



NLcom – Ontbijt Seminar

Roel Raaijmakers – Consultant

Programma

- Gartner CyberSecurity Mesh Architecture vs Fortinet Security Fabric
- Fortigate designed with Security Processing Unit (SPU)
- Fortinet Secure Driven Networking
- FortiGuard labs
- FortiClient ZTNA
- FortiAnalyzer as a SOC





Gartner CyberSecurty Mesh Architecture vs Fortinet Security Fabric



WHO IS FORTINET?

Fortinet is a global leader in cybersecurity, delivering a broad, integrated and automated security fabric to enable customers to accelerate their digital journey.

\$3.09B

FY2020 Billing

Financially Stable

38.9B+ Market Cap (as of 7.31.21)
Nasdaq: FTNT

S&P 500

BBB+ Baa1

Security Investment Grade Rating

Leading the Cybersecurity Industry

50

Integrated Fabric Products

Broadest Attack Surface Coverage

530,000+
Customers Worldwide

Massive Customer Input

660,000+

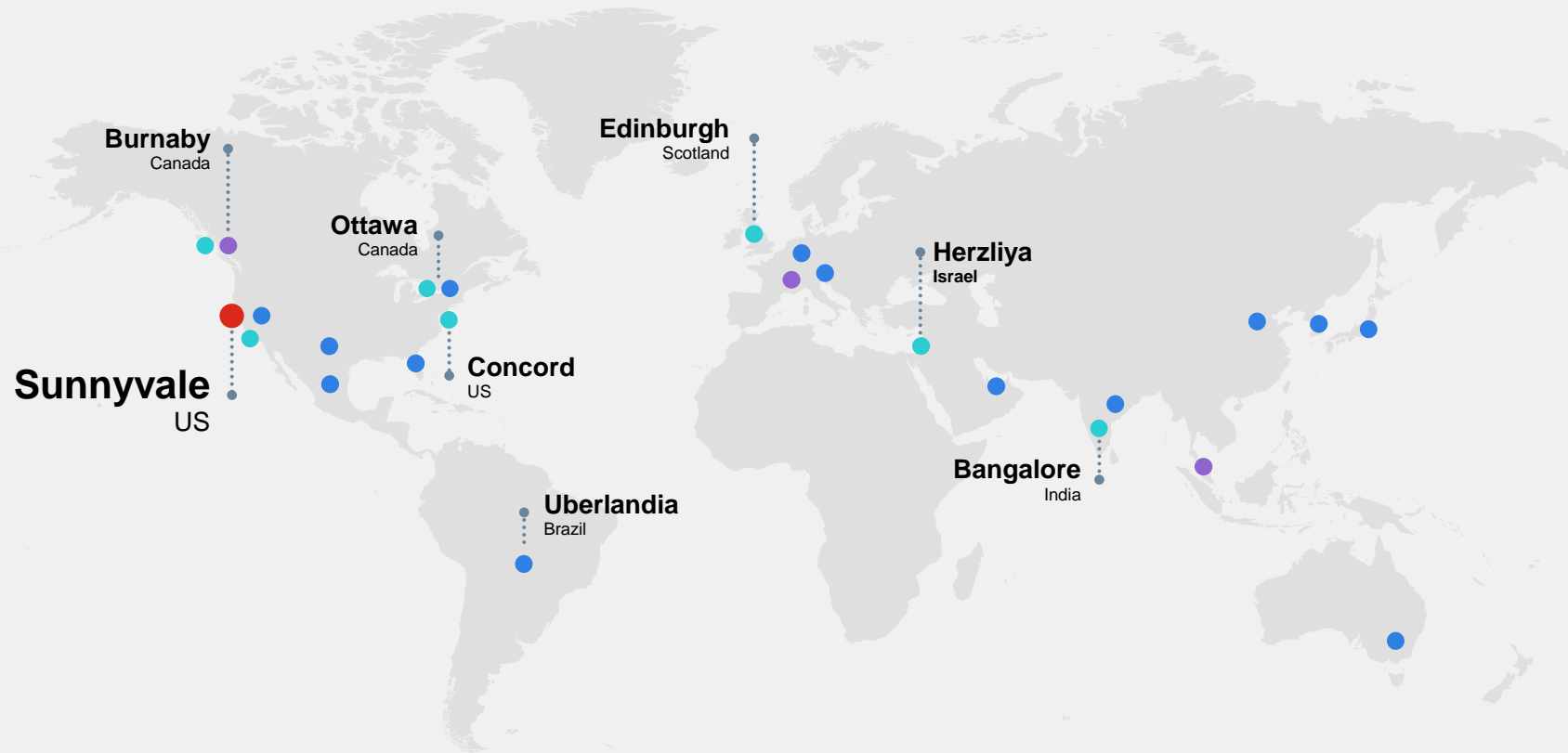
NSE Certifications

WEF Cybersecurity Founders



Broad Global Footprint—Balanced Global Growth

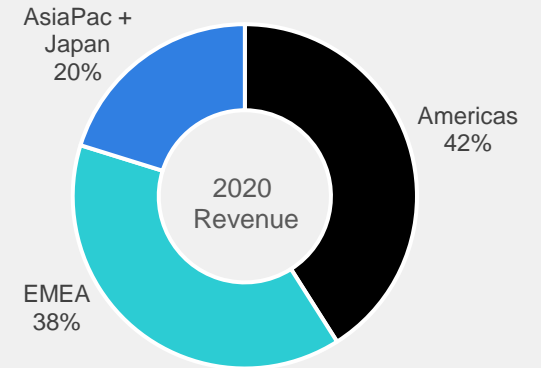
Huge R&D investment to support organic growth




9,000+
employees

530,000+
customers worldwide

785
registered patents



- Headquarters
 - Dev Centers
-
-  **FortiCare**
- Support Centers
 - Centers of Excellence



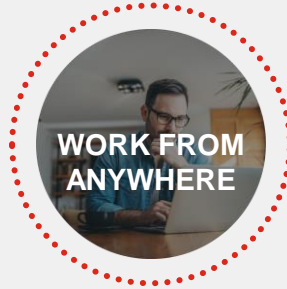


Industry Landscape and Customer Challenges



Digital Innovation Impacts Every Business

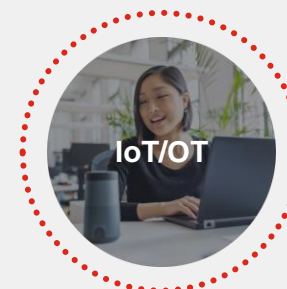
Many business-critical trends are driving organizations to accelerate digital innovation to transform key growth areas of their business. However, these vital efforts also exponentially grow the organization's digital attack surface and increase cyber risk.



