XYGATE Data Protection

Optimizing Voltage Security Tokenization and Encryption for HP NonStop Environments

GTUG April 2015

Agenda

- Introduction to XYPRO
- Introduction to HP Voltage Data-centric Security
- Data Protection for the HP NonStop
  - Unique Requirements
  - HP Voltage SecureData Optimization with XYPRO XDP
  - XDP Deployment Options
- Summary

XYPRO

Your Speakers toda

HP Security Voltage

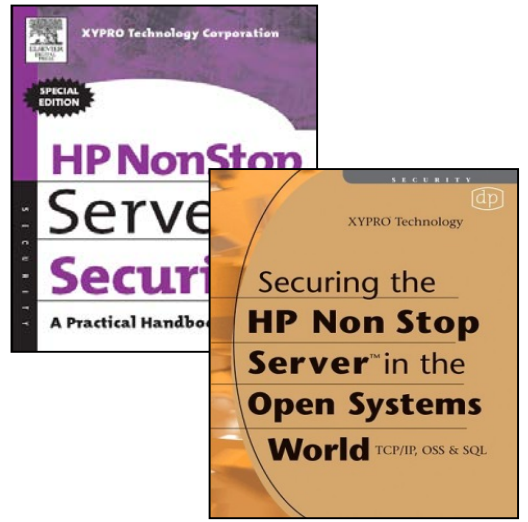
Anna Russell
EMEA Account Director,
HP Security Voltage

XYPRO®

Andrew Price
VP Technology
XYPRO Technology

About XYPRO

- Specialists in mission-critical security and compliance
- Founded in 1983 – over 30 years working with the HP NonStop community
- XYGATE Merged Audit (XMA) and XYGATE User Authentication (XUA) bundled with NonStop OS
- We wrote the books on HP NonStop security
- Partnered with Voltage Security to bring industry-leading tokenization and encryption to HP NonStop community



