ZERO TRUST SECURITY, COMPLIANCE AND RANSOMWARE PROTECTION

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May 2023

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

Cybercrime to grow
15% YoY
for next 5 years

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

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GOVERNMENT REGULATION AND COMPLIANCE

Security Today

HIPAA
Health Insurance Portability and Accountability Act of 1996

PCI DSS 4.0
Payment Card Industry Data Security Standard

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"

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
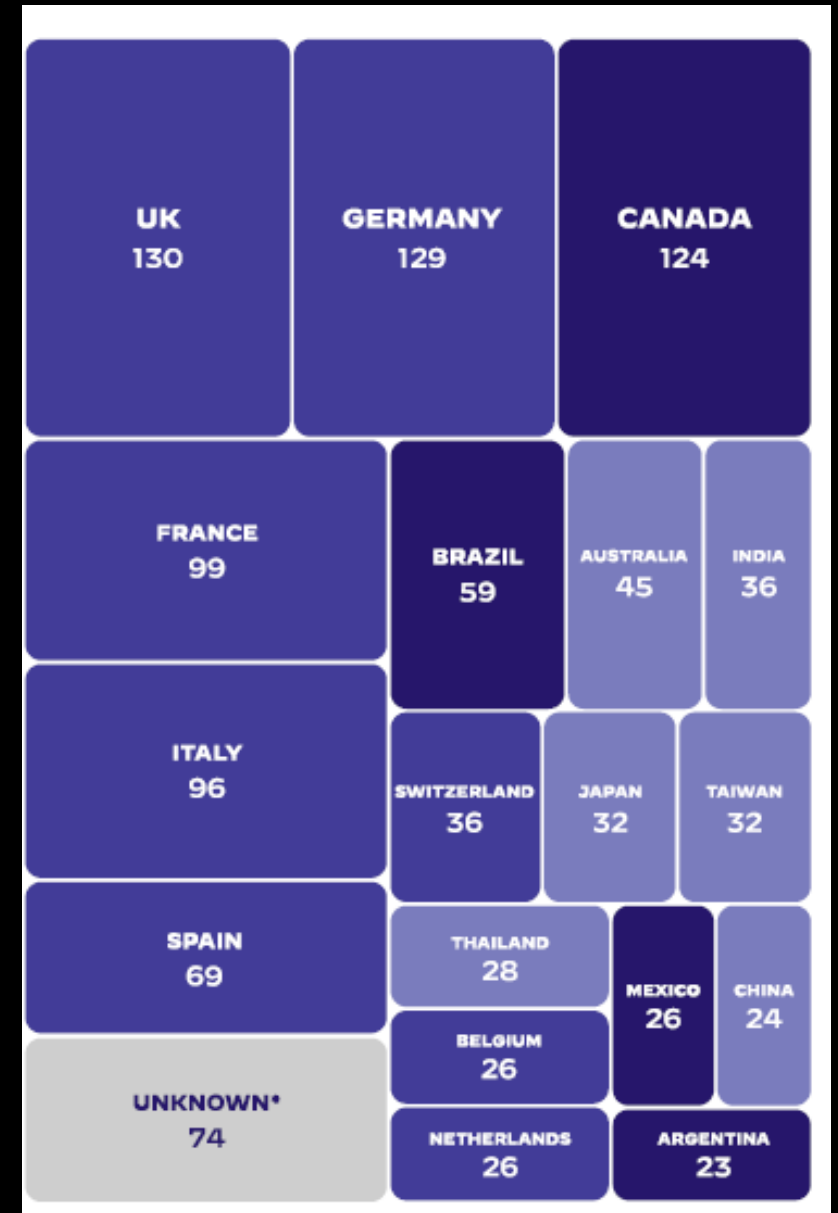
WHO IS BEING ATTACKED?

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

UK 130
GERMANY 129
CANADA 124
FRANCE 99
BRAZIL 59
AUSTRALIA 45
INDIA 36
ITALY 96
SWITZERLAND 36
JAPAN 32
TAIWAN 32
SPAIN 69
THAILAND 28
MEXICO 26
CHINA 24
BELGIUM 26
UNKNOWN* 74
NETHERLANDS 26
ARGENTINA 23

