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OTORIO'S RAM² Continuous NERC-CIP Compliance

Manage operational compliance with increased efficiency, saving time and effort

Digitization, expedited by rapidly transforming supply chains, exposes critical infrastructure and industrial organizations to an ever-growing number of cyber risks. Protecting complex multi-vendor, multi-generation ICS environments requires a comprehensive understanding of the operational technology (OT), security posture, and the operational context.

Conducting compliance and governance assessments are now a standards for critical infrastructure and industrial practitioners to ensure operational effectiveness and address the evolving threat landscape. Electric utilities are required to implement NERC CIP compliance programs to ensure the continuity of power supplies and the protection of community safety. However, as environments become more complex, manual assessments become a long, costly, and laborious effort.

RAM², OTORIO's Risk Management Platform, supports your OT security and compliance journey. RAM² ensures continuous compliance and policy fulfillment, with better efficiency and accuracy. It automates evidence collection and auditing which allows teams to focus on what matters. Most importantly, it improves your operational resilience and reduces the risk of non-compliance with regulations and policies.

RAM²

Expedite the Compliance Assessment Process

RAM² empowers security practitioners to conduct security posture and compliance assessments from a single asset to the entire operational network. It offers out-of-the-box compliance assessment capabilities and supports your compliance with NERC CIP and other industrial security standards such as NIST 800-82, IEC 62443, NIS2 and more. RAM² provides overall compliance scores, as well as detailed information on any deviation, and the required remediation instructions. The platform shortens the time and effort required to generate all the necessary assessment documentation.

Comprehensive visibility

Complete and accurate asset inventory and vulnerability assessment across your entire OT/ICS environments (from site level down to level 0 assets). Accurate vulnerability management.

Out-of-the-box compliance

Quickly assess the security posture and compliance with industry security regulations and best practices. Automatically generate required documentation for compliance and security assessments.

Effective risk management

Impact-driven prioritization of the most critical risks with actionable prescriptive mitigation guidance tailored to the operational environment. Creating a common language between stakeholders for collaborative risk mitigation efforts.

RAM² Benefits

- Automated accurate (down to level 0) asset inventory and vulnerabilities management
- Automated evidence collection and risk assessment
- Simplified audit and governance with out-of-the-box compliance
- Extended coverage from a single asset to site level
- Compliance score tracking and visibility for continuous improvement
- Business-driven prioritization of mitigation actions
- Actionable recommendations tailored to your operational environment
- Ransomware-readiness assessments: host configuration gaps, FW rules and segmentation optimization, and security gaps identification

RAM² Deliverables

Extended assets inventory management

- Accurate asset discovery and identification
- Detailed asset attribution and inventory reports

Vulnerabilities management

- Automatic vulnerability identification
- Asset vulnerability reports
- Recommended patching and alternative mitigation actions

Contextualized security posture assessment

- Security misconfigurations and security gaps identified in industrial systems and security controls
- Segmentation assessment
- Active directory (AD) misconfigurations and remote access monitoring

Attack graph analysis

- Critical exposures identified based on attack vectors analysis

Continuous Compliance and reports

- Comprehensive compliance assessment report
- Asset level & Site level compliance
- NERC CIP, NIST 800-82, IEC 62443, and more

