

AUTOMATING THE 20 CRITICAL SECURITY CONTROLS

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Qualys

RSACONFERENCE EUROPE 2013

Session ID: SPO-T07

Session Classification: Intermediate

2012 – the Year of Data Breaches









2013 – continued in a similar Way









Background

- Open System Administration Channels
- Default and Weak Passwords
- End-user has Administrator Privileges
- Outdated Software Versions
- Non-hardened Configurations
- Flaws in System Administration







- 20 Critical Controls
- Owned by SANS
 - with widespread industry expert input













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 - International participation



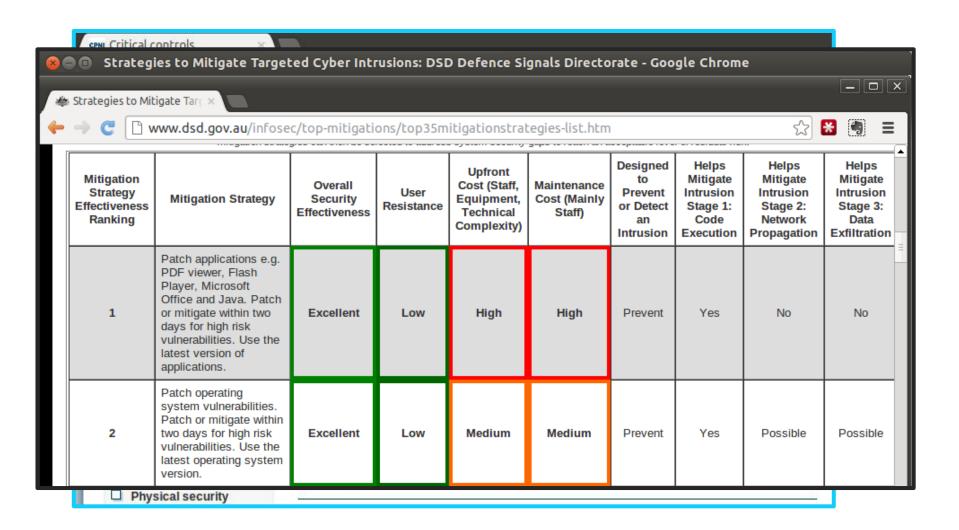
















- 20 Critical Controls
- Owned by SANS
 - with widespread industry input
 - International participation
- Prioritized







Criti	cal Control	Effect on Attack Mitigation
1.	Inventory of Authorized and Unauthorized Devices	Very High
2.	Inventory of Authorized and Unauthorized Software	Very High
3.	Secure Configurations for Hardware and Software on Laptops, Workstations, and Servers	Very High
4.	Continuous Vulnerability Assessment and Remediation	Very High
5.	Malware Defenses	High
6.	Application Software Security	High
7.	Wireless Device Control	High
8.	Data Recovery Capability	Moderately High to High
9.	Security Skills Assessment and Appropriate Training to Fill Gaps	Moderately High to High
10.	Secure Configurations for Network Devices such as Firewalls, Routers, and Switches	Moderately High
11.	Limitation and Control of Network Ports, Protocols, and Services	Moderately High
12.	Controlled Use of Administrative Privileges	Moderate to Moderately High
13.	Boundary Defense	Moderate
14.	Maintenance, Monitoring, and Analysis of Security Audit Logs	Moderate
15.	Controlled Access Based on the Need to Know	Moderate
16.	Account Monitoring and Control	Moderate
17.	Data Loss Prevention	Moderately Low to Moderate
18.	Incident Response Capability	Moderately Low to Moderate
19.	Secure Network Engineering	Low
20.	Penetration Tests and Red Team Exercises	Low





