

GridScape™ for DA Management



Network management for DA communications

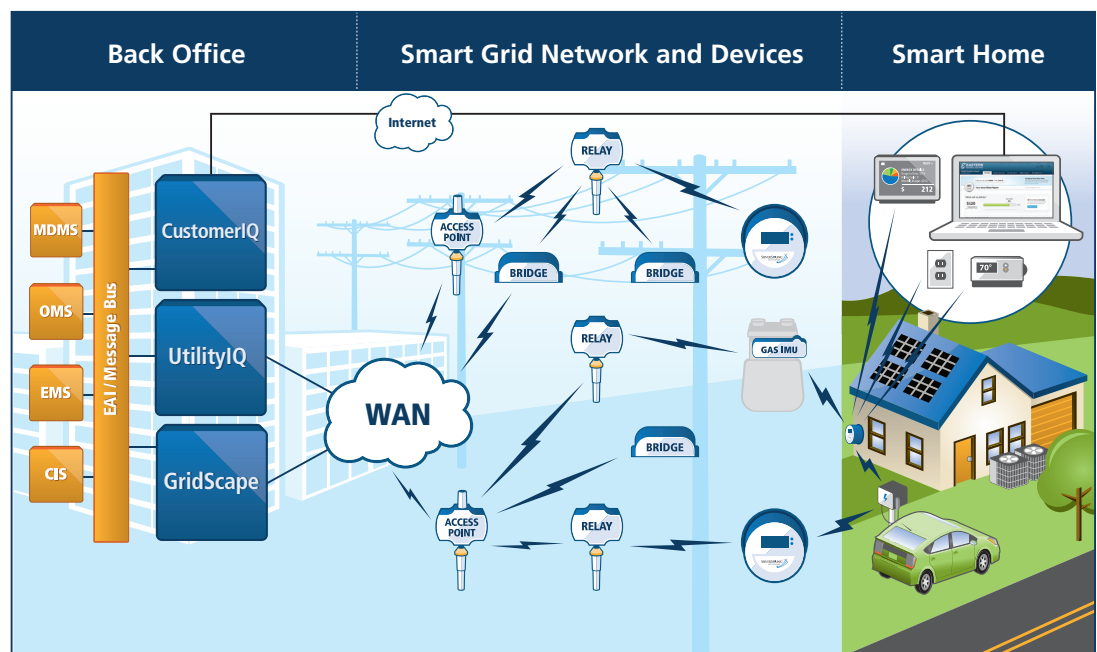
- » Enables central management of a Silver Spring-based DA communications network, including over-the-air configuration and upgrades
- » Supports end-to-end security configuration and management at the link, network, and application layers
- » Provides grid-aware communications networking, including device relationships and geographic location of assets
- » Supports utility-grade scalability and performance
- » Provides configurable real-time and historic network statistics, depicted on Google Maps/Earth
- » Analyzes spectrum on any part of the managed network
- » Enables flexible deployment, supporting separate or combined DA and AMI networks and offering Ethernet, serial, or mixed interfaces

Full configuration and management of the DA communications network

The Silver Spring™ Smart Energy Platform combines network infrastructure, software, and professional services to enable a range of smart grid applications. GridScape™ enables utilities to configure, manage, and secure Silver Spring network devices.

For Distribution Automation networks, GridScape for DA not only actively manages Silver Spring

Bridges and Relays but also provides utilities with the broader context of the IEDs connected to the network, the traffic flow going over it, and the physical location of the assets – allowing the operator to be more aware and make better decisions. Designed to minimize truck rolls, GridScape allows network design professionals to be more effective by providing centralized set up and maintenance while retaining flexibility.



An advanced, IP-based network enables the smart grid—from the data center to the customer premise.

