Security Automation

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Security Automation: the challenge

- "Tower of Babel"
  - Too much proprietary, incompatible information
  - Costly
  - Error prone
  - Difficult to scale
- Inefficient
  - Resources spent on "security hygiene"
    - Vulnerability management
    - Configuration management
    - Patch management
    - Compliance management

Security Automation: the solution

- Standardization:
  - Same Object, Same Name
  - Reporting
- Automation:
  - Efficiency
  - Accuracy
  - Resources re-tasked to harder problems:
    - Incident response
    - Infrastructure enhancement
-

What are we achieving with Security Automation?

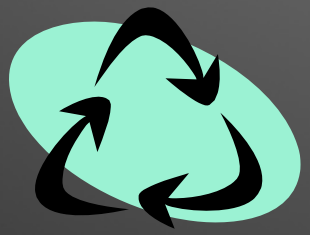
Minimize Effort

- Reducing the time and effort of manual assessment and remediation
- Providing a more comprehensive assessment of system state

Increase Standardization and Interoperability

- Enabling fast and accurate correlation within the enterprise and across organizations/agencies; Reporting
- Shortening decision cycles by rapidly communicating:
  - Requirements (What/How to check)
  - Results (What was found)
- Allowing diverse tool suites and repositories to share data
- Fostering shared situational awareness by enabling and facilitating data sharing, analysis, and aggregation

What are we achieving with Security Automation and Standardization?



Standard data, economy of scale, and reuse

- SCAP security content can be developed once and used by many
- Common definitions for vulnerabilities, software, and policy statements

Speed

- Rapidly identify vulnerabilities and improperly configured systems and communicate the degree of associated risk
    - Zero day malware detection

Partners

- US Government
  - National Institute of Standards and Technology (NIST)
  - National Security Agency (NSA)
  - Department of Homeland Security (DHS)
  - Defense Information Systems Agency (DISA)
- Foreign Government
  - Japan - **JVN/IPA** - Japan Vulnerability Notes / Information Technology Promotion Agency
  - Spain – **INTECO** - Instituto Nacional de Tecnologías de la Comunicación
- Private Sector
  - Apple, Microsoft, Red Hat, Sun Microsystems
  - Security product vendors

NIST SCAP Product Validation Program

http://nvd.nist.gov/scapproducts.cfm

Security Automation Resources

National Vulnerability Database

- NVD is the U.S. government repository of public vulnerability management information.
- Provides standardized reference for software vulnerabilities.
- Over 39,000 CVE entries with the NVD Analysis Team evaluating over 6,000 vulnerabilities a year
- Product dictionary containing 18,000 unique product names
- Used by government, industry and academia
- Machine-readable data feeds
- Spanish and Japanese language translation
- http://nvd.nist.gov

National Checklist Program

U.S. Government repository of publicly available security checklists

- Eases compliance management
- Checklists cover 178 products
  - SCAP content
- Checklist contributors include
  - Government organizations
  - Vendors
  - Non-profit organizations
- Part 39 of the Federal Acquisition Regulation (FAR)
- http://checklists.nist.gov

Content Tools

- eSCAPe
  - •Creation of new and/or customized configuration policies
    - • Puts the power of SCAP into the hands of existing staff; reduces cost/barrier of entry
    - •Government wide, department level, or agency specific
    - • Quickly generate specific assessment criteria for vulnerabilities or presence of malware
    - • Pushed out to SCAP enabled products
- Content Validation
  - • Ensures all content published to NCP is formatted correctly

Looking Ahead

- Remediation capabilities
  - Rapidly deploy corrective action
    - Shutting down services, locking out accounts, etc…
- Network Event Management
  - Event Management Automation Protocol (EMAP)
- Cloud Computing

SCAP Cloud Use Case

- SCAP in the IaaS, PaaS, and SaaS environment
  - Manage the asset inventory, e.g., compute, storage, services, etc.
  - Identify and manage the vulnerabilities and configurations
  - Express security policy and higher level framework compliance
  - Assess the components in the stack
- SCAP across diverse clouds
  - Express security level agreements for dynamic hosted environments
  - Encapsulate dynamic workloads
  - Assess and measure the hosted platforms according to the security requirements

Conclusion

Security Automation:

- Improves efficiency
- Promotes interoperability of data and security tools
- Enables standardized reporting across multiple views
- Provides enhanced situational awareness