Hewlett Packard Enterprise

XYPRO
Mission Critical Security

ZERO TRUST SECURITY, COMPLIANCE AND RANSOMWARE PROTECTION

Steve Roy
Account Executive
XYPRO Technology

The State of Cyber
Trends and Challenges

Average cost of Cyber Attack
$5 million
in 2023

Ransomware to cost world economy
$30 billion
in 2025

Insider Threats

Risk of malicious or accidental actions by authorized users, such as employees or contractors are a major concern.

80% rank
cyber risk as a top-five concern

Ransomware
is the fastest growing cybercrime
A business will fall victim to a ransomware attack every
11 seconds

75%
of breaches involve attack surface exposure [1]

[1] 2023 Unit 42 Ransomware and Extortion Report

Government Regulation and Compliance

HIPAA
Health Insurance Portability and Accountability Act of 1996

PCI DSS 4.0
Payment Card Industry Data Security Standard
Clock is Ticking!
Are you Ready?

NERC
North American Electric Reliability Corporation

DORA
Digital Operational Resilience Act

GDPR
General Data Protection Regulation

New

US Executive Order 14028:

"Within 60 days of the date of this order, the head of each agency shall…develop a plan to implement Zero Trust Architecture" – Effective January 2023

What is Ransomware?

The Criminal Supply Chain

Ransomware was once just a nuisance strain of malware used by criminals to encrypt files and data.
It has evolved into a massive, financially lucrative attack method using
data theft, harassment and other threats.

In 2022 – Ransom demands ranged from $3,000 to $50 Million
The median request was $650,000, with an average payment of $350,000

Unit42 and Palo Alto Networks Report on Ransomware 2023

Who Is Being Attacked?

EVERYONE IS A TARGET!

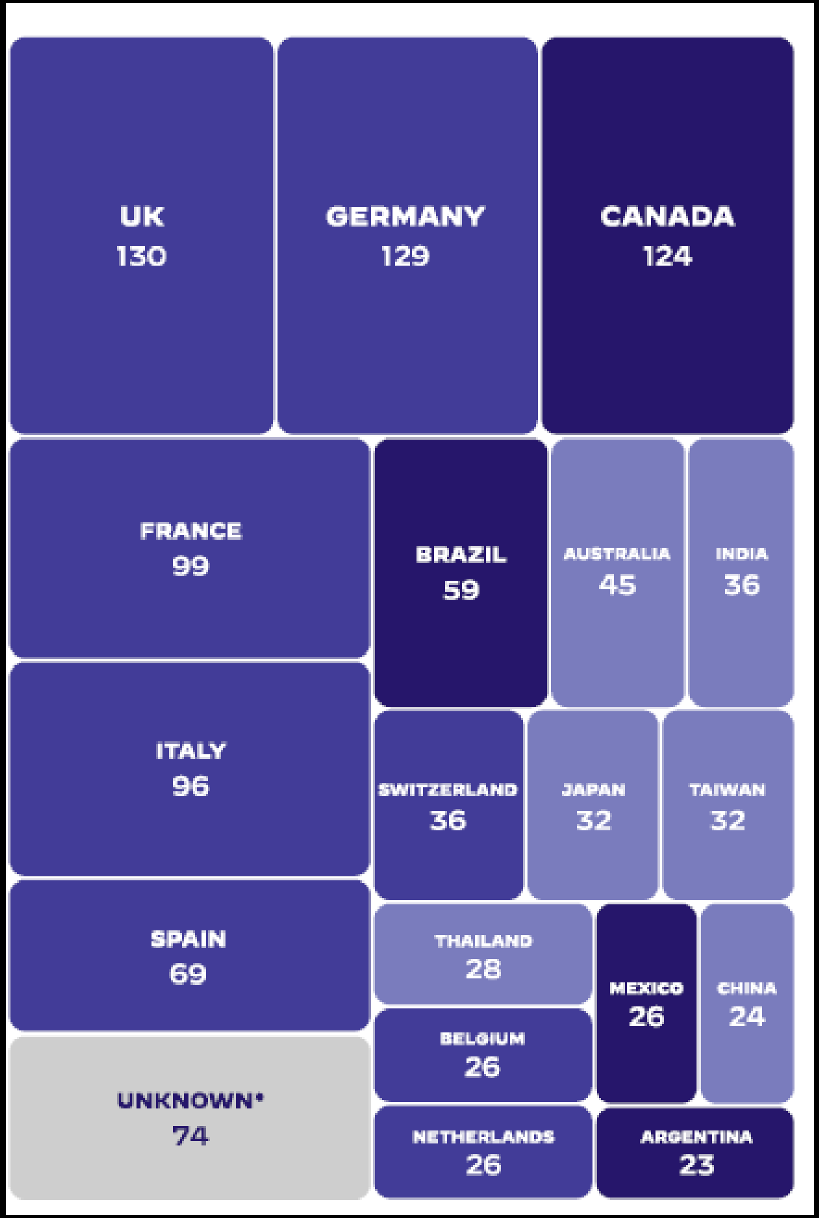
Large, multi-national organizations – “big game hunting”

At least 30 organizations on the Forbes Top 2000 list were publicly impacted in 2022

Regulated Industries contain PII, PHI and other valuable assets

Industries where its critical for businesses to provide products and services in a timely manner

Manufacturing, retail, technology at the top of the list



Unit42 and Palo Alto Networks Report on Ransomware 2023

Backups Are No Longer Good Enough

Traditional strategy is to keep up to date backups, stored offline and test them often

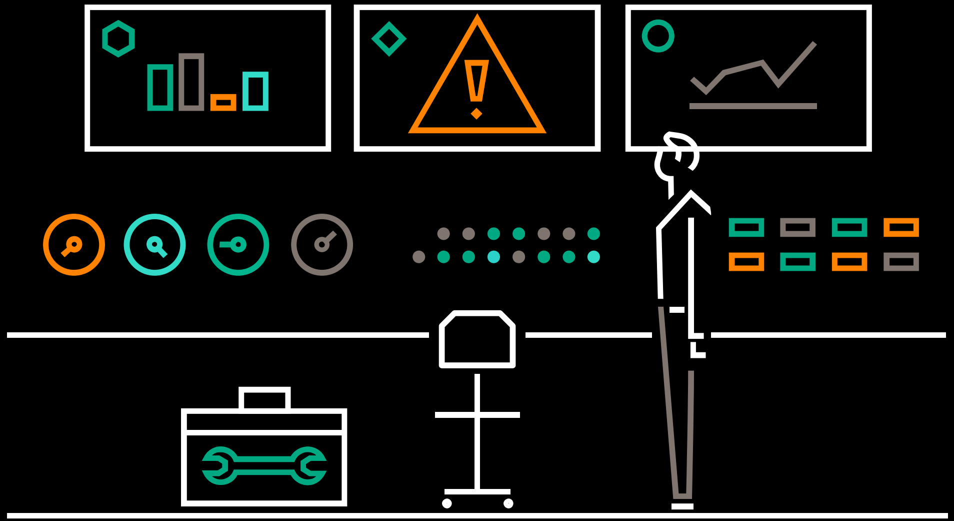
Still valid – but reactive and unreliable

Damage is already done

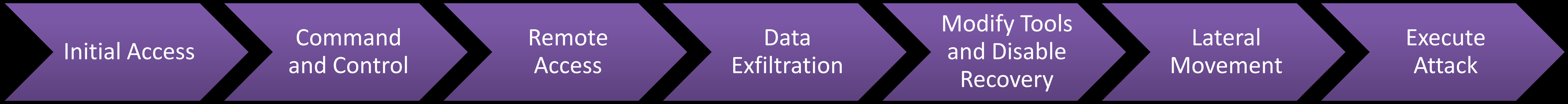
New attack methods involve disclosure of sensitive data to coerce organizations to pay ransom

Causes reputational damage, loss of confidence, employee turnover

Fines and sanctions exceed the cost of ransom demand



How Does This Happen? We Make It Too Easy!