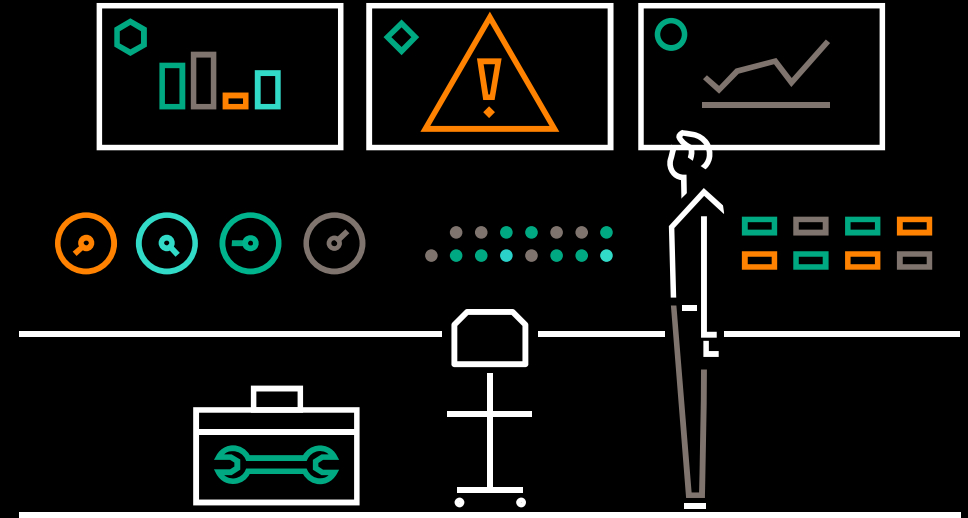Unit42 and Palo Alto Networks Report on Ransomware 2023

BACKUPS ARE NO LONGER GOOD ENOUGH

Security Today

Traditional advice is to keep up to date backups, stored offline and test them often
Still valid – but reactive and unreliable

New method involves 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

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>> 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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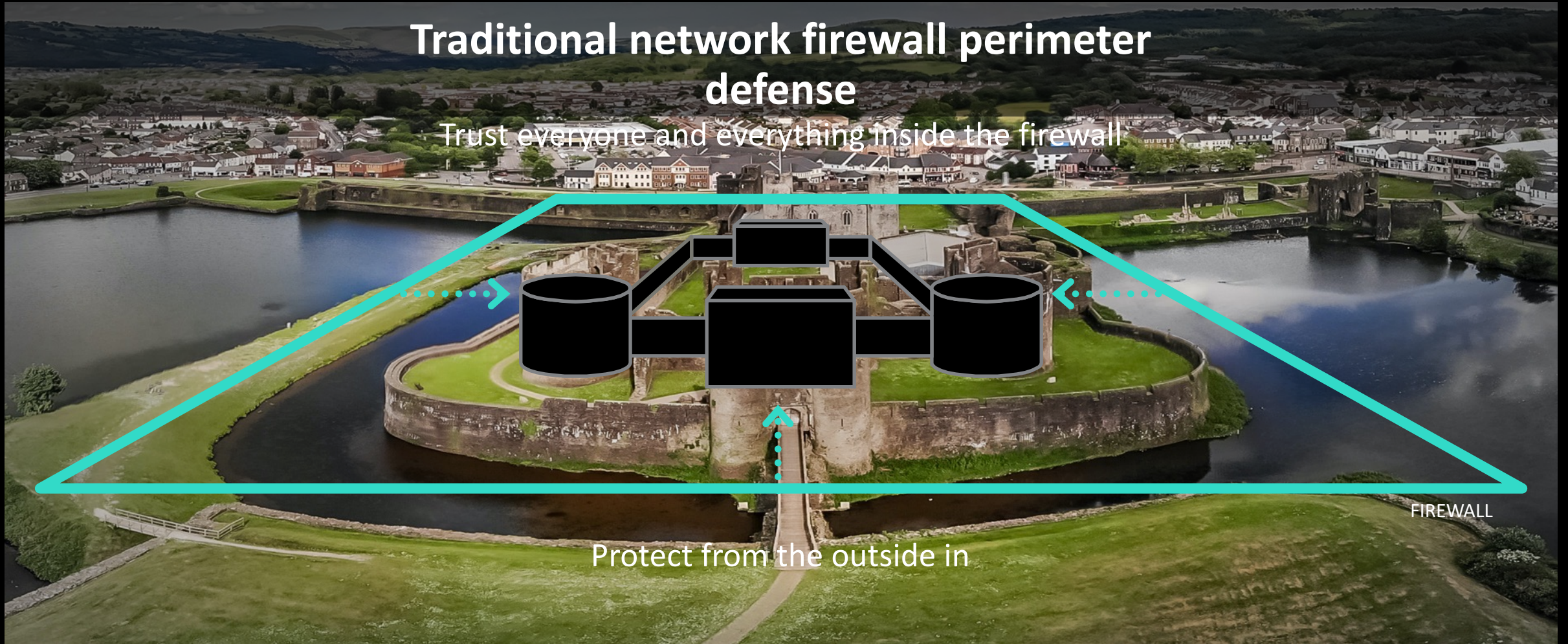
THE ZERO TRUST MODEL

WHAT DOES ZERO TRUST MEAN?

