

Connected Grid Services: Assuring the Security of Power Systems



The foundation of the smart grid is an intelligent network that provides critical infrastructure-grade security to utility systems, data, and facilities. This comprehensive approach reduces grid vulnerability to cyberattack or physical attack and improves overall operating resiliency.

Cisco's approach supports utilities in meeting smart grid security needs with:

- Experience with developing business strategies and architectures; understanding compliance needs; and designing, building, and operating grid physical and network security solutions
- Deep experience in helping utilities plan and build end-to-end architectures that include physical security, cybersecurity, compliance, intrusion detection and prevention, data center security, and security management
- Multilayer defense that combines a comprehensive set of Cisco technologies, solutions, services, and ecosystem partners

Building Secure Infrastructures for an Intelligent Electric System

Today's electrical utilities face the demands of a rapidly transforming industry, including increasingly stringent security regulations and power grid management requirements. Identified as critical national infrastructure by most nations, utilities are under pressure to assure 24x7 reliability and availability of the power grid. To meet these needs, utilities are increasingly turning to smart grid technologies.

Cisco's Connected Grid Security team partners with utilities to build powerful intelligent networks designed to support the smart grid. They enable instrumentation, analysis, and control of business and utility operations, from power generation to transmission and distribution systems that support control centers, substations, and field area networks.

Cisco services, products, and solutions enable infrastructure-grade protections to cost-effectively control access to critical utility assets, monitor the network, mitigate threats, and protect physical facilities. Benefits include:

- Increased grid utilization and reliability
- Reduced vulnerability to physical attack or cyberattack
- A comprehensive framework for meeting compliance requirements
- New opportunities for innovation in operations and enterprise computing



Cisco Solutions for Grid Security

Designed to meet the requirements of next-generation energy networks, Cisco® Connected Grid Security solutions leverage Cisco's extensive portfolio of cybersecurity and physical security products, technologies, services, and ecosystem partners. This creates a complete Lifecycle approach designed to help utilities reduce operating costs while delivering improved cybersecurity and physical security. They include:

- **Utility compliance:** Improves risk management and satisfies compliance and regulatory requirements such as NERC CIP with assessment, design, and deployment services.
- **Identity management and access control:** Secures utility facilities, assets, and data with user authentication and access control custom-built for grid operations.
- **Threat defense:** Creates a layered defense that integrates firewall, virtual private network (VPN), intrusion prevention, and content security services to detect, prevent, and mitigate threats.
- **Data center security:** Transforms network, computing, and storage solutions into a secure shared pool of resources that protects application and data integrity, secures communications between business processes and applications within the utility, and secures connectivity to external entities.
- **Security monitoring and management:** Identifies, manages, and counter information security threats and maintain compliance through ongoing monitoring of cyberevents.
- **Physical safety and security:** Provides physical security to utility environments with access control and video surveillance for real-time monitoring.

Our Cisco Services experts provide the ability to help plan, build, and run these grid security solutions to meet regulatory compliance requirements and provide protection from cybersecurity and physical security threats.

Cisco Services for Grid Security

Cisco Connected Grid Security Services teams bring to the table extensive design experience and well-honed best practices for building mission-critical networks. Our experts deliver network and physical security by assisting utilities in defining security requirements, developing future-state grid security architectures, coordinating the deployment and integration of security solutions, and delivering ongoing optimization and managed services. Available from Cisco and its industry-leading partners, these services are based on industry best practices and proven methodologies for planning, building, and running of end-to-end security infrastructures.

Planning Services

These services help prepare a grid security transformational plan through assessments, requirements development, and architecture design. They include:

- **Security strategy and architecture assessment:** Provides a grid security infrastructure strategy and plan that includes an assessment of business requirements and development of a security architecture and roadmap.
- **Utility compliance assessment for NERC CIP:** Analyzes internal controls and procedures for NERC CIP compliance, identifies gaps in security controls, and provides recommendations to address high-priority vulnerabilities.
- **Physical security site vulnerability assessment:** Analyzes requirements for access control, surveillance, and operations and provides recommendations to improve physical security.
- **Data center facilities assessment:** Provides a data center site security assessment to improve physical security.
- **Data center virtualization assessment:** Analyzes information security requirements and provides recommendations to improve data and network security.

Build Services

These services help to facilitate rapid deployment of grid security solutions within the control center, generation plant, and transmission and distribution network environments, helping to meet regulatory requirements and achieve reliable physical and information security. They include:

- **Physical security solution design:** Detailed designs for rich media collaboration, access control, video surveillance, and command and control solutions.
- **Network security solution design:** Detailed designs for data center security, identity management, threat defense, and security management.
- **Data center virtualization design:** A detailed design and implementation plan for the virtualized data center environment, including security requirements for network, storage, and compute resources.
- **Grid security deployment:** Implementation plans, custom deployment, and integration of physical and information security solutions.

Run Services

These services help utilities operate and optimize grid security solutions to lower operating costs while maintaining the highest level of security. They include:

- **Remote management and monitoring:** Provides operational support for security incident monitoring, fault and performance management, problem resolution, security infrastructure tuning, and secure network access control support.
- **Security optimization:** Strengthens the security infrastructure through strategic planning, architectural assessments, design, performance tuning, and ongoing optimization support.
- **Cisco Services for Intrusion Prevention:** Deliver timely security intelligence information, signature file updates, and comprehensive support for Cisco intrusion prevention systems (IPSeS).

Why Cisco?

Cisco provides a team of internal experts and industry-leading partners with the mission of helping utilities to plan, build, and run future-state grid security architectures, including physical security, network security, and other advanced capabilities. Our unique Cisco Lifecycle approach defines the requisite activities at each phase of the utility lifecycle to help ensure a comprehensive approach to the smart grid, providing a powerful, secure architecture designed to meet both today's and tomorrow's needs.

Further Information

For more information about Cisco Smart Grid Security solutions, contact your local Cisco account representative or visit www.cisco.com/go/smartgrid.

For more information about Cisco Services for Grid Security, visit www.cisco.com/go/smartgridservices.

Cisco Connected Grid Security products and services are available globally. Service delivery details might vary by region.



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