Fortinet Automated Security

Q1 2023

Cybersecurity Challenges for 2023

Breaches and Data Loss

5,199

Confirmed data breach incidents in 2022

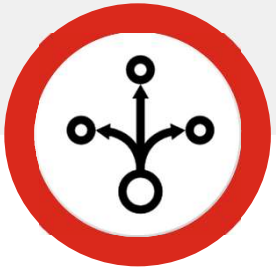
Verizon. Data Breach Investigations Report. Jun 2023.

Ransomware

50%

Of organizations fell victim to a ransomware attack in 2022

Fortinet. 2023 Ransomware Survey. Apr 2023



Complexity

52%

Of organizations believe security operations are somewhat / significantly harder than 2 years ago

ESG Research. SOC Modernization. Oct 2022.

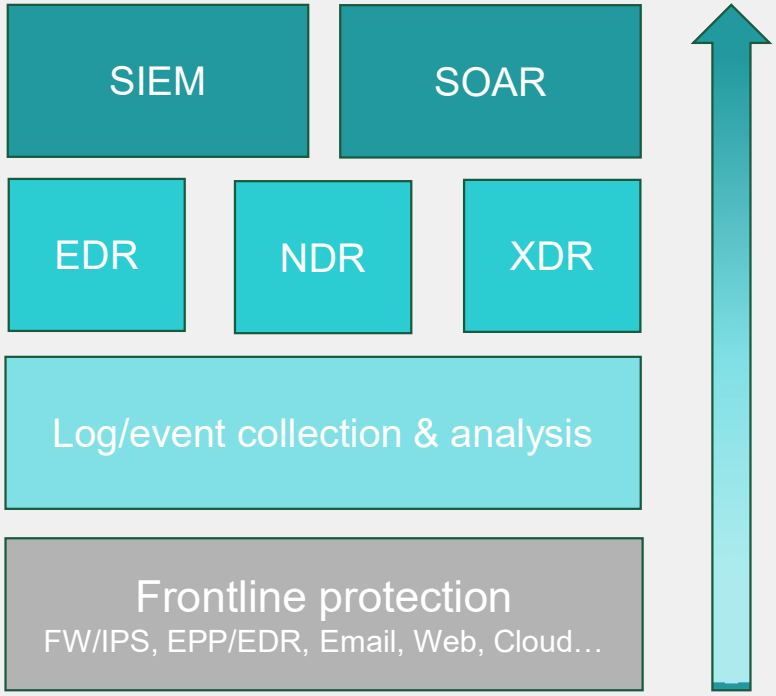
2023 Public Data Breaches

Twitter 200M users sold for $2 each
PayPal
MailChimp – social engineering – 133 accounts compromised
T-Mobile – 37M customers, 3 months undetected
Reddit – stolen credentials
Atlassian – stolen credentials
Activision – employee credentials, 2 months undetected
US House of Representatives – 170.000 users healthcare data sold on the dark web
ChatGPT – leaked PII data cross users
Western Digital – undisclosed impact
MSI - 1.5TB of IP (source code, BIOS, private keys), $4M ransom
KFC, Pizza HUT: employees PII – driver license, ID card
US Government: 237.000 employees data stolen
PharMerica: 5.8M customer PII
Suzuki: cyberattack with production impact of 20.000 cars
MOVEit: file sharing platform hacked. Affected customers British Airways, BBC
Reddit: 80GB confidential data, $4.5M payout
Mondelez: 50.000 employee data stolen; 3 months undetected
UPS Canada: customer data stolen followed by phishing attack
American Airlines: 8000 pilot data stolen
PokerStars: 110.000 customers, MOVEit vulnerability
Norwegian Government: 12 ministries affected
Police Service of Northern Ireland: all policemen data stolen
Discord: 760.000 users data stolen (username, password)
Duolingo: 2.6M users data stolen
Forever21: 500.000 customer data stolen
Sony: 6000 files stolen
Air Europa Spain: credit card data stolen

How Fortinet Can Help

Applying AI to Speed Detection and Containment

Simple View of Advanced Detection & Response



Enterprise-wide detection

Centralized & automated investigation & response

Specialized advanced detection & response

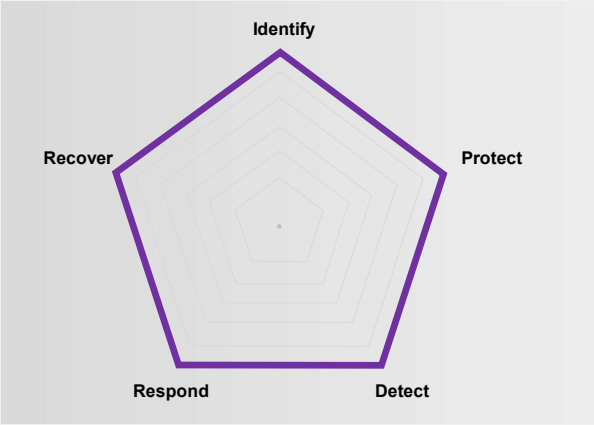
Cross-domain advanced detection & response

Correlation + analysis, detection, compliance

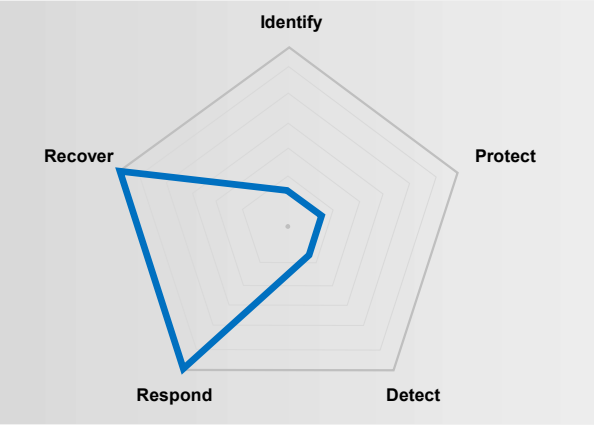
Immediate prevention at the point of attack

SOC Toolset Technical Focus

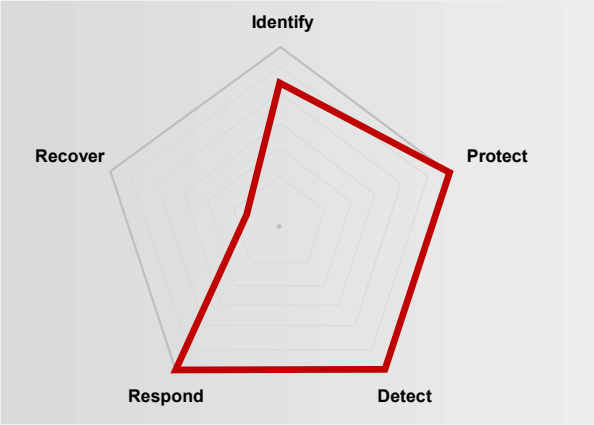
FortiSIEM



FortiEDR (endpoint)