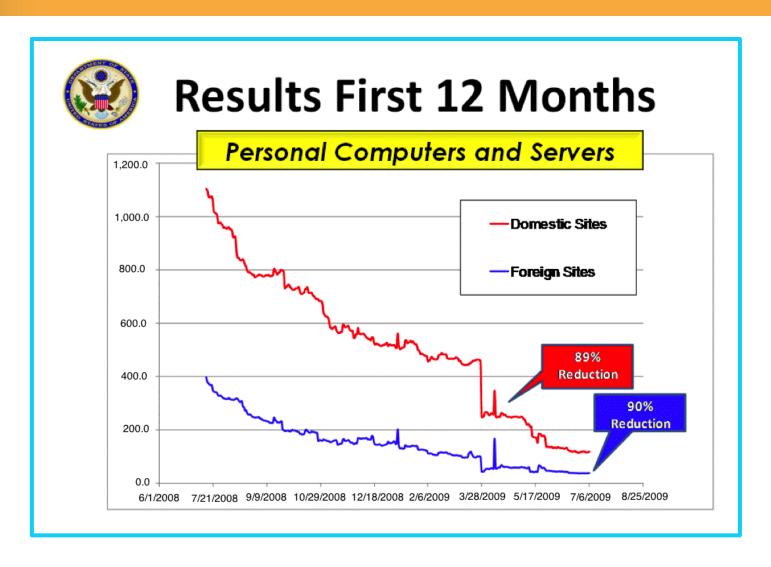


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 - with widespread industry input
 - International participation
- Prioritized
- Automation is critical to success
 - 90 % Risk Reduction at US DoS
 - 85 % Incident Reduction at DSD Australia







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Qualys

QualysGuard

- Vulnerability Management
- Policy Compliance
- Web Application Scanning
- PCI
- Malware Detection

SaaS Solution

- Browser-based, Multi-tenant
- Public and Private Cloud
- Scanning, Reporting, Ticketing
- Extensive API