About Silver Spring Networks

Silver Spring Networks is a leading smart grid networking platform technology and solutions provider. We have connected over 10 million homes and businesses throughout the world with the goal of achieving greater energy efficiency for the planet. Our innovative products enable utilities to gain efficiencies, integrate renewable energy sources and empower customers to monitor and manage energy consumption. Silver Spring Networks' clients include Baltimore Gas & Electric, CitiPower & Powercor, Florida Power & Light, Jemena Electricity Networks Limited, Pacific Gas & Electric and Pepco Holdings, Inc. among others. For more information please visit www.silverspringnet.com.

GridScope™ for DA Management

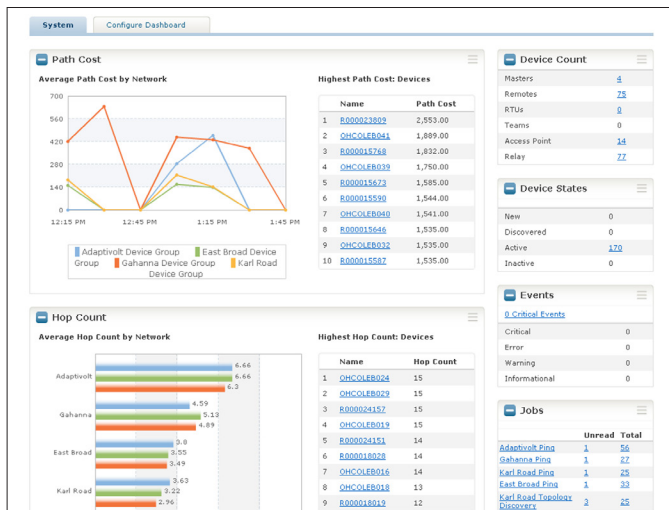
GridScope provides utility staff with the following capabilities for setting up and running the communications network serving Distribution Automation:

Centralized management of a Silver Spring-based DA communications network

- » Fully centralized design and deploy workflow
- » Over-the-air firmware upgrades
- » Over-the-air configuration with configuration audits

Grid-aware communications networking

- » Understanding of communications, substation, and IED relationships, including physical location and IP and DNP3 addresses and communications
- » Geographic locations of all assets



End-to-end security management

- » Configuration and auditing of security at three critical layers of the networking stack: link layer, application layer, network layer
- » Network configurations are secured because all networks and devices are locked by default and must be unlocked to change configurations

Utility-grade performance

- » Support for two million endpoints
- » Complete application redundancy

Complete access to real-time and historic network statistics

- » Google Maps and Earth visualization
 - Automatic maps with color-coded link status
 - Context-aware mouse-over statistics, with link and asset details
- » Fully configurable statistics-gathering jobs via time, device, group, and statistic type
- » Graphical charts, tabular reports, and exportable data

Spectrum analysis from any part of the managed network

- » Bar chart display of spectrum from any part of the managed network

Flexible deployment

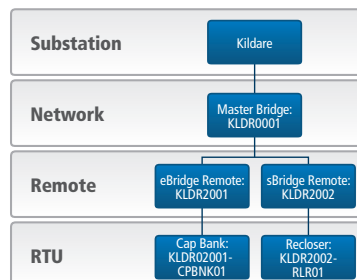
- » DA-only and combined DA/AMI Bridge networks
- » Configuration of DNP3 over serial, IP, or mixed networks
- » Configuration of SCADA-to-IED, IED-to-IED, or mixed traffic flows

This GridScope dashboard provides an at-a-glance view of the overall health of the Bridge deployment.

Utility-class management application

Based on the same technology as the Silver Spring UtilityIQ suite of advanced metering applications, GridScope provides the scale and redundancy capabilities demanded by utilities. GridScope software's ability to scale to support two million nodes and support

for full data center redundancy and an integrated scalable database enables a utility to depend on the application to handle its current and future distribution grid requirements.