Enterprise Security Program
Platinum Partner

PCI Security Standards Council
PARTICIPATING ORGANIZATION

2013 HP AllianceOne Partner of the Year

Security Category

XYPRO Solutions

Partnership with HP Security Voltage

The Effects of Data breaches

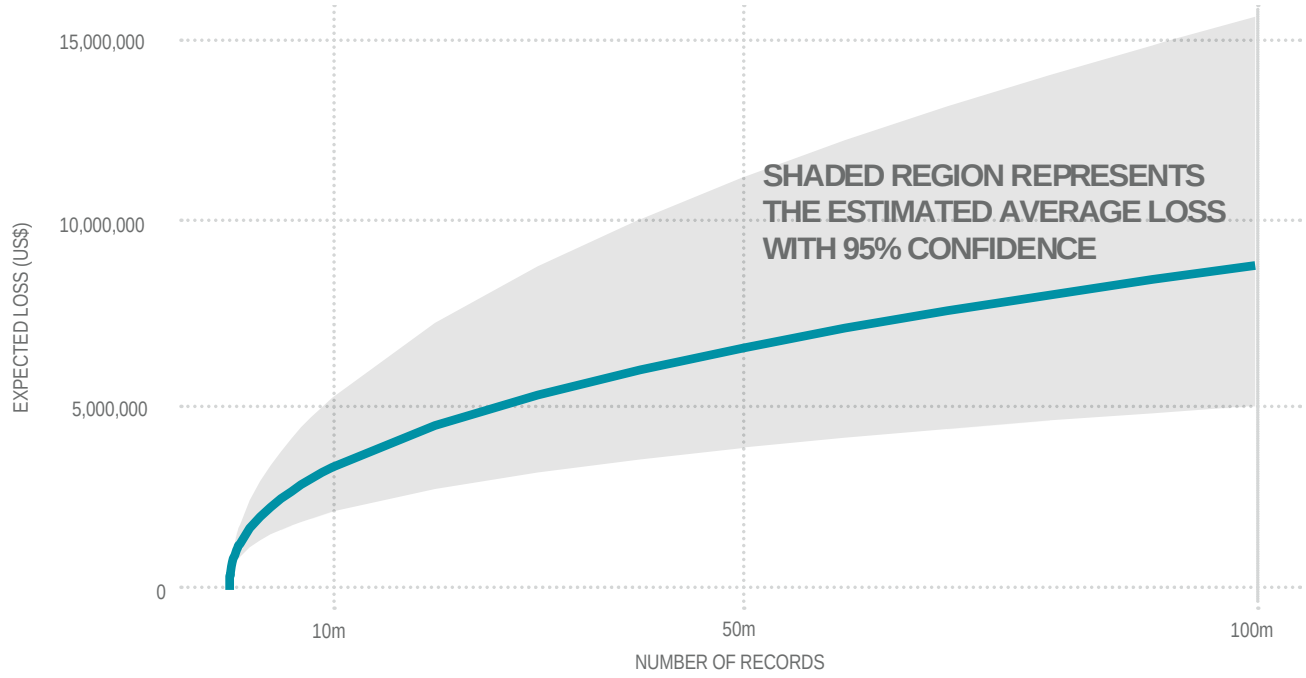
Shocking Numbers

- Estimated losses of $400 Million
- 700 Million compromised records
- 79,790 Security Incidents last year

verizon

The Effects of Data breaches

- 2,122 Confirmed Data Breaches in 2014
- The forecasted average loss for a breach of 1,000 records is between $52,000 and $87,000.



Traditional “Solutions” to Data Breaches

- Protecting data at rest is easy, isn’t it? Why are we still seeing these breaches?
- Two problems
  - Traditional infrastructure solutions do not protect the data consistently throughout the enterprise
  - Implementing traditional encryption solutions is hard!

XYPRO has been partnering with HP Security Voltage for over two years to address these issues

About HP Security Voltage

- HP Security Voltage : Founded in 2002 out of Stanford University, based in Cupertino, California.
- Acquired by HP : February 2015
- Mission: To protect the world's sensitive data
- By: Providing encryption and tokenization so
  that protect data wherever it is used or s
- Market Leadership:
  - PCI solutions are used by six of the top eight U.S. payment processors
  - Provide the world's most pervasive email encryption solutions
  - Contribute technology to multiple standards organizations

Major Security Breaches Continue To Occur...

WHY?

Major Security Breaches Continue To Occur...

Impossible to protect against every vulnerability –
IT infrastructures will continue to be breached

Impossible to keep all data behind a firewall –
there is no longer the concept of a “perimeter”

The data must be pervasively protected

Why has this not happened to date?

Problems with Traditional Data Protection

Need to change data structures and applications

7412 3456 7890 0000

Fully encrypted data is unusable until decrypted

8juYE%Uks&dDFa2345^WFLERG

Key management can be a nightmare

Requires multiple, piecemeal solutions, which create multiple security gaps

Multiple Solutions with Multiple Security Gaps

Threats to Data	Traditional IT Infrastructure Security	Data Ecosystem	Security Gaps
Credential Compromise	Authentication Management	Data & Applications	
		Security Gap	
Traffic Interceptors	SSL/TLS/Firewalls	Middleware	Data Security Coverage
		Security Gap	
SQL Injection, Malware	Database Encryption	Databases	
		Security Gap	
Malware, Insiders	SSL/TLS/Firewalls	File Systems	
		Security Gap	
Malware, Insiders	Disk Encryption	Storage	





Advantages of HP Security Voltage Data Protection

Minimal change to data structures and applications

Protected data behaves correctly
in applications and analytics

Simplified operations via Stateless Key Management

End-to-end Security within a consistent
Data Protection Framework

HP Security Voltage Provides This Protection

Threats to Data	Traditional IT Infrastructure Security	Data Ecosystem	Security Gaps	HP Security Voltage Data-centric Security
Credential Compromise	Authentication Management	Data & Applications		
		Security Gap		
Traffic Interceptors	SSL/TLS/Firewalls	Middleware	Data Security Coverage	End-to-end Data Protection
		Security Gap		
SQL Injection, Malware	Database Encryption	Databases		
		Security Gap		
Malware, Insiders	SSL/TLS/Firewalls	File Systems		
		Security Gap		
Malware, Insiders	Disk Encryption	Storage		





NonStop Environment:
Unique Data Protection Requirements

- Protect extremely sensitive data and mission-critical applications
- Support older legacy applications and newer (often ported) applications
- Support a wide variety of data types including payments and other PII (e.g., SSN, DoB)
- Support NonStop's OS personalities and executable types
- Conform to NonStop fault tolerance fundamentals
- Be highly performant
- Be secure and integrate with NonStop's unique security framework