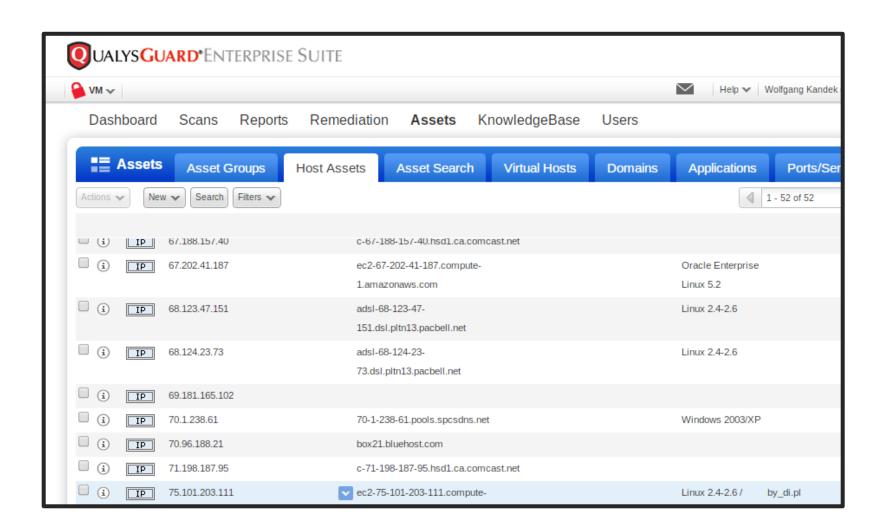




- Asset Visibility
 - Size of Network
 - Machine Types
 - Location



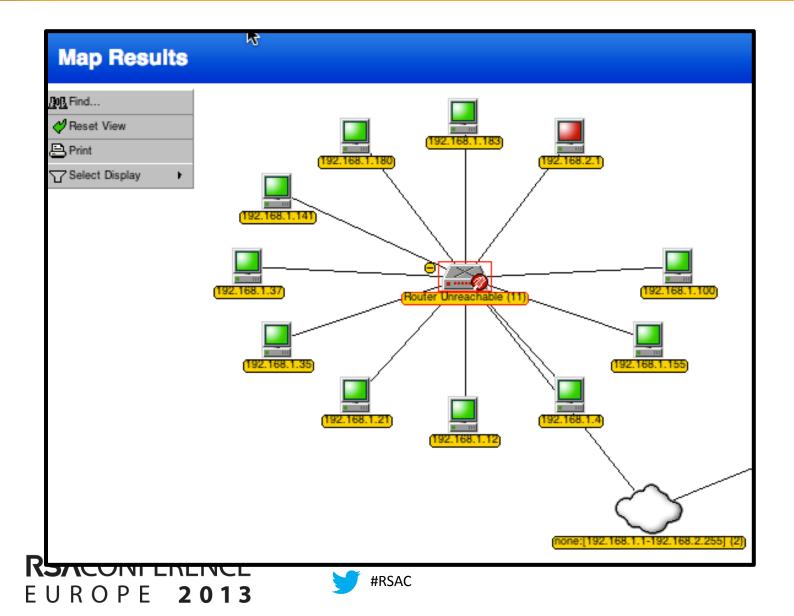












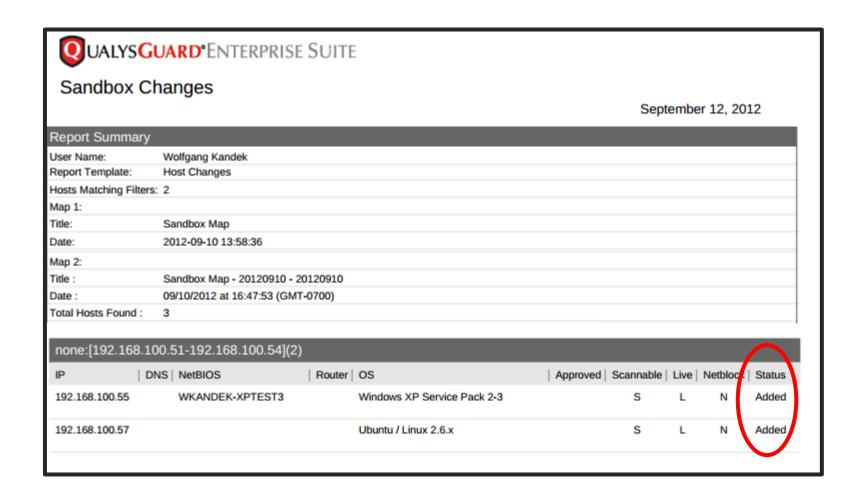


- Asset Visibility
 - Size of Network
 - Machine Types
 - Location
- New Equipment Detection
 - Authorized
 - Unauthorized















- Automation
 - Scans are scheduled
 - Delta Reports are scheduled
 - Reports can be e-mailed
 - Alerting on newly discovered hosts
 - Via API
 - Integration into Asset Management Systems
 - Via API
 - Coming: ticket generation on newly discovered hosts







- Asset Visibility
 - Operating Systems
 - Applications
 - Versions
 - Patch Levels
- Blacklisting







(2.2) 2162 Current list of 'Prohibited software applications installed'

Failed

The installation of unauthorized, incorrect, or rogue applications can interfere with user workflow and delay the timely completion of company projects. As a single rogue application can bring the entire production process to a halt and even compromise multiple systems, unauthorized, incorrect versions or, or rogue applications installed on any system should identified and removed as appropriate to the needs of the business.

The following List String value(s) X indicate the current list of installed applications (registered with the OS) on the system as defined within the HKLM\
SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall registry key.

Expected

does not contain regular expression list

mIRC

Actual

Last Updated:09/09/2012 at 14:43:00 (GMT-0700)

123 Write All Stored Passwords

Adobe Flash Player 10 ActiveX:10.2.152.32

Look@LAN 2.50 Build 35

Microsoft Office Publisher MUI (English) 2007:12.0.4518.1014

Microsoft Office Shared MUI (English) 2007:12.0.4518.1014

Microsoft Office Shared Setup Metadata MUI (English) 2007:12.0.4518.1014

Microsoft Office Word MUI (English) 2007:12.0.4518.1014

Microsoft Software Update for Web Folders (English) 12:12.0.4518.1014

mIRC:7.19

Network Stumbler 0.4.0 (remove only)

Oracle VM VirtualBox Guest Additions 4.1.8:4.1.8.0





- Asset Visibility
 - Operating Systems
 - Applications
 - Versions
 - Patch Levels
- Blacklisting
- Whitelisting







Asset Visibility

Operating Systems

(2.1) 2161 Current list of 'Required software applications installed'

Passed

The installation of the correct primary user applications, such as the 'Microsoft Office Suite' and other supporting software, are critical to the proper user workflow and smooth completion of company business. As having the right software supports these projects, while a single rogue application can bring the entire process to a halt, the applications installed on the system should match those specified as appropriate to the needs of the business.

The following List String value(s) X indicate the current list of installed applications (registered with the OS) on the system as defined within the HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall registry key.

Expected contains regular expression list

Microsoft Office

Actual Last Updated:09/09/2012 at 14:43:00 (GMT-0700)

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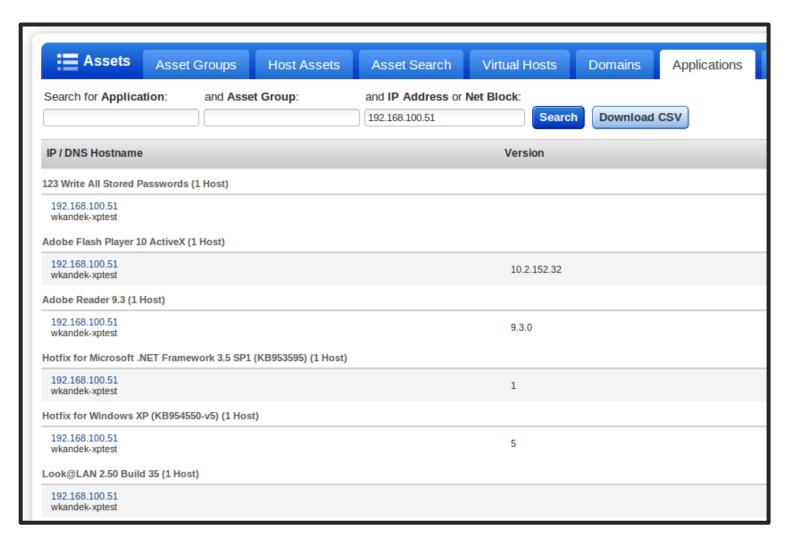