Traditional network firewall perimeter defense
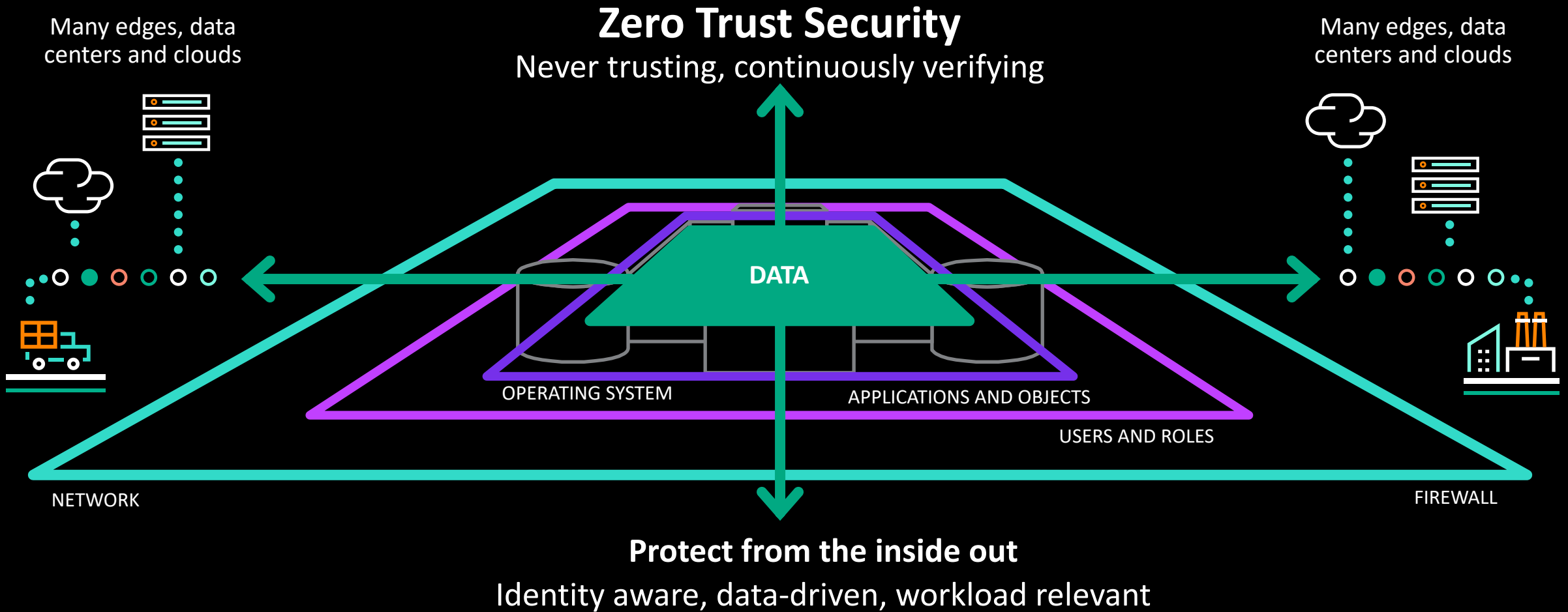
Trust everyone and everything inside the firewall

FIREWALL

Protect from the outside in

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WHAT DOES ZERO TRUST MEAN?

Traditional network firewall perimeter defense

Side channel attacks

Malware attacks

FIREWALL

FIREWALL

FIREWALL

FIREWALL

Disgruntled employees

Physical data center breaches

Ransomware attacks

WHAT DOES ZERO TRUST MEAN?