XYGATE® Data Protection

Data-Centric Security

XDP

XDP - powered by HP Security Voltage

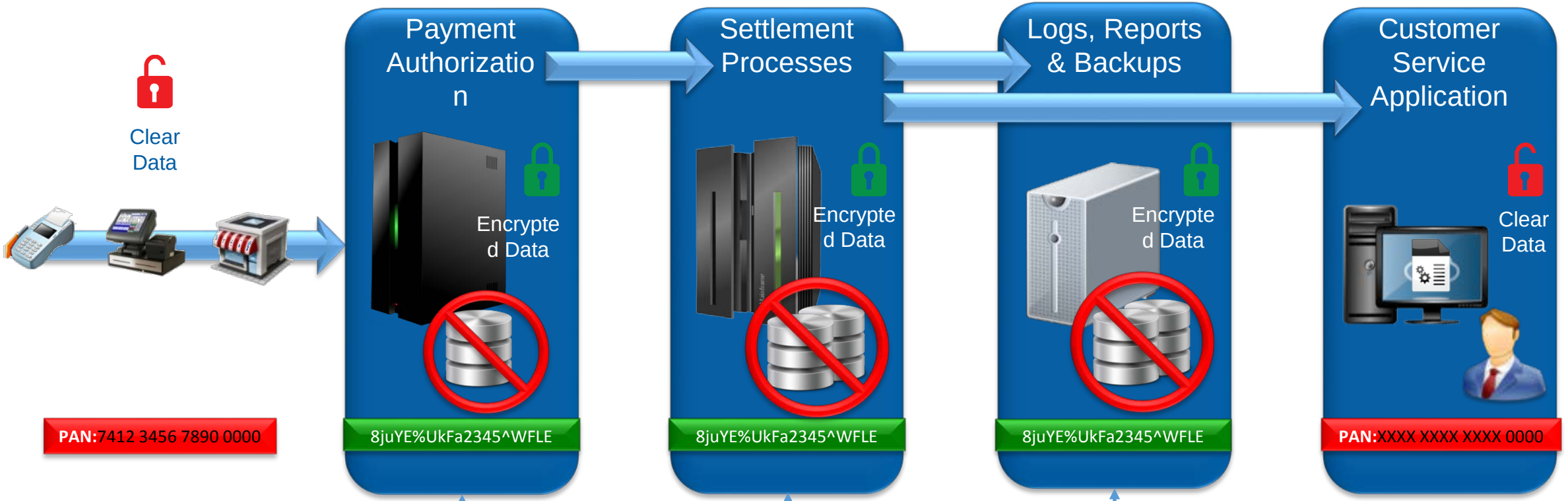
Format Preserving Encryption and Secure Stateless Tokenization, Optimized for Mission Critical NonStop Environments

XYGATE Data Protection (XDP)

- Optimizes Voltage SecureData for NonStop environments
  - Simplifies Voltage implementation
  - Enhances Voltage functionality
  - Integrates Voltage to NonStop security framework
  - Enhances Voltage fault-tolerance, parallelism and scalability
  - Provides NonStop database-specific tools for Voltage

- Can be implemented in two ways
  - As an intercept library, requiring absolutely no changes to the application
  - As an SDK that requires a small amount of programming in the customer's preferred programing language

Traditional Encryption and Payment Processing



Live Data Capture – Credit Card Primary Account Number (PAN)

Traditional Encryption Requires Database Schema and Application Re-engineering

Traditional Key Management adds complexity and cost

Requires Decryption of whole encrypted PAN, even if we only need last 4 digits

Data Protection Technologies

- Format-Preserving Encryption (FPE)
- Secure Stateless Tokenization (SST)
- Page-Integrated Encryption (PIE)

- Protects structured data while maintaining functional and analytic integrity of the data
- High-performance tokenization without database management headaches
- Extends end-to-end protection to browser, through and beyond the SSL tunnel
- Minimizes implementation time while maximizing data value

First Name: Gunther
Last Name: Robertson
PAN: 4564 1234 1234 1234
DOB: 20-07-1966
SSN: 934-72-2356

Live Data

Ija&3k24kQotugDF2390^32
0OWioNu2(*872weWaasIUahjw2%quiFI
ogjsH&a$%2lQpw*#m
WUYBw3
Oiuqwriuweuwr%oIUOw1@

