Virtual Coffee Chat

NIST SP 800-171 and CUI with Ron Ross

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Today’s Speaker

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National Institute of Standards and Technology
Special Publication 800-171

Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations

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First, some definitions.
Information that law, regulation, or governmentwide policy requires to have safeguarding or disseminating controls, excluding information that is classified under Executive Order 13526, Classified National Security Information, December 29, 2009, or any predecessor or successor order, or the Atomic Energy Act of 1954, as amended.

-- Executive Order 13556
Controlled Unclassified Information

Supports federal missions and business functions...

...that affect the economic and national security interests of the United States.
Federal Information System

An information system used or operated by an executive agency, by a contractor of an executive agency, or by another organization on behalf of an executive agency.

-- Federal Information Security Management Act (40 U.S.C., Sec. 11331)
An information system that does not meet the criteria for a federal information system.

-- NIST Special Publication 800-171
An entity that owns, operates, or maintains a nonfederal information system.

-- NIST Special Publication 800-171
Nonfederal Organizations

Some Examples

- Federal contractors.
- State, local, and tribal governments.
- Colleges and universities.
The protection of Controlled Unclassified Information while residing in nonfederal information systems and organizations is of paramount importance to federal agencies and can directly impact the ability of the federal government to successfully carry out its designated missions and business operations.

-- NIST Special Publication 800-171
Executive Order 13556
Controlled Unclassified Information
November 4, 2010

The Order —

 Established a governmentwide Controlled Unclassified Information (CUI) Program to standardize the way the Executive branch handles unclassified information that requires protection.

 Designated the National Archives and Records Administration (NARA) as the Executive Agent to implement the CUI program.

Only information that requires safeguarding or dissemination controls pursuant to federal law, regulation, or governmentwide policy may be designated as CUI.
The CUI Registry
www.archives.gov/cui/registry/category-list.html

- Online repository for information, guidance, policy, and requirements on handling CUI, including issuances by the CUI Executive Agent.
- Identifies approved CUI categories and subcategories (with descriptions of each) and the basis for controls.
- Sets out procedures for the use of CUI, including but not limited to marking, safeguarding, transporting, disseminating, re-using, and disposing of the information.
The Big Picture

A three-part plan for the protection of CUI

- Federal CUI rule (32 CFR Part 2002) to establish the required controls and markings for CUI governmentwide.
- NIST Special Publication 800-171 to define security requirements for protecting CUI in nonfederal information systems and organizations.
- Federal Acquisition Regulation (FAR) clause to apply the requirements of the federal CUI rule and NIST Special Publication 800-171 to contractors.
NIST Special Publication 800-171

Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations

June 2015
Purpose

- To provide federal agencies with recommended requirements for protecting the confidentiality of CUI —
  - When the CUI is resident in nonfederal information systems and organizations.
  - Where the CUI does not have specific safeguarding requirements prescribed by the authorizing law, regulation, or governmentwide policy for the CUI category or subcategory listed in the CUI Registry.
  - When the information systems where the CUI resides are not operated by organizations on behalf of the federal government.
Applicability

- CUI requirements apply only to components of nonfederal information systems that process, store, or transmit CUI, or provide security protection for such components.

  - The requirements are intended for use by federal agencies in contractual vehicles or other agreements established between those agencies and nonfederal organizations.
Target Audience

*Public and Private Sectors*

Individuals with —

- **System development life cycle responsibilities.**
  - Program managers, information owners, mission/business owners.

- **Acquisition or procurement responsibilities.**
  - Contracting officers, COTRs.

- **Information security or risk management responsibilities.**
  - Authorizing officials, CIOs, CISOs, system owners/security managers.

- **Security assessment and monitoring responsibilities.**
  - Auditors, system evaluators, assessors, independent verifiers and validators.
Assumption #1

- Statutory and regulatory requirements for the protection of CUI are \textit{consistent}, whether such information resides in federal information systems or nonfederal information systems.
Assumption #2

- Safeguards implemented to protect CUI are consistent in both federal and nonfederal information systems and organizations.
Assumption #3

- The confidentiality impact value for CUI is no lower than *moderate* in accordance with FIPS Publication 199.
Additional Assumptions

Nonfederal Organizations —

- Have information technology infrastructures in place.
  - Are not developing or acquiring systems specifically for the purpose of processing, storing, or transmitting CUI.
- Have safeguarding measures in place to protect their information.
  - May also be sufficient to satisfy the CUI requirements.
- May not have the necessary organizational structure or resources to satisfy every CUI security requirement.
  - Can implement alternative, but equally effective, security measures.
- Can implement a variety of potential security solutions.
  - Directly or through the use of managed services.
Basic and derived security requirements are obtained from FIPS 200 and NIST SP 800-53 initially — and then *tailored* appropriately to *eliminate* requirements that are:

- Uniquely federal (i.e., primarily the responsibility of the federal government).
- Not directly related to protecting the confidentiality of CUI.
- Expected to be routinely satisfied by nonfederal organizations without specification.
Security Requirements

14 Families

Obtained from FIPS 200 and NIST Special Publication 800-53.
Structure of Security Requirements

Security requirements have a well-defined structure that consists of the following components:

- Basic security requirements section.
- Derived security requirements section.
Basic Security Requirements:

3.4.1 Establish and maintain baseline configurations and inventories of organizational information systems (including hardware, software, firmware, and documentation) throughout the respective system development life cycles.

3.4.2 Establish and enforce security configuration settings for information technology products employed in organizational information systems.

Derived Security Requirements:

3.4.3 Track, review, approve/disapprove, and audit changes to information systems.

3.4.4 Analyze the security impact of changes prior to implementation.

3.4.5 Define, document, approve, and enforce physical and logical access restrictions associated with changes to the information system.
Mapping Tables.

Two important appendices.

Tailoring actions applied to moderate security control baseline.

Tailoring Criteria.
The road ahead.
In the Interim...

Using NIST Special Publication 800-171 on a voluntary basis

- Until the formal process of establishing a single FAR clause takes place, the CUI security requirements in NIST Special Publication 800-171 may be referenced in federal contracts consistent with federal law and regulatory requirements.
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Recommended Reading

- An Introduction to NIST 800-171 for Higher Ed
- Leveraging Cloud Services for NIST SP 800-171
- NIST SP 800-171 Rev. 1
Useful Links

- CUI Registry: www.archives.gov/cui/registry/category-list.html
- FedRAMP: https://www.fedramp.gov/
- NIST SP 800-53 and 800-171: http://csrc.nist.gov/publications/PubsSPs.html
Poll 1: How is your institution addressing NIST 800-171?
(121 total responses)

- Not Yet 57%
- Ad Hoc 18%
- Formal 25%

With a formal program or project
In an ad hoc manner
Not yet, but we will be looking into it soon
Poll 2: Does your institution currently have a dedicated (full-time) CISO?
(96 total responses)

- Yes: 70%
- No: 30%
Poll 3: What risk framework does your institution use?
(108 total responses)

- NIST: 48%
- ISO: 18%
- None: 21%
- Other: 6%
- OCTAVE: 1%
- COBIT: 2%
- ITIL: 4%