- Asset Visibility
 - Operating Systems
 - Applications
 - Versions
 - Patch Levels
- Blacklisting
- Whitelisting
- Interactive Search



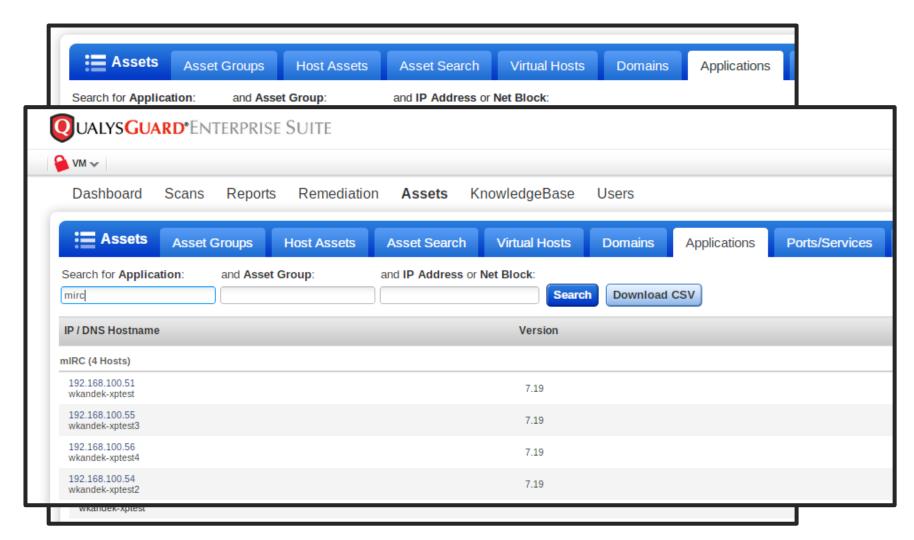
















- Automation
 - Scans are scheduled
 - Reports are scheduled
 - Reports can be emailed
 - Alerting on Exceptions
 - Via API
 - Integration into Asset Management Systems
 - Via API
 - Coming: Ticket generation on Exceptions





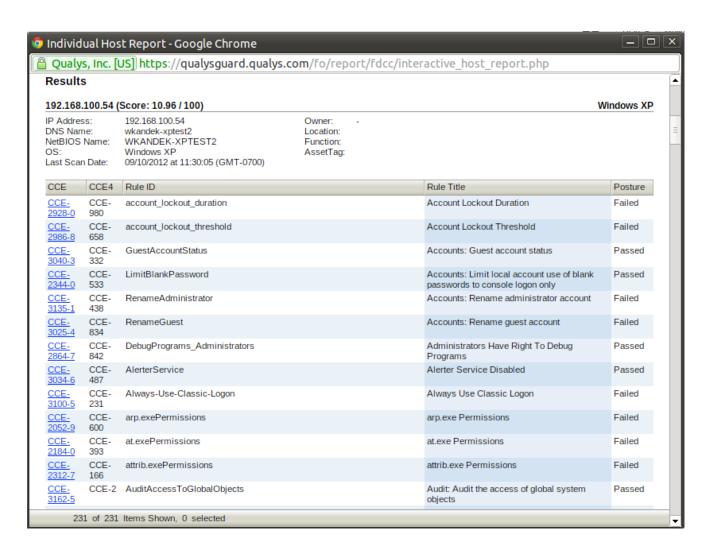


- Configuration Validation
 - SCAP/FDCC













- Configuration Validation
 - SCAP/FDCC
 - Cyberscope Reporting
 - CIS





Configuration Validation

Compliance Policy Library

Policies

Browse the following list of Sample Polices to quickly import and apply the full set of controls created to meet the requirements of the benchmark mentioned in each description.

