PolicyNet Application

User Guide

Version 5.5

June 2022

Introduction to Smart Metering

Welcome to the Aetheros PolicyNet application. PolicyNet is an advanced, end-to-end metering platform that simplifies asset, data, and operations management for utilities. The PolicyNet solution provides near-real-time information and insights through which utility users can improve supply and demand management, increase service safety and reliability, and raise quality of supply - while lowering overall operating costs and line losses from source to distribution.

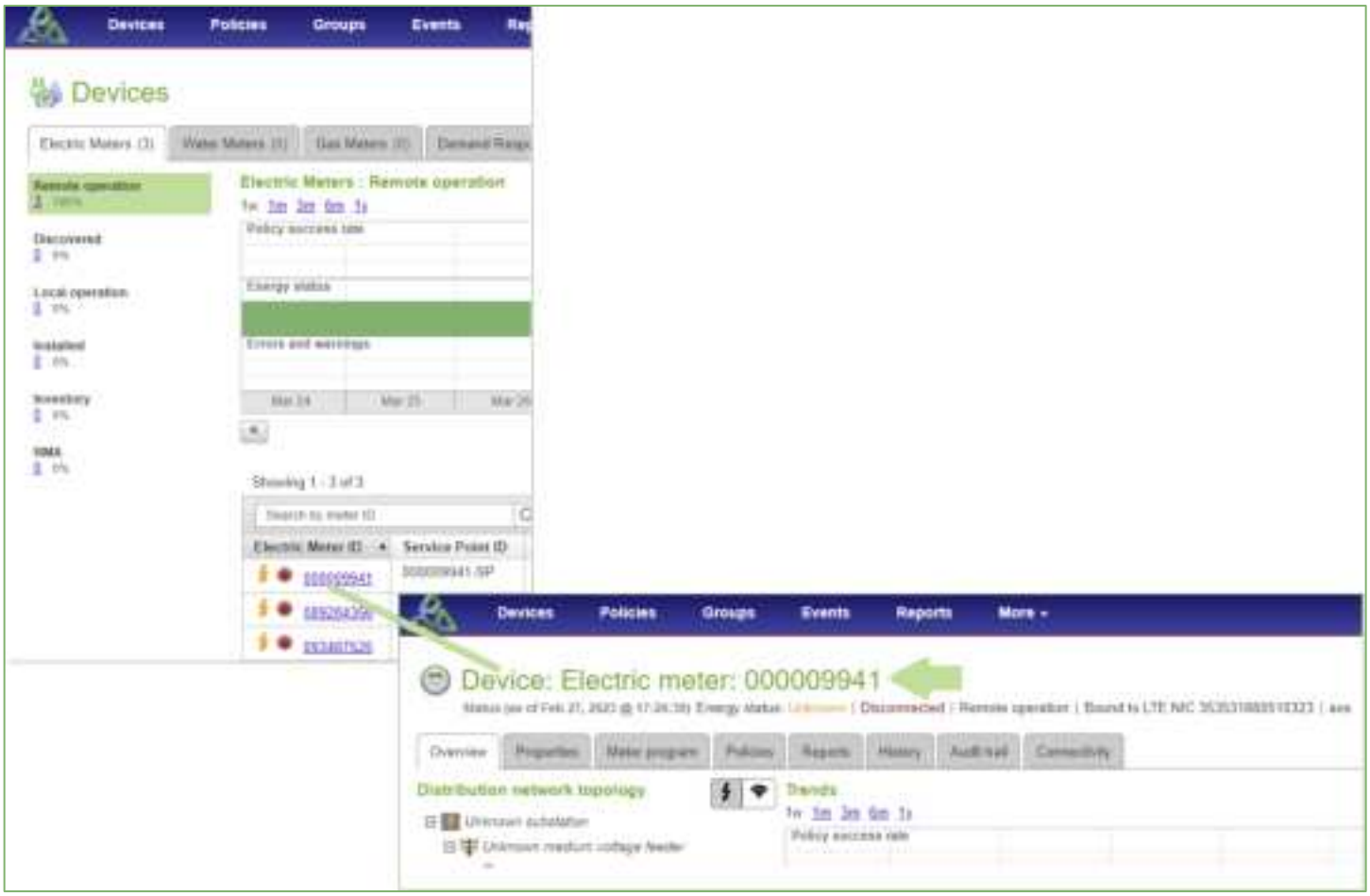
PolicyNet gives utilities an integrated, secure communications network and advanced metering platform that can help users:

- Manage and read meters and other grid edge devices
- Get accurate billing, operational, and events data
- Publish data and events to northbound consumers and back-end systems
- Enable event alerts notification and reporting to help manage by exception
- Monitor quality of supply, flow, tamper, and outage issues continuously, and help manage restorations
- Identify and pinpoint issues for repair proactively
- Streamline service connects and disconnects
- Program meters over the air
- Improve customer service

