

Cisco Secure Firewall

Nový Firepower 3100 je tady!

Jiří Tesař

jitesar@cisco.com, CCIE #14558, SFCE #124266, CEH

Technical Solution Architect - Security

Cisco Techclub, 10.5.2022



Secure Firewall 3100

Introduction

Cisco Secure Firewall 3100 Series

Make hybrid work and zero trust practical, with the flexibility to ensure strong return on investment

The new enterprise-class Cisco Secure Firewall 3100 Series supports your evolving world









Performance & Flexibility

Provide an exceptional hybrid work experience

Visibility & Enforcement

Keep the network from going dark and strengthen your zero-trust posture

Efficiency & Simplicity

Advanced automation and integrations drive cost-savings for modern environments



Why 3100 Series?

- Empower hybrid workers
 - Support more remote users with up to 3X performance enhancements with VPN
- Delight your employees
 - Up to 3X inspected throughput with multithreaded traffic handling technique, delivering strong video conferencing
- Get investment protection
 - Clustering and high port density flexibility allow your firewall to grow with you



Secure Firewall 3100

Overview

3100 Series: Key Hardware Highlights



Accelerates bulk cryptographic operations. Processes packets before the Firewall software.



A specially built circuit to provide flow acceleration and flow-offload*

* Available from Version 7.2



Comes with a single SSD. A second SSD can be added to form RAID 1 (Optional).



Supports all FIPS 140-3 requirements



Hardware Resources: 3100 vs. FPR2100



Description	3110	3120	3130	3140
CPU	12-core	16-core	24-core	32-core
Memory	64 GB	128 GB	128 GB	256 GB
Storage (SSD)	960 GB	960 GB	960 GB	960 GB

Description	FPR 2110	FPR 2120	FPR 2130	FPR 2140
CPU/NPU	4/6-core	6/8-core	8/12-core	16/16-core
Memory/NPU RAM	16/8 GB	16/8 GB	32/16 GB	64/16 GB
Storage	100 GB	100 GB	200 GB	200 GB

Logical Capabilities: 3100 vs FPR2100



Cluster 8 8 8 8 Multi-Instance Will be supported from 2023 VRF 30 30 50 50	Description	3110	3120	3130	3140
	Cluster	8	8	8	8
VRF 30 30 50 50	Multi-Instance	Will be supported from 2023			
	VRF	30	30	50	50

Description	FPR 2110	FPR 2120	FPR 2130	FPR 2140
Cluster	Not Supported			
Multi-Instance	Not Supported			
VRF	10	20	30	40

Performance Boost



	2110 vs 3110	2120 vs 3120	2130 vs 3130	2140 vs 3140	
					_
FW+AVC+IPS	2.6 ightarrow 17	3.4 → 21	5.4 → 38	10.4 → 4 5	

IPsec VPN

 $0.9 \to 8$

 $1.2 \to 10$

 $1.9 \rightarrow 17.8$

 $3.6 \rightarrow 22.4$



^{*}Performance Estimates are in Gbps, subject to 1024B packet size, protocol type, and other networking variables.

Firepower Hardware Update

As the threat landscape evolves, our firewall portfolio does too. Gain more features and better performance at the same or lower price point.



Better performance

- Up to 3.5x boost in Firewall throughput
- Up to 5x boost in VPN throughput



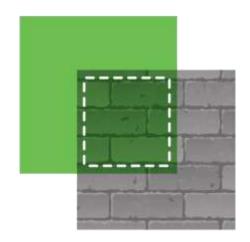
More connections

Up to 2x more connections per second (CPS)



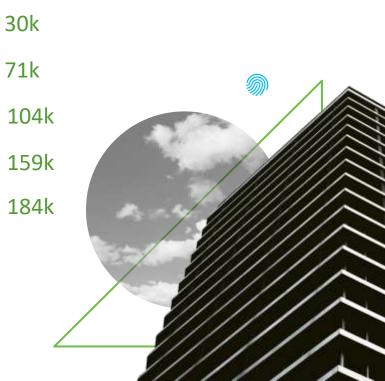
Improved encrypted traffic throughput

• Up to 3x boost in encrypted traffic performance



When It Comes to Refresh

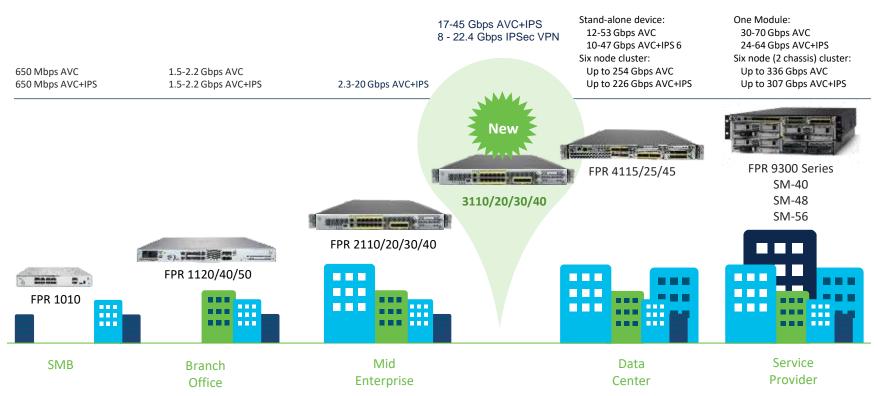
22k/40k	FPR 2110/20	\rightarrow	1150
62k	FPR 2130	\rightarrow	3110
128k	FPR 2140	\rightarrow	3120
138k/185k	FPR 4110/12	\longrightarrow	3130
247k	FPR 4115	\rightarrow	3140





Physical Appliances

Supporting your choice of FTD or ASA software





3100 Series: Minimum Supported Versions

Minimum Manager Version	Managed Devices Software	Minimum Version on Managed Devices
FMC 7.1	FTD	FTD 7.1
FDM 7.1	FTD	FTD 7.1
ASDM	ASA	ASA 9.17.1
CSM	ASA	ASA 9.17.1

