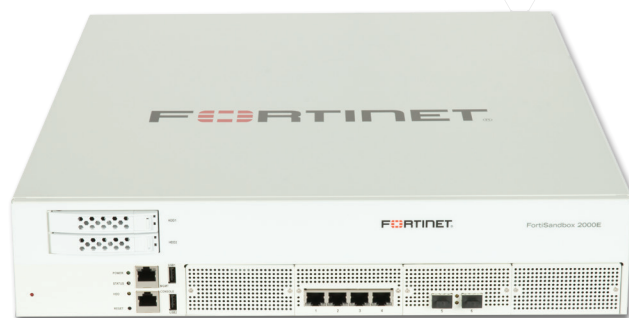


FortiSandbox™

FortiSandbox 1000D, 2000E, 3000E, 3500D, FortiSandbox-VM, and FortiSandbox Cloud

Fortinet's top-rated FortiSandbox is at the core of the Advanced Threat Protection (ATP) solution that integrates with Fortinet's Security Fabric to address the fast moving and more targeted threats across a broad attack surface. Specifically, it delivers real-time actionable intelligence through the automation of zero-day, advanced malware detection and mitigation.



Broad Coverage of the Attack Surface with Security Fabric

Effective defense against advanced targeted attacks through a cohesive and extensible architecture working to protect network, application layers and endpoint devices.



Automated Zero-day, Advanced Malware Detection and Mitigation

Native integration and open APIs automate the submission of objects from Fortinet and third-party vendor protection points, and the sharing of threat intelligence in real time for immediate threat response.



Certified and Top Rated

Constantly undergoes rigorous, real-world independent testing and consistently earns top marks.



Deployment Modes

Standalone
Integrated



FortiGuard Security Services

www.fortiguards.com



FortiCare Worldwide 24/7 Support

support.fortinet.com

Third-Party Certifications



FEATURES

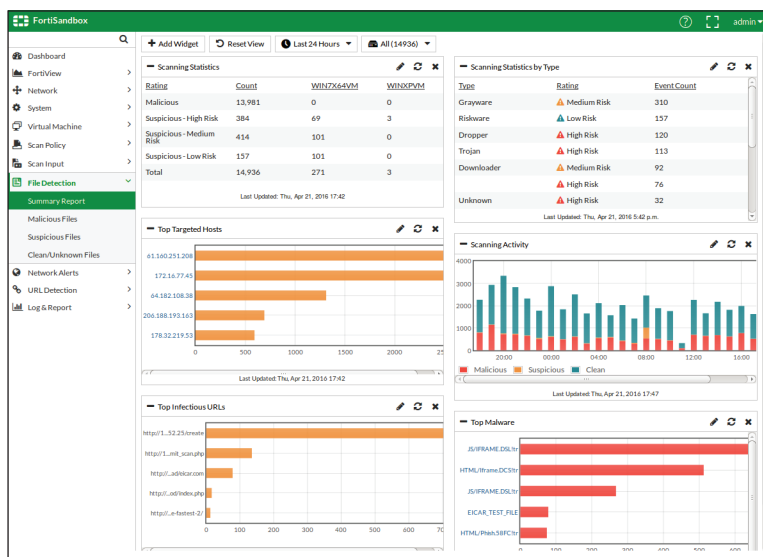


Figure 1: Widget-based real-time threat status dashboard

Sandbox Malware Analysis

Complement your established defenses with a two-step sandboxing approach. Suspicious and at-risk files are subjected to the first stage of analysis with Fortinet's award-winning AV engine, FortiGuard global intelligence query*, and code emulation. Second stage analysis is done in a contained environment to uncover the full attack lifecycle using system activity and callback detection. Figure 1 depicts new threats discovered in real time.

In addition to supporting FortiGate, FortiMail, FortiWeb, and FortiClient (ATP Agent) file submission, third-party security vendor offerings are supported through a well-defined open API set.

* a real time IoC check for emerging threats (known good and bad) within the Sandbox community

Reporting and Investigative Tools

Reports with captured packets, original file, tracer log, and screenshot provide rich threat intelligence and actionable insight after files are examined (see Figure 2). This is to speed up remediation.