Initial Access

Command and Control

Remote Access

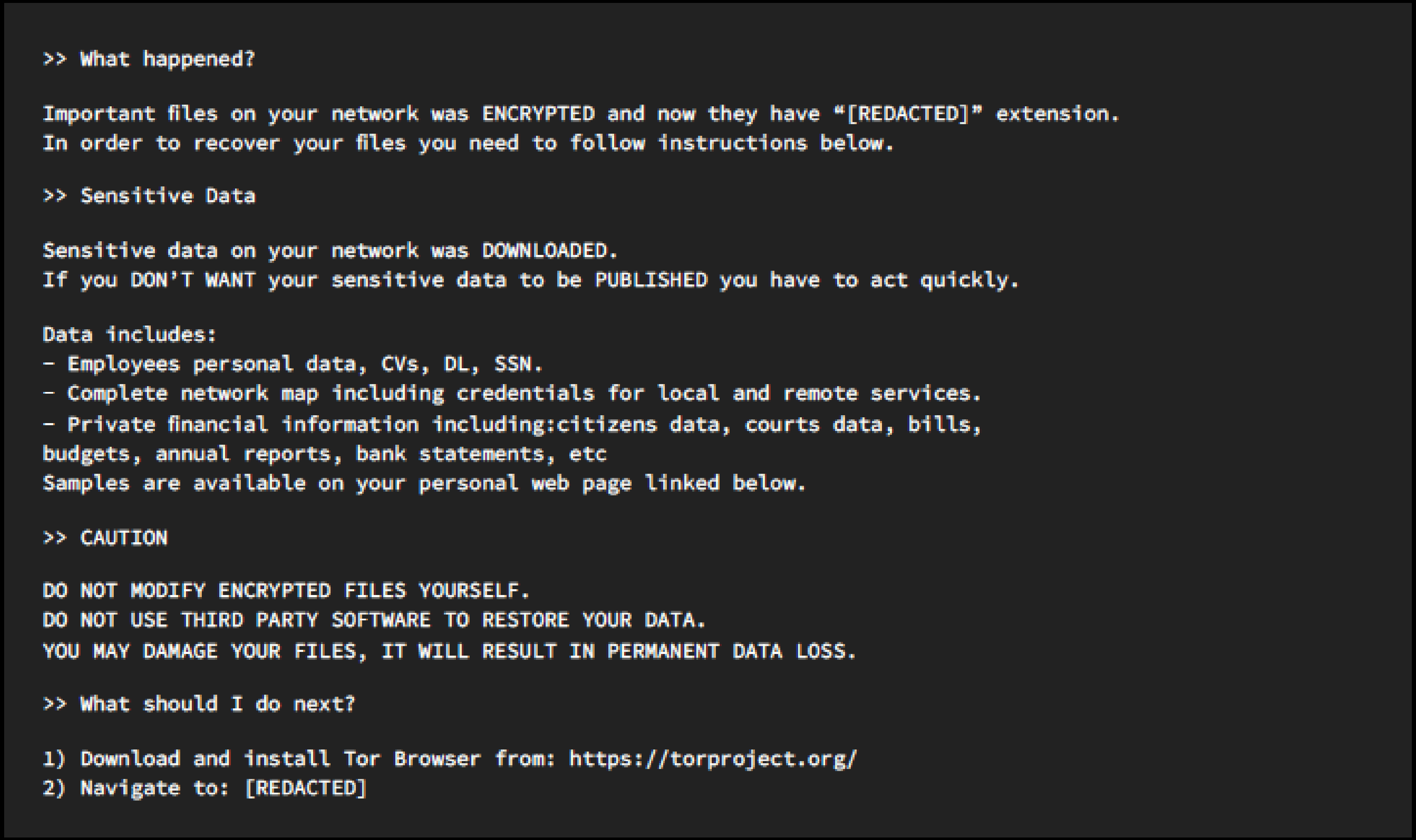
Data Exfiltration

Modify Tools and Disable Recovery

Lateral Movement

Execute Attack

The Result – Attack Completed!



```
>> What happened?

Important files on your network was ENCRYPTED and now they have "[REDACTED]" extension.
In order to recover your files you need to follow instructions below.

>> Sensitive Data

Sensitive data on your network was DOWNLOADED.
If you DON'T WANT your sensitive data to be PUBLISHED you have to act quickly.

Data includes:
- Employees personal data, CVs, DL, SSN.
- Complete network map including credentials for local and remote services.
- Private financial information including:citizens data, courts data, bills,
budgets, annual reports, bank statements, etc
Samples are available on your personal web page linked below.

>> CAUTION

DO NOT MODIFY ENCRYPTED FILES YOURSELF.
DO NOT USE THIRD PARTY SOFTWARE TO RESTORE YOUR DATA.
YOU MAY DAMAGE YOUR FILES, IT WILL RESULT IN PERMANENT DATA LOSS.

>> What should I do next?

1) Download and install Tor Browser from: https://torproject.org/
2) Navigate to: [REDACTED]
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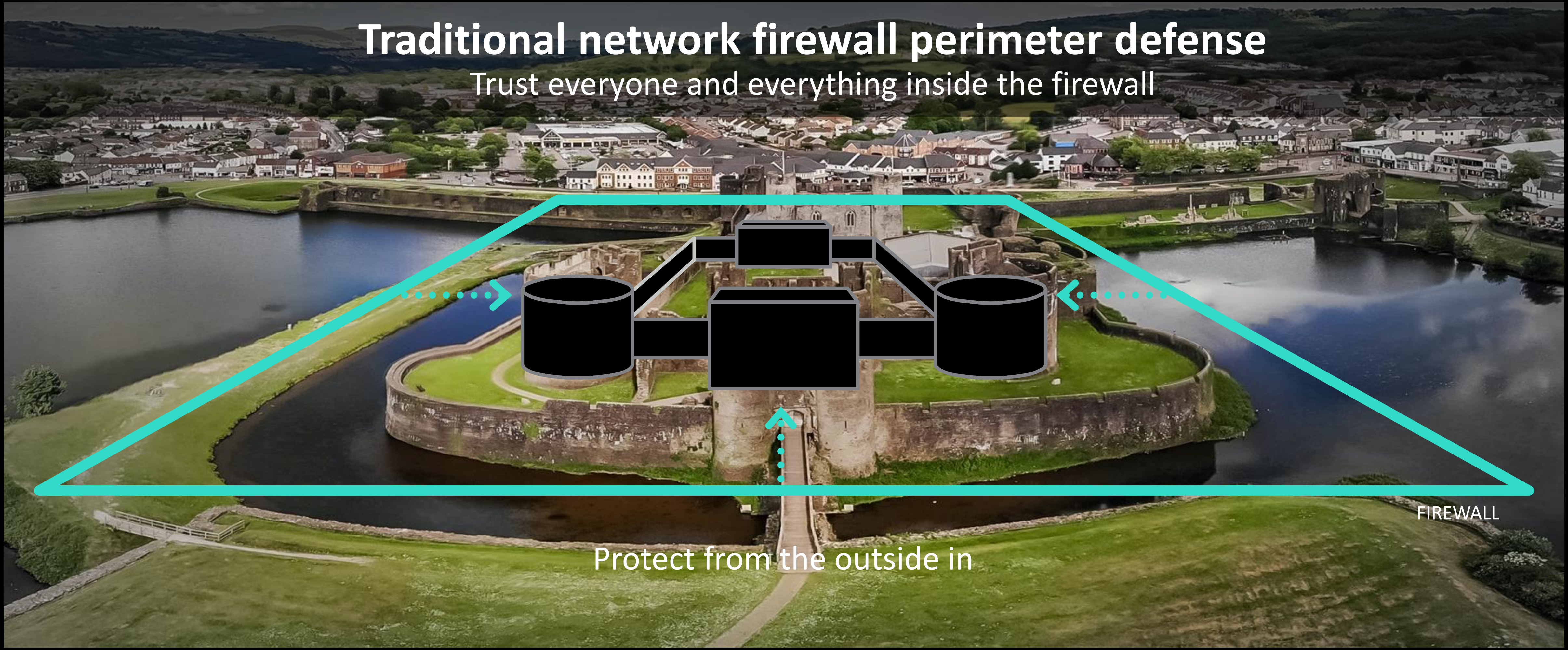
THE ZERO TRUST MODEL

What Does Zero Trust Mean?



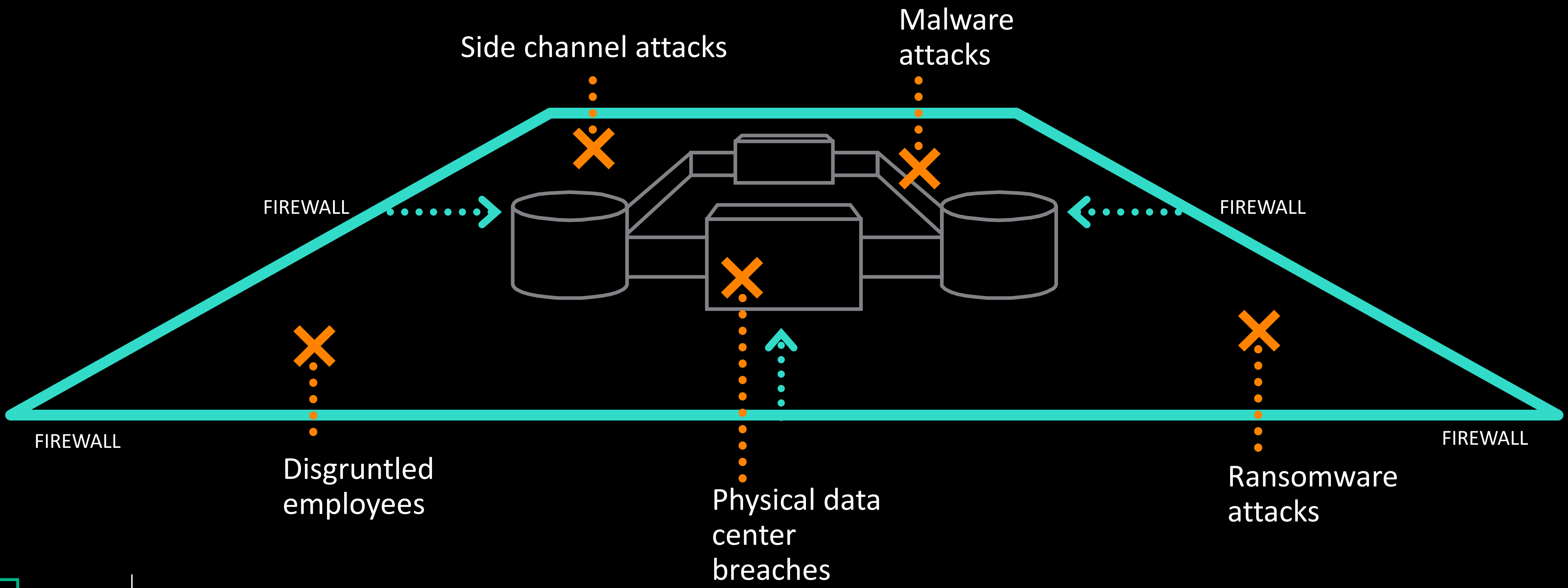
Traditional network firewall perimeter defense

Trust everyone and everything inside the firewall

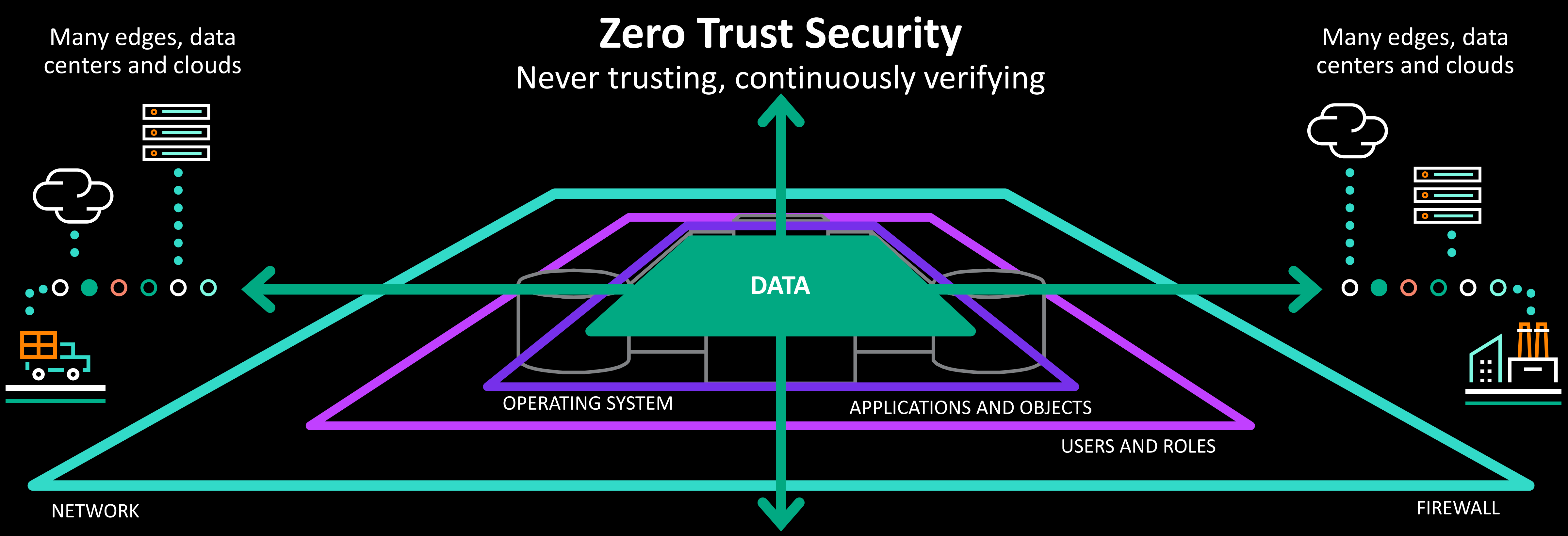
Protect from the outside in

What Does Zero Trust Mean?

Traditional network firewall perimeter defense



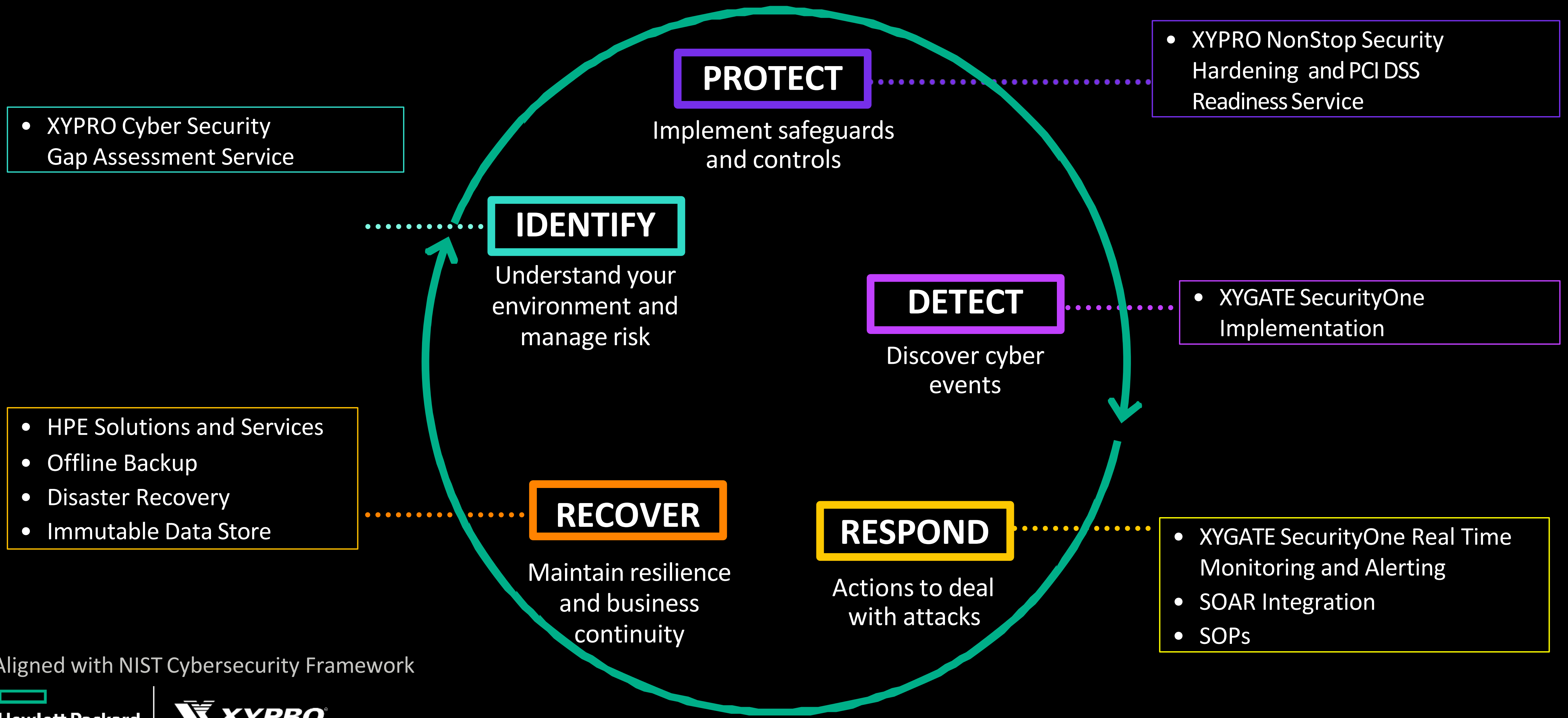
What Does Zero Trust Mean?


Many edges, data centers and clouds
Zero Trust Security
Never trusting, continuously verifying
Many edges, data centers and clouds
DATA
OPERATING SYSTEM
APPLICATIONS AND OBJECTS
USERS AND ROLES
NETWORK
FIREWALL

Protect from the inside out

Identity aware, data-driven, workload relevant

Data Resiliency Strategy



PROTECT

Implement safeguards and controls

- XYPRO NonStop Security Hardening and PCI DSS Readiness Service

IDENTIFY

Understand your environment and manage risk

- XYPRO Cyber Security Gap Assessment Service

DETECT

Discover cyber events

- XYGATE SecurityOne Implementation

RESPOND

Actions to deal with attacks

- XYGATE SecurityOne Real Time Monitoring and Alerting
- SOAR Integration
- SOPs

RECOVER

Maintain resilience and business continuity

- HPE Solutions and Services
- Offline Backup
- Disaster Recovery
- Immutable Data Store

Aligned with NIST Cybersecurity Framework

Hewlett Packard Enterprise

XYPRO Mission Critical Security

SOLUTIONS FROM HPE AND XYPRO

