



# How to Identify Datasets Containing PCI, PII or Other Sensitive Information

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> February 5, 2013 Session 12943



# Primerica: Who We Are



- Life Insurance and Investments
- Middle-income families
- Main Street, not Wall Street
- Entrepreneurial business model
- ➢ 4.3 million lives insured
- 2 million investment clients
- Publicly traded "PRI"



# Infrastructure Architecture



	Field Registration Licensing	&	Field (	Compens	ation	Field Technology			Life Administration						
Applications	Image Technolog	gy	Securities Administration					National Benefit Life							
	PeopleSoft / Cognos TM1		HR A	dministr	ative Sys	ter	ns		Appli	cation	Infrast	tructu	re Suj	oport	
Presentation Layer	MS Internet Explorer, Firefox, Safari, Chrome	Application Server			IBM Transaction Server v4.2 (CICS) Transaction Gateway v7.2				IBM TSO/E v1.12		MS .NET Framework v4.0			Tomcat v6	
Database Management	IBM DB2 v10 for z/OS	Oracle 11g			I DB2 for IW v9.7 IW v9.7		d 3 <sup>r</sup>	I 3 <sup>rd</sup> Party		AM – r SAM		AS	MySQL v5.5		
Information Security	IBM Security Server v1.12 (RACF)	r	Native UNIX & C eTrust v8		CA		Novell v6.5 eDirectory v8.7			MS A	ctive D	irecto	ry 20	03	
Telecom	Diverse, AT&T Multi-lin 155/100 Mbps Interne Access				n Area		Single & Mult & CAT 56							CISCO 65xx & 2xx Equipment	
Operating Systems Platforms	PR/SM IBM Mainframe Z/OS v1.12		Power VIVI M Unix-AIX $\sqrt{5}$ 3/6 1			Μ	Ware Vsphere 4 Microsoft lows 2003/2008		SUSE V10 SF Edirectory v8.8 an v6.5 Edirectory		d Novell			Red Hat v6 Update 2	
Disaster Recovery	Mature Recovery Pla	ns		nd Appli Festing	plication		Network Connectivity		IBM Out of Region Recovery Center		Business Recover Hembre				



# DataSniff



# What's in your mainframe?

# Finding PCI, PII and other sensitive information in your legacy mainframe



# **Mainframe Legacy**



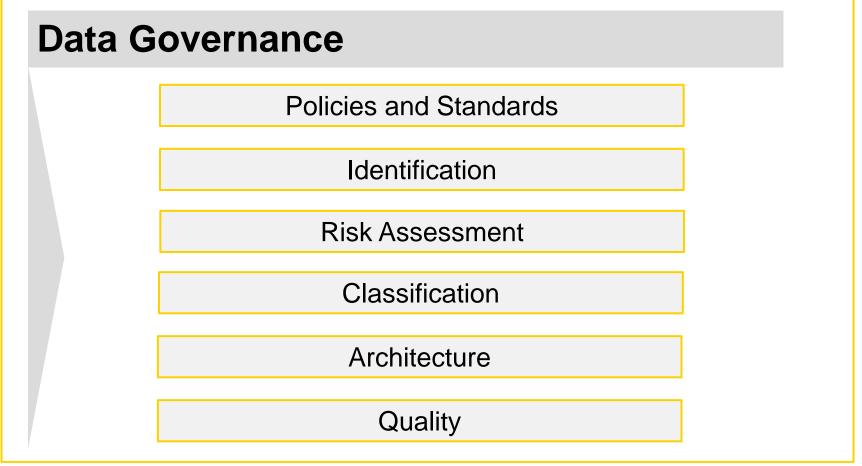
- ➢ 30+ years of legacy data
  - Production data classified manually
  - End user and Test data not classified
- Structured Data
  - VSAM
  - DB2 (includes user-owned tables)
- Unstructured Data (Disk and Tape)
  - QSAM / Sequential, GDG
  - PDS, PDSE
  - Packed Decimal
  - DFHSM ML1 / ML2



# **Data Loss Prevention Initiative**



Effective DLP Programs Utilize a Multitude of People, Process and Technology



Source: Ernst & Young, LLP, "Data Loss Prevention, Keeping your sensitive data out of the public domain"

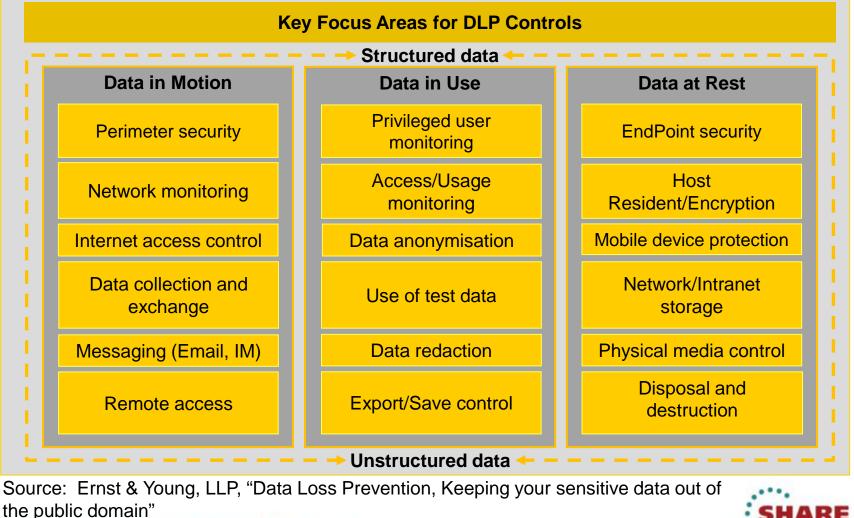


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# **Data Loss Prevention Initiative**



