Security Intelligence in the real world

wotif.com GO DO travel.com.au ONE DESTINATION. ENDLESS POSSIBILITIES. live every lastminute.com.au ASIAWEB DIRECT LateStays.com LAST-MINUTE HOTEL BOOKINGS Arnold

Wotif Group – About Us

- Operates a family of leading global online travel brands
- Accommodation in 69 countries around the world
- 25,500 accommodation properties available for bookings
- One in every ten room nights in Australia was booked through the Wotif Group of brands in the last financial year
- Employs more than 500 people in 19 countries on five continents

- **Leader in online accommodation** in Australia and New Zealand
- Ranked number one visited online travel agency by Hitwise
- Great rates and a broad range of accommodation and flights

- Fast, easy-to-use, **secure** travel website
- 24/7 customer service centre based in Brisbane

- **Trusted** Australian brand
- Receives almost 260,000 bookings per month

What makes us unique?

- Web Shop Front
- Online Partners
- Growth through acquisitions
- Small amount of externally hosted services/cloud based services
- Many "Custom" developed applications

- Evolving security measures
  - AntiVirus;
  - WAFs,
  - IDS/IPS
  - …

Maintain our Trust

- Fast, easy-to-use, **secure** travel website
- **Trusted** Australian brand

So what threats are there?

Threat Landscape is constantly changing

Is this really public enemy #1?

Summary

- External Threats
  - Script kiddies
  - Botnets
  - Price Comparison crawlers

- Internal Threats
  - DOSing ourselves
  - Transient staff and devices
  - Human Error, data breaches
  - Malware
  - Marketing Campaigns – (EDMs; 11minute deals)

Other Challenges

- Growing complexity
  - applications
  - infrastructure

- Compliance requirements

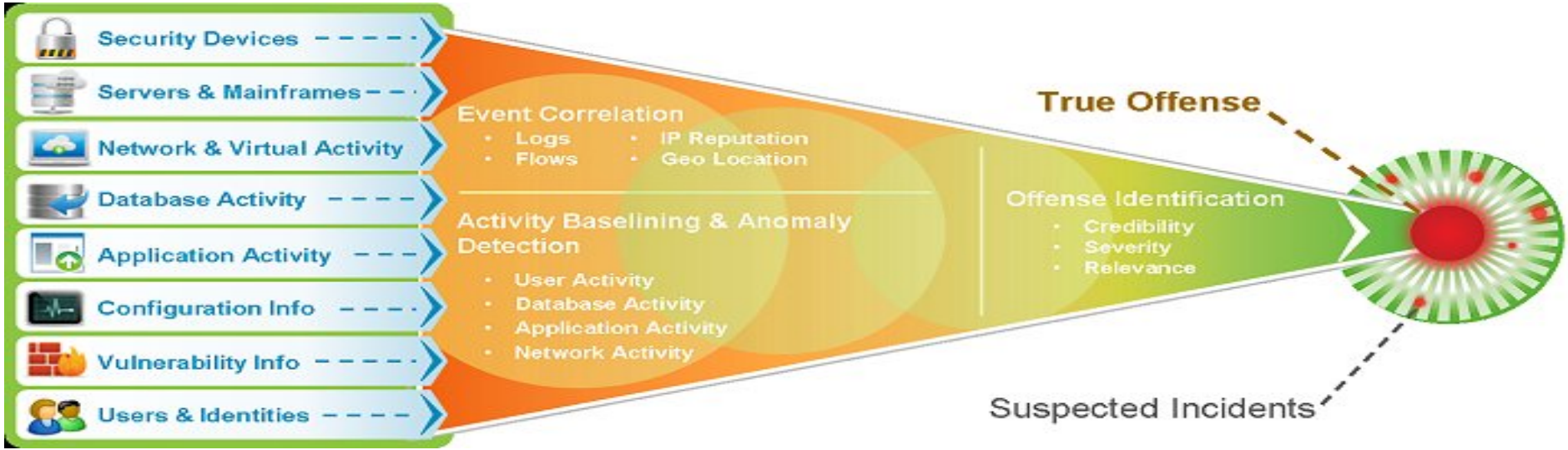
PCI Security Standards Council™
PARTICIPATING ORGANIZATION