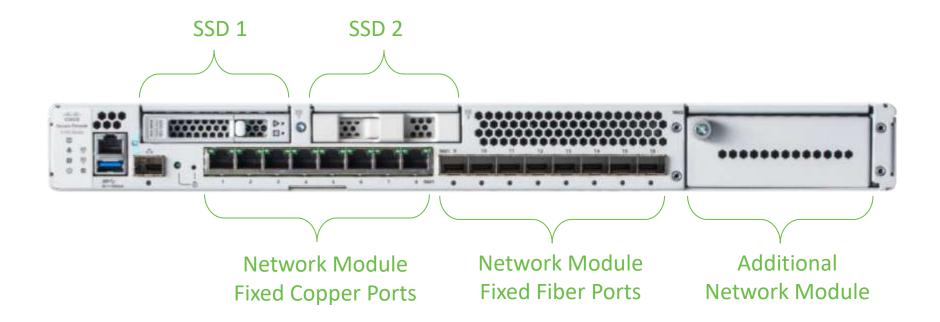


Secure Firewall 3100

Hardware



3100 Series: Front Panel





3100 Series: Back Panel





3100 Series: Network Interfaces





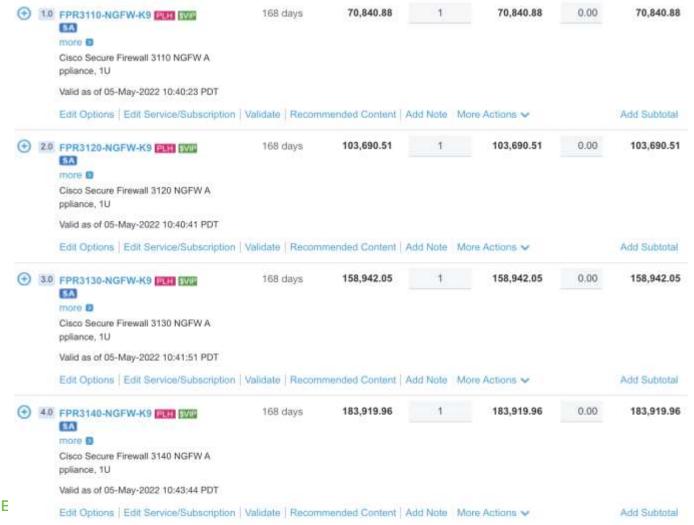
	3110	3120	3130	3140
Management	1 x 1/10G SFP	1 x 1/10G SFP	1 x 1/10G SFP	1 x 1/10G SFP
Integrated Interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ- 45), 8 x 1/10 Gigabit (SFP) Ethernet interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ- 45), 8 x 1/10 Gigabit (SFP) Ethernet interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ- 45), 8 x 1/10/25 Gigabit (SFP) Ethernet interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ- 45), 8 x 1/10/25 Gigabit (SFP) Ethernet interfaces
Network Modules	8 x 1/10G Options	8 x 1/10G Options	8 x 1/10/25G, 4 x 40G Options	8 x 1/10/25G, 4 x 40G Options

Hardware Specification Summary

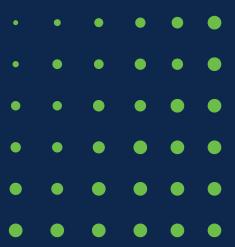


	FPR3110	FPR3120	FPR3130 FPR3140		
Core Count	12	16	24	32	
System Memory	2x32GB@3200	2x64GB@3200	4x32GB@3200	4x64GB@3200	
Front Panel Copper Ports		8x 10/100/10	000MBase-T		
Front Panel Fiber Ports	8x 1/10G 8x 1/10/25G				
SSD, 2 slots FRU,	Default slot 1 populated, 2nd slot is for SW RAID1, 900GB minimum				
NetMod	1 Slot				
USB port	1x USB3.0 with 5W, type A connector				
Management Port	1x 1/10G SFP port				
Console	Supports 1x RJ45 interface				
PSU, FRU	1+1 (default 1) 1+1 (default 2)				





Secure Firewall Platforms recap..



What's new? – Firewall Virtual Platforms

Private Cloud

- FMCv and FTDv
 - ESXi 7.0 support
 - Support for: Cisco Hyperflex, Nutanix Enterprise Cloud, OpenStack
- ASAc Docker containers



Public Cloud

- Azure Application Insights for FTD metrics
- FMCv/FTDv ASAv on Google Cloud Platform & Oracle Cloud Infrastructure











Smart Licensing Performance Tiers

- 7.0 Evaluation mode and Smart License performance tiers
- Current perpetual BASE license moves to a subscription model

Performance Tier	Device Specifications	Rate Limit	RA VPN Session Limit
FTDv5	4 cores/8 GB	100Mbps	50
FTDv10	4 cores/8 GB	1Gbps	250
FTDv20	4 cores/8 GB	3Gbps	250
FTDv30	8 cores/16 GB	5Gbps	250
FTDv50	12 cores/24 GB	10Gbps	750
FTDv100	16 cores/32 GB	20Gbps	10000



Secure Firewall Cloud Native



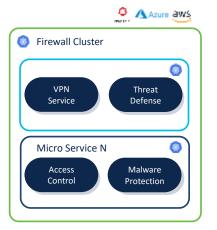
Easily deliver firewall services with massive scale and resiliency in cloud environments

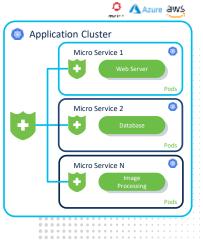


Insert security controls next to application containers



Highly scalable & elastic firewall for edge use cases – RA VPN, DC Backhaul, Mobility carriers, MSP/MSSPs





Developer-friendly elastic firewall for Kubernetes-based environments

Firepower 1000 Series

Small business and branch office security with superior price/performance



Firepower 1010

- High-performance desktop firewall
- PoE, 8 10/100/1000 Base-T RJ45 switching ports
- Stateful firewall, AVC, NGIPS, AMP, URL filtering

650Mbps Firewall Throughput



Firepower 1120/40/50

- · High-performance rackmount firewall
- 8 10/100/1000Base-T RJ45 switching ports, 4 1000Base-F SFP switching ports, 2 x 1/10Gbps SFP+ (1150)
- Stateful firewall, AVC, NGIPS, AMP, URL filtering

1120-1.5Gbps Firewall Throughput 1140-2.2Gbps Firewall Throughput 1150-3 Gbps Firewall Throughput

Firepower 4100 Series

- Up to 50% performance improvement over previous models
- Up to 44% higher TLS performance!
- Supported software releases:
 - FTD 6.4+ including multi-instance
 - ASA 9.12.1+
 - FXOS 2.6.1+

Enterprise and data center security with exceptional price/performance



Four new appliance models: 4112*, 4115, 4125, 4145 up to 47 Gbps Firewall throughput**

* 4112 FXOS 2.8.1, FTD 6.6 or ASA 9.14.1 ** 1024B FW+AVC+IPS

Firepower 9300 Service Modules

- Up to 80% performance boost than previous generation SM
- Up to 33% higher TLS performance!
- Supported software releases:
 - FTD 6.4+ including multi-instance
 - ASA 9.12.1+
 - FXOS 2.6.1+