Massive increase in remote worker access



Applications migrate to more compute platforms



Proliferation of vulnerable, network enabled devices



Growing data privacy and regulatory concerns, board level reporting



New, more sophisticated business applications



More edges appearing across the network



Zero day, supply chain, state sponsored, weaponized



End-to-end performance becoming a critical differentiator

Digital Innovation is Also Causing Increased Risk

Cyber threats take advantage of the disruption



Sophisticated Threats

Breach and ransomware incidents continue to increase



Digital Attack Surface

As the perimeter expands, billions of “Security Edges” are formed



Ecosystem Complexity

Too many vendors and too many alerts, **not** enough skilled people



Compliance

Global, country, province, industry, and government regulation

Fortinet is recognized in 6 Gartner Magic Quadrants

Fortinet recognized as a Leader in **2** Magic Quadrants



Network
Firewalls



WAN Edge
Infrastructure

Fortinet recognized as a Visionary in **2** Magic Quadrants



Wired and WLAN



SIEM

Fortinet recognized as a Challenger or Niche in **2** Magic Quadrants



Web Application
Firewall



Endpoint Protection
Platforms*

Fortinet mentioned in **2** Magic Quadrants



Secure Web
Gateway



Indoor Location
Services

And Fortinet is listed in **8** Gartner Market Guides



EDR



IDPS



Email



NAC



NDR



ZTNA



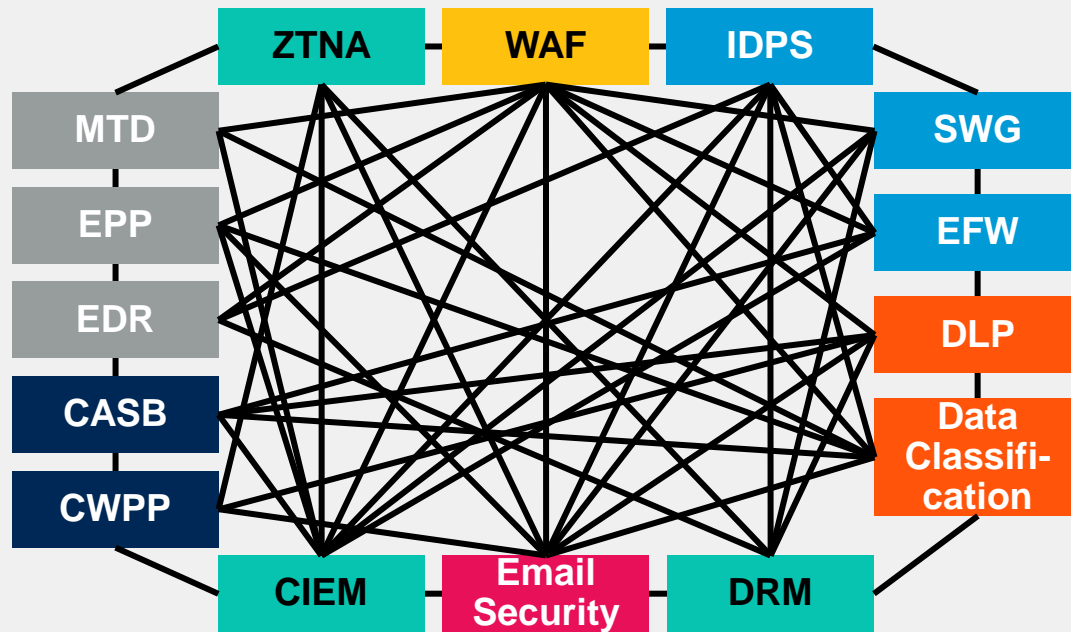
OT



SOAR

Gartner Cybersecurity Mesh Architecture

Gartner®



Executive Guide to Cybersecurity Mesh, 2022

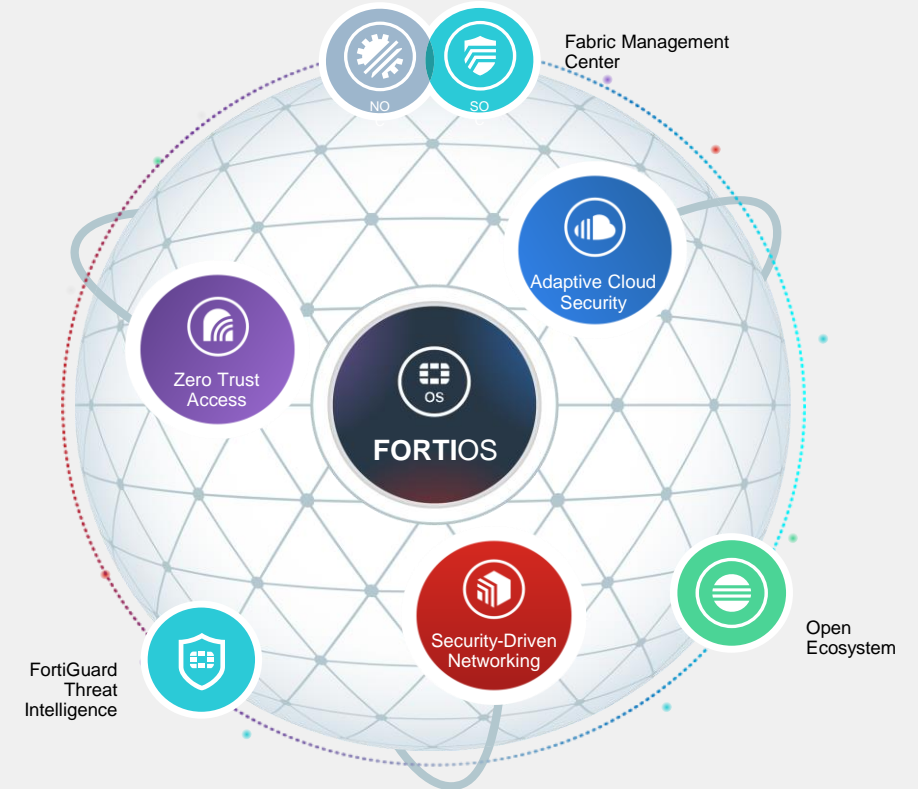
Felix Gaehtgens, James Hoover, Henrique Teixeira, Claudio Neiva, Michael Kelley, Mary Ruddy, Patrick Hevesi. As of October 2021

This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from Fortinet.



GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. All rights reserved.

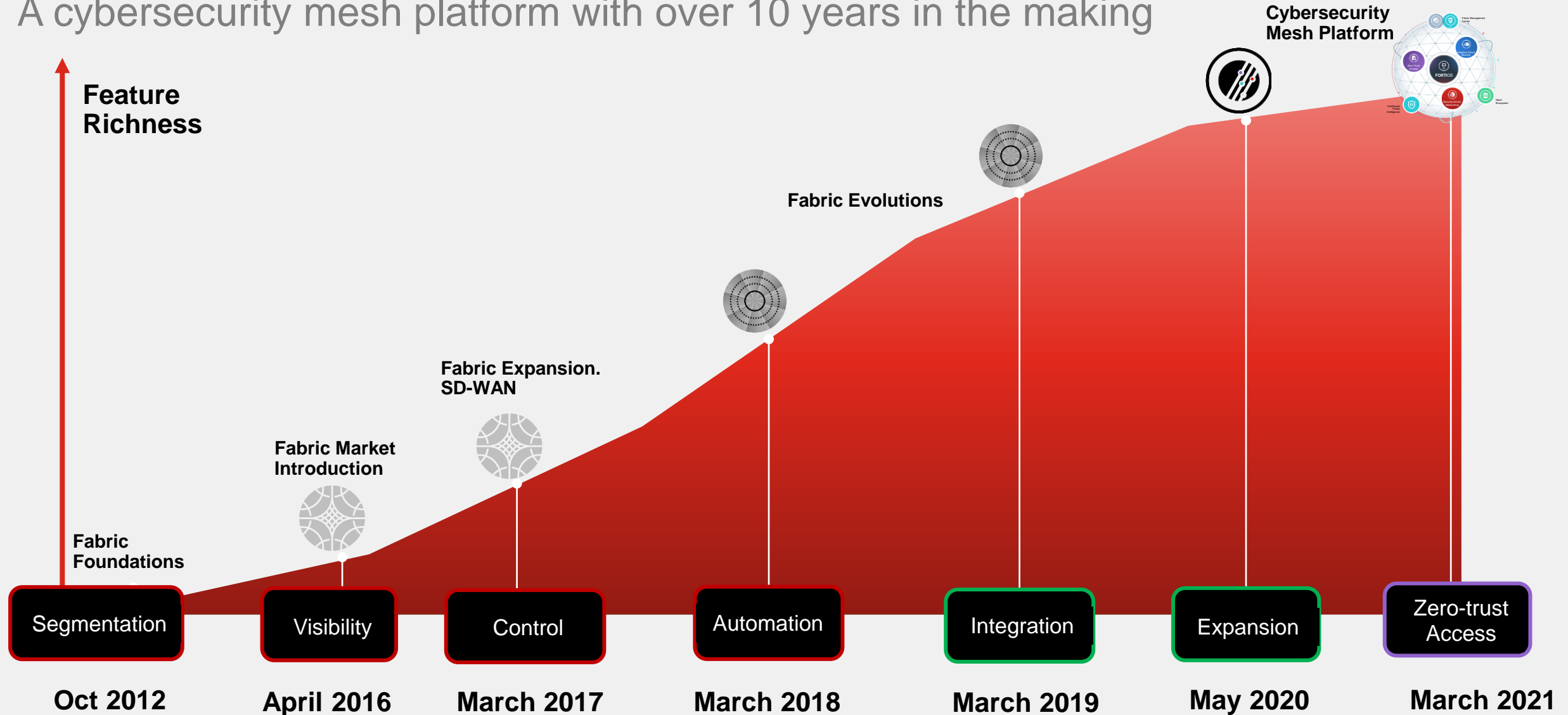
FORTINET®



© Fortinet Inc. All Rights Reserved.

Evolution of the Fortinet Security Fabric

A cybersecurity mesh platform with over 10 years in the making



Fortinet Security Fabric

Broad

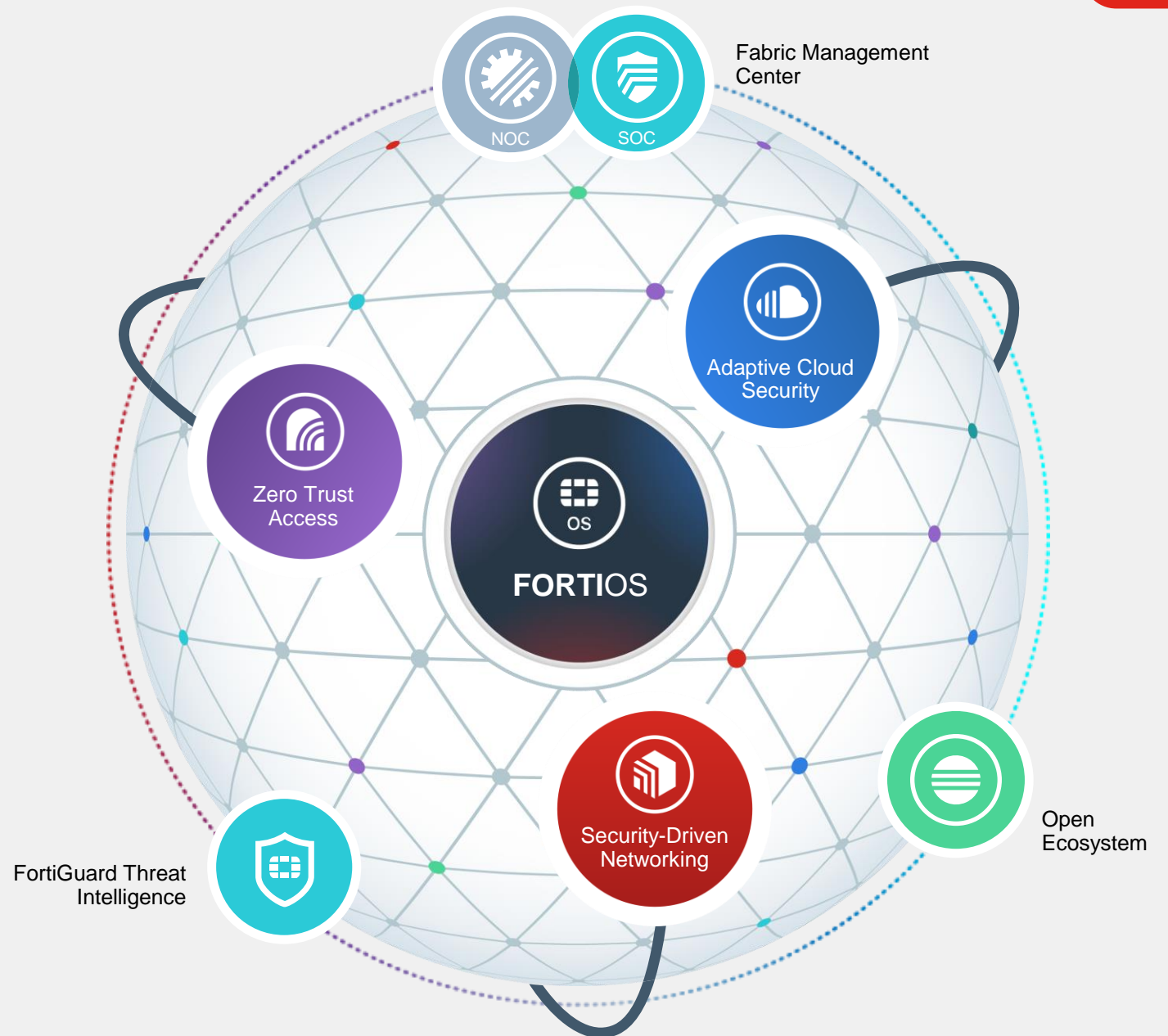
visibility and protection of the entire digital attack surface to better manage risk

Integrated

solution that reduces management complexity and shares threat intelligence

Automated

self-healing networks with AI-driven security for fast and efficient operations



Pillars of your security posture

Cybersecurity Platform Across Endpoint, Network and Cloud

Convergence of
Networking and Security
at New Network Edges



**Security-driven
Networking**

More users off Network and
more Devices IP Enabled
(IoT/OT)



