Federal Desktop Core Configuration

presented by:

Stephen Quinn

National Institute of Standards and Technology

Agenda

- Federal Desktop Core Configuration History
- Security Content Automation Protocol Interlude
- SCAP and FDCC
- FDCC Web Site and Tools
- FDCC High Impact Settings and Frequently Asked Questions

OMB Deep Dive Working Group

Acknowledgements

- Office of Management and Budget
- US Air Force
- Microsoft
- National Institute of Standards and Technology
- Defense Information Systems Agency
- National Security Agency
- Department of Homeland Security

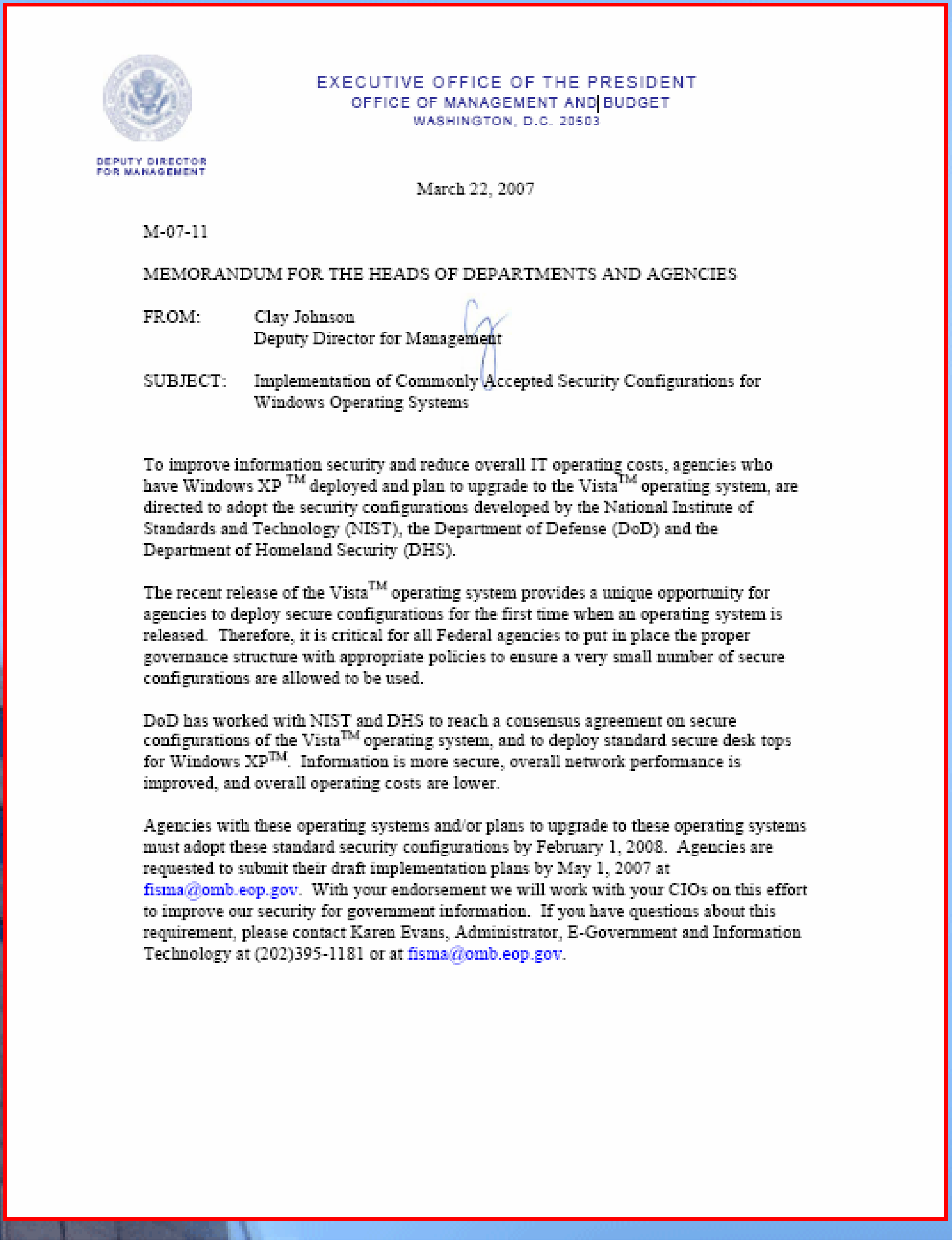
Federal Desktop Core Configuration

FDCC

- Common core Microsoft Windows configuration driven by OMB
- Leverage USAF Standard Configuration Desktop initiative
  - Deployed and tested across half a million Windows XP systems
- Based on the DISA, NSA, NIST, USAF, and Microsoft existing guidelines for securing Windows XP and Vista
- Includes applications beyond Operating System
  - Windows XP/Vista Firewall
  - Internet Explorer 7

OMB Memo M-07-11

Implementation of Commonly Accepted Security Configurations for Windows Operating Systems



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

DEPUTY DIRECTOR
FOR MANAGEMENT

March 22, 2007

M-07-11

MEMORANDUM FOR THE HEADS OF DEPARTMENTS AND AGENCIES

FROM: Clay Johnson
Deputy Director for Management

SUBJECT: Implementation of Commonly Accepted Security Configurations for Windows Operating Systems

To improve information security and reduce overall IT operating costs, agencies who have Windows XP TM deployed and plan to upgrade to the Vista TM operating system, are directed to adopt the security configurations developed by the National Institute of Standards and Technology (NIST), the Department of Defense (DoD) and the Department of Homeland Security (DHS).

The recent release of the Vista TM operating system provides a unique opportunity for agencies to deploy secure configurations for the first time when an operating system is released. Therefore, it is critical for all Federal agencies to put in place the proper governance structure with appropriate policies to ensure a very small number of secure configurations are allowed to be used.

DoD has worked with NIST and DHS to reach a consensus agreement on secure configurations of the Vista TM operating system, and to deploy standard secure desk tops for Windows XP TM. Information is more secure, overall network performance is improved, and overall operating costs are lower.

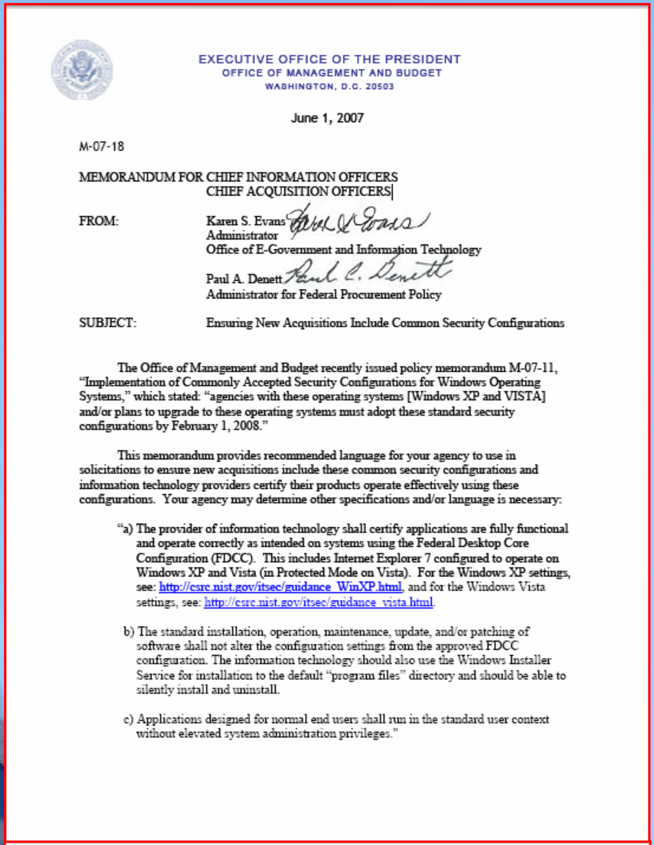
Agencies with these operating systems and/or plans to upgrade to these operating systems must adopt these standard security configurations by February 1, 2008. Agencies are requested to submit their draft implementation plans by May 1, 2007 at fisma@omb.eop.gov. With your endorsement we will work with your CIOs on this effort to improve our security for government information. If you have questions about this requirement, please contact Karen Evans, Administrator, E-Government and Information Technology at (202)395-1181 or at fisma@omb.eop.gov.

Corresponding OMB Memo to CIOs:

- Requires, **"Implementing and automating enforcement of these configurations;"**
- "NIST has established a program to develop and maintain common security configurations for many operating systems and applications, and **the "Security Content Automation [Protocol]" can help your agency use common security configurations.** Additionally, NIST's revisions to Special Publication 800-70, "Security Configuration Checklist Program for IT Products," will provide your agency additional guidance for implementing common security configurations. For additional information about NIST's programs, please contact Stephen Quinn, at Stephen.Quinn@nist.gov."

OMB Memo M-07-18

Ensuring New Acquisitions Include Common Security Configurations



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

June 1, 2007

M-07-18

MEMORANDUM FOR CHIEF INFORMATION OFFICERS
CHIEF ACQUISITION OFFICERS

FROM: Karen S. Evans Karen S. Evans
Administrator
Office of E-Government and Information Technology

Paul A. Denett Paul C. Denett
Administrator for Federal Procurement Policy

SUBJECT: Ensuring New Acquisitions Include Common Security Configurations

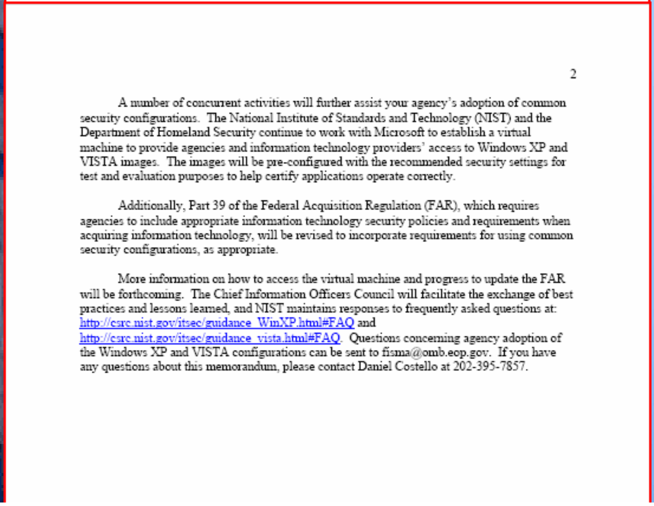
The Office of Management and Budget recently issued policy memorandum M-07-11, “Implementation of Commonly Accepted Security Configurations for Windows Operating Systems,” which stated: “agencies with these operating systems [Windows XP and VISTA] and/or plans to upgrade to these operating systems must adopt these standard security configurations by February 1, 2008.”

This memorandum provides recommended language for your agency to use in solicitations to ensure new acquisitions include these common security configurations and information technology providers certify their products operate effectively using these configurations. Your agency may determine other specifications and/or language is necessary:

“a) The provider of information technology shall certify applications are fully functional and operate correctly as intended on systems using the Federal Desktop Core Configuration (FDCC). This includes Internet Explorer 7 configured to operate on Windows XP and Vista (in Protected Mode on Vista). For the Windows XP settings, see: http://csrc.nist.gov/itsec/guidance_WinXP.html, and for the Windows Vista settings, see: http://csrc.nist.gov/itsec/guidance_vista.html.

b) The standard installation, operation, maintenance, update, and/or patching of software shall not alter the configuration settings from the approved FDCC configuration. The information technology should also use the Windows Installer Service for installation to the default “program files” directory and should be able to silently install and uninstall.

c) Applications designed for normal end users shall run in the standard user context without elevated system administration privileges."



A number of concurrent activities will further assist your agency’s adoption of common security configurations. The National Institute of Standards and Technology (NIST) and the Department of Homeland Security continue to work with Microsoft to establish a virtual machine to provide agencies and information technology providers’ access to Windows XP and VISTA images. The images will be pre-configured with the recommended security settings for test and evaluation purposes to help certify applications operate correctly.

Additionally, Part 39 of the Federal Acquisition Regulation (FAR), which requires agencies to include appropriate information technology security policies and requirements when acquiring information technology, will be revised to incorporate requirements for using common security configurations, as appropriate.

More information on how to access the virtual machine and progress to update the FAR will be forthcoming. The Chief Information Officers Council will facilitate the exchange of best practices and lessons learned, and NIST maintains responses to frequently asked questions at: http://csrc.nist.gov/itsec/guidance_WinXP.html#FAQ and http://csrc.nist.gov/itsec/guidance_vista.html#FAQ. Questions concerning agency adoption of the Windows XP and VISTA configurations can be sent to fisma@omb.eop.gov. If you have any questions about this memorandum, please contact Daniel Costello at 202-395-7857.

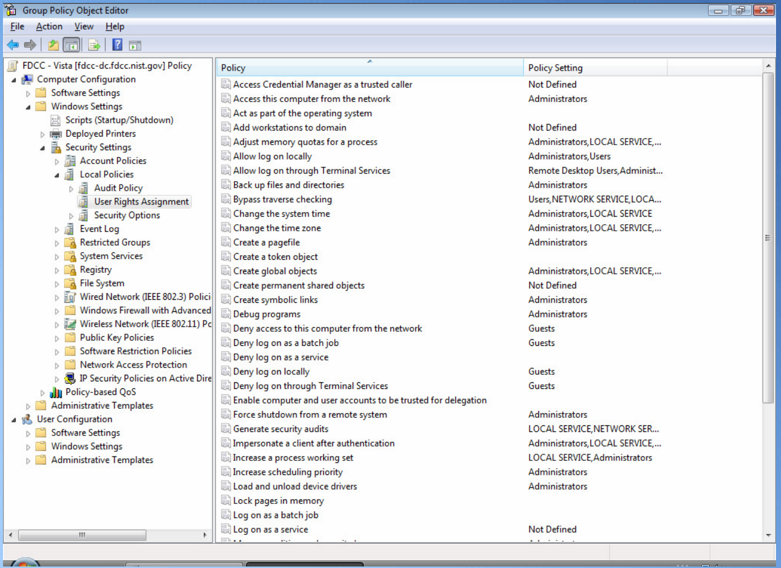
“The provider of information technology shall certify applications are fully functional and operate correctly as intended on systems using the Federal Desktop Core Configuration (FDCC). This includes Internet Explorer 7 configured to operate on Windows XP and Vista (in Protected Mode on Vista).“

“Applications designed for normal end users shall run in the standard user context **without elevated system administration privileges.**”

“The National Institute of Standards and Technology (NIST) and the Department of Homeland Security continue to work with Microsoft to **establish a virtual machine** to provide agencies and information technology providers’ access to Windows XP and VISTA images. The images will be **pre-configured with the recommended security settings for test and evaluation purposes to help certify applications operate correctly. “**

Producing an FDCC Virtual Machine Image

Implement FDCC settings on virtual machine images



Group Policy Object Editor

```
FDCC - Vista [fdcc-dc.fdcc.nist.gov] Policy
  Computer Configuration
    Software Settings
    Windows Settings
      Scripts (Startup/Shutdown)
      Deployed Printers
      Security Settings
        Account Policies
        Local Policies
          Audit Policy
          User Rights Assignment
          Security Options
        Event Log
        Restricted Groups
        System Services
        Registry
        File System
        Wired Network (IEEE 802.3) Polici
        Windows Firewall with Advanced
        Wireless Network (IEEE 802.11) Pc
        Public Key Policies
        Software Restriction Policies
        Network Access Protection
        IP Security Policies on Active Dire
      Policy-based QoS
    Administrative Templates
  User Configuration
    Software Settings
    Windows Settings
    Administrative Templates
```

Policy	Policy Setting
Access Credential Manager as a trusted caller	Not Defined
Access this computer from the network	Administrators
Act as part of the operating system	
Add workstations to domain	Not Defined
Adjust memory quotas for a process	Administrators,LOCAL SERVICE,...
Allow log on locally	Administrators,Users
Allow log on through Terminal Services	Remote Desktop Users,Administ...
Back up files and directories	Administrators
Bypass traverse checking	Users,NETWORK SERVICE,LOCA...
Change the system time	Administrators,LOCAL SERVICE
Change the time zone	Administrators,LOCAL SERVICE,...
Create a pagefile	Administrators
Create a token object	
Create global objects	Administrators,LOCAL SERVICE,...
Create permanent shared objects	Not Defined
Create symbolic links	Administrators
Debug programs	Administrators
Deny access to this computer from the network	Guests
Deny log on as a batch job	Guests
Deny log on as a service	
Deny log on locally	Guests
Deny log on through Terminal Services	Guests
Enable computer and user accounts to be trusted for delegation	
Force shutdown from a remote system	Administrators
Generate security audits	LOCAL SERVICE,NETWORK SER...
Impersonate a client after authentication	Administrators,LOCAL SERVICE,...
Increase a process working set	LOCAL SERVICE,Administrators
Increase scheduling priority	Administrators
Load and unload device drivers	Administrators
Lock pages in memory	
Log on as a batch job	
Log on as a service	Not Defined

Use SCAP to verify FDCC settings were implemented correctly

- Windows XP
- Windows Vista
- Windows XP Firewall
- Windows Vista Firewall
- Internet Explorer 7.0

ThreatGuard

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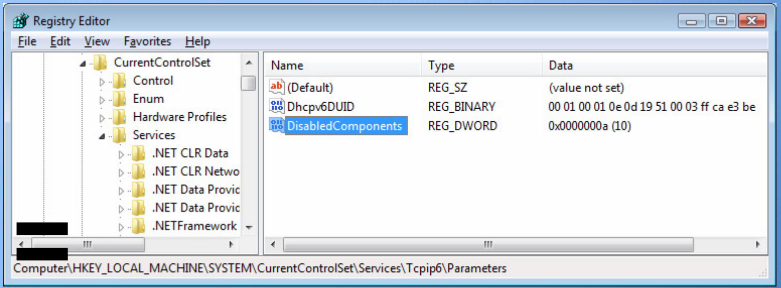
audit. evaluate. comply.

C5 Compliance Platform

Reconcile any "failed" SCAP tests



Registry Editor

```
CurrentControlSet
  Control
  Enum
  Hardware Profiles
  Services
    .NET CLR Data
    .NET CLR Netwo
    .NET Data Provic
    .NET Data Provic
    .NETFramework
```

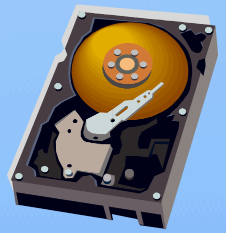
[redacted]

[redacted]

Name	Type	Data
(Default)	REG_SZ	(value not set)
Dhcpv6DUID	REG_BINARY	00 01 00 01 0e 0d 19 51 00 03 ff ca e3 be
DisabledComponents	REG_DWORD	0x0000000a (10)

Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters

Record any exceptions



FDCC Virtual Machine Image

NIST

NATIONAL SECURITY AGENCY UNITED STATES OF AMERICA

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

U.S. DEPARTMENT OF HOMELAND SECURITY

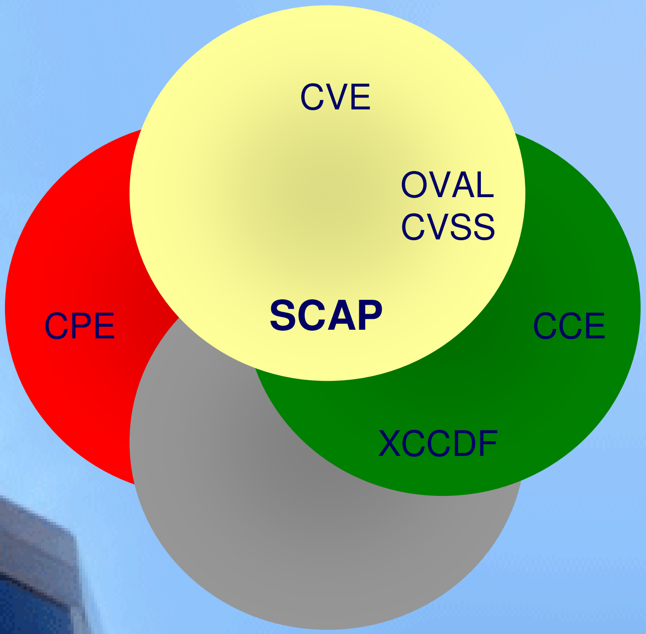
DEFENSE INFORMATION SYSTEMS AGENCY

What is SCAP?