Mitigation playbooks

- Actionable step-by-step mitigation recommendation

Overview

COMPLIANCE

RAM²

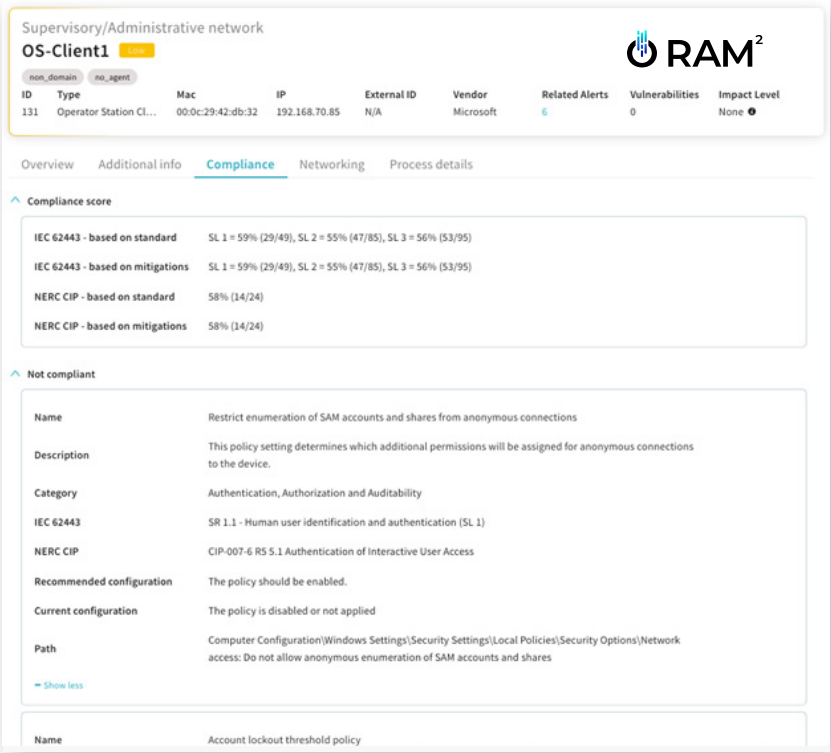
Compliance score - NERC CIP

The NERC CIP (North American Electric Reliability Corporation Critical Infrastructure Protection) plan is a set of requirements designed to secure the assets required for operating North America's Bulk Electric System (BES). The NERC CIP requirements cover the security of electronic perimeters and the protection of critical cyber assets, as well as personnel and training, security management and disaster recovery planning. Penalties for non-compliance with NERC CIP can include large fines, sanctions or other actions against covered entities.

78% Compliance

CIP-003-8: Security Management Controls 84%

Requirement	Question	Answer
Cyber Security - Security Management Controls		
CIP-003-8-R1	Do you have a cyber security policy in place?	No
CIP-003-8-R1	CIP-003-8-R1 - Is the policy approved by management?	Partially
CIP-003-8-R1	CIP-003-8-R1 - Is it reviewed once every 15 calendar months?	Yes
Cyber awareness		
CIP-003-8-R2-1	Do you reinforce cybersecurity practices through training once every 15 calendar months?	Yes
Electronic Access Control		
CIP-003-8-R2-3.1	Do you control network communications between systems that are part of the BES and "external" systems? (i.e. other systems/assets in the IT network)	Yes
CIP-003-8-R2-3.1	Are the implemented controls continuously monitored?	Yes
CIP-003-8-R2-3.2	Do you have security controls in place for authentication remote access connections?	Yes



Supervisory/Administrative network

OS-Client1 Low

non_domain no_agent

RAM²

ID	Type	Mac	IP	External ID	Vendor	Related Alerts	Vulnerabilities	Impact Level
131	Operator Station Cl...	00:0c:29:42:db:32	192.168.70.85	N/A	Microsoft	6	0	None

Overview | Additional info | Compliance | Networking | Process details

Compliance score

IEC 62443 - based on standard	SL 1 = 59% (29/49), SL 2 = 55% (47/85), SL 3 = 56% (53/95)
IEC 62443 - based on mitigations	SL 1 = 59% (29/49), SL 2 = 55% (47/85), SL 3 = 56% (53/95)
NERC CIP - based on standard	58% (14/24)
NERC CIP - based on mitigations	58% (14/24)

Not compliant

Name	Restrict enumeration of SAM accounts and shares from anonymous connections
Description	This policy setting determines which additional permissions will be assigned for anonymous connections to the device.
Category	Authentication, Authorization and Auditability
IEC 62443	SR 1.1 - Human user identification and authentication (SL 1)
NERC CIP	CIP-007-6 R5 5.1 Authentication of Interactive User Access
Recommended configuration	The policy should be enabled.
Current configuration	The policy is disabled or not applied
Path	Computer Configuration\Windows Settings\Security Settings\Local Policies\Security Options\Network access: Do not allow anonymous enumeration of SAM accounts and shares

