to offer extensive deployment flexibility, multi-tenancy and effective utilization of resources
- Delivers high-density, flexible combination of various high-speed interfaces to enable best TCO for customers for data center and WAN deployments

Management

- Includes a management console that is effective, simple to use, and provides comprehensive network automation and visibility
- Provides Zero Touch Integration with Fortinet's Security Fabric's Single Pane of Glass Management
- Predefined compliance checklist analyzes the deployment and highlights best practices to improve overall security posture

Security Fabric

- Enables Fortinet and Fabric-ready partners' products to provide broader visibility, integrated end-to-end detection, threat intelligence sharing, and automated remediation
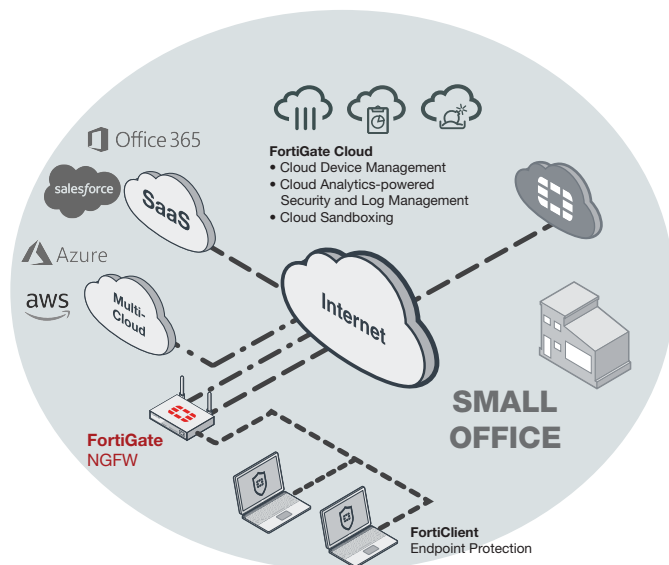
Firewall	IPS	NGFW	Threat Protection	Interfaces
5 Gbps	1 Gbps	800 Mbps	600 Mbps	Multiple GE RJ45 │ WiFi variants

DEPLOYMENT

Next Generation Firewall (NGFW)

- Reduce the complexity and maximize your ROI by integrating threat protection security capabilities into a single high-performance network security appliance, powered by Fortinet's Security Processing Unit (SPU)

- Full visibility into users, devices, and applications across the entire attack surface, and consistent security policy enforcement irrespective of asset location

- Protect against network exploitable vulnerabilities with industry-validated IPS that offers low latency and optimized network performance

- Automatically block threats on decrypted traffic using the industry's highest SSL inspection performance, including the latest TLS 1.3 standard with mandated ciphers

- Proactively block newly discovered sophisticated attacks in real-time with AI-powered FortiGuard Labs and advanced threat protection services included in the Fortinet Security Fabric
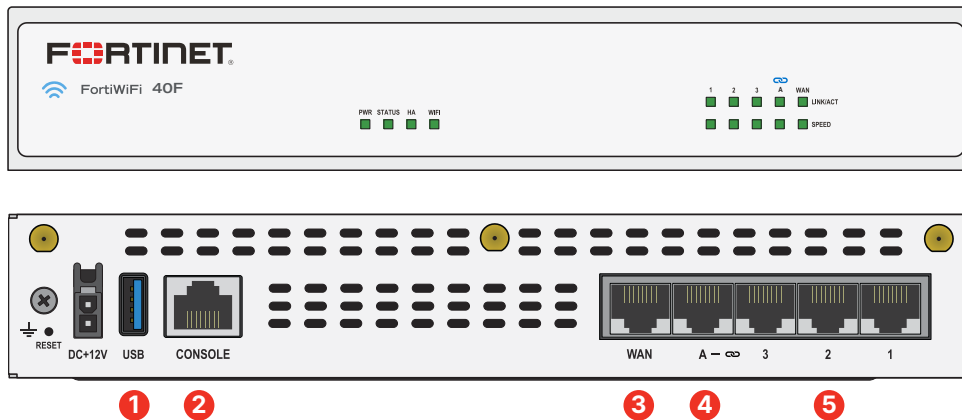
Secure SD-WAN

- Consistent business application performance with accurate detection and dynamic WAN path steering on any best-performing WAN transport

- Accelerated Multi-cloud access for faster SaaS adoption with cloud-on-ramp

- Self-healing networks with WAN edge high availability, sub-second traffic switchover-based and real-time bandwidth compute-based traffic steering

- Automated Overlay tunnels provides encryption and abstracts physical hybrid WAN making it simple to manage

- Simplified and intuitive workflow with FortiManger for management and zero touch deployment

- Enhanced analytics both real-time and historical provides visibility into network performance and identify anomalies

- Strong security posture with next generation firewall and real- time threat protection

**Small Office Deployment
(NGFW)**
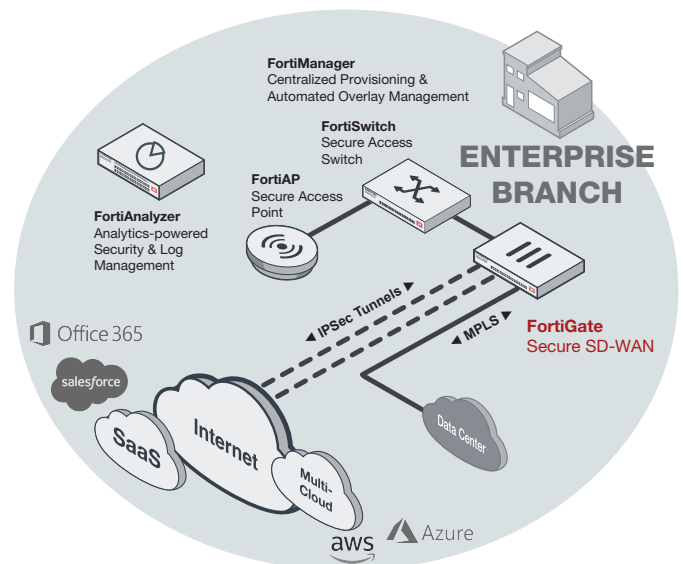
**Enterprise Branch Deployment
(Secure SD-WAN)**

HARDWARE

FortiGate/FortiWiFi 40F Series

Interfaces

1. 1x USB Port
2. 1x Console Port
3. 1x GE RJ45 WAN Port
4. 1x GE RJ45 FortiLink Port
5. 3x GE RJ45 Ethernet Ports

Hardware Features

SOC4 **Desktop** **a/b/g/n /ac-W2**

Powered by Purpose-built Secure SD-WAN ASIC SOC4

SPU

- 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 the 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

- Reduces environmental footprint by saving on average over 60% in power consumption compared to previous generation of FortiGate models

3G/4G WAN Connectivity

The FortiGate 40F Series includes a USB port that allows you to plug in a compatible third-party 3G/4G USB modem, providing additional WAN connectivity or a redundant link for maximum reliability.

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.

Secure Access Layer

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.

FORTINET SECURITY FABRIC

Security Fabric

The industry's highest-performing cybersecurity platform, powered by FortiOS, with a rich ecosystem designed to span the extended digital attack surface, delivering fully automated, self-healing network security.

- **Broad**: Coordinated detection and enforcement across the entire digital attack surface and lifecycle with converged networking and security across edges, clouds, endpoints and users

- **Integrated**: Integrated and unified security, operation, and performance across different technologies, location, deployment options, and the richest Ecosystem

- **Automated**: Context aware, self-healing network & security posture leveraging cloud-scale and advanced AI to automatically deliver near-real-time, user-to-application coordinated protection across the Fabric

The Fabric empowers organizations of any size to secure and simplify their hybrid infrastructure on the journey to digital innovation.

FortiOS™ Operating System

FortiOS, Fortinet's leading operating system enable the convergence of high performing networking and security across the Fortinet Security Fabric delivering consistent and context-aware security posture across network endpoint, and clouds. The organically built best of breed capabilities and unified approach allows organizations to run their businesses without compromising performance or protection, supports seamless scalability, and simplifies innovation consumption.

The release of FortiOS 7 dramatically expands the Fortinet Security Fabric's ability to deliver consistent security across hybrid deployment models consisting on appliances, software and As-a-Service with SASE, ZTNA and other emerging cybersecurity solutions.

SERVICES

FortiGuard™ Security Services

FortiGuard Labs offers real-time intelligence on the threat landscape, delivering comprehensive security updates across the full range of Fortinet's solutions. Comprised of security threat researchers, engineers, and forensic specialists, the team collaborates with the world's leading threat monitoring organizations and other network and security vendors, as well as law enforcement agencies.

FortiCare™ Services

Fortinet is dedicated to helping our customers succeed, and every year FortiCare services help thousands of organizations get the most from their Fortinet Security Fabric solution. We have more than 1000 experts to help accelerate technology implementation, provide reliable assistance through advanced support, and offer proactive care to maximize security and performance of Fortinet deployments.

SPECIFICATIONS

	FORTIGATE 40F	FORTIWIFI 40F
Interfaces and Modules		
Hardware Accelerated GE RJ45 WAN / DMZ Ports	1	
Hardware Accelerated GE RJ45 Internal Ports	3	
Hardware Accelerated GE RJ45 FortiLink Ports (Default)	1	
Hardware Accelerated GE RJ45 PoE/+ Ports	0	
Wireless Interface	0	Single Radio (2.4GHz/5GHz) 802.11 /a/b/g/n/ac-W2
USB Ports	1	
Console Port (RJ45)	1	
Onboard Storage	0	
Included Transceivers	0	
System Performance — Enterprise Traffic Mix		
IPS Throughput [2]	1 Gbps	
NGFW Throughput [2, 4]	800 Mbps	
Threat Protection Throughput [2, 5]	600 Mbps	
System Performance and Capacity		
IPv4 Firewall Throughput (1518 / 512 / 64 byte, UDP)	5 / 5 / 5 Gbps	
Firewall Latency (64 byte, UDP)	2.97 µs	
Firewall Throughput (Packet per Second)	7.5 Mpps	
Concurrent Sessions (TCP)	700 000	
New Sessions/Second (TCP)	35 000	
Firewall Policies	5000	
IPsec VPN Throughput (512 byte) [1]	4.4 Gbps	
Gateway-to-Gateway IPsec VPN Tunnels	200	
Client-to-Gateway IPsec VPN Tunnels	250	
SSL-VPN Throughput	490 Mbps	
Concurrent SSL-VPN Users (Recommended Maximum, Tunnel Mode)	200	
SSL Inspection Throughput (IPS, avg. HTTPS) [3]	310 Mbps	
SSL Inspection CPS (IPS, avg. HTTPS) [3]	320	
SSL Inspection Concurrent Session (IPS, avg. HTTPS) [3]	55 000	
Application Control Throughput (HTTP 64K) [2]	990 Mbps	
CAPWAP Throughput (HTTP 64K)	3.5 Gbps	
Virtual Domains (Default / Maximum)	10 / 10	
Maximum Number of FortiSwitches Supported	8	
Maximum Number of FortiAPs (Total / Tunnel)	16 / 8	
Maximum Number of FortiTokens	500	
High Availability Configurations	Active-Active, Active-Passive, Clustering	

	FORTIGATE 40F	FORTIWIFI 40F
Dimensions and Power		
Height x Width x Length (inches)	1.5 × 8.5 × 6.3	
Height x Width x Length (mm)	38.5 × 216 × 160	
Weight	2.2 lbs (1 kg)	
Form Factor (supports EIA/non-EIA standards)	Desktop	
Input Rating	12Vdc, 3A	
Power Required	Powered by External DC Power Adapter, 100–240V AC, 50/60 Hz	
Power Consumption (Average / Maximum)	7.74 W / 9.46 W	14.6 W / 16.6 W
Current (Maximum)	100V AC / 0.2A, 240V AC / 0.1A	
Heat Dissipation	52.55 BTU/h	56.64 BTU/h
Redundant Power Supplies		
Operating Environment and Certifications		
Operating Temperature	32–104°F (0–40°C)	
Storage Temperature	-31–158°F (-35–70°C)	
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	ICSA Labs: Firewall, IPsec, IPS, Antivirus, SSL-VPN	
Radio Specifications		
Multiple (MU) MIMO	0	3 × 3
Maximum Wi-Fi Speeds	0	1300 Mbps @ 5 GHz, 450 Mbps @ 2.4 GHz
Maximum Tx Power	0	20 dBm
Antenna Gain	0	3.5 dBi @ 5GHz, 5 dBi @ 2.4 GHz

Note: All performance values are "up to" and vary depending on system configuration.
1. IPsec VPN performance test uses AES256-SHA256.
2. IPS (Enterprise Mix), Application Control, NGFW and Threat Protection are measured with Logging enabled.
3. SSL Inspection performance values use an average of HTTPS sessions of different cipher suites.
4. NGFW performance is measured with Firewall, IPS and Application Control enabled.
5. Threat Protection performance is measured with Firewall, IPS, Application Control and Malware Protection enabled.