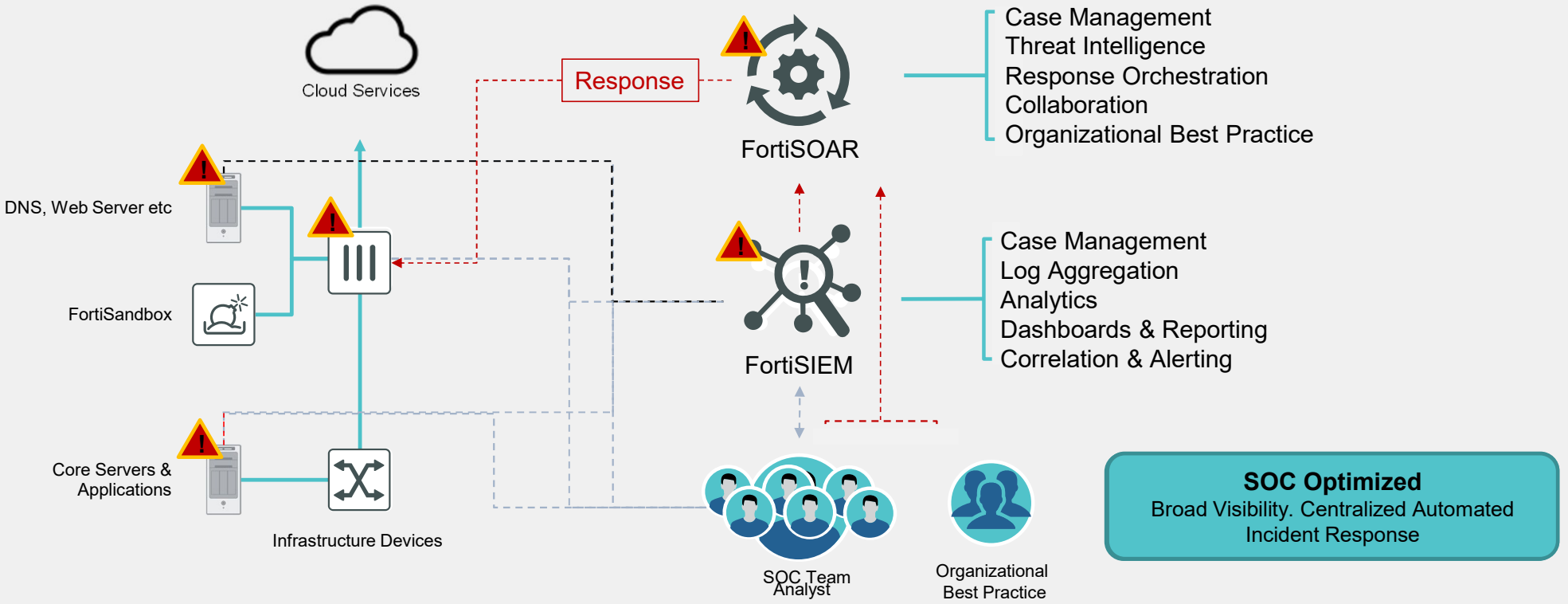
FortiSOAR



Advanced Network Security
(E.g. Fortinet Security Fabric)

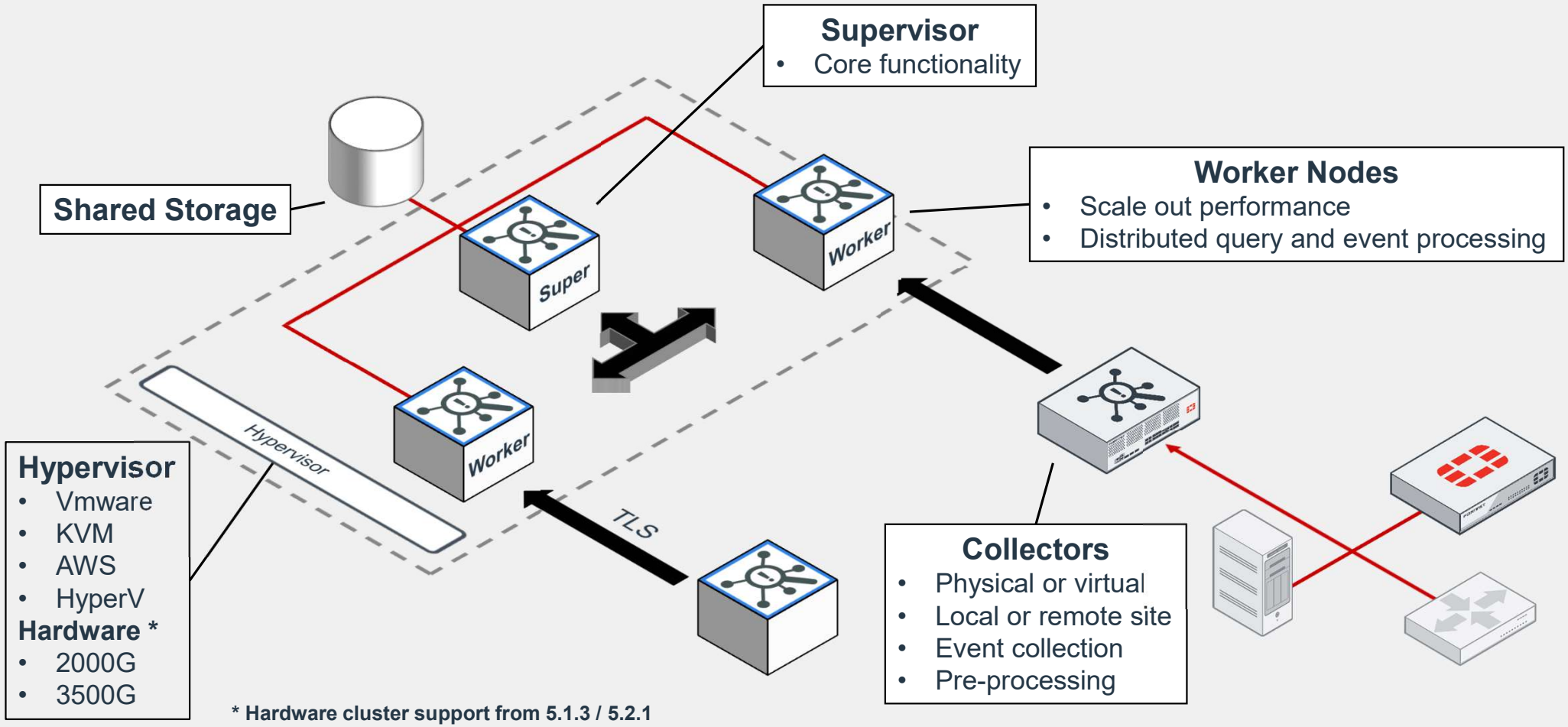
Categories based on NIST Cybersecurity Framework
https://www.nist.gov/cyberframework

SecOps Tools – Optimizing Advanced SOC Response



FortiSIEM

Scalable Architecture



*** Hardware cluster support from 5.1.3 / 5.2.1**

How Does a FortiSIEM Work?

