FITSI Federal Body of Knowledge Guide

An Overview of the Federal Body of Knowledge (FBK) for the Federal IT Security Professional (FITSP) Certification Program

Version 2.0

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TABLE OF CONTENTS

1. Executive Overview

The Federal Body of Knowledge (FBK)* is a library of federal statutes, regulations, standards, and guidelines that federal workforce security professionals are required to use in protecting and defending systems owned by or operated on behalf of the federal government. Provided by the Federal IT Security Institute (FITSI), the purpose of this document is to help provide interested parties with an understanding of what constitutes the FBK. This document can be used for general knowledge or by Federal IT Security Professional (FITSP) candidates to help augment their study in pursuit of one of the four FITSP certifications (Manager, Designer, Operator, Auditor).

This guide is updated periodically and is meant to provide a high-level description of the body of knowledge that forms the basis of the exams.

This document is available free of charge at the following FITSI website: http://www.fitsi.org/documents. It may be forwarded to professional colleagues but must be kept in its original form.

Important note: This document includes an overview of the FBK that establishes the boundary of knowledge that cuts across all four FITSP certifications. Candidates are not expected to have read and understood all of the publications listed.

* The FBK incorporates themes, concepts, and documents focused on unclassified federal information systems.

3. Federal Body of Knowledge Overview

The FBK* is broken down into six domains and 18 IT security topic areas.

Domains

1. Domain 1 – NIST Special Publications
2. Domain 2 – NIST Federal Information Processing Standards (FIPS)
3. Domain 3 – NIST Control Families
4. Domain 4 – Governmental Laws and Regulations
5. Domain 5 – NIST Risk Management Framework
6. Domain 6 – NIST Interagency Reports

IT Security Topic Areas**

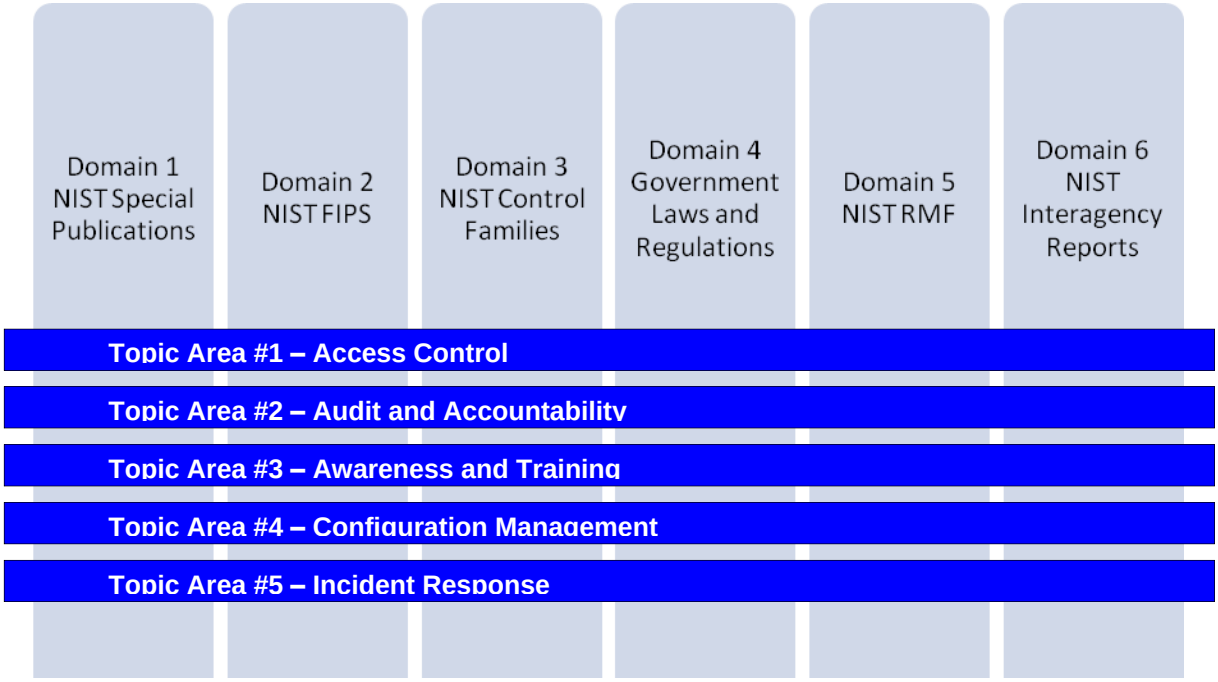
1. Access Control
2. Audit and Accountability
3. Awareness and Training
4. Configuration Management
5. Contingency Planning
6. Identification and Authentication
7. Incident Response
8. Maintenance
9. Media Protection
10. Personnel Security
11. Physical and Environmental Protection
12. Planning
13. Program Management
14. Risk Assessment
15. Security Assessment and Authorization
    a. (Formerly Certification, Accreditation, and Security Assessments)
16. System and Communications Protection
17. System and Information Integrity
18. System and Services Acquisition

* The FBK incorporates themes, concepts, and documents focused on unclassified federal information systems.
** Seventeen of the 18 IT Security topic areas are derived directly from the minimum control requirements defined in Federal Information Processing Standard 200 (FIPS 200), one is from NIST SP 800-53 (Appendix G, Program Management).

3. How FITSP uses the Federal Body of Knowledge

Domains are the boundaries of knowledge that apply to the federal government. The IT Security topic areas include themes and skills that IT security professionals are expected to understand. ***The FITSP role based exams for Manager, Designer, Operator and Auditor include questions that cover the intersection between the six domains and the 18 IT security topic areas (see illustration below).***

The interwoven nature of the domains and topic areas are below. Only five out of the 18 topic areas are present for illustration purposes.



4. FBK Breakdown

The purpose of this section is to provide the reader with a broad overview of the domains and topic areas. Because the exam focuses on federal statutes, regulations, standards, and guidelines, this guide provides a breakdown for each FITSP domain and topic area.