Zero Trust Security
Never trusting, continuously verifying

Many edges, data centers and clouds

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

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CYBER RESILIENCY STRATEGY

PROTECT
Implement safeguards and controls

- XYPRO NonStop Security Hardening and PCI DSS Readiness Service

- XYPRO Cyber Security Gap Assessment Service

IDENTIFY
Understand your environment and manage risk

DETECT
Discover cyber events

- XYGATE SecurityOne Implementation

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

RECOVER
Maintain resilience and business continuity

RESPOND
Actions to deal with attacks

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

Aligned with NIST Cybersecurity Framework

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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
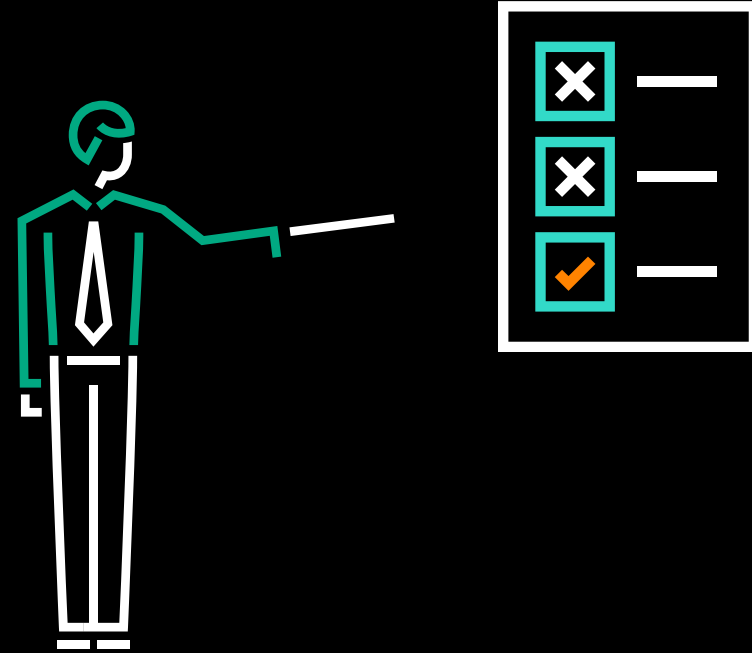
# DETECT - XYGATE SECURITYONE

Next-Generation HPE NonStop Cybersecurity

- REAL TIME Security Detection and Alerting
- Integrity Monitoring, Compliance and Ransomware Detection
- Using Patented Correlation and Context Technology
- Identify unknown issues before they turn into a serious breach

Business Value

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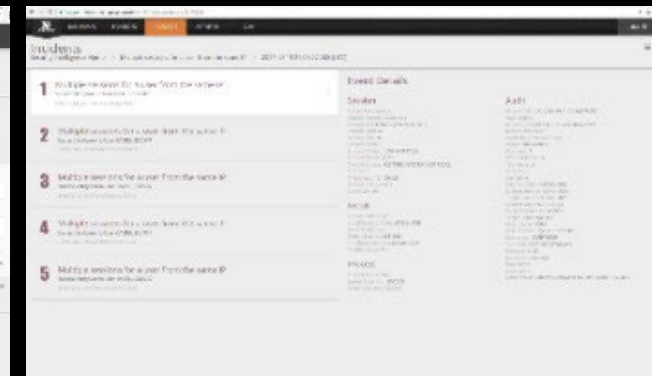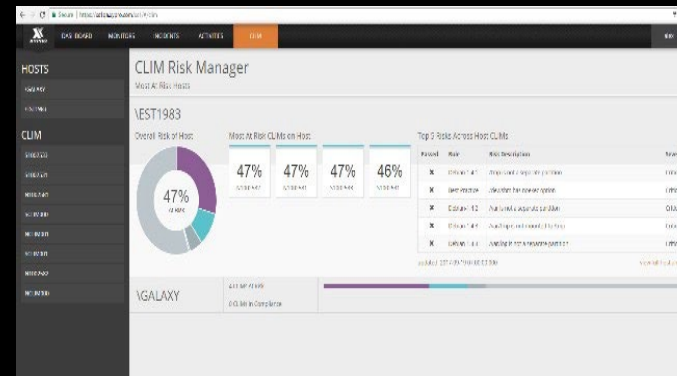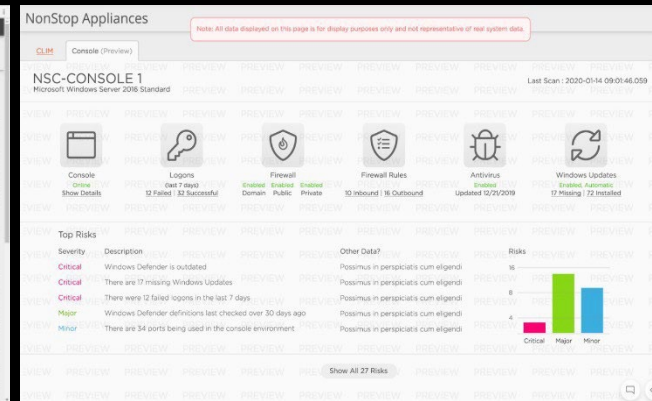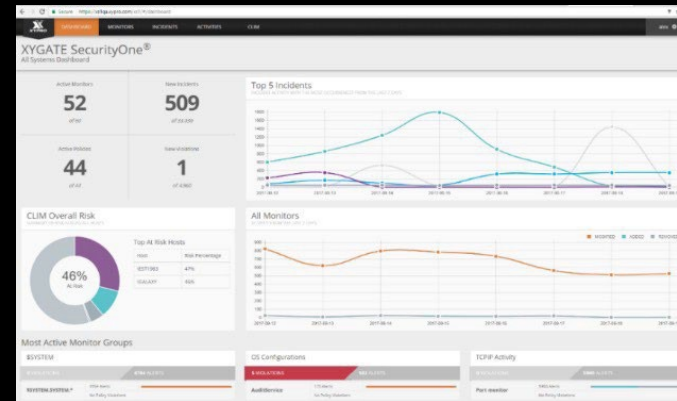
CONTEXT IS KEY