How

Standardizing the format by which we communicate

Protocol



What

Standardizing the information we communicate

Content

Sponsored by
DHS National Cyber Security Division/US-CERT
National Vulnerability Database
a comprehensive cyber vulnerability resource
NIST
National Institute of Standards and Technology

http://nvd.nist.gov

- 50 million hits per year
- 20 new vulnerabilities per day
- Mis-configuration cross references
- Reconciles software flaws from US CERT and MITRE repositories
- Produces XML feed for NVD content

Security Content Automation Protocol (SCAP)

Standardizing How We Communicate

MITRE	CVE cve.mitre.org	**CVE**	**Common Vulnerability Enumeration**	Standard nomenclature and dictionary of security related software flaws
MITRE	CCE	**CCE**	**Common Configuration Enumeration**	Standard nomenclature and dictionary of software misconfigurations
MITRE	CPE common platform enumeration	**CPE**	**Common Platform Enumeration**	Standard nomenclature and dictionary for product naming
NATIONAL SECURITY AGENCY UNITED STATES OF AMERICA	XCCDF security benchmark automation	**XCCDF**	**eXtensible Checklist Configuration Description Format**	Standard XML for specifying checklists and for reporting results of checklist evaluation
MITRE	OPEN VULNERABILITY AND ASSESSMENT LANGUAGE OVAL	**OVAL**	**Open Vulnerability and Assessment Language**	Standard XML for test procedures
FIRST Improving Security Together	CVSS	**CVSS**	**Common Vulnerability Scoring System**	Standard for measuring the impact of vulnerabilities

Cisco, Qualys, Symantec, Carnegie Mellon University

Existing Federal Content

Standardizing What We Communicate

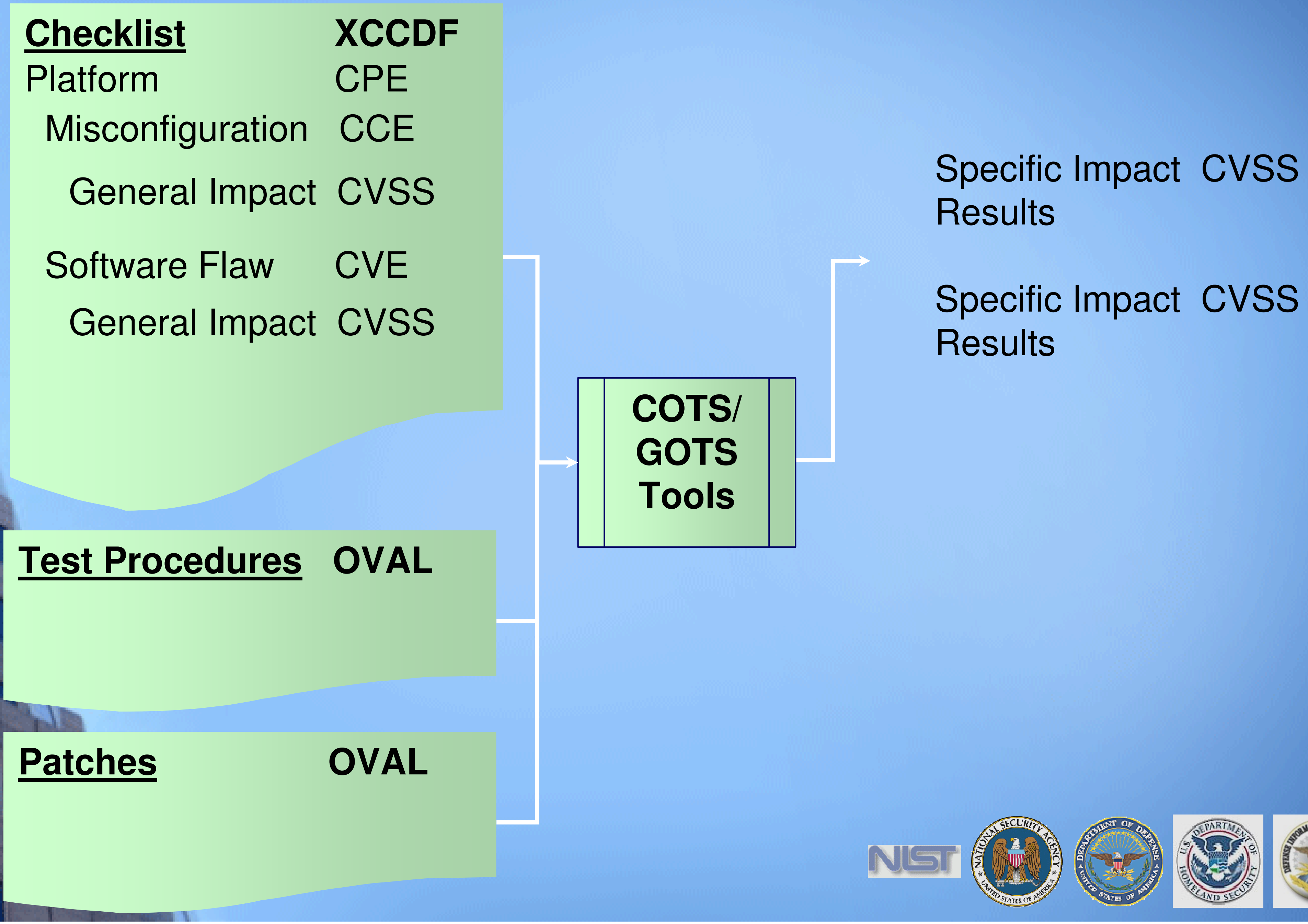
NIST Security Configuration CHECKLISTS
http://checklists.nist.gov
CSD

- In response to NIST being named in the Cyber Security R&D Act of 2002
- Encourages vendor development and maintenance of security guidance
- Currently hosts 112 separate guidance documents for over 125 IT products
- Translating this backlog of checklists into the Security Content Automating Protocol (SCAP)
- Participating organizations: DISA, NSA, NIST, Hewlett-Packard, CIS, ITAA, Oracle, Sun, Apple, Microsoft, Citadel, LJK, Secure Elements, ThreatGuard, MITRE Corporation, G2, Verisign, Verizon Federal, Kyocera, Hewlett-Packard, ConfigureSoft, McAfee, etc.

Sponsored by
DHS National Cyber Security Division/US-CERT
National Vulnerability Database
a comprehensive cyber vulnerability resource
NIST
National Institute of Standards and Technology

- Over 4 million hits per month
- About 20 new vulnerabilities per day
- Mis-configuration cross references to:
  - NIST SP 800-53 Security Controls (All 17 Families and 163 controls)
  - DoD IA Controls
  - DISA VMS Vulnerability IDs
  - Gold Disk VIDs
  - DISA VMS PDI IDs
  - NSA References
  - DCID
  - ISO 17799
- Reconciles software flaws from:
  - US CERT Technical Alerts
  - US CERT Vulnerability Alerts (CERTCC)
  - MITRE OVAL Software Flaw Checks
  - MITRE CVE Dictionary
- Produces XML feed for NVD content

How SCAP Works



Checklist **XCCDF**

Platform CPE

Misconfiguration CCE

General Impact CVSS

Software Flaw CVE

General Impact CVSS

Test Procedures **OVAL**

Patches **OVAL**

COTS/ GOTS Tools

Specific Impact CVSS Results

Specific Impact CVSS Results

Traceability within SCAP Checklists

Keyed on SP800-53 Security Controls

```
<Group id="IA-5" hidden="true">
 <title>Authenticator Management</title>
  <reference>ISO/IEC 17799: 11.5.2, 11.5.3</reference>
  <reference>NIST 800-26: 15.1.6, 15.1.7, 15.1.9, 15.1.10,
    15.1.11, 15.1.12, 15.1.13, 16.1.3, 16.2.3</reference>
  <reference>GAO FISCAM: AC-3.2</reference>
  <reference>DOD 8500.2: IAKM-1, IATS-1</reference>
  <reference>DCID 6/3: 4.B.2.a(7), 4.B.3.a(11)</reference>
</Group>
```

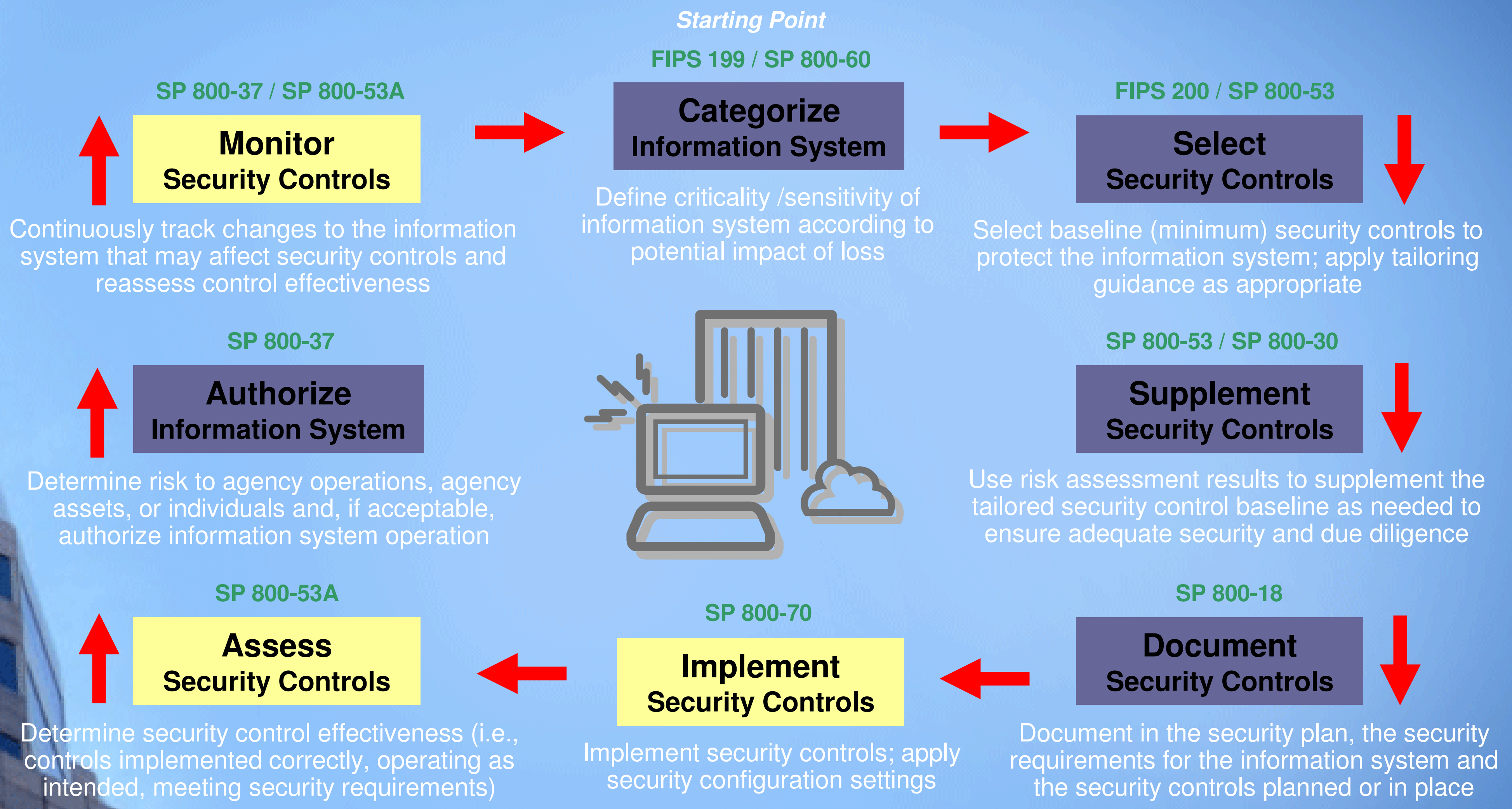
Traceability to Mandates

```
<Rule id="minimum-password-length" selected="false"
    weight="10.0">
  <reference>CCE-100</reference>
  <reference>DISA STIG Section 5.4.1.3</reference>
  <reference>DISA Gold Disk ID 7082</reference>
  <reference>PDI IAIA-12B</reference>
  <reference>800-68 Section 6.1 - Table A-1.4</reference>
  <reference>NSA Chapter 4 - Table 1 Row 4</reference>
  <requires idref="IA-5"/>
  [pointer to OVAL test procedure]
</Rule>
```

Traceability to Guidelines

Rationale for security configuration

Federal Risk Management Framework



Starting Point

FIPS 199 / SP 800-60

Categorize
Information System

Define criticality /sensitivity of information system according to potential impact of loss

FIPS 200 / SP 800-53

Select
Security Controls

Select baseline (minimum) security controls to protect the information system; apply tailoring guidance as appropriate

SP 800-53 / SP 800-30

Supplement
Security Controls

Use risk assessment results to supplement the tailored security control baseline as needed to ensure adequate security and due diligence

SP 800-18

Document
Security Controls

Document in the security plan, the security requirements for the information system and the security controls planned or in place

SP 800-70

Implement
Security Controls

Implement security controls; apply security configuration settings

SP 800-53A

Assess
Security Controls

Determine security control effectiveness (i.e., controls implemented correctly, operating as intended, meeting security requirements)

SP 800-37

Authorize
Information System

Determine risk to agency operations, agency assets, or individuals and, if acceptable, authorize information system operation

SP 800-37 / SP 800-53A

Monitor
Security Controls

Continuously track changes to the information system that may affect security controls and reassess control effectiveness

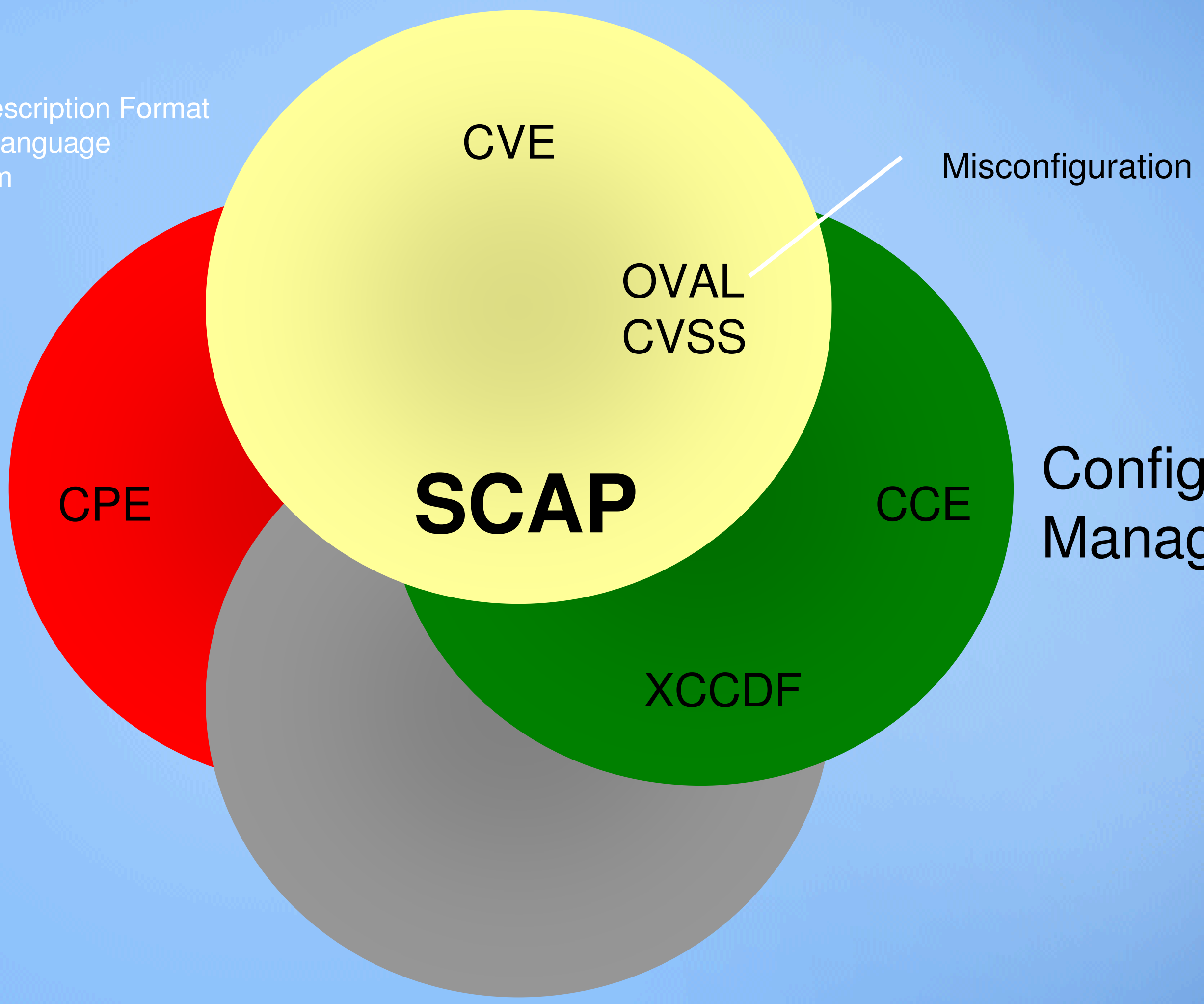
Controls with Automated Validation Support

		Control	Control	Control
Tool Set	Automation	Count	Percent	Example
Framework Tools	Full Automation	-	-	-
	Partial Automation	49	30%	PL-2 System Security Plan
Security Content Automation Protocol	Full Automation	31	19%	AC-11 Session Lock
	Partial Automation	39	24%	AC-8 System Use Notification
Future Automation Techniques or No Automation		44	27%	AC-1 Access Control Policy and Procedures
	Total Controls	163	100%	

Integrating IT and IT Security Through SCAP

Common Vulnerability Enumeration
Common Platform Enumeration
Common Configuration Enumeration
eXtensible Checklist Configuration Description Format
Open Vulnerability and Assessment Language
Common Vulnerability Scoring System

Vulnerability Management

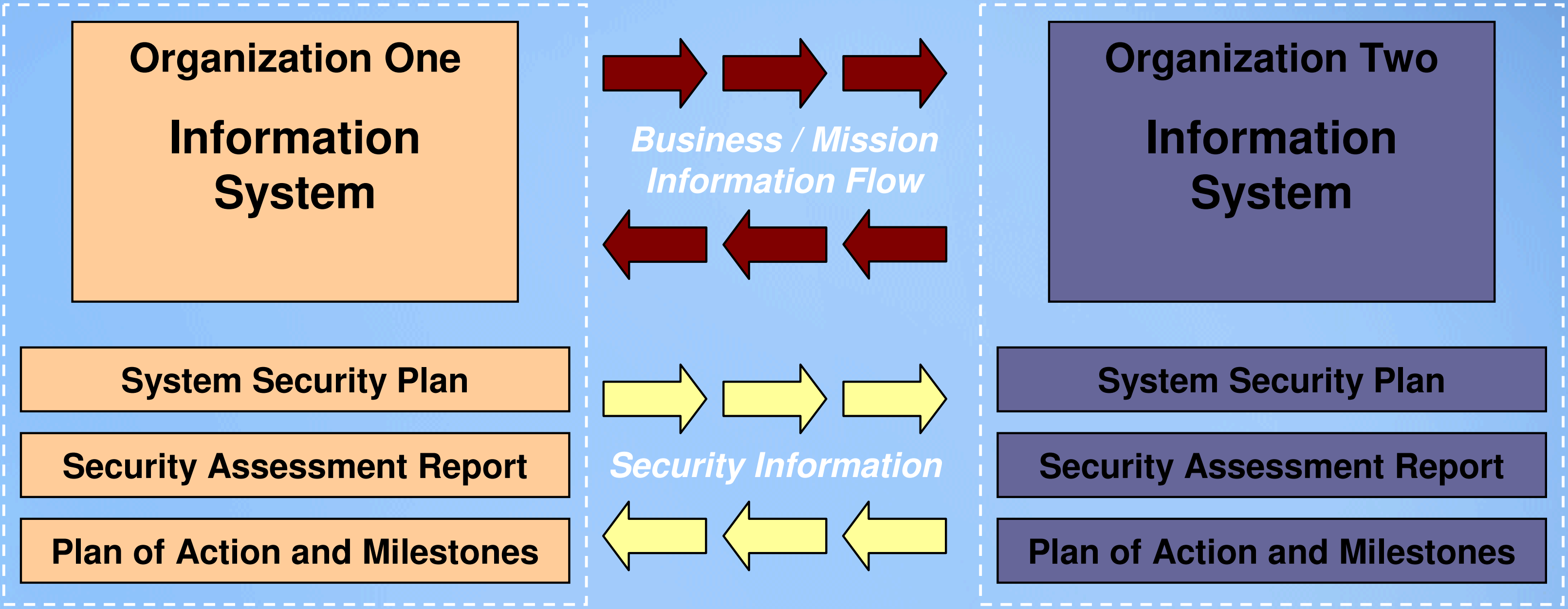


Asset Management

Configuration Management

Compliance Management

Security Visibility Among Business/Mission Partners



Organization One

Information System

System Security Plan

Security Assessment Report

Plan of Action and Milestones

Business / Mission Information Flow

Security Information

Organization Two

Information System

System Security Plan

Security Assessment Report

Plan of Action and Milestones

Determining the risk to the first organization's operations and assets and the acceptability of such risk

Determining the risk to the second organization's operations and assets and the acceptability of such risk

The objective is to achieve *visibility* into prospective business/mission partners information security programs BEFORE critical/sensitive communications begin…establishing levels of security due diligence and trust.

Stakeholder and Contributor Landscape: Industry

Product Teams and Content Contributors

XACTA
A TELOS COMPANY

BELARC

Shavlik

MITRE

eEye Digital Security®

secure elements®
audit. evaluate. comply.

ThreatGuard

nCircle
Proactive Network Security

FuGEN

McAfee®

symantec.

Configuresoft

the CENTER for INTERNET SECURITY

GIDEON TECHNOLOGIES

TENABLE
Network Security

Ai Metrix

G2

SecureInfo
THE INFORMATION ASSURANCE EXPERTS

Lumension
SECURITY™

redhat.

