

NIST SP 800-82 Rev. 3 – High OT Overlay

NIST SP 800-82 Rev. 3 (High OT Overlay) guides securing OT and industrial control systems with high-impact security controls.



What it is

NIST SP 800-82 Rev. 3 (High OT Overlay) is a specialized cybersecurity framework that assists organizations in strengthening the security of operational technology (OT) environments, particularly those requiring heightened protection. It provides tailored security controls and guidance to address the unique risks associated with industrial control systems and other OT assets.

Developed and published by the National Institute of Standards and Technology (NIST), this framework builds upon the core NIST SP 800-53 security controls, focusing specifically on the needs of critical infrastructure operators and organizations managing industrial environments. It is utilized by security professionals, compliance teams, and risk managers seeking comprehensive protection for OT systems and alignment with broader regulatory and risk management requirements.

At a glance

PUBLISHER National Institute of Standards and Technology (NIST)	TYPE Guidance	VERSION Rev. 3
EFFECTIVE September 28, 2023	DOMAIN Cybersecurity	FAMILY NIST Special Publications
REGION United States	INDUSTRY Energy & Utilities	ADOPTION MODEL Industry Requirement
IMPLEMENTATION COMPLEXITY Very High		

Source: <https://csrc.nist.gov/pubs/sp/800/82/r3/final>

Why it matters

- **Enhance operational technology resilience** Improve the ability to anticipate, withstand, and recover from cybersecurity incidents affecting industrial control and critical infrastructure systems.
- **Strengthen OT cybersecurity governance** Establish clear oversight responsibilities, policies, and procedures for securing operational technology aligned with industry-recognized guidance.
- **Improve incident detection and response** Enable faster identification, containment, and remediation of security events by establishing risk-based monitoring and response capabilities for OT environments.
- **Support regulatory and standards alignment** Facilitate compliance with sector-specific regulations and cross-industry cybersecurity standards through structured, prescriptive security controls for OT.

How SmartSuite supports NIST 800-82 Rev.3 High OT

High Impact OT Control Library Organize NIST 800-82 high-impact overlay controls aligned to industrial control systems and critical infrastructure.	Industrial Asset and Network Governance Maintain comprehensive inventories of OT assets, controllers, networks, and system dependencies.	Vulnerability and Patch Management for Critical Systems Track vulnerabilities affecting OT environments and coordinate remediation actions across engineering and security teams.
OT Incident Response and Recovery Coordination Manage incident detection, response, containment, and recovery workflows for high-impact operational disruptions.	Supplier and Operational Technology Risk Oversight Monitor vendors and supply chain partners supporting industrial systems and critical infrastructure.	Operational Risk and Security Reporting Provide dashboards showing OT security posture, critical risks, and remediation progress for leadership oversight.

Common framework mappings

CIS Controls v8.1

ISO 27001:2022

ISO 27002:2022

NERC CIP

NIST CSF 2.0

NIST 800-53 Rev.5

PCI DSS 4.0.1

SOC 2

Official resources

NIST SP 800-82 Rev. 3 (Final Public Draft) Provides guidance on implementing security controls for Operational Technology environments. csrc.nist.gov/pubs/sp/800/82/r3/final	High OT Overlay Guidance Describes additional security measures required for high-impact Operational Technology systems. csrc.nist.gov/publications/detail/sp/800-82/rev-3/draft
NIST Control Catalog Outlines the list of security and privacy controls for federal information systems. csrc.nist.gov/publications/sp800	

Frequently asked questions

- What is NIST SP 800-82 Rev. 3 (High OT Overlay) used for?**

NIST SP 800-82 Rev. 3 (High OT Overlay) provides guidance on securing operational technology (OT) environments, such as industrial control systems. It is designed to help organizations understand and implement effective cybersecurity controls tailored to the unique needs of OT systems.
- Is NIST SP 800-82 Rev. 3 mandatory or certifiable?**

NIST SP 800-82 Rev. 3 is a guidance document and not a mandatory requirement or certifiable standard. However, organizations in regulated sectors or those following federal directives may be required to align with its recommendations as part of broader compliance objectives.
- Who should use NIST SP 800-82 Rev. 3?**

This framework is applicable to organizations that operate or manage OT systems, such as those in critical infrastructure sectors (energy, water, manufacturing). It is intended for security leaders, compliance teams, and system owners responsible for OT risk management.

What are the key concepts in the High OT Overlay?

Key concepts include specialized OT security controls, asset inventory management, network segmentation, and incident response tailored for OT environments. The overlay addresses risks unique to OT, such as safety and reliability, in addition to traditional confidentiality, integrity, and availability.

How do organizations implement NIST SP 800-82 Rev. 3 (High OT Overlay)?

Implementation involves conducting risk assessments specific to OT, applying tailored security controls, and integrating OT-specific governance into existing cybersecurity programs. Documentation, training, and regular reviews of OT assets and controls are critical to successful implementation.

How does NIST SP 800-82 Rev. 3 relate to other frameworks like NIST SP 800-53?

NIST SP 800-82 Rev. 3 adapts controls from NIST SP 800-53 to address OT-specific risks and environments. The High OT Overlay provides additional guidance and clarification, ensuring alignment while providing OT-focused control requirements.

What are the ongoing compliance requirements for NIST SP 800-82 Rev. 3?

Maintaining compliance requires continuous monitoring of OT systems, periodic control assessments, incident reporting, and regular updates to risk management activities. Organizations should adapt controls in response to technological changes and threat evolutions.

How would SmartSuite support NIST SP 800-82 Rev. 3 (High OT Overlay)?

SmartSuite enables organizations to manage NIST SP 800-82 compliance by facilitating risk tracking specific to OT environments, control management, and evidence collection activities. The platform streamlines audit readiness with reporting tools and centralized documentation, making it easier to monitor ongoing compliance and facilitate regulatory reviews.

License included / downloadable: Yes NIST SP 800-82 Rev. 3 is publicly available from the NIST website. License included with platform

Full framework page and mappings: smartsuite.com/frameworks/nist-sp-800-82-rev-3-high-ot-overlay-guide-to-operational-technology-ot-security