

Data Security - Not Optional Anymore

Data Encryption – The Last Layer of Defense

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Storage Product Manager

Sun Microsystems Italia

Participation = Opportunity and Risk



5 Million More Users / Week



Device Proliferation



Transactions Are Accelerating ...



... Resulting in Huge Amounts of Data

The Security Threat Landscape Shift

Old

- Threats are **noisy and visible** to everyone
- Threats are indiscriminate **hit everyone**
- Threats are **disruptive** → Impact is readily visible
- Remediation action is **technical** (“remove”)
- **Only a few** named threats to focus upon

New

- Threats are **silent and unnoticed**
- Threats are **highly targeted**
- Threats **damage reputation** → Impact is unclear
- Remediation is more **complex**, may need to investigate
- **Overwhelming amounts** of variants, nameless threats

The **total number of records** containing sensitive personal information involved in **security breaches** over the past two years now stands at **93,754,333**, according to the Privacy Rights Clearinghouse.

The updated tally includes **thousands of instances** of data exposure in the **past month** alone.

Keith Regan

www.EcommerceTimes.com 09/25/06

All It Takes is One Missing Tape

THE TIMES



www.timesonline.co.uk



SONDERBEILAGE: Finanzplatz Luxemburg

Börsen-Zeitung

Zeitung für die Finanzmärkte

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Le Monde

12 ANNEES - 100 000 000 - 100% - FRANCE METROPOLITAINE

REDACTEUR: HERBERT RIVIERE MERRY - DIRECTEUR: JEAN MARIE COLOMBANI

ALL THE NEWS WITHOUT FEAR OR FAVOR

The Japan Times

Corporate Requirement

The Ability to Manage Identity, Access, Control & Accountability



Reduce Business Risk



The Ability to Recover From Business Interruptions