Atlantic Systems Group, Inc.
www.asg.cc

Premier Data Services

NIST

NATIONAL SECURITY AGENCY
UNITED STATES OF AMERICA

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

U.S. DEPARTMENT OF HOMELAND SECURITY

DEFENSE INFORMATION SYSTEMS AGENCY

Stakeholder and Contributor Landscape: Federal Agencies

SCAP Infrastructure, Beta Tests, Use Cases, and Early Adopters

DHS	OMB
NSA	IC
OSD	DISA
DOJ	EPA
Army	NIST
DOS	

Producing an FDCC Virtual Machine Image

Implement FDCC settings on virtual machine images

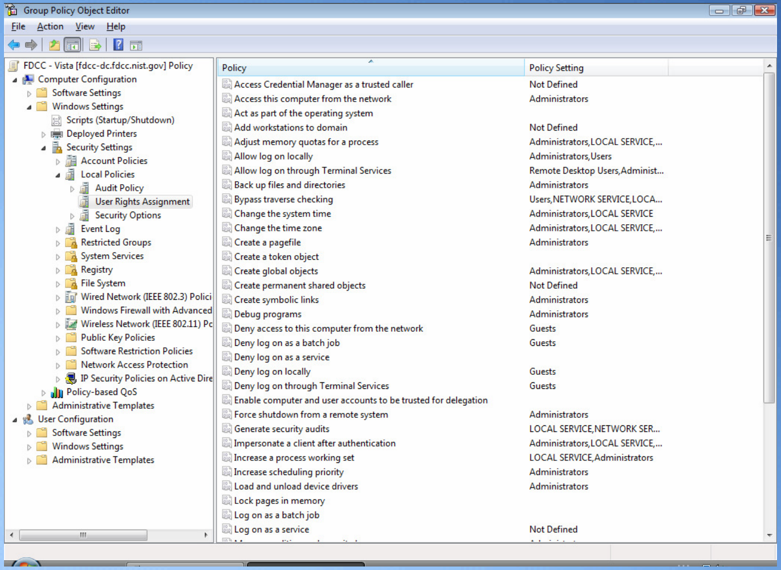
Use SCAP to verify FDCC settings were implemented correctly

- Windows XP
- Windows Vista
- Windows XP Firewall
- Windows Vista Firewall
- Internet Explorer 7.0

Reconcile any “failed” SCAP tests

Record any exceptions

FDCC Virtual Machine Image



FDCC - Vista [fdcc-dc.fdcc.nist.gov] Policy
- Computer Configuration
  - Software Settings
  - Windows Settings
    - Scripts (Startup/Shutdown)
    - Deployed Printers
    - Security Settings
      - Account Policies
      - Local Policies
        - Audit Policy
        - User Rights Assignment
        - Security Options
      - Event Log
      - Restricted Groups
      - System Services
      - Registry
      - File System
      - Wired Network (IEEE 802.3) Polici
      - Windows Firewall with Advanced
      - Wireless Network (IEEE 802.11) Pc
      - Public Key Policies
      - Software Restriction Policies
      - Network Access Protection
      - IP Security Policies on Active Dire
    - Policy-based QoS
  - Administrative Templates
- User Configuration
  - Software Settings
  - Windows Settings
  - Administrative Templates

Policy	Policy Setting
Access Credential Manager as a trusted caller	Not Defined
Access this computer from the network	Administrators
Act as part of the operating system	
Add workstations to domain	Not Defined
Adjust memory quotas for a process	Administrators,LOCAL SERVICE,...
Allow log on locally	Administrators,Users
Allow log on through Terminal Services	Remote Desktop Users,Administ...
Back up files and directories	Administrators
Bypass traverse checking	Users,NETWORK SERVICE,LOCA...
Change the system time	Administrators,LOCAL SERVICE
Change the time zone	Administrators,LOCAL SERVICE,...
Create a pagefile	Administrators
Create a token object	
Create global objects	Administrators,LOCAL SERVICE,...
Create permanent shared objects	Not Defined
Create symbolic links	Administrators
Debug programs	Administrators
Deny access to this computer from the network	Guests
Deny log on as a batch job	Guests
Deny log on as a service	
Deny log on locally	Guests
Deny log on through Terminal Services	Guests
Enable computer and user accounts to be trusted for delegation	
Force shutdown from a remote system	Administrators
Generate security audits	LOCAL SERVICE,NETWORK SER...
Impersonate a client after authentication	Administrators,LOCAL SERVICE,...
Increase a process working set	LOCAL SERVICE,Administrators
Increase scheduling priority	Administrators
Load and unload device drivers	Administrators
Lock pages in memory	
Log on as a batch job	
Log on as a service	Not Defined

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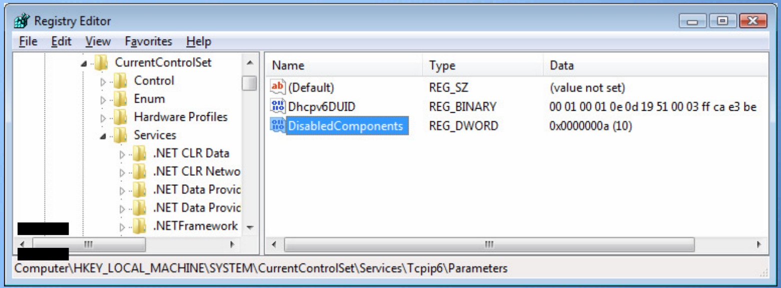
C5 Compliance Platform



- CurrentControlSet
  - Control
  - Enum
  - Hardware Profiles
  - Services
    - .NET CLR Data
    - .NET CLR Netwo
    - .NET Data Provic
    - .NET Data Provic
    - .NETFramework

[redacted]

[redacted]

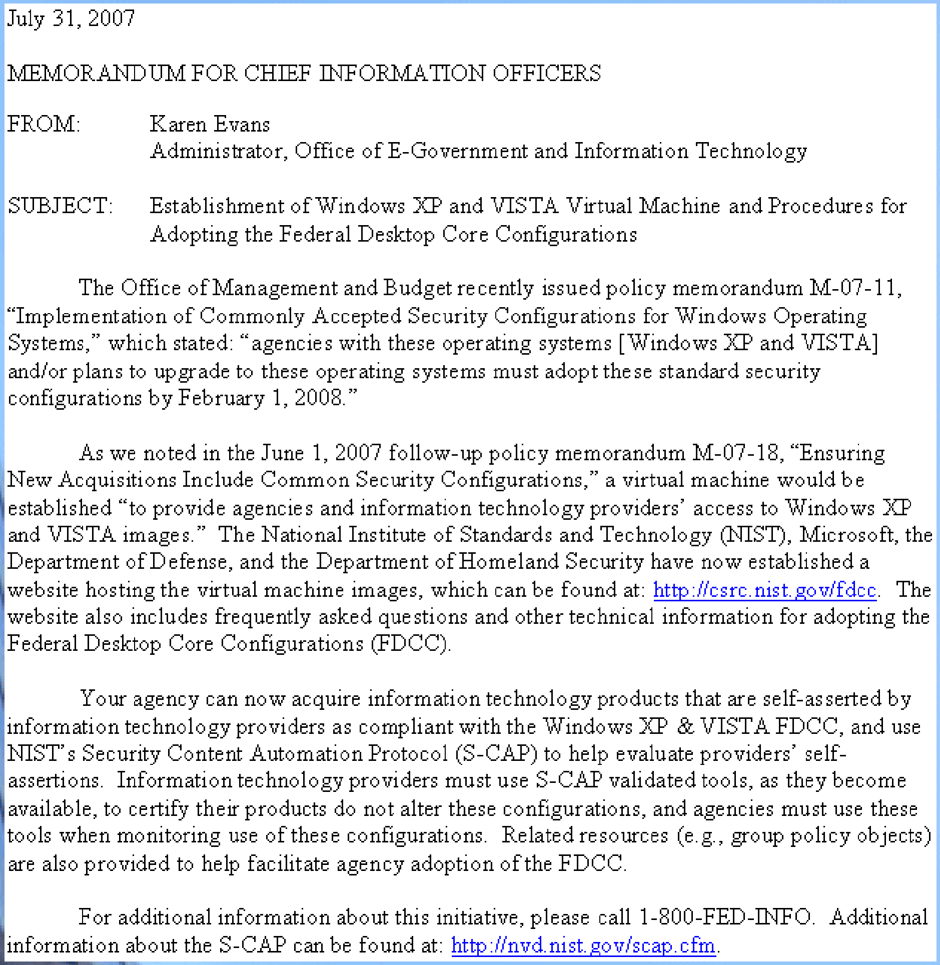
Name	Type	Data
(Default)	REG_SZ	(value not set)
Dhcpv6DUID	REG_BINARY	00 01 00 01 0e 0d 19 51 00 03 ff ca e3 be
DisabledComponents	REG_DWORD	0x0000000a (10)

Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters

NIST

OMB 31 July 2007 Memo to CIOs

Establishment of Windows XP and VISTA Virtual Machine and Procedures for Adopting the Federal Desktop Core Configurations



July 31, 2007

MEMORANDUM FOR CHIEF INFORMATION OFFICERS

FROM: Karen Evans
Administrator, Office of E-Government and Information Technology

SUBJECT: Establishment of Windows XP and VISTA Virtual Machine and Procedures for Adopting the Federal Desktop Core Configurations

The Office of Management and Budget recently issued policy memorandum M-07-11, "Implementation of Commonly Accepted Security Configurations for Windows Operating Systems," which stated: "agencies with these operating systems [Windows XP and VISTA] and/or plans to upgrade to these operating systems must adopt these standard security configurations by February 1, 2008."

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Your agency can now acquire information technology products that are self-asserted by information technology providers as compliant with the Windows XP & VISTA FDCC, and use NIST's Security Content Automation Protocol (S-CAP) to help evaluate providers' self-assertions. Information technology providers must use S-CAP validated tools, as they become available, to certify their products do not alter these configurations, and agencies must use these tools when monitoring use of these configurations. Related resources (e.g., group policy objects) are also provided to help facilitate agency adoption of the FDCC.

For additional information about this initiative, please call 1-800-FED-INFO. Additional information about the S-CAP can be found at: http://nvd.nist.gov/scap.cfm.

"As we noted in the June 1, 2007 follow-up policy memorandum M-07-18, "Ensuring New Acquisitions Include Common Security Configurations," **a virtual machine would be established "to provide agencies and information technology providers' access to Windows XP and VISTA images."** The National Institute of Standards and Technology (NIST), Microsoft, the Department of Defense, and the Department of Homeland Security have now established a website hosting the virtual machine images, which can be found at: http://csrc.nist.gov/fdcc."

"Your agency can now acquire information technology products that are self-asserted by information technology providers as compliant with the Windows XP & VISTA FDCC, and **use NIST's Security Content Automation Protocol (S-CAP) to help evaluate providers' self-assertions. Information technology providers must use S-CAP validated tools, as they become available, to certify their products do not alter these configurations, and agencies must use these tools when monitoring use of these configurations."**

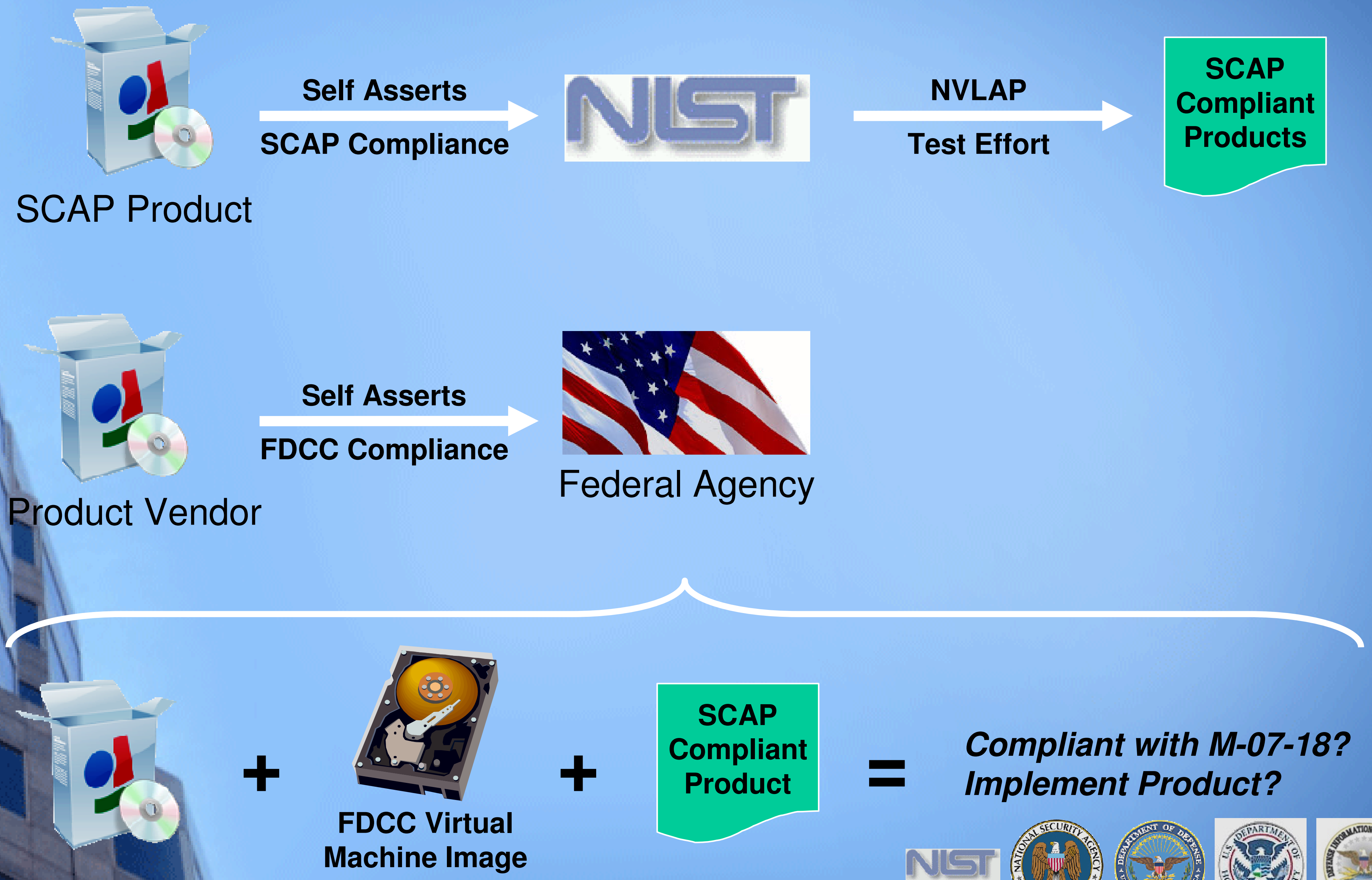
Accomplishing FDCC with SCAP

Operations Teams	Product Teams	Function
●	●	Test to ensure products do not change the FDCC settings
●		Assess new implementations for FDCC compliance
●		Monitor previous implementations for FDCC compliance
●		Generate FDCC compliance and deviation reports

Quote from OMB Memo *Establishment of Windows XP and VISTA Virtual Machine and Procedures for Adopting the Federal Desktop Core Configurations*

"**Information technology providers** must use S-CAP validated tools, as they become available, to **certify their products** do not alter these configurations, and **agencies** must use these tools **when monitoring** use of these configurations. "

The Relationship Between FDCC and SCAP Product Compliance



SCAP Product

Self Asserts

SCAP Compliance

NVLAP

Test Effort

SCAP Compliant Products

Product Vendor

Self Asserts

FDCC Compliance

Federal Agency

+

FDCC Virtual Machine Image

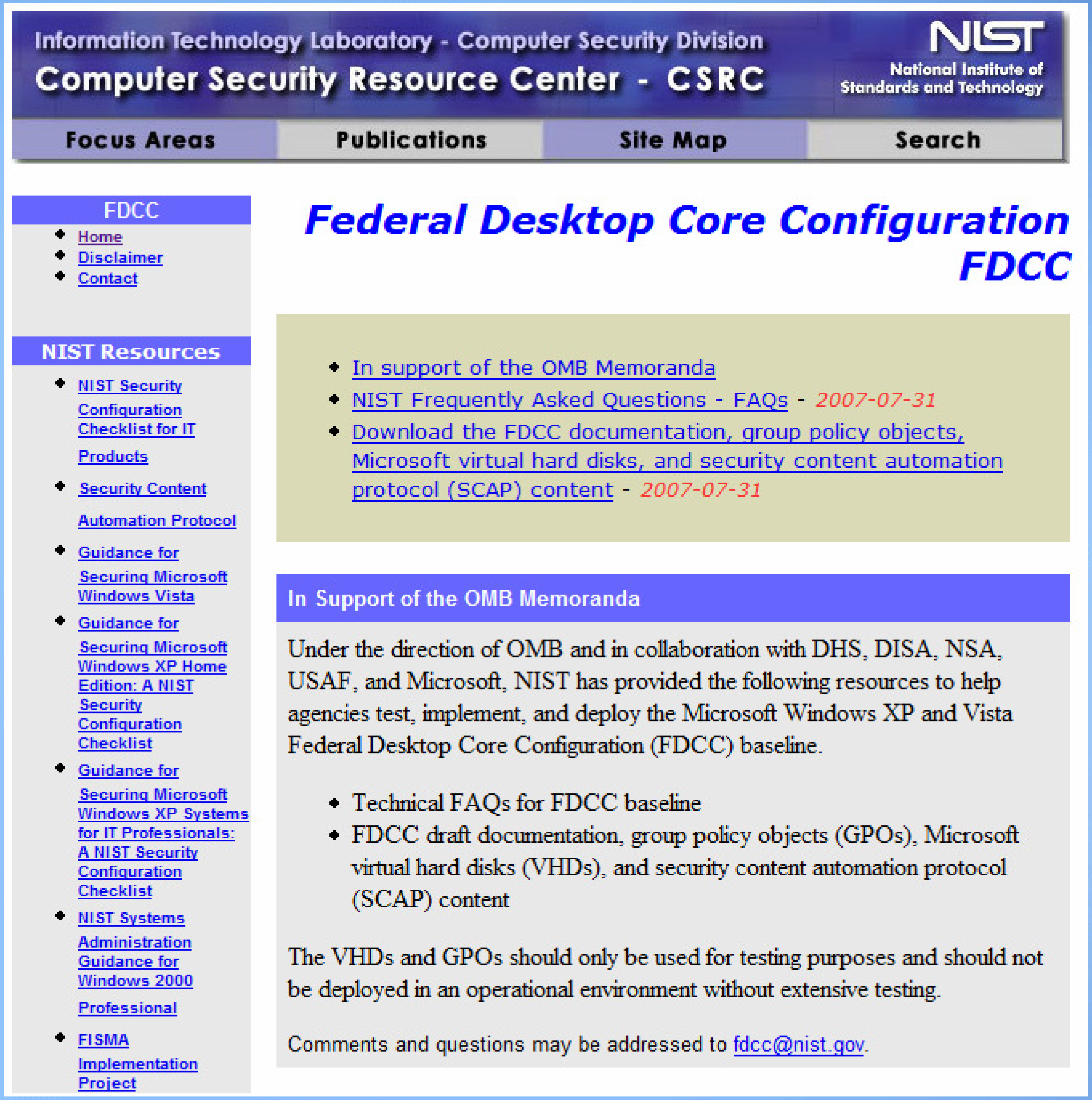
+

SCAP Compliant Product

=

Compliant with M-07-18?
Implement Product?

http://fdcc.nist.gov



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Computer Security Resource Center - CSRC
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National Institute of Standards and Technology
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FDCC

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NIST Resources

- NIST Security Configuration Checklist for IT Products
- Security Content Automation Protocol
- Guidance for Securing Microsoft Windows Vista
- Guidance for Securing Microsoft Windows XP Home Edition: A NIST Security Configuration Checklist
- Guidance for Securing Microsoft Windows XP Systems for IT Professionals: A NIST Security Configuration Checklist
- NIST Systems Administration Guidance for Windows 2000 Professional
- FISMA Implementation Project

Federal Desktop Core Configuration FDCC

- In support of the OMB Memoranda
- NIST Frequently Asked Questions - FAQs - 2007-07-31
- Download the FDCC documentation, group policy objects, Microsoft virtual hard disks, and security content automation protocol (SCAP) content - 2007-07-31

In Support of the OMB Memoranda

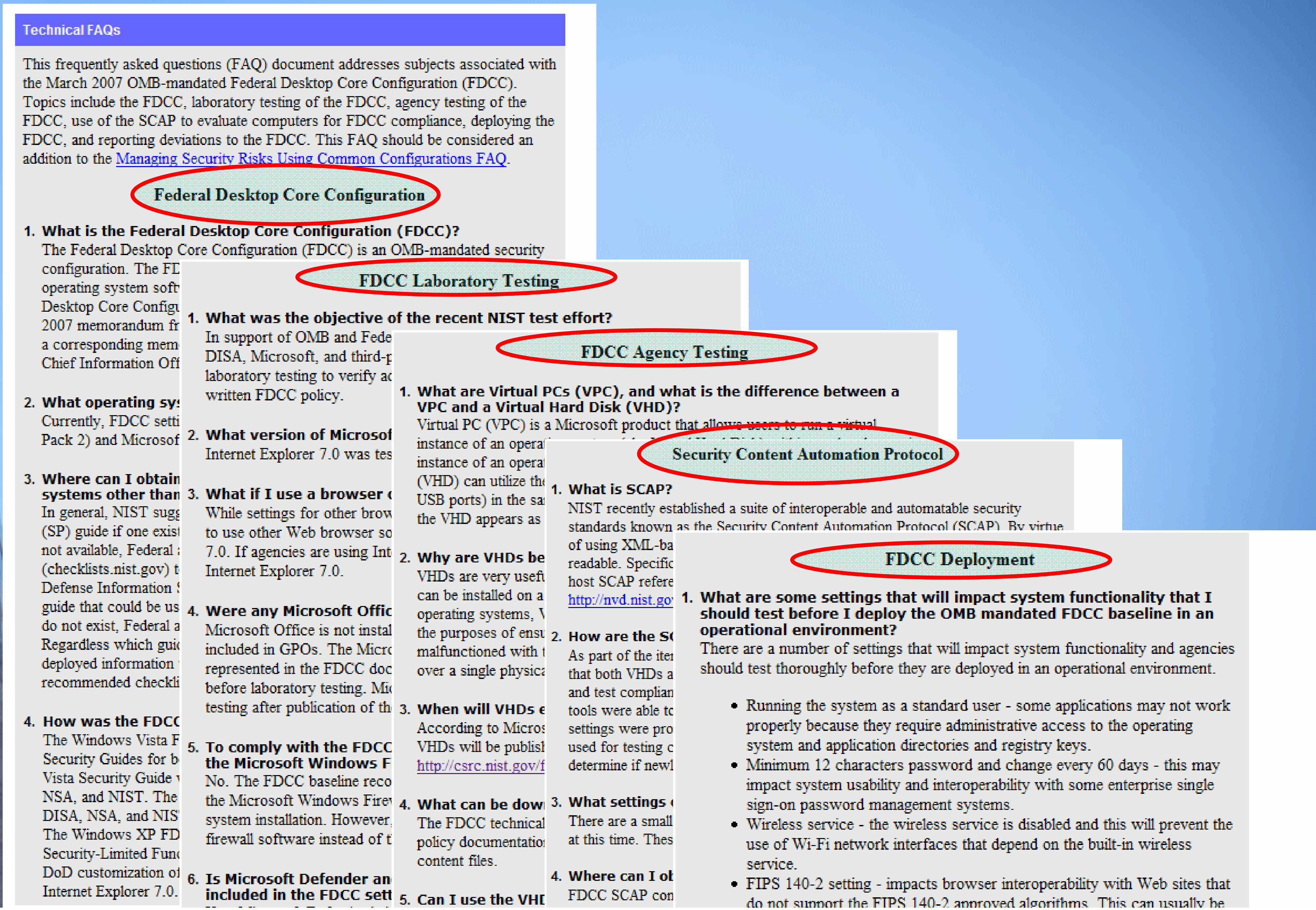
Under the direction of OMB and in collaboration with DHS, DISA, NSA, USAF, and Microsoft, NIST has provided the following resources to help agencies test, implement, and deploy the Microsoft Windows XP and Vista Federal Desktop Core Configuration (FDCC) baseline.

- Technical FAQs for FDCC baseline
- FDCC draft documentation, group policy objects (GPOs), Microsoft virtual hard disks (VHDs), and security content automation protocol (SCAP) content

The VHDs and GPOs should only be used for testing purposes and should not be deployed in an operational environment without extensive testing.

Comments and questions may be addressed to fdcc@nist.gov.

Frequently Asked Questions



Technical FAQs

This frequently asked questions (FAQ) document addresses subjects associated with the March 2007 OMB-mandated Federal Desktop Core Configuration (FDCC). Topics include the FDCC, laboratory testing of the FDCC, agency testing of the FDCC, use of the SCAP to evaluate computers for FDCC compliance, deploying the FDCC, and reporting deviations to the FDCC. This FAQ should be considered an addition to the Managing Security Risks Using Common Configurations FAQ.