CIS CERTIFIED - Windows XP Professional Operating System Legacy, Enterprise, and Specialized Security Benchmark Consensus Baseline Security Settings Version 2.01 August,2005, [Enterprise Desktop Standalone/Scorable] - Locked v.1

This Policy includes the CIS Benchmark-based Controls with Enterprise-level security settings preconfigured. When protection standards vary for an individual control within a specific configuration type, such as 'Enterprise,' which may have differing requirements for desktops and laptops, the most stringent value will be set as the default. The controls defined within this importable policy match the requirements listed by the CIS Benchmark for the Microsoft Windows XP-Professional operating system. In the case of CIS-required Control duplication (where a Control requirement appears in more than one section of the benchmark), QualysGuard Policy Compliance limits the existence of any Controls within a single policy to one (1) occurrence of each.







CC4: Continuous Vulnerability Assessment/Remediation

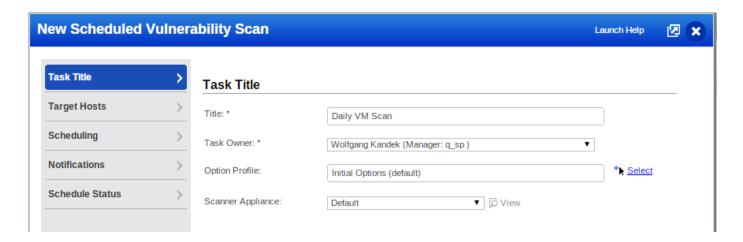
Weekly/Daily Scheduled Vulnerability Scanning





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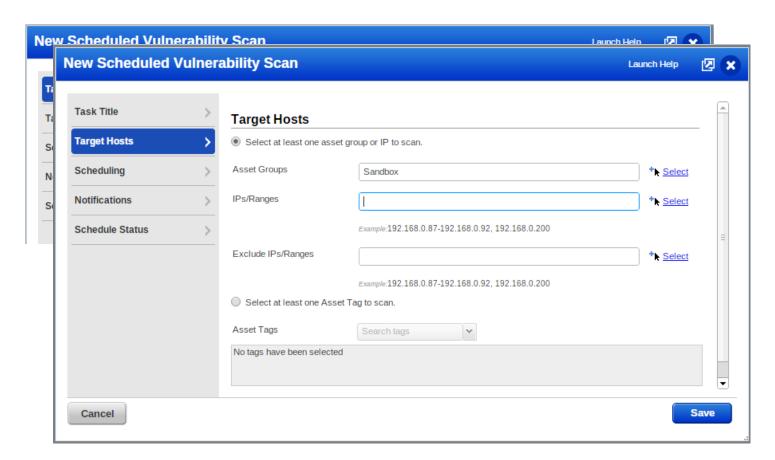
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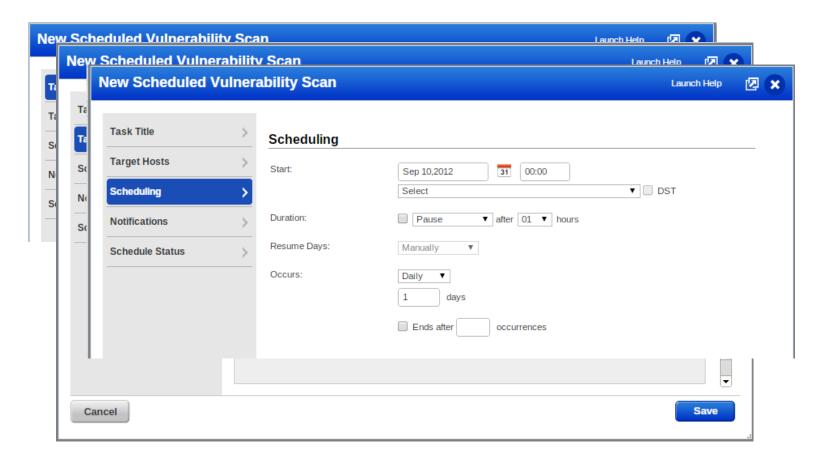