Understanding Business Risks

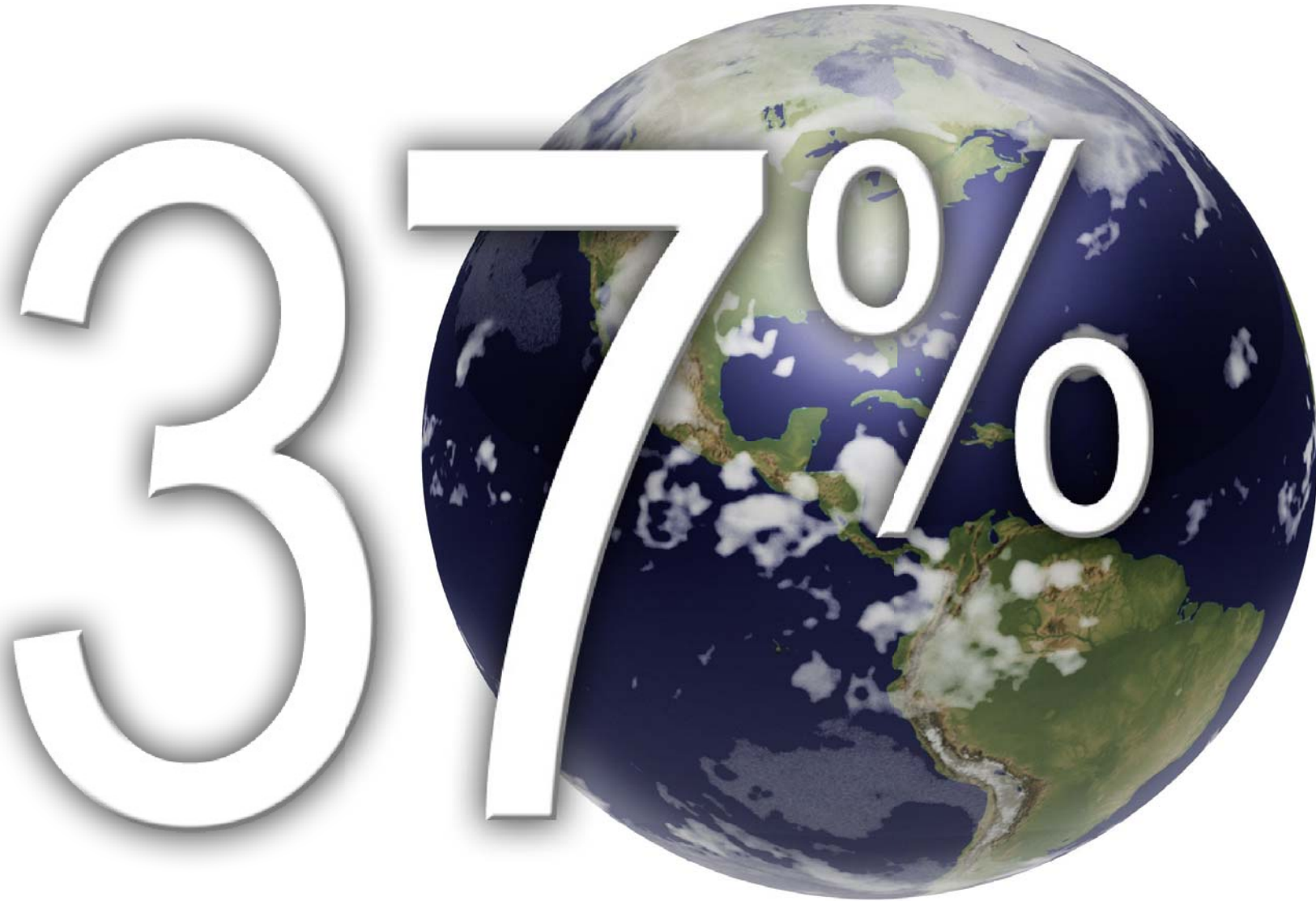
Four Dimensions



Our Vision for Data:

Data stored **securely**,
managed **intelligently**
and shared **by**
everyone and everything
participating on the network.

Sun: Trusted With the World's Data



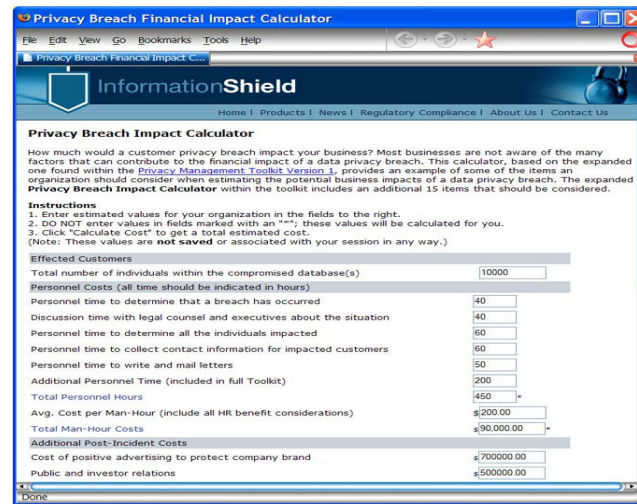
Security is in Sun's DNA

- **Radia Perlman**: Leading expert on network security
- **Whit Diffie**: Co-inventor of public key encryption
- **Jim Hughes**: Chairs IEEE 1619 committee on Storage Encryption
- Solaris 10 leadership in O/S security
- Sun industry leadership (per **Gartner**) for Identity Management
- **And now, defining the new class of storage-based encryption**



What Is the Risk of Doing Nothing?

What “Taking a Chance” Could Cost Your Business



Privacy Breach Financial Impact Calculator

Information Shield

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Privacy Breach Impact Calculator

How much would a customer privacy breach impact your business? Most businesses are not aware of the many factors that can contribute to the financial impact of a data privacy breach. This calculator, based on the expanded one found within the *Privacy Management Toolkit, Version 3*, provides an example of some of the items an organization should consider when estimating the potential business impacts of a data privacy breach. The expanded **Privacy Breach Impact Calculator** within the toolkit includes an additional 15 items that should be considered.

Instructions

1. Enter estimated values for your organization in the fields to the right.
2. DO NOT enter values in fields marked with an “*”; these values will be calculated for you.
3. Click “Calculate Cost” to get a total estimated cost.

(Note: These values are **not saved** or associated with your session in any way.)