This document provides the reader a reference on what constitutes the boundary of the FBK.

Domains

Domain 1 – NIST Special Publications

NIST Special Publications are written to provide guidance and best practices to federal agencies on how to protect the agency's missions, business functions, and environment of operation. These publications are downloadable for free at the following website: http://csrc.nist.gov.

1. 800-12 Rev1 -An Introduction to Computer Security: The NIST Handbook
2. 800-13 - Telecommunications Security Guidelines for Telecommunications Management Network
3. 800-14- Generally Accepted Principles and Practices for Securing Information Technology Systems
4. 800-16 - Information Technology Security Training Requirements: A Role- and Performance-Based Model
5. 800-18 Rev 1 - Guide for Developing Security Plans for Federal Information Systems
6. 800-23 - Guidelines to Federal Organizations on Security Assurance and Acquisition/Use of Tested/Evaluated Products
7. 800-24 - PBX Vulnerability Analysis: Finding Holes in Your PBX Before Someone Else Does
8. 800-25 - Federal Agency Use of Public Key Technology for Digital Signatures and Authentication
9. 800-27 Rev A - Engineering Principles for Information Technology Security (A Baseline for Achieving Security)
10. 800-28 Version 2 - Guidelines on Active Content and Mobile Code
11. 800- 30 Rev 1 - Guide for Conducting Risk Assessments
12. 800-32 - Introduction to Public Key Technology and the Federal PKI Infrastructure
13. 800-33 - Underlying Technical Models for Information Technology Security
14. 800-34 Rev. 1 - Contingency Planning Guide for Federal Information Systems
15. 800-35 - Guide to Information Technology Security Services
16. 800-36 - Guide to Selecting Information Technology Security Products
17. 800-37 Rev 1 - Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach
18. 800-40 Rev. 3 - Guide to Enterprise Patch Management Technologies
19. 800-41Rev 1 - Guidelines on Firewalls and Firewall Policy
20. 800-44 Version 2 - Guidelines on Securing Public Web Servers
21. 800-45 Version 2 - Guidelines on Electronic Mail Security
22. 800-46 Rev. 2 - Guide to Enterprise Telework, Remote Access, and Bring Your Own Device (BYOD) Security
23. 800-47 - Security Guide for Interconnecting Information Technology Systems
24. 800-48 Rev 1 - Guide to Securing Legacy IEEE 802.11 Wireless Networks
25. 800-49 - Federal S/MIME V3 Client Profile
26. 800-51 Rev. 1 - Guide to Using Vulnerability Naming Schemes
27. 800-52 Rev. 1 - Guidelines for the Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations

28. 800-53 Rev4 - Security and Privacy Controls for Federal Information Systems and Organizations
29. 800-53A Rev. 4 - Assessing Security and Privacy Controls in Federal Information Systems and Organizations: Building Effective Assessment Plans
30. 800-55 Rev 1 - Performance Measurement Guide for Information Security
31. 800-57 Part 1 Rev. 4 - Recommendation for Key Management, Part 1: General
32. 800-57 Part 2 - Recommendation for Key Management, Part 2: Best Practices for Key Management Organization
33. 800-57 Part 3 Rev. 1 - Recommendation for Key Management, Part 3: Application-Specific Key Management Guidance
34. 800-60 Rev 1 - Guide for Mapping Types of Information and Information Systems to Security Categories: (2 Volumes) - Volume 1: Guide Volume 2: Appendices
35. 800-61 Rev. 2 - Computer Security Incident Handling Guide
36. 800-63-3 - Digital Identity Guidelines
37. 800-63A - Digital Identity Guidelines: Enrollment and Identity Proofing
38. 800-63B - Digital Identity Guidelines: Authentication and Lifecycle Management
39. 800-63C - Digital Identity Guidelines: Federation and Assertions
40. 800-64 Rev 2 – Security Considerations in the System Development Life Cycle
41. 800-65 - Integrating IT Security into the Capital Planning and Investment Control Process
42. 800-66 Rev 1 - An Introductory Resource Guide for Implementing the Health Insurance Portability and Accountability Act (HIPAA) Security Rule
43. 800-70 Rev. 3 - National Checklist Program for IT Products: Guidelines for Checklist Users and Developers
44. 800-77 - Guide to IPSec VPNs
45. 800-78-4 - Cryptographic Algorithms and Key Sizes for Personal Identity Verification
46. 800-79-2 - Guidelines for the Authorization of Personal Identity Verification Card Issuers (PCI) and Derived PIV Credential Issuers (DPCI)
47. 800-81-2 - Secure Domain Name System (DNS) Deployment Guide
48. 800-82 Rev. 2 - Guide to Industrial Control Systems (ICS) Security
49. 800-83 Rev. 1 - Guide to Malware Incident Prevention and Handling for Desktops and Laptops
50. 800-84 - Guide to Test, Training, and Exercise Programs for IT Plans and Capabilities
51. 800-86 - Guide to Integrating Forensic Techniques into Incident Response
52. 800-87 Rev 1 - Codes for Identification of Federal and Federally-Assisted Organizations
53. 800-88 Rev. 1 - Guidelines for Media Sanitization
54. 800-92 - Guide to Computer Security Log Management
55. 800-94 - Guide to Intrusion Detection and Prevention Systems (IDPS)
56. 800-95 - Guide to Secure Web Services
57. 800-96 - PIV Card to Reader Interoperability Guidelines
58. 800-97 - Establishing Wireless Robust Security Networks: A Guide to IEEE 802.11i
59. 800-98 - Guidelines for Securing Radio Frequency Identification (RFID) Systems
60. 800-100 - Information Security Handbook: A Guide for Managers
61. 800-101 Rev. 1 - Guidelines on Mobile Device Forensics
62. 800-107 - Recommendation for Applications Using Approved Hash Algorithms
63. 800-111 - Guide to Storage Encryption Technologies for End User Devices
64. 800-113 - Guide to SSL VPNs
65. 800-114 Rev. 1 - User's Guide to Telework and Bring Your Own Device (BYOD) Security
66. 800-115 - Technical Guide to Information Security Testing and Assessment
67. 800-117 - Guide to Adopting and Using the Security Content Automation Protocol (SCAP) Version 1.0
68. 800-119 - Guidelines for the Secure Deployment of IPv6
69. 800-121 Rev. 2 - Guide to Bluetooth Security
70. 800-122 - Guide to Protecting the Confidentiality of Personally Identifiable Information (PII)
71. 800-123 - Guide to General Server Security
72. 800-124 Rev. 1 - Guidelines for Managing the Security of Mobile Devices in the Enterprise
73. 800-125 - Guide to Security for Full Virtualization Technologies
74. 800-126 Rev. 2 - The Technical Specification for the Security Content Automation Protocol (SCAP): SCAP Version 1.2