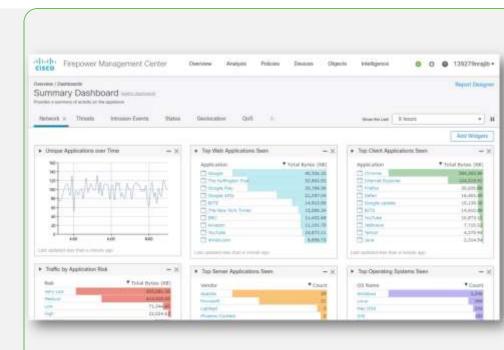
3 new 9300 SM models:

SM-40, SM-48, SM-56 up to 153 Gbps Firewall throughput*

*1024B FW+AVC+IPS

FMC Virtual 300

- Up to 300 managed devices!
- CPU: 2 x 8 cores, Memory: 64 GB, hard disk:
 2.2 TB
- Migrate easily from one FMC model to another
- High Availability for on prem, AWS and OCI clouds 7.1 or higher
- Supported software releases:
 - FTD 6.5 or higher including multi-instance
 - FMC 6.5 or higher



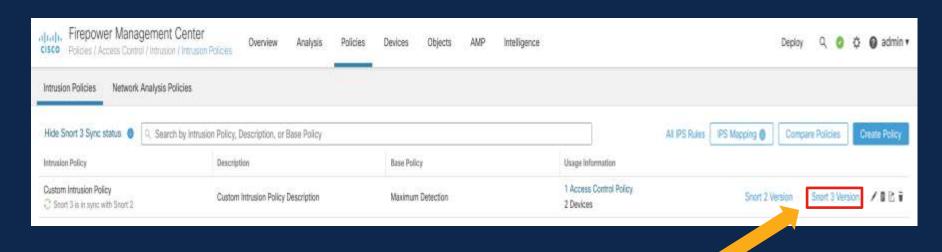
Secure Firewall Threat Defense 7.0/7.1



Snort 3

Snort 3 Rule Recommendations

Access Snort 3 Rule Recommendations under the Snort 3 version of the Intrusion Policy

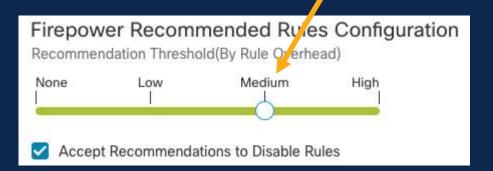


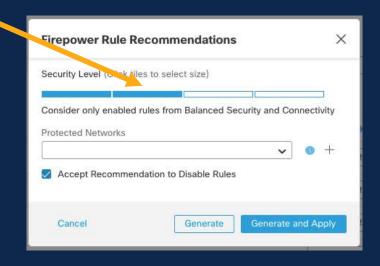
Recommendations Security Level

- Consider enabled rules from:
 - Level 1 Connectivity Over Security
 - Level 2 Balanced Security and Connectivity
 - Level 3 Security Over Connectivity
 - Level 4 Maximum Detection

Snort 2 vs. Snort 3

Balanced (Security Level 2)



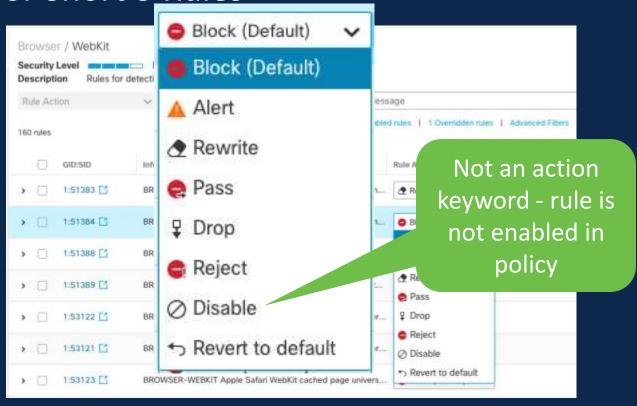


Snort 2 Snort 3

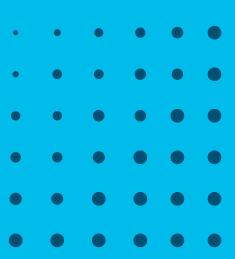
Snort 3 actions

- Starting in 7.0, FTD devices running Snort 3 supported six Snort rule actions - Alert/Block/Reject/Rewrite/Pass/Drop
- 7.0 FMC supported only two Snort 3 rule actions: Alert/Block
- Release 7.1 adds FMC capability to support additional Snort 3 rule actions
- Additional rule actions can be used on 7.0 or 7.1 devices

Actions for Snort 3 Rules



FMC Upgrade Revert



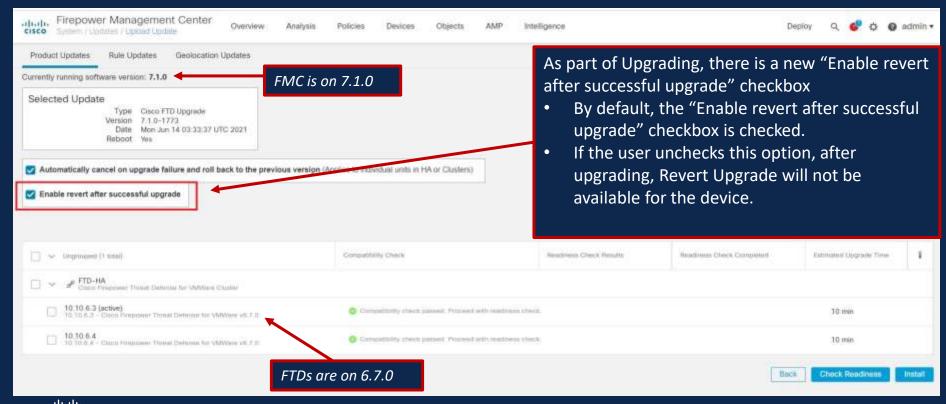
What's New



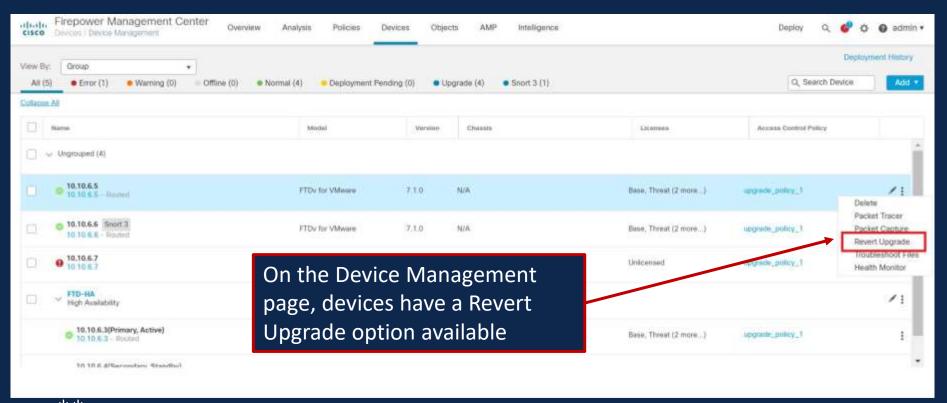
- From 7.1.0 onwards, FMC has an "Enable revert after successful upgrade" option in the system updates page.
 - Enabled by default
- From FP 7.1.0 onwards, FMC has "Revert Upgrade" option for devices in device management page.
- After successful FTD upgrade, within 30 days, if customer wishes to roll back to the previous version for any unforeseen circumstances, then they can revert the upgrade



