Are you Ready for SIM?

Agenda

- SIM Introduction
- Define Requirements
- Vendor Selection
- Deployment Preparations
- Ongoing Administration
- Understanding SIM ROI
- FOSS Approach
- Case Studies

Value of Central Information

- “Net Video Tape” - What happened and When
- Regulatory Compliance
- IG (Auditor) Requirement
- Support Your SOC or Daily Security Analysis
- Facilitates Incident Response
- Builds Inter-Group Relationships
- Improve Security Posture

Product Space

- Log Management vs. SIM
- SIM, SEM, SIEM, oh my
- SIM Mindset
- SIM Space Is Still Evolving

3 Types

i. Log Management with some reporting
   - Splunk, Network Intelligence (Now RSA)

ii. Type 1 + Correlation and Better Reporting
   - Tenable, Q-Labs, LogLogic

iii. Type 2 + Advanced Correlation – Full Blown SIM (aka Traditional SIM, aka PITA)
   - ArcSight, NetForensics, Intellitactcs

Key Terms

- Many SIM-Specific Terms
- Product Pricing is Term-Critical
- Examples:
  - EPS – Events Per Second
  - Distinct Device Types
  - Event Generators
  - Event (Collection|Normalization|Classification |Aggregation|Correlation)

Define Requirements

- SIM Type
- Reporting Devices
- User Planning/Access
- Hardware Considerations
- Administration Overhead
- Trending
- Disaster Recovery

SIM Type

- Which of the 3 Types?
- Consider Users, Load, and Event Generators

Reporting Devices

- Which Devices
  - All Security-Related Devices
  - All Business-Critical Devices
  - Consider All Publicly-Available Systems
  - Whatever You Can Afford
  - Physical/Logical Separation of Networks
  - Regional or Device-Type Collector
- Will Agents Be Required

Network Map

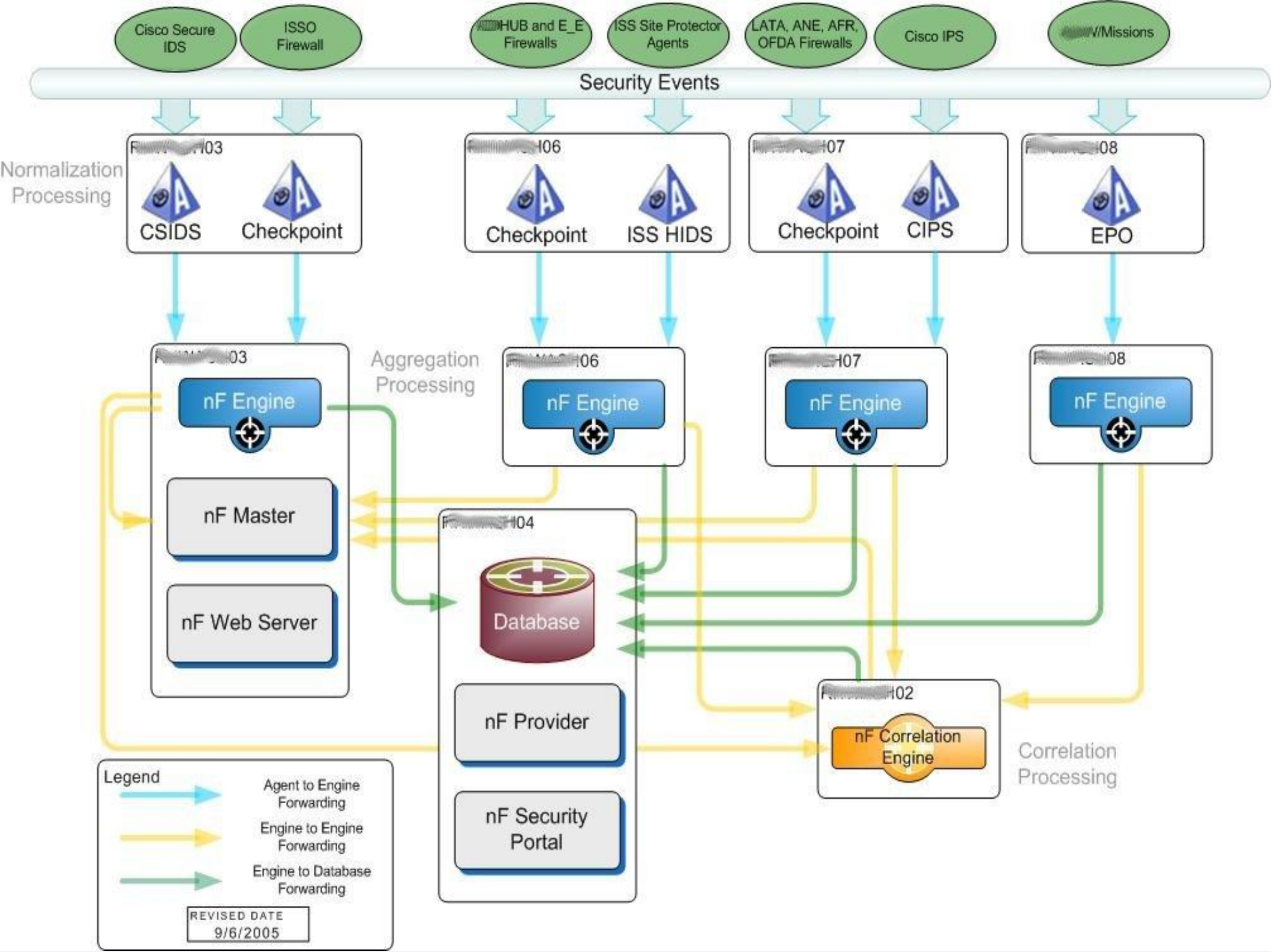
- Physical/Logical Separation of Networks
- Some SIMs Accommodate Regional Collectors
- Group Systems By Type or Region