Federal Desktop Core Configuration

1. **What is the Federal Desktop Core Configuration (FDCC)?**
The Federal Desktop Core Configuration (FDCC) is an OMB-mandated security
configuration. The FD
operating system soft
Desktop Core Configu
2007 memorandum fr
a corresponding mem
Chief Information Off

2. **What operating sys**
Currently, FDCC setti
Pack 2) and Microsof

3. **Where can I obtain**
systems other than
In general, NIST sugg
(SP) guide if one exist
not available, Federal
(checklists.nist.gov) t
Defense Information S
guide that could be us
do not exist, Federal a
Regardless which gui
deployed information
recommended checkli

4. **How was the FDCC**
The Windows Vista F
Security Guides for b
Vista Security Guide
NSA, and NIST. The
DISA, NSA, and NIS
The Windows XP FD
Security-Limited Func
DoD customization of
Internet Explorer 7.0.

FDCC Laboratory Testing

1. **What was the objective of the recent NIST test effort?**
In support of OMB and Fede
DISA, Microsoft, and third-p
laboratory testing to verify ac
written FDCC policy.

2. **What version of Microsof**
Internet Explorer 7.0 was tes

3. **What if I use a browser o**
While settings for other brow
to use other Web browser so
7.0. If agencies are using Int
Internet Explorer 7.0.

4. **Were any Microsoft Offic**
Microsoft Office is not instal
included in GPOs. The Micro
represented in the FDCC doc
before laboratory testing. Mi
testing after publication of th

5. **To comply with the FDCC**
the Microsoft Windows F
No. The FDCC baseline reco
the Microsoft Windows Firew
system installation. However,
firewall software instead of t

6. **Is Microsoft Defender an**
included in the FDCC sett

FDCC Agency Testing

1. **What are Virtual PCs (VPC), and what is the difference between a VPC and a Virtual Hard Disk (VHD)?**
Virtual PC (VPC) is a Microsoft product that allows users to run a virtual
instance of an opera
instance of an opera
(VHD) can utilize the
USB ports) in the sa
the VHD appears as

2. **Why are VHDs be**
VHDs are very usefu
can be installed on a
operating systems, V
the purposes of ensu
malfunctioned with t
over a single physica

3. **When will VHDs e**
According to Micros
VHDs will be publish
http://csrc.nist.gov/f

4. **What can be dow**
The FDCC technical
policy documentatio
content files.

5. **Can I use the VHD**

Security Content Automation Protocol

1. **What is SCAP?**
NIST recently established a suite of interoperable and automatable security
standards known as the Security Content Automation Protocol (SCAP). By virtue
of using XML-ba
readable. Specific
host SCAP refere
http://nvd.nist.gov

2. **How are the SC**
As part of the iter
that both VHDs a
and test complian
tools were able to
settings were pro
used for testing c
determine if newl

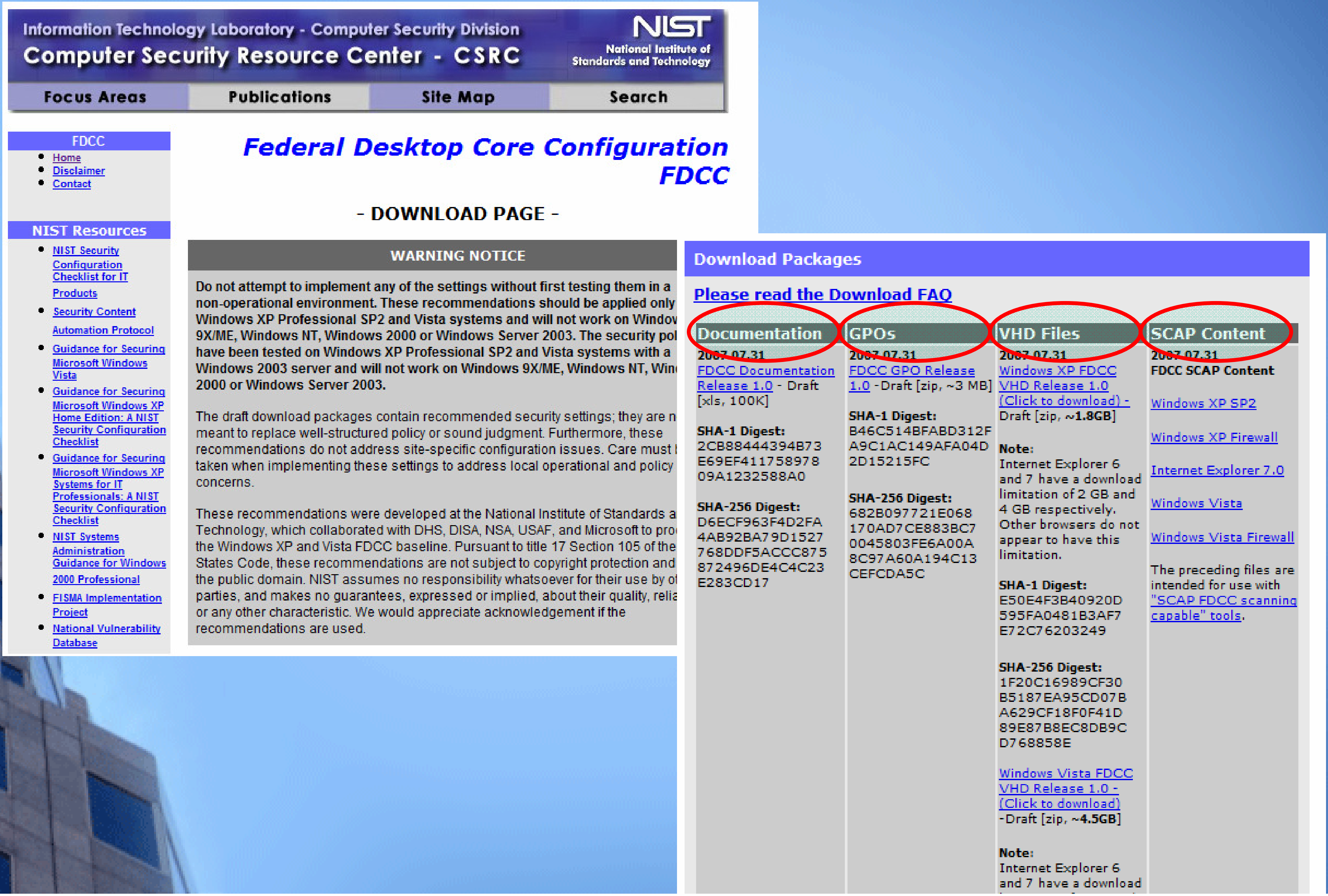
3. **What settings c**
There are a small
at this time. Thes

4. **Where can I ob**
FDCC SCAP con

FDCC Deployment

1. **What are some settings that will impact system functionality that I should test before I deploy the OMB mandated FDCC baseline in an operational environment?**
There are a number of settings that will impact system functionality and agencies should test thoroughly before they are deployed in an operational environment.
   - Running the system as a standard user - some applications may not work properly because they require administrative access to the operating system and application directories and registry keys.
   - Minimum 12 characters password and change every 60 days - this may impact system usability and interoperability with some enterprise single sign-on password management systems.
   - Wireless service - the wireless service is disabled and this will prevent the use of Wi-Fi network interfaces that depend on the built-in wireless service.
   - FIPS 140-2 setting - impacts browser interoperability with Web sites that do not support the FIPS 140-2 approved algorithms. This can usually be

http://fdcc.nist.gov/download_fdcc.html



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Computer Security Resource Center - CSRC

NIST National Institute of Standards and Technology

FDCC

- Home
- Disclaimer
- Contact

NIST Resources

- NIST Security Configuration Checklist for IT Products
- Security Content Automation Protocol
- Guidance for Securing Microsoft Windows Vista
- Guidance for Securing Microsoft Windows XP Home Edition: A NIST Security Configuration Checklist
- Guidance for Securing Microsoft Windows XP Systems for IT Professionals: A NIST Security Configuration Checklist
- NIST Systems Administration Guidance for Windows 2000 Professional
- FISMA Implementation Project
- National Vulnerability Database

Federal Desktop Core Configuration FDCC

- DOWNLOAD PAGE -

WARNING NOTICE

Do not attempt to implement any of the settings without first testing them in a non-operational environment. These recommendations should be applied only Windows XP Professional SP2 and Vista systems and will not work on Window 9X/ME, Windows NT, Windows 2000 or Windows Server 2003. The security pol have been tested on Windows XP Professional SP2 and Vista systems with a Windows 2003 server and will not work on Windows 9X/ME, Windows NT, Win 2000 or Windows Server 2003.

The draft download packages contain recommended security settings; they are n meant to replace well-structured policy or sound judgment. Furthermore, these recommendations do not address site-specific configuration issues. Care must taken when implementing these settings to address local operational and policy concerns.

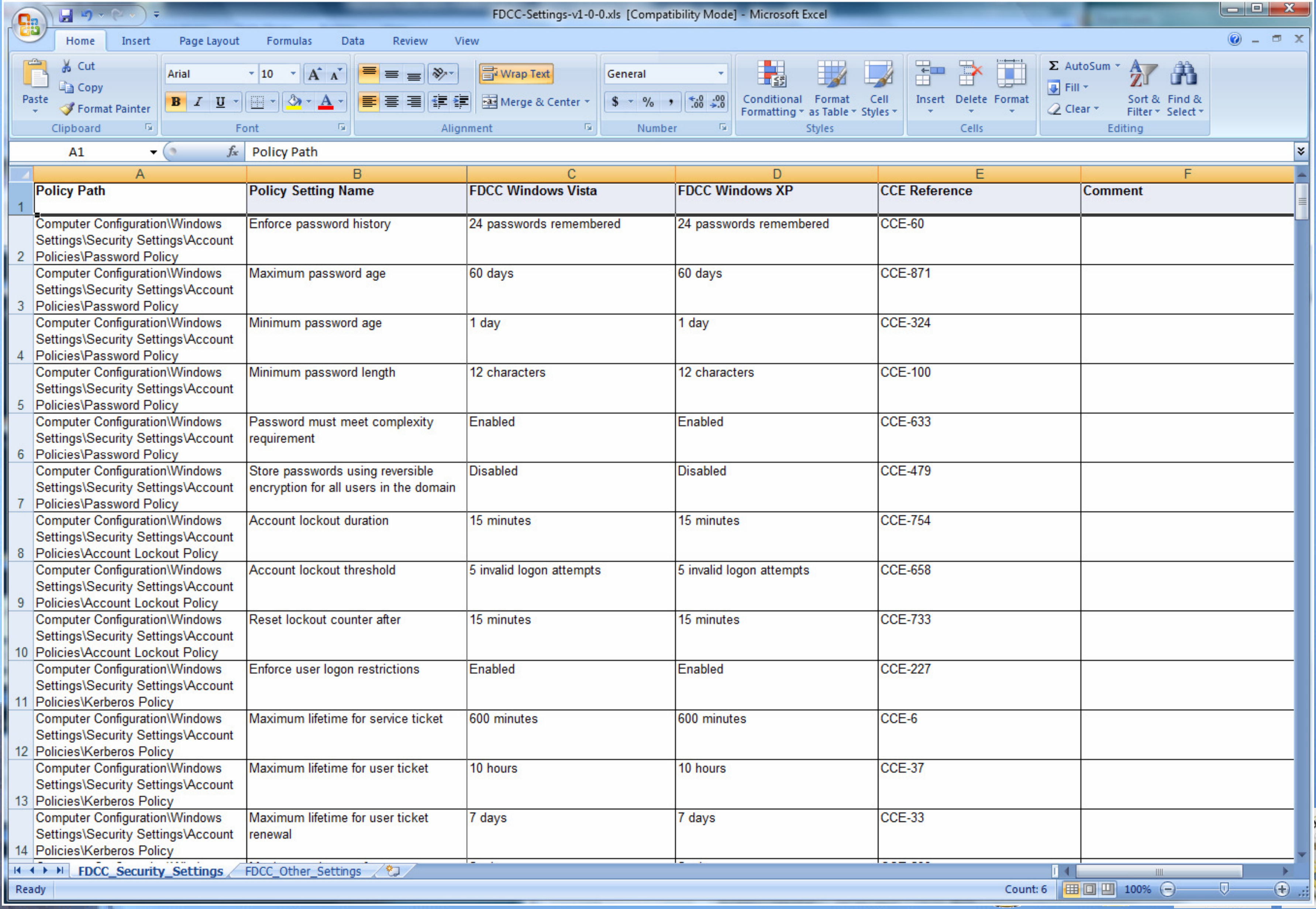
These recommendations were developed at the National Institute of Standards a Technology, which collaborated with DHS, DISA, NSA, USAF, and Microsoft to pro the Windows XP and Vista FDCC baseline. Pursuant to title 17 Section 105 of the States Code, these recommendations are not subject to copyright protection and the public domain. NIST assumes no responsibility whatsoever for their use by o parties, and makes no guarantees, expressed or implied, about their quality, relia or any other characteristic. We would appreciate acknowledgement if the recommendations are used.

Download Packages

Please read the Download FAQ

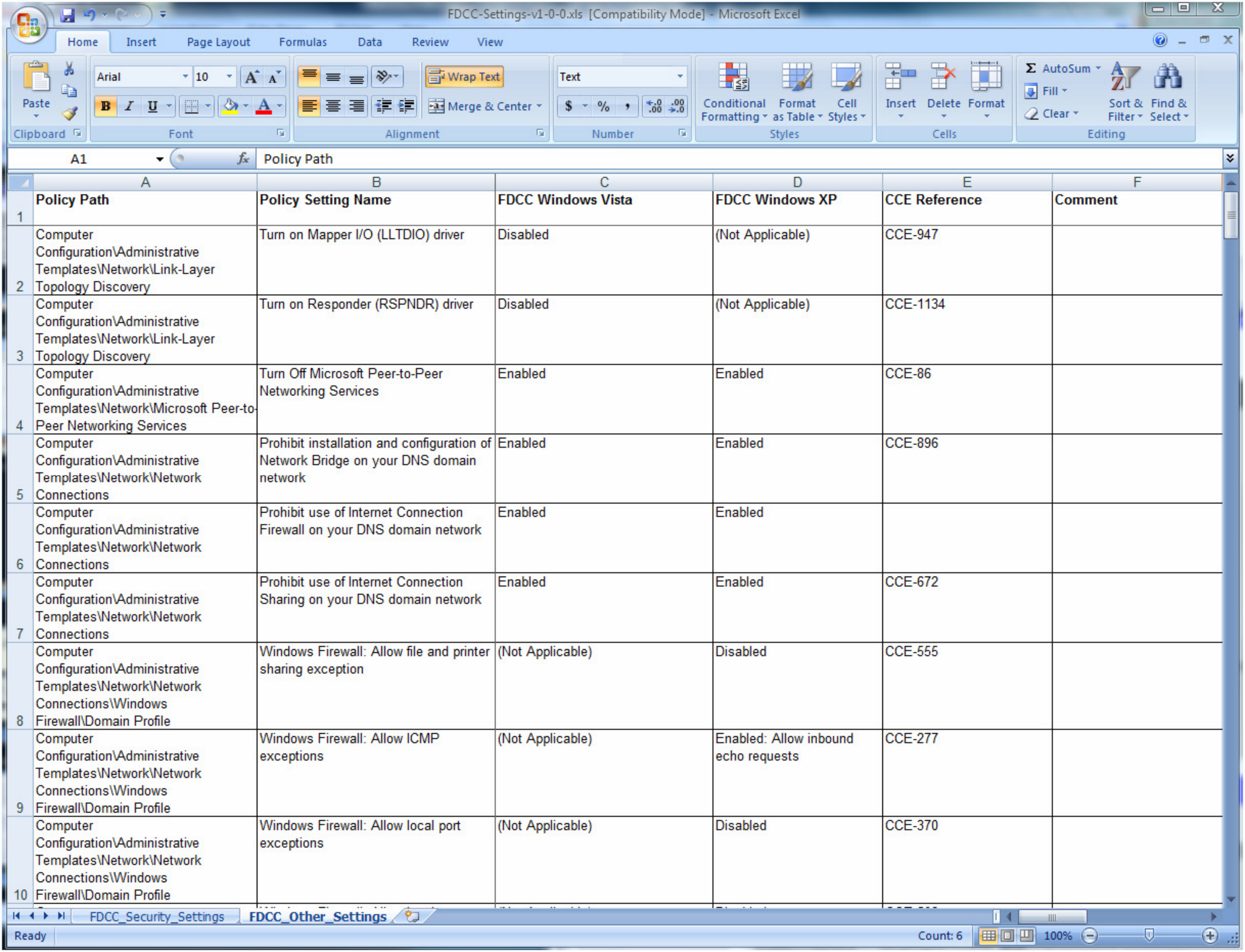
Documentation	GPOs	VHD Files	SCAP Content
2007.07.31 FDCC Documentation Release 1.0 - Draft [xls, 100K] **SHA-1 Digest:** 2CB88444394B73 E69EF411758978 09A1232588A0 **SHA-256 Digest:** D6ECF963F4D2FA 4AB92BA79D1527 768DDF5ACCC875 872496DE4C4C23 E283CD17	**2007.07.31** FDCC GPO Release 1.0 -Draft [zip, ~3 MB] **SHA-1 Digest:** B46C514BFABD312F A9C1AC149AFA04D 2D15215FC **SHA-256 Digest:** 682B097721E068 170AD7CE883BC7 0045803FE6A00A 8C97A60A194C13 CEFCDA5C	**2007.07.31** Windows XP FDCC VHD Release 1.0 (Click to download) - Draft [zip, **~1.8GB**] **Note:** Internet Explorer 6 and 7 have a download limitation of 2 GB and 4 GB respectively. Other browsers do not appear to have this limitation. **SHA-1 Digest:** E50E4F3B40920D 595FA0481B3AF7 E72C76203249 **SHA-256 Digest:** 1F20C16989CF30 B5187EA95CD07B A629CF18F0F41D 89E87B8EC8DB9C D768858E Windows Vista FDCC VHD Release 1.0 - (Click to download) -Draft [zip, **~4.5GB**] **Note:** Internet Explorer 6 and 7 have a download	**2007.07.31** **FDCC SCAP Content** Windows XP SP2 Windows XP Firewall Internet Explorer 7.0 Windows Vista Windows Vista Firewall The preceding files are intended for use with "SCAP FDCC scanning capable" tools.

FDCC Security Settings



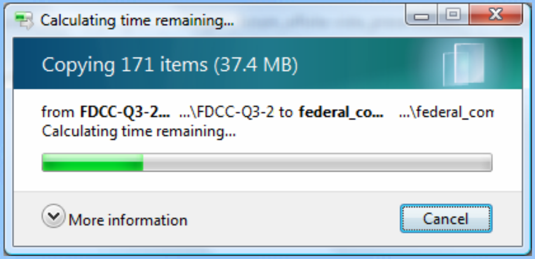
	A	B	C	D	E	F
1	**Policy Path**	**Policy Setting Name**	**FDCC Windows Vista**	**FDCC Windows XP**	**CCE Reference**	**Comment**
2	Computer Configuration\Windows Settings\Security Settings\Account Policies\Password Policy	Enforce password history	24 passwords remembered	24 passwords remembered	CCE-60	
3	Computer Configuration\Windows Settings\Security Settings\Account Policies\Password Policy	Maximum password age	60 days	60 days	CCE-871	
4	Computer Configuration\Windows Settings\Security Settings\Account Policies\Password Policy	Minimum password age	1 day	1 day	CCE-324	
5	Computer Configuration\Windows Settings\Security Settings\Account Policies\Password Policy	Minimum password length	12 characters	12 characters	CCE-100	
6	Computer Configuration\Windows Settings\Security Settings\Account Policies\Password Policy	Password must meet complexity requirement	Enabled	Enabled	CCE-633	
7	Computer Configuration\Windows Settings\Security Settings\Account Policies\Password Policy	Store passwords using reversible encryption for all users in the domain	Disabled	Disabled	CCE-479	
8	Computer Configuration\Windows Settings\Security Settings\Account Policies\Account Lockout Policy	Account lockout duration	15 minutes	15 minutes	CCE-754	
9	Computer Configuration\Windows Settings\Security Settings\Account Policies\Account Lockout Policy	Account lockout threshold	5 invalid logon attempts	5 invalid logon attempts	CCE-658	
10	Computer Configuration\Windows Settings\Security Settings\Account Policies\Account Lockout Policy	Reset lockout counter after	15 minutes	15 minutes	CCE-733	
11	Computer Configuration\Windows Settings\Security Settings\Account Policies\Kerberos Policy	Enforce user logon restrictions	Enabled	Enabled	CCE-227	
12	Computer Configuration\Windows Settings\Security Settings\Account Policies\Kerberos Policy	Maximum lifetime for service ticket	600 minutes	600 minutes	CCE-6	
13	Computer Configuration\Windows Settings\Security Settings\Account Policies\Kerberos Policy	Maximum lifetime for user ticket	10 hours	10 hours	CCE-37	
14	Computer Configuration\Windows Settings\Security Settings\Account Policies\Kerberos Policy	Maximum lifetime for user ticket renewal	7 days	7 days	CCE-33	

FDCC Security Settings



Policy Path	Policy Setting Name	FDCC Windows Vista	FDCC Windows XP	CCE Reference	Comment
Computer Configuration\Administrative Templates\Network\Link-Layer Topology Discovery	Turn on Mapper I/O (LLTDIO) driver	Disabled	(Not Applicable)	CCE-947	
Computer Configuration\Administrative Templates\Network\Link-Layer Topology Discovery	Turn on Responder (RSPNDR) driver	Disabled	(Not Applicable)	CCE-1134	
Computer Configuration\Administrative Templates\Network\Microsoft Peer-to-Peer Networking Services	Turn Off Microsoft Peer-to-Peer Networking Services	Enabled	Enabled	CCE-86	
Computer Configuration\Administrative Templates\Network\Network Connections	Prohibit installation and configuration of Network Bridge on your DNS domain network	Enabled	Enabled	CCE-896	
Computer Configuration\Administrative Templates\Network\Network Connections	Prohibit use of Internet Connection Firewall on your DNS domain network	Enabled	Enabled		
Computer Configuration\Administrative Templates\Network\Network Connections	Prohibit use of Internet Connection Sharing on your DNS domain network	Enabled	Enabled	CCE-672	
Computer Configuration\Administrative Templates\Network\Network Connections\Windows Firewall\Domain Profile	Windows Firewall: Allow file and printer sharing exception	(Not Applicable)	Disabled	CCE-555	
Computer Configuration\Administrative Templates\Network\Network Connections\Windows Firewall\Domain Profile	Windows Firewall: Allow ICMP exceptions	(Not Applicable)	Enabled: Allow inbound echo requests	CCE-277	
Computer Configuration\Administrative Templates\Network\Network Connections\Windows Firewall\Domain Profile	Windows Firewall: Allow local port exceptions	(Not Applicable)	Disabled	CCE-370	

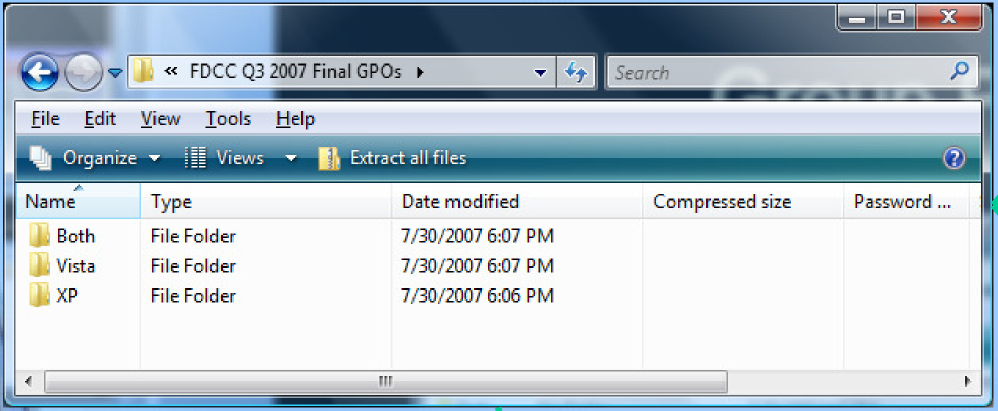
Group Policy Objects (GPOs)



Calculating time remaining...