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 DATA INTO 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
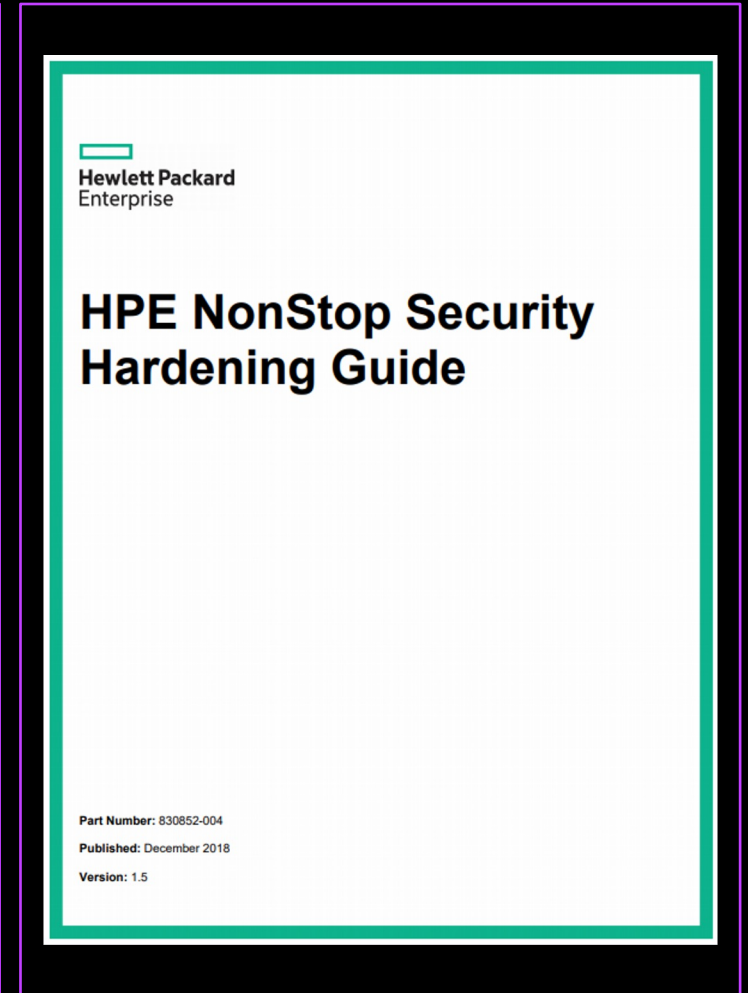
Identify Human Error