ORDERING INFORMATION

Product	SKU	Description
FortiGate 40F	FG-40F	5 x GE RJ45 ports (including 4 x Internal Ports, 1 x WAN Ports).
FortiWiFi 40F	FWF-40F-[RC]	5 x GE RJ45 ports (including 4 x Internal Ports, 1 x WAN Ports), Wireless (802.11a/b/g/n/ac-W2).
Optional Accessories		
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-FG-40F-PA-10(-XX)	Pack of 10 AC power adaptors for FG/FWF-40F, come with interchangeable power plugs. (XX=various countries code).
Wall Mount Kits	SP-FG60F-MOUNT-20	Pack of 20 wall mount kits for FG/FWF-40F series, FG/FWF-60F series, FG-80F, FG-81F and FG-80F-Bypass.

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

BUNDLES

FortiGuard Bundle

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.

Bundles	Enterprise Protection	SMB Protection	Unified Threat Protection	Advanced Threat Protection
FortiCare	24×7	24×7	24×7	24×7
FortiGuard App Control Service	•	•	•	•
FortiGuard IPS Service	•	•	•	•
FortiGuard Advanced Malware Protection (AMP) — Antivirus, Mobile Malware, Botnet, CDR, Virus Outbreak Protection and FortiSandbox Cloud Service	•	•	•	•
FortiGuard Web and Video[1] Filtering Service	•	•		
FortiGuard Antispam Service	•	•	•	
FortiGuard Security Rating Service	•			
FortiGuard IoT Detection Service	•			
FortiGuard Industrial Service	•			
FortiConverter Service	•			
FortiGate Cloud Subscription		•		

1. Available when running FortiOS 7.0

www.fortinet.com

FortiGuard Security Services

FortiGuard Labs, the threat intelligence and research organization at Fortinet, develops, innovates, and maintains one of the most recognized and seasoned artificial intelligence and machine learning systems in the industry. We use this to deliver proven unparalleled protection, visibility, and business continuity across the Fortinet Security Fabric, protecting our customers against the wide range of ever changing and sophisticated threats.

Delivering 1B Updates Every Day

FortiGuard Labs
Proven, Effective, Innovative

Best-in-Class Technologies
Sustained 3rd Party Certification YoY

Analytics & Artificial Intelligence
End-to End Protection
Breach Detection
Incident Response Insights

Firewalls   Web   Emails   Endpoints   Sandbox   Deception
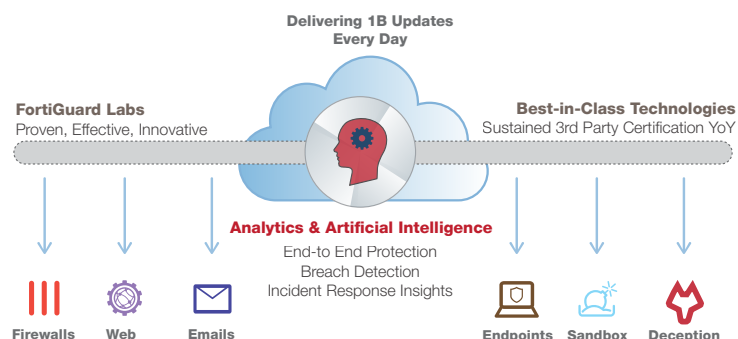
Why FortiGuard?

What sets FortiGuard apart comes down to our advanced and proven analytics and artificial intelligence (AI) platform developed, innovated, and operated by FortiGuard Labs. Our platform ingests and analyzes 100 billion events every day, on average, to deliver over 1 billion security updates daily to protect our customers against new, unknown threats across all Security Fabric deployments.

Where other vendors measure results in days, weeks, or months, Fortinet can show impressive outcomes by the minute.

Ultimately, the effectiveness of security AI and analytics systems are only as good as the inputs and trainings that go into them. At Fortinet, our platform is driven by one of the largest and most experienced security research organizations in the industry with over 215 researchers and analysts, spanning 31 countries. Our FortiGuard team contributes 580,000 hours of research annually. Very few, if any, of our competitors can say that!

In fact, FortiGuard is credited with over 720+ zero-day discoveries – a record unmatched by any other security vendor. and we feed in millions of events coming from across global Fortinet Security Fabric deployments by customers who join our submissions program and ingest threat intelligence across over 200 Threat Intelligence Ecosystem partners and collaborations. This combination gives Fortinet unparalleled insights and visibility to proactively identify and stop the latest threats around the clock. To subscribe, go to support.

FortiGuard Minute

580,000
Hours of Threat Research
Globally Per Year

140,000
Malicious Website Accesses
Blocked Per Minute

10,000,000
Network Intrusion Attempts
Resisted Per Minute

65,000
Botnet C&C Attempts
Thwarted Per Minute

35,000
Malware Programs
Neutralized Per Minute

22,000
Intrusion Prevention Rules,
63 Rules Per Week

860
Terabytes of Threat Samples

720+
Zero Day Threats Discovered

Certifications

Customers can rest assured knowing that our security efficacy is backed by sustained year-over-year certifications and rigorous testing by leading organizations, including: NSS Labs, ICSA Labs, Common Criteria, Virus Bulletin, Virus Bulletin Spam, Mitre, Oasis and NASA. This makes the Fortinet Security Fabric the most certified and proven security solution available in the industry.

Feature Highlights

To benefit from and access the intelligence, expertise, and protection delivered by FortiGuard Labs, customers simply need to add the desired security subscriptions to their Fortinet Security Fabric deployment.

FortiGuard security services are designed to optimize performance and maximize protection across the Fortinet Security Fabric and are available as both individual and bundled subscriptions. Our subscriptions cover every aspect of the attack surface and includes IP reputation updates, intrusion prevention, web filtering, antivirus/anti-spyware, anti-spam, database security, virus outbreak protection service, content disarm & reconstruction, security rating services and network and web application control capabilities.

Subscription Benefits

Up-to-the minute threat intelligence in real time to stop the latest threats

Insight into threats anywhere in the world through a global network of more than three million sensors

Fast and comprehensive intelligence via automated and advanced analytics (such as machine learning) being applied to cross-discipline information

High fidelity with mature and rigorous back-end processes

Prevention of exploitation of new avenues of attack with proactive threat research

Top-rated effectiveness achieved through the commitment to independent, real-world testing

Subscribe to FortiGuard to stay protected against the latest threat across all threat vectors and attack surfaces today!

Subscription Services

Antivirus
FortiGuard Antivirus delivers automated updates that protect against the latest viruses, spyware, and other content-level threats. It uses industry-leading advanced detection engines to prevent both new and evolving threats from gaining a foothold inside your network and accessing its invaluable content.

Intrusion Prevention (IPS)
FortiGuard automated IPS updates provide latest defenses against network intrusions by detecting and blocking threats before they reach your network devices. You get the latest defenses against stealthy network-level threat, a comprehensive IPS Library with thousands of signatures, flexible policies that enable full control of attack detection methods to suit complex security applications, resistance to evasion techniques proved by NSS Labs and IPS signature lookup service.

Application Control
Improve security and meet compliance with easy enforcement of your acceptable use policy through unmatched, real-time visibility into the applications your users are running. With FortiGuard Application Control, you can quickly create policies to allow, deny, or restrict access to applications or entire categories of applications.
The sophisticated detection signatures identify Apps, DB applications, web applications and protocols; both blacklist and white list approaches can allow or deny traffic. Traffic shaping can be used to

prioritize applications and flexible policies enable full control of attack detection methods.

Security Rating Service
The Security Rating Service is helps guide customers to design, implement and continually maintain the target Security Fabric security posture suited for their organization. By running Security Rating Service audit checks, security teams will be able to identify critical vulnerabilities and configuration weaknesses in their Security Fabric setup, and implement best practice recommendations.

Indicators of Compromise (IOC)
The IOC service is an automated breach defense system that continuously monitors your network for attacks, vulnerabilities, and persistent threats. It provides protection against legitimate threats, guarding customer data and defending against fraudulent access, malware, and breaches. It also helps businesses detect and prevent fraud from compromised devices or accounts.

Vulnerabilitity Scan
Vulnerability scan network assets for security weaknesses, with on demand or scheduled scans. Comprehensive reports on the security posture of your critical assets and automated scanning of remote location FortiGates.

F:RTINET.

Web Application Firewall (WAF)

Automated WAF signature updates that protects against SQL injection, cross-site scripting and various other attacks, hundreds of vulnerability scan signatures, data-type and web robot patterns, and suspicious URLs.

Supports PCI DSS compliance by protecting against OWASP top-10 vulnerabilities and using WAF technology to block attacks.

Web Filtering

Block and monitor web activities to assist customers with government regulations and enforcement of corporate internet usage policies. FortiGuard's massive web-content rating databases power one of the industry's most accurate web-filtering services. Granular blocking and filtering provide web categories to allow, log, or block. Comprehensive URL database provides rapid and comprehensive protection. And, Credential Stuffing Defense identifies login attempts using credentials that have been compromised using an always up-to-date feed of stolen credentials.

Antispam

FortiGuard Antispam provides a comprehensive and multi-layered approach to detect and filter spam processed by organizations. Dual-pass detection technology can dramatically reduce spam volume at the perimeter, giving you unmatched control of email attacks and infections. Advanced anti-spam detection capabilities provide greater protection than standard real-time blacklists.

Cloud Sandbox

FortiCloud Sandbox Service is an advanced threat detection solution that performs dynamic analysis to identify previously unknown malware. Actionable intelligence generated by FortiCloud Sandbox is fed back into preventive controls within your network—disarming the threat. FortiSandbox is NSS Labs Recommended for breach detection and breach prevention, and ICSA Labs certified for advanced threat defense.

FortiGuard Subscription Bundles

SERVICE	ADVANCED THREAT PROTECTION (ATP)	UNIFIED PROTECTION (UTM)	ENTERPRISE PROTECTION (ENT)	360 PROTECTION
FortiManager Cloud				✓
FortiAnalyzer Cloud				✓
SD-WAN Cloud Assist Monitoring				✓
SD-WAN One Click VPN Overlay				✓
FortiConverter Service				✓
Industrial Security Service			✓	✓
Security Rating			✓	✓
CASB			✓	✓
Anti-Spam		✓	✓	✓
Web Filtering		✓	✓	✓
Advanced Malware Protection	✓	✓	✓	✓
IPS	✓	✓	✓	✓
FortiCare + Application Control	✓	✓	✓	✓

Deployment Use Cases

FortiGuard security subscriptions works optimally with the Fortinet Security Fabric to protect all deployment use case needs.
Visit https://www.fortinet.com/support/support-services/fortiguard-security-subscriptions.html for more details.