"Enable revert" option on updates page



Device management page "Revert Upgrade" option



Cluster Upgrade Improvements



What's New



Solution

- The Device Upgrade workflow (**Devices -> Device Upgrade**) improvement to provide better support for cluster upgrades.
 - Cluster validations are performed, status and issues are reported on the UI
 - Offline nodes are excluded from upgrade automatically and user is informed as such.
 - Upgrade order is displayed on the UI. From the UI, user can also change upgrade order for data nodes if they want.
 - If the upgrade transaction has completed the upgrade for at least one node then it will tolerate one upgrade failure for the remaining nodes.
 - During a cluster upgrade transaction, if there is a newly-elected control node and that node has not been upgraded yet, then it will become the last node to be upgraded.
 - Similar improvements are also implemented for FTDs deployed in HA.
 - Infrastructure to enable the upgrade package sync in FTD nodes of Cluster/HA deployments using rsync over secure control/failover link leading to more reliable and faster upgrades

Upgrade Order

Clusters

- Control node is always upgraded last
- Upgrade order for data nodes:
 - Default order: generated automatically based on Priority attribute of cluster nodes
 - Node with highest priority value gets upgraded first (since it has the least chance to become the control node)
 - Node with second highest priority value gets upgraded next, and so on.
 - Order can be customized by user if needed

HAs:

- Active unit is always upgraded last
- There is only the auto-generated default order, user-defined order is not allowed

> show running-config cluster

cluster group FPR-9300_MI_Cluster-1 key *****

local-unit unit-1-1

cluster-interface Port-channel10 ip 127.2.1.1 255.255.0.0 priority 9

health-check holdtime 3

health-check data-interface auto-rejoin 3 5 2

health-check cluster-interface auto-rejoin unlimited 5 1

health-check system auto-rejoin 3 5 2

health-check monitor-interface debounce-time 500

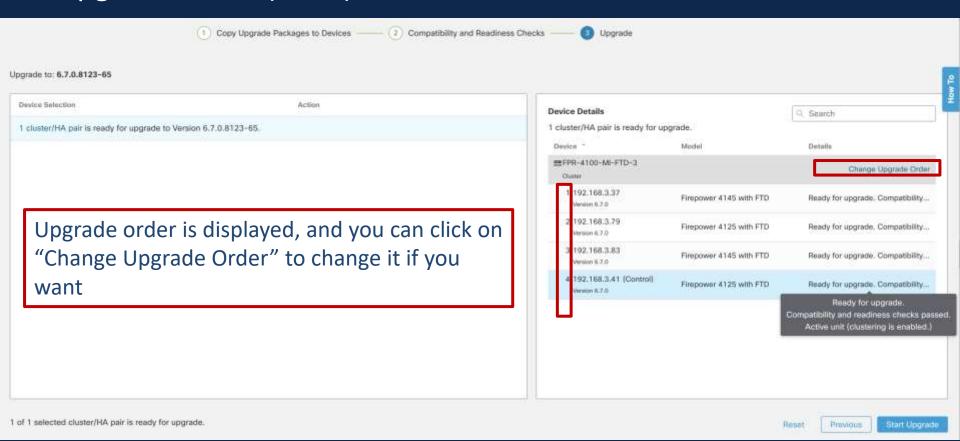
site-id 1

no unit join-acceleration

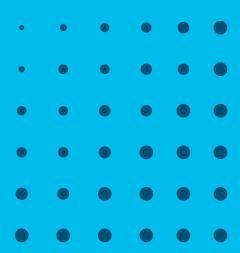
enable



Upgrade Order (cont.)



Health Monitoring Improvements



Health Monitoring - FMC

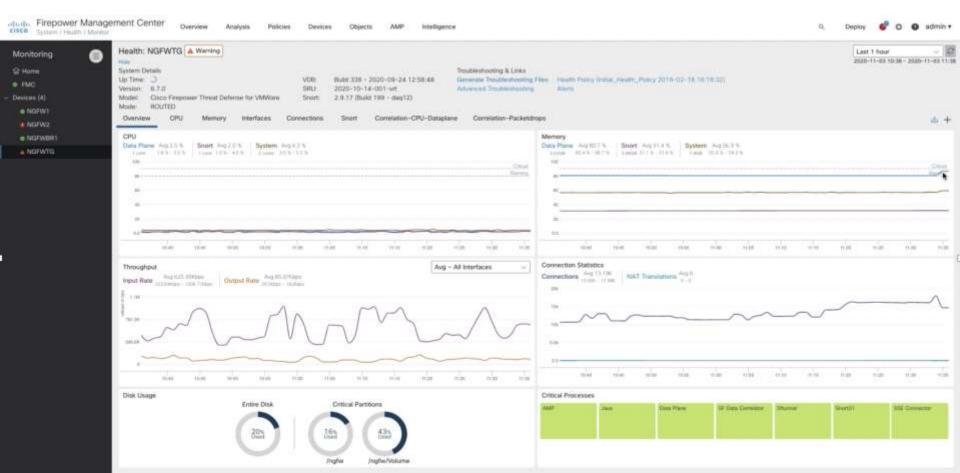


FMC Dashboard

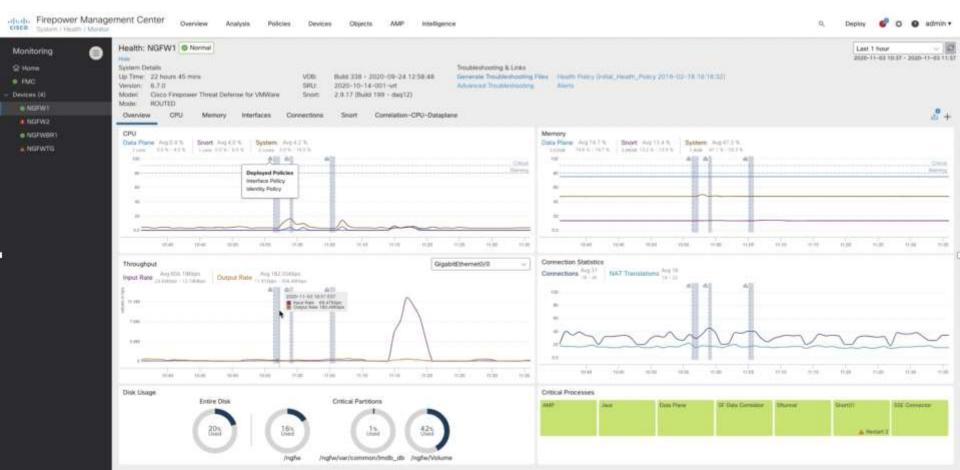
- HA
- Event Rate
- Event Capacity
- Process Health
- CPU
- Memory
- Interface
- Disk Usage