75. 800-127 - Guide to Securing WiMAX Wireless Communications
76. 800-128 - Guide for Security-Focused Configuration Management of Information Systems
77. 800-137 - Information Security Continuous Monitoring (ISCM) for Federal Information Systems and Organizations
78. 800-144 - Guidelines on Security and Privacy in Public Cloud Computing
79. 800-145 - The NIST Definition of Cloud Computing
80. 800-146 - Cloud Computing Synopsis and Recommendations
81. 800-147 - BIOS Protection Guidelines
82. 800-150 - Guide to Cyber Threat Information Sharing
83. 800-153 - Guidelines for Securing Wireless Local Area Networks (WLANs)
84. 800-160 - Systems Security Engineering: Considerations for a Multidisciplinary Approach in the Engineering of Trustworthy Secure Systems
85. 800-161 - Supply Chain Risk Management Practices for Federal Information Systems and Organizations
86. 800-162 - Guide to Attribute Based Access Control (ABAC) Definition and Considerations
87. 800-167 - Guide to Application Whitelisting
88. 800-171 Rev. 1 - Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations
89. 800-181 - NICE Cybersecurity Workforce Framework (NCWF): National Initiative for Cybersecurity Education
90. 800-183 - Networks of 'Things'
91. 800-184 - Guide for Cybersecurity Event Recovery

Domain 2 - NIST Federal Information Processing Standards

The FBK includes the list of all NIST Federal Information Processing Standards (FIPS). These standards are downloadable at the following website: http://csrc.nist.gov.

1. FIPS 202 - SHA-3 Standard: Permutation-Based Hash and Extendable-Output Functions
2. FIPS 201-2 - Personal Identity Verification (PIV) of Federal Employees and Contractors
3. FIPS 200 - Minimum Security Requirements for Federal Information and Information Systems
4. FIPS 199 - Standards for Security Categorization of Federal Information and Information Systems
5. FIPS 198-1 - The Keyed-Hash Message Authentication Code
6. FIPS 197 - Advanced Encryption Standard
7. FIPS 186-4 - Digital Signature Standard (DSS)
8. FIPS 180-4 - Secure Hash Standard (SHS)
9. FIPS 140-2 - Security Requirements for Cryptographic Modules

Domain 3 - NIST Control Families

NIST SP 800-53 identifies 18 IT security control families used in the design of federal information systems. These control families are separated into three categories of controls (management, technical and operational).

1. Access Control
2. Awareness and Training
3. Audit and Accountability
4. Security Assessment and Authorization
5. Configuration Management
6. Contingency Planning
7. Identification and Authentication

8. Incident Response
9. Maintenance
10. Media Protection
11. Physical and Environmental Protection
12. Planning
13. Personnel Security
14. Risk Assessment
15. System and Services Acquisition
16. System and Communication Protection
17. System and Information Integrity
18. Program Management (organization level)

Domain 4 - Government Laws and Regulations

Listed below are the Acts of Congress, OMB memos, executive orders and presidential directives that impact federal IT systems. Acts of Congress, executive orders, and presidential directive are available on the Internet. OMB memos and bulletins are downloadable from http://www.whitehouse.gov/omb.

1. Acts of Congress

    a) Privacy Act of 1974
        a. as amended 5 U.S.C. § 552a.
    b) Paperwork Reduction Act of 1980
        a. 44 USC § 3501, et. seq.
    c) Computer Security Act of 1987
        a. Replaced by FISMA and is no longer in effect
    d) Chief Financial Officers Act of 1990
    e) Government Performance and Results Act of 1993
    f) Paperwork and Elimination Act of 1998
    g) Government Information Security Reform Act
        a. Replace by FISMA and is no longer in effect
    h) Federal Information Security Management Act of 2002
        a. 44 U.S.C. 3541, et. Seq.
    i) Health Insurance Portability and Accountability Act
    j) Clinger-Cohen Act of 1996
    k) Federal Information Security Modernization Act of 2014
    l) National Cybersecurity Protection Act of 2014
    m) Cybersecurity Workforce Assessment Act of 2014
    n) Cybersecurity Enhancement Act of 2014
    o) Federal Information Technology Acquisition Reform Act of 2015

2. Council of the Inspectors General for Integrity and Efficiency (CIGIE)

    a) IG FISMA ISCM Maturity Model Assessment Framework

3. DHS Binding Operational Directives

    a) BOD 15-01, Critical Vulnerability Mitigation Requirements for Federal Civilian Executive Branch Departments' and Agencies' Internet-Accessible Systems

b) BOD 16-01, Securing High Value Assets
c) BOD 16-02, Threat to Network Infrastructure Devices
d) BOD 16-03, 2016 Agency Cybersecurity Reporting Requirements