Threat Mitigation

Fortinet's ability to uniquely integrate various products with FortiSandbox offers automatic protection with incredibly simple setup. Once a malicious code is identified, the FortiSandbox will return risk ratings and the local intelligence is shared in real time with Fortinet and third-party vendor-registered devices and clients to remediate and immunize against new advanced threats. The local intelligence can optionally be shared with Fortinet threat research team, FortiGuard Labs, to help protect organizations globally. Figure 3 steps through the flow on the automated mitigation process.

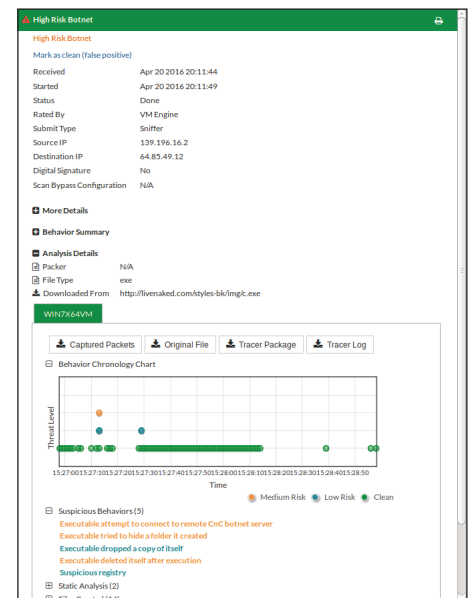


Figure 2: Detailed malware report with built-in tools

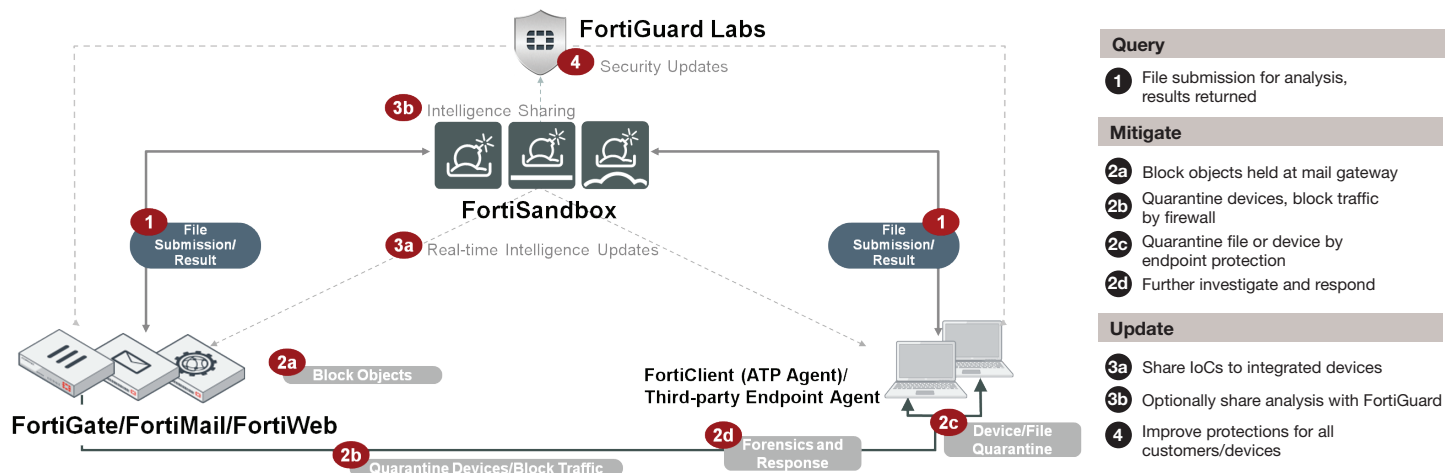


Figure 3: FortiSandbox threat mitigation workflow

DEPLOYMENT OPTIONS

Easy Deployment

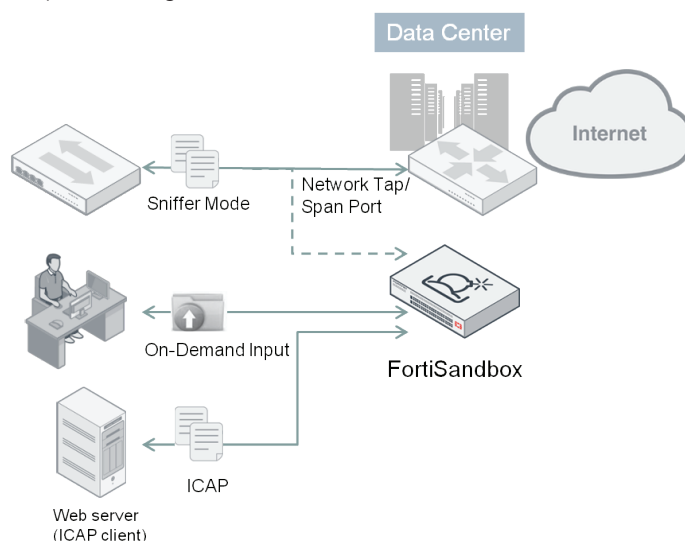
FortiSandbox supports inspection of many protocols in one unified solution, thus simplifies network infrastructure and operations. Further, it integrates within the Security Fabric adding a layer of advanced threat protection to your existing security architecture.