Weekly/Daily Scheduled Vulnerability Scanning





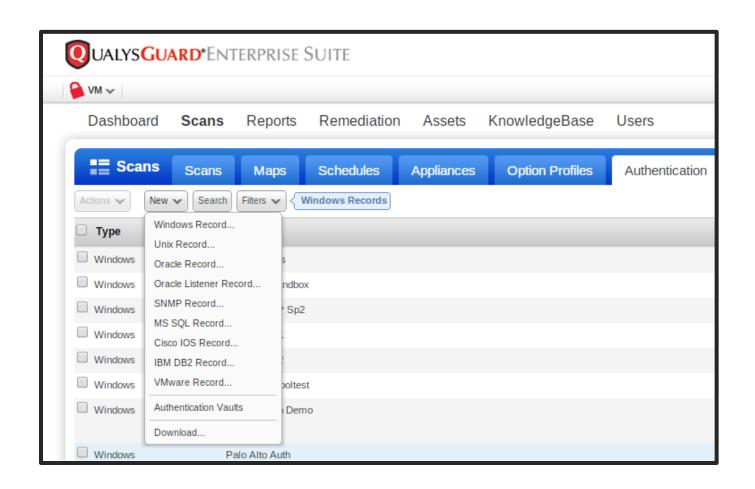


- Weekly/Daily Scheduled Vulnerability Scanning
- Authenticated Scanning



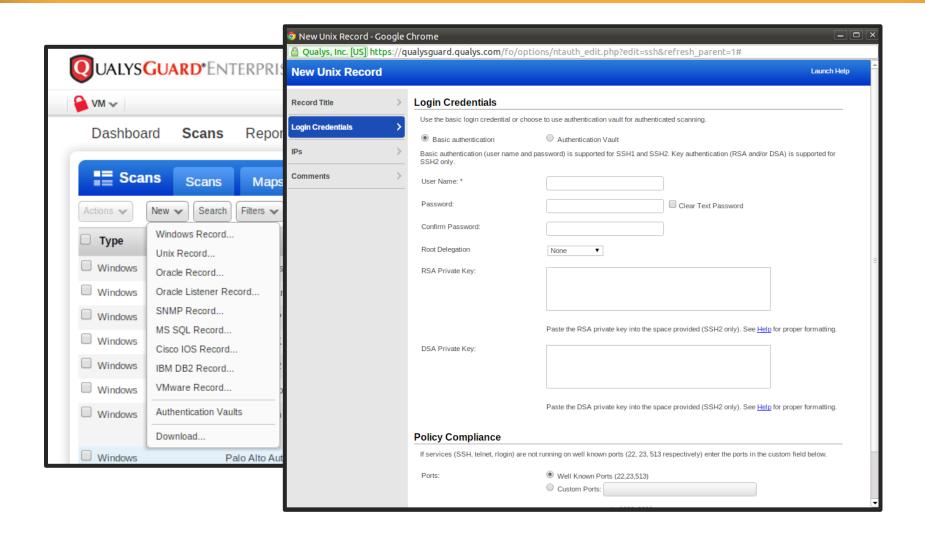












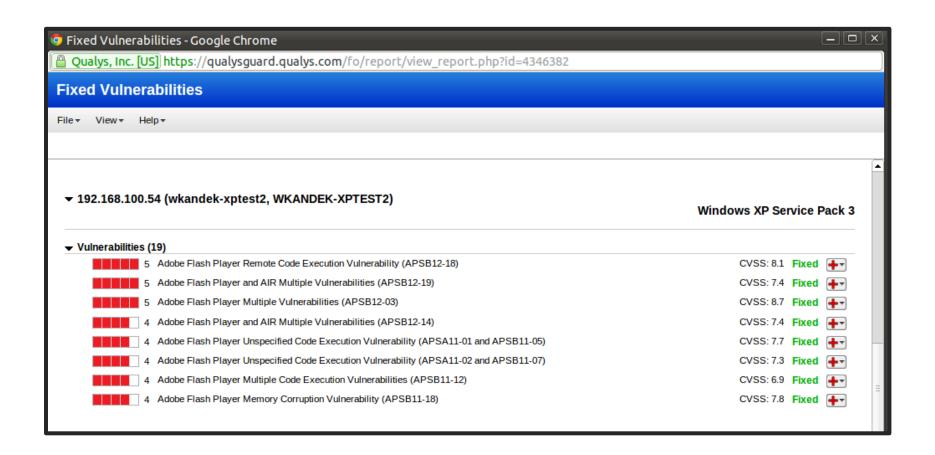




- Weekly/Daily Scheduled Vulnerability Scanning
- Authenticated Scanning
- Verify Patching







