GRID MANAGEMENT GETTING STARTED GUIDE

INTEGRATING SMART GRID DEVICES TO THE ITRON GEN5 NETWORK

The Basics

The Gen5 network platform is a suite of intelligent devices that lays the foundation for the Active Grid through proven, standards-based solutions that are secure, flexible and reliable. Our network is purpose-built to enable a variety of grid management use cases, delivering the performance required for mission critical applications such as outage response while providing the flexibility to enable future
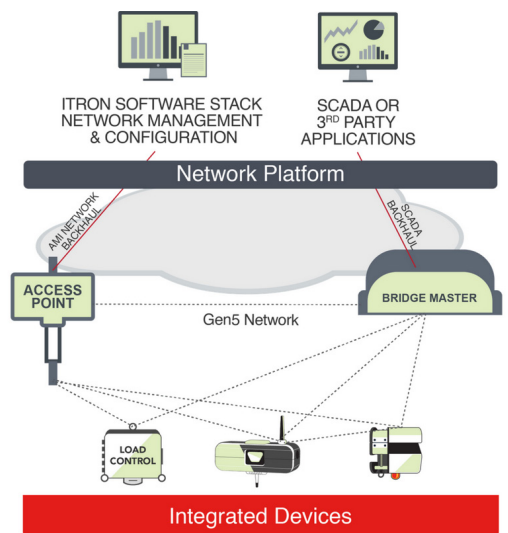
Access Points (AP) provide a single takeout point that connects all field area network (FAN) devices to the wide area network (WAN). This creates a unified network that supports all grid management applications. Access Points work with Relays to communicate with edge devices, providing seamless network coverage.

Master Bridges provide dedicated takeout for critical grid management applications. These come in a ruggedized form factor and are purpose-built to connect directly to existing SCADA backhaul. Master Bridges support dedicated, stackable bandwidth for grid management takeout to the WAN. A typical architecture configuration for grid-management use cases utilizes Master Bridges as the network gateway.

By leveraging widely adopted industry standards such as Wi- SUN, solutions that integrate with the Gen5 platform will support full interoperability with existing Wi-SUN-based devices already deployed in the field as well as future Wi-SUN-based devices that utilities will deploy over time.Utilities have two options for Network Takeout when designing grid management networks on Gen5:

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ITRON SOFTWARE STACK NETWORK MANAGEMENT & CONFIGURATION

SCADA OR 3RD PARTY APPLICATIONS

Network Platform

ACCESS POINT

BRIDGE MASTER

Gen5 Network

LOAD CONTROL

Integrated Devices

ENDPOINT CONNECTIVITY

Intelligent endpoint devices connect to the FAN via Remote Bridges or embedded communications modules (such as NIC 5 or Milli 5). Remote Bridges are versatile RF-based communications devices that pair with reclosers, feeder switches, capacitor bank controllers and other distribution automation (DA) equipment via serial or Ethernet interfaces to support low-latency SCADA communications. The low latency, high data rate, and quality of service allow mission-critical control processes while delivering cost-of-ownership advantages of a unified network.

Embedded communications modules are integrated into high-volume devices, like line sensors, which often have size constraints or limited access to power supply. Deploying high volumes of these devices helps to create a scalable and resilient RF mesh layer for the FAN.

The Itron network as a whole uses widely adopted open standards to create a common platform that supports a wide range of grid management use cases including Distribution Automation (DA), Distributed Energy Resources (DER), and Advanced Metering Infrastructure (AMI) systems.

Choosing Plug-and-Play or Device-Embedded

Itron's Gen5 Network offers several options to integrate endpoint devices. Solution providers may refer to the table below to determine the advantages of integrating grid management devices with Itron's Gen5 communications network via the plug-and-play Bridge 5 versus deploying embedded communications modules.

Plug-and-Play Connectivity (Bridge)

» A weatherized, rugged, standalone device for connecting high-value assets, such as switches and reclosers.

» Can be readily installed within a control box and interface to the controller using serial or Ethernet.

» Provides IP-based aftermarket interoperability with remote terminal units (RTUs) and can be tested and deployed with minimal support.

» Delivers up to 2.4 Mbps of wireless data transfer, and 10 ms per hop latency.

» Increases performance for critical devices using bandpass filters

» Bridges are procured directly by the utility.

Embedded Communications Modules

» A module to be embedded into continuously powered and power- harvesting, third-party devices.

» Suitable for lower cost, higher volume grid devices and/or devices with size constraints.

» Helps to create a scalable and resilient RF mesh layer for the FAN.

Join us in creating a more **resourceful world**.