**Zero Trust
Access**

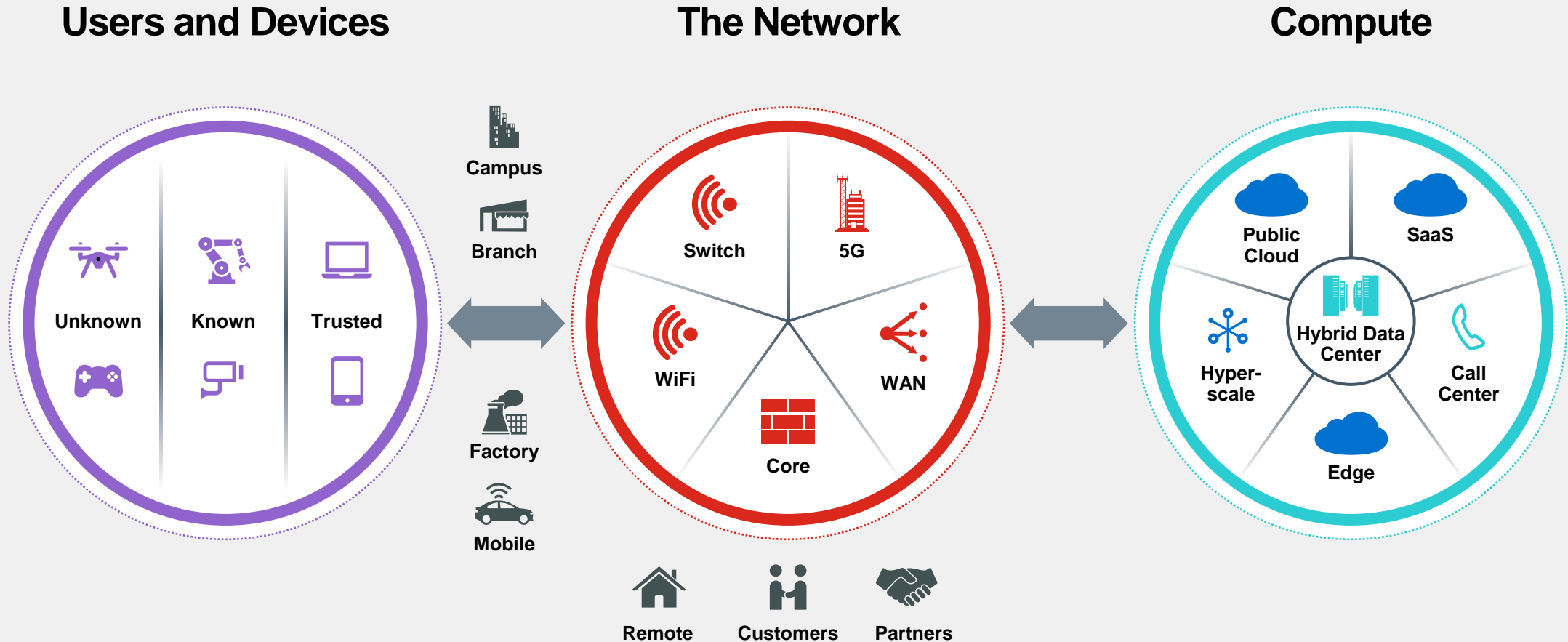
Applications continue
to move across
different Clouds



**Adaptive Cloud
Security**

Billions of “Edges” Expanding the Digital Attack Surface

The perimeter is everywhere



Digital Security, everywhere you need it.



FortiGuard Security Services

SOC & NOC



User Security



Fabric Management Center - SOC

Endpoint



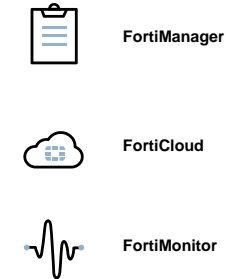
Breach



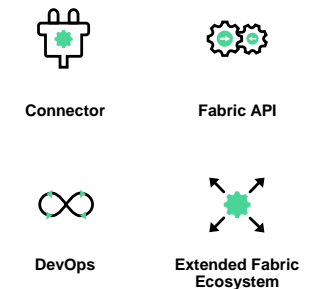
Incident Response



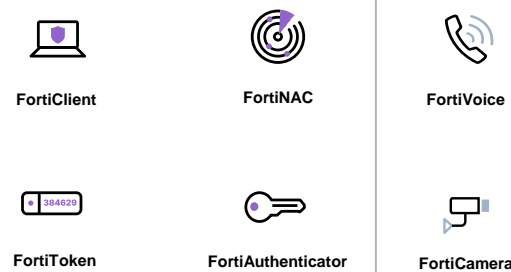
Fabric Management Center - NOC



Open Ecosystem



Zero Trust Access



Security-Driven Networking

LAN Edge



WAN Edge



DC Edge

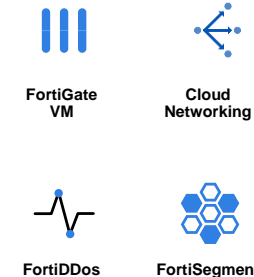


Cloud Edge

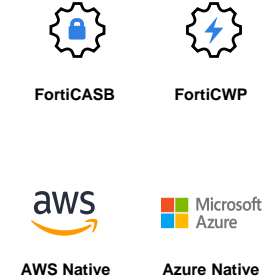


Adaptive Cloud Security

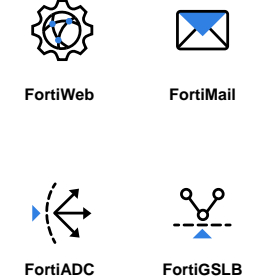
Network



Platform



Applications





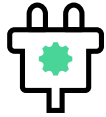
Platform Integration and Services



Open Ecosystem

450+ Best-in-class integrated solutions for comprehensive protection

Fortinet-developed deep integration automating security operations and policies



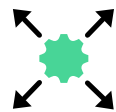
Fabric Connectors



Fabric APIs



Fabric DevOps



Extended Ecosystem



Firewalls



Switching



Wireless



Endpoint Security

Integrations with threat sharing initiatives and other vendor technologies

Figures as of March 31, 2021





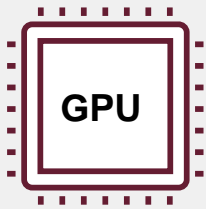
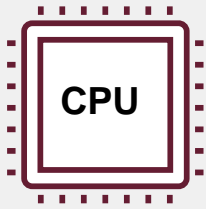
FortiGate designed with Security Processing Unit (SPU)



Fortinet Designed Security Processing Unit (SPU)

Industry Leading Hyperscale Security with NP7

Gaming and AI Systems



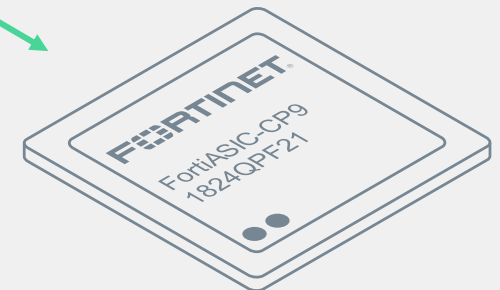
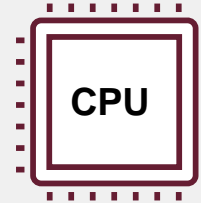
Graphical Processing Unit
(GPU)

Security Processing Unit (SPU)



**Network Processor
(NP)**

Off-Loads Networking
Functions



**Content Processor
(CP)**

Off-Loads Security
Functions

SPU - System on Chip (SoC4)