Effected Customers

Total number of individuals within the compromised database(s)

Personnel Costs (all time should be indicated in hours)

Personnel time to determine that a breach has occurred

Discussion time with legal counsel and executives about the situation

Personnel time to determine all the individuals impacted

Personnel time to collect contact information for impacted customers

Personnel time to write and mail letters

Additional Personnel Time (included in full Toolkit)

Total Personnel Hours

Avg. Cost per Man-Hour (include all HR benefit considerations)

Total Man-Hour Costs

Additional Post-Incident Costs

Cost of positive advertising to protect company brand

Public and investor relations

- Most businesses are not aware of the many factors that can contribute to the financial impact of a data privacy breach
- Together, with Information Shield Corporation, we have developed a **ROI calculator** that provides an example

Security Requires a Delicate Balance



How High the Fences?



Ease of Access?

A Balancing Act: Cost vs. Risk

Data Security Landscape

- Data security can be implemented in a **series of protective layers**
 - > **Physical access control**
 - > **Logical access control**
 - > **Data encryption**



- The **last layer of defense**, is to alter the data, in such a way that the intruder will not find it useful, without increasing complexity risk and cost
- **Encryption** insures **data integrity** as it cannot be altered once encrypted without the key

Payment Card Industry (PCI) Data Security Standard and Encryption

Requirement 3: Protect Stored Data

- *Encryption is the ultimate protection mechanism because **even if someone breaks through all other protection mechanisms** and gains access to encrypted data, they will not be able to read the data without further breaking the encryption.*
- **3.4:** *Render sensitive cardholder data unreadable anywhere it is stored (including data on portable media, backup media, in logs, and data received from or stored by wireless networks) by using any of the following approaches:*
 - One-way hashes (hashed indexes), such as SHA-1
 - Truncation
 - Index tokens and PADs, with the PADs being securely stored
 - Strong cryptography, such as Triple-DES 128-bit or **AES 256-bit** with associated key management processes and procedures

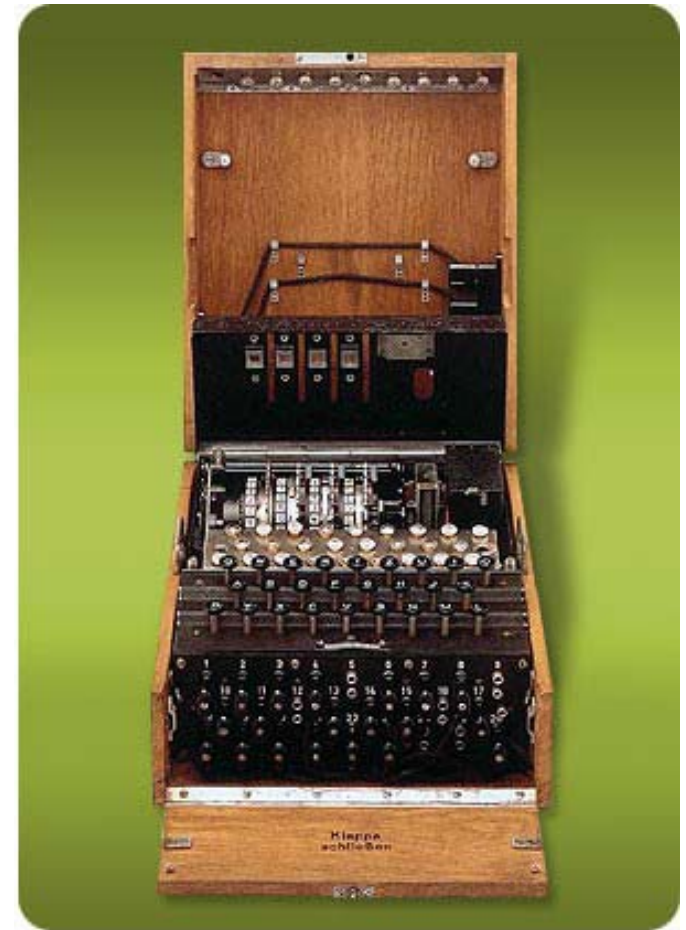
Last layer of defense



Implementing an Encryption Strategy

Data Encryption is “Old News”

- Why is data encryption not being used?