- Detect mistakes before they cause irreparable damage

Necessary for Compliance

- PCI, GDPR, SOX, HIPAA, DORA, FISMA, NIST and other frameworks
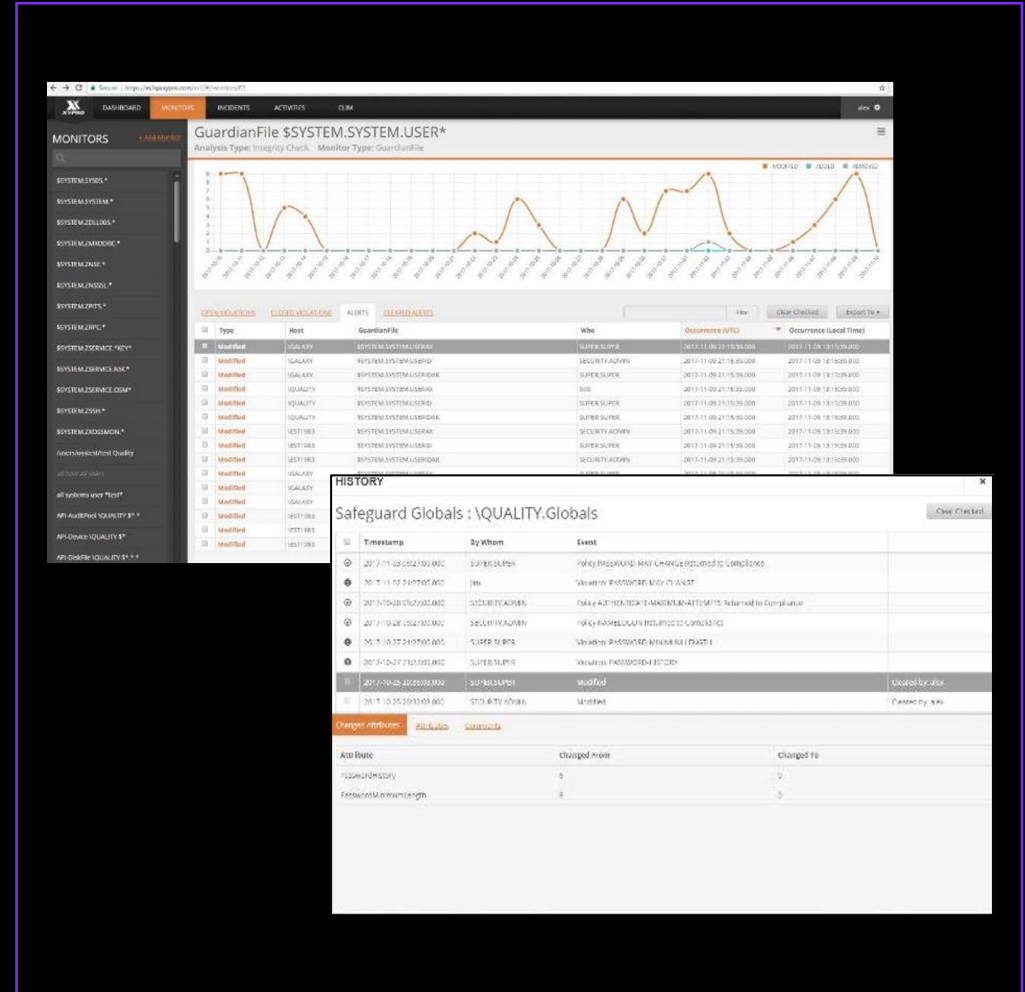
Recommended by HPE NonStop Hardening Guide

- "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."

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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

RESPOND - XYGATE SECURITYONE FOR INCIDENT RESPONSE

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

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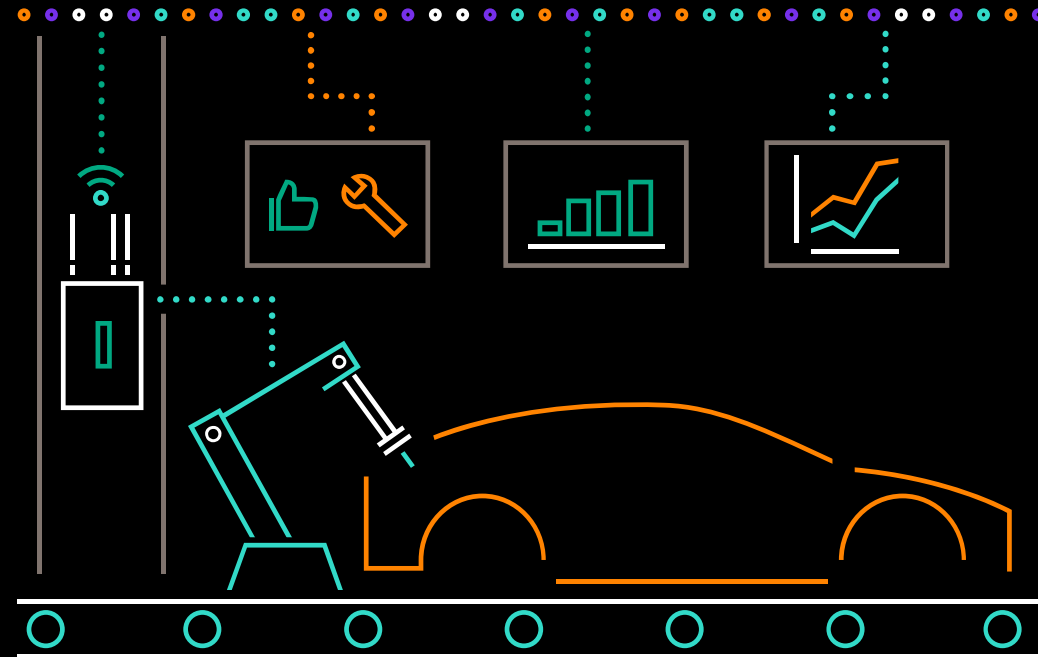
RESOURCES

