Firmware Upgrader

Data sheet

OVER-THE-AIR SYSTEM-WIDE UPGRADES

The Itron 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 application suite, allows utilities to upgrade the firmware on NICs, 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 Advanced Metering Manager (AMM).

Itron 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.

STEP-BY-STEP PROCESS

Firmware Upgrader analyzes the network and automatically optimizes the upgrade for speed and efficiency. The upgrade process is designed to use minimal network bandwidth and to avoid interference with routine operations such as regular meter reading.

During firmware distribution, the communication channel between the Firmware Upgrader and each NIC or 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.
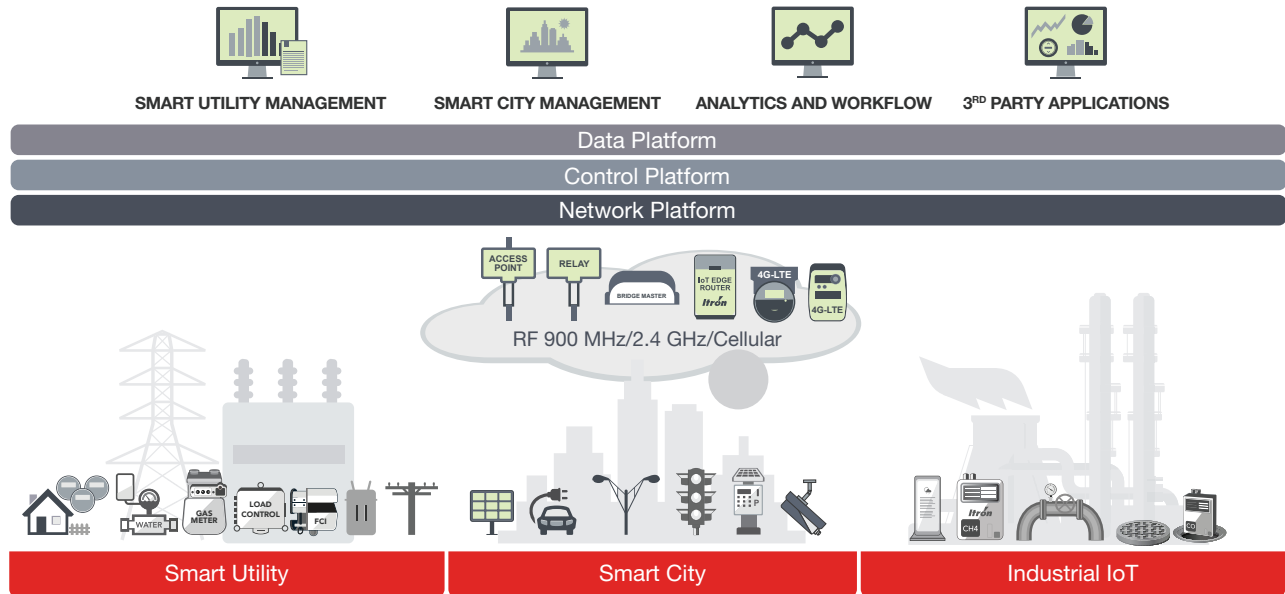
AUDITING AND SECURING THE UPGRADES

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 Advanced Metering Manager, a target firmware image to look for and a schedule for how often to audit the devices.

An audit returns data about the device and a summary table displays the audit results. Users can configure the audit to automatically generate an upgrade job for devices found to be running out-of-date firmware images. Combining automated audits and upgrades allows the network to be kept up to date with minimal user input.

THE ITRON GEN5 SOLUTION SUITE

Any application server: not dependent on Itron head end

SMART UTILITY MANAGEMENT · SMART CITY MANAGEMENT · ANALYTICS AND WORKFLOW · 3RD PARTY APPLICATIONS

Data Platform

Control Platform

Network Platform

ACCESS POINT · RELAY · BRIDGE MASTER · IoT EDGE ROUTER · 4G-LTE · 4G-LTE

RF 900 MHz/2.4 GHz/Cellular

Smart Utility · Smart City · Industrial IoT

The Itron Gen5 platform supports a range of smart grid, smart city and industrial IoT applications on a single open standards-based network.

KEEPING THE SMART GRID UP TO DATE

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

FEATURES:

» Supports native (e.g., C12.19) programming for advanced meters from GE, L+G, and PRI

» Configures registers and intervals on NICs for programming energy-only meters.

» Supports importing of native meter programs from meter vendors' programming software

» Stores meter programs for future use

» Transfers new programs to selected meters wirelessly without any truck rolls

» Updates AMM with new programs for automated approval

» Enables and disables self reads and offset times

» Runs automated, recurring audits of meter programs

Firmware Upgrader provides a secure and efficient mechanism to keep smart grid devices up to date.