- Next-generation Firewall (NGFW)
- Secure SD-WAN
- Intrusion Prevention (IPS)
- Intent-based Segmentation
- Secure Web Gateway (SWG)
- Mangement & Analytics
- Advanced Threats

- Email
- Public Cloud
- Private Cloud
- Web Application Firewall
- Application Delivery Controller
- Endpoint Protecion
- SIEM

Order Information

FortiGuard A La Carte Services	
Anti-Virus, Botnet IP/Domain and Mobile Malware Service	Protects against the latest viruses, spyware, and other content-level threats.
Web Filtering	First line of defense against web-based attacks, monitor, control, or block access to risky or malicious websites
Cloud Sandbox	Advanced threat detection solution that performs dynamic analysis to identify previously unknown malware. Includes: Virus Outbreak Protection Service and Content Disarm & Reconstruction Service
Virus Outbreak Protection	Protects against emerging threats discovered between signature updates
Indicator of Compromise	Provides a continually updated list of known bad threat elements for prevention and detection capabilities
Security Rating Service	Identifies security fabric configuration weaknesses, provides ranking against industry peers, and automates best practice recommendation
Industrial Security Service	Provides in-line protection, proactive filtering of malicious and unauthorized network traffic, enforce security policies tailored to industrial environments, protocols and equipment
IPS Service	Provides real-time threat intelligence updates to block and prevent advanced cyber threats
AntiSpam	Multi-layered approach to detect and filter spam at the perimeter, giving you unmatched control of email attacks and infections
Advanced Malware Protection	FortiGuard Advanced Malware Protection is a robust service providing core technologies needed for security protection for known threats and emerging threats. and includes: Antivirus, Botnet IP/Domain Service, Mobile Malware Security, FortiSandbox Cloud, Virus Outbreak Protection Service and Content Disarm & Reconstruct.
Penetration Testing Service	FortiGuard Pentest Team conducts a series of technical assessments on your organization's security controls to determine the weakness on computer hardware infrastructure and software application, apply commercial automated tools to discover unintended services made publicly available by your network and also apply real-world attackers' methodologies to discover unknown vulnerabilities on the given target.

FortiCare SKUs	
FC-10-#####-247-02-DD	FortiCare 24x7 -- In addition to 24x7 phone and email support, this SKU covers automatic updates following databases: Application Control DB, Internet Service DB, Client ID DB, IP Geography DB, Malicious URL DB, and URL Whitelist DB.
FC-10-#####-280-02-DD	FortiCare 360 Contract (24x7 FortiCare plus Advanced Support ticket handling & Health Check Monthly Reports; Collector included with Setup & Administration)

FNDN License SKUs	
FC-10-FNDN1-651-02-12	FNDN Develop Toolkit – FNDN access for single user. Includes Develop tools and licenses
FC-10-FNDN1-652-02-12	FNDN Deploy Toolkit - FNDN access for single user. Includes Deploy tools and licenses
FC-10-FNDN2-139-02-12	FNDN Site Toolkit – FNDN access for up to 15 users. Includes premium tools and licenses for developers and advanced users of Fortinet products

| Additional Services	
FortiAnalyzer	Subscription license for the FortiGuard Indicator of Compromise (IOC)
FortiSandbox	Intelligence from IPS, AntiVirus, IP Reputation, Web Filtering, and FortiCare services.
FortiClient	Intelligence from Application Control, AntiVirus, Web Filtering, Vulnerability Scan, and FortiCare services.
FortiProxy	Intelligence from AntiVirus, Web Filtering, IPS, DLP, Appication Control, DNS Filtering, AntiSpam, Vulnerability Scan and FortiCare Service
FortiMail	Intelligence from AntiVirus, AntiSpam, FortiSandbox Cloud, Virus Outbreak Protection Service, Dynamic Adult Image Analysis Service, FortiCare services
FortiWeb	Intelligence from Web Application Security, AntiVirus, IP Reputation, Vulnerability Scan, FortiGuard Credential Stuffing Defense, FortiCare services.
FortiADC	Intelligence from AntiVirus, IP Reputation Web Application Security, FortiGuard Web Filtering Service, and FortiCare services.
FortiDDoS	Intelligence from IP Reputation and FortiCare services.
FortiSIEM	Subscription license for the FortiGuard Indicator of Compromise (IOC)
FortiCASB	Provide visibility and control for data stored in the cloud.
FortiManager Cloud:	Cloud-based Orchestration Service (1yr subscription)
FortiAnalyzer Cloud	Cloud-based Security and Event Management Service (1yr subscription)
SD-WAN Cloud Assisted Monitoring	SD-WAN Bandwidth & Quality Monitoring Service
SD-WAN Overlay Controller VPN Service	Cloud-based VPN Overlay Service & Portal
FortiConverter Service	Policy Migration and Optimization Service

FE:RTINET®

www.fortinet.com

FortiSwitch™ Secure Access

Available in:

Appliance
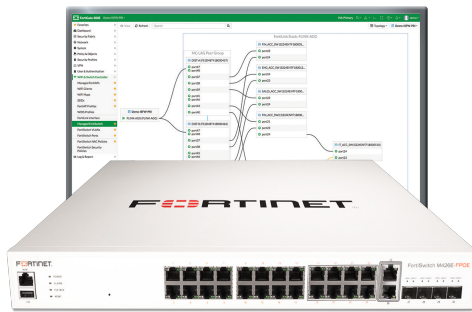
Security, Performance, and Manageability

The FortiSwitch™ Secure Access Family delivers outstanding security, performance, and manageability. Secure, simple, and scalable, FortiSwitch is the right choice for threat-conscious businesses of all sizes.

Tightly integrated into the Fortinet Security Fabric via FortiLink, FortiSwitch can be managed directly from the familiar FortiGate interface. This single-pane-of-glass management provides complete visibility and control of users and devices on the network regardless of how they connect. This makes the FortiSwitch ideal for SD-Branch and campus deployments with applications that range from desktop to data center aggregation, enabling businesses to converge their security and network access.

Security Fabric Integration through FortiLink

FortiLink is an innovative proprietary management protocol that allows our FortiGate Next-Generation Firewall to seamlessly manage any FortiSwitch. FortiLink enables the FortiSwitch to become a logical extension of the FortiGate, integrating it directly into the Fortinet Security Fabric. This management option reduces complexity and decreases management costs as network security and access layer functions are enabled and managed through a single console. FortiLink integration enables centralized policy management, including role-based access and control, making it easy to implement and manage.

Highlights

- Designed for installations from desktops to wiring closets
- Ideal for SD-Branch deployments
- Centralized security and access management from FortiGate interfaces with FortiLink
- Optimal for converged network environments; enabling voice, data, and wireless traffic to be delivered across a single network
- Supports non-FortiLink deployments through onboard GUI, API, or command line configuration
- Up to 48 ports in a compact 1 RU form factor
- Stackable up to 300 switches per FortiGate, depending on model
- Supports wire-speed switching and store and forward forwarding mode

1

HIGHLIGHTS

Entry

100 Series

- Entry level switch
- 8-48 GE ports, PoE+ capable
- Desktop to wiring closet
- 2-4 GE SFP uplink ports
- 4× 10GE SFP+ uplink ports

Mid-Range

200 Series

- Mid-level switch
- 24-48 GE ports, PoE+ capable
- Typical wiring closet switch
- 4 GE SFP uplink ports

Premium

400 Series

- Enterprise switch
- 24-48 GE and Multi-Gig port options, PoE+ and UPOE options
- Larger wiring closet or high throughput requirements
- 4× 10 GE SFP+ uplink ports

Aggregation

500 Series

- Aggregation switch
- 24-48 GE ports, PoE+ capable
- Larger wiring closet or high throughput requirements
- 4× 10 GE SFP+ and 2× 40 GE QSFP uplink ports

DEPLOYMENT OVERVIEW

FortiSwitch is commonly managed and deployed through our FortiGate with FortiLink but can also be deployed and managed in non-FortiGate environments
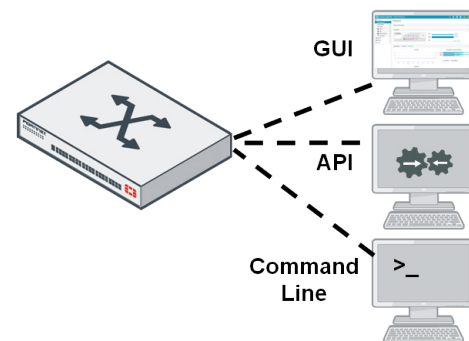
FortiGate

- Deployment and management via FortiLink
- Security extended from NGFW
- Most common Fortinet deployment model
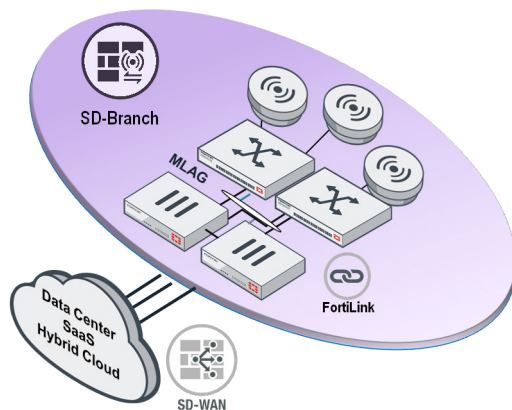
Non-FortiGate

- Standalone GUI or CLI
- Manage at scale with FortiSwitch Manager
- Industry standard, no Fortinet Security Fabric integration

Cloud Management for both deployment options available through FortiCloud

PRODUCT OFFERINGS

Model Numbers

FS-108E, FS-108E-POE, FS-108E-FPOE, FS-108F, FS-108F-POE, FS-108F-FPOE, FS-124E, FS-124E-POE, FS-124E-FPOE, FS-148E, FS-148E-POE, FS-124F, FS-124F-POE, FS-124F-FPOE, FS-148F, FS-148F-POE, FS-148F-FPOE, FS-224D-FPOE, FS-224E, FS-224E-POE, FS-248D, FS-248E-POE, FS-248E-FPOE, FS-424E-FIBER, FS-M426E-FPOE, FS-424E, FS-424E-POE, FS-424E-FPOE, FS-448E, FS-448E-POE, FS-448E-FPOE, FS-524-D, FS-524D-FPOE, FS-548D, FS-548D-FPOE

FEATURES

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

FORTISWITCH FORTILINK MODE (WITH FORTIGATE)
Management and Configuration
Auto Discovery of Multiple Switches
8 to 300 Managed Switches depending on FortiGate model
FortiLink Stacking (Auto Inter-Switch Links)
Software Upgrade of Switches
Centralized VLAN Configuration
Switch POE Control
Link Aggregation Configuration
Spanning Tree
LLDP/MED
IGMP Snooping
L3 Routing and Services (FortiGate)
Policy-Based Routing (FortiGate)
Virtual Domain (FortiGate)
Automated detection and recommendations
Dynamic Port Profiles for FortiSwitch ports
Provision firmware upon authorization
High Availability
Support FortiLink FortiGate in HA Cluster
LAG support for FortiLink Connection
Active-Active Split LAG from FortiGate to FortiSwitches for Advanced Redundancy

