

# Capabilities for IT, IOT, IIoT and OT



## NIST SP 1800-53

### Security and Privacy Controls for Information Systems and Organizations

NIST Special Publication 1800-53, Provides a comprehensive set of security controls and guidelines for organizations to enhance their cybersecurity posture and manage risks effectively. These controls cover various aspects of information security, including access control, encryption, incident response, and more.

IMPRES Cyberspace Operations Infrastructure (CSOI) is designed to improve security and privacy in network communications. introducing a new way of identifying and authenticating network hosts using cryptographic keys (Identities) rather than traditional IP addresses.

### Here's how IMPRES CSOI can apply in the context of NIST 1800-53 and why it's relevant

#### Enhanced Authentication and Access Control (AC)

NIST 1800-53 places a strong emphasis on authentication and access control as fundamental security controls. CSOI contributes to these controls by offering a more secure and flexible method of authenticating network hosts. With CSOI, hosts can authenticate each other using public-key cryptography, reducing the reliance on less secure methods.

#### Privacy and Data Confidentiality (SC)

NIST 1800-53 includes controls related to data confidentiality (Security Control SC) that require protecting sensitive information. CSOI supports this by facilitating secure communications through encryption and ensuring that only authenticated hosts can access data.

#### Secure Communication (CA)

Control CA in NIST 1800-53 focuses on secure communication channels. CSOI enhances secure communication by establishing secure associations between hosts, which can protect data in transit from eavesdropping and tampering.

#### Protection Against IP Spoofing and Man-in-the-Middle Attacks

One of the security challenges NIST 1800-53 addresses is protecting against IP spoofing and man-in-the-middle attacks. CSOI helps mitigate these risks by ensuring that communication between hosts is authenticated and encrypted. This reduces the likelihood of attackers intercepting or manipulating data in transit.

#### Network Segmentation and Isolation (AC-18)

NIST 1800-53 Control AC-18 relates to network segmentation and isolation. CSOI can be used to enforce network segmentation by ensuring that only authorized and authenticated hosts can communicate with each other.

#### Security Configuration Management (CM)

Properly configuring and managing the security of network devices is essential. CSOI can be integrated into security configuration management practices so that hosts are configured to use strong cryptographic keys and protocols.

IMPRES CSOI can play a role in enhancing the security controls and principles outlined in NIST 1800-53, particularly in the areas of authentication, access control, secure communication, and protection against various network-related attacks. By adopting CSOI alongside 1800-53 guidelines, organizations can strengthen their overall information security posture and better protect their networks and data.

Let's start a conversation!

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