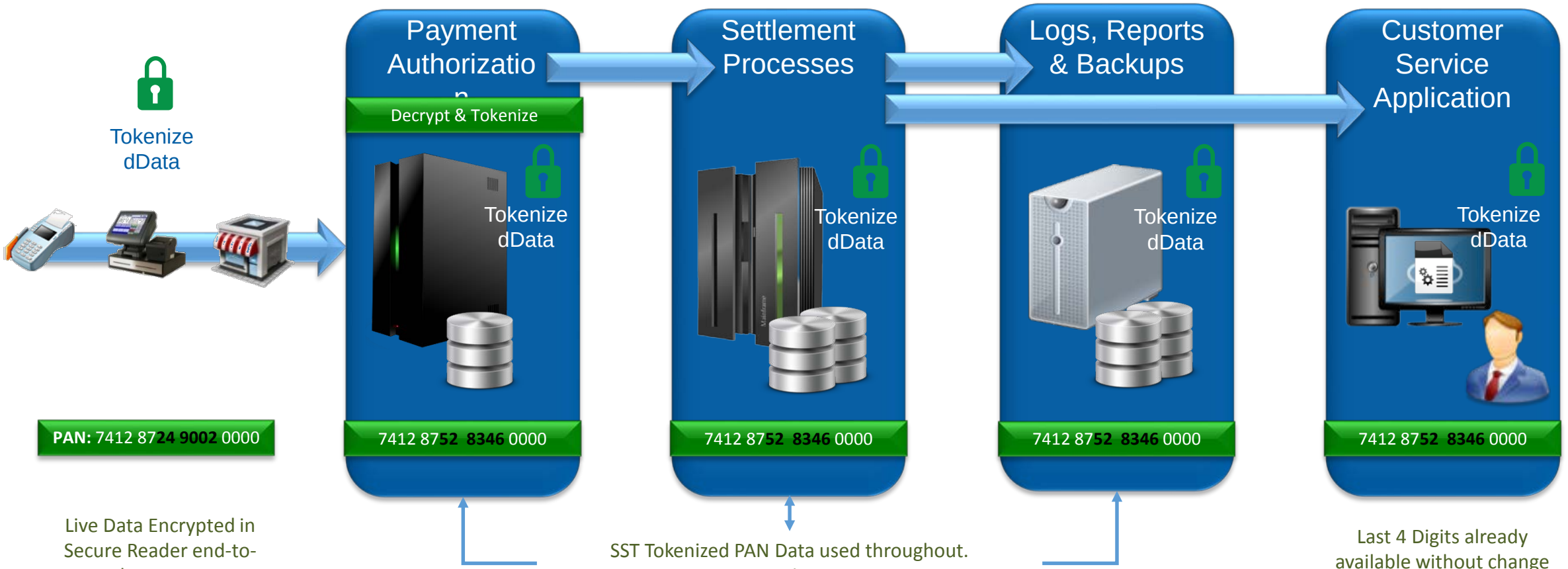
Traditional Encryption

First Name: Uywjlqo
Last Name: Muwruwwbp
PAN: 4564 1279 6945 1234
DOB: 18-06-1972
SSN: 298-24-2356