Users

- User Planning
  - User/Role Permissions
  - Technical Vs Decision Maker
  - Security Implication of Providing Access
- User Access
  - Java and Web Clients Are Big In This Market
  - Will the Client Pass Your Software Requirements?
  - Consider Server Resources (i.e. Proc/Query)
  - Java Java Java Java Java

Hardware

- Prepare for Several/Many Systems
- Most Benefit From High CPU/Memory
- Databases Require High Reliability
- Expect to Deploy a SAN or Storage Array


Cisco Secure IDS
ISSO Firewall
HUB and E_E Firewalls
ISS Site Protector Agents
LATA, ANE, AFR, OFDA Firewalls
Cisco IPS
/Missions
Security Events
Normalization Processing
03
CSIDS
Checkpoint
06
Checkpoint
ISS HIDS
07
Checkpoint
CIPS
08
EPO
Aggregation Processing
nF Engine
nF Master
nF Web Server
04
Database
nF Provider
nF Security Portal
02
nF Correlation Engine
Correlation Processing
Legend
Agent to Engine Forwarding
Engine to Engine Forwarding
Engine to Database Forwarding
REVISED DATE
9/6/2005

Appliance Vs Installable Software

- Appliance is Easier, But at What Cost?
- What is the Analytic Requirement?
- What is the Expected Load/Event Counts?
- Price
- Extensibility

Admin Overhead

- Dedicated Admin is Recommended
- For Type3 - You Might Want to Buy Them a Headset For The Long Support Calls
- Type2/3 - Professional Services are Usually an Unfortunate Necessity
- Custom Solutions (Both Customer and Vendor)
- Most SIMs are Unix/Linux-Based

Trending

- Review Trends From Collected Devices
- Long Term Trends (Years)
- Must Collect Metadata From Stored Logs
  - Almost no SIM Vendor Does This
- Most SIMs Display Trends Only On Currently-Stored Logs

Disaster Recovery

- Defer to Management Direction
  - Full System
  - Configs
  - Data (Raw, Parsed, Summaries, etc.)
- Vendor Will Provide Method to Backup/Restore Their Application

Vendor Selection

- Market Survey
- Reputation (Gartner and Others)
- Not Apples-to-Apples
- Get Vendor-Referrals
- Demo, demo, demo
  - One Product Failed During Demo
  - Another Should Have

Deployment Preparations

- NTP – Network Time Protocol
- Considerable Administrative Overhead
- Vendor's Preparation Guides
- Pre-Configure What You Can
- Things Will Go Wrong, Expect This
- Contract

NTP

- Network Wide NTP (Deploy And Force Usage)
- Without Central Time SIM Provides Little Value

Vendor's Preparation Guides

- Steep Learning Curve for SIM
- Additional Learning Curve for Each Vendor
- This Will Not be a Seamless Implementation
  - Should it Be?