This dashboard is available to both Active and Standby FMC

Health Monitoring - Devices

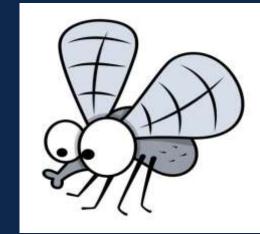


Device Health Monitoring

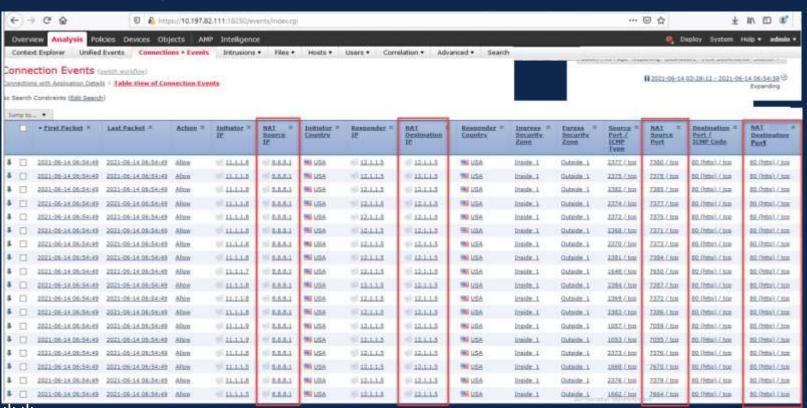


Feature Overview

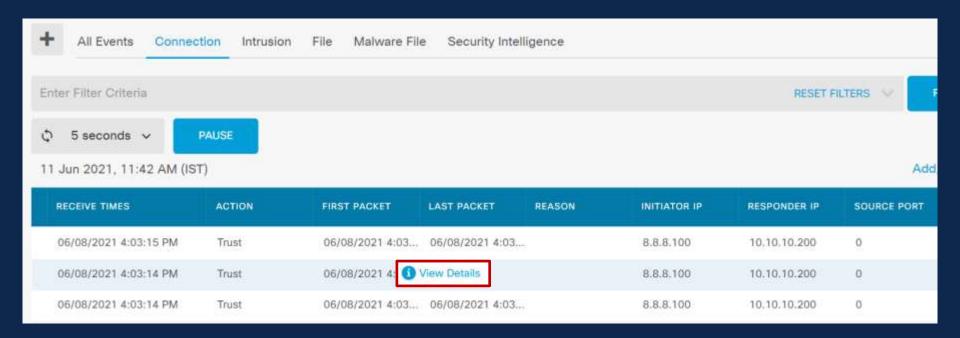
- Before 7.1
 - Lina performed NAT translations
 - Snort engine received real IP address and ports
 - Events did not contain information about translated IP address and ports
- With 7.1: NAT IP and port translations in the connection events
 - Any connection event consumer receives 4 additional fields:
 - Translated source and destination IP addresses
 - Translated source and destination ports
 - Supported in both FMC and FTD
 - Both Snort 2 and Snort 3
 - No configuration required



FMC Example



FDM Example

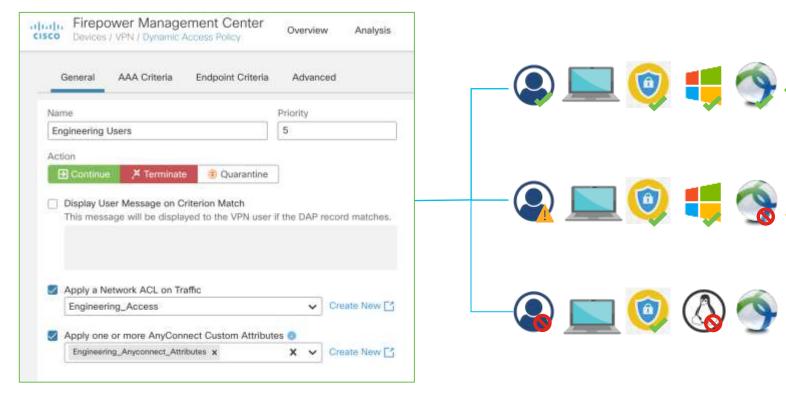


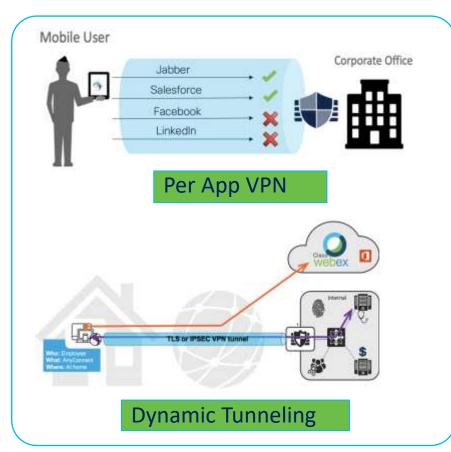


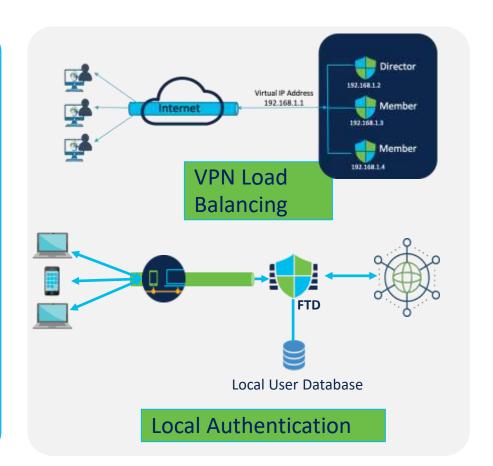
VPN

•

Dynamic Access Policy







Other 7.1 Features – Slide 1 of 2

- Routing
 - BGP IPv6 support for VRFs and VTIs
 - BGP VRF route leaking (IPv4 and IPv6)
 - ECMP/Traffic Zones configurable in the FMC UI
 - Policy based routing, including application-based routing for DIA using feeds
- TLS Enhancements
 - Certificate feeds
 - Advanced options in FMC
 - Encrypted Visibility Engine (experimental debut)
- Wild card (discontiguous) masks
- FQDN Based NAT