Powers SD-WAN Branch Performance



NP6 Lite

Firewall – 10 Gbps
Networking – 9 Mpps
IPsec – 3 Gbps

Quad Core CPU

All FortiOS Features

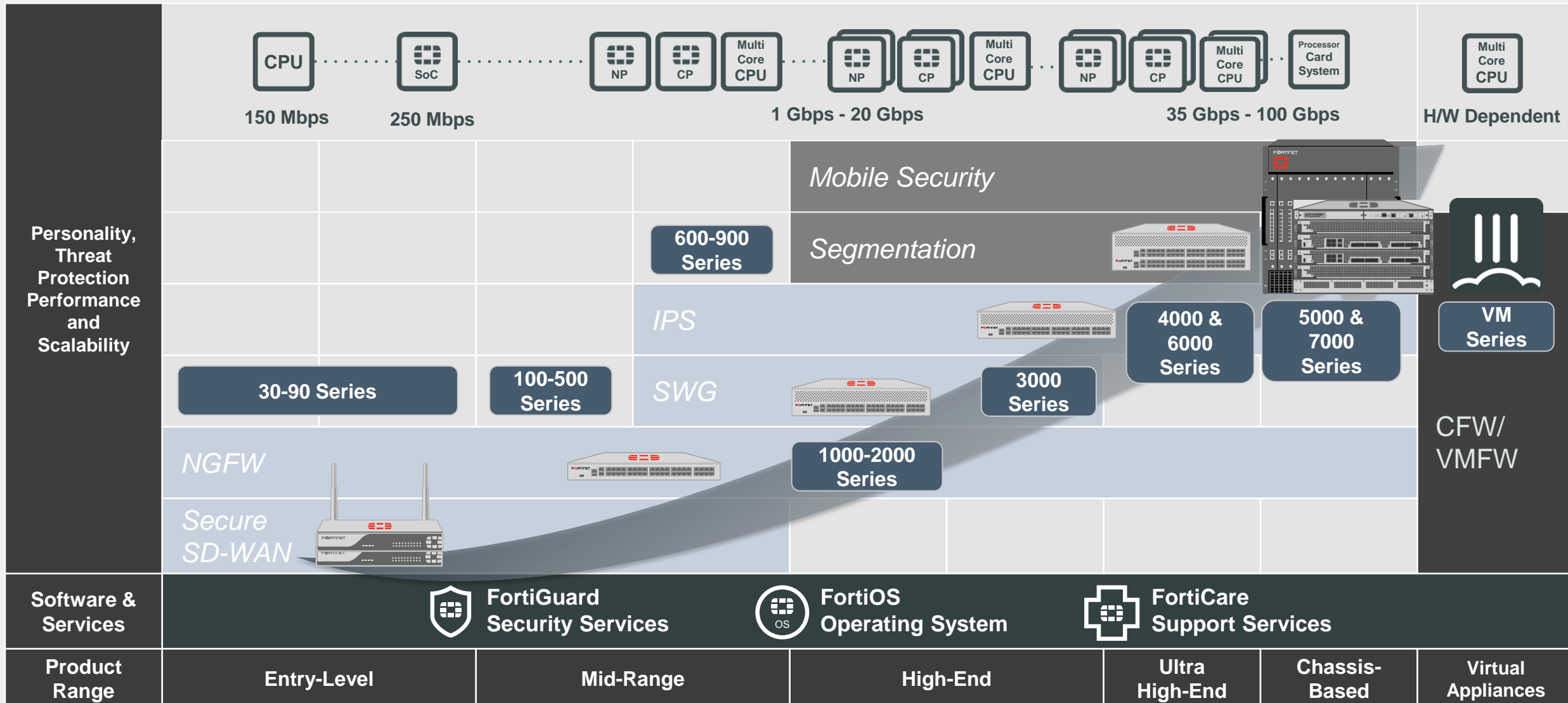
CP9 Lite

Flow Engine - IPS
Flow Engine - AV
Encryption Engine - SSL

Green

Low cost
Low power

FortiGate Product Range



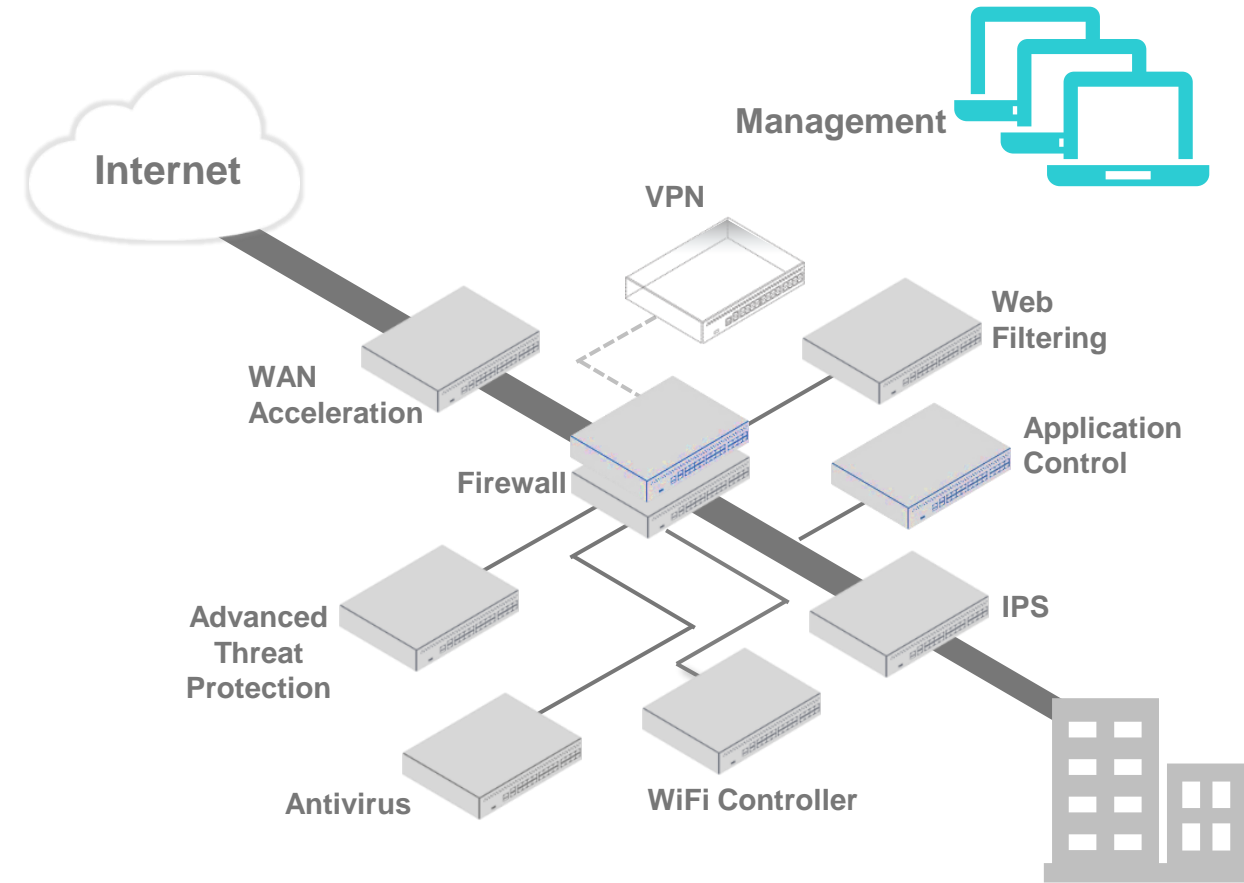


Security Driven Networking

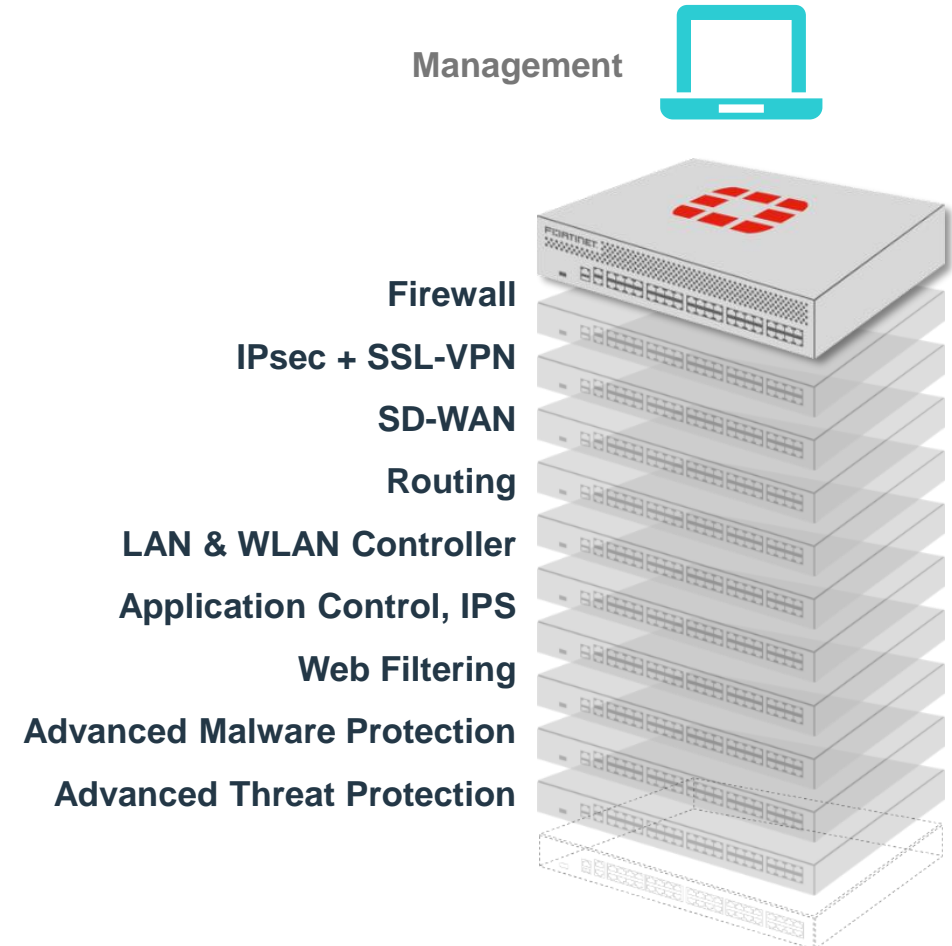


FortiGate NGFW - Powerful Multi-Layered Protection

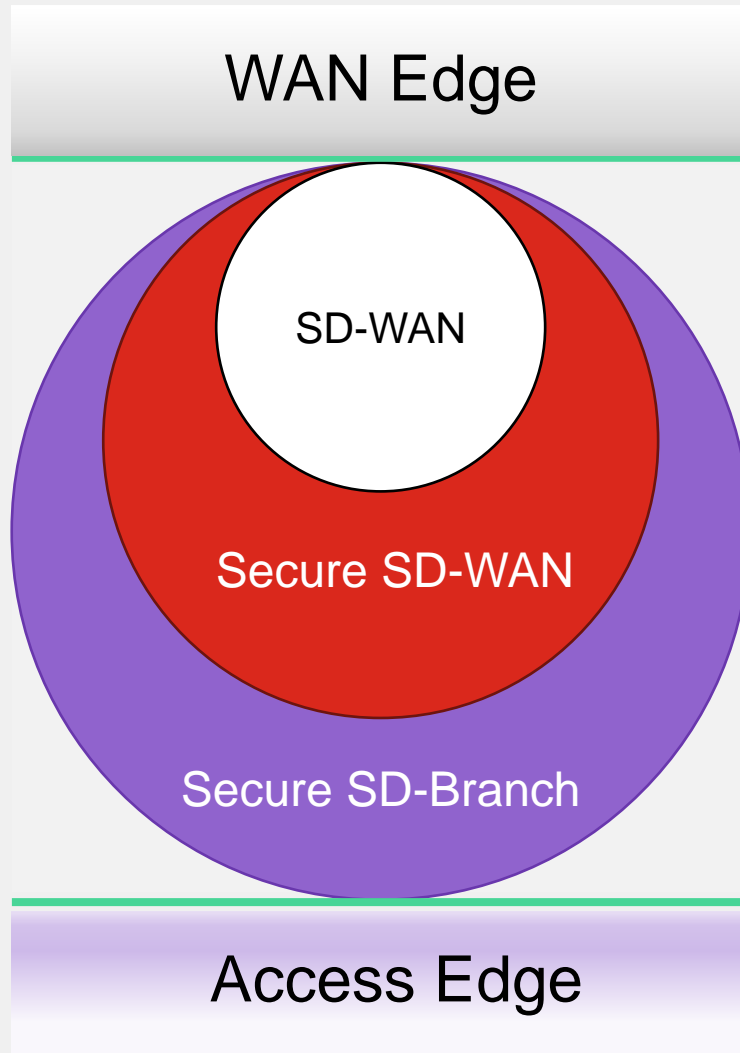
Point Solution Security



Integrated Security



Evolution of the WAN Edge at the Remote Branch



- **SD-WAN**

Offers cost savings and improvements in application performance but lack security

- **Secure SD-WAN**

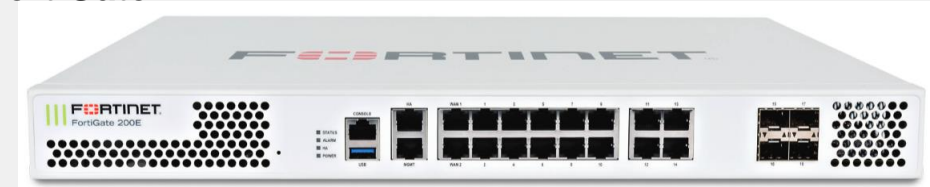
Provides superior application experience, visibility, and security but still too many additional point products

- **Secure SD-Branch**

Provides integration of WAN and LAN platforms, reducing the number of devices, extending Secure SD-WAN features into the network

Secure SD-WAN

FortiGate



APPLICATION AWARE

- Visibility into 5000+ Applications
- High Application Identification Accuracy



MULTI-PATH INTELLIGENCE

- Application Steering Based on Expanded SLAs
- Automated Fail-Over Capabilities



WAN RESILIENCY

- WAN Path Remediation (FEC)
- Tunnel Bandwidth Aggregation (Per Packet Steering)



SIMPLIFIED MONITORING

- High-level Monitoring of SD-WAN Devices on a Map
- Expanded Historical SLA Analytics



SEGMENTATION

- Multi-Tenancy with Patented VDOM
- User Level Segmentation for Applications

(Secure) SD-Branch

Integrated Security

- FortiSwitch integrated into FortiGate as extensions of the NGFW
- Firewall and switch ports equally secure
- New NAC feature allows for secure IoT onboarding

Simplicity

- Ease of deployment and management through FortiGate interface
- Flexible architecture, scales as needs change
- Up to 300 switches per FortiGate

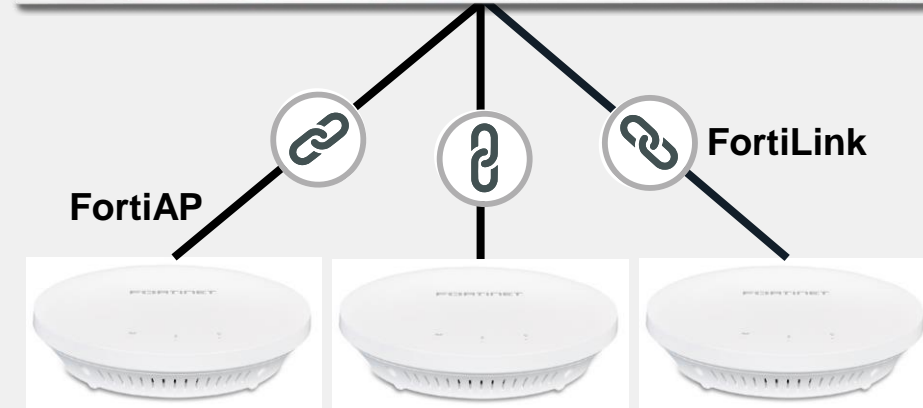
Lower Total Cost of Ownership

- FortiSwitch management included in FortiOS. No Licenses required.