4. DHS Federal Information Security Memorandum

a) FISM 14-01 - Fiscal Year 2014 Metrics for the Federal Information Security Management Act of 2002 and Agency Privacy Management Act and Operational Reporting Instructions
b) FISM 12-02 - FY 2012 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
c) FISM 12-01 - Protected BIOS for New Procurements of Desktop and Laptop Computers
d) FISM 11-02 - FY 2011 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management

5. DHS FISMA Documents

a) FY17 CIO Annual FISMA Metrics
b) FY17 IG FISMA Metrics
c) FY16 CIO Annual FISMA Metrics
d) FY16 IG FISMA Metrics
e) FY16 SAOP FISMA Metrics
f) FY15 CIO Annual FISMA Metrics
g) FY15 IG FISMA Metrics
h) FY15 SAOP FISMA Metrics
i) FY15 CIO Q3 FISMA Metrics
j) FY15 CIO Q2 FISMA Metrics
k) FY15 CIO Q1 FISMA Metrics

6. Executive Orders

a) EO - Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure
b) EO 13636 - Improving Critical Infrastructure Cybersecurity
c) EO 12958 – Classified National Security Information
d) 36 Code of Federal Regulation Part 1236, Management of Vital Records, revised as of July 1, 2000
e) 41 Code of Federal Regulations 101.20.103-4, *Occupant Emergency Program*, revised as of July 1, 2000
f) EO 12472 – Assignment of National Security and Emergency Preparedness Telecommunications Functions
g) EO 12656 – Assignment of Emergency Preparedness Responsibilities
h) EO 13231 – Critical Infrastructure Protection in the Information Age

7. Federal Audit Standards

a) Government Audit Standards (Yellow Book)
b) GAO / PCIE Financial Audit Manual (FAM)
c) GAO Federal Information Systems Control Audit Manual (FISCAM)

8. Federal CIO Council Guidance

    e) Federated Identity, Credential, and Access Management (FICAM) Roadmap and Implementation Guidance Version 2.0

9. FedRAMP Program Management Documents

    a) FedRAMP Security Assessment Framework Version 2.1

10. Homeland Security Presidential Directives

    a) HSPD-3 – Homeland Security Advisory System
    b) HSPD-5 – Management of Domestic Incidents
    c) HSPD-7 – Critical Infrastructure Identification, Prioritization, and Protection
    d) HSPD-8 – National Preparedness
    e) HSPD-12 – Policy for a Common Identification Standard for Federal Employees and Contractors
    f) HSPD-20/NSPD-51 – National Continuity Policy
    g) HSPD-24 – Biometrics for Identification and Screening to Enhance National Security

11. National Initiative for Cybersecurity Education (NICE)

    a) NICE Framework 2.0

12. NIST Cyber Security Framework Documents

    a) Framework for Improving Critical Infrastructure Cybersecurity Version 1.0

13. OMB Circular

    a) Office of Management and Budget Circular A-11, Preparation, Submission and Execution of the Budget, June 2008
    b) Office of Management and Budget Circular A-123, Management Responsibility for Internal Control, December 2004
    c) Office of Management and Budget Circular A-127-Revised, Financial Management Systems, January 2009
    d) Office of Management and Budget Circular A-130, Managing Information as a Strategic Resource, July 2016

14. OMB Memoranda

    1) M-17-26, Reducing Burden for Federal Agencies by Rescinding and Modifying OMB Memoranda
    2) M-17-25, Reporting Guidance for Executive Order on Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure
    3) M-17-15, Rescission of Memoranda Relating to Identity Management
    4) M-17-12, Preparing for and Responding to a Breach of Personally Identifiable Information
    5) M-17-09, Management of Federal High Value Assets

6) M-17-06, Policies for Federal Agency Public Websites and Digital Services
7) M-17-05, Fiscal Year 2016 - 2017 Guidance On Federal Information Security And Privacy Management Requirements
8) M-16-24, Role and Designation of Senior Agency Officials for Privacy
9) M-16-17, OMB Circular No. A-123, Management's Responsibility for Enterprise Risk Management and Internal Control
10) M-16-15, Federal Cybersecurity Workforce Strategy
11) M-16-04, Cybersecurity Strategy and Implementation Plan (CSIP) for the Federal Civilian Government
12) M-16-03, Fiscal Year 2015-2016 Guidance on Federal Information Security and Privacy Management Requirements
13) M-16-02, Category Management Policy 15-1: Improving the Acquisition and Management of Common Information Technology: Laptops and Desktops
14) M-15-14, Management and Oversight of Federal Information Technology
15) M-15-01, Fiscal Year 2014-2015 Guidance on Improving Federal Information Security and Privacy Management Practices
16) M-14-16, Guidance on Managing Email
17) M-14-04, Fiscal Year 2013 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
18) M-14-03, Enhancing the Security of Federal Information and Information Systems
19) M-13-13, Open Data Policy - Managing Information as an Asset
20) M-12-20, FY 2012 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
21) M-11-33, FY 2011 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
22) M-11-29, Chief Information Officer Authorities
23) M-11-27, Implementing the Telework Enhancement Act of 2010: Security Guidelines
24) M-11-11, Continued Implementation of Homeland Security Presidential Directive (HSPD) 12–Policy for a Common Identification Standard for Federal Employees and Contractors
25) M-11-08, Initial Assessments of Safeguarding and Counterintelligence Postures for Classified National Security Information in Automated Systems
26) M-11-06, WikiLeaks - Mishandling of Classified Information
27) M-11-02, Sharing Data While Protecting Privacy
28) M-10-31, Immediate Review of Information Technology Projects
29) M-10-28, Clarifying Cybersecurity Responsibilities and Activities of the Executive Office of the President and the Department of Homeland Security (DHS)
30) M-10-27, Information Technology Investment Baseline Management Policy
31) M-10-26, Immediate Review of Financial Systems IT Projects
32) M-10-25, Reforming the Federal Government's Efforts to Manage Information Technology Projects
33) M-10-23, Guidance for Agency Use of Third-Party Websites and Applications
34) M-10-15, FY 2010 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
35) M-10-10, Federal Agency Coordination on Health Information Technology (HIT)
36) M-09-32 – Update on the Trusted Internet Connections Initiative
37) M-09-29 - FY 2009 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
38) M-09-02 - Information Technology Management Structure and Governance Framework
39) M-08-27 - Guidance for Trusted Internet Connection (TIC) Compliance
40) M-08-23 - Securing the Federal Government’s Domain Name System Infrastructure
41) M-08-22 - Guidance on the Federal Desktop Core Configuration (FDCC)
42) M-08-21 – FY 2008 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
43) M-08-16 – Guidance for Trusted Internet Connection Statement of Capability Form (SOC)
44) M-08-09 – New FISMA Privacy Reporting Requirements for FY 2008
45) M-08-05 - Implementation of Trusted Internet Connections (TIC)