Received Logs
- Syslog
- SNMP Traps
- WMI
- Netflow

Others
- Agents
- Agent-Less
- Windows/Linux Agents

"Original Log Data"

May 6 17:55:48 squid[1773]: [ID 702911 local4.info] 192.168.20.39 1715 2.2.2.2 172.16.10.6 3128 674 - - - - - [06/May/2008:17:55:48 -0700] GET "http://mail.abc.com/mail/?" HTTP/1.1 302 1061 568 "http://www.abc.com/" "Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.8.1.14) Gecko/20080404 Firefox/2.0.0.14" TCP_MISS:DIRECT

"Normalized"

- Timestamp = "May 6 17:55:48"
- Reporting Device = "192.168.20.39"
- URL = "http://mail.abc.com/mail/?"
- Severity level = "Low"
- Browser (User Agent) = " Mozilla/5.0 (Win..."

TestEvent_B Source_IP=10.0.52.5 Test Attack Type B Destination_IP=192.168.2.2 accessing website www.test_b5.com downloading wwreqwer34q345qwerfasfasyw445636

<regex><![CDATA[TestEvent_B Source_IP=<**srcIpAddr**:gPatIpV4Dot> Test Attack Type B Destination_IP=<**destIpAddr**:gPatIpV4Dot> accessing website <**uriStem**:gPatStr> downloading <**hashMD5**:gPatStr>]]></regex>

Regex	Matches
a	The character "a"
aB	The string "aB" (but not "ab")
Fortinet	The string "Fortinet"
E-T	The string "E-T"
A|z	Character "A" or character "z"
a|b|c	Character "a" or "b" or "c"

Regex	Matches
\s	White space character
\s+	One or more whitespace characters
\d	A single digit
\d+	One or more digits
\w	Word character (letter, number or _)
\w+	One or more word characters

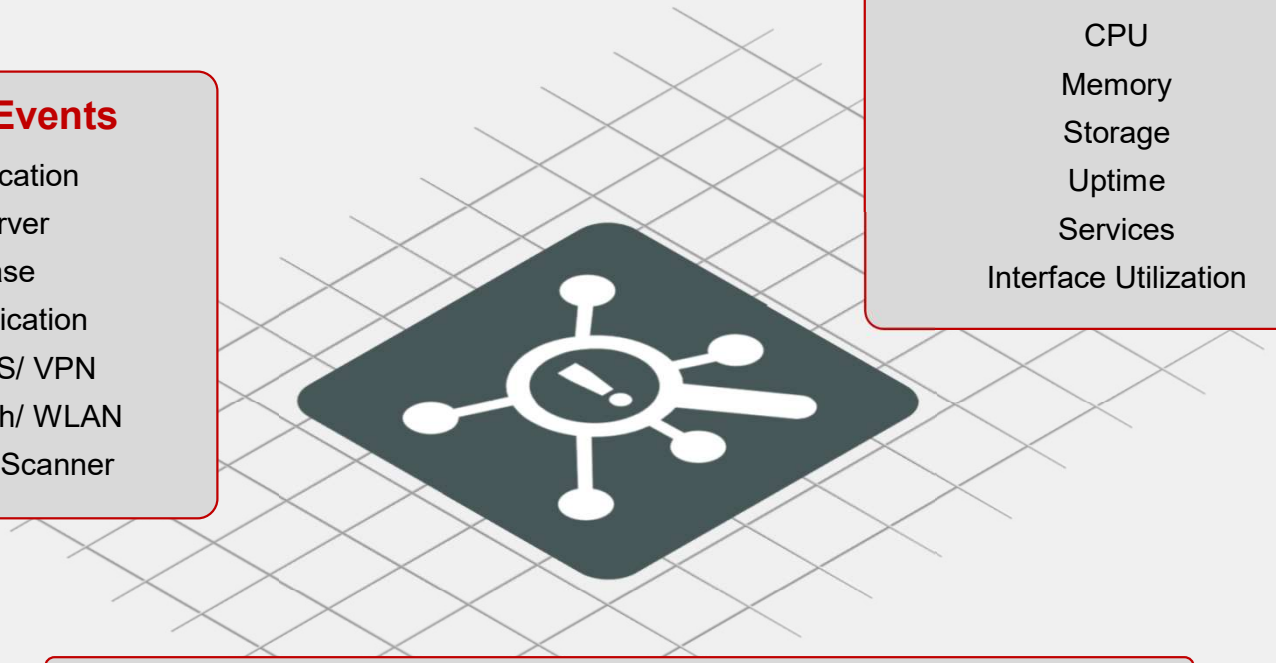
```
<pattern
name="gPatIpV4Dot"><![CDATA[\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}]]></patter
n>
<!-- Matches an IPv4 address -->
```

Combined SOC & NOC Analytics

Solving the SOC Visibility Puzzle

Security Events

Web Application
AAA Server
Database
Cloud Application
Firewall/ IPS/ VPN
Router/ Switch/ WLAN
Vulnerability Scanner