FORTISWITCH FORTILINK MODE (WITH FORTIGATE)
Security and Visibility
802.1X Authentication (Port-based, MAC-based, MAB)
Syslog Collection
DHCP Snooping
Device Detection
MAC Black/While Listing (FortiGate)
Policy Control of Users and Devices (FortiGate)
Block Intra-VLAN Traffic
Network Device Detection
Host Quarantine on Switch Port
Integrated FortiGate Network Access Control (NAC) function
FortiGuard IoT identification
FortiSwitch recommendations in Security Rating
Switch Controller traffic collector
UTM Features
Firewall (FortiGate)
IPC, AV, Application Control, Botnet (FortiGate)

FEATURES

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

FORTISWITCH
Layer 2
Jumbo Frames
Auto-negotiation for Port Speed and Duplex
MDI/MDIX Auto-crossover
IEEE 802.1D MAC Bridging/STP
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
STP Root Guard
STP BPDU Guard
Edge Port / Port Fast
IEEE 802.1Q VLAN Tagging
Private VLAN
IEEE 802.3ad Link Aggregation with LACP
Unicast/Multicast traffic balance over trunking port (dst-ip, dst-mac, src-dst-ip, src-dst-mac, src-ip, src-mac)
IEEE 802.1AX Link Aggregation
Spanning Tree Instances (MSTP/CST)
IEEE 802.3x Flow Control and Back-pressure
IEEE 802.3 10Base-T
IEEE 802.3u 100Base-TX
IEEE 802.3z 1000Base-SX/LX
IEEE 802.3ab 1000Base-T
IEEE 802.3ae 10 Gigabit Ethernet
IEEE 802.3az Energy Efficient Ethernet
IEEE 802.3bz Multi Gigabit Ethernet
IEEE 802.3 CSMA/CD Access Method and Physical Layer Specifications
Storm Control
MAC, IP, Ethertype-based VLANs
Virtual-Wire
Split Port (QSFP+ breakout to 4×10G SFP+ or 4×1G SFP)
Time-Domain Reflectcometry (TDR) Support
LAG min/max bundle
Rapid PVST interoperation
Ingress Pause Metering
Loop Guard
Per-port storm control
Priority-based Flow Control (802.1Qbb)
IEEE 802.1ad QinQ
VLAN Mapping
IEEE 802.3ba, 802.3bj, and 802.3bm 40 and 100 Gigabit Ethernet
Auto topology
Services
IGMP proxy / querier
MLD Snooping
MLD proxy / querier
IGMP Snooping

FORTISWITCH
Layer 3
Static Routing (Hardware-based)
Dynamic Routing Protocols: OSPFv2, RIPv2, VRRP, BGP, ISIS *
Multicast Protocols: PIM-SSM *
ECMP
Bidirectional Forwarding Detection (BFD)
DHCP Relay
IP conflict detection and notification
DHCP server
Unicast Reverse Path Forwarding - uRPF
IPv6 route filtering
Filtering routemaps based on routing protocol
Security and Visibility
Port Mirroring
Admin Authentication Via RFC 2865 RADIUS
IEEE 802.1X Authentication Port-based
IEEE 802.1X Authentication MAC-based
IEEE 802.1X Guest and Fallback VLAN
IEEE 802.1X MAC Access Bypass (MAB)
IEEE 802.1X Dynamic VLAN Assignment
Radius CoA (Change of Authority)
Radius Accounting
MAC-IP Binding
sFlow
ACL
IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
IEEE 802.1ab LLDP-MED
IEEE 802.1ae MAC Security (MAC Sec)
DHCP-Snooping
Dynamic ARP Inspection
Sticky MAC and MAC Limit
IEEE 802.1X open auth
IEEE 802.1X EAP pass-through
Flow Export (NetFlow and IPFIX)
ACL Multistage
ACL Multiple Ingress
ACL Schedule
IP source guard
IPv6 RA Guard
LLDP-MED ELIN support
Per-port and per-VLAN MAC learning limit
Assign VLANs via Radius attributes (RFC 4675)

*Requires 'Advanced Features' License.

FEATURES

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

FORTISWITCH
High Availability
Multi-Chassis Link Aggregation (MCLAG)
Quality of Service
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
Management
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

FEATURES

ALL FORTISWITCH MODELS

RFC and MIB Support*

BFD

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)

BGP

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

DHCP

RFC 2131: Dynamic Host Configuration Protocol

RFC 3046: DHCP Relay Agent Information Option

RFC 7513: Source Address Validation Improvement (SAVI) Solution for DHCP

IP/IPv4

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

IP Multicast

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

IPv6

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

IS-IS

RFC 1195: Use of OSI IS-IS for Routing in TCP/IP and Dual Environments

RFC 5308: Routing IPv6 with IS-IS

MIB

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

FEATURES

ALL FORTISWITCH MODELS

RFC AND MIB Support*

MIB

RFC 1724: RIPv2-MIB

RFC 1850: OSPF Version 2 Management Information Base

RFC 2233: The Interfaces Group MIB using SMIv2

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)

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)

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 108E	FORTISWITCH 108E-POE	FORTISWITCH 108E-FPOE
Hardware Specifications			
Total Network Interfaces	7x GE RJ45, 1x GE/POE-PD RJ45, and 2x GE SFP	8x GE RJ45 and 2x GE SFP	8x GE RJ45 and 2x GE SFP
Dedicated Management 10/100 Port	0	0	0
RJ-45 Serial Console Port	1	1	1
Form Factor	Desktop	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	0	4 (802.3af/at)	8 (802.3af/at)
PoE Power Budget	0	65 W	130 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	20 Gbps	20 Gbps	20 Gbps
Packets Per Second (Duplex)	30 Mpps	30 Mpps	30 Mpps
MAC Address Storage	8 K	8 K	8 K
Network Latency	4μs	4μs	4μs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	8	8	8
Packet Buffers	512 KB	512 KB	512 KB
DRAM	256 MB DDR3	256 MB DDR3	256 MB DDR3
FLASH	32 MB	32 MB	32 MB
ACL	640	640	640
Spanning Tree Instances	16	16	16
Dimensions			
Height x Depth x Width (inches)	1.5 × 6.3 × 8.7	1.7 × 8.2 × 13	1.7 × 8.2 × 13
Height x Depth x Width (mm)	38 × 160 × 220	44 × 209 × 330	44 × 209 × 330
Weight	2.2 lbs (1 kg)	4.3 lbs (1.95 kg)	4.5 lbs (2.04 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz / PoE-PSE(af)	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC & PoE-PD Built in	AC Built in	AC Built in
Redundant Power	—	—	—
Power Consumption* (Average / Maximum)	5.54 W / 6.26 W	70.19 W / 71.10 W	135.19 W / 136.10 W
Heat Dissipation	18.9 BTU/h	17.7 BTU/h	17.7 BTU/h
Operating Temperature	32-113°F (0–45°C)	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)	-40–158°F (-40–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing	10–90% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2		
Warranty			
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 108E

FortiSwitch 108E-POE

FortiSwitch 108E-FPOE

SPECIFICATIONS

Hardware Specifications	FORTISWITCH 108F	FORTISWITCH 108F-POE	FORTISWITCH 108F-FPOE
Total Network Interfaces	7x GE RJ45, 1x GE/POE-PD RJ45, and 2x GE SFP	8x GE RJ45 and 2x GE SFP	8x GE RJ45 and 2x GE SFP
Dedicated Management 10/100 Port	0	0	0
RJ-45 Serial Console Port	1	1	1
Form Factor	Desktop	Deskop / 19" rack bracket	Deskop / 19" rack bracket
Power over Ethernet (PoE) Ports	0	8 (802.3af/at)	8 (802.3af/at)
PoE Power Budget	0	65 W	130 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	20 Gbps	20 Gbps	20 Gbps
Packets Per Second (Duplex)	30 Mpps	30 Mpps	30 Mpps
MAC Address Storage	8 K	8 K	8 K
Network Latency	4 µs	4 µs	4 µs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	8	8	8
Packet Buffers	512 KB	512 KB	512 KB
DRAM	256 MB DDR3	256 MB DDR3	256 MB DDR3
FLASH	32 MB	32 MB	32 MB
ACL	768	768	768
Spanning Tree Instances	16	16	16
Dimensions			
Height x Depth x Width (inches)	1.18 × 4.72 × 7.09	1.73 × 8.23 × 9.85	1.73 × 8.23 × 9.85
Height x Depth x Width (mm)	30 × 120 × 180	44 × 209 × 250	44 × 209 × 250
Weight	1.36 lbs (0.62 kg)	3.75 lbs (1.70 kg)	4.05 lbs (1.84 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz / PoE-PSE(af)	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	12V/1A DC power adapter included, PoE-PD Built in	AC built in	AC built in
Redundant Power	No	No	No
Power Consumption	6.2 W	74.4 W	139.2 W
Heat Dissipation	21.142 BTU/h	34.12 BTU/h	34.56 BTU/h
Operating Temperature	32–113°F (0–45°C)	32–113°F (0–45°C)	32–113°F (0–45°C)
Storage Temperature	-49–158°F (-40–70°C)	-40–158°F (-40–70°C)	-40–158°F (-40–70°C)
Humidity	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty			
Fortinet Warranty		Limited lifetime* warranty on all models	

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

FortiSwitch 108F

FortiSwitch 108F-FPOE

FortiSwitch 108F-POE

SPECIFICATIONS

	FORTISWITCH 124E	FORTISWITCH 124E-POE	FORTISWITCH 124E-FPOE
Hardware Specifications			
Total Network Interfaces	24x GE RJ45 and 4x GE SFP	24x GE RJ45 and 4x GE SFP	24x GE RJ45 and 4x GE SFP
Dedicated Management 10/100 Port	0	0	0
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	0	12 (802.3af/at)	24 (802.3af/at)
PoE Power Budget	0	185 W	370 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	56 Gbps	56 Gbps	56 Gbps
Packets Per Second (Duplex)	83 Mpps	83 Mpps	83 Mpps
MAC Address Storage	8 K	8 K	8 K
Network Latency	4μs	4μs	4μs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	8	8	8
Packet Buffers	512 KB	512 KB	512 KB
DRAM	256 MB DDR3	256 MB DDR3	256 MB DDR3
FLASH	32 MB	32 MB	32 MB
ACL	640	640	640
Spanning Tree Instances	16	16	16
Dimensions			
Height x Depth x Width (inches)	1.7 × 8.2 × 13	1.7 × 12.2 × 17.3	1.7 × 12.2 × 17.3
Height x Depth x Width (mm)	44 × 209 × 330	44 × 309 × 440	44 × 309 × 440
Weight	4.7 lbs (2.13 kg)	11.1 lbs (5.03 kg)	11.2 lbs (5.03 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC Built in	AC Built in	AC Built in
Redundant Power	—	—	—
Power Consumption* (Average / Maximum)	15.83 W /17.79 W	202.78 W / 205.45 W	387.78 W / 390.45 W
Heat Dissipation	54 BTU/h	60.67 BTU/h	60.67 BTU/h
Operating Temperature	32-113°F (0–45°C)	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)	-40–158°F (-40–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing	10–90% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2		
Warranty			
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 124E