Encrypted Visibility Engine

- Experimental feature in release 7.1
- Utilizes machine learning to determine the application (client process) generating the Client Hello packet
- Identifies known processes/browsers
- Identifies malware based on Secure Malware Analytics fingerprints

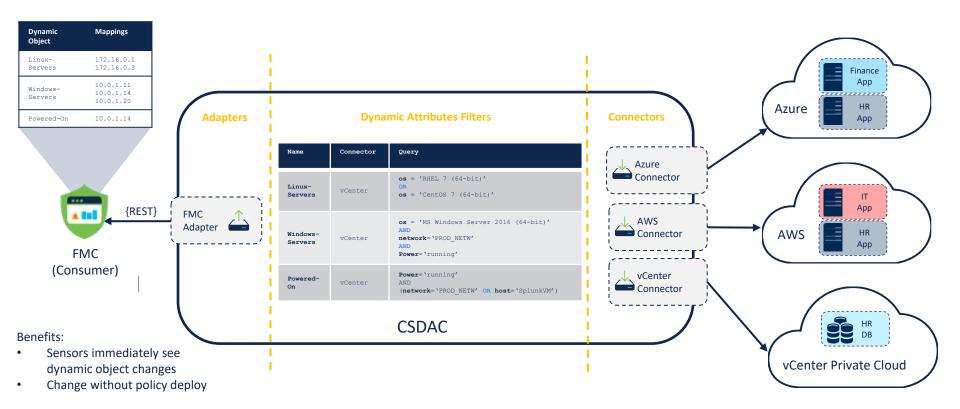


Other 7.1 Features – Slide 2 of 2

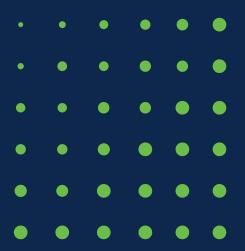
- Auto Rollback for Remote Branch Deployment
- Enhanced troubleshooting including new FTD packet tracer
- VPN striving for parity with ASA: VPN filter, multiple IKE policies
- VPN enhancements: local tunnel ID support for integration with Umbrella, tunnel monitoring dashboard, remote access VPN configuration copy
- Dynamic feeds for O365 and Azure Service Tags using dynamic objects
- Virtual
 - GENEVE tunnel support for Gateway Load Balancer in AWS
 - ASAv Clustering for private cloud
 - Enhancements to Cisco Secure Managed Remote Access (CSRA)
 - Enhancements to Cisco Secure Firewall Cloud Native (CSFCN)



Cisco Secure Dynamic Attributes Connector



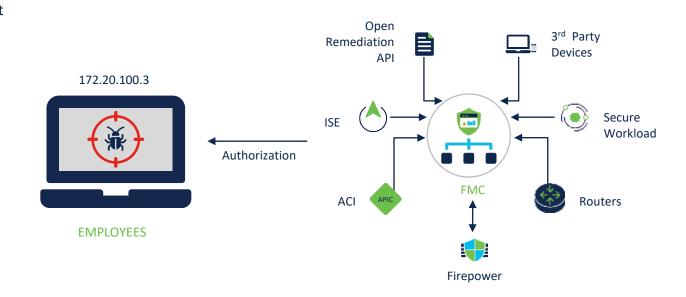
Integrated Security Portfolio



Cisco Rapid Threat Containment

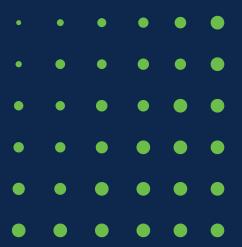
Proven approach to reduce time and impact of threat

- Automatic network threat containment using the network as an enforcer
- Threat-centric network access determines network access based on IoCs
- Richer visibility from bidirectional data sharing with the network access





Firepower Competitive Advantages



Silver Bullets

DC Technology:

- Clustering (geo-clustering)
- ACI integration
- Virtual contexts
- IPS/IDS/FW flexibility

Identity, Device, Health,...

- Integration with ISE, AMP, Vulnerability Scanners, Threat Director feeds...
- Dynamic Objects
- Secure Analytics and Logging (SAL)

Talos

- IPS
- Security Intelligence
- AMP

VPN

- Easy to install, also with virtual
- DUO MFA

Encrypted traffic

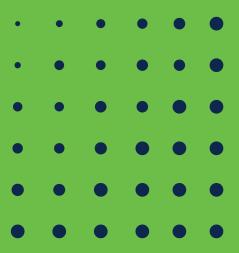
• Integration with other platforms: AnyConnect, AMP, Stealthwatch, Tetration