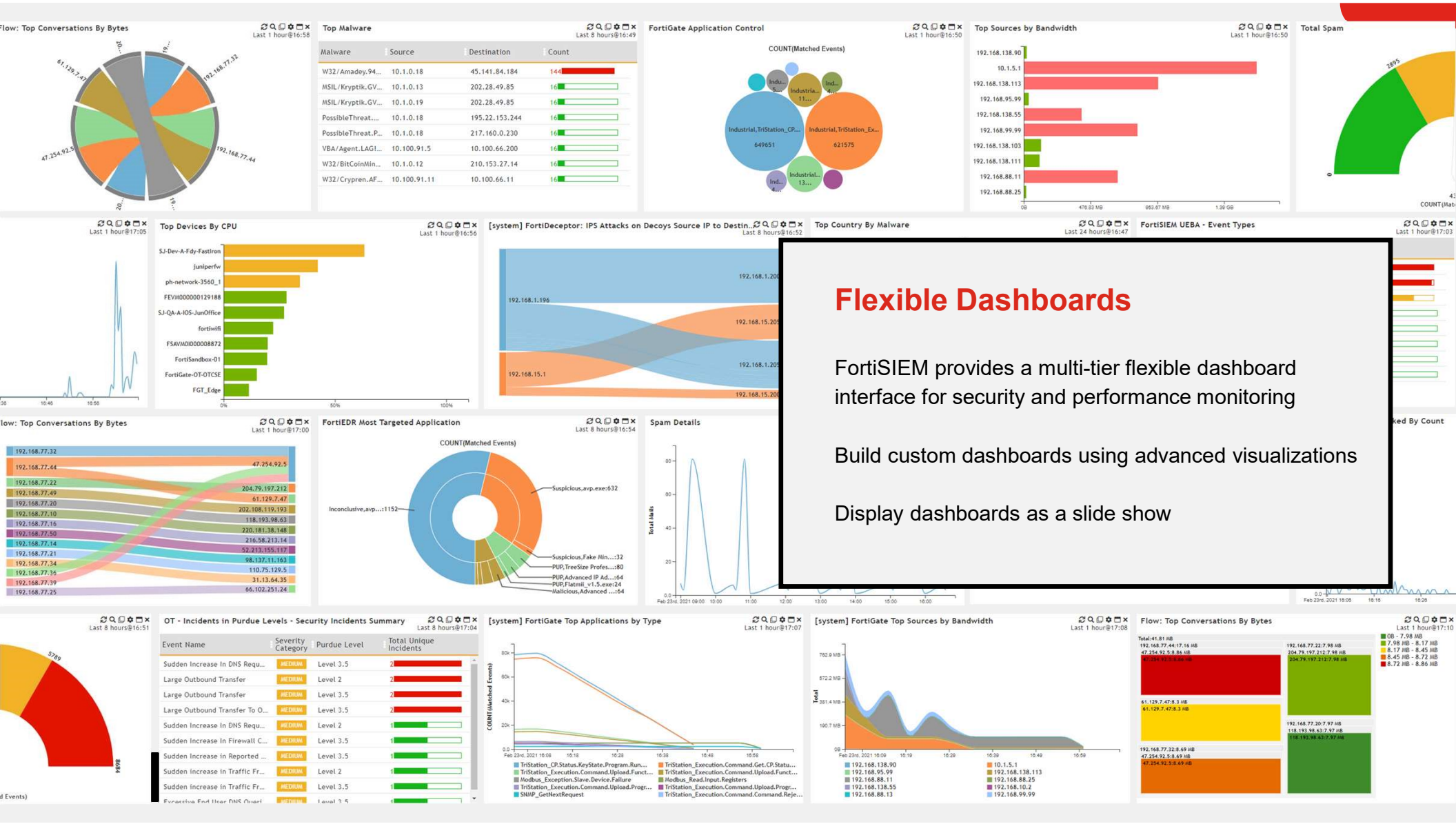
Performance Metrics

CPU
Memory
Storage
Uptime
Services
Interface Utilization

Combined SOC & NOC

Integrated CMDB | FortiGuard Threat Intelligence

Increased Functionality | Increased Visibility | Reduced Time to Respond



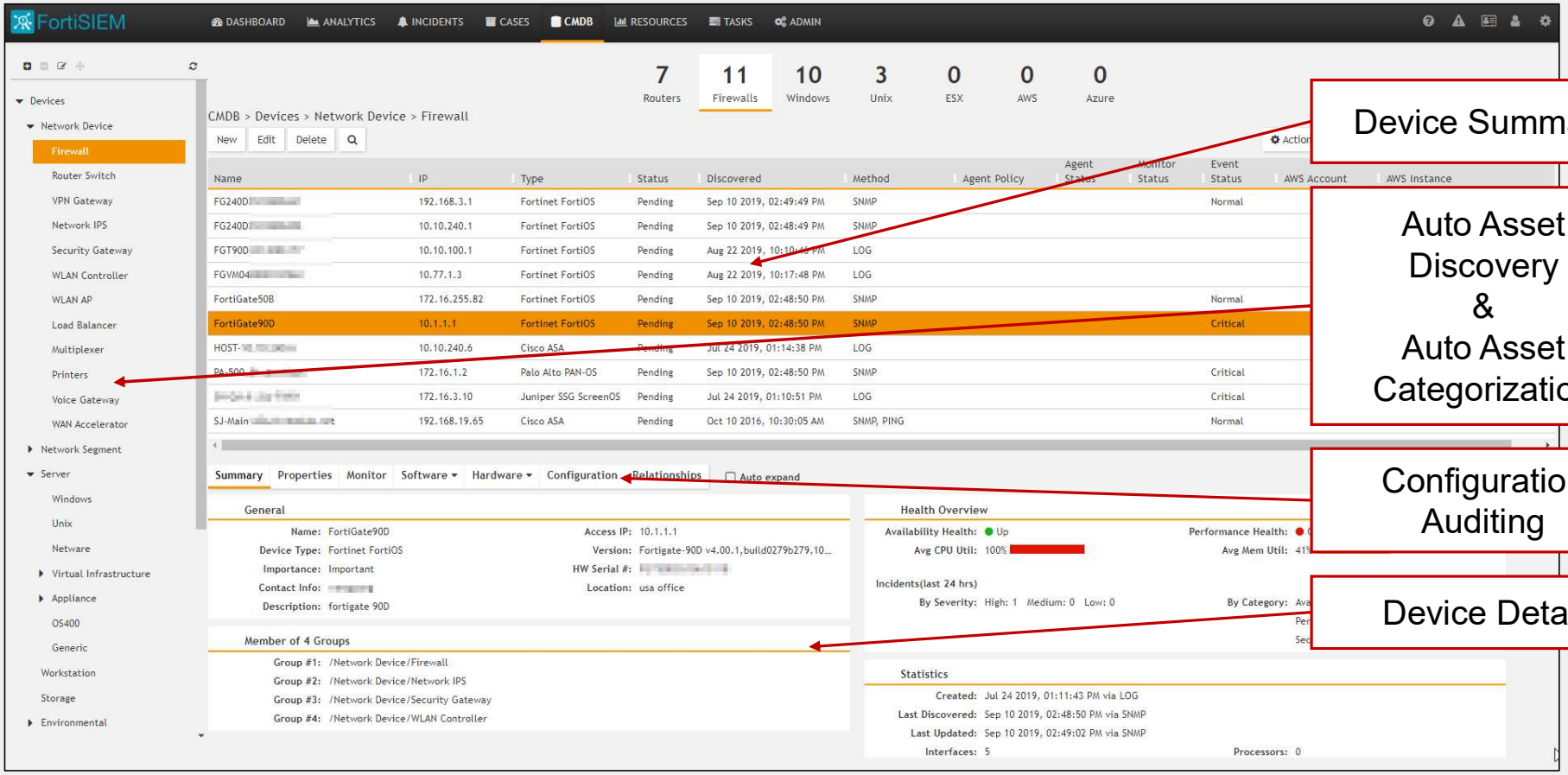
Flexible Dashboards

FortiSIEM provides a multi-tier flexible dashboard interface for security and performance monitoring