FortiSwitch 124E-FPOE

FortiSwitch 124E-POE

SPECIFICATIONS

Hardware Specifications	FORTISWITCH 148E	FORTISWITCH 148E-POE
Total Network Interfaces	48x GE RJ45 and 4x GE SFP	48x GE RJ45 and 4x GE SFP
Dedicated Management 10/100 Port	0	0
RJ-45 Serial Console Port	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	0	24 (802.3af/at)
PoE Power Budget	0	370 W
Mean Time Between Failures	> 10 years	> 10 years
System Specifications		
Switching Capacity (Duplex)	104 Gbps	104 Gbps
Packets Per Second (Duplex)	155 Mpps	155 Mpps
MAC Address Storage	16 K	16 K
Network Latency	3860 ns	3860 ns
VLANs Supported	4 K	4 K
Link Aggregation Group Size	8	8
Total Link Aggregation Groups	16	16
Packet Buffers	1.5 MB	1.5 MB
DRAM	256 MB DDR3	256 MB DDR3
FLASH	64 MB	64 MB
ACL	640	640
Spanning Tree Instances	16	16
Dimensions		
Height x Depth x Width (inches)	1.73 × 12.2 × 17.3	1.73 × 13.7 × 17.3
Height x Depth x Width (mm)	44 × 309 × 440	44 × 348 × 440
Weight	8.6 lbs (3.9 kg)	11.5 lbs (5.2 kg)
Environment		
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC Built in	AC Built in
Redundant Power	No	No
Power Consumption* (Average / Maximum)	19.804 W / 22.137 W	389.742 W /393.109 W
Heat Dissipation	67.574 BTU/h	78.82 BTU/h
Operating Temperature	32-113°F (0–45°C)	32-113°F (0–45°C)
Storage Temperature	-4–158°F (-20–70°C)	-4–158°F (-20–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing
Air-Flow Direction	side-to-back	side-to-back
Certification and Compliance		
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty		
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 148E

FortiSwitch 148E-POE

SPECIFICATIONS

	FORTISWITCH 124F	FORTISWITCH 124F-POE	FORTISWITCH 124F-FPOE
Hardware Specifications			
Total Network Interfaces	24x GE RJ45 and 4× 10GE SFP+	24x GE RJ45 and 4× 10GE SFP+	24x GE RJ45 and 4× 10GE SFP+
Dedicated Management 10/100 Port	0	0	0
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	0	12 (802.3af/at)	24 (802.3af/at)
PoE Power Budget	0	185 W	370 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	128 Gbps	128 Gbps	128 Gbps
Packets Per Second (Duplex)	190 Mpps	190 Mpps	190 Mpps
MAC Address Storage	32 K	32 K	32 K
Network Latency	< 1µs	< 1µs	< 1µs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	16	16	16
Packet Buffers	2 MB	2 MB	2 MB
DRAM	512 MB DDR3	512 MB DDR3	512 MB DDR3
FLASH	64 MB	64 MB	64 MB
ACL	768	768	768
Spanning Tree Instances	16	16	16
Dimensions			
Height x Depth x Width (inches)	1.73 × 9.06 × 12.99	1.73 × 10.24 × 17.32	1.73 × 10.24 × 17.32
Height x Depth x Width (mm)	44 × 230 × 330	44 × 260 × 440	44 × 260 × 440
Weight	4.48 lbs (2.03 kg)	7.85 lbs (3.56 kg)	8.42 lbs (3.82 kg)
Environment			
Power Required	100–240V AC, 50-60 Hz	100–240V AC, 50-60 Hz	100–240V AC, 50-60 Hz
Power Supply	AC built in	AC built in	AC built in
Redundant Power	No	No	No
Power Consumption* (Average / Maximum)	24.8 W / 26.3 W	235.9 W / 237.4 W	449.8 W / 451.3 W
Heat Dissipation	89.683 BTU/h	102.982 BTU/h	118.327 BTU/h
Operating Temperature	32–113°F (0–45°C)	32–113°F (0–45°C)	32–113°F (0–45°C)
Storage Temperature	-4–158°F (-20–70°C)	-4–158°F (-20–70°C)	-4–158°F (-20–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing	10–90% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty			
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 124F

FortiSwitch 124F-FPOE

FortiSwitch 124F-POE

SPECIFICATIONS

	FORTISWITCH 148F	FORTISWITCH 148F-POE	FORTISWITCH 148F-FPOE
Hardware Specifications			
Total Network Interfaces	48x GE RJ45 and 4× 10GE SFP+	48x GE RJ45 and 4× 10GE SFP+	48x GE RJ45 and 4× 10GE SFP+
Dedicated Management 10/100 Port	0	0	0
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	0	24 (802.3af/at)	48 (802.3af/at)
PoE Power Budget	0	370 W	740 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	176 Gbps	176 Gbps	176 Gbps
Packets Per Second (Duplex)	260 Mpps	260 Mpps	260 Mpps
MAC Address Storage	32 K	32 K	32 K
Network Latency	< 1µs	< 1µs	< 1µs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	16	16	16
Packet Buffers	2 MB	2 MB	2 MB
DRAM	512 MB DDR3	512 MB DDR3	512 MB DDR3
FLASH	64 MB	64 MB	64 MB
ACL	768	768	768
Spanning Tree Instances	16	16	16
Dimensions			
Height x Depth x Width (inches)	1.73 × 10.24 × 17.32	1.73 × 12.20 × 17.32	1.73 × 12.20 × 17.32
Height x Depth x Width (mm)	44 × 260 × 440	44 × 310 × 440	44 × 310 × 440
Weight	7.63 lbs (3.46 kg)	10.32 lbs (4.68 kg)	10.32 lbs (4.68 kg)
Environment			
Power Required	100–240V AC, 50-60 Hz	100–240V AC, 50-60 Hz	100–240V AC, 50-60 Hz
Power Supply	AC built in	AC built in	AC built in
Redundant Power	No	No	No
Power Consumption* (Average / Maximum)	55.8 W / 57 W	474.8 W / 476.3 W	893.5 W / 895.7 W
Heat Dissipation	194.37 BTU/h	195.73 BTU/h	198.46 BTU/h
Operating Temperature	32–113°F (0–45°C)	32–113°F (0–45°C)	32–113°F (0–45°C)
Storage Temperature	-4–158°F (-20–70°C)	-4–158°F (-20–70°C)	-4–158°F (-20–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing	10–90% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty			
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 148F

FortiSwitch 148F-FPOE

FortiSwitch 148F-POE

SPECIFICATIONS

	FORTISWITCH 224D-FPOE	FORTISWITCH 224E	FORTISWITCH 224E-POE
Hardware Specifications			
Total Network Interfaces	24x GE RJ45 ports and 4x GE SFP ports	24x GE RJ45 ports and 4x GE SFP ports	24x GE RJ45 ports and 4x GE SFP ports
Dedicated Management 10/100 Port	1	1	1
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	24 (802.3af/802.3at)	NA	12 (802.3af/802.3at)
PoE Power Budget	370 W	NA	180 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	56 Gbps	56 Gbps	56 Gbps
Packets Per Second (Duplex)	83 Mpps	83 Mpps	83 Mpps
MAC Address Storage	16 K	16 K	16 K
Network Latency	< 1µs	< 1µs	< 1µs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	Up to number of ports	Up to number of ports	Up to number of ports
Packet Buffers	1.5 MB	1.5 MB	1.5 MB
DRAM	512 MB DDR3	512 MB DDR3	512 MB DDR3
FLASH	128 MB	128 MB	128 MB
ACL	512	512	512
Spanning Tree Instances	16	16	16
Route Entries	64	64	64
Host Entries	1k	1k	1k
Dimensions			
Height x Depth x Width (inches)	1.73 × 12.2 × 17.5	1.73 × 9 × 12.99	1.73 × 9 × 12.99
Height x Depth x Width (mm)	44 × 310 × 440	44 × 230 × 330	44 × 230 × 330
Weight	10.64 lbs (4.83 kg)	4.78 lbs (2.17 kg)	5.37 lbs (2.44 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC built in	AC built in	AC built in
Redundant Power	Optional FRPS-740	Redundant AC	Optional FRPS-740
Power Consumption* (Average / Maximum)	380 W / 397 W	17.2 W / 17.3 W	220.18 W / 223.57 W
Heat Dissipation	85 BTU/h	59.095 BTU/h	74.29554 BTU/h
Operating Temperature	32–122°F (0–50°C)	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)	-4–158°F (-20–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing	10–90% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty			
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 224E-POE

FortiSwitch 224D-FPOE

FortiSwitch 224E

SPECIFICATIONS

	FORTISWITCH 248D	FORTISWITCH 248E-POE	FORTISWITCH 248E-FPOE
Hardware Specifications			
Total Network Interfaces	48x GE RJ45 ports and 4x GE SFP ports	48x GE RJ45 ports and 4x GE SFP ports	48x GE RJ45 ports and 4x GE SFP ports
Dedicated Management 10/100 Port	1	1	1
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	—	24 (802.3af/802.3at)	48 (802.3af/802.3at)
PoE Power Budget	N/A	370 W	740 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	104 Gbps	104 Gbps	104 Gbps
Packets Per Second (Duplex)	155 Mpps	155 Mpps	155 Mpps
MAC Address Storage	16 K	16 K	16 K
Network Latency	< 1µs	< 1µs	< 1µs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	Up to number of ports	Up to number of ports	Up to number of ports
Packet Buffers	1.5 MB	1.5 MB	1.5 MB
DRAM	512 MB DDR3	512 MB DDR3	512 MB DDR3
FLASH	128 MB	128 MB	128 MB
ACL	512	512	512
Spanning Tree Instances	16	16	16
Route Entries	64	64	64
Host Entries	1k	1k	1k
Dimensions			
Height x Depth x Width (inches)	1.73 × 9.68 × 17.3	1.73 × 16.1 × 17.3	1.73 × 16.1 × 17.3
Height x Depth x Width (mm)	44 × 246 × 440	44 × 410 × 440	44 × 410 × 440
Weight	7.81 lbs (3.54 kg)	12.12 lbs (5.5 kg)	13.44 lbs (6.1 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC built in	AC built in	AC built in
Redundant Power	—	Optional FRPS-740	Optional FRPS-740
Power Consumption* (Average / Maximum)	38.66 W / 39.19 W	457.46 W / 466.47 W	842 W / 855.02 W
Heat Dissipation	134 BTU/h	177.14268 BTU/h	162.87865 BTU/h
Operating Temperature	32–122°F (0–50°C)	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)	-4–158°F (-20–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing	10–90% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2		
Warranty			
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 248D

FortiSwitch 248E-FPOE

FortiSwitch 248E-POE

SPECIFICATIONS

	FORTISWITCH-424E-FIBER	FORTISWITCH-M426E-FPOE
Hardware Specifications		
Total Network Interfaces	24x GE SFP and 4× 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	16x GE RJ45, 8× 2.5 GE RJ45 ports, 2× 5 GE RJ45, and 4× 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 (16× 802.3af/at, 8× 802.3af/at/bt Type 3)
PoE Power Budget	N/A	420 W
Mean Time Between Failures	> 10 years	> 10 years
System Specifications		
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
DRAM	1 GB DDR4	1 GB DDR4
FLASH	256 MB	256 MB
ACL	1.5k	1k
Spanning Tree Instances	16	16
Route Entries	16k	1k
Host Entries	16k	2k
Dimensions		
Height x Depth x Width (inches)	1.75 × 7.87 × 17.3	1.73 × 16.14 × 17.3
Height x Depth x Width (mm)	44 × 200 × 440	44 × 410 × 440
Weight	5.62 lbs (2.55 kg)	13.00 lbs (5.9 kg)
Environment		
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	32–113°F (0–45°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
Certification and Compliance		
	FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty		
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
Hardware Specifications			
Total Network Interfaces	24x GE RJ45 and 4×10 GE SFP+ ports Note: SFP+ ports are compatlble with 1 GE SFP	24x GE RJ45 and 4×10 GE SFP+ ports Note: SFP+ ports are compatlble with 1 GE SFP	24x GE RJ45 and 4×10 GE SFP+ ports Note: SFP+ ports are compatlble with 1 GE SFP
Dedicated Management 10/100 Port	1	1	1
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	—	24 (802.3af/at)	24 (802.3af/at)
PoE Power Budget	N/A	250 W	421 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	128 Gbps	128 Gbps	128 Gbps
Packets Per Second (Duplex)	204 Mpps	204 Mpps	204 Mpps
MAC Address Storage	16 K	16 K	16 K
Network Latency	< 1μs	< 1μs	< 1μs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	Up to number of ports	Up to number of ports	Up to number of ports
Packet Buffers	2 MB	2 MB	2 MB
DRAM	1 GB DDR4	1 GB DDR4	1 GB DDR4
FLASH	256 MB	256 MB	256 MB
ACL	1k	1k	1k
Spanning Tree Instances	16	16	16
Route Entries	1k	1k	1k
Host Entries	2k	2k	2k
Dimensions			
Height x Depth x Width (inches)	1.75 × 10.23 × 17.3	1.75 × 16.14 × 17.3	1.75 × 16.14 × 17.3
Height x Depth x Width (mm)	44 × 260 × 440	44 × 410 × 440	44 × 410 × 440
Weight	6.83 lbs (3.1 kg)	11.57 lbs (5.25 kg)	12.72 lbs (5.77 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC built in	AC built in	AC built in
Redundant Power	Redundant AC	Redundant AC	Redundant AC
Power Consumption* (Average / Maximum)	22.3 W / 23.6 W	281.3 W / 283.5 W	431.2 W / 433.7 W
Heat Dissipation	76.04 BTU/h	102.64 BTU/h	117.2 BTU/h
Operating Temperature	32–113°F (0–45°C)	32–113°F (0–45°C)	32–122°F (0–45°C)
Storage Temperature	-40–158°F (-40–70°C)	-4–158°F (-40–70°C)	-40–158°F (-40–70°C)
Humidity	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty			
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-FPOE