FortiGate



FortiSwitch



Security Driven Networking

Security Driven Networking (SASE Edge - SASE)

- Expanding FOS on OPAQ Infrastructure
- Securing remote workforce with orchestration portal for SASE capabilities
- Securing thin branch with SASE to help customers moving from CAPEX to OPEX

Security Driven Networking (WAN Edge: SD-WAN)

- Increased Resiliency (Adaptive WAN Remediation)
- Efficient Operations (scalable ZTP, Analytics)
- Better Cloud application experience with passive WAN monitoring
- Accelerated convergence for Thin & WAN edge
- New SD-WAN appliance with in-built WiFi6

Security Driven Networking (DC Edge: NGFW)

- Ultra-Scalability with pay as you grow model (FGT 7121F, 400G)
- Attack surface Reduction (Video filtering , DNS)
- Efficient Operations with network automation (Policy Learn mode, automated upgrades)

Security Driven Networking (LAN Edge: WiFi/Switch)

- Unified code base (L3 FortiLink, NAC Visibility and Zero trust response)
- Convergence (WLM and AIOps on FMG, FortiLAN cloud)
- Simplified Operation AI/ML driven wireless easy classification and remediation)

Security Driven Networking (LTE Edge: 5G)

- 5G backup (+SD-WAN for WWAN with new dual modem)
- LTE portfolio expansion (+WWAN application release, 101F/201F)
- SASE bundle for Thin edge and remote workers

Zero Trust Access (ZTNA)

- Single policy for on-net / off-net behavior
- Better & easier VPN with automated setup for HW/VM/SASE & cloud
- Granular access with role based application access
- Leverage existing products

Adaptive Cloud Security (VM, CWP, CASB)

- Centrally managed hybrid cloud (expended support & multi tenant policies)
- Effective usage of resources with autoscaling
- Extended application support for CASB
- Container guardian

Adaptive Cloud Security (WAF & Email)

- Email continuity switch to FortiMail cloud when service go down
- FortiWeb enhanced with ML-based API discovery, deep learning and more.
- FortiADC/FortiGSLB user experience visibility and Auto-Scaling capabilities

FortiGuard Threat Intelligence (Security Services)

- Increased Attack Surface Coverage – Video Filtering enhancement to our web filtering offering
- Security Rating expended to **Fabric Rating**
- **IoT real-time query service**

Fabric Management Center (SOC)

- MITRE attack analysis with expansion in cover and automated protection across the fabric and ecosystem
- SOAR enhanced AI/ML & out-of-the-box content packs. Integrations. FSR cloud. mobile app.
- IR unified console, FORTISOAR container, FortiCASB connector

Fabric Management Center (NOC)

- Insider threat analysis with EUBA support
- Enhanced visibility with extended product support across the Fabric & SD-Branch
- Efficient and scalable operation with SIEM
- SaaS management with Unified GUI, easy on boarding with ZTP templet and more & efficient full branch operations

Advance Services

- SOC as a Service to augment organization and MSSP's SOC
- Best Practice Evaluation
- FortiGuard Consultant

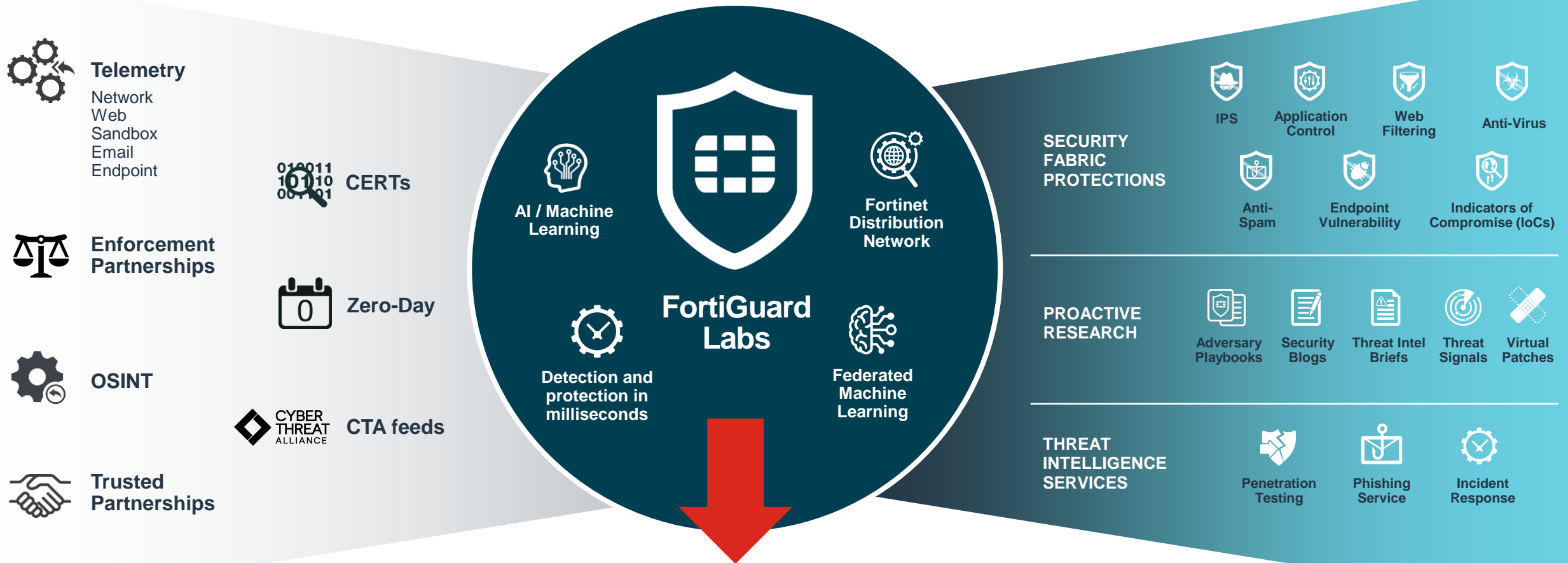


FortiGuard Labs



FortiGuard Labs

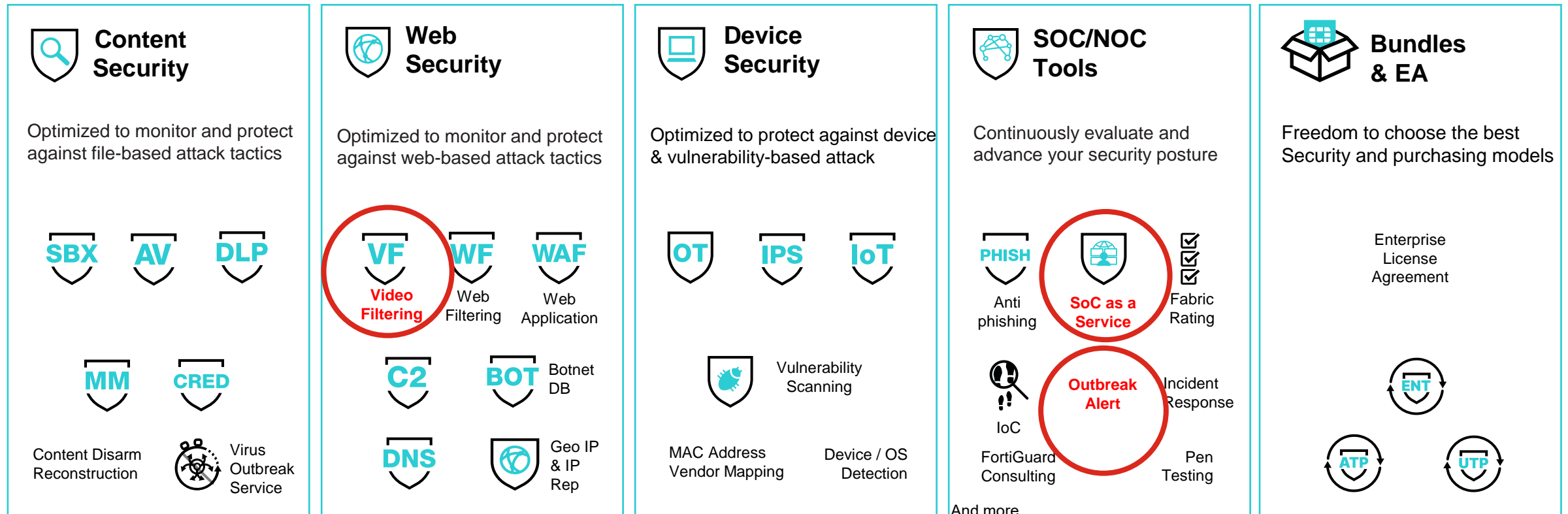
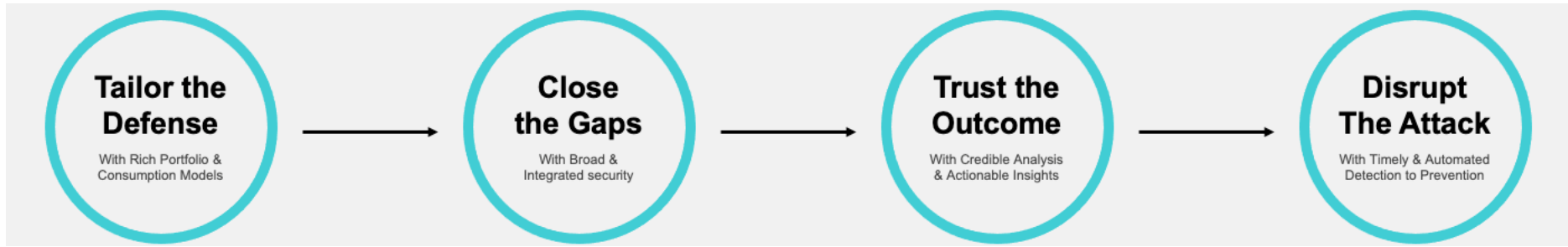
VISIBILITY → **INNOVATION** → **ACTIONABLE THREAT INTELLIGENCE**

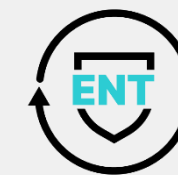
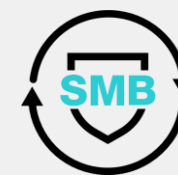
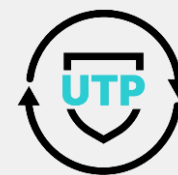


Our platform ingests and analyzes more than 100 billion events every day, on average.