The FortiSandbox is the most flexible threat analysis appliance in the market as it offers various deployment options for customers' unique configurations and requirements. Organizations can choose to combine these deployment options.

Standalone

This FortiSandbox deployment mode accepts inputs as an ICAP server or from spanned switch ports or network taps. It may also include administrators' on-demand file uploads using the GUI. It is

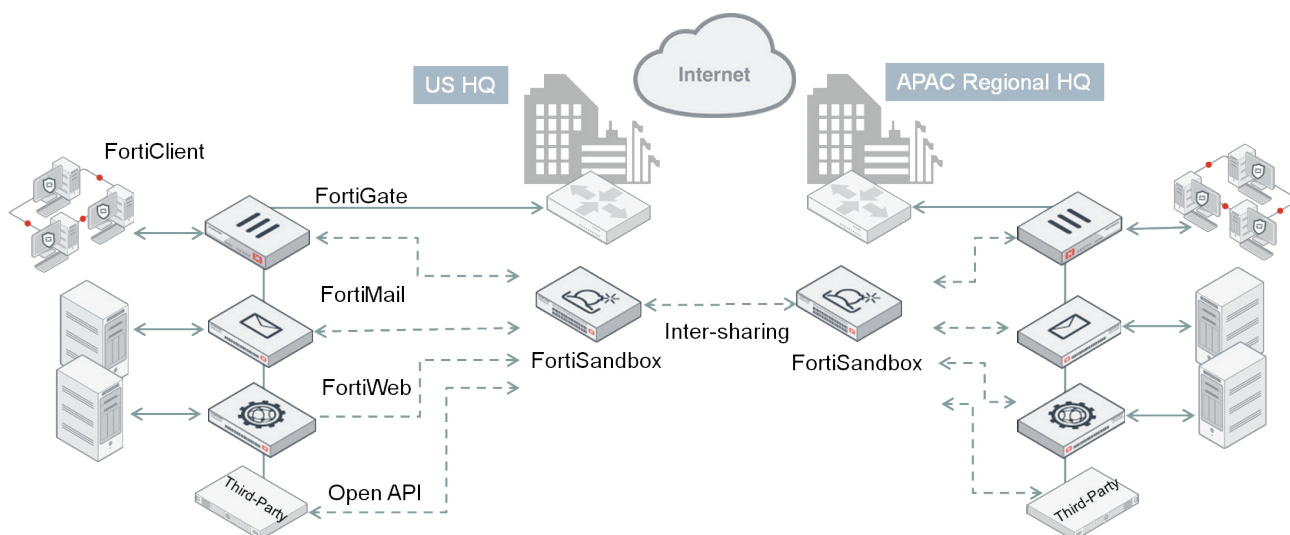
the most suitable infrastructure for adding protection capabilities to existing threat protection systems from various vendors.



Integrated

Fortinet products, such as FortiGate, FortiMail, FortiWeb, FortiClient (ATP Agent) and third-party security vendors can intercept and submit suspicious content to FortiSandbox when they are configured to interact with FortiSandbox. The integration will also provide timely remediation and reporting capabilities to those devices.

This integration extends to other FortiSandboxes to allow instantaneous sharing of real-time intelligence. This benefits large enterprises that deploy multiple FortiSandboxes in different geo-locations. This zero-touch automated model is ideal for holistic protection across different borders and time zones.