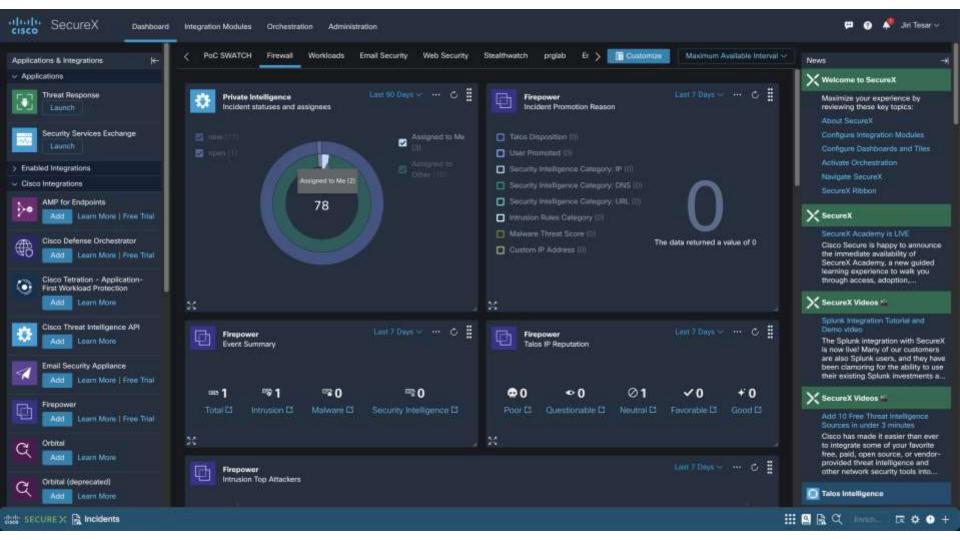
Automation

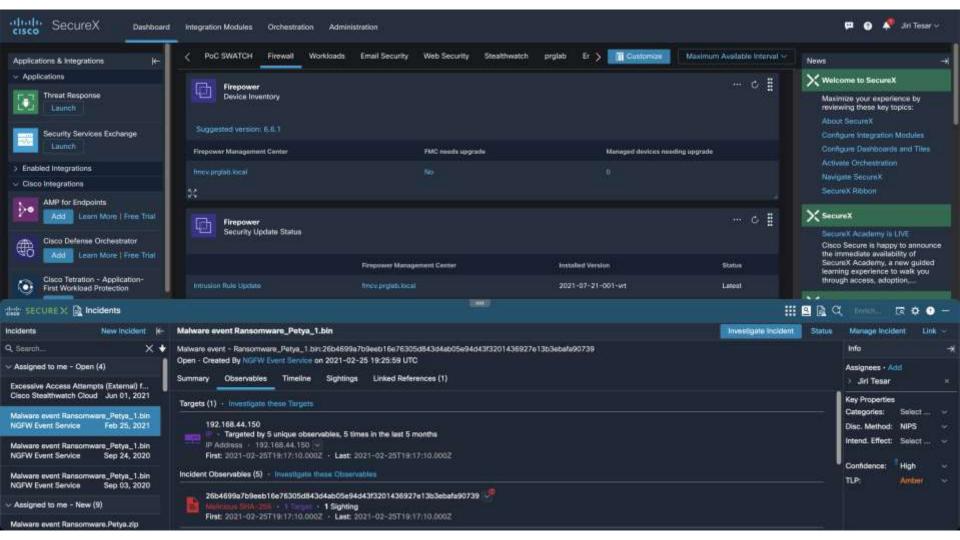
- Correlation, Indication of compromise
- Learning => Recommendation, Events Filtering
- Remediation
- SecureX
- API

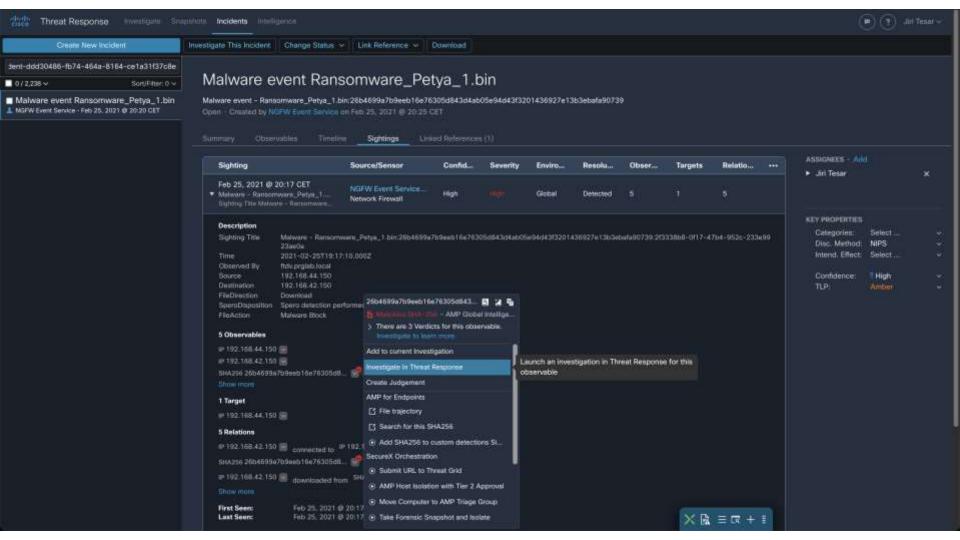


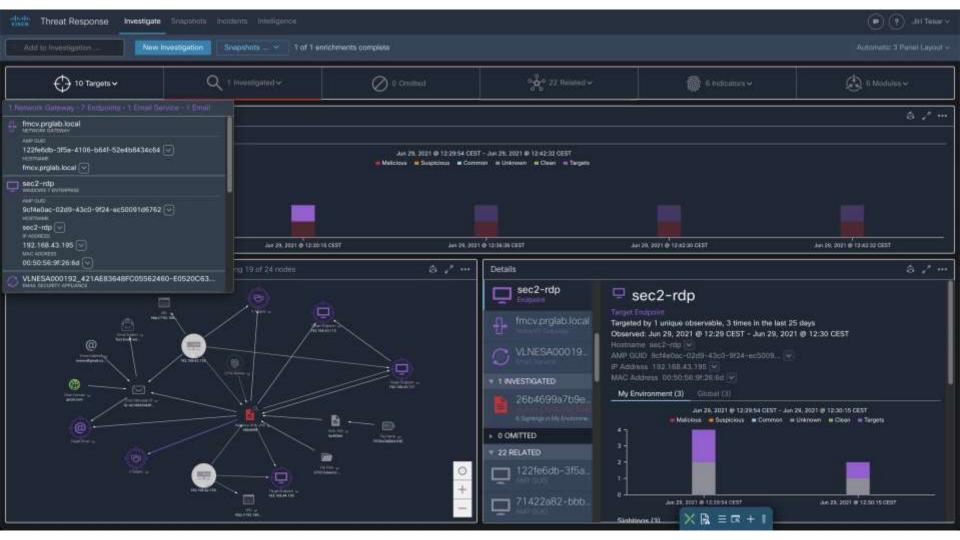
XDR (SecureX)