46) M-08-01 - HSPD-12 Implementation Status
47) M-07-19 – FY 2007 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
48) M-07-18 - Ensuring New Acquisitions Include Common Security Configurations
49) M-07-16 - Safeguarding Against and Responding to the Breach of Personally Identifiable Information
50) M-07-11 - Implementation of Commonly Accepted Security Configurations for Windows Operating Systems
51) M-07-06 - Validating and Monitoring Agency Issuance of Personal Identity Verification Credentials
52) Recommendations for Identity Theft Related Data Breach Notification
53) M-06-20 - FY 2006 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
54) M-06-19 - Reporting Incidents Involving Personally Identifiable Information and Incorporating the Cost for Security in Agency Information Technology Investments
55) M-06-18 - Acquisition of Products and Services for Implementation of HSPD-12
56) M-06-16 - Protection of Sensitive Agency Information
57) M-06-15 - Safeguarding Personally Identifiable Information
58) M-06-06 - Sample Privacy Documents for Agency Implementation of Homeland Security Presidential Directive (HSPD) 12
59) M-05-24 - Implementation of Homeland Security Presidential Directive (HSPD) 12 – Policy for a Common Identification Standard for Federal Employees and Contractors
60) M05-16 - Regulation on Maintaining Telecommunication Services During a Crisis or Emergency in Federally-owned Buildings
61) M05-15 - FY 2005 Reporting Instructions for the Federal Information Security Management Act and Agency Privacy Management
62) M-05-08 - Designation of Senior Agency Officials for Privacy
63) M-05-05 - Electronic Signatures: How to Mitigate the Risk of Commercial Managed Services
64) M-05-04 - Policies for Federal Agency Public Websites
65) M-04-26 - Personal Use Policies and "File Sharing" Technology
66) M-04-25 – FY 2004 Reporting Instructions for the Federal Information Security Management Act and Updated Guidance on Quarterly IT Security Reporting
67) M-04-16 - Software Acquisition
68) M-04-15 - Development of Homeland Security Presidential Directive (HSPD) - 7 Critical Infrastructure Protection Plans to Protect Federal Critical Infrastructures and Key Resources
69) M-04-04 - E-Authentication Guidance for Federal Agencies
70) M-03-22 - OMB Guidance for Implementing the Privacy Provisions of the E-Government Act of 2002
71) M-03-19 - FY 2003 Reporting Instructions for the Federal Information Security Management Act and Updated Guidance on Quarterly IT Security Reporting
72) M-03-18 - Implementation Guidance for the E-Government Act of 2002
73) M-02-09 - Reporting Instructions for the Government Information Security Reform Act and Updated Guidance on Security Plans of Action and Milestones
74) M-02-01 - Guidance for Preparing and Submitting Security Plans of Action and Milestones
75) M-01-24 - Reporting Instructions for the Government Information Security Reform Act
76) M-01-08 - Guidance on Implementing the Government Information Security Reform Act
77) M-01-05 - Guidance on Inter-Agency Sharing of Personal Data - Protecting Personal Privacy
78) M-00-13 - Privacy Policies and Data Collection on Federal Web Sites
79) M-00-10 - OMB Procedures and Guidance on Implementing the Government Paperwork Elimination Act
80) M-00-07 - Incorporating and Funding Security in Information Systems Investments
81) M-00-01 - Day One Planning and Request for Updated Business Continuity and Contingency Plans
82) M-99-20 - Security of Federal Automated Information Resources
83) M-99-18 - Privacy Policies on Federal Web Sites
84) M-99-16 - Business Continuity and Contingency Planning for the Year 2000

Domain 5 - NIST Risk Management Framework (formerly C&A)

The Risk Management Framework deals with system authorization and is in NIST Special Publication 800-37 Rev1 and supporting documents. These special publications and standards are downloadable at the following website: http://csrc.nist.gov.

1. 800-18 Rev1 - Guide for Developing Security Plans for Federal Information Systems
2. SP 800-34 Rev. 1 - Contingency Planning Guide for Federal Information Systems
3. 800-47 - Security Guide for Interconnecting Information Technology Systems
4. 800-53 Rev4 - Recommended Security Controls for Federal Information Systems
5. 800-53A Rev4 - Guide for Assessing the Security Controls in Federal Information Systems
6. 800-37 Rev1 - Guide for the Security Certification and Accreditation of Federal Information Systems
7. 800-59 - Guideline for Identifying an Information System as a National Security System
8. 800-60 Rev1- Guide for Mapping Types of Information and Information Systems to Security Categories: (2 Volumes)
9. 800-66 Rev1 - An Introductory Resource Guide for Implementing the Health Insurance Portability and Accountability Act (HIPAA) Security Rule
10. 800-115 - Technical Guide to Information Security Testing and Assessment
11. 800-137 - Information Security Continuous Monitoring (ISCM) for Federal Information Systems and Organizations
12. FIPS 200 - Minimum Security Requirements for Federal Information and Information Systems
13. FIPS 199 - Standards for Security Categorization of Federal Information and Information Systems

Domain 6 - NIST Interagency Reports

NIST Interagency or Internal Reports (NISTIRs) describe research of a technical nature of interest to a specialized audience. These NISTIRs are downloadable at the following website: http://csrc.nist.gov.

