Mission Critical Security
for your Mission Critical Applications

So you've had a data breach – now what?

Key Facts about Cyber breaches?

Which organisations suffered data breaches in 2013?

- 81% of large organisations
- 61 % of small organisations

What was the median number of breaches per company?

- Large organisations: 16
- Small organisations: 6

What was the average cost of the worst single breach?

- Large organisations: £600k - £1.15m
- Small organisations: £65k - £115k

What will happen next year?

- 59% of respondents expect more breaches this year than last

Source: PwC and BIS: 2014 ISBS Survey

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What kind of breaches are there?

Of Large Organisations:

- External attack – 55%
- Malware or viruses – 73%
- Denial of Service – 38%
- Network penetration (detected) – 24%
  - (if you don't think you've been breached, you're not looking hard enough)
- Know they've suffered IP theft – 16%
- Staff-related security breaches – 58%
- Breaches caused by inadvertent human error – 31%

Source: PwC and BIS: 2014 ISBS Survey

So you've had a breach

- Is the NonStop immune to attack?
- It's likely to happen one day
- You're PCI compliant, but how *secure* are you?
- How would you respond to a breach?
- Certain institutions have shown how not to do it
- Why not neutralize your Crown Jewels?
- How are you handing e-commerce Fraud ?

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How can we improve User Authentication?

- Credentials are subject to brute force attack
- Malware is everywhere
- One-time password (OTP) devices
- SMS messages with OTP can be diverted
- Certificates are 20 years old & spoof-able
- There is an alternative – Device-based Authentication – more later…

Secure the Crown Jewels - Data Centric Security

- Encryption
- Tokenization
- Masking

XYPRO and Voltage

- Enhanced Data Security for HP NonStop
- Encryption and Tokenization Solution
- Two Methods for Application Support
  - Application API
  - XYPRO Intercept Library (XDP)
- Support for Native and Non-Native Applications
- Enterprise Support

XYGATE Data Protection

Enterprise Wide Encryption with No Application Changes

Format-Preserving Encryption (FPE)

	Credit Card	**Tax ID**	**Driver's License**
	7412 3456 7890 0000	934-72-2356	RAMIRJM-302JA
FPE	7412 3423 3526 0000	934-28-7756	BETJJKL-288TU
AES	8juYE%UWjaks&dDFeruga2345^WFLERG	Ija&2924kUEF65%QarotugDF2390^32	ZLllkdiI3&3#a45Ija8v%Jm<1Pa

- Supports data of any format
  - Credit Card, Social Security, Bank Account, Generic Alphanumeric, Dates, etc.
  - Maintain rules such as credit card checksums
- Encrypts all or part of a value – e.g., first 6, last 4 preserved
- Preserves referential integrity
  - Allows encrypted data to be used as database indices & foreign keys
  - Enables searching on encrypted data without performance impact