Build custom dashboards using advanced visualizations

Display dashboards as a slide show

CMDB Overview



Device Summary

Auto Asset Discovery & Auto Asset Categorization

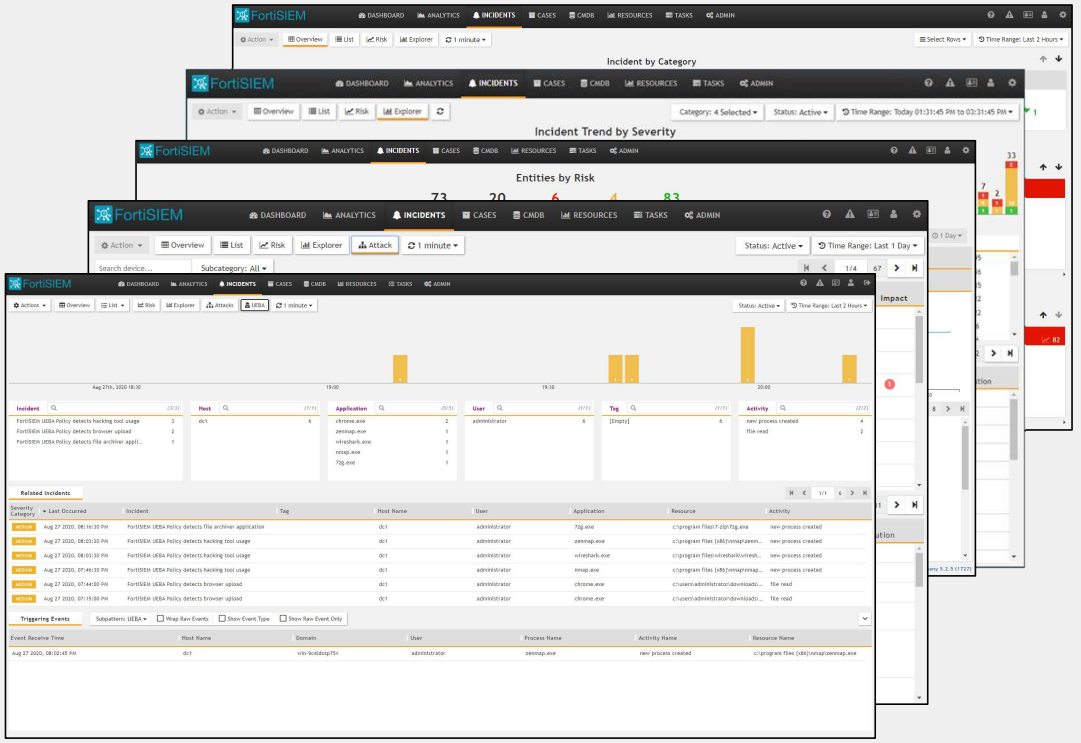
Configuration Auditing

Device Detail

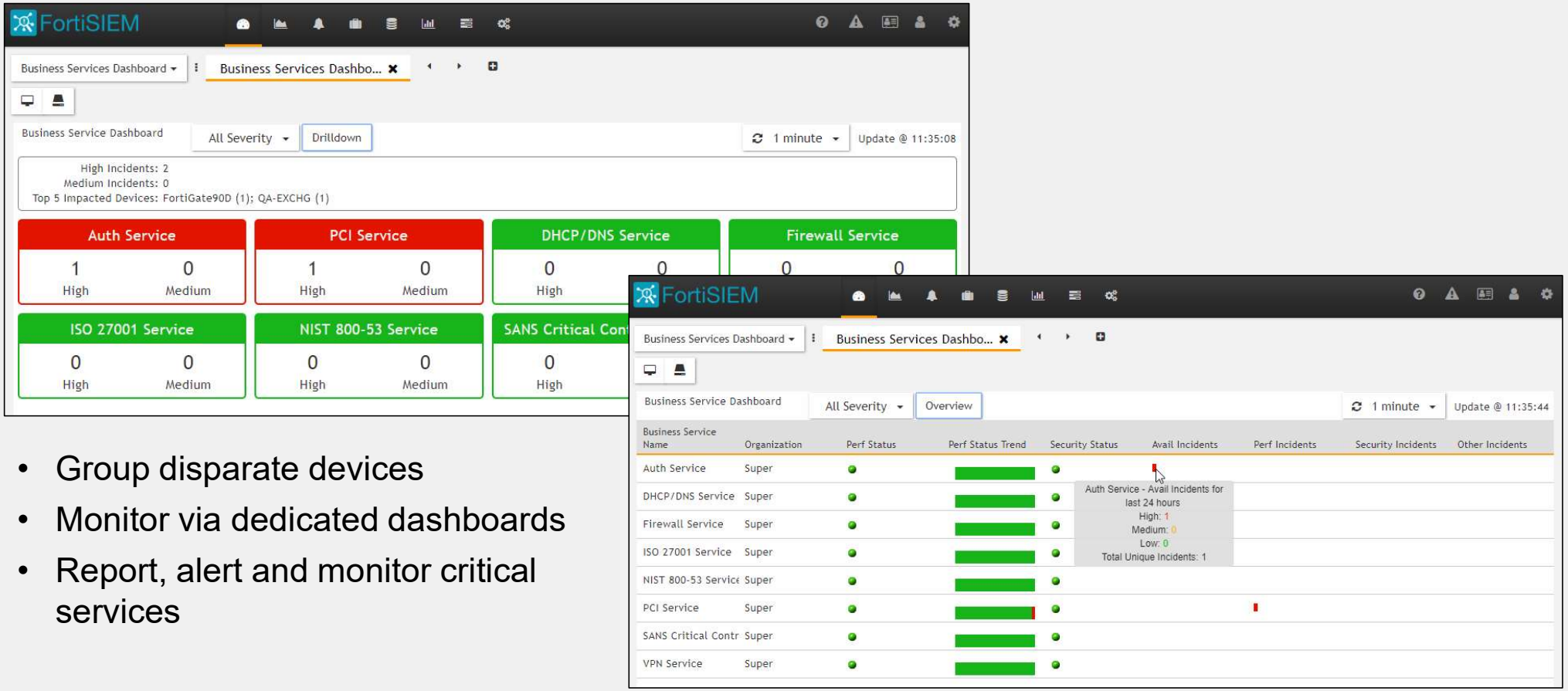
Relevant and Accessible Incident Information

Incident Dashboards Prioritize Incident Information

- Incident Overview Dashboard
  - Top level incident overview
- Incident Explorer Dashboard
  - Interactive incident investigations
- Risk Dashboard
  - Device and user risk & incident timeline
- Attack Dashboard
  - MITRE ATT&CK tactic alignment
- UEBA Dashboard
  - UEBA anomaly focused incidents



CMDB Business Services



- Group disparate devices
- Monitor via dedicated dashboards
- Report, alert and monitor critical services

FortiSIEM Key Features Overview

Asset Discovery

- Comprehensive & granular
- Contextual awareness
- Vulnerability awareness

Scalable, Rapid Integration

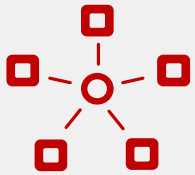
- Custom device support
- Scale out architecture