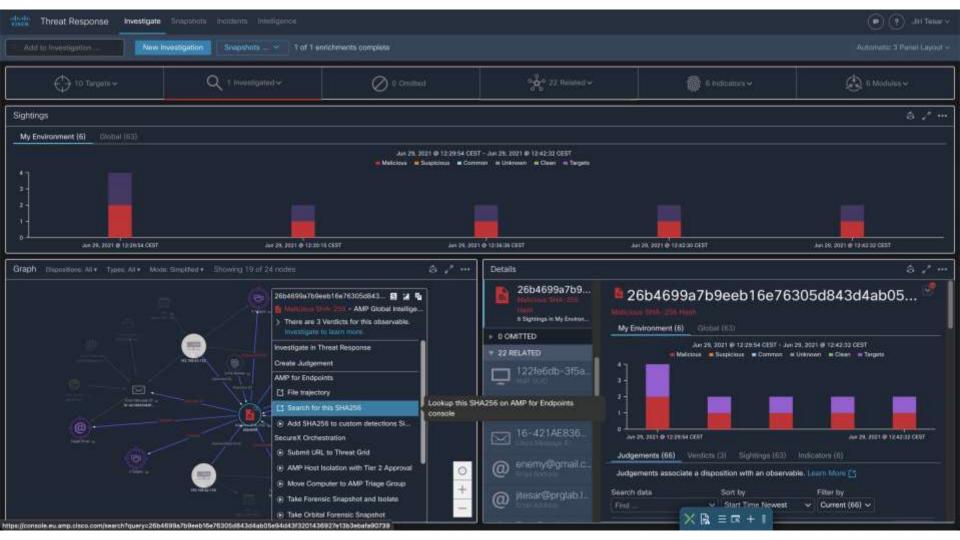


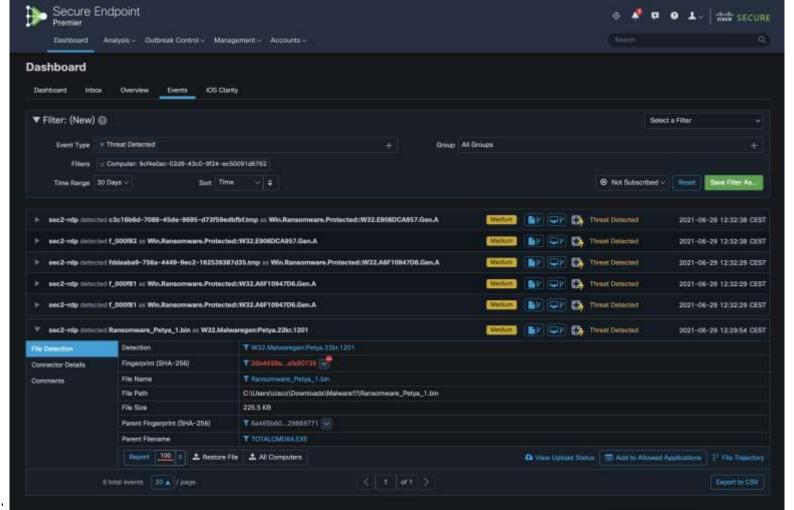


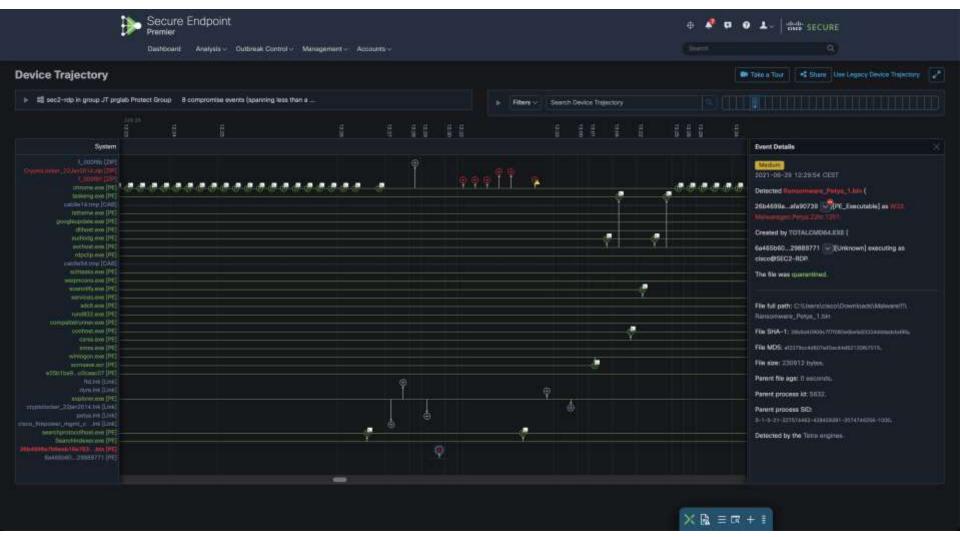




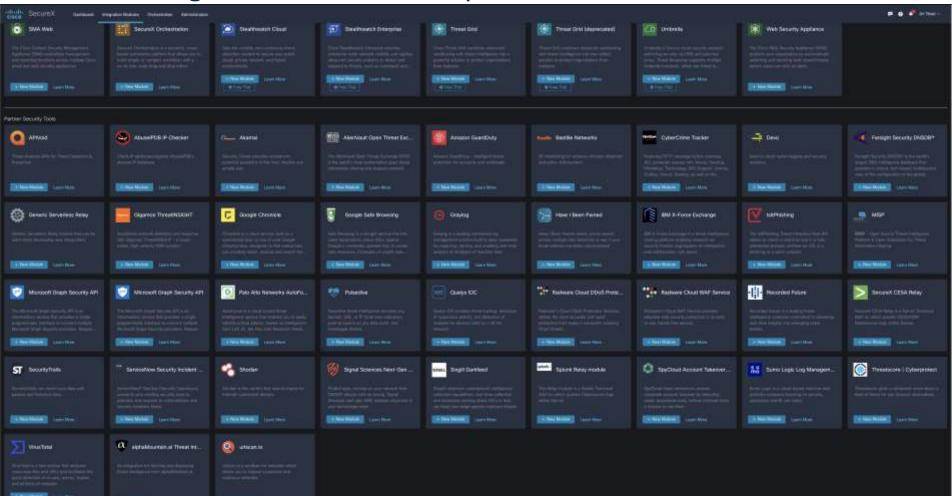




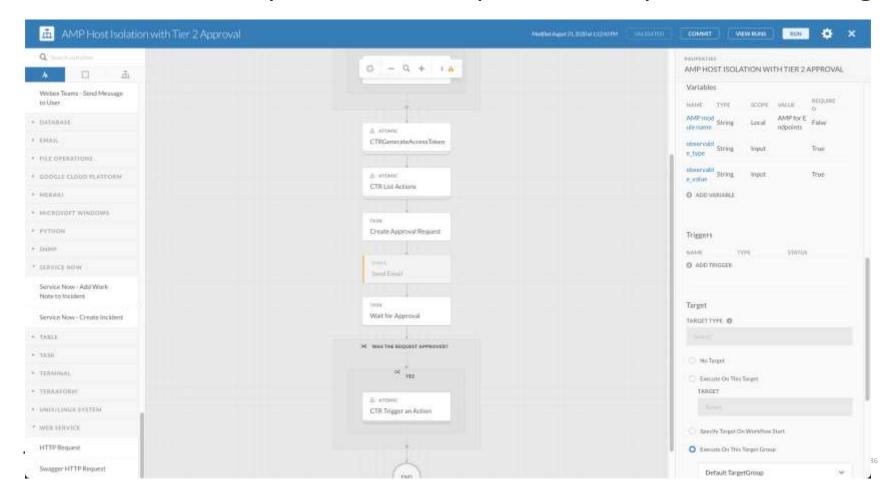




We can integrate a lot of Partner platforms into SecureX



Orchestration is easy to use "SDK" opened for any scenario of usage



NOVÝ FIREPOWER 3100 JE TADY!

▶ 10.5. – TechClub webinar

25.5. – Pro partnery, jen fyzicky –Golden Gate

 26.5. – Pro zákazníky, jen fyzicky – Golden Gate

cisco SECURE