1. NISTIR 8170 - The Cybersecurity Framework - Implementation Guidance for Federal Agencies
2. NISTIR 8062 - An Introduction to Privacy Engineering and Risk Management in Federal Systems
3. NISTIR 8060 - Guidelines for the Creation of Interoperable Software Identification (SWID) Tags
4. NISTIR 8053 - De-Identification of Personal Information
5. NISTIR 8011 Vol. 2 - Automation Support for Security Control Assessments: Hardware Asset Management
6. NISTIR 8011 Vol. 1 - Automation Support for Security Control Assessments: Overview
7. NISTIR 7946 - CVSS Implementation Guidance
8. NISTIR 7864 - The Common Misuse Scoring System (CMSS): Metrics for Software Feature Misuse Vulnerabilities
9. NISTIR 7800 - Applying the Continuous Monitoring Technical Reference Model to the Asset, Configuration, and Vulnerability Management Domains
10. NISTIR 7799 - Continuous Monitoring Reference Model Workflow, Subsystem, and Interface Specifications
11. NISTIR 7756 - CAESARS Framework Extension: An Enterprise Continuous Monitoring Technical Reference Architecture
12. NISTIR 7695 - Common Platform Enumeration: Naming Specification Version 2.3
13. NISTIR 7694 - Specification for Asset Reporting Format 1.1
14. NISTIR 7693 - Specification for Asset Identification 1.1
15. NISTIR 7692 - Specification for the Open Checklist Interactive Language (OCIL) Version 2.0

16. NISTIR 7622 - Notional Supply Chain Risk Management Practices for Federal Information Systems
17. NISTIR 7511 - Security Content Automation Protocol (SCAP) Version 1.2 Validation Program Test Requirements
18. NISTIR 7502 - The Common Configuration Scoring System (CCSS): Metrics for Software Security Configuration Vulnerabilities
19. NISTIR 7435 - The Common Vulnerability Scoring System (CVSS) and its Applicability to Federal Agency Systems
20. IR 7459 - Information Security Guide for Government Executives
21. IR 7358 - Program Review for Information Security Management Assistance (PRISMA)
22. IR 7298 - Glossary of Key Information Security Terms

IT Security Topic Areas

The purpose of this listing is to provide a basic understanding of key terms and concepts rather than offer an exhaustive list. Knowledge of these terms and concepts is the foundation for effective performance of job functions associated with each of the management, operational and technical topic areas.

Seventeen of the 18 IT Security topic areas come from the requirements defined in the Federal Information Processing Standard 200 (FIPS 200). One of the topic areas, Program Management, is new and comes from NIST SP 800-53 (Appendix G).

Topic Area 1 – Access Control

This topic area refers to the knowledge and understanding that organizations must limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems) and to the types of transactions and functions that authorized users are permitted to exercise.

• Access	• Least Privilege
• Access Authority	• Mandatory Access Control (MAC)
• Access Control	• Permitted Actions
• Access Control List	• Previous Login Notification
• Account Management	• Role Based Access Control (RBAC)
• Access Enforcement	• Security Attributes
• Authorization	• Separation of Duties
• Brute Force	• Session Lock
• Concurrent Session Control	• Session Termination
• Discretionary Access Control (DAC)	• System Use Notification
• Information Flow Enforcement	• Unsuccessful Login Attempt

Topic Area 2 – Audit and Accountability

This topic area refers to the knowledge and understanding that organizations must: (i) create, protect, and retain information system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate information system activity; and (ii) ensure that the actions of individual information system users can be uniquely traced to those users so they can be held accountable for their actions.

• Accountability	• Audit Review
• Auditable Event	• Audit Trail
• Audit	• Audit Storage Capacity
• Audit Analysis	• Audit Failure Response
• Audit Data	• Contents of Audit Record

• Audit Generation • Audit Policy • Audit Record Retention • Audit Reduction Tool • Audit Report • Audit Reduction	• Monitoring for Information Disclosure • Non-repudiation • Protection of Audit Information • Session Audit • Time Stamps

Topic Area 3 – Awareness and Training

This topic area refers to the knowledge and understanding that organizations must: (i) ensure that managers and users of organizational information systems are made aware of the security risks associated with their activities and of the applicable laws, Executive Orders, directives, policies, standards, instructions, regulations, or procedures related to the security of organizational information systems; and (ii) ensure that organizational personnel are adequately trained to carry out their assigned information security-related duties and responsibilities.

• Awareness (Information Security) • Behavioral Outcome • Certification • Computer Based Training (CBT) • Curriculum • Education (Information Security) • End User Security Training • Information Sharing • Instructional Systems Design (ISD) • Instructor Led Training (ILT) • IT Security Awareness • IT Security Awareness and Training Program	• IT Security Education • IT Security Training Program • Learning Management System (LMS) • Learning Objectives • Needs Assessment (IT Security) • Role-Based Training • Testing • Training (Information Security) • Training Assessment • Training Effectiveness • Training Effectiveness Evaluation • Web Based Training (WBT)

Topic Area 4 – Configuration Management

This topic area refers to the knowledge and understanding that organizations must: (i) establish and maintain baseline configurations and inventories of organizational information systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles; and (ii) establish and enforce security configuration settings for information technology products employed in organizational information systems.

• Access Restriction for Change • Baseline Configuration • Configuration Change • Configuration Management Plan • Configuration Management Policy	• Configuration Setting • Federal Desktop Core Configuration • Least Functionality • Security Checklists • Security Impact Analysis

Topic Area 5 – Contingency Planning

This topic area refers to the knowledge and understanding that organizations must establish, maintain, and effectively implement plans for emergency response, backup operations, and post-disaster recovery for organizational information systems to ensure the availability of critical information resources and continuity of operations in emergency situations.