Voltage FPE/SST

Data-centric Security and Payment Processing

XYGATE® Data Protection
Data-Centric Security
XDP



Live Data Encrypted in Secure Reader end-to-end to Payment Authorization Host

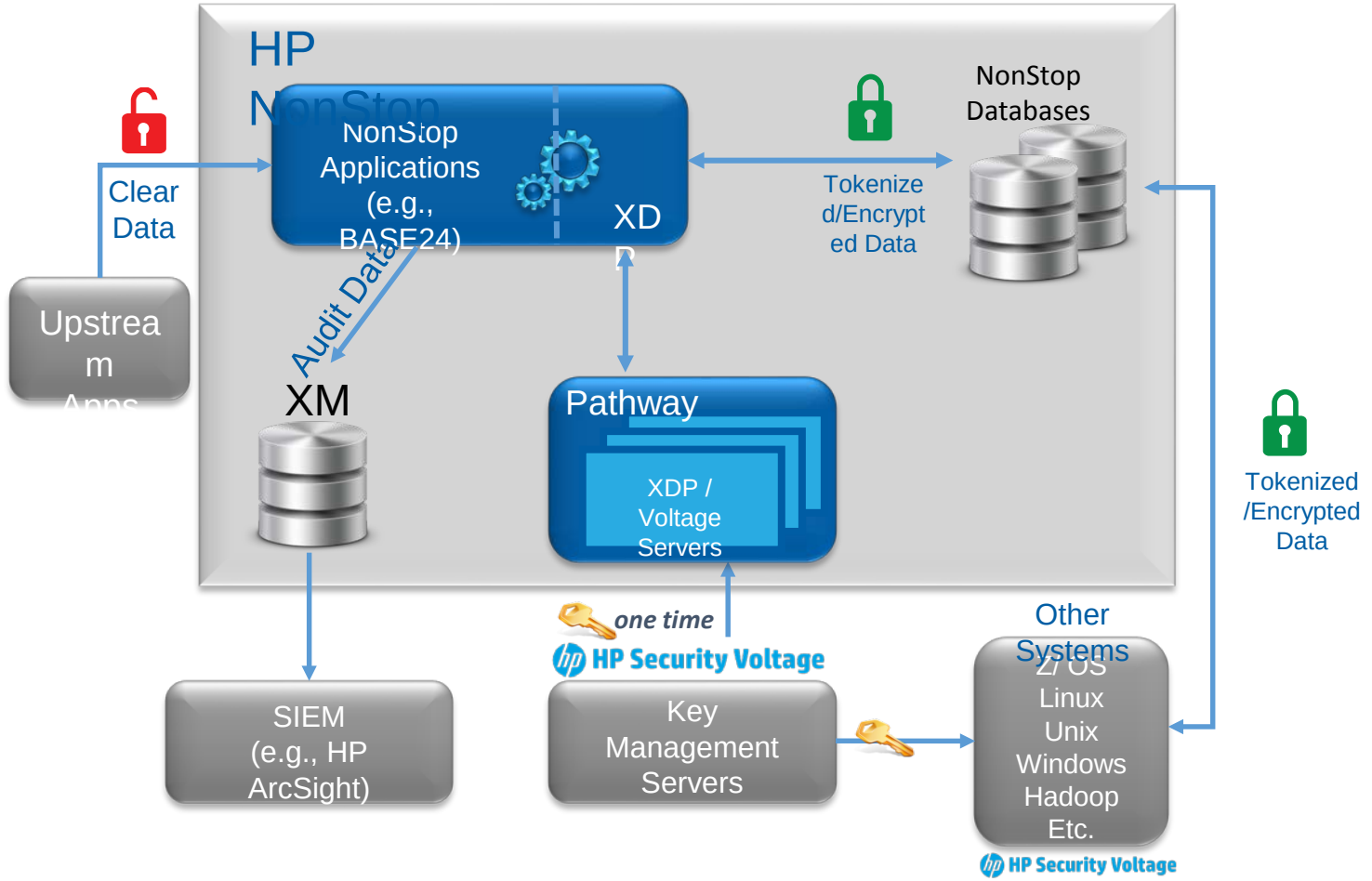
SST Tokenized PAN Data used throughout.
No Live Data in internal processes or systems