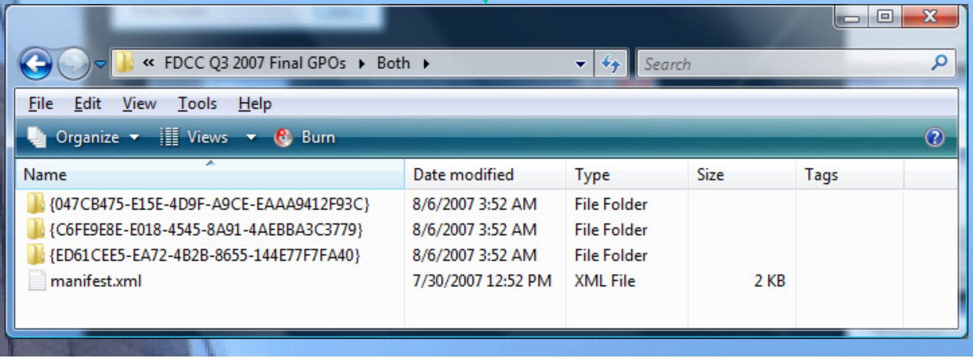
Copying 171 items (37.4 MB)

from **FDCC-Q3-2...** ...\FDCC-Q3-2 to **federal_co...** ...\federal_con
Calculating time remaining...



« FDCC Q3 2007 Final GPOs ▸

Name	Type	Date modified	Compressed size	Password ...
Both	File Folder	7/30/2007 6:07 PM		
Vista	File Folder	7/30/2007 6:07 PM		
XP	File Folder	7/30/2007 6:06 PM		



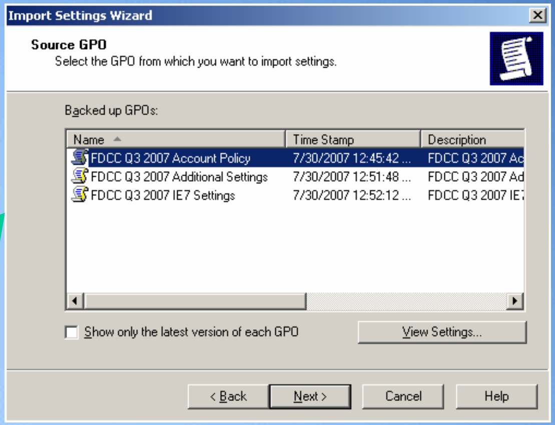
« FDCC Q3 2007 Final GPOs ▸ Both ▸

Name	Date modified	Type	Size	Tags
{047CB475-E15E-4D9F-A9CE-EAAA9412F93C}	8/6/2007 3:52 AM	File Folder		
{C6FE9E8E-E018-4545-8A91-4AEBBA3C3779}	8/6/2007 3:52 AM	File Folder		
{ED61CEE5-EA72-4B2B-8655-144E77F7FA40}	8/6/2007 3:52 AM	File Folder		
manifest.xml	7/30/2007 12:52 PM	XML File	2 KB	

Both

Vista

XP



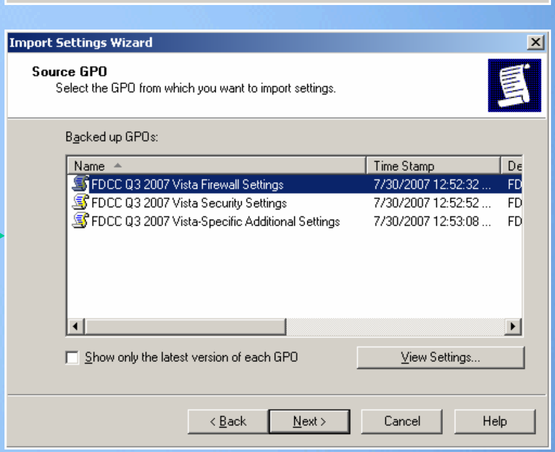
Import Settings Wizard

Source GPO
Select the GPO from which you want to import settings.

Backed up GPOs:

Name	Time Stamp	Description
FDCC Q3 2007 Account Policy	7/30/2007 12:45:42 ...	FDCC Q3 2007 Ac
FDCC Q3 2007 Additional Settings	7/30/2007 12:51:48 ...	FDCC Q3 2007 Ad
FDCC Q3 2007 IE7 Settings	7/30/2007 12:52:12 ...	FDCC Q3 2007 IE7

□ Show only the latest version of each GPO



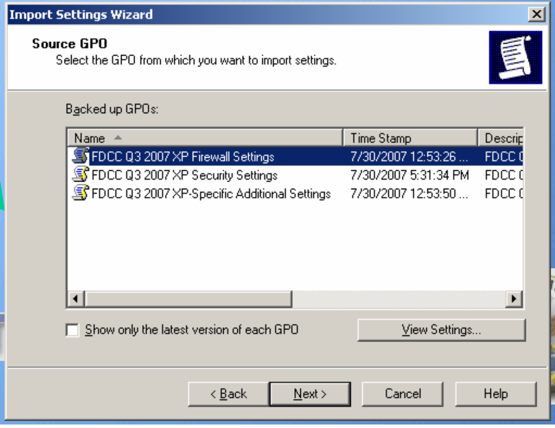
Import Settings Wizard

Source GPO
Select the GPO from which you want to import settings.

Backed up GPOs:

Name	Time Stamp	De
FDCC Q3 2007 Vista Firewall Settings	7/30/2007 12:52:32 ...	FD
FDCC Q3 2007 Vista Security Settings	7/30/2007 12:52:52 ...	FD
FDCC Q3 2007 Vista-Specific Additional Settings	7/30/2007 12:53:08 ...	FD

□ Show only the latest version of each GPO



Import Settings Wizard

Source GPO
Select the GPO from which you want to import settings.

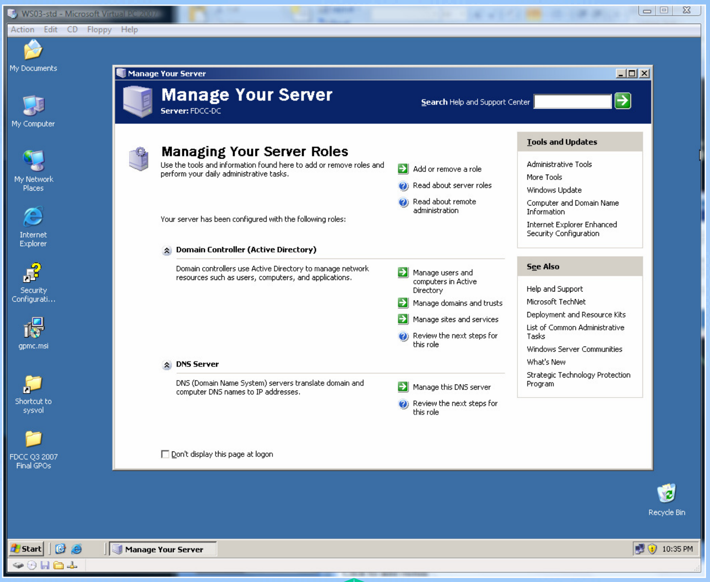
Backed up GPOs:

Name	Time Stamp	Descrip
FDCC Q3 2007 XP Firewall Settings	7/30/2007 12:53:26 ...	FDCC (
FDCC Q3 2007 XP Security Settings	7/30/2007 5:31:34 PM	FDCC (
FDCC Q3 2007 XP-Specific Additional Settings	7/30/2007 12:53:50 ...	FDCC (

□ Show only the latest version of each GPO

GPOs Test Environment

Windows Server 2003
- AD/DNS -
- GPOs -



Manage Your Server

Manage Your Server
Server: FDCC-DC

Search Help and Support Center

Managing Your Server Roles

Use the tools and information found here to add or remove roles and perform your daily administrative tasks.

- Add or remove a role
- Read about server roles
- Read about remote administration

Your server has been configured with the following roles:

Domain Controller (Active Directory)

Domain controllers use Active Directory to manage network resources such as users, computers, and applications.

- Manage users and computers in Active Directory
- Manage domains and trusts
- Manage sites and services
- Review the next steps for this role

DNS Server

DNS (Domain Name System) servers translate domain and computer DNS names to IP addresses.

- Manage this DNS server
- Review the next steps for this role

☐ Don't display this page at logon

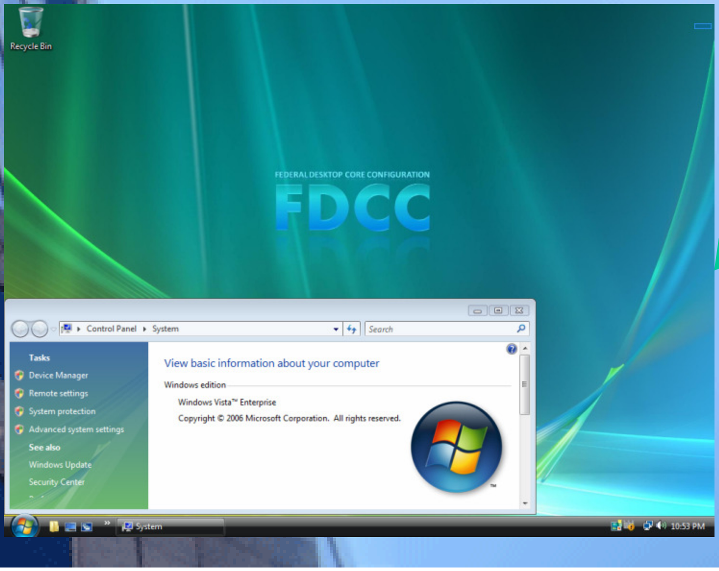
Tools and Updates

- Administrative Tools
- More Tools
- Windows Update
- Computer and Domain Name Information
- Internet Explorer Enhanced Security Configuration

See Also

- Help and Support
- Microsoft TechNet
- Deployment and Resource Kits
- List of Common Administrative Tasks
- Windows Server Communities
- What's New
- Strategic Technology Protection Program

Windows Vista
Client



View basic information about your computer

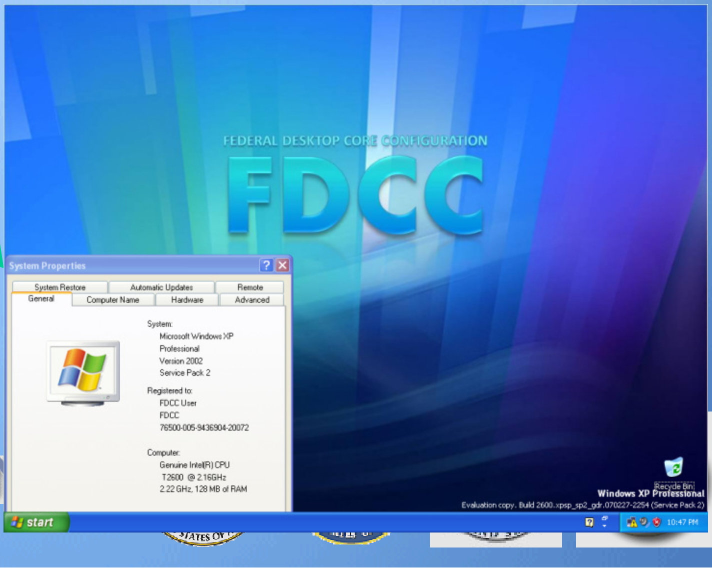
Windows edition

Windows Vista™ Enterprise
Copyright © 2006 Microsoft Corporation. All rights reserved.

Tasks
- Device Manager
- Remote settings
- System protection
- Advanced system settings

See also
- Windows Update
- Security Center

Windows XP
Client



System:
Microsoft Windows XP
Professional
Version 2002
Service Pack 2

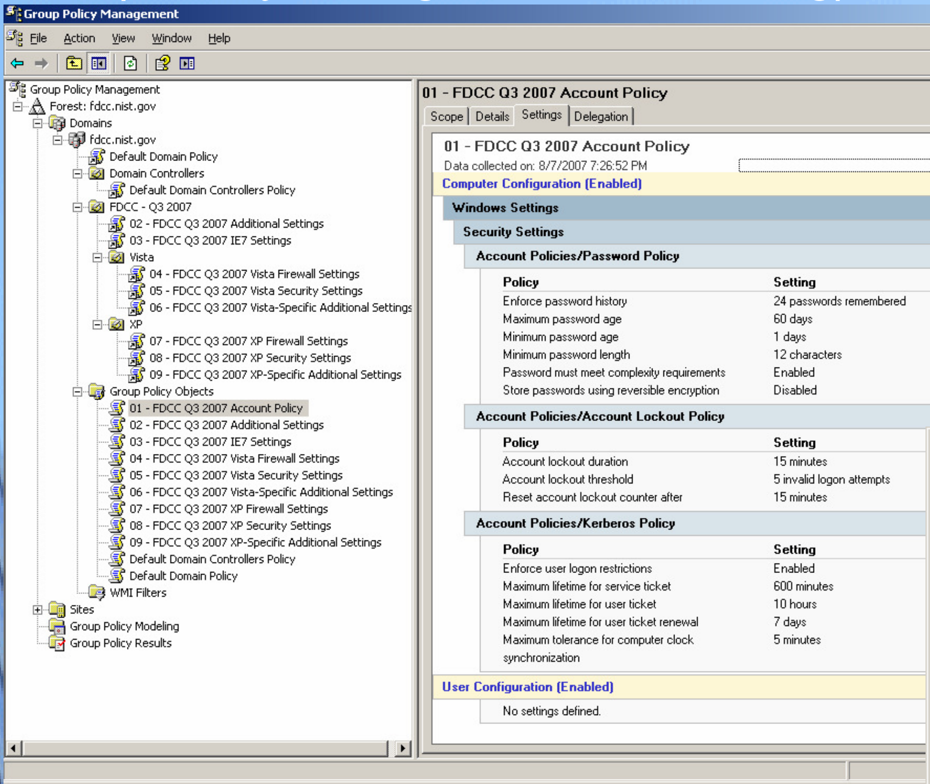
Registered to:
FDCC User
FDCC
76500-005-9436904-20072

Computer:
Genuine Intel(R) CPU
T2600 @ 2.16GHz
2.22 GHz, 128 MB of RAM

Windows XP Professional
Evaluation copy. Build 2600.xpsp_sp2_gdr.070227-2254 (Service Pack 2)

FDCC GPOs

Group Policy Management Console – gpmc.msc



Group Policy Management
File Action View Window Help
Scope Details Settings Delegation

Group Policy Management
- Forest: fdcc.nist.gov
  - Domains
    - fdcc.nist.gov
      - Default Domain Policy
      - Domain Controllers
        - Default Domain Controllers Policy
      - FDCC - Q3 2007
        - 02 - FDCC Q3 2007 Additional Settings
        - 03 - FDCC Q3 2007 IE7 Settings
        - Vista
          - 04 - FDCC Q3 2007 Vista Firewall Settings
          - 05 - FDCC Q3 2007 Vista Security Settings
          - 06 - FDCC Q3 2007 Vista-Specific Additional Settings
        - XP
          - 07 - FDCC Q3 2007 XP Firewall Settings
          - 08 - FDCC Q3 2007 XP Security Settings
          - 09 - FDCC Q3 2007 XP-Specific Additional Settings
      - Group Policy Objects
        - 01 - FDCC Q3 2007 Account Policy
        - 02 - FDCC Q3 2007 Additional Settings
        - 03 - FDCC Q3 2007 IE7 Settings
        - 04 - FDCC Q3 2007 Vista Firewall Settings
        - 05 - FDCC Q3 2007 Vista Security Settings
        - 06 - FDCC Q3 2007 Vista-Specific Additional Settings
        - 07 - FDCC Q3 2007 XP Firewall Settings
        - 08 - FDCC Q3 2007 XP Security Settings
        - 09 - FDCC Q3 2007 XP-Specific Additional Settings
        - Default Domain Controllers Policy
        - Default Domain Policy
      - WMI Filters
  - Sites
- Group Policy Modeling
- Group Policy Results

01 - FDCC Q3 2007 Account Policy

01 - FDCC Q3 2007 Account Policy

Data collected on: 8/7/2007 7:26:52 PM hide all

Computer Configuration (Enabled) hide

Windows Settings hide

Security Settings hide

Account Policies/Password Policy hide

Policy	Setting
Enforce password history	24 passwords remembered
Maximum password age	60 days
Minimum password age	1 days
Minimum password length	12 characters
Password must meet complexity requirements	Enabled
Store passwords using reversible encryption	Disabled

Account Policies/Account Lockout Policy hide

Policy	Setting
Account lockout duration	15 minutes
Account lockout threshold	5 invalid logon attempts
Reset account lockout counter after	15 minutes

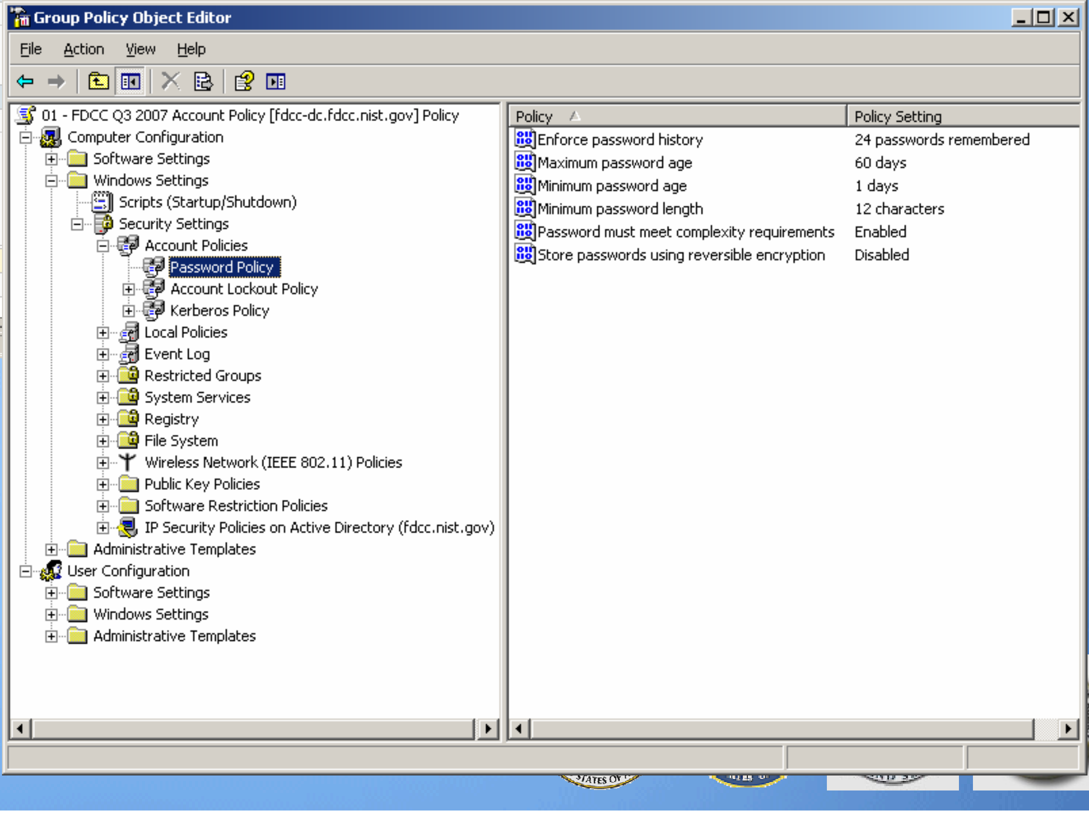
Account Policies/Kerberos Policy

Policy	Setting
Enforce user logon restrictions	Enabled
Maximum lifetime for service ticket	600 minutes
Maximum lifetime for user ticket	10 hours
Maximum lifetime for user ticket renewal	7 days
Maximum tolerance for computer clock synchronization	5 minutes

User Configuration (Enabled)

No settings defined.