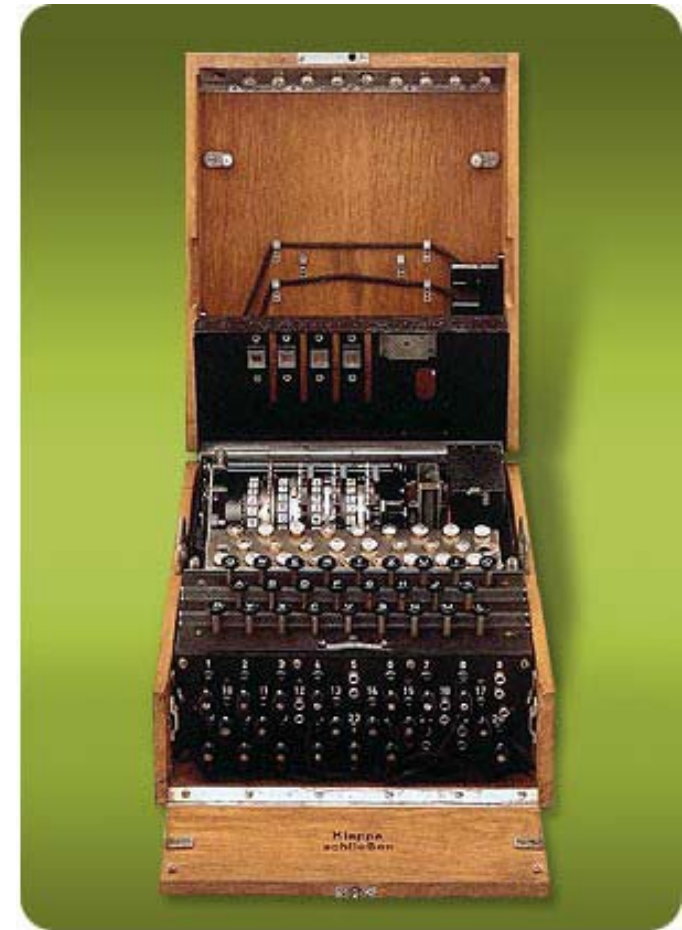


World War II
“Enigma” Encryption
Device

Implementing an Encryption Strategy

Data Encryption is “Old News”

- Why is data encryption not being used?
- The answer is **cost, complexity and risk**



World War II
“Enigma” Encryption
Device

Sun's Approach to Encryption

- Offer **choice** where to encrypt
- Reduce the **risk** factors that lead to business losses
- **Integrate** encryption into current workflows
- Make **it less complex** to encrypt data and manage the “keys”



Data Encryption Implementation

Choosing the Right Solution to Meet Your Unique Needs



At Creation



In Band Appliances



In the Storage Device

Encrypting at Data Creation

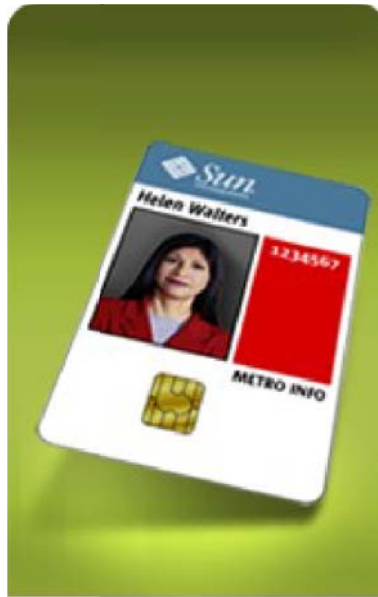
Server-Based Encryption Solutions

- Data encrypted the moment it's created, providing the first possible level of data security
- There is little chance of encrypted data being intercepted, either accidentally or maliciously
- **Bottom line:** Host-based encryption is a good fit for sensitive data as it travels through the network and when TCO is less important