Pre-configure What You Can

- Build Your Systems (Install, Patch, Harden)
- Prep The SAN, HBAs, LUNs
- Get Device Connection Info Ready (e.g. DB Accts, FW Info, etc.)
- Preparation Will Save You Professional Services Dollars

Things will go wrong, expect this

- A Good Vendor Will Overcome the Hurdles
- These Have Happened During Install
  - Reinstall during install
  - Dozens of OOM (Out of Memory) Crashes the First Week
  - Millions of Events Lost in First Few Days

Deployment Preparations - Contract

- What determines a successful install?
- How Is This Measured?
- What Do You Do If There Are Problems?
- Deployment Agreement/Statement of Work
- Ensure the SOW Meets Your Requirements

SIM Administration 101

- Backups
- Monitoring
- Configuration Management
- Device Support
- Maintenance
  - Patching, Signature Updates, Etc.
  - Full-Time Admin In Some Organizations
  - Database Pruning/Purging

Backups

- Implement Backup Plan
- Vendor Will Provide Backup Procedure
- Consider Impact of Backups on SIM DB

Monitoring

- SIM Systems (resources, network, etc.)
- SIM Processes (db, correlation, web, etc.)
- Reporting-devices
  - Which Devices Are Really Reporting In?
- Number of Incoming Events
  - GREAT Trending Data...When It Is There

Configs

- Many initial configurations
- Change Management Policy Model
- SIMS Require a lot of Tweaking

Alternatives To A Commercial SIM

- MSP (Managed Service Provider)
  - Have Experts Do It (Questionable??)
  - Security Concerns
  - IT Staff Can Lose Motivation and Abilities
- Roll Your Own
  - Central Syslog (More on FOSS In a Few Slides)
  - Open Source SIM - http://ossim.org
  - Prelude IDS http://prelude-ids.org

One Possible **Approach**

- Determine Devices
- Build syslog-ng Host
- One (or more) of these Three:
  - Type1 SIM
  - Type2 SIM
  - FOSS Analytic Farm

Determine Devices

- Determine Type and Quantity of Devices
- Many Devices Log as Syslog
- Some Devices Log Special
  - Determine if this is the Case
  - Find a Solution (e.g. Checkpoint's Opsec Lea Encrypted Log Has Several Free Alternatives)
  - Don't forget to Sync Time!!!!

Build Central Log-Host

- Log-Host Will Help: Inventory Devices and Data, Validate Data, Repository of Raw Data
- Install Pre-Fork Syslog-ng on Linux
- Plan For Storage/Space
- Is HA Necessary?
- Sync Logs Or Collect Syslog
- Rsync Log Files From Remote NIX Systems

Deploy Type1 SIM or

- Go Through Steps Outlined In this Presentation
- Market Survey/Demo Candidates
- Retransmit Your Syslog Feed to SIM
  - This Step Typically Shortens Initial Install Time
- Consider Using Splunk (Free/Easy Trial)
- Pros: Easy, Fast, Cheaper Than Type2, Frequently Appliances, Relative-Low Overhead
- Cons: Not Flexible, Little to No Correlation, Few Reports/Graphs/Trends, No Open DB?

Deploy Type2 SIM

- Go Through Steps Outlined In this Presentation
- Market Survey/Demo Candidates
- Retransmit Your Syslog Feed to SIM
  - This Step Typically Shortens Initial Install Time
- SIM Will Also Allow For
  - Anti-Virus Data
  - Vulnerability Assessment Data
- Con'td -->

Deploy Type2 SIM Cont'd or

- Validate SIM By Comparing Syslog Data
- Spend Next Few Months Configuring
- Pros: Vendor Provides Integration, Correlation, Aggregation, Trending, Good Data per Dollar with relative little time investment
- Cons: Little Flexibility, No Open DB?

Deploy Analytic Farm

- Configure One or More Systems Dedicated to Analytics With a Mount Point to Syslog-data
- Install FOSS Utilities Specially Made to Churn Through Collected Data
- Determine Trends and Values To Monitor
- Install FOSS Graphing Utilities
- Pros: Low Cost, Flexible, Raw Data Access
- Cons: All Manual, Self-Service Device Integration, Can Be Very Complicated

What About Windows Logs

- Windows Logs Can Be Very Valuable
- Most Granular Auditing of **Any OS**
- Windows Logs Are Notoriously Hard To Collect
- DAD – Distributed Analyst Database
  - FOSS WAMP Based – Search for “DAD” on SF
  - Agentless by Using RPC DCOM; Collects, Aggregates and Reports on Windows LOGS
  - Can Retransmit as Syslog Feed to SIM
- Many SIMs Will Collect Windows Logs