Last 4 Digits already available without change

XYPRO

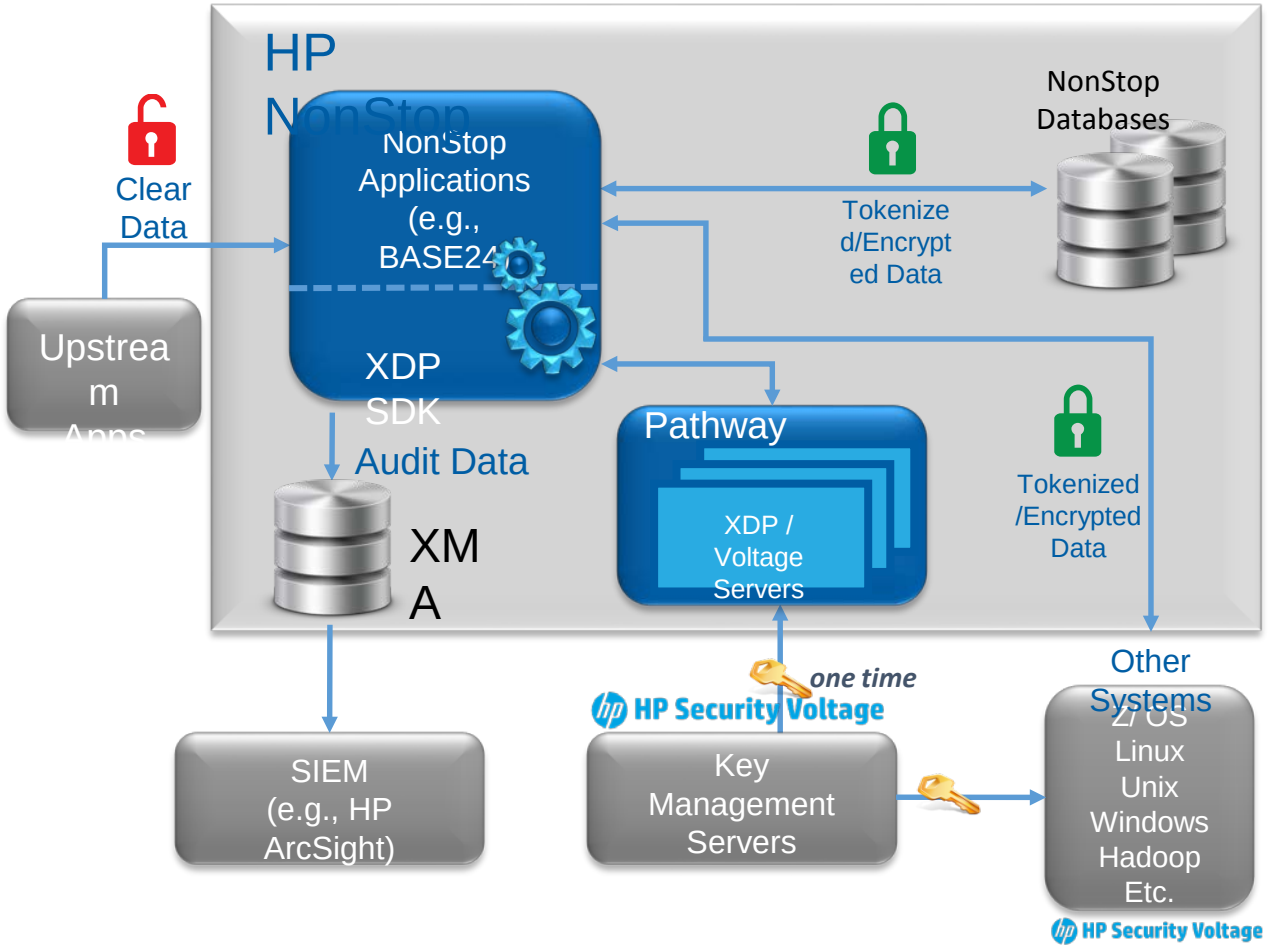
XDP Intercept Library

- No application changes required
- XDP intercept library functions by overlaying the system's I/O procedures with additional functionality to encrypt/tokenize on the fly
- All sensitive data is protected in the database
- Application sees clear data and is unaware that an intercept library is being used
- XDP configuration files control behavior (such as which files or fields to access and protect)



XDP SDK

- Lightweight programmatic interface that can embed directly into NonStop application
- Enables multi-threaded NonStop applications to have non-blocking access to Voltage encryption/tokenization engine
- Supports multiple programming languages
- Minimal code changes



Data-centric Security – Case studies

A Large Latin American Payments Switch

- Tokenize PAN data stored in Sun-Solaris
- No Data-structure Changes
- Quick launch (installing & implementing)
- Next stage tokenize PAN data in BASE24 (Legacy Payments Application)

Data-centric Security – Case studies

A Top 10 Financial Institution

- PCI scope reduction for HP Nonstop and IBM mainframe
- Mission-critical core transaction and card issuer systems
- Voltage tokenization natively on core processing platforms
- Streamlined PCI compliance, reduced risk of internal and external access
- Minimal business impact including to complex z/OS Hogan applications

"Tokenization impact on average auth response time is miniscule", HP NonStop POS Team member

Data-centric Security – Case studies

A Large Health Retailer

- PII scope reduction for HP Nonstop and IBM mainframe
- Mission-critical medical patient and prescription systems
- Voltage tokenization natively on core platforms
- Streamlined PII protection, reduced risk of internal and external access
- Minimal business impact including to complex z/OS applications

XYPRO/Voltage Advantages

- Industry-leading Voltage Security tokenization and encryption
  - Standards-based
  - Industry-proven
  - Multi-platform support
  - Runs natively on NonStop
  - Support for wide variety of data types
  - Stateless key management
  - Flexible

- XDP optimization of Voltage for NonStop environments
  - No application changes required on NonStop
  - Support for nowaited/non-blocking encryption/tokenization
  - Support for NonStop's OS personalities and executable types
  - Multiple language support: C, TAL and COBOL
  - Distributed architecture provides fault-tolerance, parallelism and scalability
  - Built-in access control and auditing, as with all XYGATE products

Thank you!

XYGATE® Data Protection XDP

Data-Centric Security

Format-Preserving Encryption (FPE) & Secure-Stateless-Tokenization (SST

- ✔ No database or application changes
- ✔ Enscribe, SQL/MP and SQL/MX support
- ✔ Multiple data type support

- ✔ Native and Non-Native code support
- ✔ True enterprise scalability
- ✔ Quick Implementation

HP Security Voltage

"Neutralize the Breach"

XYPRO