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

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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

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#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.

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#5 – XYPRO ENHANCES YOUR ENTERPRISE SIEM

10 HPE NonStop events

SIEM results $=$ $$$$$$$$$$$$$$$$$$$

10 SIEM fees

10 HPE NonStop events

XYPRO Mission Critical Security $=$ $

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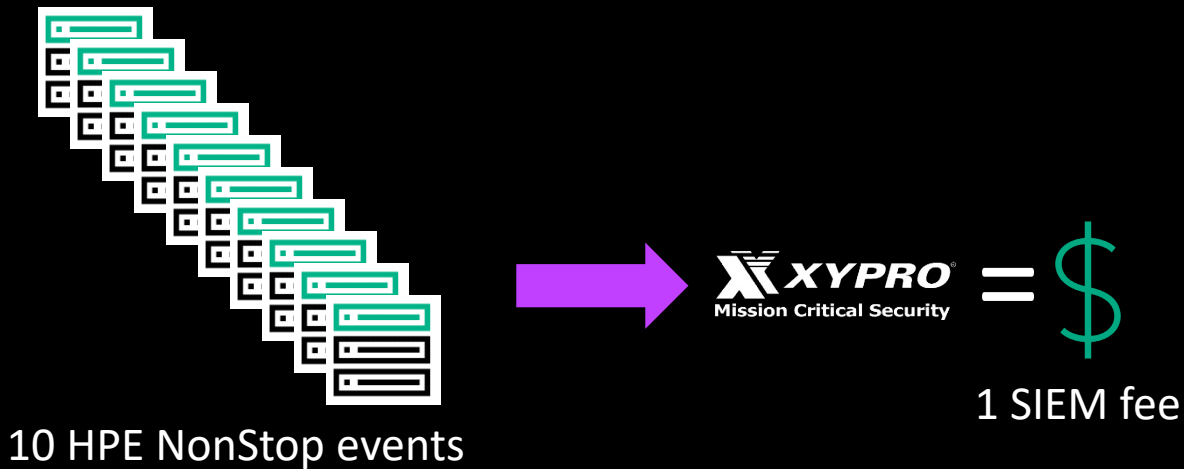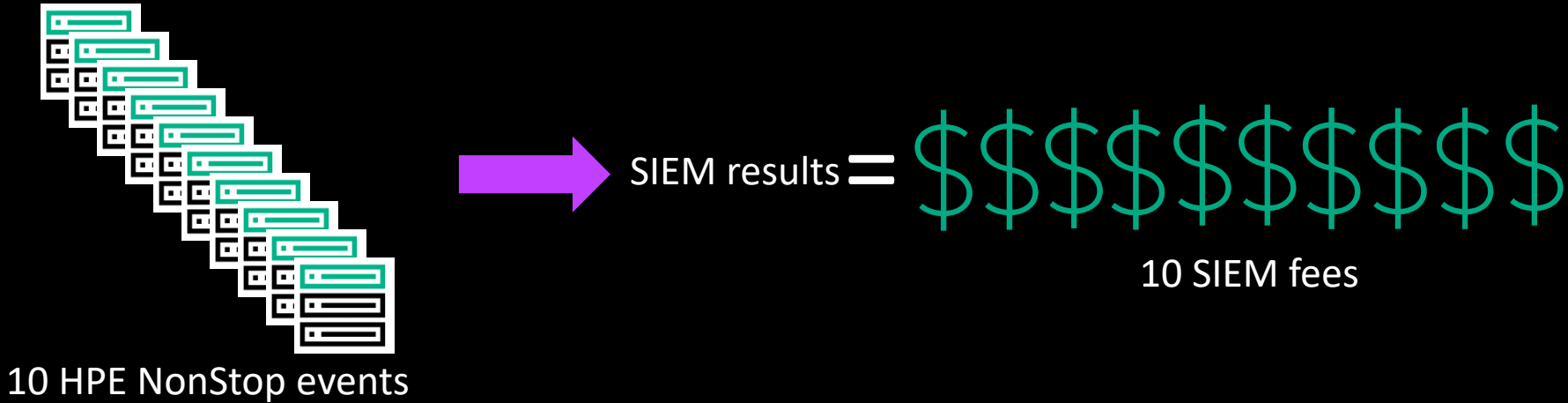
Cost savings
- XYPRO is licensed per connected server rather than on event volume
- XYPRO can reduce SIEM license fees