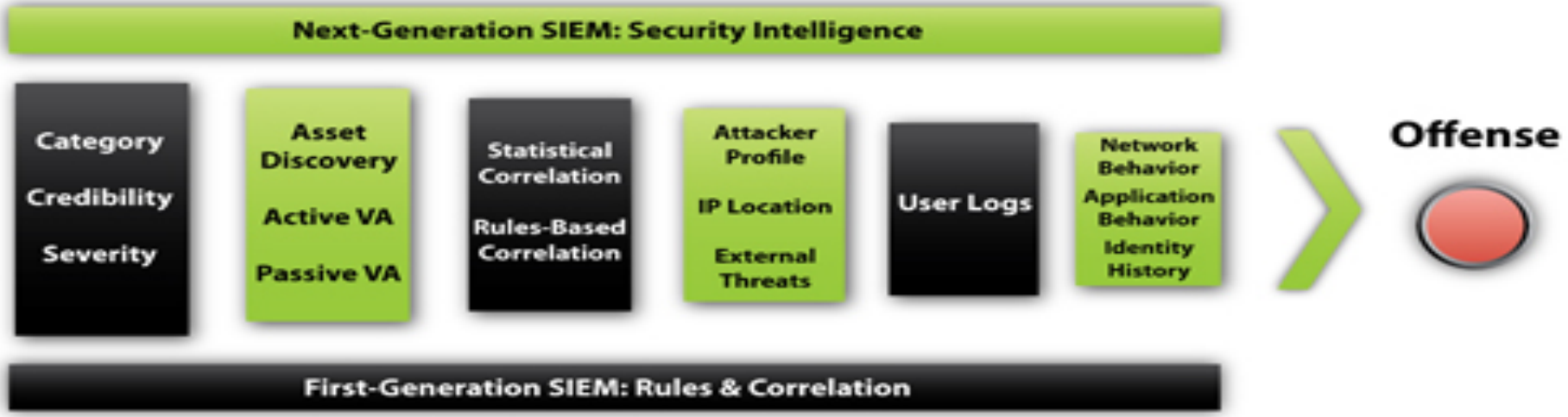
Simplicity

What we wanted

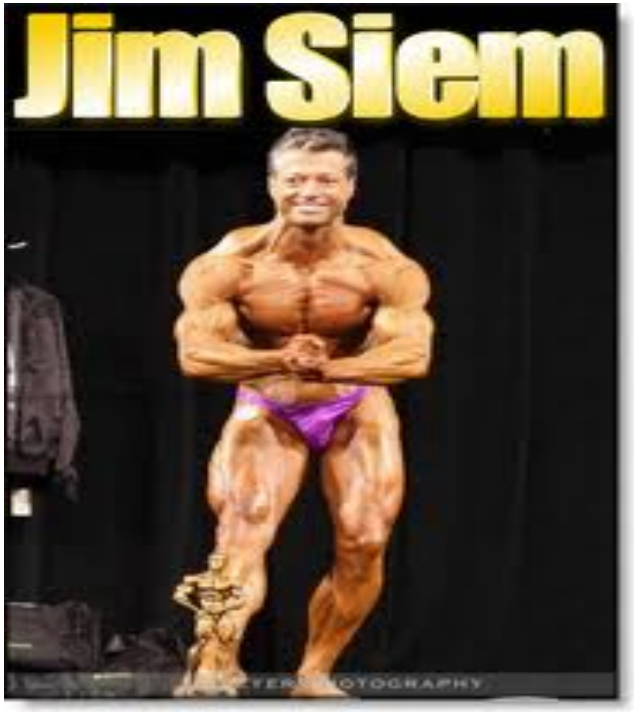
- Proactive on security
- Leverage existing infrastructure
- Noise filter
- Meaningful Data
- Real-time and Historical views
- Scheduled/batch Reporting
- Vulnerability and Risk based prioritisation

We need a SIEM!





Which SIEM is right for us?



Which SIEM is right for us?