FEATURES SUMMARY

ADMINISTRATION

Supports WebUI and CLI configurations
 Multiple administrator account creation
 Configuration file backup and restore
 Notification email when malicious file is detected
 Weekly report to global email list and FortiGate administrators
 Centralized search page which allows administrators to build customized search conditions
 Frequent signature auto-updates
 Automatic check and download new VM images
 VM status monitoring
 Radius Authentication for administrators

NETWORKING/DEPLOYMENT

Static Routing Support
 File Input: Offline/sniffer mode, On-demand file upload, file submission from integrated device(s)
 Option to create simulated network for scanned file to access in a closed network environment
 High-Availability Clustering support
 Port monitoring for fail-over in a cluster

SYSTEMS INTEGRATION

File Submission input: FortiGate, FortiClient (ATP agent), FortiMail, FortiWeb
 File Status Feedback and Report: FortiGate, FortiClient, FortiMail, FortiWeb
 Dynamic Threat DB update: FortiGate, FortiClient, FortiMail
 – Periodically push dynamic DB to registered entities
 – File checksum and malicious URL DB
 Update Database proxy: FortiManager
 Remote Logging: FortiAnalyzer, syslog server
 JSON API to automate the process of uploading samples and downloading actionable malware indicators to remediate
 Certified third-party integration: CarbonBlack, Ziften
 Inter-sharing of IOCs between FortiSandboxes

ADVANCED THREAT PROTECTION

Inspection of new threats including ransomware and password protected malware mitigation
 Static Code analysis identifying possible threats within non-running code
 Heuristic/Pattern/Reputation-based analysis
 Virtual OS Sandbox:
 – Concurrent instances
 – OS type supported: Windows XP*, Windows 7, Windows 8.1, Windows 10, macOS, and Android
 – Anti-evasion techniques: sleep calls, process, and registry queries
 – Callback Detection: malicious URL visit, botnet C&C communication, and attacker traffic from activated malware
 – Download Capture packets, Original File, Tracer log, and Screenshot

* Supported in a custom VM

File type support: .7z, .ace, .apk, .app, .arj, .bat, .bz2, .cab, .cmd, .dll, .dmg, .doc, .docm, .docx, .dot, .dotm, .dotx, .exe, .gz, .htm, .html, .jar, .js, .kgb, .lnk, .lzh, Mach-O, .msi, .pdf, .pot, .potm, .potx, .ppam, .pps, .ppsm, .ppsx, .ppt, .pptm, .pttx, .ps1, .rar, .rtf, .sldm, .sldx, .swf, .tar, .tgz, .upx, .url, .vbs, WEblink, .wsf, .xlam, .xls, .xlsb, .xism, .xlsx, .xlt, .xltm, .xltx, .xz, .z, .zip

Protocols/applications supported:

– Sniffer mode: HTTP, FTP, POP3, IMAP, SMTP, SMB
 – Integrated mode with FortiGate: HTTP, SMTP, POP3, IMAP, MAPI, FTP, IM and their equivalent SSL-encrypted versions
 – Integrated mode with FortiMail: SMTP, POP3, IMAP
 – Integrated mode with FortiWeb: HTTP
 – Integrated mode with ICAP Client: HTTP

Customize VMs for supporting various file types

Isolate VM image traffic from system traffic

Network threat detection in Sniffer Mode: Identify Botnet activities and network attacks, malicious URL visit

Scan SMB/NFS network share and quarantine suspicious files. Scan can be scheduled

Scan embedded URLs inside document files

Integrate option for third-party Yara rules

Option to auto-submit suspicious files to cloud service for manual analysis and signature creation

Option to forward files to a network share for further third-party scanning

Files checksum whitelist and blacklist option

URLs submission for scan and query from emails and files

MONITORING AND REPORT

Real-Time Monitoring Widgets (viewable by source and time period options): Scanning result statistics, scanning activities (over time), top targeted hosts, top malware, top infectious urls, top callback domains

Drilldown Event Viewer: Dynamic table with content of actions, malware name, rating, type, source, destination, detection time, and download path

Logging — GUI, download RAW log file

Report generation for malicious files: Detailed reports on file characteristics and behaviors — file modification, process behaviors, registry behaviors, network behaviors, vm snapshot, behavior chronology chart

Further Analysis: Downloadable files — sample file, sandbox tracer logs, PCAP capture and indicators in STIX format