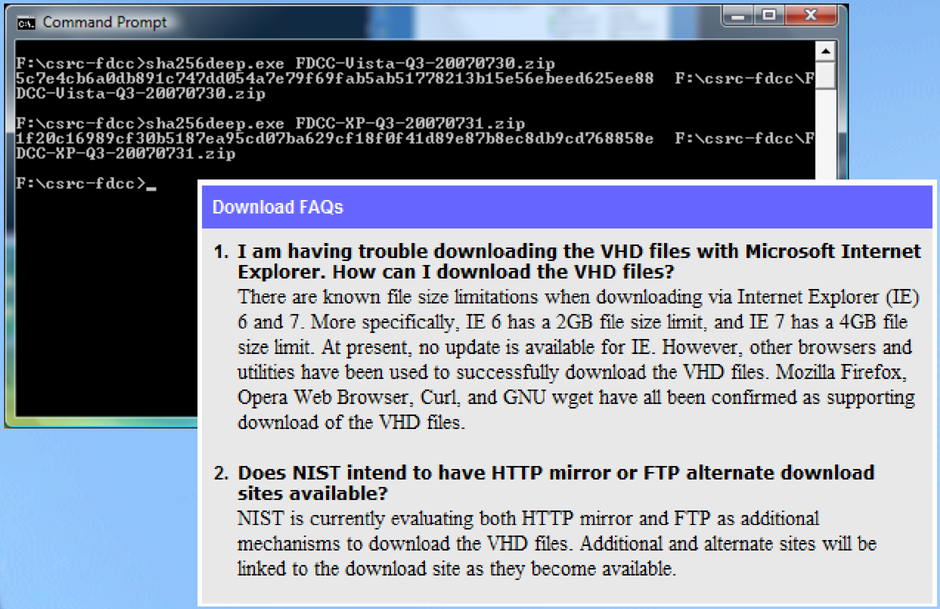
Group Policy Object Editor – gpedit.msc



01 - FDCC Q3 2007 Account Policy [fdcc-dc.fdcc.nist.gov] Policy
- Computer Configuration
  - Software Settings
  - Windows Settings
    - Scripts (Startup/Shutdown)
    - Security Settings
      - Account Policies
        - Password Policy
        - Account Lockout Policy
        - Kerberos Policy
      - Local Policies
      - Event Log
      - Restricted Groups
      - System Services
      - Registry
      - File System
      - Wireless Network (IEEE 802.11) Policies
      - Public Key Policies
      - Software Restriction Policies
      - IP Security Policies on Active Directory (fdcc.nist.gov)
  - Administrative Templates
- User Configuration
  - Software Settings
  - Windows Settings
  - Administrative Templates

Policy	Policy Setting
Enforce password history	24 passwords remembered
Maximum password age	60 days
Minimum password age	1 days
Minimum password length	12 characters
Password must meet complexity requirements	Enabled
Store passwords using reversible encryption	Disabled

Download FDCC VHD Files



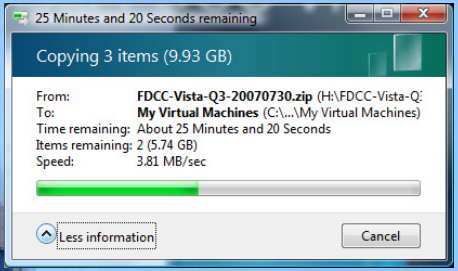
```
F:\csrc-fdcc>sha256deep.exe FDCC-Vista-Q3-20070730.zip
5c7e4cb6a0db891c747dd054a7e79f69fab5ab51778213b15e56ebeed625ee88  F:\csrc-fdcc\F
DCC-Vista-Q3-20070730.zip

F:\csrc-fdcc>sha256deep.exe FDCC-XP-Q3-20070731.zip
1f20c16989cf30b5187ea95cd07ba629cf18f0f41d89e87b8ec8db9cd768858e  F:\csrc-fdcc\F
DCC-XP-Q3-20070731.zip

F:\csrc-fdcc>_
```

Download FAQs

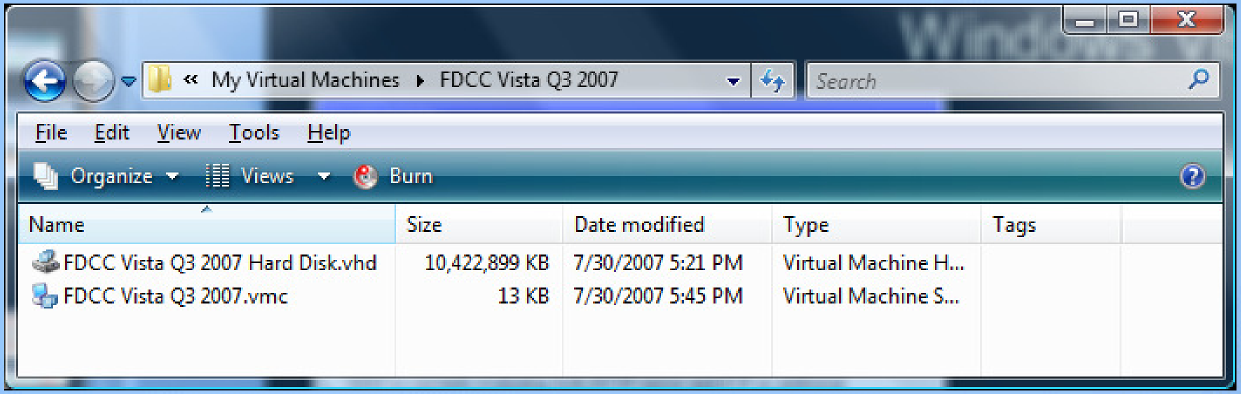
1. **I am having trouble downloading the VHD files with Microsoft Internet Explorer. How can I download the VHD files?**
   There are known file size limitations when downloading via Internet Explorer (IE) 6 and 7. More specifically, IE 6 has a 2GB file size limit, and IE 7 has a 4GB file size limit. At present, no update is available for IE. However, other browsers and utilities have been used to successfully download the VHD files. Mozilla Firefox, Opera Web Browser, Curl, and GNU wget have all been confirmed as supporting download of the VHD files.

2. **Does NIST intend to have HTTP mirror or FTP alternate download sites available?**
   NIST is currently evaluating both HTTP mirror and FTP as additional mechanisms to download the VHD files. Additional and alternate sites will be linked to the download site as they become available.

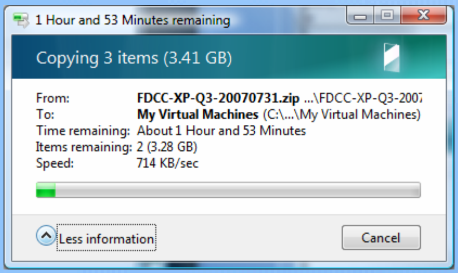
NTFS Disk Space Requirement:
Vista: 4.5 GB + 10 GB + Swap
XP: 1.8 GB + 3.5 GB + Swap


25 Minutes and 20 Seconds remaining
Copying 3 items (9.93 GB)
Less information
Cancel

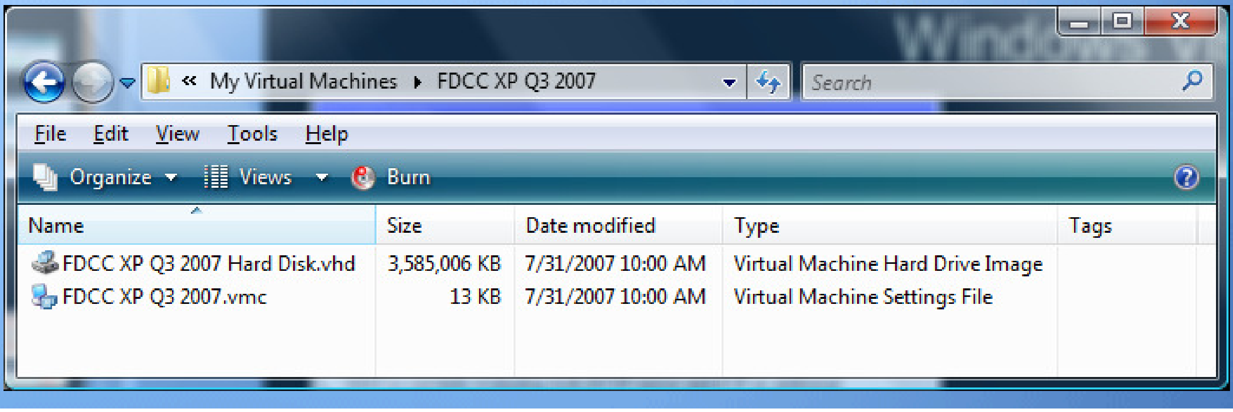
From: **FDCC-Vista-Q3-20070730.zip** (H:\FDCC-Vista-Q
To: **My Virtual Machines** (C:\...\My Virtual Machines)
Time remaining: About 25 Minutes and 20 Seconds
Items remaining: 2 (5.74 GB)
Speed: 3.81 MB/sec



Name	Size	Date modified	Type	Tags
FDCC Vista Q3 2007 Hard Disk.vhd	10,422,899 KB	7/30/2007 5:21 PM	Virtual Machine H...	
FDCC Vista Q3 2007.vmc	13 KB	7/30/2007 5:45 PM	Virtual Machine S...	



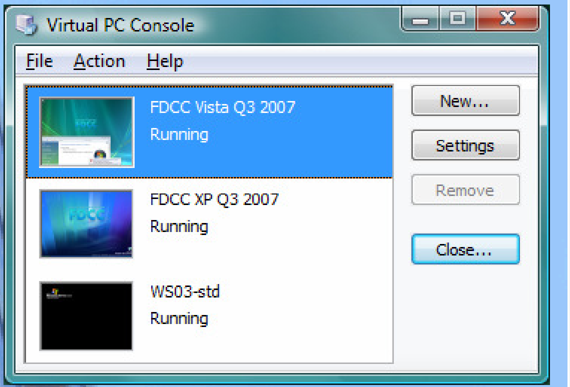
From: **FDCC-XP-Q3-20070731.zip** ...\FDCC-XP-Q3-2007
To: **My Virtual Machines** (C:\...\My Virtual Machines)
Time remaining: About 1 Hour and 53 Minutes
Items remaining: 2 (3.28 GB)
Speed: 714 KB/sec



Name	Size	Date modified	Type	Tags
FDCC XP Q3 2007 Hard Disk.vhd	3,585,006 KB	7/31/2007 10:00 AM	Virtual Machine Hard Drive Image	
FDCC XP Q3 2007.vmc	13 KB	7/31/2007 10:00 AM	Virtual Machine Settings File	

Vista FDCC VPC

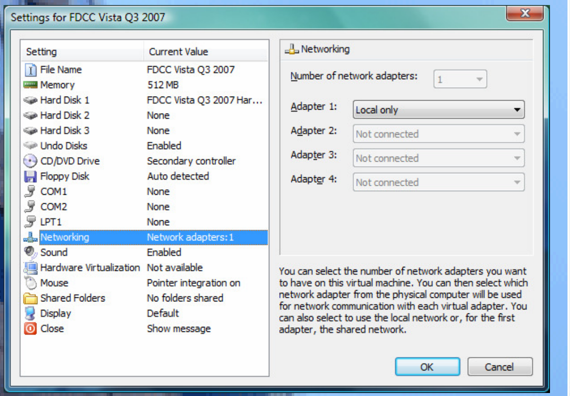
1. Microsoft Virtual PC 2007
2. fdcc_admin
3. P@ssw0rd123456



FDCC Vista Q3 2007 Running

FDCC XP Q3 2007 Running

WS03-std Running



Settings for FDCC Vista Q3 2007

Setting	Current Value
File Name	FDCC Vista Q3 2007
Memory	512 MB
Hard Disk 1	FDCC Vista Q3 2007 Har...
Hard Disk 2	None
Hard Disk 3	None
Undo Disks	Enabled
CD/DVD Drive	Secondary controller
Floppy Disk	Auto detected
COM1	None
COM2	None
LPT1	None
Networking	Network adapters: 1
Sound	Enabled
Hardware Virtualization	Not available
Mouse	Pointer integration on
Shared Folders	No folders shared
Display	Default
Close	Show message

Networking

Number of network adapters: 1

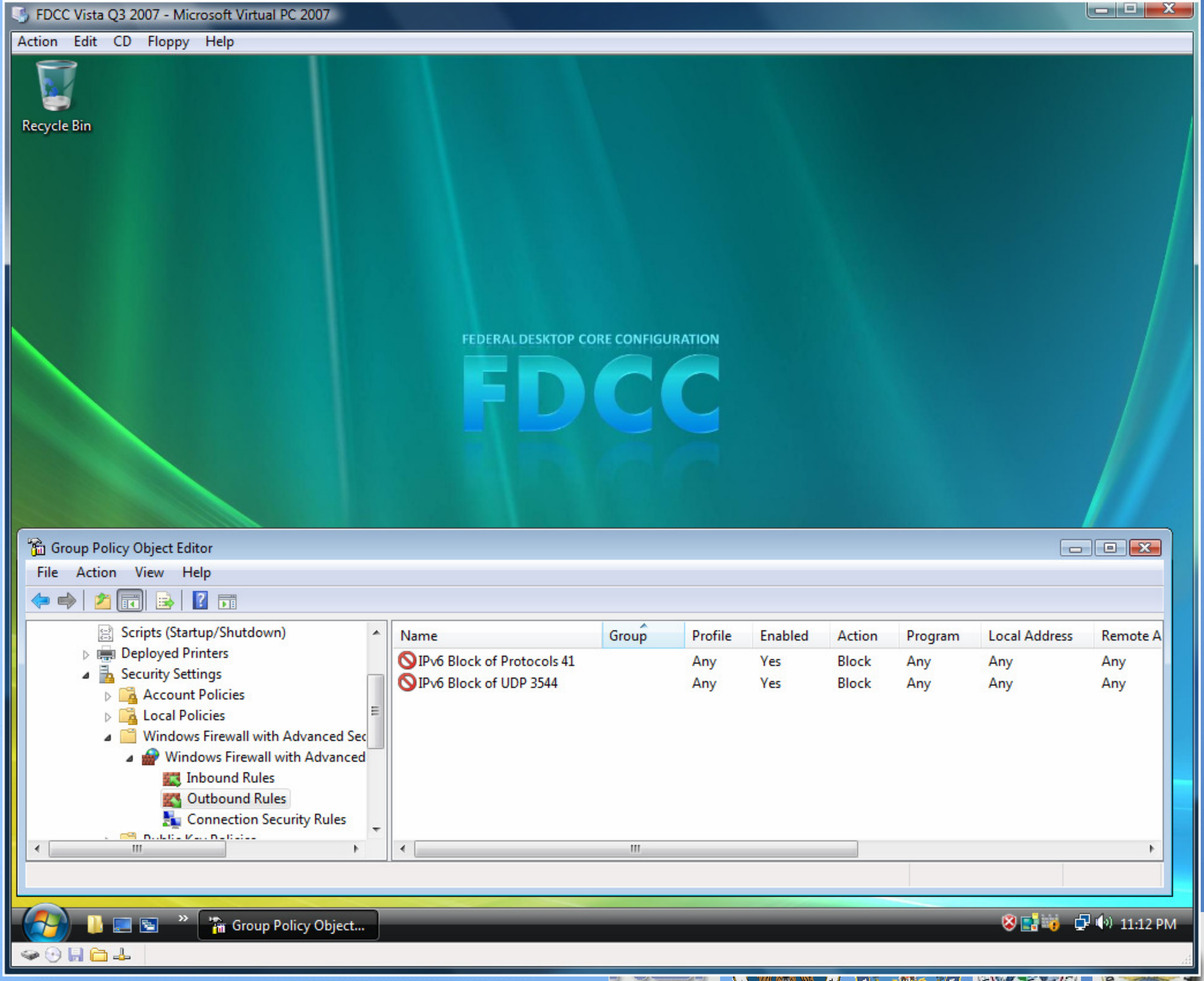
Adapter 1: Local only

Adapter 2: Not connected

Adapter 3: Not connected

Adapter 4: Not connected

You can select the number of network adapters you want to have on this virtual machine. You can then select which network adapter from the physical computer will be used for network communication with each virtual adapter. You can also select to use the local network or, for the first adapter, the shared network.

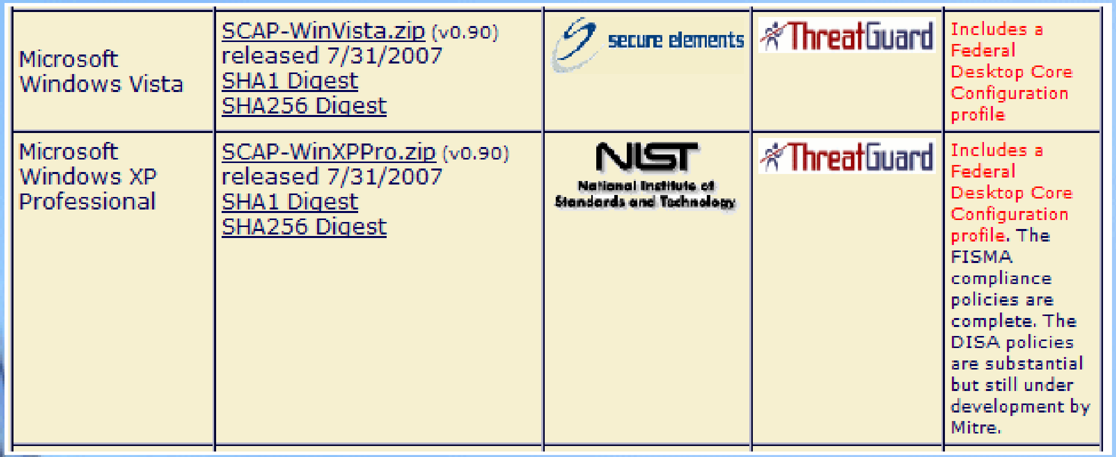

FDCC Vista Q3 2007 - Microsoft Virtual PC 2007
Action Edit CD Floppy Help
Recycle Bin
FEDERAL DESKTOP CORE CONFIGURATION
FDCC
Group Policy Object Editor
File Action View Help
Group Policy Object...
11:12 PM

- Scripts (Startup/Shutdown)
- Deployed Printers
- Security Settings
  - Account Policies
  - Local Policies
  - Windows Firewall with Advanced Sec
    - Windows Firewall with Advanced
      - Inbound Rules
      - Outbound Rules
      - Connection Security Rules

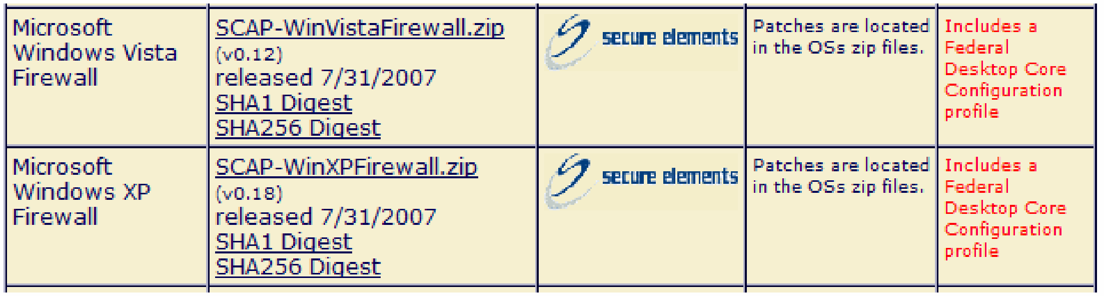
Name	Group	Profile	Enabled	Action	Program	Local Address	Remote A
IPv6 Block of Protocols 41		Any	Yes	Block	Any	Any	Any
IPv6 Block of UDP 3544		Any	Yes	Block	Any	Any	Any

SCAP Content

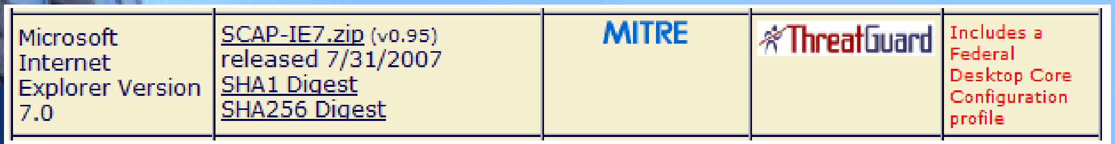
http://nvd.nist.gov/scapchecklists.cfm



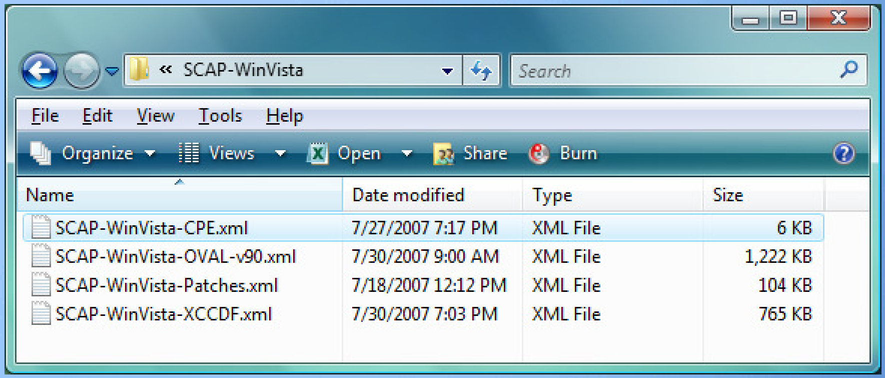
Microsoft Windows Vista	SCAP-WinVista.zip (v0.90) released 7/31/2007 SHA1 Digest SHA256 Digest	secure elements	ThreatGuard	Includes a Federal Desktop Core Configuration profile
Microsoft Windows XP Professional	SCAP-WinXPPro.zip (v0.90) released 7/31/2007 SHA1 Digest SHA256 Digest	NIST National Institute of Standards and Technology	ThreatGuard	Includes a Federal Desktop Core Configuration profile. The FISMA compliance policies are complete. The DISA policies are substantial but still under development by Mitre.