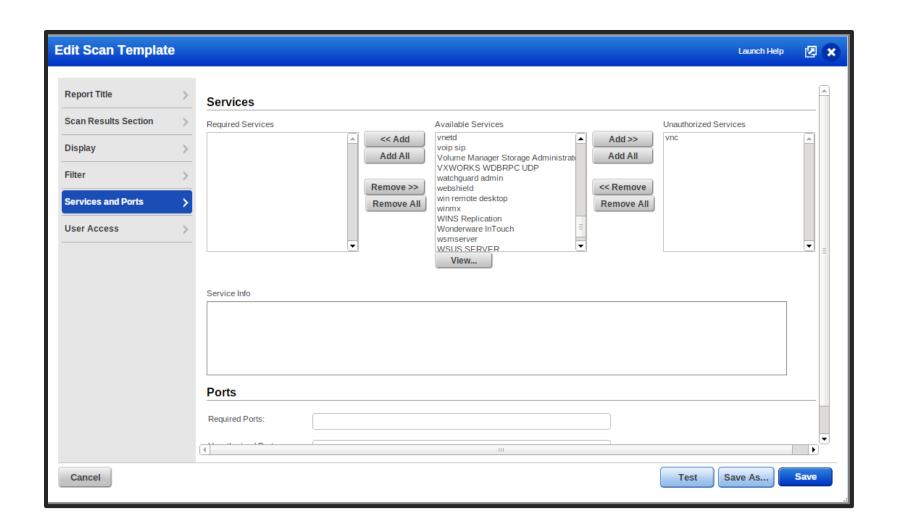




- Weekly/Daily Scheduled Vulnerability Scanning
- Authenticated Scanning
- Verify Patching
- Report on Unauthorized Services

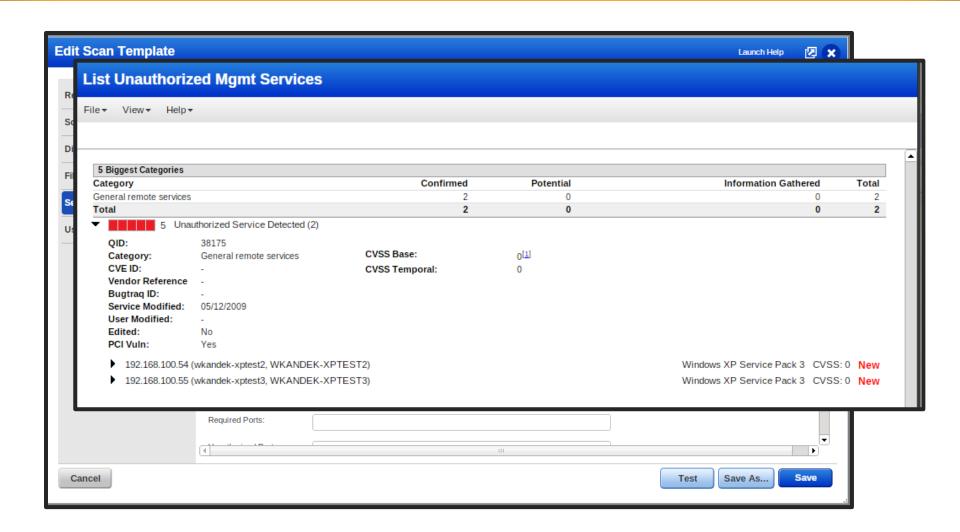






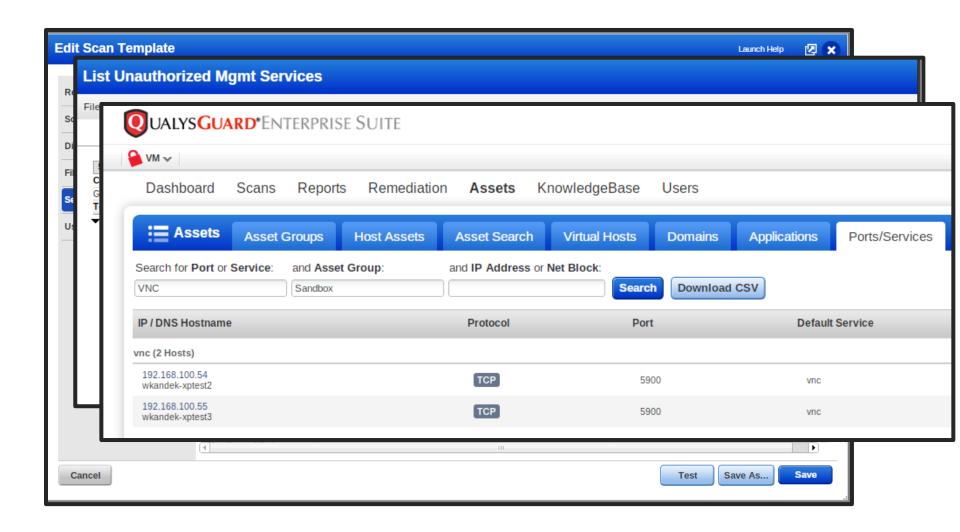


















- Automation
 - Scans are scheduled
 - Reports are scheduled
 - Reports are emailed
 - Alerting on Vulnerabilities
 - Tickets for Vulnerabilities, Remediation SLA and Confirmation
 - Integration into Asset Management Systems
 - Via API