IDENTIFY – XYPRO CYBER SECURITY GAP ASSESSMENT

- Cyber Resiliency begins with asset identification, inventory, and categorization.
- XYPRO’s Security Gap Assessment identifies critical assets and security risks.
- This assessment scans, identifies and assesses security misconfiguration, compliance status, and other ransomware attack vectors.
- Builds a roadmap for subsequent phases.

PROTECT – XYPRO SECURITY HARDENING AND SERVICE

- Based on findings from the Security Assessment, security controls are implemented to reduce the identified attack surface.
- This includes
  - Safeguard Configuration
  - XYGATE User Authentication for Auth Controls, Multi-Factor Authentication and AD Integration
  - Hardened password controls
  - User and Identity Management
  - Priveledged Session Management and Monitoring
  - Secure critical files, objects and assets
  - Implement additional security controls based on Security Assessment findings.

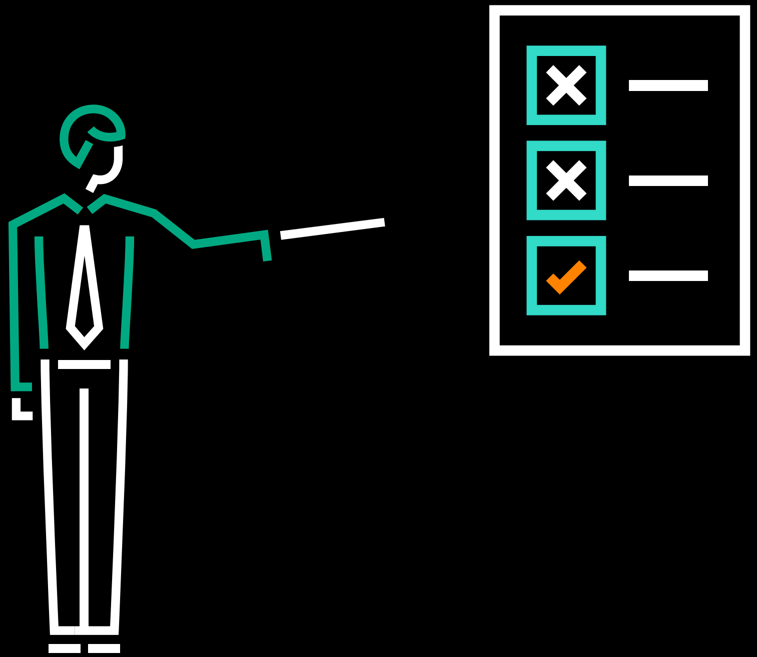
PCI DSS 4.0

The New Requirements

- 64 New Requirements
- 13 new requirements are effective immediately*
- 51 are best practices until March 2025
- Biggest Impacts are to Requirements 8, 10, 11 and 12

Important Dates

- 2023 is a transition period
- PCI 3.2.1 officially retired March 2024
- Best practices become effective in March 2025



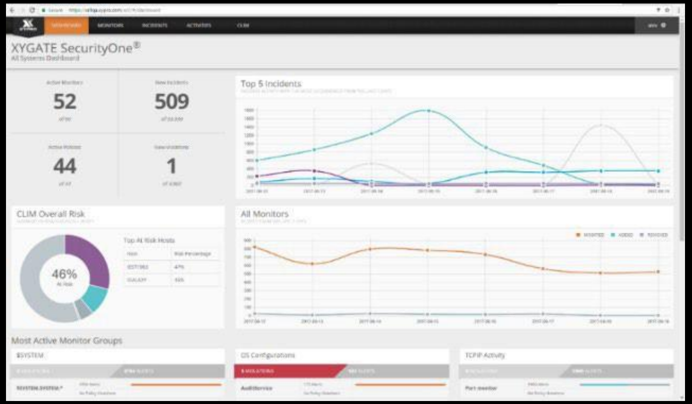
DETECT - XYGATE SECURITYONE

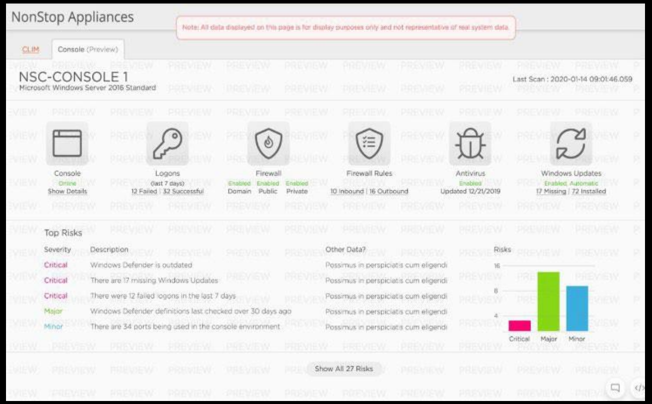
Zero Trust Security and Ransomware Protection

- Ransomware, Virus and Malware Protection
- PCI DSS 4.0, GDPR and HPE Hardening Guide
- Intelligent File and System Integrity Monitoring
- Real-Time Threat Detection and Vulnerability Management
- Monitor NonStop CLIMs and Windows Console
- Privileged Session Management
- Keystroke Logging
- Object Level Security
- User Behavior Profiling

Business Value

- Reduce cost of security incidents. **Prevention is KEY!**
- Simplify compliance reporting
- Improve staff productivity
- Reduce business risk





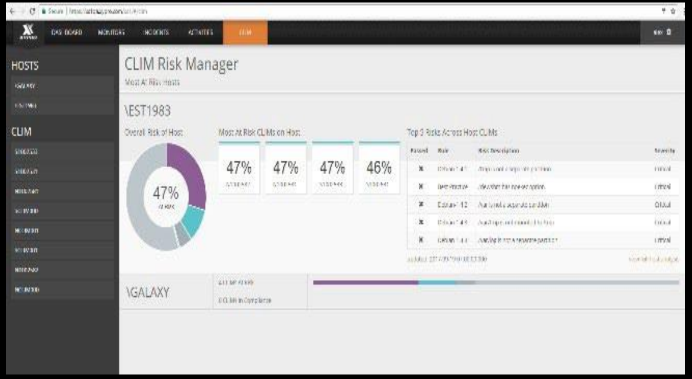
Note: All data displayed on this page is for display purposes only and not representative of real system data.

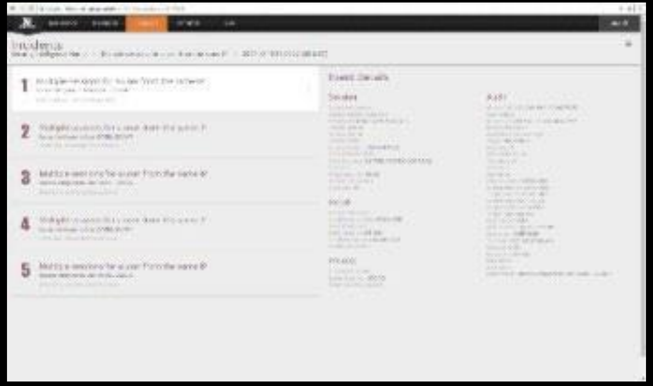
NSC-CONSOLE 1
Microsoft Windows Server 2016 Standard

Last Scan : 2020-01-14 09:01:46.059

Top Risks

Severity	Description	Other Data?
Critical	Windows Defender is outdated	Possimus in perspiciatis cum eligendi
Critical	There are 17 missing Windows Updates	Possimus in perspiciatis cum eligendi
Critical	There were 12 failed logons in the last 7 days	Possimus in perspiciatis cum eligendi
Major	Windows Defender definitions last checked over 30 days ago	Possimus in perspiciatis cum eligendi