Selection Process

- Minimal set selection criteria?
- Short list 3
- Get technical presentations from those 3
- Take 1 for a test drive

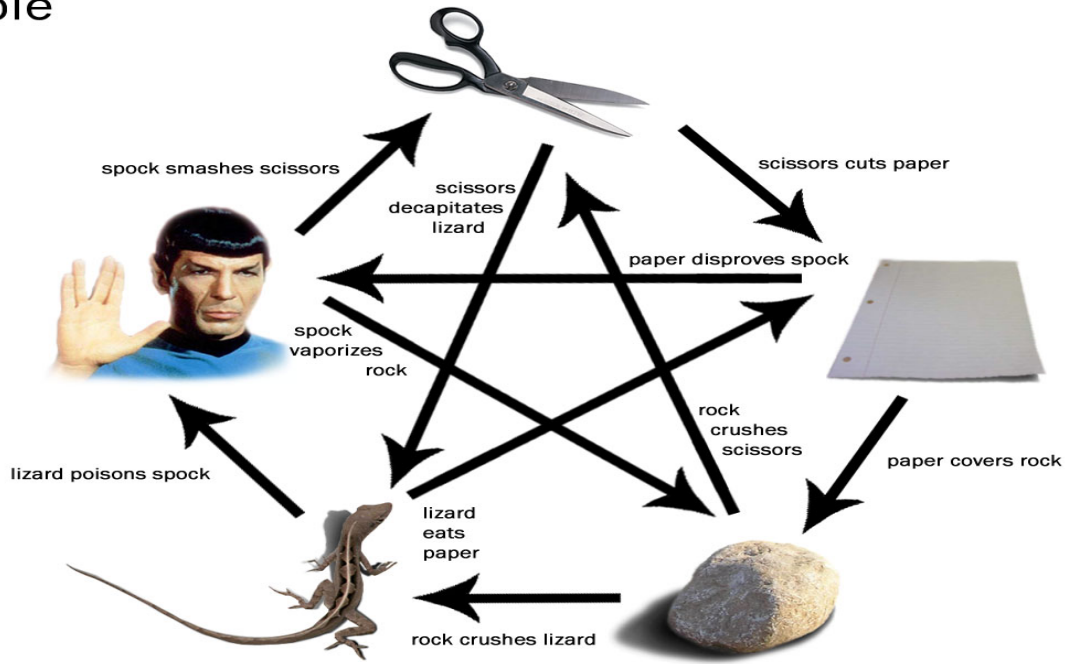
tldr; Criteria

proactive security
Easy to use
Correlated Application Logs
Network flows
packet capture
Anomaly detection
Accessible
compliance reporting
Vulnerability Assessment
Investigation
data retention
scalable architecture
distributed network
monitoring
Flexible Device Support

alerts
Dashboards
Australian based Support
user/role privilege separation
self-service custom log formats
log sources
3rd party feeds
update frequency reports
custom rules and custom data
white list; black lists; grey lists
performant querying
real-time rule evaluation
advanced persistent threat detection
Real-Time analysis

Discussions

Its Simple



The Test Drive

- Pick one

Radar

Sizing and Deployment Options

Input Sources

- Routers
- Firewalls
- Load Balancers
- OS
- Chasis
- Virtualization
- IPS
- Authentication Services
- “Our Custom Log Sources”
  - Critical that we can define and modify these ourselves