FGD Security Services

Market leading security integrated across the attack lifecycle & surface





Service Offering

A-la-carte

ATP

UTP

SMB
(FG 80 and lower)

ENT

24*7 Support

SD-WAN, ZTNA, Application control, botnet control and database services

V

V

V

V

V

Content Security

Av, AI-powered cloud sandbox, IPS

V

V

V

V

V

Web Security

AI-powered Web, Video and DNS Filtering

V

V

V

V

Central Management & Analytics

FortiGate Cloud management

V

V

Device Security

IoT and OT Advanced Security & compliance tools

V

V

Recommended add-ons

SOC-as-a-Service

Management

SD-WAN Monitoring & Overlay Controller VPN Cloud

Fortinet Client

V



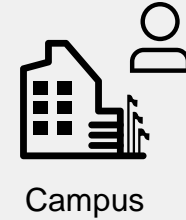
FortiClient ZTNA



Supporting Work From Anywhere (WFA)

A better user experience

- Access from in or out of Office
- Automatic secure tunnels to applications
- SSO Supported



Fortinet ZTA, FMC and ZTNA in Context

Zero Trust Model

- **Devices**
- **People**
- **Networks**
- **Workloads**
- **Data**
- **Visibility & Analytics**
- **Automation & Orchestration**

Fortinet ZTA – Pillar

- Endpoint Access & Control
- Device Access (NAC)
- Identity Management

Fortinet ZTNA

User application access control

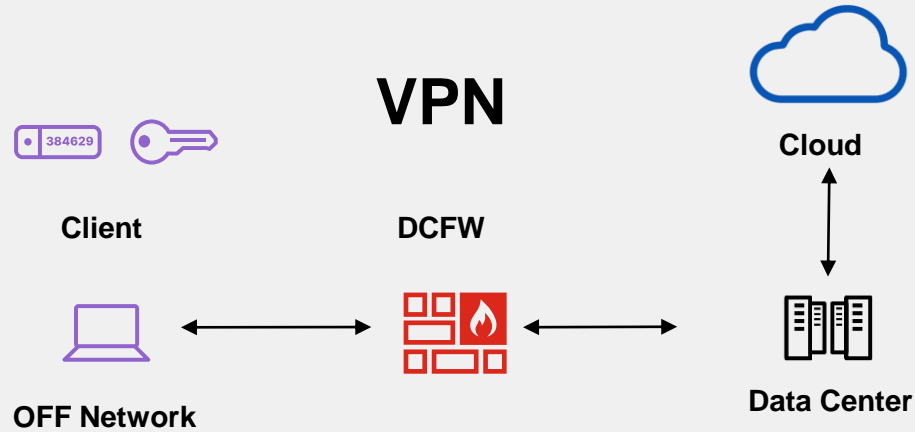
- New secure-remote access method replacing VPN

Fortinet Fabric Management Center

- FortiMonitor
- FortiAnalyzer, FortiSIEM
- FortiSOAR, FortiEDR
- FortiAI



From Traditional VPN to ZTNA

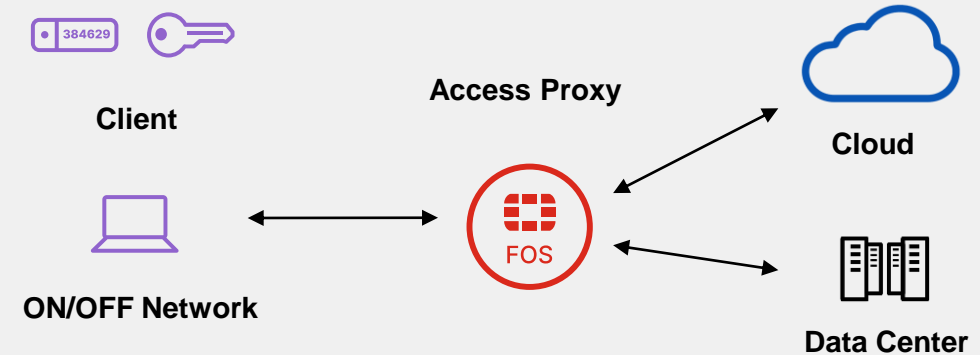


One Time Trust Check

Access Entire Network

Generic Rule Set

ZTNA



Continuous Trust Check

Access Specific Applications

User Contextual Rule Set



Fortinet's ZTNA

What's it made of? Existing Fortinet Security Fabric Products

Core Elements



FortiGate



FortiClient / Central
Management

- FortiGate builds the secure tunnel, maintains user group/application access table (FOS 7.0)
- FortiClient Central Management configures the ZTNA agent in FortiClient for the secure connection back to the FortiGate (FortiClient 7.0)
 - FortiClient Central Management: Either FortiClient EMS or FortiClient Cloud
- Authentication Solution
 - FortiAuthenticator, FortiToken or any 3rd party supported by the Security Fabric



Fortinet ZTNA advantages

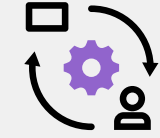
Complete coverage vs. other ZTNA solutions

- Leveraging existing investments in on-prem Firewalls
 - Most ZTNA solutions are SASE-only options with expensive charges for company-wide coverage
 - Leverage SD-WAN, SD-Branch capabilities
- Improved Security (“Secure ZTNA”)
 - Extend FortiGate protection to wherever you are
 - Traffic traversing Industry-leading FortiGate technology
- No Licenses Required
 - Simply a feature in FOS & Supported FortiClient version to turn on!



Evolution of VPN tunnels

Bringing Zero Trust principles to remote access



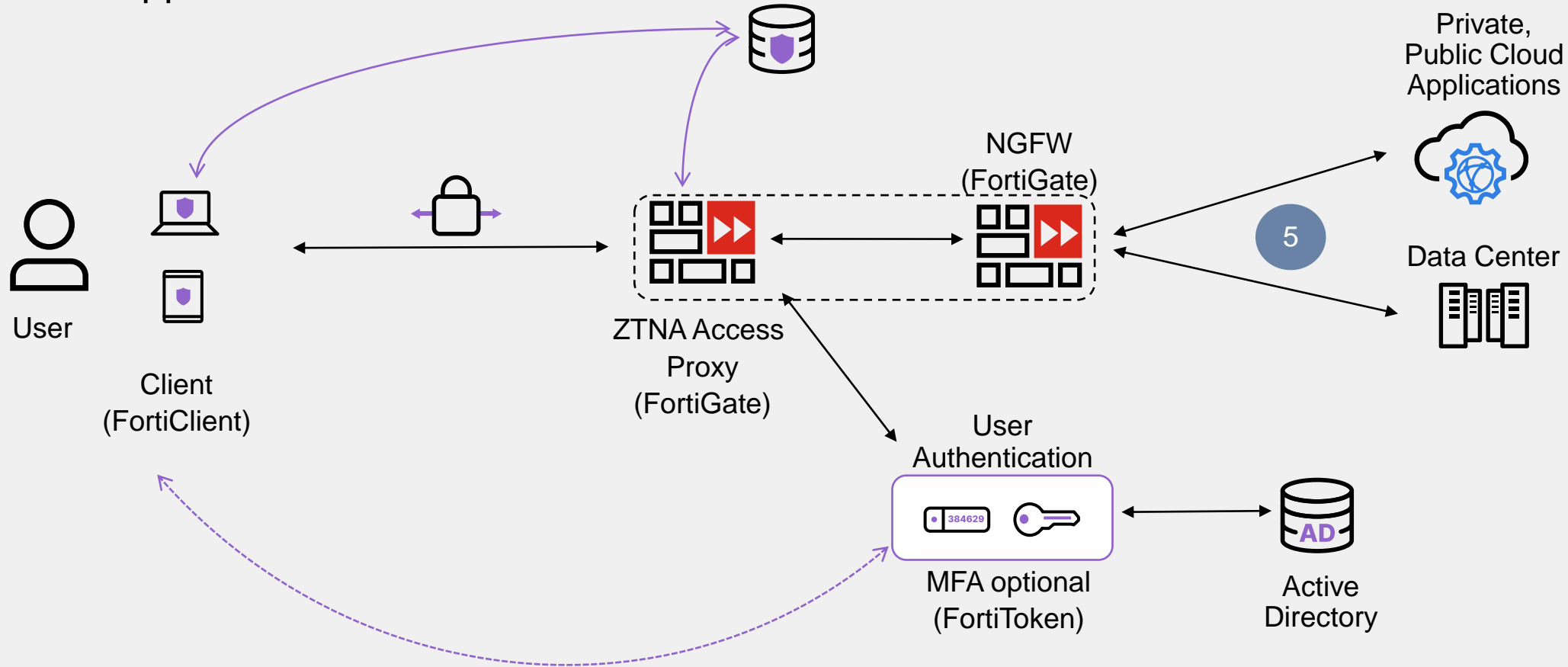
- Ongoing verification
 - Per session user identity checks
 - Per session device posture checks (OS version, A/V status, vulnerability assessment)
- More granular control
 - Access granted only to specific application
 - No more broad VPN access to the network
- Easier user experience
 - Auto-initiates secure tunnel when user accesses applications
 - Same experience on and off-net



Zero Trust Network Access (ZTNA) Technology



Granular Application Access



- Automatic, transparent encrypted tunnels
- Split tunneling
- Per Session verification & identification
- Additional layers of security with MFA
- Single-Sign-on agent supports FortiAuthenticator