Tokenisation

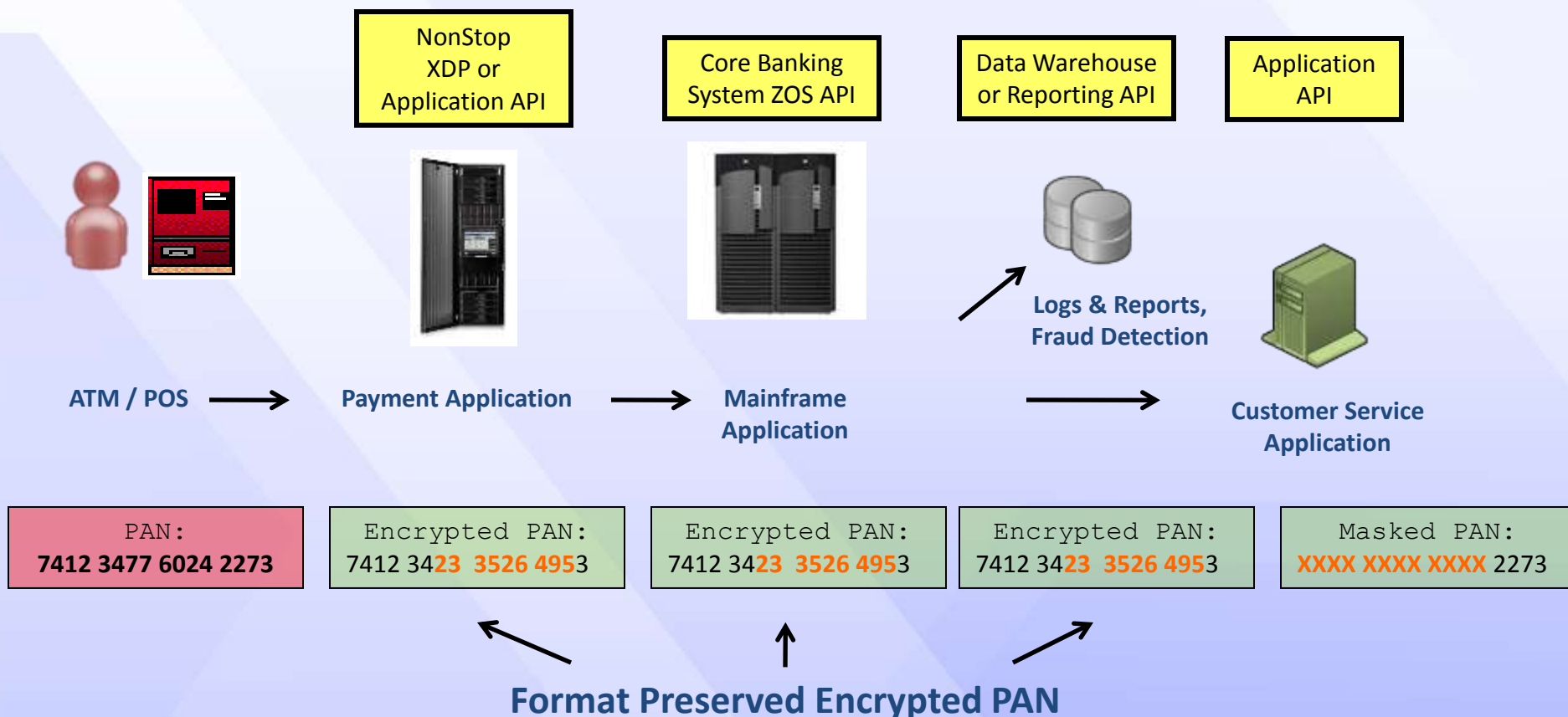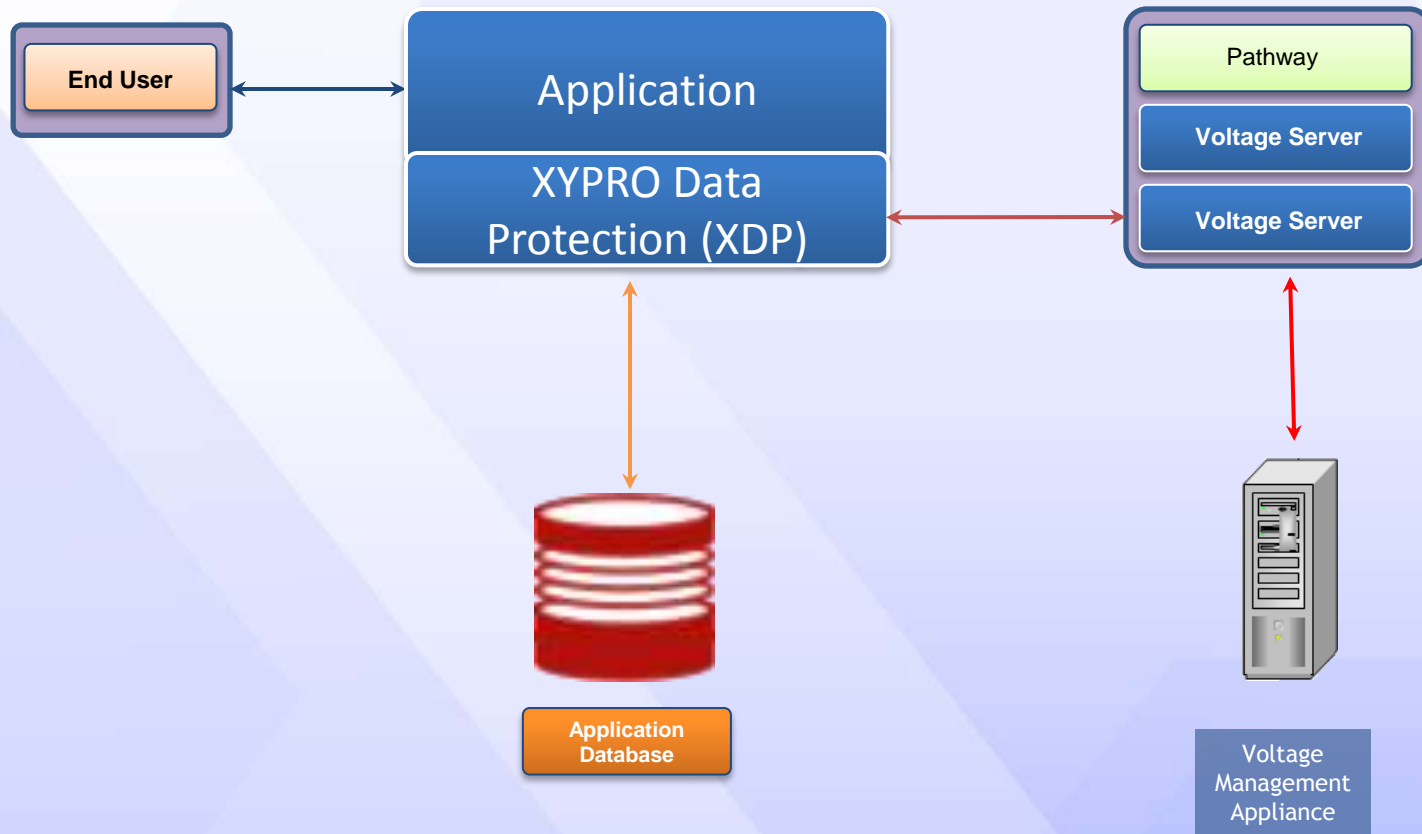|	Credit Card	Tax ID	Driver's License
	7412 3456 7890 0000	934-72-2356	RAMIRJM-302JA
TKN	9564 6942 6945 3546	638-65-9264	BETJJKL-288TU
TKN	A564 6B42 6945 3546		