• Alternate Processing / Storage Site • Backup Strategy • Business Continuity Plan • Business Impact Analysis • Business Recovery Plan • Call Tree • Cold Site • Contingency Plan • Contingency Plan Policy • Contingency Plan Training • Contingency Plan Testing • Continuity of Operations Plan • Continuity of Support Plan • Crisis Communication • Cyber Incident Response • Delegation of Authority • Disaster Recovery Plan	• Disruption • Essential Functions • Hot Site • Information Technology • Interoperable Communications • Mission Assurance • Occupant Emergency Plan • Order of Succession • Preparedness/Readiness • Reconstitution • Recovery • Risk Mitigation • Standard Operating Procedures • Telecommunications Services • Threat Environment • Vital Records and Databases • Warm Site

Topic Area 6 – Identification and Authentication

This topic area refers to the knowledge and understanding that organizations must identify information system users, processes acting on behalf of users, or devices and authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.

• Authenticate • Authentication • Authentication Mechanism • Authentication Mode • Authentication Protocol • Authentication Token • Authenticator Feedback • Authenticator Management • Authenticity • Biometric • Biometric System • Biometric Information • Device Authentication	• Device Identification • Digital Certificate • Certificate Policy • Certificate Revocation List (CRL) • Certification Authority • Claimant • Credential • Cryptographic Module Authentication • Electronic Authentication • Identification • Identifier Management • Mutual Authentication

Topic Area 7 – Incident Response

This topic area refers to the knowledge and understanding that organizations must: (i) establish an operational incident handling capability for organizational information systems that includes adequate preparation, detection, analysis, containment, recovery, and user response activities; and (ii) track, document, and report incidents to appropriate organizational officials and/or authorities.

• Attack Signature	• Incident Response Testing
• Computer Forensics	• Incident Response Training
• Computer Security Incident	• Intrusion
• Computer Security Incident Response Team	• Intrusion Prevention System
• Computer Security	• Intrusion Detection System
• Escalation Procedures	• Measures
• Honey Pot	• Personally Identifiable Information (PII)
• Incident Handling	• Reconstitution of System
• Incident Monitoring	• Security Alerts
• Incident Records	• Security Incident
• Incident Reporting	• System Compromise
• Incident Response Assistance	• Threat Motivation
• Incident Response Plan	• Unauthorized Access
• Incident Response Policy	• Vulnerability

Topic Area 8 – Maintenance

This topic area refers to the knowledge and understanding that organizations must: (i) perform periodic and timely maintenance on organizational information systems; and (ii) provide effective controls on the tools, techniques, mechanisms, and personnel used to conduct information system maintenance.

• Antivirus Software	• Security Data Analysis
• Backup	• Security Measures
• Baseline	• Security Reporting
• Configuration Management	• System Hardening
• Controlled Maintenance	• System Logs
• Insider Threat	• System Maintenance Policy
• Maintenance Tools	• System Monitoring
• Maintenance Personnel	• Threat Analysis
• Non-Local Maintenance	• Threat Monitoring
• Patch Management	• Timely Maintenance
• Penetration Testing	• Vulnerability Analysis

Topic Area 9 – Media Protection

This topic area refers to the knowledge and understanding that organizations must: (i) protect information system media, both paper and digital; (ii) limit access to information on information system media to authorized users; and (iii) sanitize or destroy information system media before disposal or release for reuse.

• Degaussing • Media Access • Media Destruction • Media Marking	• Media Protection Policy • Media Storage • Media Transport • Sanitization

Topic Area 10 – Personnel Security

This topic area refers to the knowledge and understanding that organizations must: (i) ensure that individuals occupying positions of responsibility within organizations (including third-party service providers) are trustworthy and meet established security criteria for those positions; (ii) ensure that organizational information and information systems are protected during and after personnel actions such as terminations and transfers; and (iii) employ formal sanctions for personnel failing to comply with organizational security policies and procedures.

• Access Agreement • Background Checks • Background Investigation • Confidentiality • Digital Identity • Human Resources • Insider Threat • Job Rotation • Nondisclosure Agreement • Position Categorization • Position Sensitivity • Personnel Sanctions	• Personnel Security Policy • Personnel Screening • Personnel Termination • Personnel Transfer • Security Breach • Security Clearance • Separation of Duties • Social Engineering • Special Background Investigation (SBI) • Suitability Determination • Third-Party Personnel Security

Topic Area 11 – Physical and Environmental Protection

This topic area refers to the knowledge and understanding that organizations must: (i) limit physical access to information systems, equipment, and the respective operating environments to authorized individuals; (ii) protect the physical plant and support infrastructure for information systems; (iii) provide supporting utilities for information systems; (iv) protect information systems against environmental hazards; and (v) provide appropriate environmental controls in facilities containing information systems.

• Access Cards • Access Control	• Inventory

• Access Control for Output Devices • Access Control for Transmission Medium • Access Records • Alarm • Alternate Work Site • Asset Disposal • Biometrics • Defense-in-Depth • Delivery and Removal • Emergency Lighting • Emergency Power • Environmental Threat • Fire Protection • Information Leakage	• Location of Information System Components • Manmade Threat • Monitoring Physical Access • Natural Threat • Perimeter Defense • Physical and Environmental Policy • Physical Access Authorization • Physical Access Control • Power Equipment and Power Cabling • Risk Management • Temperature and Humidity Control • Threat and Vulnerability Assessment • Video Surveillance • Visitor Control • Water Damage Protection

Topic Area 12 – Planning

This topic area refers to the knowledge and understanding that organizations must develop, document, periodically update, and implement security plans for organizational information systems that describe the security controls in place or planned for the information systems and the rules of behavior for individuals accessing the information systems.