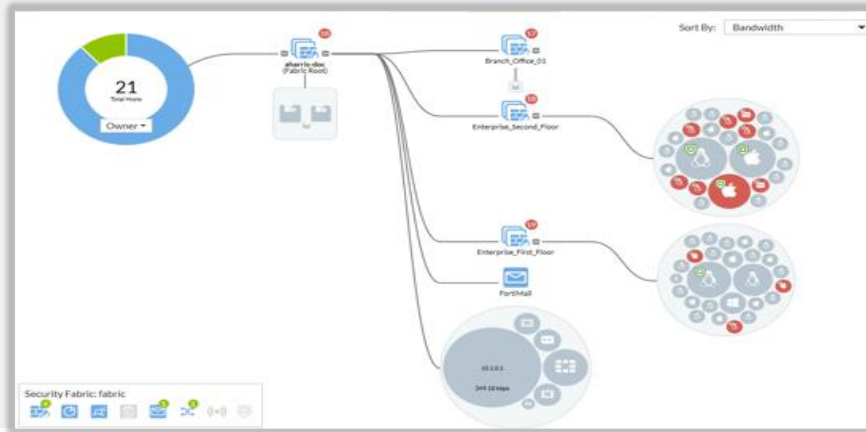


FortiAnalyzer as a SOC

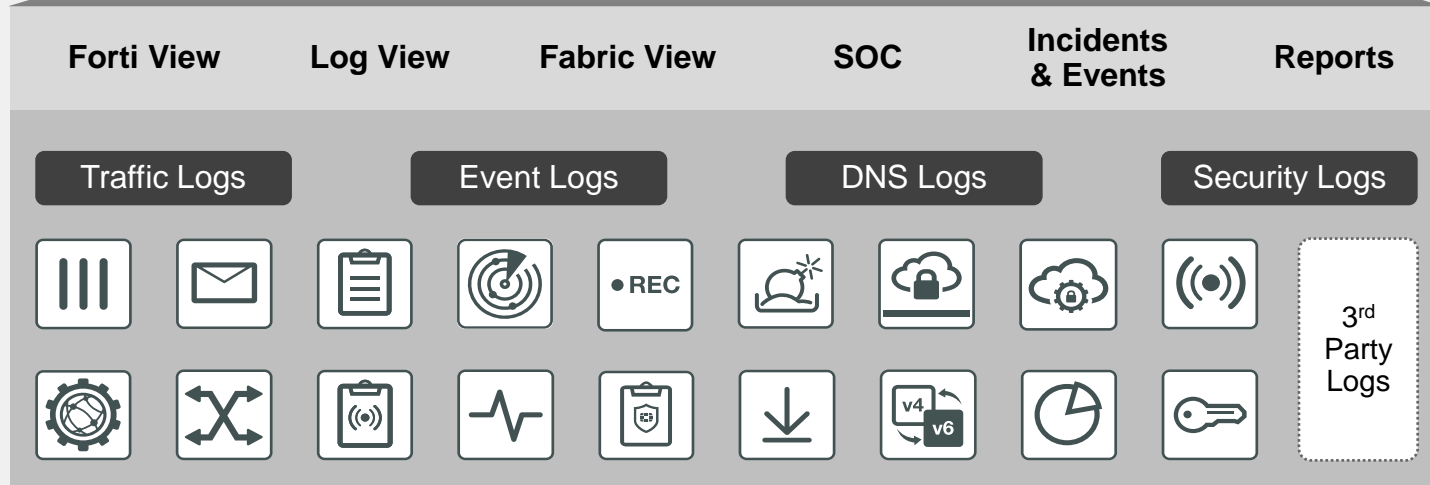


Logging & Reporting

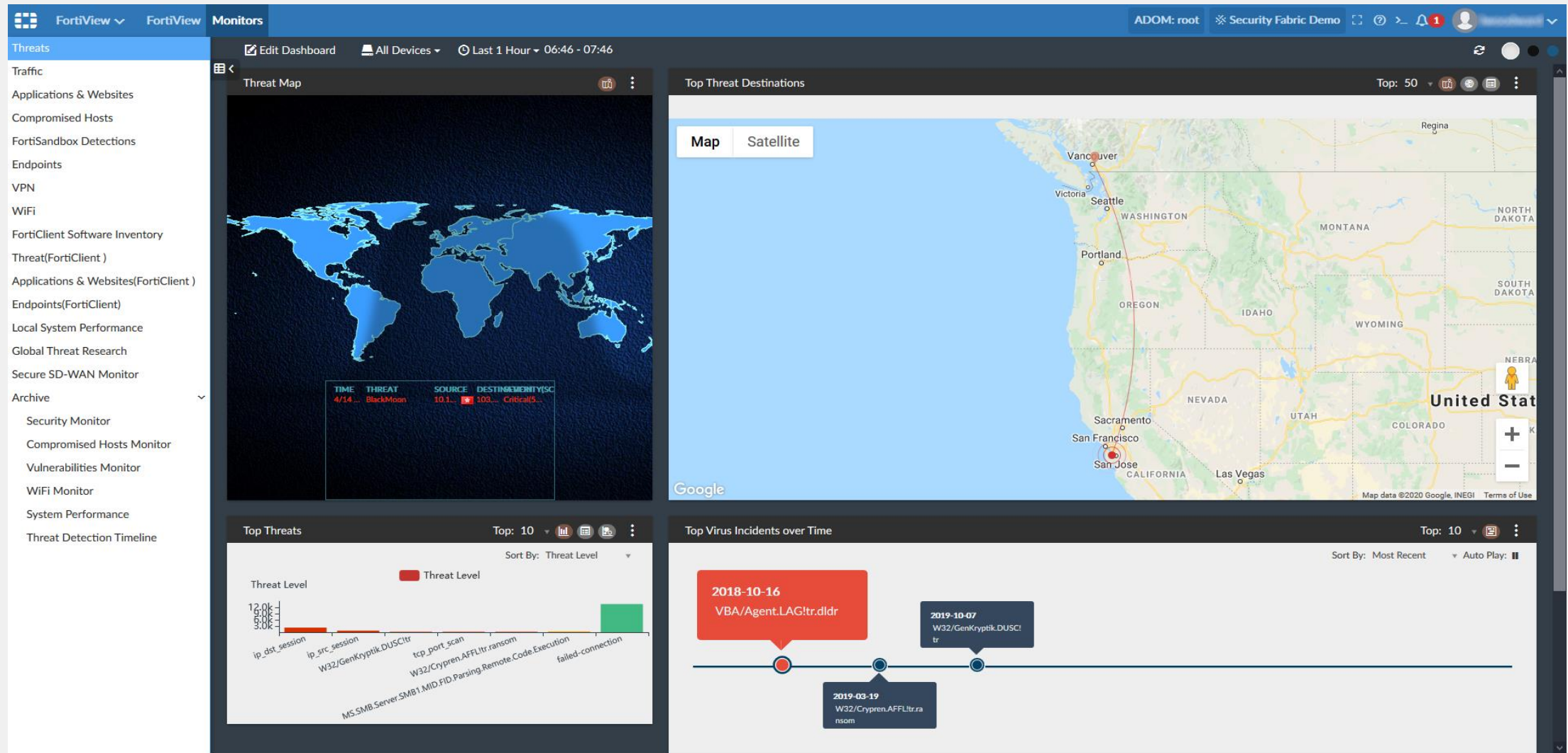
6.4



1. FortiGate
2. FortiClient
3. FortiNAC
4. FortiMail
5. FortiAuthenticator
6. FortiManager
7. FortiWeb
8. FortiSandbox
9. FortiCarrier
10. FortiCache
11. FortiDDos
12. FortiDeceptor
13. FortiProxy
14. Security Fabric
15. FortiRecorder
16. Generic Syslog



FortiView Monitors



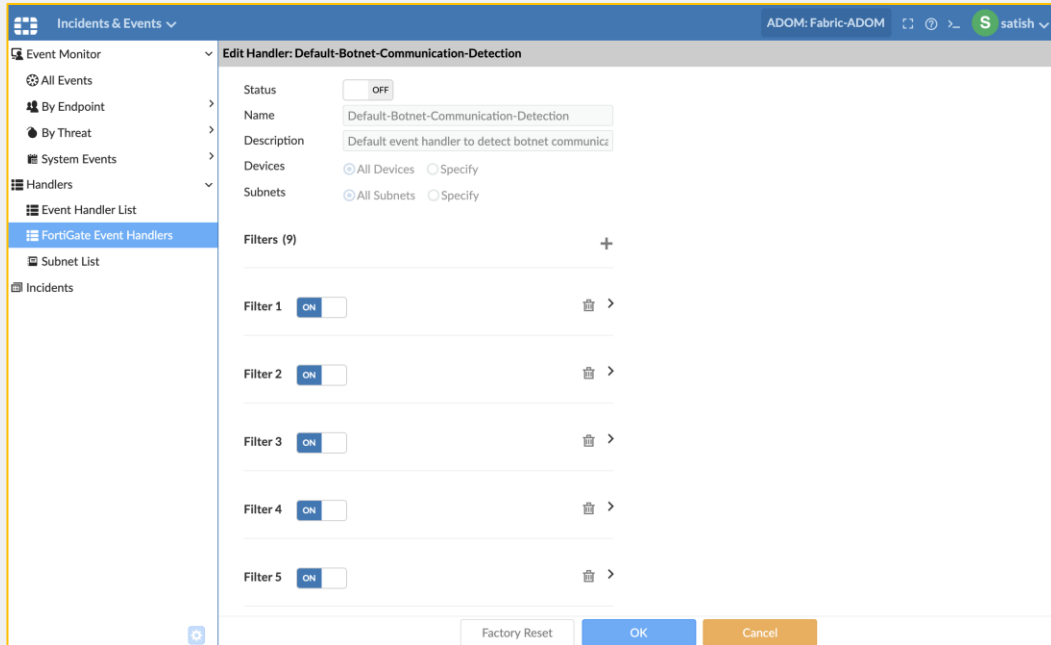
Indicator of Compromise

Log View											
ADOM: Fabric-ADOM											
Last 1 Hour 11:26:31 To 12:26:30											
Custom View											
Add Filter											
FortiGate	#	▼Date/Time	Data Source ID	Event Message	Event Type	Event Severity	Source IP	Destination IP	Host Name	User ID	Application Name
FortiClient	1	12:26:18	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
FortiMail	2	12:26:15	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
FortiSandbox	3	12:26:15	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
FortiProxy	4	12:26:15	FSA3KD3R13000029	URL job(500298996...	Device_URL	debug				system	
FortiAnalyzer	5	12:26:12	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
FortiDeceptor	6	12:26:12	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
Event	7	12:26:08	FSA3KD3R13000029	Start processing url: ...	event	debug				system	
Custom View	8	12:26:07	FSA3KD3R13000029	Fetching url for new ...	event	debug				system	
Log Browse	9	12:26:05	FSA3KD3R13000029	Device FEVM02000...	event	debug				system	
Log Group	10	12:26:05	FSA3KD3R13000029	Device (FEVM0200...	event	debug				system	
	11	12:25:59	FGR60D4Q16001952	System performance...	event	notice					
	12	12:25:53	FPXVM40000187343	Performance statisti...	event	notice					
	13	12:25:50	FGR60D4Q16001952		traffic	notice	172.30.72.30	10.88.210.62			RSH
	14	12:25:50	FGR60D4Q16001952		traffic	notice	172.30.72.30	10.88.210.62			RSH
	15	12:25:49	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
	16	12:25:49	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
	17	12:25:46	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
	18	12:25:46	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
	19	12:25:45	FSA3KD3R13000029	URL job(500298940...	event	debug				system	
	20	12:25:43	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
	21	12:25:43	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
	22	12:25:40	FEVM040000195676	SMTP authenticatio...	event	information					
	23	12:25:38	FSA3KD3R13000029	Start processing url: ...	event	debug				system	
	24	12:25:38	FSA3KD3R13000029	Fetching url for new ...	event	debug				system	
	25	12:25:33	FSA3KD3R13000029	Device FEVM02000...	event	debug				system	
	26	12:25:33	FSA3KD3R13000029	Device (FEVM0200...	event	debug				system	
	27	12:25:25	FSA3KD3R13000029	FG100E4Q1701561...	event	debug				system	
	28	12:25:20	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
	29	12:25:20	FGR60D4Q16001952		traffic	notice	0.0.0.0	255.255.255.255			DHCP/DHCP Relay
Total logs for analytics: 53 days 12 hours.											
50 Items per page											
1 2 3 4 5											
0.103 Second											