- Supports data of any format
  - Credit Card, Social Security, Bank Account, Generic Alphanumeric, Dates, etc.
  - Maintain rules such as credit card checksums
- Maintains application compatibility
- Preserves referential integrity
  - Allows encrypted data to be used as database indices & foreign keys
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Example – Reducing Change with FPE

EXAMPLE: Capture and Use of Card Number (PAN) in Electronic Payments
REQUIREMENT: Protect PAN

NonStop XDP or Application API	Core Banking System ZOS API	Data Warehouse or Reporting API	Application API

Logs & Reports, Fraud Detection

ATM / POS → **Payment Application** → **Mainframe Application** → **Customer Service Application**

PAN: **7412 3477 6024 2273**	Encrypted PAN: 7412 34**23 3526 495**3	Encrypted PAN: 7412 34**23 3526 495**3	Encrypted PAN: 7412 34**23 3526 495**3	Masked PAN: **XXXX XXXX XXXX** 2273

Format Preserved Encrypted PAN

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XDP/Voltage High Level Architecture

![DeviceAuthority — The Device is the Key ™]

D-FACTOR™ Device-Centric Security Solution Overview

Please visit www.deviceauthority.com and for free eBook please visit http://www.deviceauthority.com/intro-to-device-centric-security-ebook-download for further information