Minor	There are 34 ports being used in the console environment	Possimus in perspiciatis cum eligendi





CONTEXT IS KEY

XYPRO Patented Technology

Correlation is not context

Context allows separation of noise from data

XS1 applies HPE NonStop specific knowledge to contextualize events and assess impact

Reduce false positives

Provide actionable information

CONTEXT TRANSFORMS DATAINTO INFORMATION

FILE AND SYSTEM INTEGRITY IS CRITICAL

Detect Malicious Activity

- Detecting unauthorized changes to objects and files is the best defense against malware and ransomware

Identify Human Error

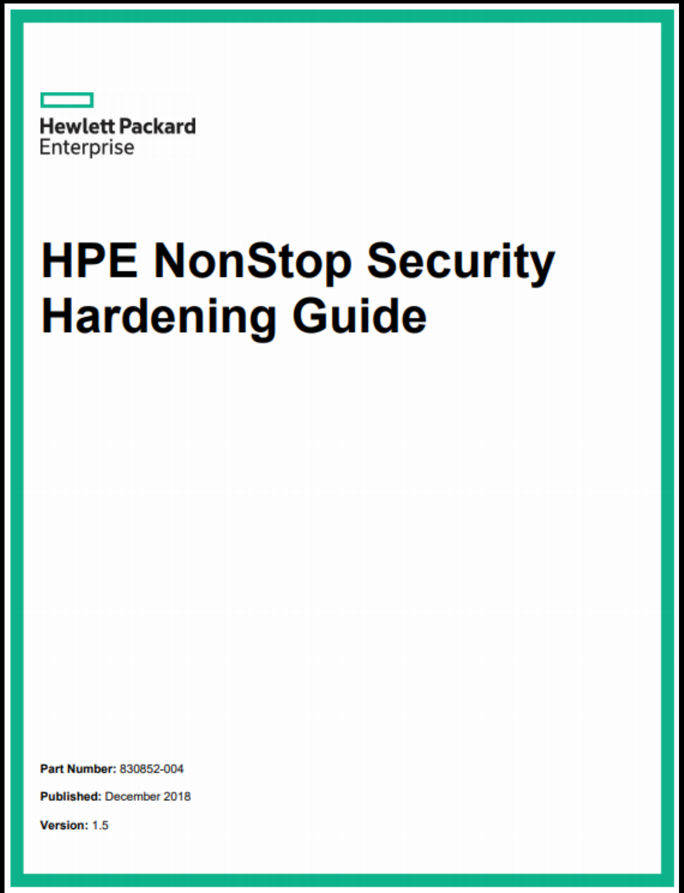
- Detect mistakes before they cause irreparable damage

Necessary for Compliance

- PCI, GDPR, SOX, HIPAA, DORA, FISMA, NIST and other frameworks

Recommended by HPE NonStop Hardening Guide

- “Ensuring the integrity of critical operating system files and settings is an important part of your security strategy.”
- “Centralized monitoring and reporting and file integrity checking both assist you in demonstrating compliance to security regulations such as PCI DSS, SOX and HIPAA.”



Hewlett Packard
Enterprise

HPE NonStop Security Hardening Guide

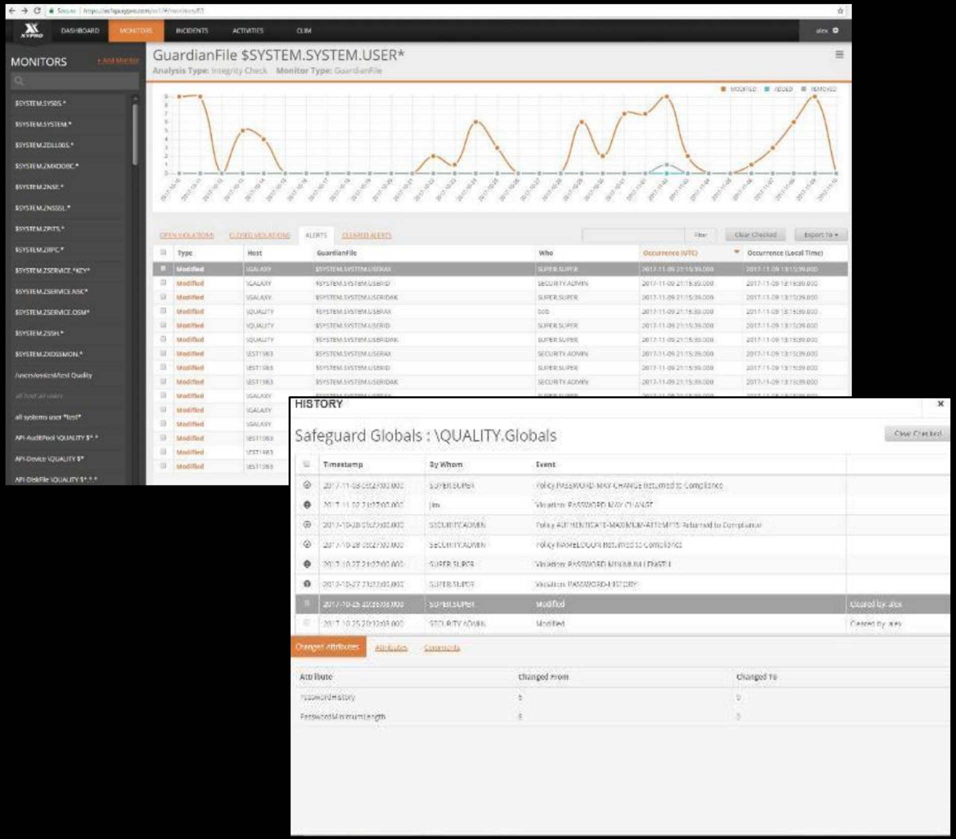
Part Number: 830852-004

Published: December 2018

Version: 1.5

FILE INTEGRITY IS REQUIRED FOR PCI DSS 4.0 COMPLIANCE

- Real Time Monitoring
- Guardian and OSS Support
- Allow/Deny lists
- File Hashing/Fingerprinting
- Policy Management and Enforcement
- Integration with SIEM/SOAR and Analytics
- Real-time file, user, process, config monitoring
  - Network port monitor detects newly added ports
  - Process monitor detects new process creation
  - Prevent configuration drift
- Dashboards, details and context
  - Alert on who did what when
  - Entire history lifecycle of object
  - Context for changes that violate policy frameworks
  - Data trending



GuardianFile $SYSTEM.SYSTEM.USER*

Analysis Type: Integrity Check Monitor Type: GuardianFile

Type	Host	GuardianFile	Who	Occurrence (UTC)	Occurrence (Local Time)
Modified	\GALAXY	$SYSTEM.SYSTEM.USERAX	SUPER.SUPER	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\GALAXY	$SYSTEM.SYSTEM.USERID	SECURITY.ADMIN	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\GALAXY	$SYSTEM.SYSTEM.USERIDAK	SUPER.SUPER	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\QUALITY	$SYSTEM.SYSTEM.USERAX	bob	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\QUALITY	$SYSTEM.SYSTEM.USERID	SUPER.SUPER	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\QUALITY	$SYSTEM.SYSTEM.USERIDAK	SUPER.SUPER	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\EST1983	$SYSTEM.SYSTEM.USERAX	SECURITY.ADMIN	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\EST1983	$SYSTEM.SYSTEM.USERID	SUPER.SUPER	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\EST1983	$SYSTEM.SYSTEM.USERIDAK	SECURITY.ADMIN	2017-11-09 21:15:39.000	2017-11-09 13:15:39.000