Automated Workflow

- Incident response
- Case management
- Automated remediation

Single Pane of Glass

- Comprehensive single GUI
- Unified NOC & SOC features
- PAM



Unified Platform

- Multi-tenancy
- Role based access control

FortiGuard Intelligence

- FortiGuard threat feed
- Domain, IP and URL IOCs

FortiEDR

FortiEDR – Cloud Native EPP + EDR

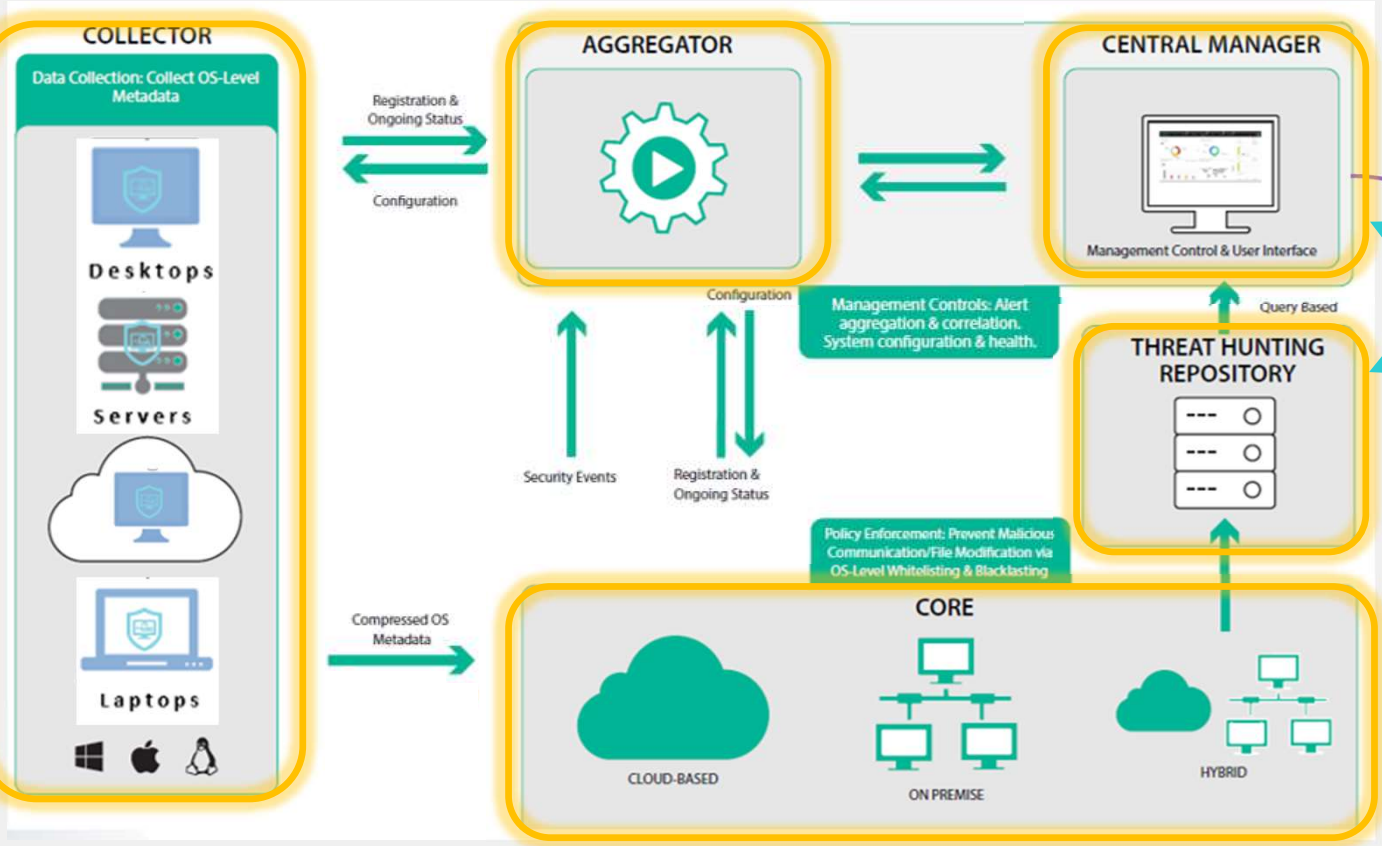
Detect, Defuse, Respond and Remote Remediation

Pre-infection/ Pre-execution		Post-infection/Post-execution			
Discover & Predict	**Prevent**	**Detect**	**Defuse**	**Respond & Investigate**	**Remediate & Roll back**
Proactive risk mitigation	Pre-execution protection	File-less and advanced threats	Stop Breach and Ransomware	Full attack visibility	Automated Dis-infection
• Discover rogue devices & IoT • Vulnerabilities • Virtual patching	• ML AV • FortiGuard Threat Intelligence • Sandbox Integration • Desktop firewall • Web filtering	• Behavioral based • Detect memory based attacks • Threat classification	• Block Malicious actions • Prevent data loss • Zero Dwell time	• Playbook automation • Cross platform response • Forensic data • Behavioral-based threat hunting • Built-in MITRE tags	• Clean up / Roll back • Eliminate re-image/rebuild • Minimize business disruption