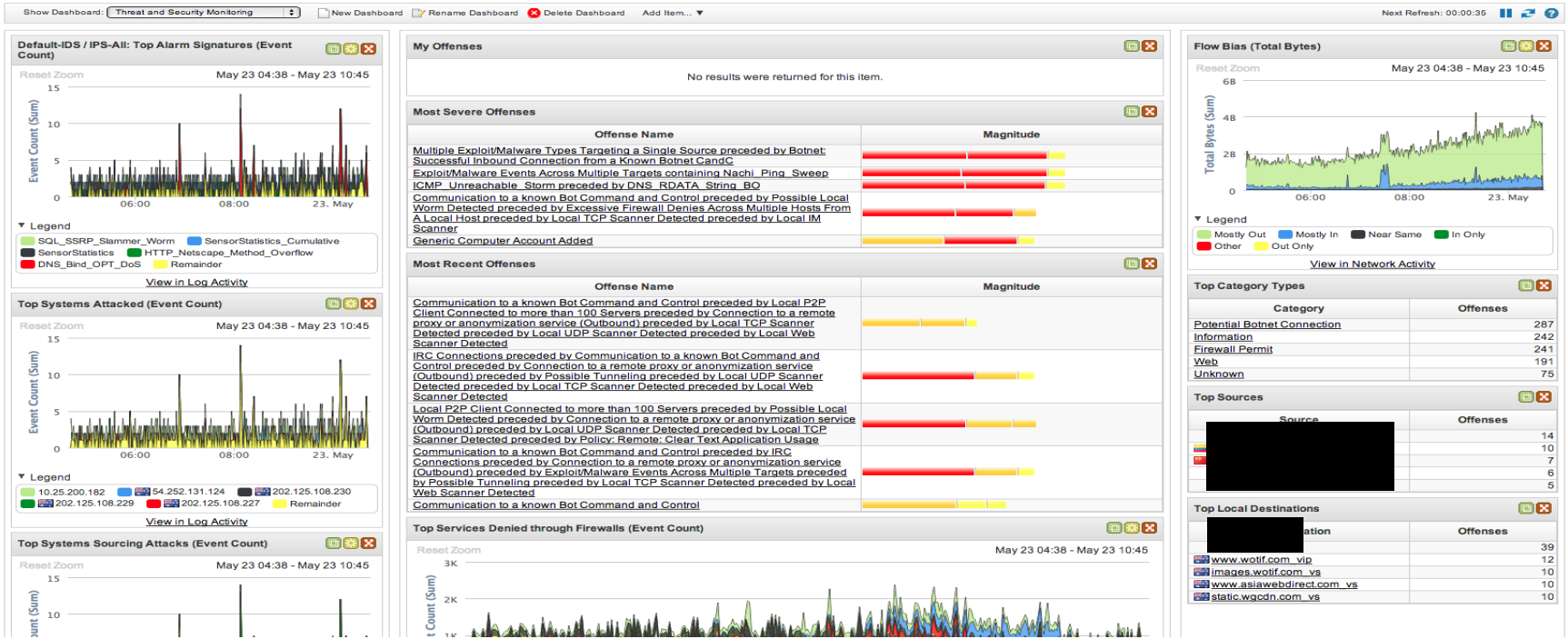
Event Logs aren't as easy as you think

- Event Logs would be easy?
  - source system syslog versions,
  - single syslog forwarders
  - poor filtering options in source systems
  - custom log formats, lots of options

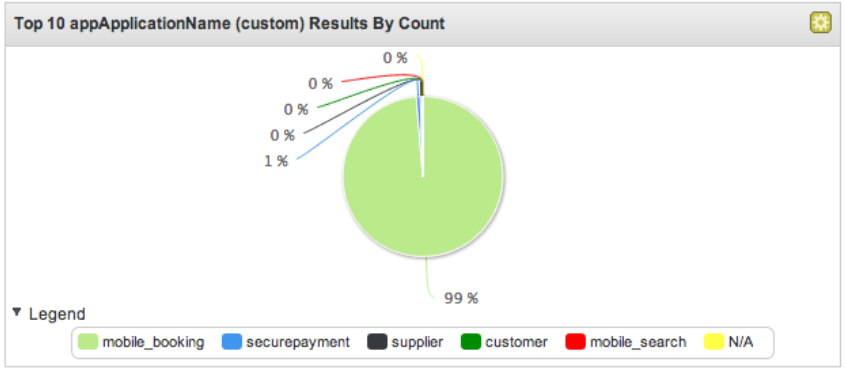
Iterative Deployment/Tuning

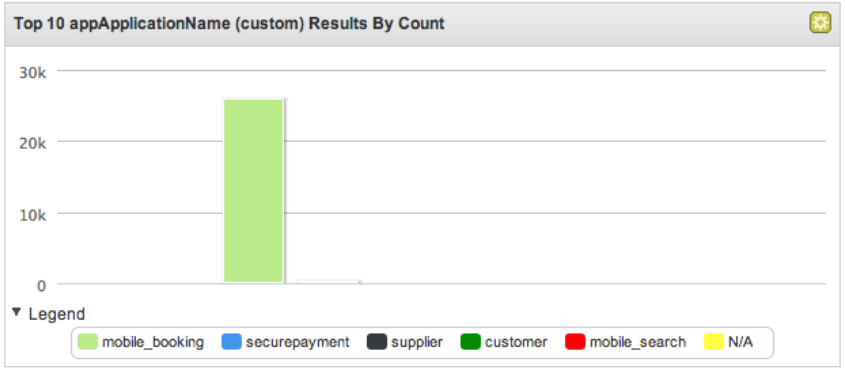
- Sit back and watch
  - Assisted in resolution of a live back-office issue
- High number of Alerts, initially
  - Time to Configure
    - Network Hierarchy
    - Network zones and hosts
    - Trusted VA Scanners
    - Internal Monitoring hosts
  - Remote Networks
    - Partner subnets/hosts