Modified	\GALAXY				
Modified	\GALAXY				
Modified	\GALAXY				
Modified	\EST1983				
Modified	\EST1983				
Modified	\EST1983				

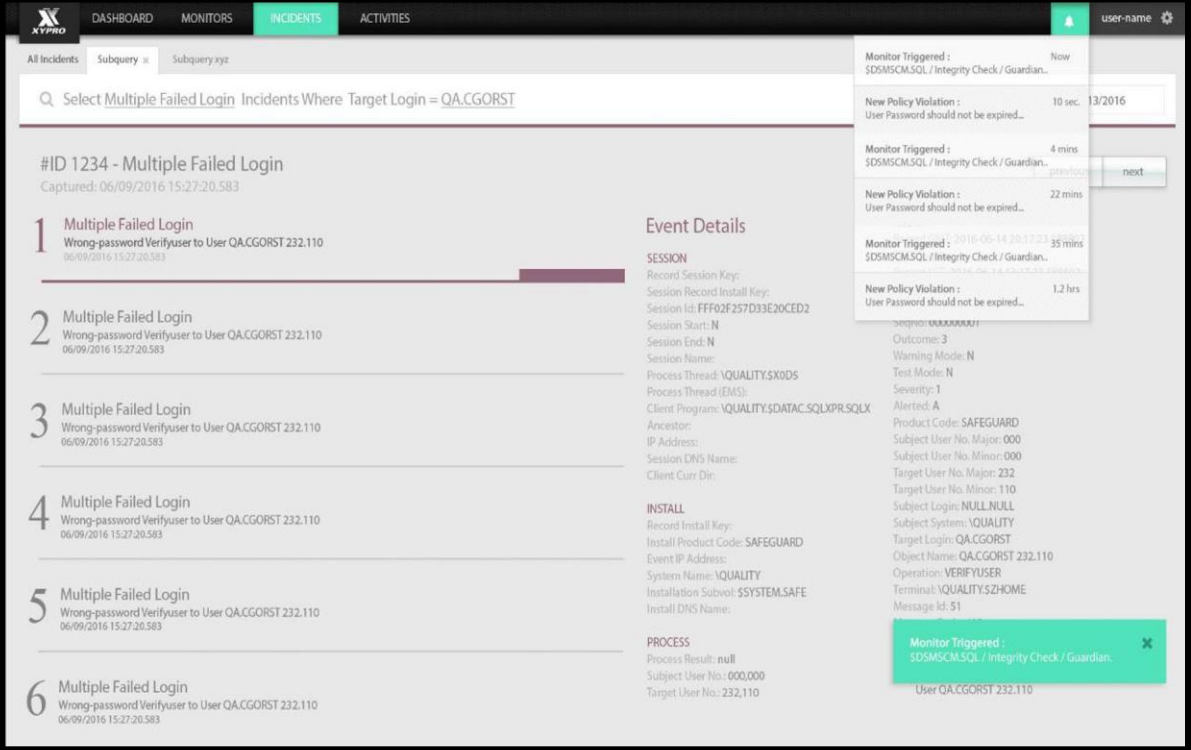
HISTORY

Safeguard Globals : \QUALITY.Globals

Timestamp	By Whom	Event	
2017-11-03 05:27:00.000	SUPER.SUPER	Policy PASSWORD-MAY-CHANGE Returned to Compliance	
2017-11-02 21:27:00.000	jim	Violation: PASSWORD-MAY-CHANGE	
2017-10-28 05:27:00.000	SECURITY.ADMIN	Policy AUTHENTICATE-MAXIMUM-ATTEMPTS Returned to Compliance	
2017-10-28 05:27:00.000	SECURITY.ADMIN	Policy NAMELOGON Returned to Compliance	
2017-10-27 21:27:00.000	SUPER.SUPER	Violation: PASSWORD-MINIMUM-LENGTH	
2017-10-27 21:27:00.000	SUPER.SUPER	Violation: PASSWORD-HISTORY	
2017-10-25 20:[illegible]	SUPER.SUPER	Modified	Cleared by: alex
2017-10-25 20:12:03.000	SECURITY.ADMIN	Modified	Cleared by: alex

Attribute	Changed From	Changed To
PasswordHistory	5	0
PasswordMinimumLength	8	5

RESPOND - XYGATE SECURITYONE FOR INCIDENT RESPONSE



Select Multiple Failed Login Incidents Where Target Login = QA.CGORST

#ID 1234 - Multiple Failed Login
Captured: 06/09/2016 15:27:20.583

1 Multiple Failed Login
Wrong-password Verifyuser to User QA.CGORST 232.110
06/09/2016 15:27:20.583

2 Multiple Failed Login
Wrong-password Verifyuser to User QA.CGORST 232.110
06/09/2016 15:27:20.583

3 Multiple Failed Login
Wrong-password Verifyuser to User QA.CGORST 232.110
06/09/2016 15:27:20.583

4 Multiple Failed Login
Wrong-password Verifyuser to User QA.CGORST 232.110
06/09/2016 15:27:20.583

5 Multiple Failed Login
Wrong-password Verifyuser to User QA.CGORST 232.110
06/09/2016 15:27:20.583

6 Multiple Failed Login
Wrong-password Verifyuser to User QA.CGORST 232.110
06/09/2016 15:27:20.583

Event Details

SESSION
Record Session Key:
Session Record Install Key:
Session Id: FFF02F257D33E20CED2
Session Start: N
Session End: N
Session Name:
Process Thread: \QUALITY.$X0D5
Process Thread (EMS):
Client Program: \QUALITY.$DATAC.SQLXPR.SQLX
Ancestor:
IP Address:
Session DNS Name:
Client Curr Dir:

INSTALL
Record Install Key:
Install Product Code: SAFEGUARD
Event IP Address:
System Name: \QUALITY
Installation Subvol: $SYSTEM.SAFE
Install DNS Name:

PROCESS
Process Result: null
Subject User No.: 000,000
Target User No.: 232,110

Seqno: 000000001
Outcome: 3
Warning Mode: N
Test Mode: N
Severity: 1
Alerted: A
Product Code: SAFEGUARD
