

Power utilities

Overview and benefits of power utility solutions

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Power utilities are undergoing a monumental shift toward grid modernization and are grappling with the need for a flexible and evolving grid as they face many challenges. These include the need to accelerate cybersecurity measures to safeguard operational technologies and critical infrastructures, update aging grids, integrate renewable energy resources, comply with tightening regulations, and meet increased energy demands – and amidst all these challenges loom the shortages of resources and skilled staff to get the work done.

Cisco industrial IoT solutions for power utilities

A strategic and comprehensive approach is essential for effective grid modernization. Cisco's Industrial IoT team has been collaborating with utilities for over two decades, recognizing that a modern grid necessitates a modern network. Our focus is to provide industrial networking products and solutions built and certified for utility needs, helping ensure security, simplicity, and scalability for the modern grid.

Substation automation

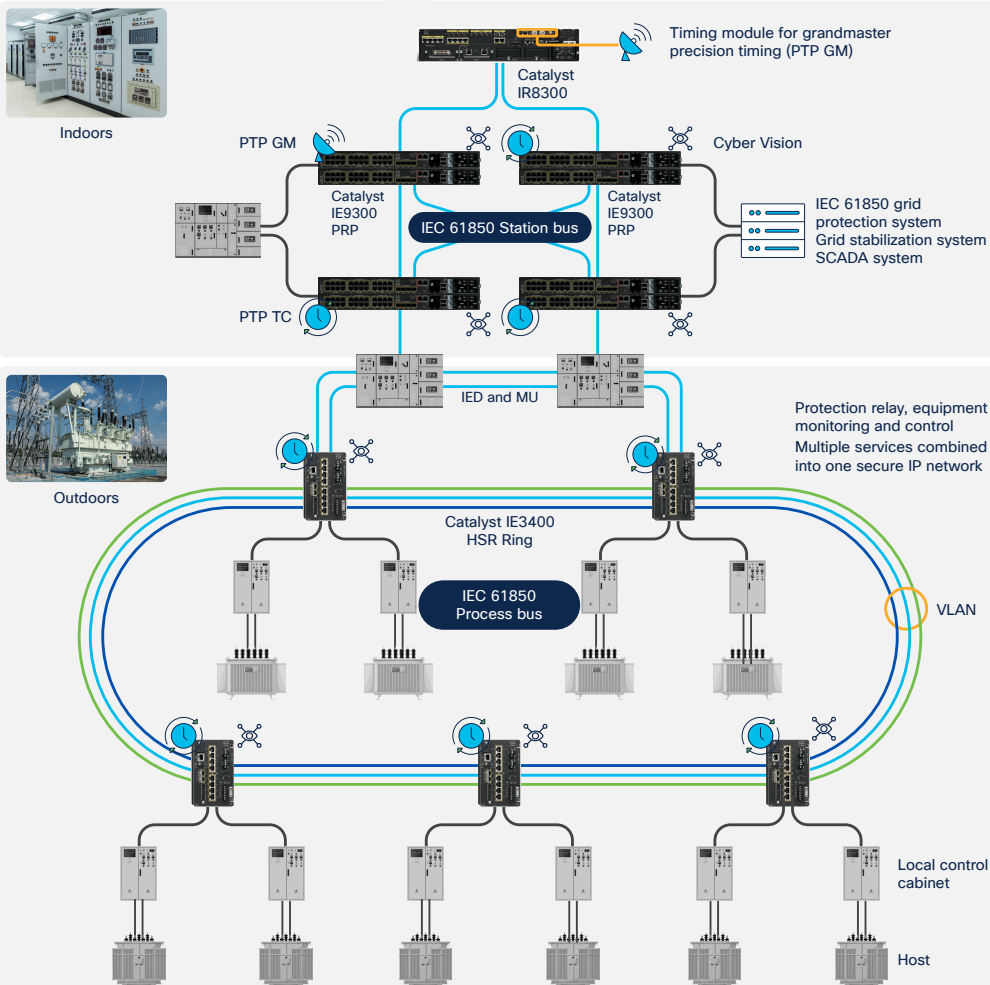
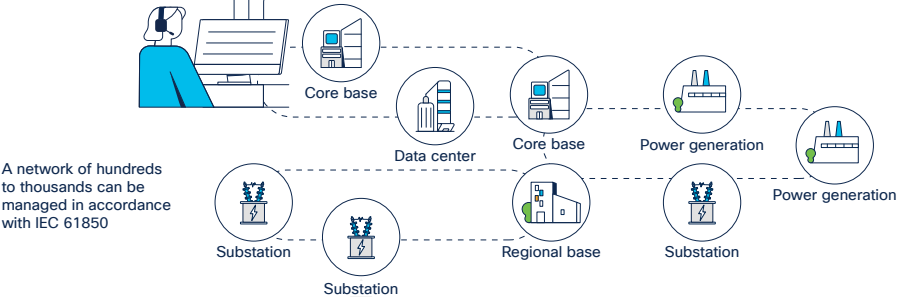
Cisco's substation automation solutions enhance remote monitoring of substation equipment and sensors, minimize service interruptions by providing greater visibility into where maintenance is needed, reduce costs by eliminating multiple leased lines, and help ensure compliance with security and industry standards, including IEC 61850. These benefits are delivered through products like the Cisco Catalyst IR8300 Rugged Series Router with Next Generation Firewall built-in, and IE9300 Rugged Series Switches, which provide the networking foundation for advanced control, diagnostics, and maintenance capabilities. Learn more in our Cisco Validated Design and solution overview for [Substation Automation](#).