• Privacy Impact Assessment • Rules of Behavior • Security Planning Policy	• Security Planning Procedures • Security Related Activity Planning • System Security Plan

Topic Area 13 – Program Management

This topic area refers to the knowledge and understanding that organizations are required to implement security program management controls to provide a foundation for the organization's information security program.

• Critical Infrastructure Plan • Enterprise Architecture • Information Security Measures of Performance • Information Security Program Plan • Information Security Resources	• Information System Inventory • Mission/Business Process Definition • Security Authorization Process • Senior Information Security Officer • Plan of Action and Milestones Process • Risk Management Strategy

Topic Area 14 – Risk Assessment

This topic area refers to the knowledge and understanding that organizations must periodically assess the risk to organizational operations (including mission, functions, image, or reputation), organizational assets, and individuals, resulting from the operation of organizational information systems and the associated processing, storage, or transmission of organizational information.

• Acceptable Risk • Assessment • Asset Valuation • Business Impact Analysis • Controls • Impact • Inside Threat • Likelihood Determination • National Vulnerability Database • Qualitative • Quantitative • Risk • Risk Assessment • Risk Assessment Policy • Risk Avoidance • Risk Level	• Risk Limitation • Risk Management • Risk Matrix • Risk Mitigation • Risk Research • Risk Scale • Risk Transference • Security Categorization • Security Controls • Security Measures • Threat • Threat and Vulnerability • Threat Modeling • Types of Risk • Vulnerability • Vulnerability Scanning

Topic Area 15 – Security Assessments and Authorization

(Formerly Certification, Accreditation, and Security Assessments)

This topic area refers to knowledge and understanding that organizations must: (i) periodically assess the security controls in organizational information systems to determine if the controls are effective in their application; (ii) develop and implement plans of action designed to correct deficiencies and reduce or eliminate vulnerabilities in organizational information systems; (iii) authorize the operation of organizational information systems and any associated information system connections; and (iv) monitor information system security controls on an ongoing basis to ensure the continued effectiveness of the controls.

• Assessment Method • Assessment Procedure • Authorization (to operate) • Authorization Boundary • Authorize Process • Authorizing Official • Designated Representative • Dynamic Subsystem • Common Control Provider • Common Control • Compensating Control • Complex Information System • Continuous Monitoring • Cost Effective • Critical Control • External Subsystems	• Hybrid Security Control • Information Owner/Steward • Information System Boundary • Information System Owner • Information System Security Engineer • Information Type • Interconnection Agreement • Net-centric Architecture • Plan of Action and Milestones (POAM) • Reciprocity • Risk Executive • Security Control Assessor • Senior Information Security Officer • Tailored Security Control Baseline • Volatile Control

Topic Area 16 – System and Communication Protection

This topic area refers to the knowledge and understanding that organizations must: (i) monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems; and (ii) employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational information systems.

• Application Partitioning • Boundary Protection • Collaborative Computing Devices • Communications Security • Configuration • Covert Channel Analysis • Cryptographic Key Establishment • Cryptographic Key Management • Defense-in-Depth • Denial of Service Protection	• Penetration Testing • Port • Protection of Information at Rest • Public Access Protections • Public Key Infrastructure Certificates • Resource Priority • Router • Secure Name Resolution • Security Function Isolation • Security Trust

• Emission Security • Encryption Technologies • Fail in Known State • Firewall • Heterogeneity • Honeypots • Hub • Information in Shared Resources • Information System Partitioning • Intrusion Detection System • Intrusion Prevention Systems • Load Balancers • Mobile Code • Network Architecture • Network Disconnect • Networking Models and Protocols • Network Segmentation • Non-Modifiable Executable Programs	• Session Authenticity • Switch • System and Communications Protection Policy • Telecommunications Technology • Thin Nodes • Transmission Confidentiality • Transmission of Security Attributes • Transmission Integrity • Transmission Preparation Integrity • Trusted Path • Use of Cryptography • Virtual Private Network (VPN) • VOIP • Virtualization Techniques • Vulnerability • Web Services Security • Wired and Wireless Networks

Topic Area 17 – System and Information Integrity

This topic area refers to the knowledge and understanding organizations must: (i) identify, report, and correct information and information system flaws in a timely manner; (ii) provide protection from malicious code at appropriate locations within organizational information systems; and (iii) monitor information system security alerts and advisories and take appropriate actions in response.

• Agent • Antivirus Software • Application • Application Content Filtering • Blended Attack • Boot Sector Virus • Buffer Overflow • Computer Virus • Error Handling • Flaw Remediation • Information Input Restrictions	• Information Input Validation • Information Output Handling and Retention • Information System Monitoring • Macro Virus • Malicious Code Protection • Predictable Failure Prevention • Security Alerts, Advisories, and Directives • Security Functionality Verification • Spam Protection • Software and Information Integrity • System and Information Integrity Policy

Topic Area 18 – System and Services Acquisition

This topic area refers to the knowledge and understanding that organizations must: (i) allocate sufficient resources to adequately protect organizational information systems; (ii) employ system development life cycle processes that incorporate information security considerations; (iii) employ software usage and installation restrictions; and (iv) ensure that third-party providers employ adequate security measures to protect information, applications, and/or services outsourced from the organization.

• Acquisitions • Allocation of Resources • Business Impact Analysis • Contract • Cost-Benefit Analysis • Critical Information System Components • Developer Configuration Management • Developer Security Testing • Disposal • External Information System Services • Information System Documentation • Life Cycle Support • Prequalification • Regulatory Compliance • Request for Information • Request for Proposal (RFP)	• Risk Analysis • Risk-Based Decision • Risk Mitigation • Security Engineering Principles • Security Requirements • Service Level Agreement (SLA) • System and Services Acquisition Policy • Software usage Restrictions • Solicitation • Supply Chain Protection • Statement of Objectives (SOO) • Statement of Work (SOW) • Total Cost of Ownership (TCO) • Trustworthiness • User Installed Software