Dashboards



Log Activity





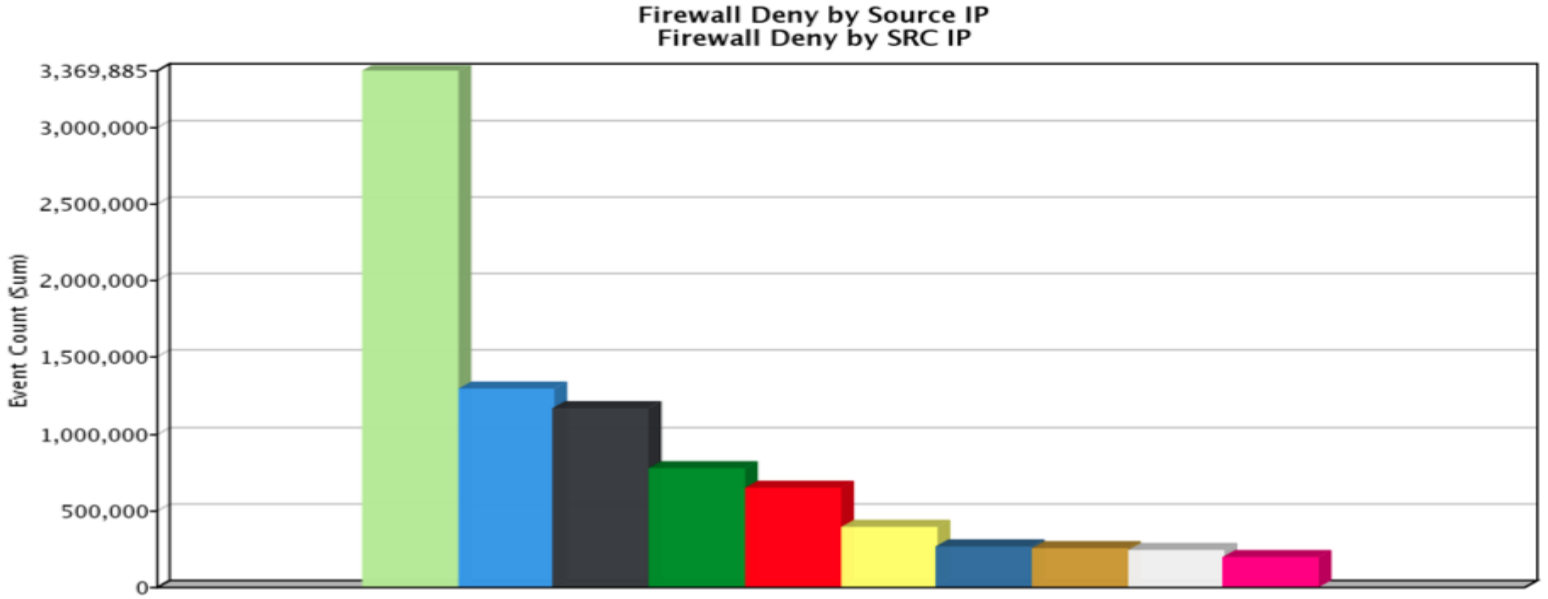
(Hide Charts)

appApplicationName (custom)	Event Name (Unique Count)	Log Source (Unique Count)	Event Count (Sum)	Start Time (Minimum)	Category (Unique Count)	Source IP (Unique Count)	Source Port (Unique Count)	Username (Unique Count)
mobile_booking	HTTP 200 - OK	[redacted]	68,973	2013-06-10 14:27:51	System Status	Multiple (2)	0	N/A
securepayment	Multiple (3)		250	2013-06-11 10:04:03	System Status	Multiple (13)	0	Multiple (3)
supplier	Multiple (3)		95	2013-06-11 11:01:07	System Status	Multiple (2)	0	Multiple (6)
customer	Multiple (2)		37	2013-06-11 09:44:33	System Status	Multiple (7)	0	Multiple (2)
mobile_search	Multiple (2)		21	2013-06-11 00:38:57	System Status	Multiple (2)	0	N/A
N/A	Multiple (2)		3	2013-06-11 00:39:25	Multiple (2)	Multiple (3)	0	N/A