FortiSwitch 424E

FortiSwitch 424E-POE

SPECIFICATIONS

	FORTISWITCH 448E	FORTISWITCH 448E-POE	FORTISWITCH 448E-FPOE
Hardware Specifications			
Total Network Interfaces	48x GE RJ45 and 4× 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	48x GE RJ45 and 4× 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	48x GE RJ45 and 4× 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP
Dedicated Management 10/100 Port	1	1	1
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	—	48 (802.3af/at)	48 (802.3af/at)
PoE Power Budget	—	421 W	772 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	176 Gbps	176 Gbps	176 Gbps
Packets Per Second (Duplex)	262 Mpps	262 Mpps	262 Mpps
MAC Address Storage	32 K	32 K	32 K
Network Latency	<1μs	<1μs	<1μs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	Up to number of ports	Up to number of ports	Up to number of ports
Packet Buffers	2 MB	2 MB	2 MB
DRAM	1GB DDR4	1GB DDR4	1GB DDR4
FLASH	256 MB	256 MB	256 MB
ACL	1.5k	1.5k	1.5k
Spanning Tree Instances	16	16	16
Route Entries	16k	16k	16k
Host Entries	16k	16k	16k
Dimensions			
Height x Depth x Width (inches)	1.75 × 12.2 × 17.3	1.73 × 16.1 × 17.3	1.73 × 16.1 × 17.3
Height x Depth x Width (mm)	44 × 310 × 440	44 × 410 × 440	44 × 410 × 440
Weight	9.17 lbs (4.16 kg)	13.8 lbs (6.26 kg)	14.04 lbs (6.37 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC built in	AC built in	AC built in
Redundant Power	Redundant AC	Redundant AC	Redundant AC
Power Consumption* (Average / Maximum)	46.5 W / 47.81 W	440.12 W / 442.234 W	921.4 W / 923.6 W
Heat Dissipation	163.032 BTU/h	163.066 BTU/h	163.1 BTU/h
Operating Temperature	32–122°F (0–50°C)	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)	-4–158°F (-20–70°C)
Humidity	10–90% non condensing	10–90% non condensing	10–90% non condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Certification and Compliance			
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty			
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 448E-FPOE

FortiSwitch 448E

FortiSwitch 448E-POE

SPECIFICATIONS

	FORTISWITCH 524D	FORTISWITCH 524D-FPOE	FORTISWITCH 548D	FORTISWITCH 548D-FPOE
Hardware Specifications				
Total Network Interfaces	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	48x GE/RJ45 ports, 4× 10 GE SFP+ ports and 2× 40 GE QSFP Note: SFP+ ports are compatible with 1G SFP	48x 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	1	1
RJ-45 Serial Console Port	1	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	N/A	24 (802.3af/at)	N/A	48 (802.3af/at)
PoE Power Budget	N/A	400 W	N/A	750 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years	> 10 years
System Specifications				
Switching Capacity (Duplex)	288 Gbps	288 Gbps	336 Gbps	336 Gbps
Packets Per Second (Duplex)	428 Mpps	428 Mpps	512 Mpps	512 Mpps
MAC Address Storage	96 K	96 K	96 K	96 K
Network Latency	< 2µs	< 2µs	< 2µs	< 2µs
VLANs Supported	4 K	4 K	4 K	4 K
Link Aggregation Group Size	24	24	48	48
Total Link Aggregation Groups	Up to number of ports	Up to number of ports	Up to number of ports	Up to number of ports
Packet Buffers	4 MB	4 MB	4 MB	4 MB
DRAM	2 GB DDR3	2 GB DDR3	2 GB DDR3	2 GB DDR3
FLASH	128 MB	128 MB	128 MB	128 MB
ACL	1k	1k	1k	1k
Spanning Tree Instances	32	32	32	32
Route Entries	16k	16k	16k	16k
Host Entries	24k	24k	24k	24k
Dimensions				
Height x Depth x Width (inches)	1.75 × 13.8 × 17.3	1.75 × 13.8 × 17.3	1.75 × 13.8 × 17.3	1.75 × 13.8 × 17.3
Height x Depth x Width (mm)	44 × 350 × 439	44 × 350 × 439	44 × 350 × 439	44 × 350 × 439
Weight	13.6 lbs (6.2 kg)	15.74 lbs (7.14 kg)	14.1 lbs (6.4 kg)	15.74 lbs (7.14 kg)
Environment				
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	150 W AC PSU*	600 W AC PSU*	150 W AC PSU*	920 W AC PSU*
Redundant Power	Optional FS-PSU-150* (for 150 W backup only)	Optional FS-PSU-600* (for 600 W for additional PoE)	Optional FS-PSU-150* (for 150 W backup only)	Optional FS-PSU-920* (for 900 W for additional PoE)
Power Consumption** (Average / Maximum)	73 W / 75 W	570 W / 579 W (full PoE load)	74 W / 77 W	925 W / 961 W (full PoE load)
Heat Dissipation	247 BTU/h	296 BTU/h (full PoE loading)	252 BTU/h	318 BTU/h (full PoE loading)
Operating Temperature	32–113°F (0–45°C)	32–113°F (0–45°C)	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)	-40–158°F (-40–70°C)	-40–158°F (-40–70°C)
Humidity	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing
Air-Flow Direction	front-to-back	front-to-back	front-to-back	front-to-back
Certification and Compliance				
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2		
Warranty				
Fortinet Warranty		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

FortiSwitch 548D

FortiSwitch 548D-FPOE
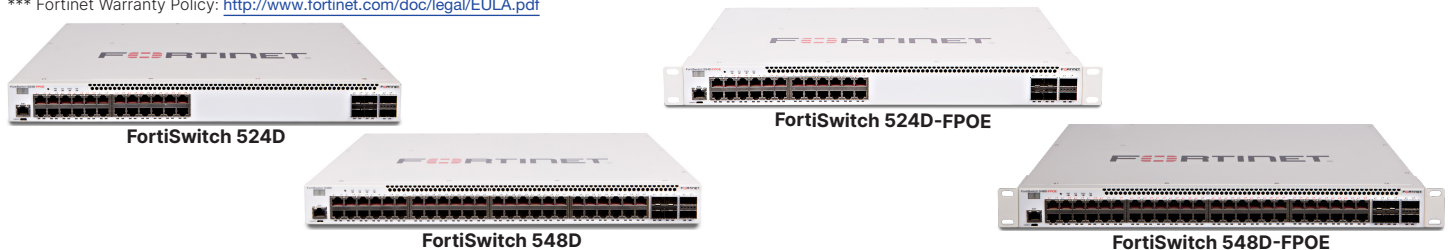
ORDER INFORMATION

PRODUCT	SKU	DESCRIPTION
FortiSwitch Models		
FortiSwitch 108E	FS-108E	Layer 2 FortiGate switch controller compatible switch with 8 GE RJ45 + 2 SFP ports, line AC and PSE dual powered. Fanless.
FortiSwitch 108E-POE	FS-108E-POE	Layer 2 FortiGate switch controller compatible PoE+ switch with 8 GE RJ45 + 2 SFP ports, 4 port PoE with maximum 65 W PoE limit. Fanless.
FortiSwitch 108E-FPOE	FS-108E-FPOE	Layer 2 FortiGate switch controller compatible PoE+ switch with 8 GE RJ45 + 2 SFP ports, 8 port PoE with maximum 130 W PoE limit. Fanless.
FortiSwitch 108F	FS-108F	Layer 2 FortiGate switch controller compatible switch with 8 x GE RJ45 ports, 2 x GE SFP, Fanless, 12V/3A power adapter of input voltage 100 – 240VAC, and PSE dual powered.
FortiSwitch 108F-POE	FS-108F-POE	Layer 2 FortiGate switch controller compatible PoE+ switch with 8 x GE RJ45 ports, 2 x GE SFP, Fanless with automatic Max 65W POE output limit.
FortiSwitch 108F-FPOE	FS-108F-FPOE	Layer 2 FortiGate switch controller compatible PoE+ switch with 8 x GE RJ45 ports, 2 x GE SFP, Fanless with automatic Max 130W POE output limit.
FortiSwitch 124E	FS-124E	Layer 2 FortiGate switch controller compatible switch with 24 GE RJ45 + 4 SFP ports. Fanless.
FortiSwitch 124E-POE	FS-124E-POE	Layer 2 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45 + 4 SFP ports, 12 port PoE with maximum 185 W limit.
FortiSwitch 124E-F-POE	FS-124E-FPOE	Layer 2 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45 + 4 SFP ports, 24 port PoE with maximum 370 W limit.
FortiSwitch 148E	FS-148E	Layer 2 FortiGate switch controller compatible switch with 48 GE RJ45 + 4 SFP ports.
FortiSwitch 148E-POE	FS-148E-POE	Layer 2 FortiGate switch controller compatible PoE+ switch with 48 GE RJ45 + 4 SFP ports, 24 port PoE with maximum 370 W limit.
FortiSwitch 124F	FS-124F	Layer 2 FortiGate switch controller compatible switch with 24 GE RJ45 + 4 10G SFP+ ports.
FortiSwitch 124F-POE	FS-124F-POE	Layer 2 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45 + 4 10G SFP+ ports, 12 port PoE with maximum 185 W limit.
FortiSwitch 124F-FPOE	FS-124F-FPOE	Layer 2 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45 + 4 10G SFP+ ports, 24 port PoE with maximum 370 W limit.
FortiSwitch 148F	FS-148F	Layer 2 FortiGate switch controller compatible switch with 48 GE RJ45 + 4 10G SFP+ ports.
FortiSwitch 148F-POE	FS-148F-POE	Layer 2 FortiGate switch controller compatible PoE+ switch with 48 GE RJ45 + 4 10G SFP+ ports, 24 port PoE with maximum 370 W limit.
FortiSwitch 148F-FPOE	FS-148F-FPOE	Layer 2 FortiGate switch controller compatible PoE+ switch with 48 GE RJ45 + 4 10G SFP+ ports, 48 port PoE with maximum 740 W limit.
FortiSwitch 224D-FPOE	FS-224D-FPOE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45 + 4 SFP ports, 24 port PoE with maximum 370 W limit.
FortiSwitch 224E	FS-224E	Layer 2/3 FortiGate switch controller compatible switch with 24 GE RJ45 + 4 SFP ports. Fanless.
FortiSwitch 224E-POE	FS-224E-POE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45 + 4 SFP ports, 12 port PoE with maximum 180 W limit.
FortiSwitch 248D	FS-248D	Layer 2/3 FortiGate switch controller compatible switch with 48 GE RJ45 + 4 SFP ports.
FortiSwitch 248E-POE	FS-248E-POE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 48 GE RJ45 + 4 SFP ports, 24 port PoE with maximum 370 W limit.
FortiSwitch 248E-FPOE	FS-248E-FPOE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 48 GE RJ45 + 4 SFP ports, 48 port PoE with maximum 740 W limit.
FortiSwitch 424E-Fiber	FS-424E-Fiber	Layer 2/3 FortiGate switch controller compatible switch with 24x GE SFP and 4× 10 GE SFP+ Uplinks
FortiSwitch M426E-FPOE	FS-M426E-FPOE	Layer 2/3 FortiGate switch controller compatible PoE+/802.3bt Type 3 switch with 16x GE RJ45, 8× 2.5 RJ45, 2× 5 GE RJ45 and 4× 10 GE SFP+, 24 port PoE+ with maximum 420 W limit.
FortiSwitch 424E	FS-424E	Layer 2/3 FortiGate switch controller compatible switch with 24 GE RJ45, 4× 10 GE SFP + ports.
FortiSwitch 424E-POE	FS-424E-POE	Layer 2/3 FortiGate switch controller compatible switch with 24 GE RJ45, 4× 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, 4× 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, 4× 10 GE SFP + ports.
FortiSwitch 448E-POE	FS-448E-POE	Layer 2/3 FortiGate switch controller compatible switch with 48 GE RJ45, 4× 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, 4× 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, 4× 10 GE SFP+ and 2× 40 GE QSFP+ ports.
FortiSwitch 524D-FPOE	FS-524D-FPOE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 24 GE RJ45, 4× 10 GE SFP+, 2× 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, 4× 10 GE SFP+ and 2× 40 GE QSFP+ ports.
FortiSwitch 548D-FPOE	FS-548D-FPOE	Layer 2/3 FortiGate switch controller compatible PoE+ switch with 48 GE RJ45, 4× 10 GE SFP+ and 2× 40 GE QSFP+ ports, 48 port PoE with maximum 750 W limit.