Automation | Cloud . Hybrid . Air-gap deployment | OS coverage

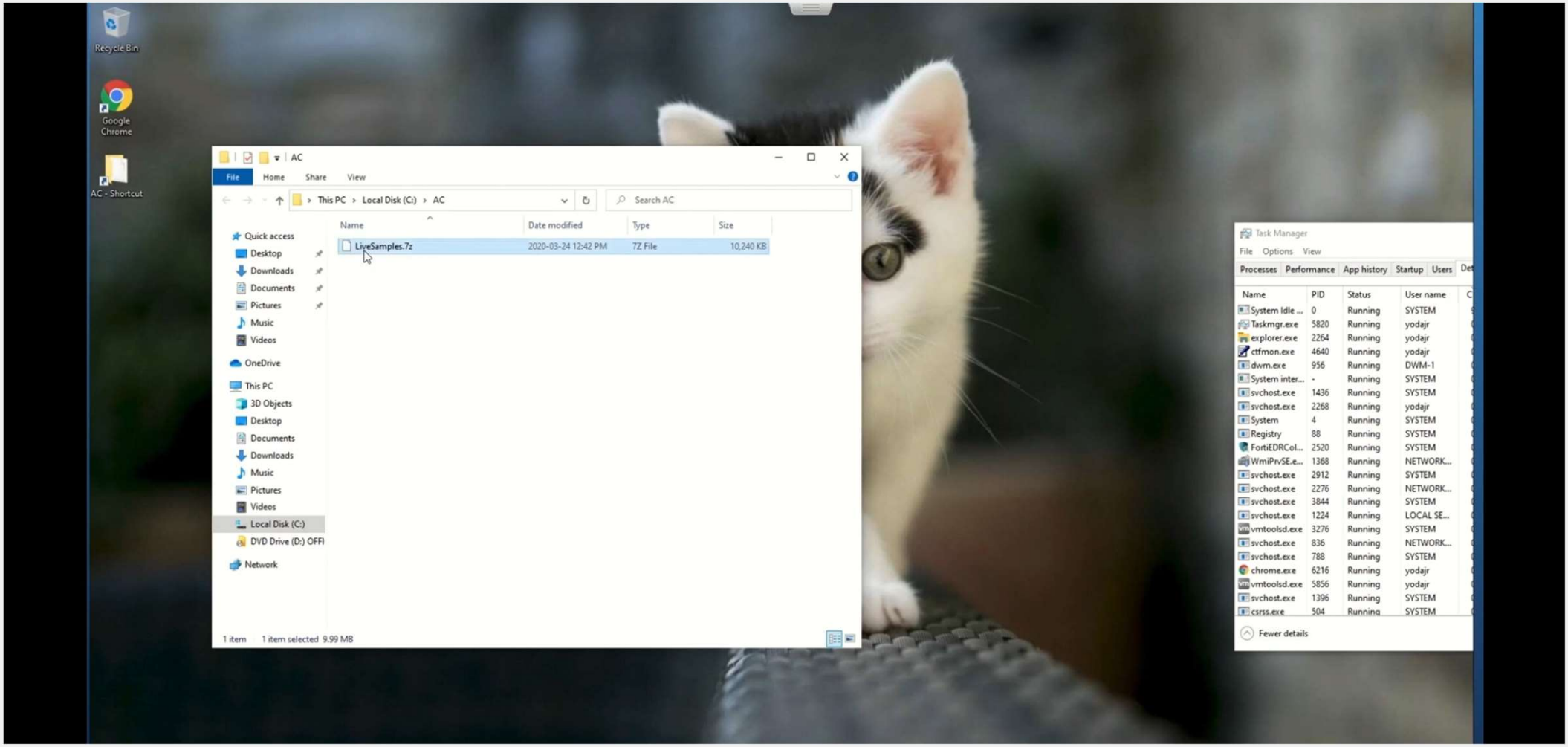
Solution Components Overview

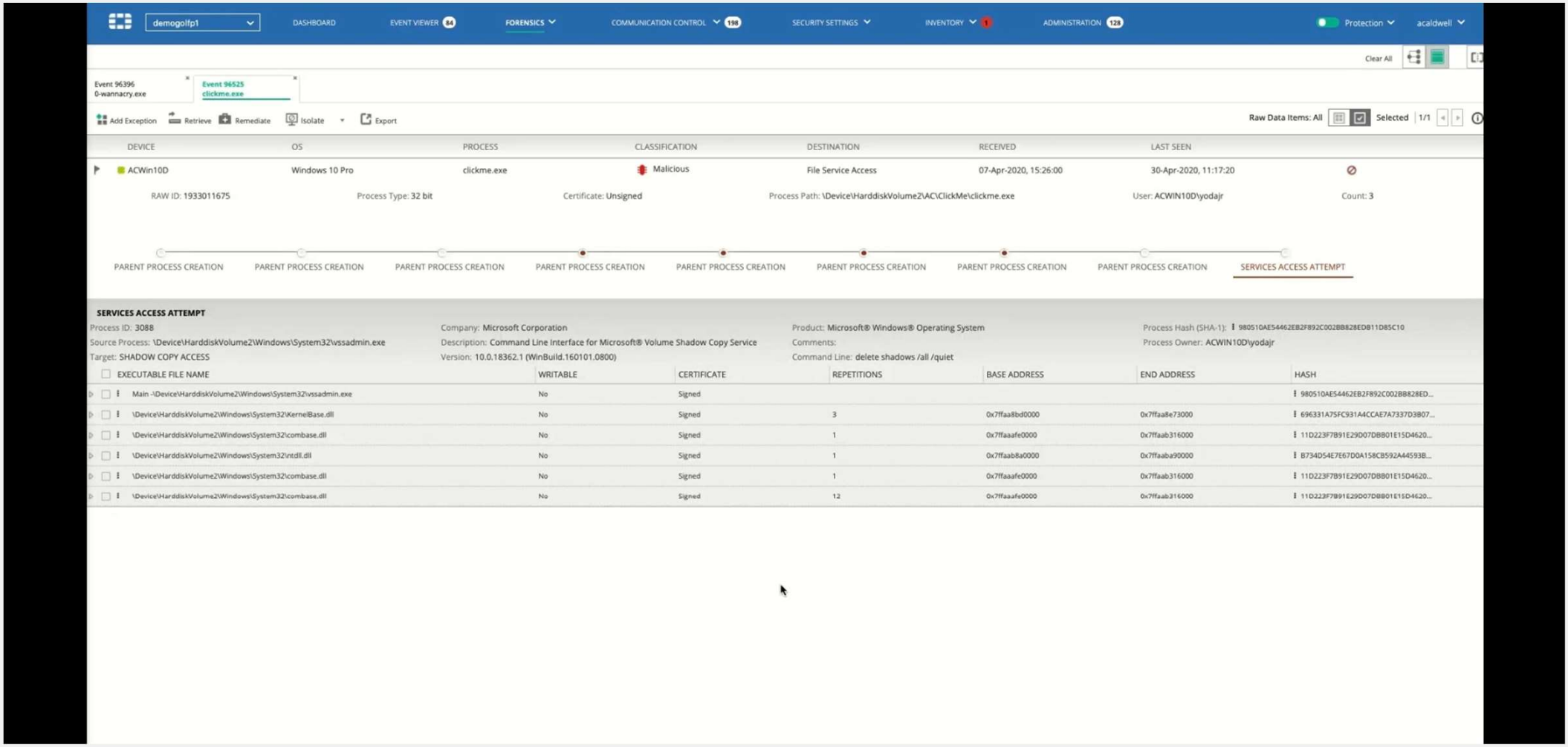
Communication Architecture



* Threat Hunting also contains the following repositories:

- AV Signatures
- Remote Shell (FortiEDR Connect)





FortiEDR Fabric Integration

FortiGate

- Telemetry sharing, automatic blocking of malicious destination IP

FortiNAC

•Extended response - move endpoints to remediation VLAN

FortiSandbox

•Threat intelligence sharing

FortiSIEM

•Alerts and Logs

FortiSOAR

•Extended workflow automation

FortiDeceptor

What is Deception?

Diverting attackers to fake assets to protect enterprise's real assets

Decoys
Fake assets, fake network devices, fake applications and fake services

Lures
Fake services of the honeypots/decoys

Network traffic
Fake network traffic beaconing (SMB,CDP, UPnP, and more)

Breadcrumbs (tokens)
Fake resources placed on real IT assets and point to the fake systems

Prioritize alerts from the deception — High-fidelity alerts that require your immediate attention

Honeypots vs Deception

Deception — Much More Than a Honeypot

	Traditional Honeypots	Deception Technology
Authenticity		
Ease of deployment and operation		
Scalability		
Interaction		
Capture Lateral Movement		
Automated Threat Response		

AI-driven Security Operations

DECEIVE | EXPOSE | ELIMINATE

Decoys & Lures

- Rich offering of Deception Decoys. (windows & Linux& FW & OT & IoT)
- Rich offering of Deception lures to expand the attack surface.
- Deception Decoys & lures deployment automation.