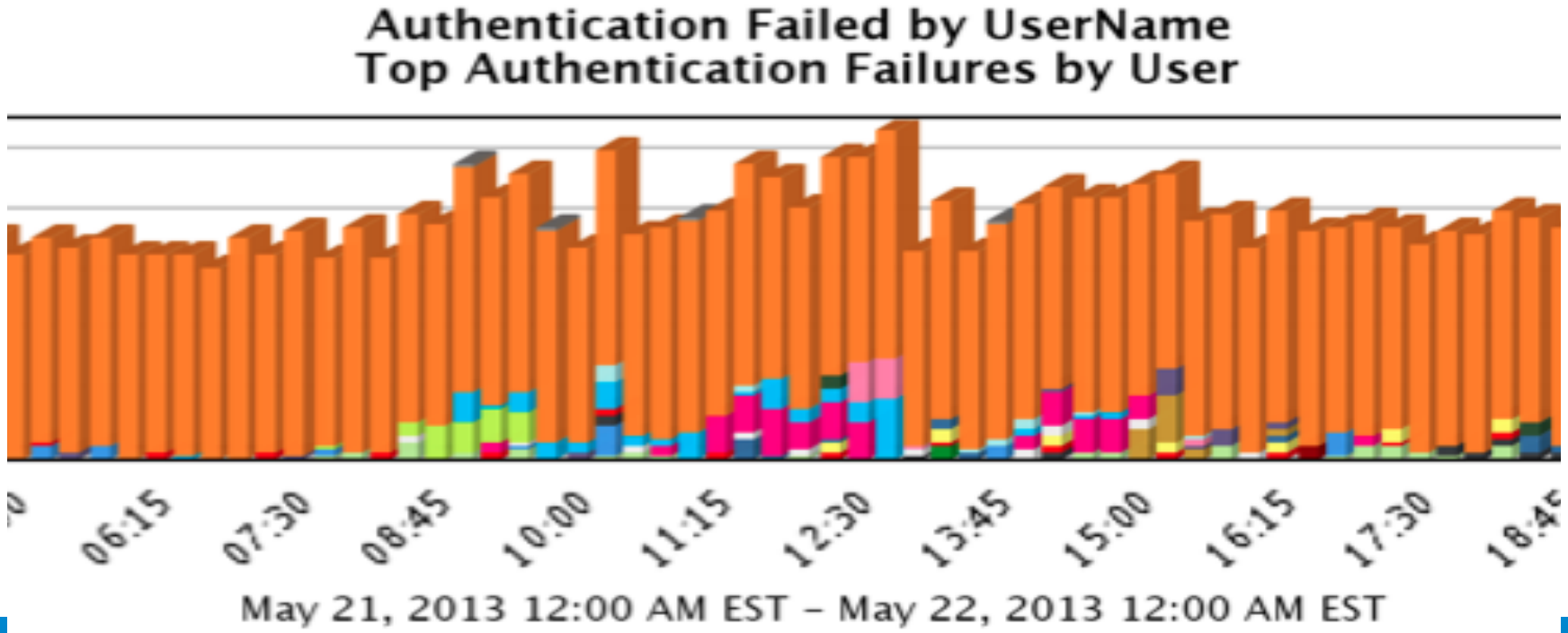
Reports

Weekly Firewall Deny Activity

Generated: May 20, 2013 1:00 AM EST



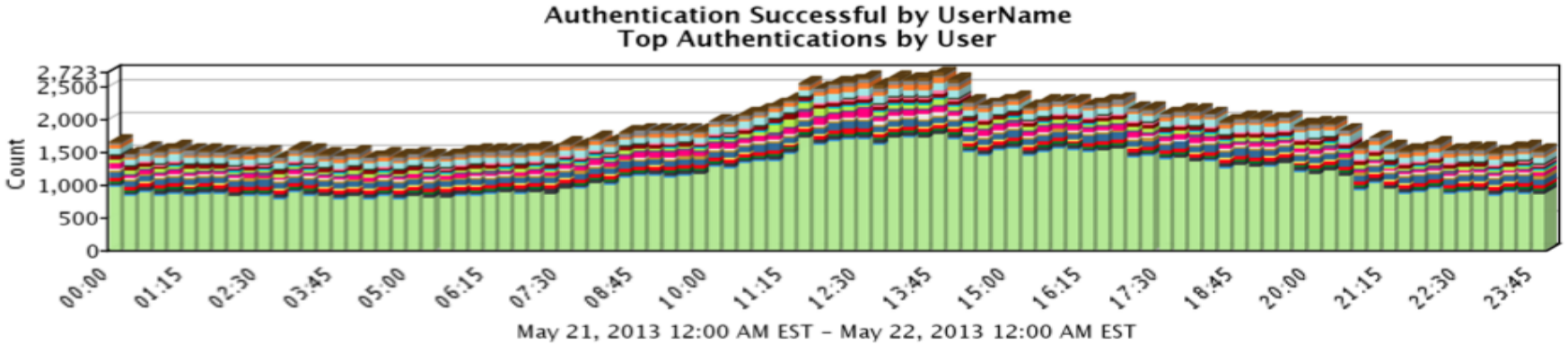
Reports



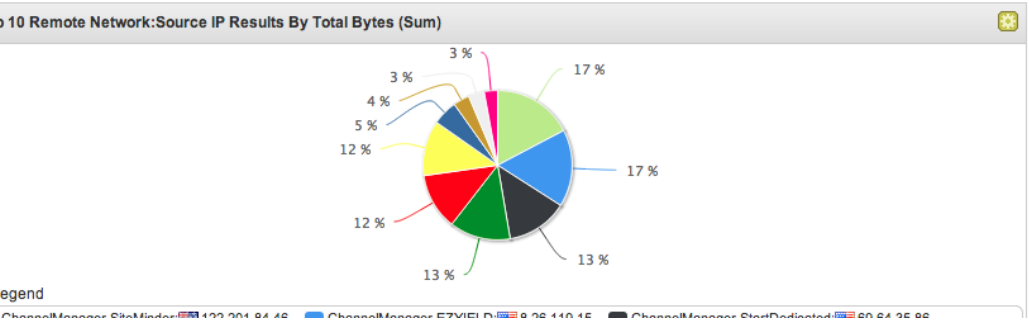
Reports

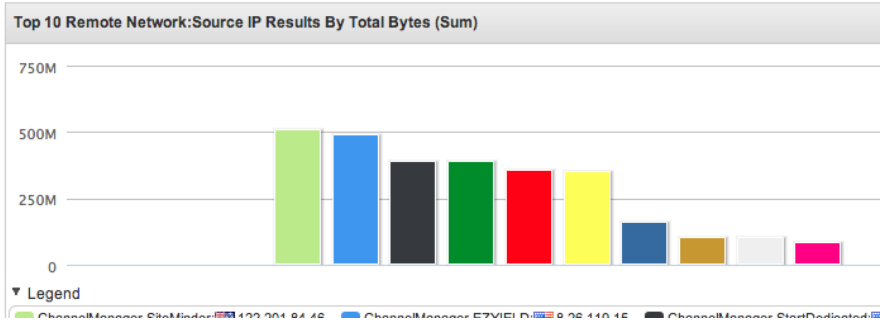
Daily User Authentication Activity

Generated: May 22, 2013 3:39 AM EST



Reports – Top Traffic Sources





Lessons Learned

- You can get quick wins and immediate benefits
- Configuration takes time
  - Network Hierarchy
  - Building Blocks
  - Log Sources
  - Remote Networks
  - Reference Sets
  - Asset Profiles
  - Vulnerability Scans
- Regularly review and tune you configuration to deliver the benefits.

Lessons Learned 2

- Tuning rules to get the right amount of Offences
  - don't let them pile up, we had thousands per day in the beginning
  - Aim for 5, or <10 per day.
  - What Data Sources do you need, what are you willing to pay for?
  - What black lists do you want to import to assist
  - Developers use IRC (potential Botnet command and control)

- Anomaly Detection
  - basic rules; thresholds; time-series variation based (holt-winters) on a single metric

- Searching
  - Can take longer than you expect, time-series databases are different.
  - Reports need to be tailored

Lessons Learned 3

- Interpreting results
  - Takes a mix of skills and domain knowledge for your events.
- Reference Sets
  - Very useful for defining sets of data, such as IP addresses.
  - Reference Sets are making it easier to name and defined data and share conditions across different searches
- Name lookups associated with an offence or a host
  - are sampled
- IP and Port pairs represent our internal applications
  - Standard ports, like 80 can't be overridden.
  - Matching that ip and port combination = wotif.com:80 requires two conditions
- Bugs happen

Future Plans

- GI-Prod Team Training
  - Tending to building blocks and rules
  - Art of triage
- Rolling dashboards out for our dev/test teams
- Feed data out of QRadar for other systems/analysis
  - Improve our Fraud Risk Assessments
  - Try other anomaly detection algorithms
- Integrate more devices
- Better events sent from Applications.
- Auto provisioned assets
  - Dynamic scaling needs to fit in with Network Hierarchies etc.

Questions?