Show less

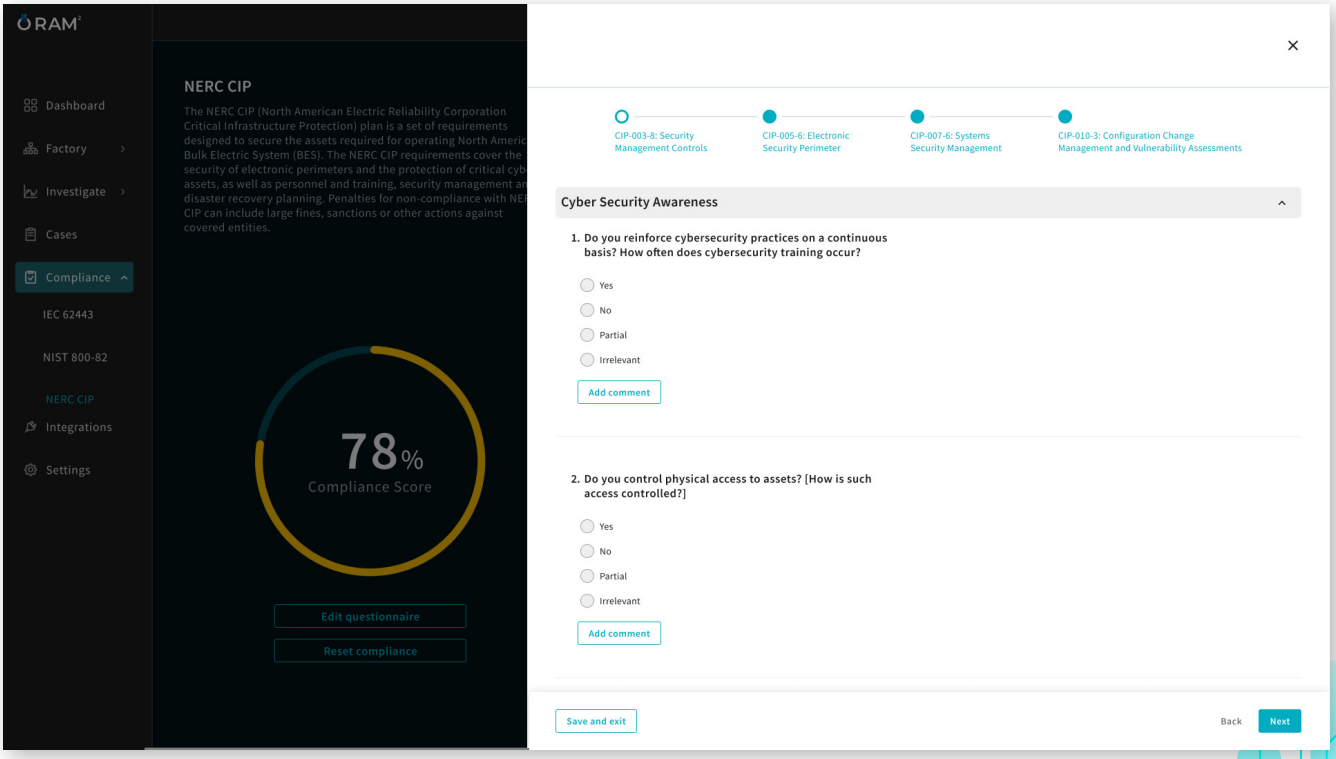
Name	Account lockout threshold policy

How RAM² Assists with NERC CIP Requirements

The table below maps NERC CIP requirements to RAM² capabilities based on continuous monitoring of the network and RAM²'s ability to integrate with multiple security and industrial systems within the operational environment.

RAM² Capabilities and Value	NERC CIP Requirements
Continuous Asset Inventory management using Active querying, passive network monitoring, integrations and processing of offline data.	• CIP-002-5.1a-R1-1.1 Identify each of the high impact Bulk Electric System (BES) Cyber Systems • CIP-005-5-R1-1.1 Cyber Assets shall reside within a defined Electronic Security Perimeter (ESP)
Vulnerability management. Identify needed patches and suggest alternative mitigation actions when patching is not an option.	• CIP-010-3-R3.1 Conduct a paper or active vulnerability assessment • CIP-010-3-R3.2 Perform an active vulnerability assessment in a production or test environment, and document results • CIP-010-3-R3.3 Perform an active vulnerability assessment of the new Cyber Asset prior to connecting it to the production environment • CIP-007-6-R1-2.1 Security Patch Management • CIP-007-6-R4 Patch Management • CIP-010-3-R1-1.4 Cyber Security - Configuration Change Management and Vulnerability Assessments • CIP-010-3-R3-3.1 Conduct a paper or active vulnerability assessment
Identify vulnerable configurations of user accounts in Active Directory.	• CIP-007-6-R5.2 Identify and inventory all known enabled default or other generic account types, either by system, by group of systems, by locations, or by system type(s) • CIP-007-6-R5.3 Identify Individuals that have authorized access to shared accounts • CIP-007-6 R5.4 Change known default passwords, per Cyber Asset capability • CIP -007-6-R5.6 Change passwords once every 15 months- where technically feasible
Configuration management (e.g. firmware changes).	• CIP-010-3-R1-1.2 Authorize and document changes that deviate from the existing baseline configuration • CIP-010-3-R1-1.3 Update the baseline configuration for changes that deviate from the baseline • CIP-010-3-R1-2.1 Monitor for changes to the baseline configuration Document and investigate detected unauthorized changes
Continuous network monitoring and security control utilization Firewall (FW) rules optimization, Endpoint detection and response (EDR), default credentials, segmentation issues, (and more), risk alerts, and mitigation recommendations.	• CIP-003-8-R1 Cyber Security - Security Management Controls
Define operational units and hierarchy and assign assets to related processes for operational context, compliance and risk assessment.	• CIP-005-6-R1-1.1 Cyber Assets shall reside within a defined ESP.