Subject User No. Major: 000
Subject User No. Minor: 000
Target User No. Major: 232
Target User No. Minor: 110
Subject Login: NULL.NULL
Subject System: \QUALITY
Target Login: QA.CGORST
Object Name: QA.CGORST 232.110
Operation: VERIFYUSER
Terminal: \QUALITY.$ZHOME
Message Id: 51
User QA.CGORST 232.110

Monitor Triggered : Now
$DSMSCM.SQL / Integrity Check / Guardian..

New Policy Violation : 10 sec.
User Password should not be expired...

Monitor Triggered : 4 mins
$DSMSCM.SQL / Integrity Check / Guardian..

New Policy Violation : 22 mins
User Password should not be expired...

Monitor Triggered : 35 mins
$DSMSCM.SQL / Integrity Check / Guardian..

New Policy Violation : 1.2 hrs
User Password should not be expired...

Monitor Triggered :
$DSMSCM.SQL / Integrity Check / Guardian.

Real-time alerting and data contextualization ensures CSIRT is not flooded with benign or false positive alerts.

Alerts are triggered based on

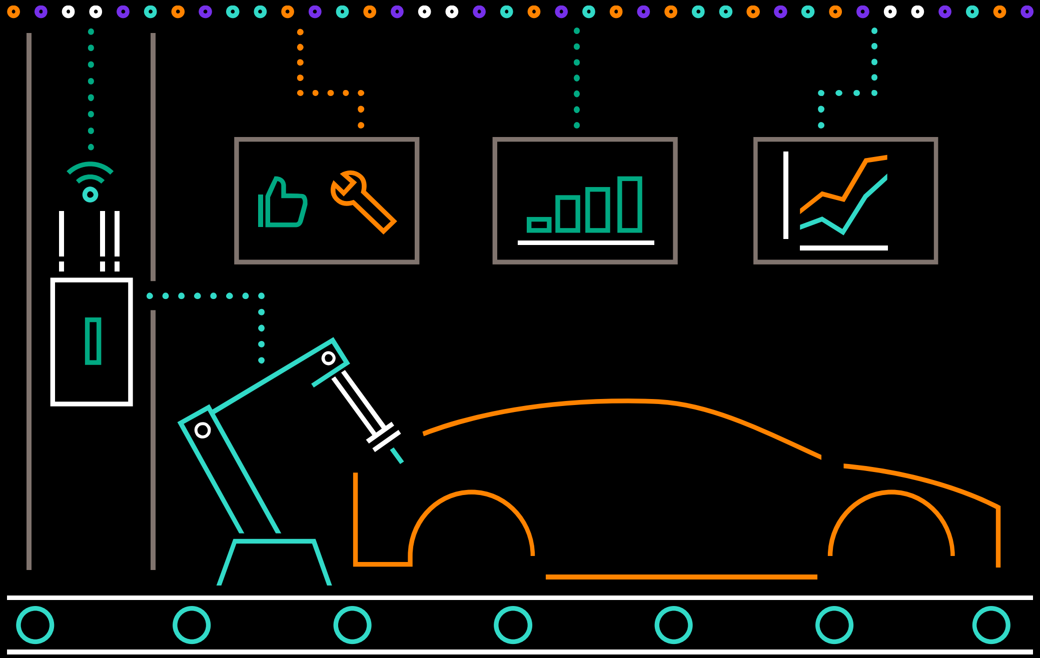
- Out of the box library
- Easy to use, visual Rule manager for create new rule patters
- ML algorithms for baselining and detecting unusual activity

Alerts can be integrated with enterprise SIEM and/or SOAR, or addressed within the XS1 Application Intelligent summary/detail dashboards highlight what is critical and what can be safely ignored for immediate response

XYGATE SECURITYONE BUNDLE

What’s Included

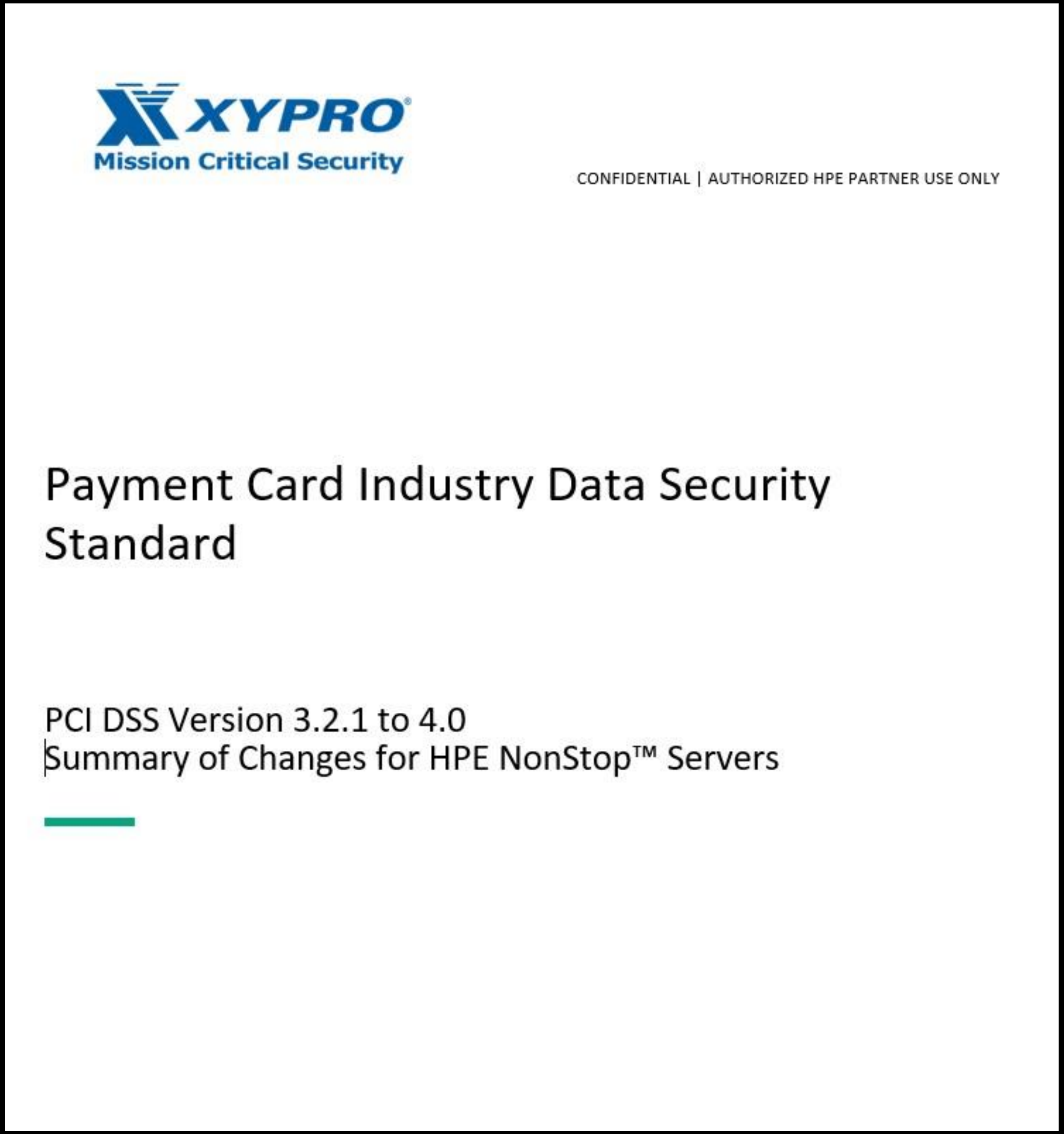
- Real Time Security Threat Detection
- User Authentication (XUA)
- Merged Audit (XMA)
- Access Control (XAC)
- Object Security (XOS)
- CompliancePRO (XSW)
- File and System Integrity Monitor
- Compliance Module
- Appliance Sentry Monitor
- Onboarding Services



RESOURCES

Visit www.xypro.com

- PCI Auditors Guide
- PCI DSS Summary of Change for HPE NonStop
- PCI DSS 4.0 Webinar – Not To Miss!
- Articles, Videos and more on simplifying compliance
- PCI DSS Assessment and Readiness Services



XYPRO Mission Critical Security

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Payment Card Industry Data Security Standard

PCI DSS Version 3.2.1 to 4.0
Summary of Changes for HPE NonStop™ Servers

BUSINESS VALUE AND ROI

#1 – XYPRO REDUCES THE COST OF SECURITY INCIDENTS BY 80%

- Reduces cost of security incidents
- Improved threat detection and response
- Reduces SIEM costs

34%

Probability that an organization will experience a material breach in the next 24 months

270+ Days

Current mean time to identify and contain a breach

$2 Million

Amount organizations save when using a ZERO-Trust Strategy

#2 – XYPRO COMPLIANCE REPORTING CAN SAVE THOUSANDS OF HOURS

Reduce manual effort, automate compliance monitoring and reporting