Microsoft Windows Vista Firewall	SCAP-WinVistaFirewall.zip (v0.12) released 7/31/2007 SHA1 Digest SHA256 Digest	secure elements	Patches are located in the OSs zip files.	Includes a Federal Desktop Core Configuration profile
Microsoft Windows XP Firewall	SCAP-WinXPFirewall.zip (v0.18) released 7/31/2007 SHA1 Digest SHA256 Digest	secure elements	Patches are located in the OSs zip files.	Includes a Federal Desktop Core Configuration profile

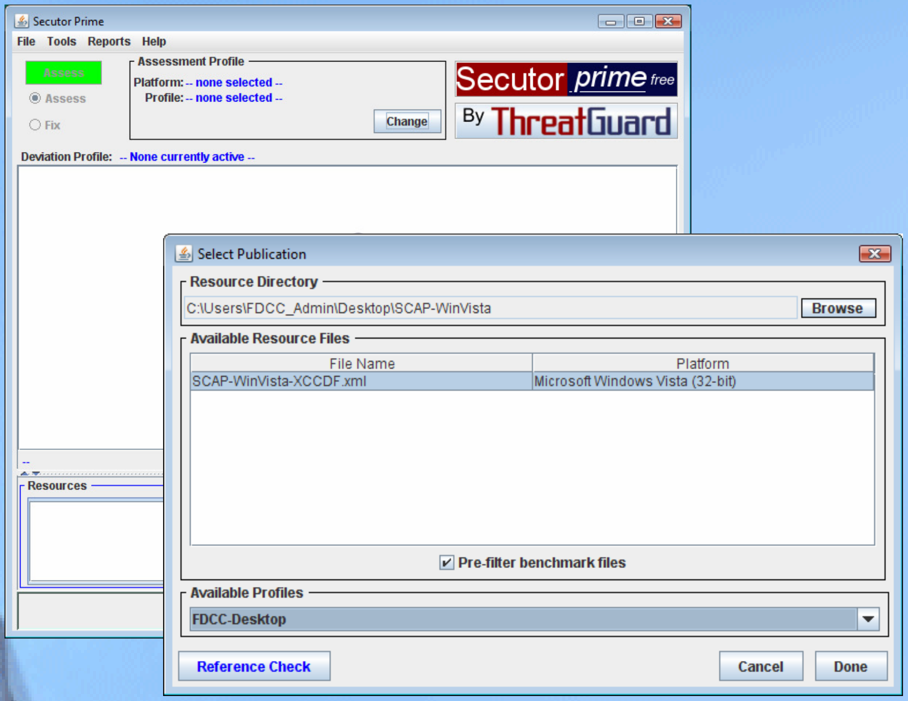


Microsoft Internet Explorer Version 7.0	SCAP-IE7.zip (v0.95) released 7/31/2007 SHA1 Digest SHA256 Digest	MITRE	ThreatGuard	Includes a Federal Desktop Core Configuration profile



Name	Date modified	Type	Size
SCAP-WinVista-CPE.xml	7/27/2007 7:17 PM	XML File	6 KB
SCAP-WinVista-OVAL-v90.xml	7/30/2007 9:00 AM	XML File	1,222 KB
SCAP-WinVista-Patches.xml	7/18/2007 12:12 PM	XML File	104 KB
SCAP-WinVista-XCCDF.xml	7/30/2007 7:03 PM	XML File	765 KB

Verify and Test



Assessment Profile
Platform: -- none selected --
Profile: -- none selected --
Change

Deviation Profile: -- None currently active --

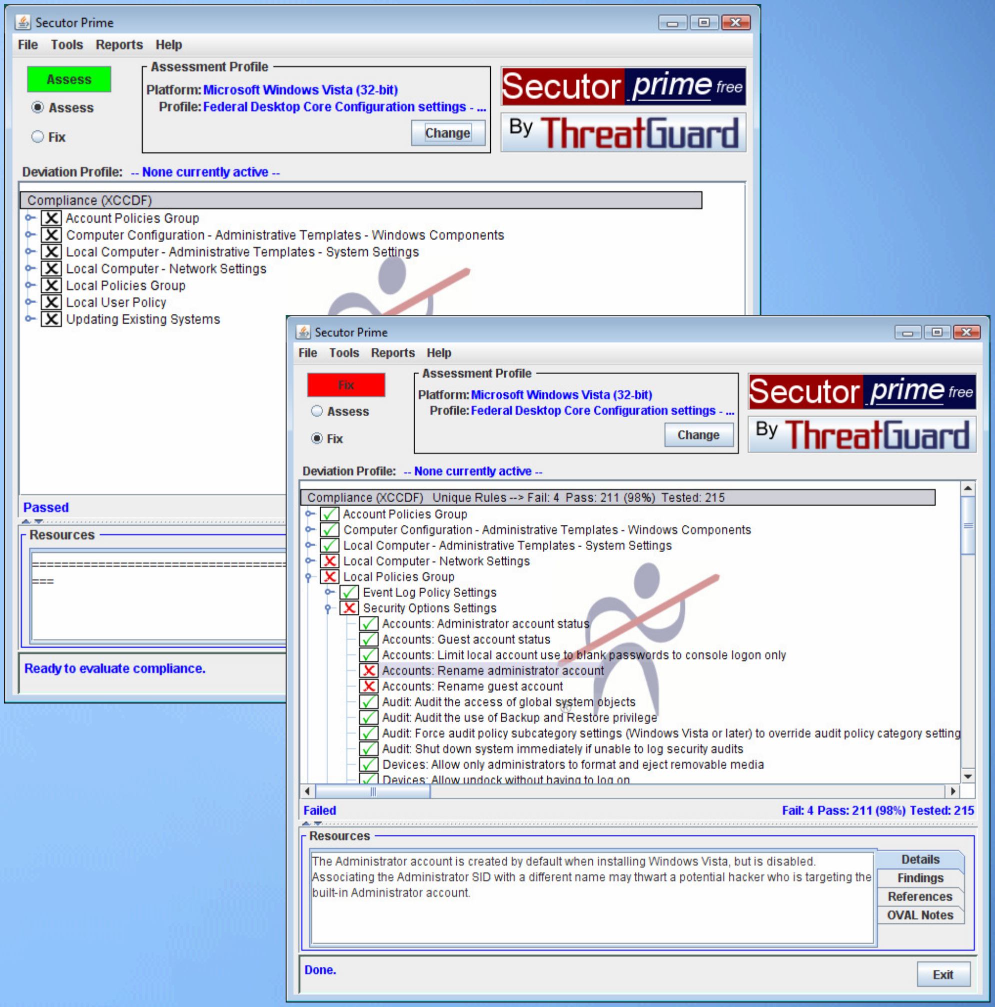
Resource Directory
C:\Users\FDCC_Admin\Desktop\SCAP-WinVista

Available Resource Files

File Name	Platform
SCAP-WinVista-XCCDF.xml	Microsoft Windows Vista (32-bit)

☑ Pre-filter benchmark files

Available Profiles
FDCC-Desktop



Assessment Profile
● Assess
○ Fix
Platform: Microsoft Windows Vista (32-bit)
Profile: Federal Desktop Core Configuration settings - ...

Deviation Profile: -- None currently active --

Compliance (XCCDF)
☒ Account Policies Group
☒ Computer Configuration - Administrative Templates - Windows Components
☒ Local Computer - Administrative Templates - System Settings
☒ Local Computer - Network Settings
☒ Local Policies Group
☒ Local User Policy
☒ Updating Existing Systems

Passed

Ready to evaluate compliance.

Assessment Profile
○ Assess
● Fix
Platform: Microsoft Windows Vista (32-bit)
Profile: Federal Desktop Core Configuration settings - ...

Deviation Profile: -- None currently active --

Compliance (XCCDF) Unique Rules --> Fail: 4 Pass: 211 (98%) Tested: 215
✓ Account Policies Group
✓ Computer Configuration - Administrative Templates - Windows Components
✓ Local Computer - Administrative Templates - System Settings
✗ Local Computer - Network Settings
✗ Local Policies Group
  ✓ Event Log Policy Settings
  ✗ Security Options Settings
    ✓ Accounts: Administrator account status
    ✓ Accounts: Guest account status
    ✓ Accounts: Limit local account use to blank passwords to console logon only
    ✗ Accounts: Rename administrator account
    ✗ Accounts: Rename guest account
    ✓ Audit: Audit the access of global system objects
    ✓ Audit: Audit the use of Backup and Restore privilege
    ✓ Audit: Force audit policy subcategory settings (Windows Vista or later) to override audit policy category setting
    ✓ Audit: Shut down system immediately if unable to log security audits
    ✓ Devices: Allow only administrators to format and eject removable media
    ✓ Devices: Allow undock without having to log on

Failed
Fail: 4 Pass: 211 (98%) Tested: 215

The Administrator account is created by default when installing Windows Vista, but is disabled. Associating the Administrator SID with a different name may thwart a potential hacker who is targeting the built-in Administrator account.

Done.

More Information

NIST FDCC Questions	fdcc@nist.gov
NIST FDCC Web Site	http://fdcc.nist.gov

- FDCC SCAP Checklists
- FDCC Settings
- Virtual Machine Images
- Group Policy Objects

National Checklist Program	http://checklists.nist.gov
National Vulnerability Database	http://nvd.nist.gov or http://scap.nist.gov

- SCAP Checklists
- SCAP Capable Products
- SCAP Events

NIST SCAP Mailing Lists	Scap-update@nist.gov Scap-dev@nist.gov Scap-content@nist.gov

Contact Information

Policy Questions

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matthew.barrett@nist.gov

Murugiah Souppaya
(301) 975-4758
murugiah.souppaya@nist.gov

Information and Feedback
Web: http://nvd.nist.gov/scap
Comments: scap-update@nist.gov

🟥 NIST FDCC Team Members

High Impact Settings

What 800 Pound Gorilla?

- Operate the system as a standard user
- Accounts: Administrator account status -Disabled
- Wireless Service - Disabled
- Maximum password age – 60 days
- Minimum password length – 12 characters
- Microsoft network client: Digitally sign communications (always) – Enabled
- Network security: LAN Manager authentication level - Send NTLMv2 Response only. Refuse LM and NTLM
- System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing – Enabled
- Windows Firewall – Enabled
- Signed Drivers – XP only

Common Mailing List Questions

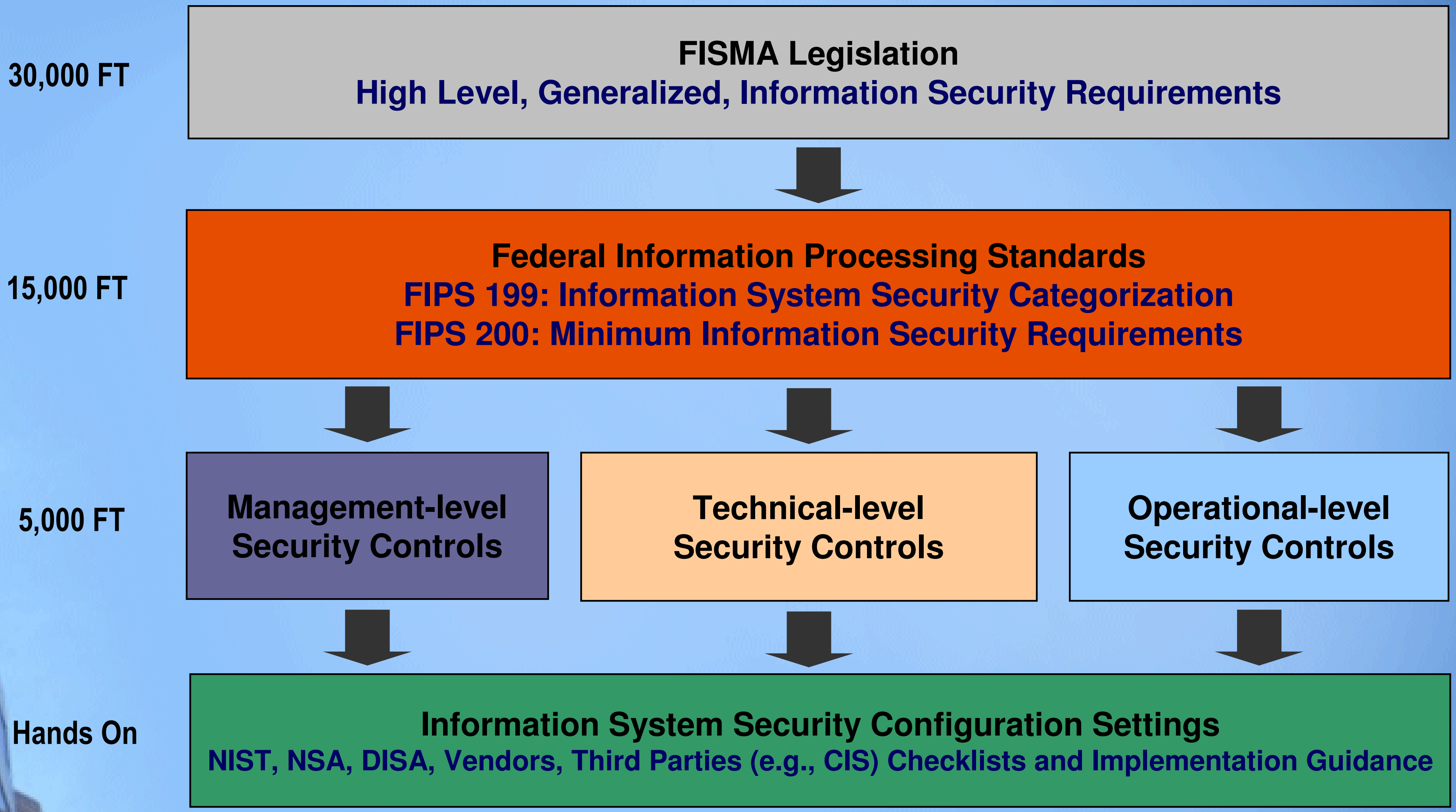
- How does FDCC relate to FISMA compliance and SP800-53?
- How do I report compliance and exceptions? To whom do I report that information? Any special format?
- Where can I find a centralized list of FDCC compliant applications?
- Does 100% pass on SCAP-based scans mean I am 100% FDCC compliant?
- We have implemented wireless within our enterprise. Do I really need to disable wireless? What if I am using a third-party wireless client?
- Is FDCC applicable to:
  - Windows XP and Vista when used as a server?
  - logically or physical separated desktops and laptops?
  - developer or test desktops and laptops?
  - contractor computers?
  - special purpose (e.g., process control) computers?
- What about FDCC for UNIX, Macintosh, applications, etc?

Questions

National Institute of Standards & Technology
Information Technology Laboratory
Computer Security Division

Current State of Information Security

FISMA Compliance Model



30,000 FT

FISMA Legislation
High Level, Generalized, Information Security Requirements

15,000 FT

Federal Information Processing Standards
FIPS 199: Information System Security Categorization
FIPS 200: Minimum Information Security Requirements

5,000 FT

Management-level Security Controls

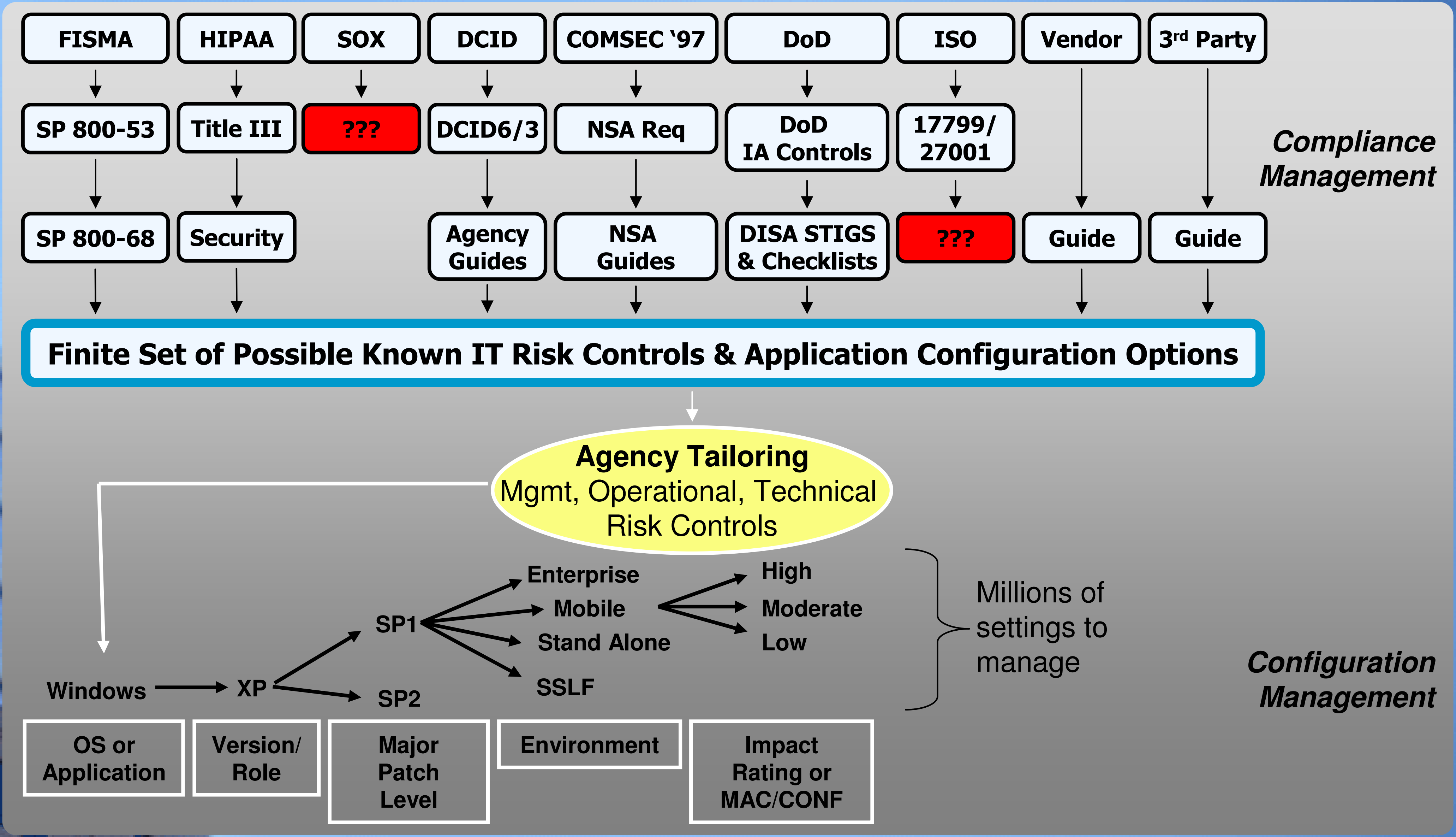
Technical-level Security Controls

Operational-level Security Controls

Hands On

Information System Security Configuration Settings
NIST, NSA, DISA, Vendors, Third Parties (e.g., CIS) Checklists and Implementation Guidance

Current State: Compliance and Configuration Management



FISMA → SP 800-53 → SP 800-68

HIPAA → Title III → Security

SOX → ???

DCID → DCID6/3 → Agency Guides

COMSEC '97 → NSA Req → NSA Guides

DoD → DoD IA Controls → DISA STIGS & Checklists

ISO → 17799/ 27001 → ???

Vendor → Guide

3rd Party → Guide

Compliance Management

Finite Set of Possible Known IT Risk Controls & Application Configuration Options

Agency Tailoring
Mgmt, Operational, Technical
Risk Controls

Windows → XP → SP1, SP2

SP1 → Enterprise, Mobile, Stand Alone, SSLF

Mobile → High, Moderate, Low

Millions of settings to manage

OS or Application

Version/ Role

Major Patch Level

Environment

Impact Rating or MAC/CONF

Configuration Management

Current State Summary - Compliance

A Study in Cause and Effect

Governing Bodies

Recognize the need to improve security and mandate it in an increasing number of laws, directives, and policies

Standards Bodies

Try to keep pace with an increasing number of mandates by generating more frameworks and guidelines

Product Teams

Based on the increasing number of mandates, see the need for automation, many seek to enable it through proprietary methods

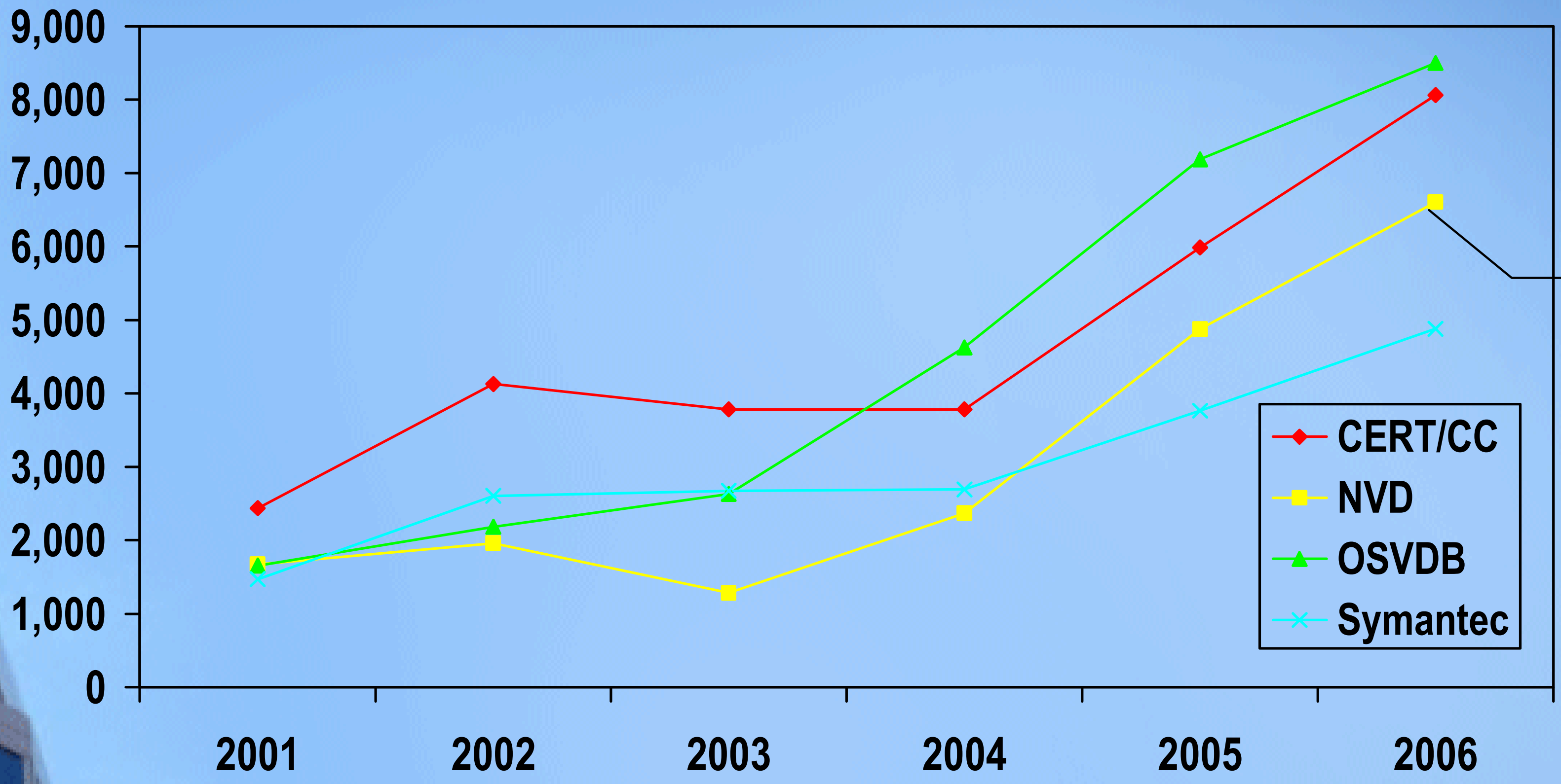
Service Providers

Based on the increasing number of mandates, see the need for automation and have responded by 1) learning a wide variety of both open and proprietary technologies and 2) implementing point solutions

Operations Teams

Lacking true automation, 1) have become overwhelmed by an increasing number of mandates, frameworks, and guidelines and 2) are spending a considerable amount of resources trying to keep pace

Current State: Vulnerability Trends



A 20-50% increase over previous years

- Decreased timeline in exploit development coupled with a decreased patch development timeline (highly variable across vendors)
- Increased prevalence of zero day exploits
- Three of the SANS Top 20 Internet Security Attack Targets 2006 were categorized as “configuration weaknesses.” Many of the remaining 17 can be partially mitigated via proper configuration.