ORDER INFORMATION

PRODUCT	SKU	DESCRIPTION
Licenses		
FortiLAN Cloud Management License*	FC-10-FSW00-628-02-DD	FortiSwitch 100 Series (none-Rugged) FortiLAN Cloud Management SKU Including Forticare 24×7. (Note, FortiCare only applicable when used with FortiLAN Cloud)
	FC-10-FSW10-628-02-DD	FortiSwitch 200-400 Series (incl all FSW Rugged Models) FortiLAN Cloud Management SKU Including Forticare 24×7. (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 24×7. (Note, FortiCare only applicable when used with FortiLAN Cloud)
FortiSwitch Manager Subscription License	FC1-10-SWMVM-258-01-DD	Subscription license for 10 FortiSwitch Units managed by FortiSwitchManager VM. 24×7 FortiCare support (for FSWM VM) included.
	FC2-10-SWMVM-258-01-DD	Subscription license for 100 FortiSwitch Units managed by FortiSwitchManager VM. 24×7 FortiCare support (for FSWM VM) included.
	FC3-10-SWMVM-258-01-DD	Subscription license for 1000 FortiSwitch Units managed by FortiSwitchManager VM. 24×7 FortiCare support (for FSWM VM) included.
FortiSwitch Advanced Features License	FS-SW-LIC-200	SW License for FS-200 Series Switches to activate Advanced Features.
	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.
Accessories		
External Redundant AC Power Supply	FRPS-740	Redundant AC power supply for up to 2 units: FS-224D-FPOE, FS-224E-POE, FS-248E-POE, FS-248E-FPOE.
Redundant AC Power Supply	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.

F#RTINET.

www.fortinet.com

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 06/07/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	Aon Risk Services, Inc of Florida	
Aon Risk Services, Inc of Florida	PHONE (A/C, No, Ext): 800-743-8130		FAX (A/C, No): 800-522-7514
1001 Brickell Bay Drive, Suite #1100	EMAIL ADDRESS: ADP.COI.Center@Aon.com		
Miami, FL 33131-4937	**INSURER(S) AFFORDING COVERAGE**		**NAIC #**
	INSURER A : New Hampshire Ins Co		23841
INSURED	INSURER B :		
ADP TotalSource FL XVI, Inc.	INSURER C :		
5800 Windward Parkway			
Alpharetta, GA 30005	INSURER D :		
ALTERNATE EMPLOYER	INSURER E :		
MXN Corporation			
12600 Deerfield Parkway Suite 100	INSURER F :		
Alpharetta, GA 30004			

COVERAGES CERTIFICATE NUMBER: 3902476 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. LIMITS SHOWN ARE AS REQUESTED.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	CLAIMS-MADE ☐ OCCUR ☐						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	POLICY ☐ PROJECT ☐ LOC ☐						PRODUCTS - COMP/OP AGG	$
	OTHER							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY ☐						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	DEC ☐ RETENTION $							
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	WC 038361534 GA	07/01/2021	07/01/2022	X PER STATUTE ☐ OTHER ☐	
							E.L. EACH ACCIDENT	$ 2,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 2,000,000
							E.L. DISEASE - POLICY LIMIT	$ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
All worksite employees working for MXN CORPORATION, paid under ADP TOTALSOURCE, INC.'s payroll, are covered under the above stated policy. MXN CORPORATION is an alternate employer under this policy.

CERTIFICATE HOLDER	CANCELLATION
State of West Virginia 2019 Washington Street East Charleston, WV 25305	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE *Aon Risk Services, Inc of Florida*

ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

ACORD® CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
06/07/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Amy Schenck		
PointeNorth Insurance Group, LLC	PHONE (A/C, No, Ext): (770) 858-7540		FAX (A/C, No): (770) 858-7545
PO Box 724728	E-MAIL ADDRESS: amy.schenck@pninsurance.com		
	INSURER(S) AFFORDING COVERAGE		NAIC #
Atlanta GA 31139	INSURER A : Hanover Insurance Co		22292
INSURED	INSURER B :		
MXN CORP	INSURER C :		
1025 ROSE CREEK DR #620	INSURER D :		
	INSURER E :		
WOODSTOCK GA 30189	INSURER F :		

COVERAGES   CERTIFICATE NUMBER: 22/23 Master Liab COI   REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ Blanket Additional Insured ☒ Blanket Waiver of Subrogation	Y		OHAA920452	05/15/2022	05/15/2023	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 300,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC OTHER:						GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
							PDLL	$ 300,000
A	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☒ HIRED AUTOS ONLY ☒ NON-OWNED AUTOS ONLY			OHAA920452	05/15/2022	05/15/2023	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
A	☒ UMBRELLA LIAB ☒ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTION $			OHAA920452	05/15/2022	05/15/2023	EACH OCCURRENCE	$ 5,000,000
							AGGREGATE	$ 5,000,000
								$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A					☐ PER STATUTE ☐ OTH-ER	
							E.L. EACH ACCIDENT	$
							E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER	CANCELLATION
State of West Virginia 2019 Washington Street East PO Box 50130 Charleston WV 25305	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE William H Skelbs

ACORD 25 (2016/03)

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BUSINESSOWNERS LIABILITY SPECIAL BROADENING ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESSOWNERS COVERAGE FORM

SUMMARY OF COVERAGES	Limits	Page
1. Additional Insured by Contract, Agreement or Permit	Included	1
2. Additional Insured - Broad Form Vendors	Included	2
3. Alienated Premises	Included	3
4. Broad Form Property Damage - Borrowed Equipment, Customers Goods and Use of Elevators	Included	3
5. Incidental Malpractice (Employed Nurses, EMT's and Paramedics)	Included	3
6. Personal and Advertising Injury - Broad Form	Included	4
7. Product Recall Expense	Included	4
Product Recall Expense Each Occurrence Limit	$25,000 Occurrence	5
Product Recall Expense Aggregate Limit	$50,000 Aggregate	5
Product Recall Deductible	$500	5
8. Unintentional Failure to Disclose Hazards	Included	6
9. Unintentional Failure to Notify	Included	6

This endorsement amends coverages provided under the Businessowners Coverage Form through new coverages and broader coverage grants. This coverage is subject to the provisions applicable to the Businessowners Coverage Form, except as provided below.

The following changes are made to **SECTION II - LIABILITY:**

1. **Additional Insured by Contract, Agreement or Permit**

   The following is added to **SECTION II - LIABILITY, C. Who Is An Insured:**

   Additional Insured by Contract, Agreement or Permit

   a. Any person or organization with whom you agreed in a written contract, written agreement or permit to add such person or organization as an additional insured on your policy is an additional insured only with respect to liability for "bodily injury", "property damage", or "personal and advertising injury" caused, in whole or in part, by your acts or omissions, or the acts or omissions of those acting on your behalf, but only with respect to:

   (1) "Your work" for the additional insured(s) designated in the contract, agreement or permit;

   (2) Premises you own, rent, lease or occupy; or

   (3) Your maintenance, operation or use of equipment leased to you.

   b. The insurance afforded to such additional insured described above:

   (1) Only applies to the extent permitted by law; and

   (2) Will not be broader than the insurance which you are required by the contract, agreement or permit to provide for such additional insured.

   (3) Applies on a primary basis if that is required by the written contract, written agreement or permit.

   (4) Will not be broader than coverage provided to any other insured.

   (5) Does not apply if the "bodily injury", "property damage" or "personal and advertising injury" is otherwise excluded from coverage under this Coverage Part, including any endorsements thereto.

c. This provision does not apply:

(1) Unless the written contract or written agreement was executed or permit was issued prior to the "bodily injury", "property damage", or "personal injury and advertising injury".

(2) To any person or organization included as an insured by another endorsement issued by us and made part of this Coverage Part.

(3) To any lessor of equipment:

(a) After the equipment lease expires; or

(b) If the "bodily injury", "property damage", "personal and advertising injury" arises out of sole negligence of the lessor.

(4) To any:

(a) Owners or other interests from whom land has been leased if the "occurrence" takes place or the offense is committed after the lease for the land expires; or

(b) Managers or lessors of premises if:

(i) The "occurrence" takes place or the offense is committed after you cease to be a tenant in that premises; or

(ii) The "bodily injury", "property damage", "personal injury" or "advertising injury" arises out of structural alterations, new construction or demolition operations performed by or on behalf of the manager or lessor.

(5) To "bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of or the failure to render any professional services.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage" or the offense which caused the "personal and advertising injury" involved the rendering of or failure to render any professional services by or for you.

d. With respect to the insurance afforded to these additional insureds, the following is added to **SECTION II - LIABILITY, D. Liability and Medical Expense Limits of Insurance**:

The most we will pay on behalf of the additional insured for a covered claim is the lesser of the amount of insurance:

1. Required by the contract, agreement or permit described in Paragraph **a.;** or

2. Available under the applicable Limits of Insurance shown in the Declarations.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations

e. All other insuring agreements, exclusions, and conditions of the policy apply.