#### **Data Control**





2013

San Francisco

# **Data Loss Prevention Initiative**



#### **Supporting Information Security Processes**

Identity/Access Management	Security information/event management	Configuration management	Vulnerability management
Digital rights management	Incident response	Physical security	Training and awareness
Asset management	Data privacy/document protection	Employee screening and vetting	Third-party management and assurance
Business continuity	Disaster recovery	Regulatory compliance management	Change management/SDLC

Source: Ernst & Young, LLP, "Data Loss Prevention, Keeping your sensitive data out of the public domain"



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# If You Can't Measure It...

# ...You Can't Manage It!



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# The Task at Hand



- Classify all mainframe data files
- > Who owns them?
- > What do they contain?
- Where is the confidential, PII, PCI or other sensitive information?





# DataSniff by XBridge Systems

- Data Discovery Tool
  - Runs on the mainframe
  - Automated, native scanning of mainframe data
  - Schedule by Media Type
- Analytical Engine
  - Appliance or Windows-based
- Browser-based User Interface
  - Schedule scans
  - Manage reporting



# **DataSniff Evaluation**



- Identify and secure
  - Payment Card Numbers (PCN)
  - Personally Identifiable Information (PII) especially Social Security/Tax ID numbers, home address
- Support all Mainframe data structures
  - DB2 databases
  - VSAM KSDS & ESDS
  - QSAM, GDG files on both disk and tape
  - PDS & PDSE
  - DFHSM ML1 & ML2 on tape
  - Packed decimal data



# **Features Evaluated**



- Locate SSN/PCN format data in DB2 tables, QSAM/VSAM, & PDS(E)s
- Selection of data using regular expressions
- User control of mainframe resources
- ➢ HSM re-migration
- User-written regular expressions
- Results reporting
- Impact on mainframe performance



# **Management Console**



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		525	1		Dataset record (pos: 111)	PFS SSN found.:*****4965					<u></u>	
		525	1		Dataset record (pos: 189)	PFS SSN found.:*****4965						
		524	1		Dataset record (pos: 0)	PFS SSN found.:*****9365						
		522	1		Dataset record (pos: 0)	PFS SSN found.:*****2194					<u></u>	
		500	1		Dataset record (pos: 0)	PFS SSN found.:*****8062					<u></u>	
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# Successes



- PCN/SSN data located with minimum of "false positives"
- ✓ User-defined selection filters
- Scanned all required data structures: DB2, VSAM, Sequential / QSAM, PDS/PDSE, HSM migrated data sets
- ✓ Scanned packed decimal structures
- ✓ Controlled use of scarce mainframe resources (tape, disk)
- HSM migrated files automatically recalled and re-migrated to original migration level (ML1, ML2)
- Scanned large numbers of data stores with no performance impact



## Issues



#### **Resolved during evaluation**

- ✓ Dynamic allocation of HSM migration control dataset caused contention with HSM CDS reorgs.
- ✓ Excessive runtimes for PDS/PDSE scans. Fix has been developed.



# Performance



Quick data analysis; select group of datastores

	Test LPAR	Prod LPAR
Total Files Scanned	34,960	225,195
By File Type:		
PDS/E	669	1,804
QSAM	5,049	176,852
VSAM	28,447	37,112
DB2 Tables	795	9,428
By Media Type:		
DASD (non-migrated)	32,169	67,812
Таре	115	41,905
Migrated (ML1/ML2)	2,676	115,478

- Minimal mainframe resource usage
- User-controlled mainframe resources:
  - Tape
  - HSM recalls



# **Custom Regular Expressions**



- Identify SSNs with specific state codes
- Addresses and zip+4's in the form "xxxxx-xxxx".
- Example of SSN regular expression

 $(?:[0-6]\d{2}|7[0-6]\d{77[0-2]})(?: \{0,2\}(?(-)(?:-\{0,2\})))(?:\d{2})(?: \{0,2\}(?(-)(?:-\{0,2\})))(?:\d{4}))$ 

 $((253|263|260)[0-9]\{6\})|((253|260|263)-[0-9]\{2\}-[0-9]\{4\})$ 



# Conclusion



- ✓ Data identification and classification
- ✓ Mainframe data at rest
- ✓ Easy to use
- Quick and efficient
- ✓ Little or no impact to the operational environment

DataSniff is a valuable part of Primerica's comprehensive DLP program.







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Primerica, Inc. Duluth, GA www.primerica.com