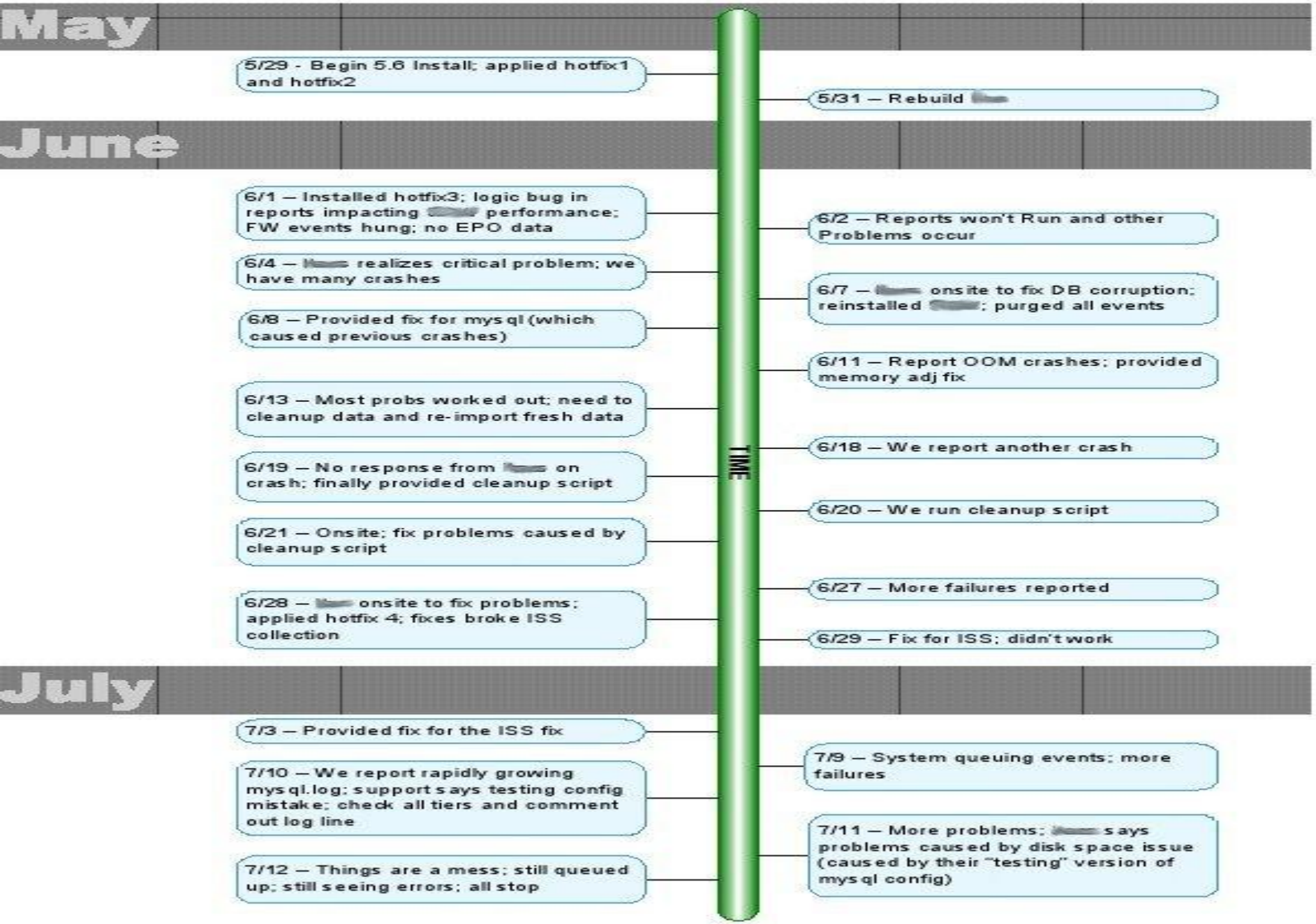
“Where Is My ROI?” OR “Getting The Most Out Of Your SIM”

- Daily Usage Quickly Reveals Problems
- Can Help Determine Network and System Fault
- Track Infection Spread (e.g. Worm Spread)
- Discover Internal attackers
- Trends in Attacks and Service Usage
- Improve Security Posture