SPECIFICATIONS

	FSA-1000D	FSA-2000E	FSA-3000E	FSA-3500D
Hardware				
Form Factor	2 RU	2U	2 RU	3 RU (with default 5 nodes, up to 8 maximum)
Total Network Interfaces	6x GE RJ45 ports, 2x GE SFP slots	4x GE RJ45 ports, 2x 10 GE SFP+ slots	4x GE RJ45 ports, 2x 10 GE SFP+ slots	20x GE RJ45 ports, 10x 10 GE SFP+ slots (4x GE RJ45 ports, 2x 10 GE SFP+ slots per node)
Storage	2x 2 TB	2x 2 TB	4x 2 TB	5x 2 TB (2 TB per node)
Power Supplies	2x Redundant PSU	2x Redundant PSU	2x Redundant PSU	2x Redundant PSU
System Performance				
Number of VMs	8	24***	56***	36* (Upgradable** to 60) (8 per node)
Sandbox Pre-Filter Throughput (Files/Hour) ¹	6,000	12,000	15,000	30,000* (Upgradable** to 48,000) (6,000 per node)
VM Sandboxing Throughput (Files/Hour)	160	480	1,120	720* (Upgradable** to 1,200) (160 per node)
Real-world Effective Throughput (Files/Hour) ²	480	1,440	3,360	2,160 (Upgradable** to 3,600) (480 per node)
Sniffer Throughput	1 Gbps	4 Gbps	8 Gbps	2 Gbps
Dimensions				
Height x Width x Length (inches)	3.5 x 17.2 x 14.5	3.46 x 17.24 x 20.87	3.5 x 17.2 x 25.5	5.2 x 17.5 x 29.5
Height x Width x Length (mm)	89 x 437 x 368	88 x 438 x 530	89 x 437 x 647	133 x 445 x 749
Weight	27.60 lbs (12.52 kg)	27 lbs (12.25 kg)	43 lbs (19.52 kg)	88 lbs (39.92 kg)
Environment				
Power Consumption (Average / Maximum)	115 / 138 W	164.7 / 175.9 W	538.6 / 549.6 W	625 / 735.6 W
Maximum Current	100V/5A, 240V/3A	100V/8A, 240V/4A	100V/9.8A, 240V/5A	12A@100V/12A, 240V/8A
Heat Dissipation	471 BTU/h	600.17 BTU/h	1,943.82 BTU/h	2,728.9 BTU/h
Power Source	100–240V AC, 60–50 Hz	100–240V AC, 60–50 Hz	100–240V AC, 60–50 Hz	100–240V AC, 60–50 Hz
Humidity	5–95% non-condensing	5–90% non-condensing	8–90% (non-condensing)	8–90% (non-condensing)
Operation Temperature Range	32–104°F (0–40°C)	32–104°F (0–40°C)	50–95°F (10–35°C)	50–95°F (10–35°C)
Storage Temperature Range	-13–158°F (-25–70°C)	-4–158°F (-20–70°C)	-40–158°F (-40–70°C)	-40–158°F (-40–70°C)
Compliance				
Certifications	FCC Part 15 Class A, C-Tick, VCCI, CE, BSMI, KC, UL/cUL, CB, GOST			

* Based on the assumption that 1 blade will be used as master in HA-cluster mode.

** By adding 3 more SAM-3500D nodes to the same chassis.

*** 4(FSA-2000E)/8(FSA-3000E) Windows VM licenses included with hardware, remaining are sold as an upgrade license.

¹ FortiSandbox pre-filtering is powered by FortiGuard Intelligence.

² Measured based on real-world data when both pre-filter and dynamic analysis are working consecutively



FortiSandbox 1000D



FortiSandbox 2000E



FortiSandbox 3000E



FortiSandbox 3500D

	FORTISANDBOX-VM	FORTISANDBOX CLOUD
Hardware Requirements		
Hypervisor Support	VMware ESXi version 5.1 or later, Linux KVM CentOS 7.2 or later, Amazon Web Services (On-Demand)	N/A
Virtual CPUs (Minimum / Maximum)	4 / Unlimited (Fortinet recommends that the number of vCPUs match the number of Windows VM +4.)	N/A
Memory Support (Minimum / Maximum)	8 GB / Unlimited	N/A
Virtual Storage (Minimum / Maximum)	30 GB / 16 TB	N/A
Total Virtual Network Interfaces (Minimum)	6	N/A
System Performance		
VM Sandboxing (Files/Hour)	Hardware dependent	*
AV Scanning (Files/Hour)	Hardware dependent	*
Number of VMs	8 VMs/node, up to a maximum of 99 nodes per cluster	*
Sniffer Throughput	1 Gbps	N/A

* Please refer to FortiCloud Sandbox Service Description

Note: All performance values are "up to" and vary depending on the environment and system configuration.