Audit reports generally require “pulling” data from multiple systems and consolidating into audit reports. This process is typically manual and can take months.

VS

XYPRO compliance monitoring and audit reporting are automated. Reports are generated in real time in summary/detail views.

PCI DSS
Payment Card
Industry Data
Security Standard

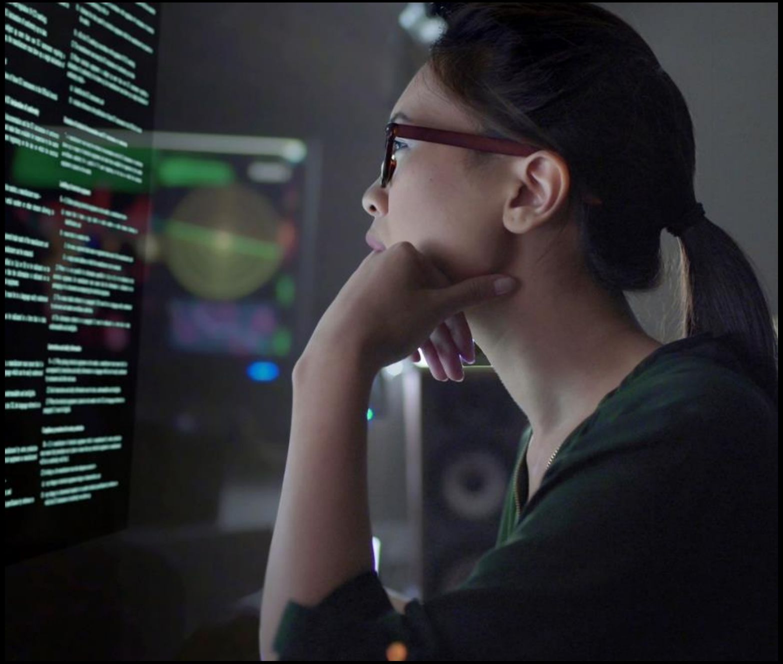
HPE
HPE NonStop
Hardening Guide

DORA
Digital
Operational
Resilience Act

GDPR
General Data
Protection
Regulation

#3 – XYPRO SOLUTIONS INCREASE STAFF PRODUCTIVITY

Most organizations cannot allocate enough resources to proactively monitor their environment



Security staff must devote time investigating potential incidents - a very manual and time-consuming process of collecting, correlating, and searching through disparate logs.

XYPRO solutions automate incident identification by correlating data in real-time and highlighting actionable incidents that need immediate attention – using patented technology.

Automation of investigation activities frees up nearly 80% of your staff's time, allowing them to focus on proactive monitoring

#4 – XYPRO SOLUTIONS MODERNIZE SECURITY RESOURCES

Manage NonStop the same way you manage other IT assets

Data volume, velocity and variety is increasing

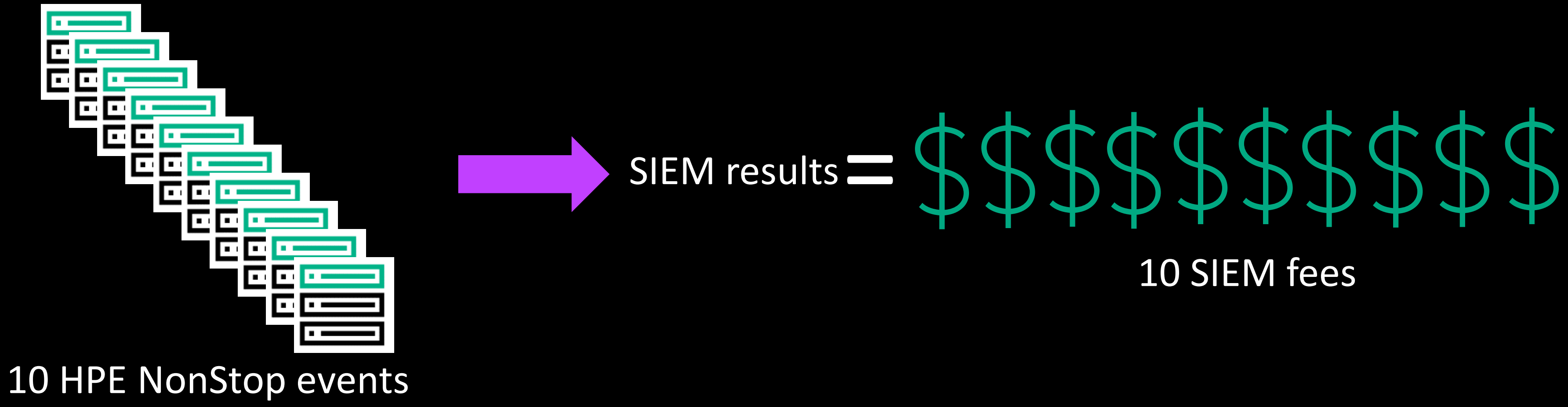
Not having the right resources to secure the HPE NonStop is a risk

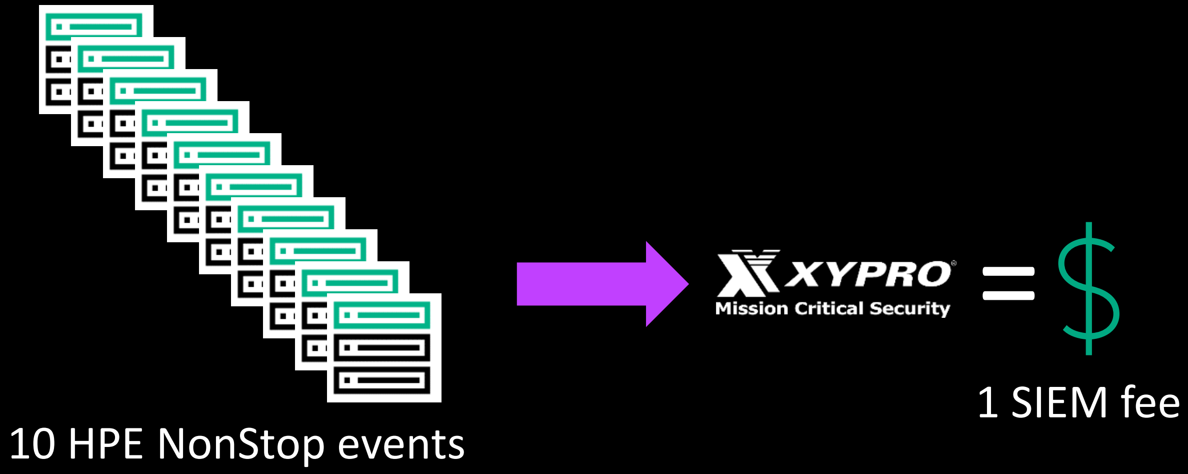
NonStop-dedicated resources are shrinking

Having only a few staff members familiar with NonStop security management heightens the risk of insider abuse

Anyone with security management experience can use XYPRO solutions to manage HPE NonStop security without needing in-depth NonStop knowledge, greatly reducing the risks from resource attrition and insider abuse.

#5 – XYPRO ENHANCES YOUR ENTERPRISE SIEM





Cost savings

- XYPRO is licensed per connected server rather than on event volume
- XYPRO can reduce SIEM license fees

Can result to 90% cost saving on SIEM license fees associated with NonStop events

Q: What % of breaches involve attack surface exposure?

CUSTOMER CASE STUDY – DISCOVER FINANCIAL SERVICES

- **3rd-largest debit/ATM network in USA**
  - 2.1 million ATMs and cardholder access locations
  - Large NonStop environment
- **Challenges**
  - Inadequate real-time monitoring of suspicious activity
  - Limited visibility and lots of noise
  - Difficult to extract value and context from data
- **Solution: XYGATE SecurityOne**
  - Unified security views, advanced analytics and threat detection, file integrity monitoring and contextualization
- **Benefits**