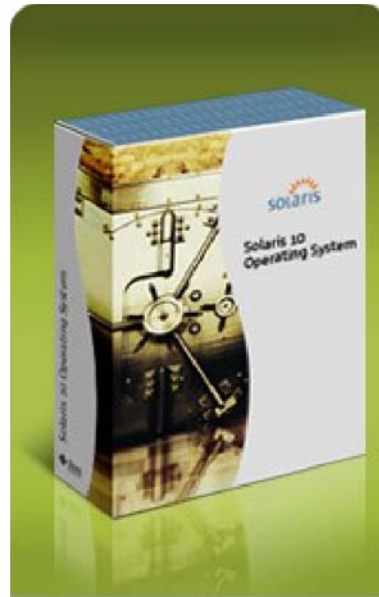


Sun Security Advantage

Security Built-in Everywhere



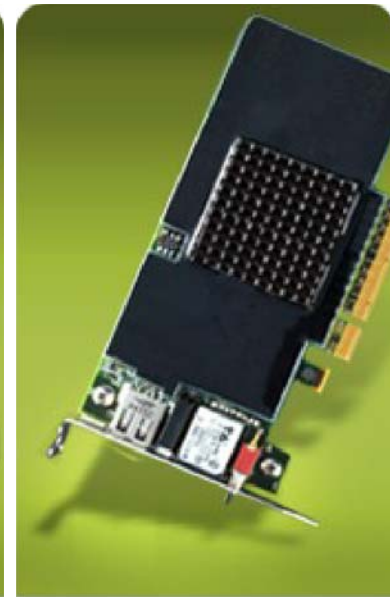
Java Card
Authentication



Solaris 10
Trusted Solaris



UltraSPARC
T1



Sun
Cryptographic
Accelerator
6000

Identity Enabled

In-Band Data Encryption

In-band Appliance-based Solutions

- Encrypts data as it flows across the network
- Appliance-based encryption and key management
- Poor scalability, cost and security issues

Bottom Line: Easy to implement, and good as a “stop gap” for smaller, localized encryption solutions, good fit for legacy media formats



Encryption In Device

Tape Based Encryption Solutions

- Data can be **encrypted on a tape drive** device, making it easy to validate and eliminating the performance penalty on the server and tape drive
- **Most secure** solution, AES-256, **device independent** key management
- **Easiest** to implement

Bottom line: This is a good fit for heterogeneous environments; inherently secure, reduces complexity, risk, and total cost of ownership



Why Sun Approach?

Reason for encryption



To meet **PCI requirement**, customer had to encrypt legacy data by the end of December 2006. Sun guaranteed that we could encrypt their floor tapes within the time required, and that our solution would work within their environment.

Large Office Supply Retailer

Need to protect the data on backup tapes shipped **offsite**; an added bonus with the T10000 - they reduced the number of tapes they use by a factor of six.

Large Grocery Chain

They wanted **to secure** and separate regulated data from unregulated data both on-site and going off-site

Large Power Company 24

Business Value of Tape Encryption


Reduces Immediate Risks and Lowers Costs

- Customer or regulatory body **notification is not required** as information is not accessible to unauthorized parties
- Provides **protection** from both off-site and on-premise information loss
- Enables **secure shipment** of data
- Allows **secure reuse** of tapes



Managing Encryption

Customer Questions



- Who will create and manage keys?
- How many keys do we need?
- How often should we change keys?
- How will we share keys with entities that need to read the data?
- How will disaster recovery work?
- How will I integrate this into my workflow?
- And more...

Managing Encryption

Being “Ready” to Implement and Manage Encryption

- Understanding key management and having a **well-defined** key management **strategy is crucial**
- A select group of people manage a select group of keys – so if a key is lost, it can be replaced **without** jeopardizing data
- Sun offers an **Encryption Readiness Assessment** in order to be **ready to encrypt**



Gartner

“The **value** provided by securing sensitive data with encryption, access controls, and audit functionality **outweighs the cost** of implementation. With regulations requiring security at varying levels, and non-compliance costs adding up quickly, **can you afford not to secure your data?**”

Source: Avivah Litan

Gartner Security Analyst

IT Security Summit May 2006



Take Action Today

- > Get a better understanding of the options and trade-offs before you decide on a data encryption method
- > Engage Sun to do a Data Security Assessment or Encryption Readiness Analysis to find out where you are at risk and how Sun can help reduce that risk

Veniteci a trovare allo stand



Thank you!