

UtilityIQ® Firmware Upgrader

Features

- » Enables over-the-air updates to Silver Spring Communications Modules, other Silver Spring hardware, and partner meters
- » Supports meter firmware upgrades for GE, L+G, and PRI meters
- » Enables utilities to upgrade devices incrementally across their deployment
- » Leverages Advanced Metering deployments to efficiently distribute updated firmware
- » Provides for secure relay of firmware code
- » Enables systemwide auditing to determine firmware versions

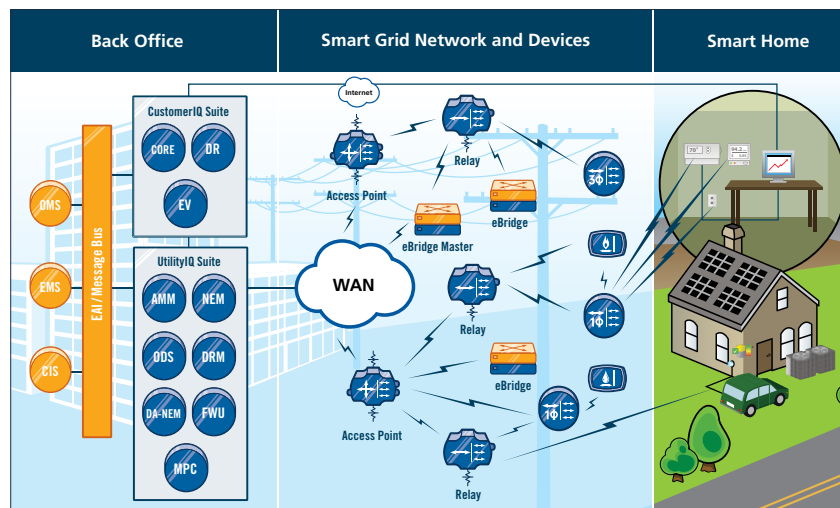
Over-the-air systemwide upgrades

The Silver Spring Smart Energy Platform combines network infrastructure, software, and professional services to enable a range of smart grid applications. Enabling easy upgrades to network devices is essential for keeping the smart grid up to date.

Firmware Upgrader, a software application within the UtilityIQ application suite, allows utilities to upgrade the firmware on Silver Spring Communications Modules, Access Points, Relays, Bridges, and partner meters. Utilities can also use the tool to upgrade the application firmware in General Electric (GE), Landis+Gyr (L+G), and PRI meters, directly from within UtilityIQ.

Silver Spring updates firmware images to incorporate new functionality, and the Firmware Upgrader supports three primary features:

- » Upload a firmware image to the application and add important metadata.
- » Distribute a firmware image to a set of specified devices, install the new firmware, and verify that the installation was successful.
- » Audit the firmware version of network devices on a regular basis to ensure compliance.



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 solution provider that enables utilities to achieve operational efficiencies, reduce carbon emissions and empower their consumers with new ways to monitor and manage their energy consumption. Silver Spring provides the hardware, software and services that allow utilities to deploy and run multiple advanced solutions, including Smart Metering, Demand Response, Distribution Automation and Distributed Generation, over a single, unified network. The Silver Spring Smart Energy Platform is based on open, Internet Protocol (IP) standards, allowing continuous, two-way communication between the utility and devices on the grid. Silver Spring has numerous deployments with leading utilities in the US and abroad, including Florida Power & Light, Pacific Gas & Electric, Pepco Holdings, Inc., Jemena Electricity Networks Limited and United Energy Distribution, among others. For additional information, please visit www.silverspringnetworks.com.

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Step-by-step process

Firmware Upgrader defines a step-by-step plan for upgrading Silver Spring devices in a way that optimizes speed and reliability. The software uses the mesh to distribute updates quicker and efficiently.

During firmware distribution, the communication channel between the Firmware Upgrader and each Communications Module or other Silver Spring device is encrypted using AES-256 and is authenticated using Hashed Message Authentication Check (HMAC) for non-repudiation. The system manages the process of installing the new firmware, which includes verification of the image and automatic reversion to the previously running firmware version if errors are detected in the upgraded firmware.

Auditing and securing the upgrades

Firmware Upgrader lets the user create multiple audits of firmware on network devices. When creating an audit job, the user specifies a device group from UtilityIQ Advanced Metering Manager, a target firmware image to look for, and a schedule for how often to audit the devices.

An audit will return as much data about the device firmware as can be read from the device. A summary table displays the audit results of multiple devices at once and allows users to upgrade out-of-date devices directly from the report.

Keeping the smart grid up to date

The ability to update the functionality of Communications Modules, other Silver Spring hardware, and partners' meters is essential to enabling the smart grid to adapt to changing application requirements and security threats. Silver Spring's efficient and secure mechanism for supporting firmware upgrades provides utilities the assurance that their deployments will keep pace with those changes.