INTEGRATION MATRIX

		FORTIGATE	FORTICLIENT	FORTIMAIL	FORTIWEB
FSA Appliance and VM	File Submission	*FortiOS V5.0.4+	FortiClient for Windows OS V5.4+	FortiMail OS V5.1+	FortiWeb OS V5.4+
	File Status Feedback	*FortiOS V5.0.4+	FortiClient for Windows OS V5.4+	FortiMail OS V5.1+	FortiWeb OS V5.4+
	File Detailed Report	*FortiOS V5.4+	FortiClient for Windows OS V5.4+	FortiMail OS V5.1+	—
	Dynamic Threat DB Update	*FortiOS V5.4+	FortiClient for Windows OS V5.4+	FortiMail OS V5.3+	FortiWeb OS V5.4+
FortiSandbox Cloud	File Submission	*FortiOS V5.2.3+	—	FortiMail OS V5.3+	FortiWeb OS 5.5.3+
	File Status Feedback	*FortiOS V5.2.3+	—	FortiMail OS V5.3+	FortiWeb OS 5.5.3+
	File Detailed Report	*FortiOS V5.2.3+	—	—	—
	Dynamic Threat DB Update	*FortiOS V5.4+	—	FortiMail OS V5.3+	FortiWeb OS 5.5.3+

*some models may require CLI configuration

ORDER INFORMATION

Product	SKU	Description
FortiSandbox 1000D	FSA-1000D	Advanced Threat Protection System — 6x GE RJ45, 2x GE SFP slots, redundant PSU, 8 VMs with Win7 and (1) MS Office license included.
FortiSandbox 2000E	FSA-2000E	Advanced Threat Protection System — 4x GE RJ45, 2x 10 GE SFP+ slots, redundant PSU, 4 VMs with Win7, Win8, Win10 and (1) MS Office license included. Upgradable to a maximum of 24 licensed VMs.
FortiSandbox 3000E	FSA-3000E	Advanced Threat Protection System — 4x GE RJ45, 2x 10 GE SFP+ slots, redundant PSU, 8 VMs with Win7, Win8, Win10 and (1) MS Office license included. Upgradable to a maximum of 56 licensed VMs.
FortiSandbox 3500D	FSA-3500D	Advanced Threat Protection System — 3U 8-slot chassis with redundant PSU, 5x SAM-3500D blades with 20x GE RJ45, 10x 10 GE SFP+ slots, 36 VMs with Win7, Win8, Win10 and (5) MS Office licenses included. Upgradable to a maximum of 60 licensed VMs.
SandboxModule 3500D	SAM-3500D	Advanced Threat Protection Blade: 4x GE RJ45, 2x 10 GE SFP+ slots, 8 VMs with Win7, Win8, Win10 and (1) MS Office license included.
FortiSandbox-VM	FSA-VM-00	FortiSandbox-VM virtual appliance with 0 VMs included and maximum expansion limited to 8 total VMs per node, up to 99 nodes per cluster.
FortiSandbox macOS Cloud VM	FC-10-FSA01-192-02-DD	macOS Cloud VM Service for (2) macOS X VMs and maximum expansion limited to (8) macOS X VMs per FortiSandbox (Appliance / VM).
FortiSandbox Cloud Service	FC-10-XXXX-123-02-12	FortiSandbox Cloud Service Subscription (SKU varied by FortiGate/FortiMail/FortiWeb models).
Optional Accessories		
1 GE SFP SX Transceiver Module	FG-TRAN-SX	1 GE SFP SX transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP LX Transceiver Module	FG-TRAN-LX	1 GE SFP LX transceiver module for all systems with SFP and SFP/SFP+ slots.
10 GE SFP+ Transceiver Module, Short Range	FG-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	FG-TRAN-SFP+LR	10 GE SFP+ transceiver module, long range for all systems with SFP+ and SFP/SFP+ slots.



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