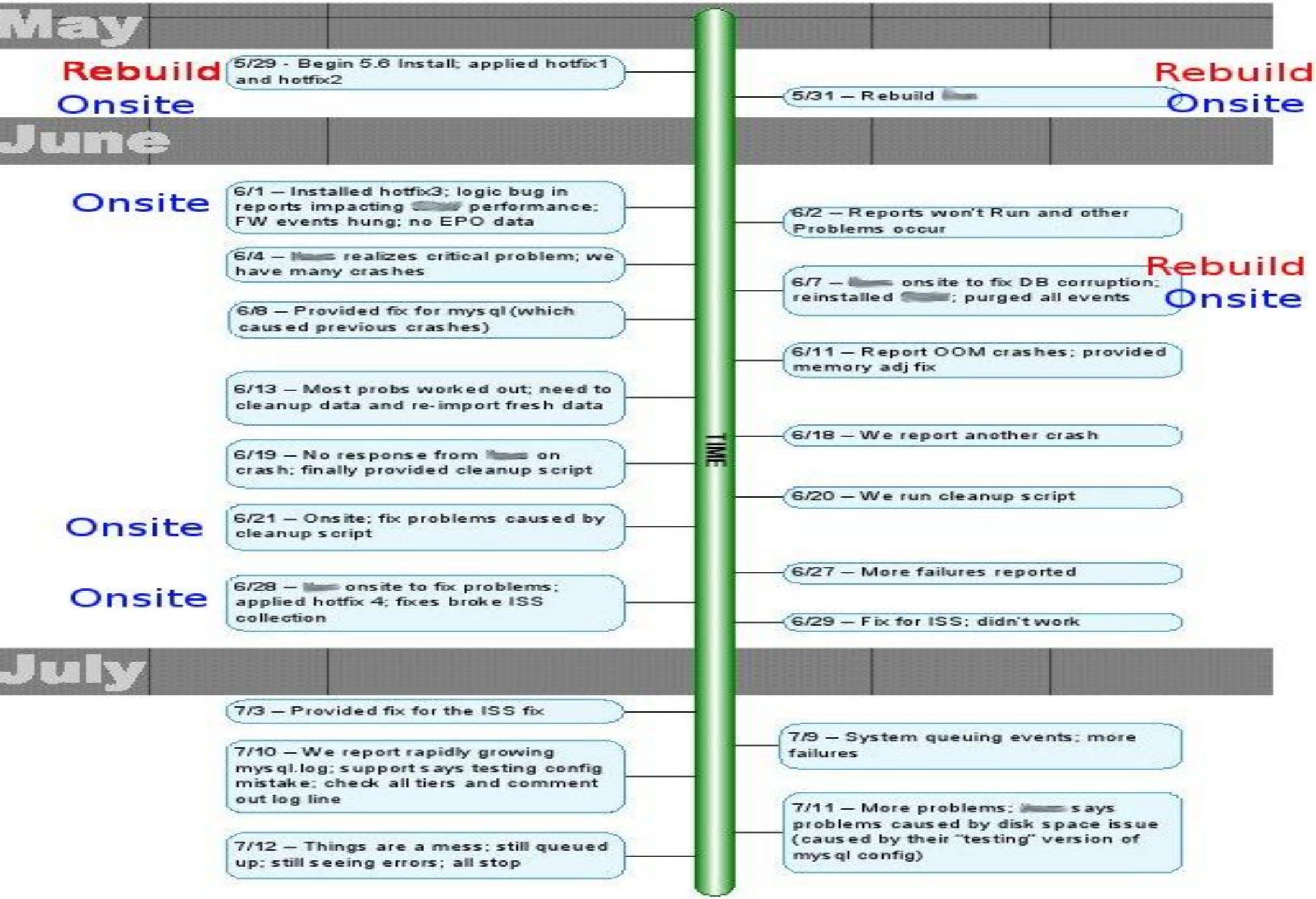
Case Study – 6 Months and No SIM

- Gov't Agency Deployed Type3 SIM in 2003
  - Good at the Time, but Became Outdated
- Nov. 2006 Market Survey For new Type3 SIM
- Considered 6 Products Demoed Several
- Ultimately Chose A Recently-Redesigned SIM
- Merrily Deployed New SIM in Jan 2007
- 5 Months of Chaos and Failure
- May 2007 Gave Ultimatum To Vendor

[redacted] 5.6 Installation Timeline



[redacted] 5.6 Installation Timeline



Trends?

- SIM Type 1 & 2 Space Steadily Growing
- SIM Type 3 Space Shrinking
- Well-developed Security Teams Ditching SIMs
- Analysts Turning Toward Extrusion Detection
- Flow Analysis an Increasing Player
- Regulatory/Auditors Require Central Log Mgmt

Closing

- A SIM Is Not Just Software, But A Change In Your Information Security Strategy
- Great Network, System, and Time Overhead
- Garbage In Is Garbage Out, Not Auto-Secure
- SIM Can Be A Considerable Asset To A Well-Honed Information Security Program
- A SIM, no matter what the cost, DOES NOT replace the Skills of a Good Analyst

Resources

- Gartner Report Security Information and Event Management Solutions June 2006
- Review: Security Information Management Products http://www.networkcomputing.com/article/printFullArticle.jhtml?articleI[
- Market Analysis: Security Information Management http://www.networkcomputing.com/article/printFullArticle.jhtml?articleI[
- Too Much Information http://www.networkcomputing.com/article/printFullArticle.jhtml?articleI[