RAM² Capabilities and Value	NERC CIP Requirements
Analyze network traffic and logs from remOT (OTORIO platform's secure remote access module).	• CIP-005-6-R1-1.2 External Routable Connectivity through an identified Extensible Authentication Protocol (EAP) • CIP-005-6-R1-1.3 Inbound and Outbound Access Permissions.
Provide assessment reports with top risks, unsecure protocols, misconfigurations and segmentation gaps.	• CIP-007-6-R1-1.1 logical port enablement
Integrate with security controls to provide consolidated data and identify suspicious behavior based on correlation of events from multiple sources. Alerting on security issues and risks.	• CIP-007-6-R3-3.1 Monitoring for Malicious Code • CIP-007-6-R4-4.2 Generate alerts for security events • CIP-008-5 Cyber Security - Incident Reporting and Response Planning
Generate vulnerability and security posture reports based on auditing of the operational network.	• CIP-010-3-R3-3.2 Perform an active vulnerability assessment in a production or test environment, and document results
On-demand querying and vulnerability assessment for machines prior to connecting to production.	• CIP-010-3-R3-3.3 Perform an active vulnerability assessment of the new Cyber Asset prior to connecting it to the production environment



Asset level compliance audit

RAM²'s capabilities support your compliance with NERC CIP. The platform also provides a site-level compliance questionnaire for trackability and transparency. RAM² provides out-of-the-box compliance auditing at the single asset level. It automates the collection of detailed security configuration information, maps the findings to the standards, and generates an overall compliance score. Each finding is delivered with actionable remediation guidance. The following table includes only a few examples of the configurations RAM² collects and audits for compliance.

Security Control verified by RAM²	NERC CIP Requirement
Host Firewall status	• CIP-005-6-R1-1.5 Detects known or suspected malicious communications • CIP-005-6-R2-2.4 Determine active vendor remote access sessions • CIP-005-6-R2-2.5 Disable active vendor remote access
Remote Desktop Services	
Windows Remote Management (WinRM) Service	
Windows Remote Management (WinRM) Client	
Deny access to this computer from the network	
Remote Assistance	
Force shutdown from a remote system	
Named Pipes and Shares	• CIP-007-6-R5-5.1 Authentication of Interactive User Access
Deny log on locally	
Disable Guest Account	
Enumeration of SAM accounts and shares	
Anonymous SID/Name translation	
Named Pipes	
Approval Mode for Built-in Admin account	
Disable Administrator Account	
Store password using reversible encryption	• CIP-007-6-R5-5.4 Change known default passwords
Limit local accounts with blank passwords	• CIP-007-6-R5-5.5 Password length and minimum complexity • CIP-00706-R5-5.6 Password change
Password Policy - Password History	
Password Policy - Maximum password age	
Password Policy - Minimum password length	
Password Policy - Complexity requirements	
Audit Account Lockout	• CIP-007-6-R5-5.7 Limits and logs the number of unsuccessful login attempts
Account Lockout Policy - Account lockout threshold	
Account Lockout Policy - Account lockout duration	
Account Lockout Policy - Reset account lockout counter after	

In addition to the parameters mapped to NERC CIP requirements, OTORIO's platform checks asset configurations, security best practices and vendor recommendations, promoting security hardening against ransomware. Several examples of these checks are:

- **Users are allowed to change system time**
- **Default AutoRun behavior**
- **Autoplay should be turned off**
- **Disallow Autoplay for non-volume devices**
- **Data Execution Prevention (DEP)**
- **More than one interface is connected**
- **Elevated privileges are used for installations**
- **Users are allowed to shut down the system**

About OTORIO

OTORIO has pioneered an industrial-native OT security platform that enables its customers to achieve an integrated, holistic security strategy for industrial control systems (ICS) and cyber-physical systems (CPS).

Together with its partners, OTORIO empowers operational security practitioners to proactively manage cyber risks and ensure resilient operations. The company's platform provides automated and consolidated visibility of the entire operational network, enabling companies to take control of their security posture, eliminate critical risks, and deliver immediate business value across the organization.

OTORIO's global team combines the extensive mission-critical experience of top nation-state cyber security experts with deep operational and industrial domain expertise.

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