The screenshot shows the configuration page for a device named 'KILDR0001'. It includes fields for Network Name, Master SSN RF Routing Prefix, and Master RF IPv4 Address. Below these are sections for Master Ethernet IP Address, Destination Networks, SCADA Systems, and Description. A table lists the device's Name, MAC Address, and RF IP or DNP3 Address. At the bottom, there are buttons for Back, Save, Save and Deploy, and Cancel.

GridScope operates on a notion of hierarchy in organizing the Silver Spring Bridge devices into a network. Master Bridges are associated with substations and with a set of Remote Bridges that tie to that Master Bridge.

GridScope™ for DA Management

Full utility awareness

GridScope offers more than just communications management; it provides a complete grid context for the operator, with full geographic visualization and full awareness of the underlying telemetry and control devices it supports. This integrated context helps the operator prioritize responses based on an accurate understanding of the criticality of a given problem.

Centralized lifecycle management for communications devices

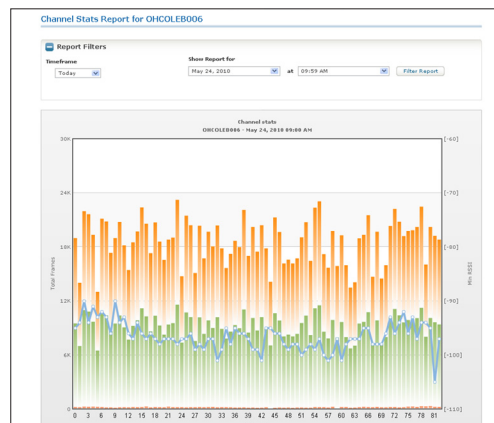
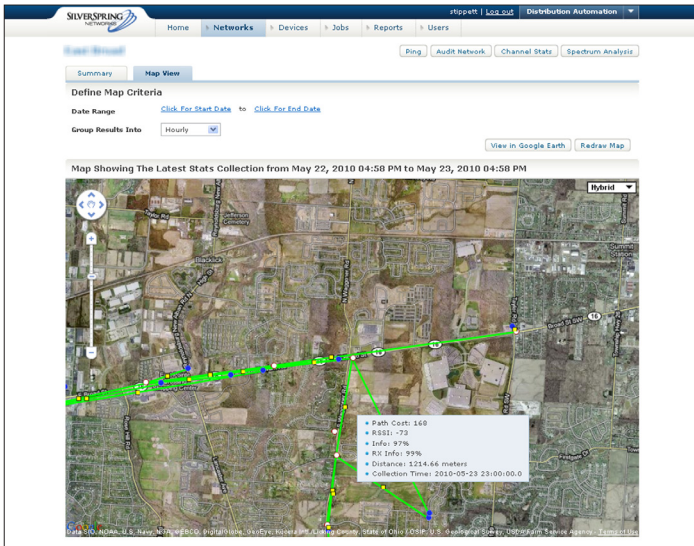
To simplify initial network build out, GridScope uses the Silver Spring network to push a full configuration to a factory-standard Bridge. This approach allows the network design engineer to focus on designing and operating the network rather than spending time in the field. This model also facilitates change control such as RMAs and adds and moves. Operators can also schedule configuration deployments, including retries and audits, to ensure that GridScope and the network are always synchronized.

Real-time and historical statistics

GridScope allows the network operator to determine what statistics to gather, how often to collect them, and which devices to query. This flexibility allows the operator to establish a baseline of desired information and drill down for more granular information only in areas that require it. The operator can search statistics through time and have data displayed graphically or in tables or be exported for analysis in other systems. In addition, operators can query the network in real time to gain immediate insight into events.

Services for smart grid Bridge deployments and GridScope

Consistent with all of its offerings, Silver Spring offers a complete set of Bridge network design, testing, training, and deployment services to take the project from conception to conclusion or to augment existing staff at a utility. GridScope can be a fully independent system deployed separately from the UtilityIQ metering applications, or it can reside inside the same data center.



GridScope provides a number of ways to visualize network health, including placing devices on Google Maps/Earth and displaying spectrum analysis.