Current State: Vulnerability Management Industry

- Product functionality is becoming more hearty as vendors acknowledge connections between security operations and a wide variety of IT systems (e.g., asset management, change/configuration management)
- Some vendors understand the value of bringing together vulnerability management data across multiple vendors
- Vendors driving differentiation through:
  - enumeration,
  - evaluation,
  - content,
  - measurement, and
  - reporting

Hinders information sharing and automation

Reduces reproducibility across vendors

Drives broad differences in prioritization and remediation

Enabling Network Centric Operations

A Wish List

Goal 1. Assured DoD mission execution in the face of cyber attack, or Goal 1. Dependability of the information and information infrastructure in the face of cyber attack

-Richard Hale, 2007 Security Automation Conference

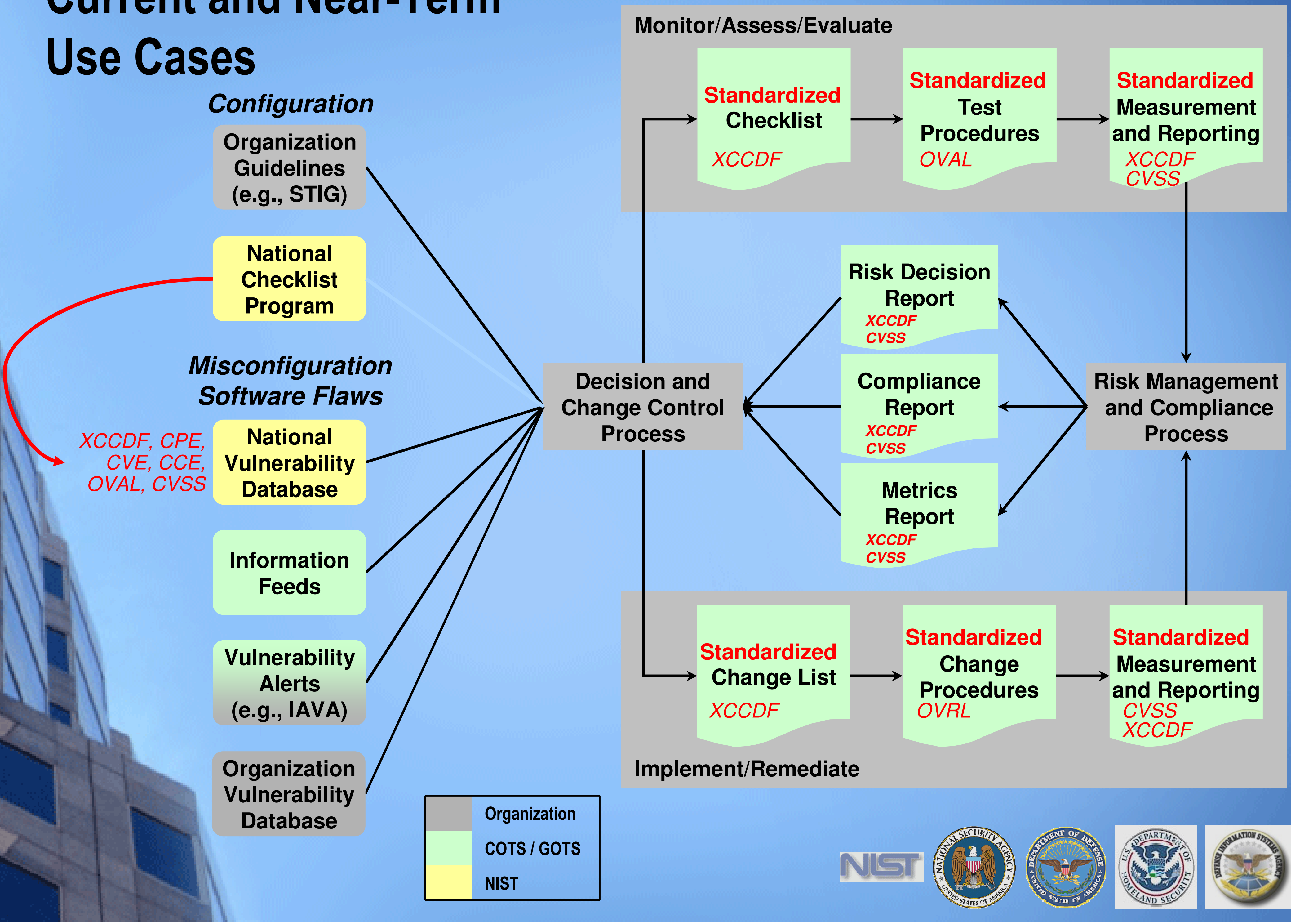
Tactical

- Push button understanding of likely exposure to vulnerability/attack
- Push button understanding of actual vulnerability
- Ability to automatically aggregate vulnerability data from tools of varied manufacture
- Ability to implement security configurations and remediate vulnerability in a controlled yet automated way, including SSLF environments
- Ability to dynamically build trust relationships and join computer systems with mission partners
- Reduce effort and expense of documenting system vulnerability and compliance status (e.g., C&A)
- Reduce effort and expense of demonstrating compliance with various mandates

Strategic

Supplemental – SCAP Platform Evaluation Tutorial

Current and Near-Term Use Cases



Configuration

Organization Guidelines (e.g., STIG)

National Checklist Program

Misconfiguration Software Flaws

XCCDF, CPE, CVE, CCE, OVAL, CVSS

National Vulnerability Database

Information Feeds

Vulnerability Alerts (e.g., IAVA)

Organization Vulnerability Database

Decision and Change Control Process

Monitor/Assess/Evaluate

Standardized Checklist XCCDF

Standardized Test Procedures OVAL

Standardized Measurement and Reporting XCCDF CVSS

Risk Decision Report XCCDF CVSS

Compliance Report XCCDF CVSS

Metrics Report XCCDF CVSS

Risk Management and Compliance Process

Standardized Change List XCCDF

Standardized Change Procedures OVRL

Standardized Measurement and Reporting CVSS XCCDF

Implement/Remediate

▨	Organization
🟩	COTS / GOTS
🟨	NIST

Current Problems

Conceptual Analogy (Continued)

Before

After

Error Report

Problem

Air Pressure Loss

Impact

Car Will Not Start (9/10)

Diagnosis Accuracy:

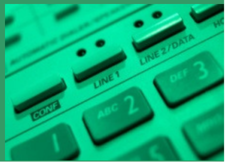
All Sensors Reporting

Diagnosis:

Replace Gas Cap

Expected Cost:

$25.00



XML Made Simple

XCCDF - eXtensible Car Care Description Format

```
<Car>
  <Description>
    <Year> 1997 </Year>
    <Make> Ford </Make>
    <Model> Contour </Model>
  <Maintenance>
    <Check1> Gas Cap = On <>
    <Check2>Oil Level = Full <>
  </Maintenance>
 </Description>
</Car>
```

OVAL – Open Vehicle Assessment Language

```
<Checks>
  <Check1>
    <Location> Side of Car <>
    <Procedure> Turn <>
  </Check1>
  <Check2>
    <Location> Hood <>
    </Procedure> … <>
  </Check2>
</Checks>
```

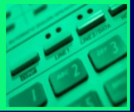
CHECK ***Error Report***

Problem:
Air Pressure Loss

Diagnosis Accuracy:
All Sensors Reporting

Diagnosis:
Replace Gas Cap

Expected Cost:
$25.00



SCAP Content Made Simple

Standardized Checklist

XCCDF - eXtensible Checklist Configuration Description Format

```
<Document ID> NIST SP 800-68
  <Date> 04/22/06 </Date>
    <Version> 1 </Version>
    <Revision> 2 </Revision>
 <Platform> Windows XP <>
    <Check1> Password >= 8 <>
    <Check2> Win XP Vuln <>
  </Maintenance>
 </Description>
</Car>
```

🟥	CPE
🟨	CCE
🟩	CVE

OVAL – Open Vulnerability Assessment Language

Standardized Test Procedures

```
<Checks>
  <Check1>
     <Registry Check> … <>
     <Value> 8 </Value>
  </Check1>
  <Check2>
     <File Version> … <>
     <Value> 1.0.12.4 </Value>
  </Check2>
</Checks>
```

Standardized Measurement and Reporting

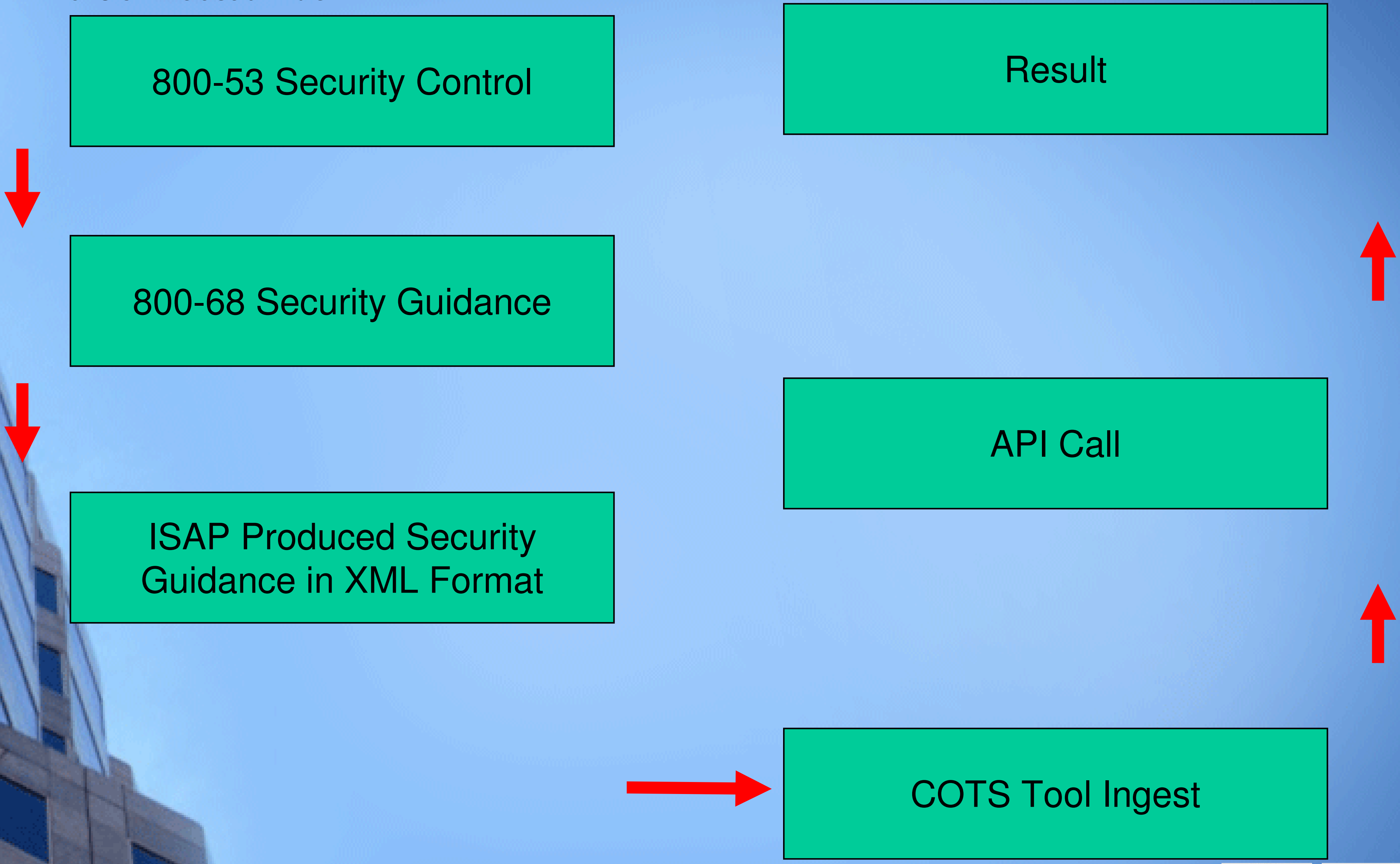
XCCDF security benchmark automation

cvss

NIST

Application to Automated Compliance

The Connected Path



800-53 Security Control

800-68 Security Guidance

ISAP Produced Security Guidance in XML Format

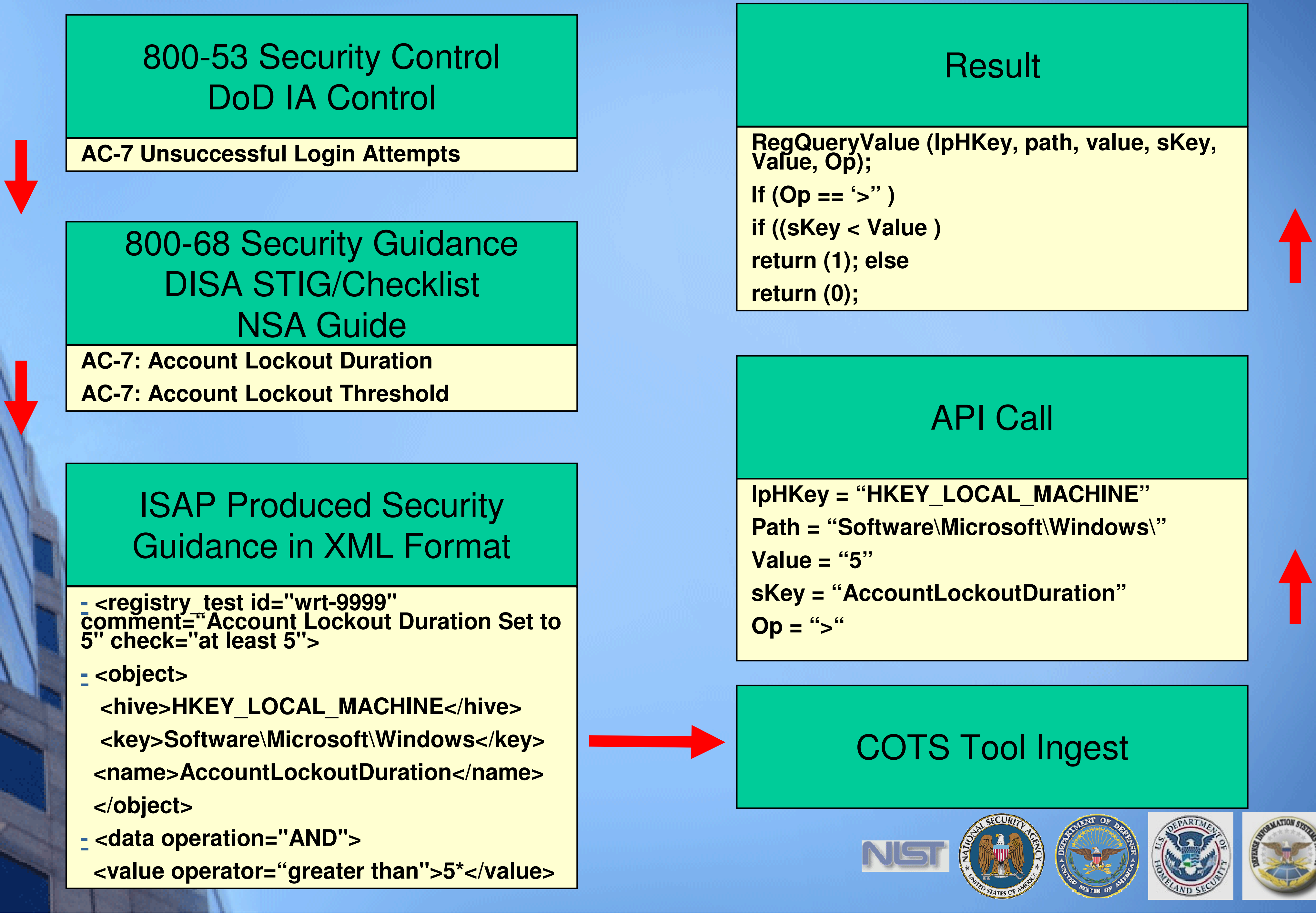
COTS Tool Ingest

API Call

Result

Application to Automated Compliance

The Connected Path



800-53 Security Control
DoD IA Control

AC-7 Unsuccessful Login Attempts

800-68 Security Guidance
DISA STIG/Checklist
NSA Guide

AC-7: Account Lockout Duration

AC-7: Account Lockout Threshold

ISAP Produced Security Guidance in XML Format

```
- <registry_test id="wrt-9999" comment="Account Lockout Duration Set to 5" check="at least 5">
- <object>
   <hive>HKEY_LOCAL_MACHINE</hive>
   <key>Software\Microsoft\Windows</key>
  <name>AccountLockoutDuration</name>
  </object>
- <data operation="AND">
  <value operator=“greater than">5*</value>
```

COTS Tool Ingest

API Call

```
lpHKey = “HKEY_LOCAL_MACHINE”
Path = “Software\Microsoft\Windows\”
Value = “5”
sKey = “AccountLockoutDuration”
Op = “>“
```

Result

```
RegQueryValue (lpHKey, path, value, sKey, Value, Op);
If (Op == ‘>” )
if ((sKey < Value )
return (1); else
return (0);
```

Supplemental – SCAP Value Reference

SCAP Value

Feature	Benefit
Standardizes ***how*** computers communicate vulnerability information – the protocol	▪Enables interoperability for products and services of various manufacture
Standardizes ***what*** vulnerability information computers communicate – the content	▪Enables repeatability across products and services of various manufacture ▪Reduces content-based variance in operational decisions and actions
Based on open standards	▪Harnesses the collective brain power of the masses for creation and evolution ▪Adapts to a wide array of use cases
Uses configuration and asset management standards	▪Mobilizes asset inventory and configuration information for use in vulnerability and compliance management
Applicable to many different Risk Management Frameworks – Assess, Monitor, Implement	▪Reduces time, effort, and expense of risk management process
Detailed traceability to multiple security mandates and guidelines	▪Automates portions of compliance demonstration and reporting ▪Reduces chance of misinterpretation between Inspector General/auditors and operations teams
Keyed on NIST SP 800-53 security controls	▪Automates portions of FISMA compliance demonstration and reporting

Supplemental – FAQ for NIST FISMA Documents

Fundamental FISMA Questions

What are the NIST Technical Security Controls?

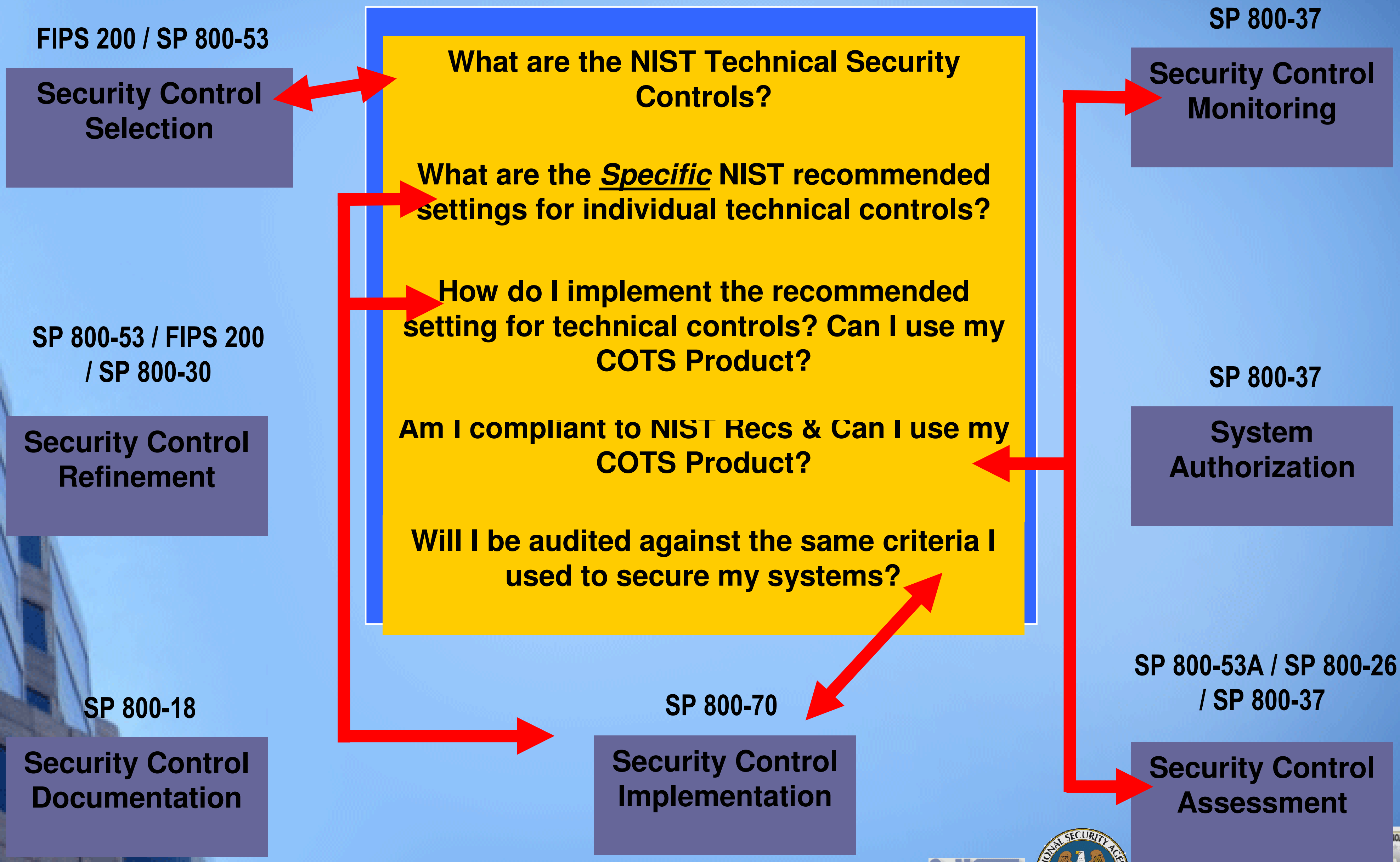
What are the ***<u>Specific</u>*** NIST recommended settings for individual technical controls?

How do I implement the recommended setting for technical controls? Can I use my COTS Product?

Am I compliant to NIST Recs & Can I use my COTS Product?

Will I be audited against the same criteria I used to secure my systems?

Fundamental FISMA Documents



FIPS 200 / SP 800-53

Security Control Selection

What are the NIST Technical Security Controls?

What are the *__Specific__* NIST recommended settings for individual technical controls?

How do I implement the recommended setting for technical controls? Can I use my COTS Product?

Am I compliant to NIST Recs & Can I use my COTS Product?

Will I be audited against the same criteria I used to secure my systems?

SP 800-53 / FIPS 200 / SP 800-30

Security Control Refinement

SP 800-18

Security Control Documentation

SP 800-70

Security Control Implementation

SP 800-37

Security Control Monitoring

SP 800-37

System Authorization

SP 800-53A / SP 800-26 / SP 800-37

Security Control Assessment