

Cisco WAN Solutions

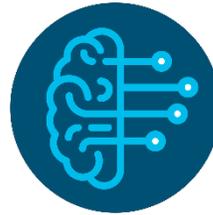
Utilities



Reduced costs



Greater resilience



Intelligent distribution across the grid



Reliable communications

Building a scalable and secure utilities network

Today's electric utility increasingly requires the ability to connect thousands of geographically dispersed communications networks, including field area networks (FANs).

FANs, transmission and distribution (T&D), and control and data centers are essential elements of the modernized utility. This level of connectivity is achieved by relying on multiservice WANs to unite these disparate resources into a single extended environment. The WAN architecture enables utilities to gain holistic situational awareness of the entire grid, for visibility into issues and prompt remedial measures and real-time action as required.

Cisco's architectural designs for the smart grid WAN enable optimum availability, safety, and performance for large-scale networks by automating the entire energy chain.

By establishing a technology foundation to support rapidly expanding power systems, utilities are assured of long-term reliability, increased responsiveness, and lower operating costs.

Benefits

Cisco delivers clear and immediate benefits to the utility, enabling better visibility across the grid, greater reliability, and significant cost savings. Our open standards-based infrastructure designs enable a more scalable and secure substation network architecture. Leading utilities are migrating communications and critical system control infrastructure to the IP world to achieve:

- Reliable communications via interoperable devices on a common network
- Remote monitoring of station equipment and sensors for better transparency in the station
- Improved load balancing based on more accurate information on grid assets
- Reduced service disruption due to proactive equipment maintenance
- Lower operational costs, reduced lease line charges, and improved worker productivity
- Compliance with NERC CIP and other regulatory requirements
- Improved incident response, better worker safety, and stronger loss prevention

Why Cisco?

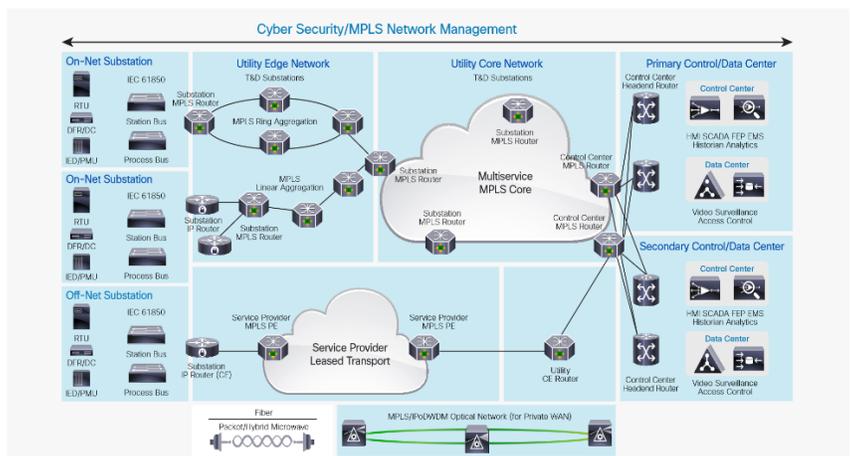
Cisco is the leader in end-to-end communications solutions and standards development, bringing more than 30 years of industrial networking experience to utilities. Cisco provides design expertise, industry partnerships, and a portfolio of best-in-class products and solutions to deploy Multiprotocol Label Switching (MPLS) within energy grid operations. Scalable, secure implementations support both current and future applications, allowing operations managers to confidently plan for tomorrow's capabilities while continuing to maximize existing technologies.

Cisco WANs

Converged IP/MPLS infrastructure

Utilities have traditionally relied on time-division multiplexing (TDM)-based solutions such as Synchronous Optical Networking (SONET) and Synchronous Digital Hierarchy (SDH) to control critical infrastructure. However, today utilities demand increasing grid reliability and operational efficiency. By migrating to a converged IP/MPLS network, utilities are able to cost-effectively support SCADA, teleprotection, cybersecurity, and additional grid modernization programs.

The Cisco® Utility WAN solution addresses utilities' immediate requirements for improved reliability and efficiency with the Cisco ASR 900 Series, to reduce OpEx over time. By building a converged MPLS network, a utility can leverage standard WAN architectures, with the control center representing the data center layer, the utility transmission fiber network representing the provider optical core layer, and the substation interconnect edge networks representing the metro layer of the network.



Cisco Utility WAN solution components

The Cisco Utility WAN solution consists of multiple high-performance components that make up a single, multiservice network that is secure, highly reliable, and operationally efficient.

Components include:

- Ruggedized highly redundant carrier-class MPLS and optical routers
- Scalable, operationally efficient software platform that eases the operations workload while improving network reliability through task automation

For more information

Contact your Cisco representative or learn more online at www.cisco.com/go/smartgrid.