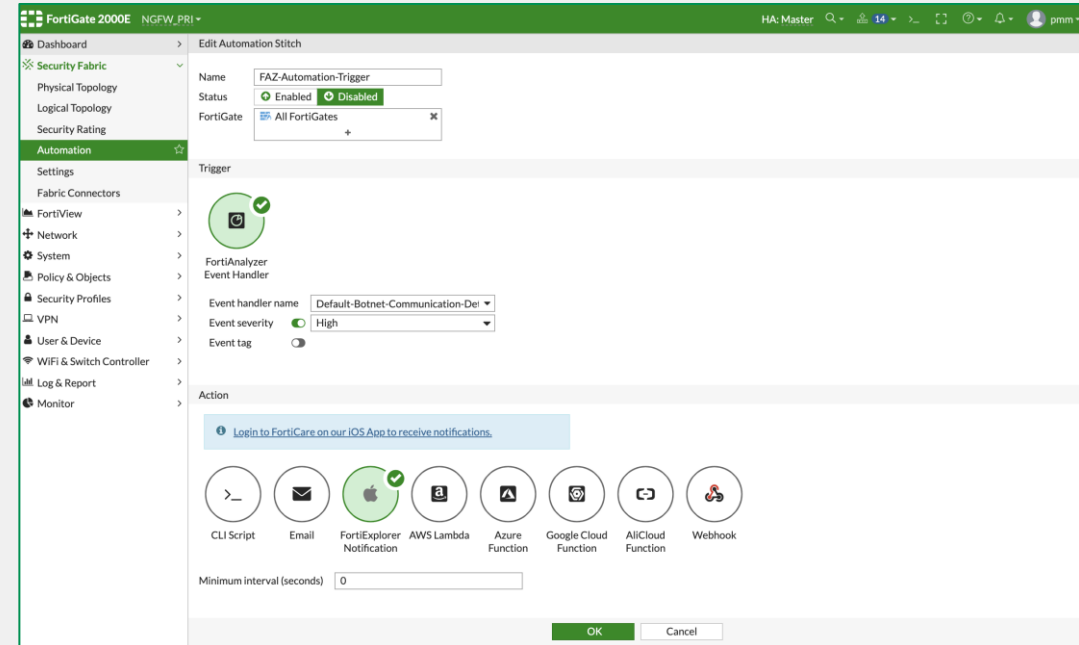


Security Fabric Integration

FortiAnalyzer

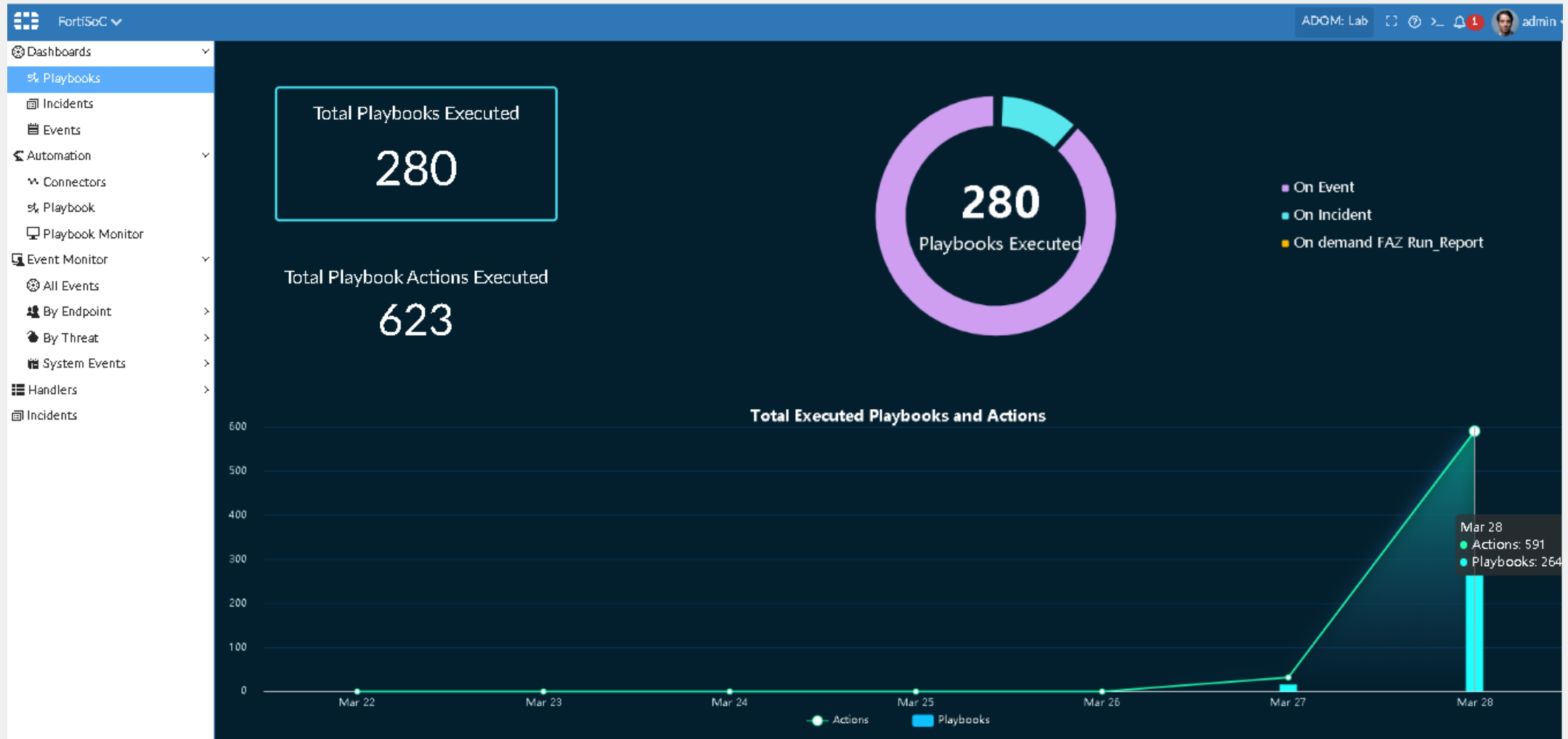


FortiGate



- **Security Fabric's** Analytics Engine is part of FortiAnalyzer and is necessary for the Fabric
- **Automation Stitch** is like If-this-then-that of the Security Fabric. FortiAnalyzer is the Analytics backend of the Security Fabric and can be leveraged natively in a FortiGate through a secure channel between FortiGate & FortiAnalyzer

FortiSOC: Playbooks



FortiSOC: OutBreak and Alerting service

FortiSOC

Dashboards

Playbooks

Incidents

Events

Outbreak Alerts

Automation

Connectors

Playbook

Playbook Monitor

Event Monitor

All Events

By Endpoint

By Threat

System Events

Handlers

Incidents

Search...

Microsoft PrintNightmare

HermeticWiper Malware

Win32k Privilege Escalation

WinHTTP Protocol Stack RCE

AD Privilege Escalation

Log4j2 Vulnerability

Zoho Exploit

Windows Installer Zero-Day

Emotet Malware

VMWare vCenter vulnerabilities

REvil Ransomware

Kaseya VSA Attack

DarkSide

Big-IP

DearCry Ransomware

Microsoft Exchange

SolarWinds

Latest Developments

Many popular sites including Steam (search box), Apple (icloud), and Minecraft were quickly confirmed affected by CVE-2021-44228 (severity 10.0). Subsequent reports indicate ransomware being used to attack vulnerable systems.

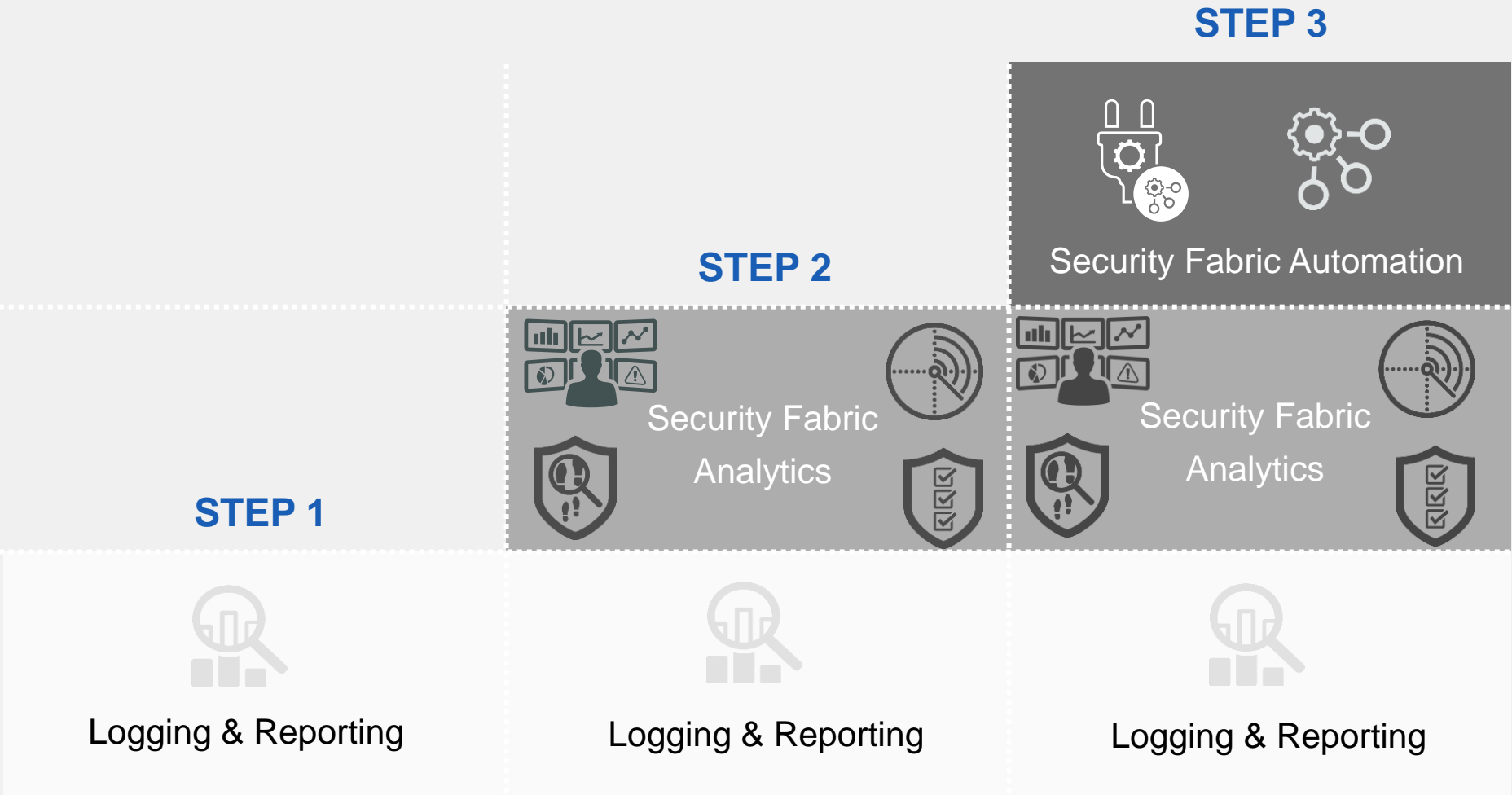
<https://www.bleepingcomputer.com/news/security/fintech-firm-hit-by-log4j-hack-refuses-to-pay-5-million-ransom>

Due to the high profile nature of this vulnerability, more vulnerabilities have been discovered and reported including CVE-2021-45046 (9.0), CVE-2021-45105 (8.5) and CVE-2021-44832 (6.6). The coverages for these vulnerabilities are included in the latest set of Security Fabric products & services that can protect against exploit or detect the vulnerability as summarized below.

Fortinet Products Summary

	Services	Version	Other Info
FortiGate	IPS	19.231	Blocks exploitation of the Log4j2 vulnerability
FortiAnalyzer	Outbreak Detection	1.00041	Automated detection of indicators for the Log4j2 vulnerability from across the security fabric
	Threat Hunting	6.4+	Threat hunting for indicators for the Log4j2 vulnerability from across the security fabric

FortiAnalyzer: Three Stages of Deployment





FORTINET®