  - Faster detection and response to security events
  - Dramatic reduction in audit and compliance time and effort
  - Easy uptake for NonStop novices

Tanya Jones, Sr. Manager of Cybersecurity for Discover Financial Services and PULSE, presenting at 2019 NonStop Technical Boot Camp

"Summary view represents data we need to see without inundating us with details we don't need"

"PCI audit time went from one week to 30 minutes"

"I'm actually looking forward to our next PCI audit"

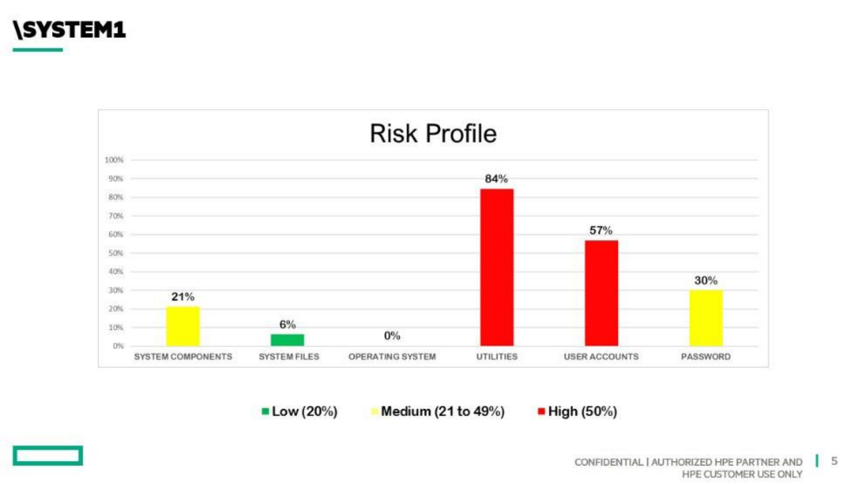
CUSTOMER CASE STUDY - HDFC BANK

- **Challenges**
  - Manual effort to benchmark baseline and standards
  - Applications spanning multiple systems
  - Limited resources
  - Too much data (volume, velocity, variety)
- **Solution: XYGATE SecurityOne**
  - Immediate visibility into application health and security
  - Summary results for executives
  - Actionable events for security operations
- **Benefits**
  - Achieved PCI DSS Compliance
  - NonStop data integrated with the rest of the enterprise
  - Simplified reporting
  - Reduced time spent on false positive alerts
  - Augmented security staff

RAPID SECURITY ASSESSMENT
The LAST SLIDE – I PROMISE!!

- 120+ different security vectors evaluated in 6 key categories
- Single executable, nothing to install, easy to run
- No sensitive data
- Report generated and recommendation provided
- **Completely FREE!**

xypro.com/free



\SYSTEM1

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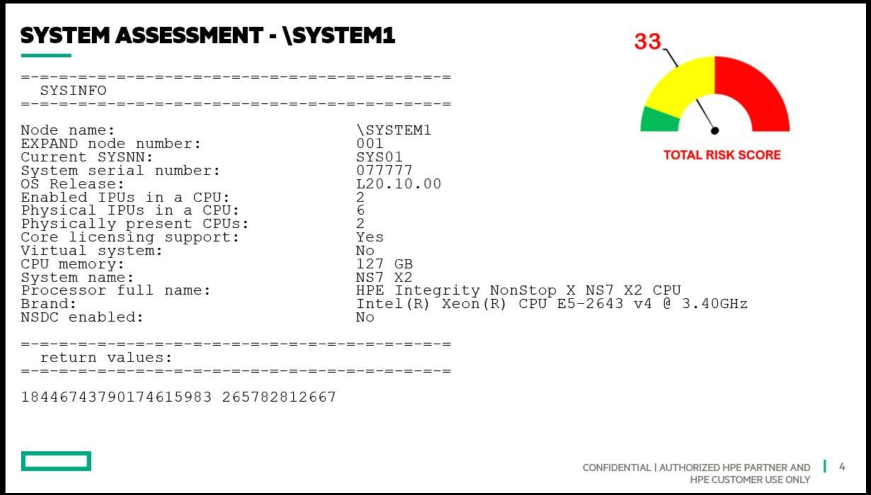

SYSTEM ASSESSMENT - \SYSTEM1

```
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
  SYSINFO
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

Node name:                          \SYSTEM1
EXPAND node number:                 001
Current SYSNN:                      SYS01
System serial number:               077777
OS Release:                         L20.10.00
Enabled IPUs in a CPU:              2
Physical IPUs in a CPU:             6
Physically present CPUs:            2
Core licensing support:             Yes
Virtual system:                     No
CPU memory:                         127 GB
System name:                        NS7 X2
Processor full name:                HPE Integrity NonStop X NS7 X2 CPU
Brand:                              Intel(R) Xeon(R) CPU E5-2643 v4 @ 3.40GHz
NSDC enabled:                       No

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
  return values:
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

18446743790174615983 265782812667
```

CONFIDENTIAL | AUTHORIZED HPE PARTNER AND HPE CUSTOMER USE ONLY | 4

THANK YOU

TAKE ACTION

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