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

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Q: What % of breaches involve attack surface exposure?

CUSTOMER CASE STUDY – DISCOVER FINANCIAL SERVICES

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

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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
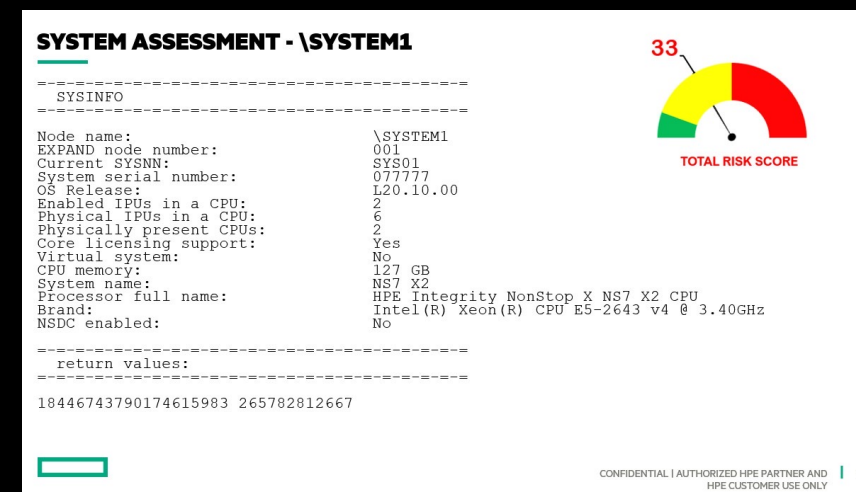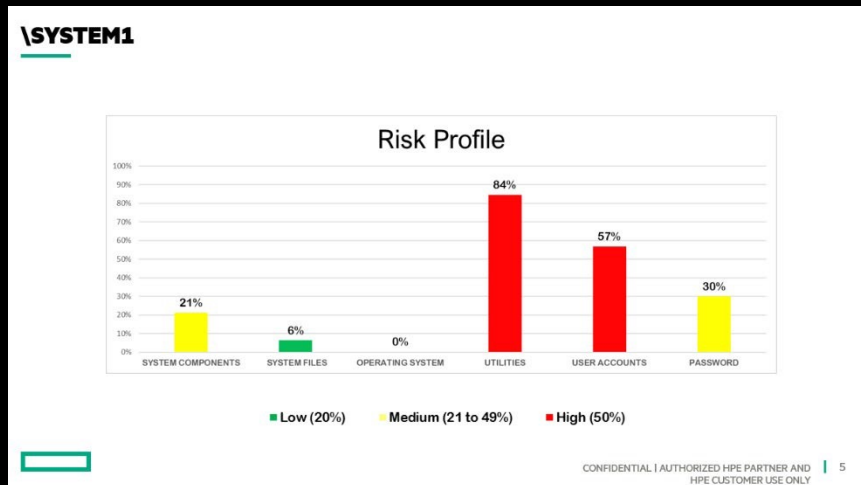 - Reduced time spent on false positive alerts
  - Augmented security staff

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HDFC BANK

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

Risk Profile

	SYSTEM COMPONENTS	SYSTEM FILES	OPERATING SYSTEM	UTILITIES	USER ACCOUNTS	PASSWORD
	21%	6%	0%	84%	57%	30%

■ Low (20%)   ■ Medium (21 to 49%)   ■ High (50%)

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SYSTEM ASSESSMENT - \SYSTEM1

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=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
  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
```

33

TOTAL RISK SCORE

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THANK YOU

TAKE ACTION

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          @SteveTcherchian

- LinkedIn linked.com/xyprotechnology
          linkedin.com/stevetcherchian