Network example for the power utility industry

Centralized management of substation LAN (Cisco Catalyst Center)

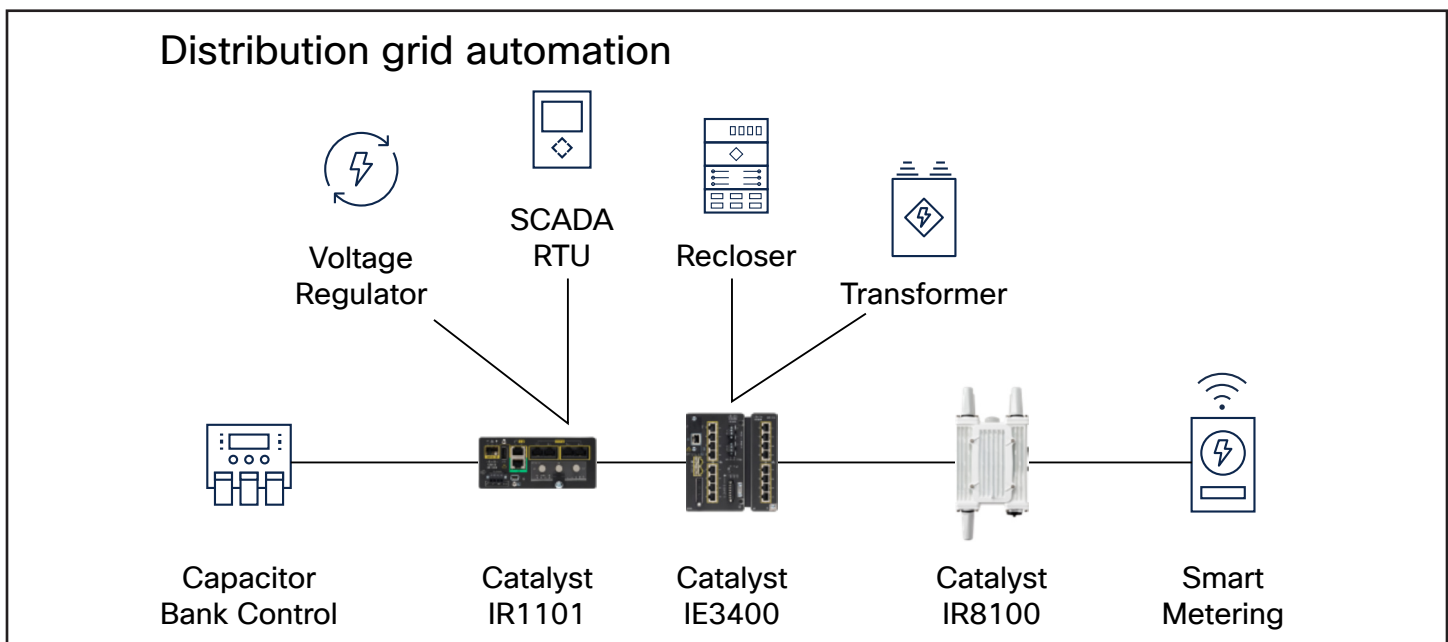
Centralized management of substation WAN (Cisco Catalyst SD-WAN Manager)

Cisco Splunk for gaining insights from data



Distribution grid automation

Multiservice data communications networks are essential to realizing the full potential of the smart grid. With Cisco® industrial IoT solutions, utilities can get the data they need to improve the operational efficiency, safety, and security of the distribution power system. Field area networks are powered by the Cisco industrial routing and switching portfolios, including the Cisco Catalyst IR1101 Rugged Router and Catalyst IE3X00 family of rugged switches. They support all the capabilities that drive the competitive edge of modern utilities, including high-efficiency Distribution Automation (DA), remote asset management, smart metering, and mobile workforce automation. Cisco multiservice networks are the foundation for enabling distributed power generation, including renewables such as solar and wind, energy storage, microgrids, and more.



Advanced metering infrastructure

Advanced metering infrastructure (AMI) is a critical part of any smart grid initiative, enabling utilities to obtain real-time power consumption data and allowing customers to make informed choices about energy usage. Unlike legacy electricity meters, AMI-based smart meters are capable of two-way communication with the utility network. Cisco is committed to open standards, and our AMI solutions are fully Wi-SUN compliant.

Our flexible AMI solutions enable utilities to:

- Scale to connect millions of smart meters
- Provide over-the-air meter firmware upgrades
- Remotely connect and disconnect power from meter to load
- Deliver power outage and restoration notifications
- Receive alerts when meters have been damaged