

Distribution Automation

Utilities



Increase operational reliability



Achieve higher operational efficiency



Incorporate distributed generation



Improve system performance

Modernize the grid with distribution automation

Through distribution automation (DA), the utility industry has improved monitoring, control, and management of the medium-voltage (MV) and low-voltage (LV) grids, from the distribution substation to the meters. And now more than ever, DA and our next era of networking solutions are essential for taking on the challenges of the active grid, Industrial Internet of Things (IIoT), distributed energy resources (DERs) and more, which require:

- End-to-end security for continuous monitoring and control of all critical infrastructure and millions of endpoints
- Scalable network management for distribution feeder efficiency and reliability

Cisco's flexible DA solutions bring together the communications networks, switches and routers, and myriad sensors and processors that perform the grid's distribution system functions. With Cisco® DA, utilities can lower costs, achieve intelligent distribution across the grid, and more effectively manage operations.

Benefits

- Increase operational reliability through self-healing grids
- Achieve higher operational efficiency by reducing feeder losses
- Incorporate distributed generation while maintaining grid stability
- Improve system performance using power quality monitoring and distribution-level sensing
- Increase customer engagement through demand response, advanced metering infrastructure (AMI), and prosumer models
- Improve security, quality of service (QoS), resilience, and meter interoperability

Cisco field area networks

Cisco field area networks (FANs) monitor and control energy distribution networks to improve their reliability, efficiency, and safety. The Cisco multiservice FAN solution is based on a flexible two-tier architecture that generates IP network services and offers, security, QoS, resilience, and management. The ability to converge many DA use cases across a single secure FAN architecture results in a lower total cost of ownership due to reduced FAN assets, simplified outside plant infrastructure, spare and expertise commonality, and limited frequency costs. The secure virtualization of the FAN provides for many operational and nonoperational use cases such as:

- DA
- DERs
- Voltage (volt/VAR optimization)
- Smart meters and AMI
- Substation automation
- Workforce automation
- Connected and smart community services, street lighting, and more

Distribution automation for the active grid

The industry is evolving from the smart grid to the active grid. The volume of connections and data flowing from the distribution grid is impacting the RF models, cellular RF OpEx, and data storage CapEx and OpEx. In addition, DA innovations for grid stabilization are moving from 15-minute to millisecond intervals. Machine-to-machine dialogue, machine learning, and distributed edge computing are how the industry is evolving, and they require leading Cisco solutions for a new era in utilities networking.

Our DA solutions integrate granular control of the distribution grid, remote monitoring, and protection solutions (devices and head-end software applications) within those data communications infrastructures.

Cisco solutions enable grid operators to collect and analyze data about power distribution and consumption in near real time. The modernized utility is flexible and resilient, with predictive and actionable information that enables the utility, suppliers, partners, and customers to efficiently manage power.

Why Cisco?

Cisco addresses the business imperatives of both OT and IT. Working with Cisco, leading utilities across the globe are paving the way for the grid of the future – today. Our standards-based and open approach empowers customers to remain agile through technological and regulatory evolution.

Cisco FAN solution components

The Cisco FAN solution consists of multiple high-performance components that make up a single, multiservice network communicating with diverse RF mesh software and power-line communication (PLC) devices, including:

- Cisco connected grid endpoints that enable devices to communicate on an IPv6 RF mesh
- Cisco ruggedized modular connected grid routers
- Scalable Cisco IoT Field Network Director software

For more information

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