Incident Analysis & Threat intelligence

Alert analysis automation

Malware analysis automation

Generate Threat & actionable intelligence IOC's

Fabric integration

- Fortinet Fabric support for Mitigation & Remediation
- Generic REST-API wizard builder to integrate with any third part tools for Mitigation & Remediation

• System Features

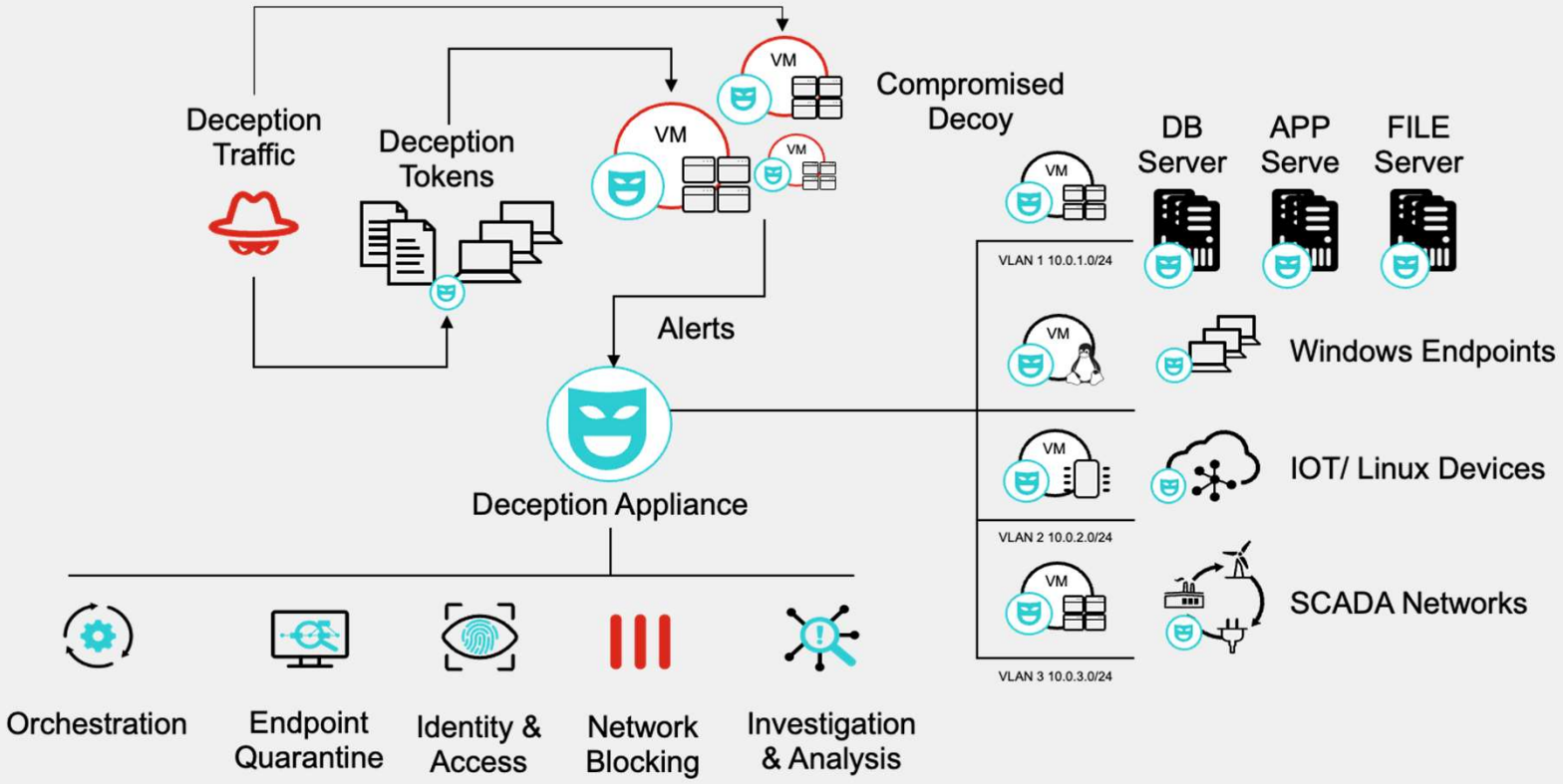
- Enterprise management console
- Security reporting and analytics
- Support air-gap networks deployment
- SIEM support

FortiDeceptor in Action…

Detect early. Contain cyberattacks. Reduce risk.

Comprehensive detection, closing visibility gaps, diverts attackers from sensitive assets to shift the balance to defender's advantage

How Deception Works



Decoys & Lures Overview

Local Windows Decoys
- Windows 7
- Windows 10

Custom Windows Decoys
- Windows 7
- Windows 10
- Windows 11
- Windows Server 2016
- Windows Server 2019
- Windows Server 2022
- RedHat Enterprise Linux 7.9

Windows Lure / Token
- SMB
- RDP
- SMTP
- ICMP
- FTP
- TCP Port Listener
- NBNSSpoofSpotter
- SWIFT Lite 2
- SQL (MS-Server)
- Cache Credentials
- SQL ODBC
- SAP Connector
- HoneyDocs (Office / PDF / Excel)

VPN Decoys
- FortiOS

VPN Lures
- SSLVPN
- SSL VPN DMZ

Linux Decoy
- Ubuntu 16.0.4
- Ubuntu 18.0.4
- CentOS
- MacOS
- Outbreak Alerts

Linux Lure / Token
- SSH
- SAMBA
- TCP Port Listener
- ICMP
- Radius
- FTP
- ESXi
- ELK
- GIT
- MariaDB (MySQL)
- Tomcat (Webserver)
- SCADABR (MGMT)
- Citrix
- Webmin

IoT Decoys
- Cisco Router
- TP-Link Router
- IP Camera
- Printers (HP, LX, BR)
- UPS
- SWIFT VPN Gateway
- HP Switch

VoIP Decoys
- SIP
- XMPP
- MQTT
- 4G/5G-3GPP

Application Decoys
- SAP
- ERP
- POS

Cloud Decoys
Azure aws Google Cloud

Medical Decoys
- PACS / Infusion Pump
- DICOM
- SPACECOM
- INFUSOMAT (Braun)

SCADA Decoys
- Schneider
  - Modicon M241
  - PowerMeter PM-5560
  - EcoStrucure BMS Server
  - SCADAPack 333E
- Siemens
  - S7-200 PLC
  - S7-300 PLC
  - S7-1500 PLC
- Rockwell
  - Rockwell PLC
  - 1769-L16ER/B LOGIX5316ER
  - 1769-L35E Ethernet Port
- Niagara
  - Niagara4 Station
  - NiagaraAX Station
- Phoenix Contact AXC 1050
- MOXA NPORT 5110
- GUARDIAN-AST
- GE PLC 90 (SRTP)
- Liebert Spruce UPS
- VAV-DD BACnet controller
- Kamstrup 382
- Ascent Compass MNG
- IPMI Device
- Modicon M580
- PowerLogic ION7650
- Emerson iPro by Dixell
- C-More HMI
- Lantronix XPORT

SCADA Lures
- HTTP/HTTPS
- FTP
- TFTP
- SNMP
- TELNET
- MODBUS
- S7COMM
- BACNET
- IPMI
- MOXA
- TRICONEX
- ENIP (EtherNet/IP)
- DNP3
- IEC 60870-5-104
- PROFINET
- KAMSTRUP
- Guardoan-AST

Schneider Electric
SIEMENS
Rockwell Automation
TRIDIUM
VERTIV.
General Electric


FORTINET