Other Critical Controls

- CC6: Application Software Security
 - Automated Web Application Scans
- CC7: Wireless Device Controls
 - Wireside Detection
- CC11: Control of Network Ports
 - Scans and Reports for authorized and unauthorized Ports and Services
- CC16: Account Monitoring
 - Controls for Admin accounts, password policies, account lockout settings







- Ability to add tactical controls
- Example: Recent Internet Explorer Vulnerabilities CVE-2012-4969 (Sep/12)/KB2794220 (Dec/12)
- Mitigated by use of EMET







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- Example: Recent Internet Explorer Vulnerabilities CVE-2012-4969 (Sep/12)/KB2794220 (Dec/12)



MSRC

Microsoft Releases Security Advisory 2757760

9 days ago by

Today we released Security Advisory 2757760 to address an issue that affects Internet Explorer 9 and earlier versions if a user views a website hosting malicious code. Internet Explorer 10 is not affected.

We have received reports of only a small number of targeted attacks and are working to develop a security update to address this issue. In the meantime, customers using Internet Explorer are protected when they deploy the following workarounds and mitigations included in the advisory:

Deploy the Enhanced Mitigation Experience Toolkit (EMET)
 This will help prevent exploitation by providing mitigations to help protect against this issue and should not affect usability of websites.







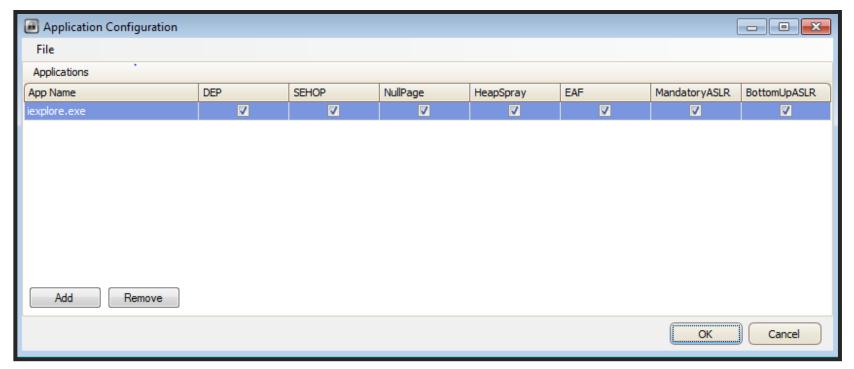
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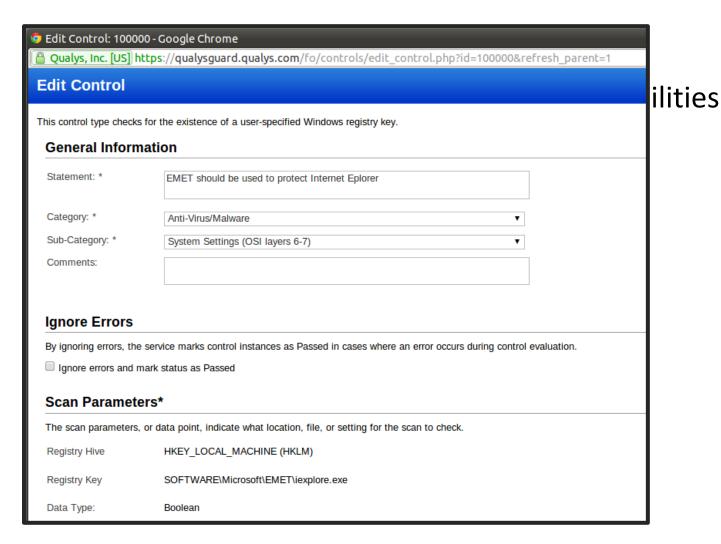


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- Mitigated by use of EMET
- Audit the Deployment









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- Ability to add tactical controls
- Example: Recent Internet Explorer Vulnerabilities CVE-2012-4969 (Sep/12)/KB2794220 (Dec/12)
- Mitigated by use of EMET
- Audit the Deployment
 - User Defined Registry Check







Summary

- Functionality to assess Controls exist
- Automation available, but frequently API integrations is needed
- Offerings are improving with better workflow coming





Thank You

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Security in knowledge