How it Works

Smart meters and other grid edge devices are equipped with an integrated Aetheros communications card which contains a PolicyNet agent. The agent securely connects to the PolicyNet server that resides in a secure cloud. The PolicyNet agent on the meters, and the PolicyNet server in the cloud, exchange synchronous and asynchronous bidirectional communications over a private IP network. The meters are pre-provisioned for both the LTE network and PolicyNet so that when devices are powered on, they immediately appear in the PolicyNet User Interface (UI), ready to be managed. The PolicyNet application, as well as other Internet of Things (IoT) applications in the ecosystem, securely run on top of the Aether Operating System (AOS) IoT platform.

PolicyNet users can access the other IoT applications using PolicyNet's UI, or they can use PolicyNet's APIs to integrate AMI, DI, DM&C and DERMS features programmatically with other back-end systems.


Devices
Policies
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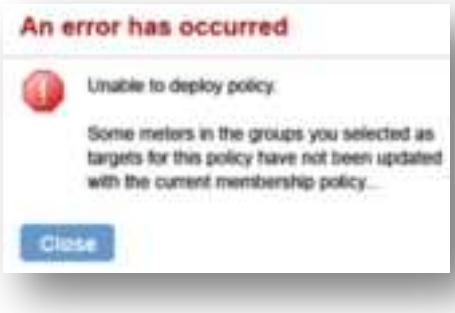
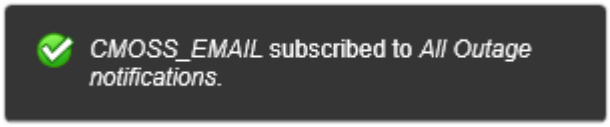
Events
Devices
Electric Meters : Remote operation
Device: Electric meter: 000009941
Reports
More

Operational Error Messages

The PolicyNet system issues error messages when something has gone awry. The error message describes the error (for example, “Unable to deploy policy” shown below) and the reason why it occurred.



PolicyNet issues brief messages on the screen when it has completed a task or series of steps.



Important-System Setup Tasks

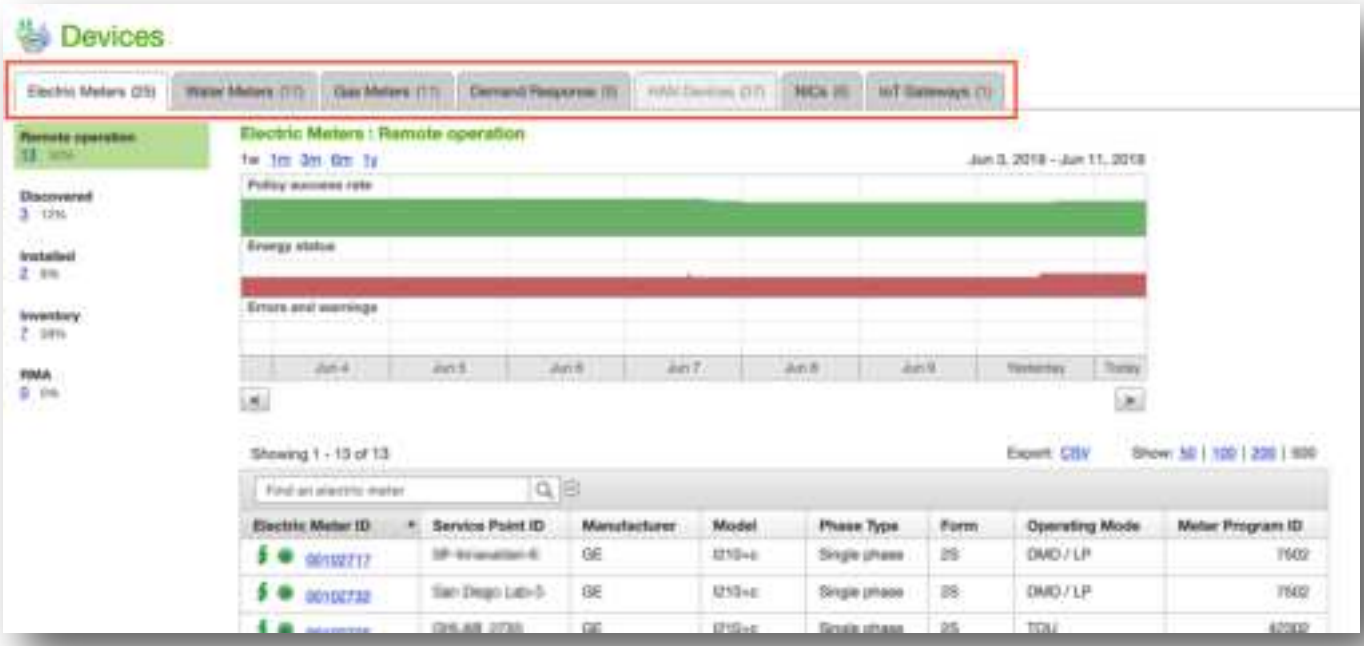
During PolicyNet system onboarding, one or more users are granted the Utility Admin role, granting administrative privileges. To set up the PolicyNet system for regular operations, complete the following critical tasks:

Step	Task
1	Create additional PolicyNet UI users. Users assigned the Utility Admin role can optionally create users with administrative privileges who can perform the subsequent setup tasks. See Users and Roles for background information.
2	An authorized user may need to set up the master security code for each meter model, depending on integration or meter programming work flows.
3	Create device groups. Group membership is dynamic, based on device attributes, so users can create device groups even before the utility has any fielded devices. Each device can belong to multiple groups. See Groups for background information.
4	Before or after a utility has begun fielding meters, Create policies that govern meter readings, data collection, meter programming and control, system monitoring, etc. Once a policy is "deployed", the PolicyNet system automatically configures target devices (defined by dynamic target group membership) as the target devices come online. See Policies for background information.

About Devices

Navigate to the Devices pages by clicking Devices in the main components menu:

Devices include all the types of hardware, such as meters, communication cards, routers, and various edge devices, required to make the smart grid operational. The device types appear in tabs across the top of the Devices page.



Device Operational States

Operational states characterize stages in a device's life cycle, such as when it is in test mode, RMA, sitting in inventory, fielded but not in use, or fully fielded and in use. The operational states can also be used to dictate whether subscription billing is active for the device. The PolicyNet system uses the operational state to determine:

- Whether or not users can deploy certain policies to the device. For example, a user can deploy a meter-reading policy to devices that are fielded and in the remote operation state, but not to devices that are in inventory or out for repairs.
- Whether or not a device is an eligible target for a specific group
- Whether or not the meter's data will be included in standard reliability reports
- Whether or not the system must redeploy policies that were removed in an earlier state transition

The PolicyNet system typically updates a device's operational state automatically in response to an event. For example, a device enters the Discovered state automatically when it successfully connects to the network and the PolicyNet server. However, users can change the operational state manually if necessary. See Manual Device State Changes.

Electric Meter Operational States

State	Description
Remote Operation	Remote Operation is the normal operational state, indicating a fully functioning field-deployed meter. A meter changes from Discovered to Remote Operation when it is assigned service point location information (either by file import or through integration with another information system). Characteristics of a meter in the Remote Operation state: ▪ Meter has been energized ▪ Meter has joined the network ▪ Meter has been authenticated onto the PolicyNet platform ▪ Meter has been assigned service point location information ▪ Meter is eligible for network policies, such as meter reads and service ON/OFF policies
Discovered	A meter in the Discovered state has joined the network and the PolicyNet platform but has not yet had service point location information assigned. Therefore, the device is not eligible for network policies. This is typically the state of a lab test meter or a meter that has just been installed in the field and has not yet had its service point location information assigned. Characteristics of a meter in the Discovered state: ▪ Meter has been energized ▪ Meter has joined the network ▪ Meter been authenticated onto the PolicyNet platform ▪ Meter has NOT been assigned service point location information ▪ Meter is NOT eligible for network policies, except meter programming and meter password policies
Installed	The Installed state represents a meter that has been assigned service point location information but is not energized (has not joined the network). This state is useful for managing meters that are physically deployed at their known service location yet will be powered down for some time. A meter moves from the Installed state to the Remote Operation state upon energizing. Characteristics of a meter in the Installed state: ▪ Meter is not energized ▪ Meter has not joined the network ▪ Meter has been assigned service point location information ▪ Meter is not eligible for network policies ▪ Will not factor into reliability calculations or appear on outage maps

State	Description
Inventory	Meters are typically in the Inventory state when they are first shipped, prior to deployment. This state is also useful for managing meters during service location changes. Upon joining the network, a meter in Inventory state moves to the Discovered state. Characteristics of a meter in the Inventory state: ▪ Meter is not energized ▪ Meter has not joined the network ▪ Meter has not been assigned service point location information ▪ Meter is not eligible for network policies ▪ Will not factor into reliability calculations or appear on outage maps
RMA	The RMA state is for meters that are being returned because of a functional issue. When a user moves a meter to the RMA state, the meter loses its service location and policies. Characteristics of a meter in the RMA state: ▪ All associations with groups, policies, and service point locations have been removed.