2. Additional Insured - Broad Form Vendors

The following is added to **SECTION II - LIABILITY, C. Who Is An Insured:**

Additional Insured - Broad Form Vendors

a. Any person or organization that is a vendor with whom you agreed in a written contract or written agreement to include as an additional insured under this Coverage Part is an insured, but only with respect to liability for "bodily injury" or "property damage" arising out of "your products" which are distributed or sold in the regular course of the vendor's business.

b. The insurance afforded to such vendor described above:

(1) Only applies to the extent permitted by law;

(2) Will not be broader than the insurance which you are required by the contract or agreement to provide for such vendor;

(3) Will not be broader than coverage provided to any other insured; and

(4) Does not apply if the "bodily injury", "property damage" or "personal and advertising injury" is otherwise excluded from coverage under this Coverage Part, including any endorsements thereto

c. With respect to insurance afforded to such vendors, the following additional exclusions apply:

The insurance afforded to the vendor does not apply to:

(1) "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reasons of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the insured would have in the absence of the contract or agreement;

(2) Any express warranty unauthorized by you;

(3) Any physical or chemical change in the product made intentionally by the vendor;

(4) Repackaging, unless unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instruction from the manufacturer, and then repackaged in the original container;

(5) Any failure to make such inspection, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business in connection with the sale of the product;

(6) Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product;

(7) Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor;

(8) "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its own acts or omissions or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:

  (a) The exceptions contained within the exclusion in subparagraphs **(4)** or **(6)** above; or

  (b) Such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products.

(9) "Bodily injury" or "property damage" arising out of an "occurrence" that took place before you have signed the contract or agreement with the vendor.

(10) To any person or organization included as an insured by another endorsement issued by us and made part of this Coverage Part.

(11) Any insured person or organization, from whom you have acquired such products, or any ingredient, part or container, entering into, accompanying or containing such products.

d. With respect to the insurance afforded to these vendors, the following is added to **SECTION II - LIABILITY, D. Liability and Medical Expense Limits of Insurance**:

The most we will pay on behalf of the vendor for a covered claim is the lesser of the amount of insurance:

1. Required by the contract or agreement described in Paragraph **a.;** or

2. Available under the applicable Limits of Insurance shown in the Declarations;

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

3. Alienated Premises

SECTION II - LIABILITY, B. Exclusions, 1. Applicable To Business Liability Coverage k. Damage to Property, paragraph **(2)** is replaced by the following:

(2) Premises you sell, give away or abandon, if the "property damage" arises out of any part of those premises and occurred from hazards that were known by you, or should have reasonably been known by you, at the time the property was transferred or abandoned.

4. Broad Form Property Damage - Borrowed Equipment, Customers Goods, Use of Elevators

a. The following is added to **SECTION II - LIABILITY, B. Exclusions, 1. Applicable To Business Liability Coverage, k. Damage to Property**:

Paragraph **(4)** does not apply to "property damage" to borrowed equipment while at a jobsite and not being used to perform operations.

Paragraph **(3), (4)** and **(6)** do not apply to "property damage" to "customers goods" while on your premises nor to the use of elevators.

b. For the purposes of this endorsement, the following definition is added to **SECTION II - LIABILITY, F. Liability and Medical Expenses Definitions**:

1. "Customers goods" means property of your customer on your premises for the purpose of being:

  a. Worked on; or

  b. Used in your manufacturing process.

c. The insurance afforded under this provision is excess over any other valid and collectible property insurance (including deductible) available to the insured whether primary, excess, contingent or on any other basis.

5. Incidental Malpractice - Employed Nurses, EMT's and Paramedics

SECTION II - LIABILITY, C. Who Is An Insured , paragraph **2.a.(1)(d)** does not apply to a nurse,

emergency medical technician or paramedic employed by you if you are not engaged in the business or occupation of providing medical, paramedical, surgical, dental, x-ray or nursing services.

6. **Personal Injury - Broad Form**

   a. **SECTION II - LIABILITY, B. Exclusions, 2. Additional Exclusions Applicable only to "Personal and Advertising Injury",** paragraph **e.** is deleted.

   b. **SECTION II - LIABILITY, F. Liability and Medical Expenses Definitions, 14.** "Personal and advertising injury", paragraph **b.** is replaced by the following:

      b. Malicious prosecution or abuse of process.

   c. The following is added to **SECTION II - LIABILITY, F. Liability and Medical Expenses Definitions,** Definition **14.** "Personal and advertising injury":

      "Discrimination" (unless insurance thereof is prohibited by law) that results in injury to the feelings or reputation of a natural person, but only if such "discrimination" is:

      (1) Not done intentionally by or at the direction of:

         (a) The insured;

         (b) Any officer of the corporation, director, stockholder, partner or member of the insured; and

      (2) Not directly or indirectly related to an "employee", not to the employment, prospective employment or termination of any person or persons by an insured.

   d. For purposes of this endorsement, the following definition is added to **SECTION II - LIABILITY, F. Liability and Medical Expenses Definitions:**

      1. "Discrimination" means the unlawful treatment of individuals based upon race, color, ethnic origin, gender, religion, age, or sexual preference. "Discrimination" does not include the unlawful treatment of individuals based upon developmental, physical, cognitive, mental, sensory or emotional impairment or any combination of these.

   e. This coverage does not apply if liability coverage for "personal and advertising injury" is excluded either by the provisions of the Coverage Form or any endorsement thereto.

7. **Product Recall Expense**

   a. **SECTION II - LIABILITY, B. Exclusions, 1. Applicable To Business Liability Coverage,**

   o. **Recall of Products, Work or Impaired Property** is replaced by the following:

   o. **Recall of Products, Work or Impaired Property**

      Damages claimed for any loss, cost or expense incurred by you or others for the loss of use, withdrawal, recall, inspection, repair, replacement, adjustment, removal or disposal of:

      (1) "Your product";

      (2) "Your work"; or

      (3) "Impaired property";

      If such product, work or property is withdrawn or recalled from the market or from use by any person or organization because of a known or suspected defect, deficiency, inadequacy or dangerous condition in it, but this exclusion does not apply to "product recall expenses" that you incur for the "covered recall" of "your product".

      However, the exception to the exclusion does not apply to "product recall expenses" resulting from:

      (4) Failure of any products to accomplish their intended purpose;

      (5) Breach of warranties of fitness, quality, durability or performance;

      (6) Loss of customer approval, or any cost incurred to regain customer approval;

      (7) Redistribution or replacement of "your product" which has been recalled by like products or substitutes;

      (8) Caprice or whim of the insured;

      (9) A condition likely to cause loss of which any insured knew or had reason to know at the inception of this insurance;

      (10) Asbestos, including loss, damage or clean up resulting from asbestos or asbestos containing materials; or

      (11) Recall of "your products" that have no known or suspected defect solely because a known or suspected defect in another of "your products" has been found.

   b. The following is added to **SECTION II - LIABILITY, C. Who Is An Insured,** paragraph **3.b.**:

      "Product recall expense" arising out of any withdrawal or recall that occurred before you acquired or formed the organization.

c. The following is added to **SECTION II - LIABILITY, D. Liability and Medical Expenses Limits of Insurance**:

Product Recall Expense Limits of Insurance

a. The Limits of Insurance shown in the SUMMARY OF COVERAGES of this endorsement and the rules stated below fix the most that we will pay under this Product Recall Expense Coverage regardless of the number of:

(1) Insureds;

(2) "Covered Recalls" initiated; or

(3) Number of "your products" withdrawn.

b. The Product Recall Expense Aggregate Limit is the most that we will reimburse you for the sum of all "product recall expenses" incurred for all "covered recalls" initiated during the policy period.

c. The Product Recall Each Occurrence Limit is the most we will pay in connection with any one defect or deficiency.

d. All "product recall expenses" in connection with substantially the same general harmful condition will be deemed to arise out of the same defect or deficiency and considered one "occurrence".

e. Any amount reimbursed for "product recall expenses" in connection with any one "occurrence" will reduce the amount of the Product Recall Expense Aggregate Limit available for reimbursement of "product recall expenses" in connection with any other defect or deficiency.

f. If the Product Recall Expense Aggregate Limit has been reduced by reimbursement of "product recall expenses" to an amount that is less than the Product Recall Expense Each Occurrence Limit, the remaining Aggregate Limit is the most that will be available for reimbursement of "product recall expenses" in connection with any other defect or deficiency.

g. **Product Recall Deductible**

We will only pay for the amount of "product recall expenses" which are in excess of the $500 Product Recall Deductible. The Product Recall Deductible applies separately to each "covered recall". The limits of insurance will not be reduced by the amount of this deductible.

We may, or will if required by law, pay all or any part of any deductible amount, if applicable. Upon notice of our payment of a deductible amount, you shall promptly reimburse us for the part of the deductible amount we paid.

The Product Recall Expense Limits of Insurance apply separately to each consecutive annual period and to any remaining period of less than 12 months, starting with the beginning of the policy period shown in the Declarations, unless the policy period is extended after issuance for an additional period of less than 12 months. In that case, the additional period will be deemed part of the last preceding period for the purposes of determining the Limits of Insurance.

d. The following is added to **SECTION II - LIABILITY, E. Liability and Medical Expense General Conditions, 2. Duties in the Event of Occurrence, Offense, Claim or Suit**:

You must see to it that the following are done in the event of an actual or anticipated "covered recall" that may result in "product recall expense":

(1) Give us prompt notice of any discovery or notification that "your product" must be withdrawn or recalled. Include a description of "your product" and the reason for the withdrawal or recall;

(2) Cease any further release, shipment, consignment or any other method of distribution of like or similar products until it has been determined that all such products are free from defects that could be a cause of loss under this insurance.

e. For the purpose of this endorsement, the following definitions are added to **SECTION II - LIABILITY, F. Liability and Medical Expenses Definitions**:

1. "Covered recall" means a recall made necessary because you or a government body has determined that a known or suspected defect, deficiency, inadequacy, or dangerous condition in "your product" has resulted or will result in "bodily injury" or "property damage".

2. "Product recall expense(s)" means:

a. Necessary and reasonable expenses for:

(1) Communications, including radio or television announcements or printed advertisements including stationary, envelopes and postage;

(2) Shipping the recalled products from any purchaser, distributor or user to the place or places designated by you;

(3) Remuneration paid to your regular "employees" for necessary overtime;

(4) Hiring additional persons, other than your regular "employees";

(5) Expenses incurred by "employees" including transportation and accommodations;

(6) Expenses to rent additional warehouse or storage space;

(7) Disposal of "your product", but only to the extent that specific methods of destruction other than those employed for trash discarding or disposal are required to avoid "bodily injury" or "property damage" as a result of such disposal,

you incur exclusively for the purpose of recalling "your product"; and

b. Your lost profit resulting from such "covered recall".

f. This Product Recall Expense Coverage does not apply:

(1) If the "products - completed operations hazard" is excluded from coverage under this Coverage Part including any endorsement thereto; or

(2) To "product recall expense" arising out of any of "your products" that are otherwise excluded from coverage under this Coverage Part including endorsements thereto.

8. Unintentional Failure to Disclose Hazards

The following is added to **SECTION II - LIABILITY, E. Liability and Medical Expenses General Conditions:**

Representations

We will not disclaim coverage under this Coverage Part if you fail to disclose all hazards existing as of the inception date of the policy provided such failure is not intentional.

9. Unintentional Failure to Notify

The following is added to **SECTION II - LIABILITY, E. Liability and Medical Expenses General Conditions, 2. Duties in the Event of Occurrence, Offense, Claim or Suit:**

Your rights afforded under this Coverage Part shall not be prejudiced if you fail to give us notice of an "occurrence", offense, claim or "suit", solely due to your reasonable and documented belief that the "bodily injury", "property damage" or "personal and advertising injury" is not covered under this Policy.

ALL OTHER TERMS, CONDITIONS, AND EXCLUSIONS REMAIN UNCHANGED.