Yukon: What's New and Path for Legacy Users

David Sutton

11-May-2023

Powering Business Worldwide

Agenda

01 Introduction

02 Software Release Process Overview

03 Recent New Features and Improvements

04 Migration of Java Client Functionality

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Introduction

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Introduction

David Sutton - Software Product Manager

- Primary role
  - The prioritization of new feature sets and improvements into the Yukon software platform

- Email: davidlsutton@eaton.com

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Software Release Process Overview

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Software Release Process Overview

- Software platform is typically released two times a calendar year
  - Q2 and Q4 are the typical targets
  - Release package includes:
    - What's new guide
    - Release notes for both the enterprise software and the compatible RFN package if applicable
    - Updated documentation
    - Minimum system requirements matrix containing current OS, DB and browsers used for validation of the software release

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Software Release Process Overview

- **Yukon v9.4 – Available Now**
  - OS
    - Windows Server 2019
    - Windows Server 2022
  - DB
    - SQL Server 2017
    - SQL Server 2019
    - SQL Server 2022
    - Oracle 19c
  - Browser
    - Google Chrome
    - Microsoft Edge

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Software Release Process Overview

Yukon v9.5 – Q4 2023

- OS
  - Windows Server 2019
  - Windows Server 2022
- DB
  - SQL Server 2019
  - SQL Server 2022
  - Oracle 19c

Yukon Q2 2024

- OS
  - Windows Server 2019
  - Windows Server 2022
- DB
  - SQL Server 2019
  - SQL Server 2022
  - Oracle 19c

*Note that SQL Server 2017 will be removed from the upcoming fall release due to mainstream support having expired October 2022

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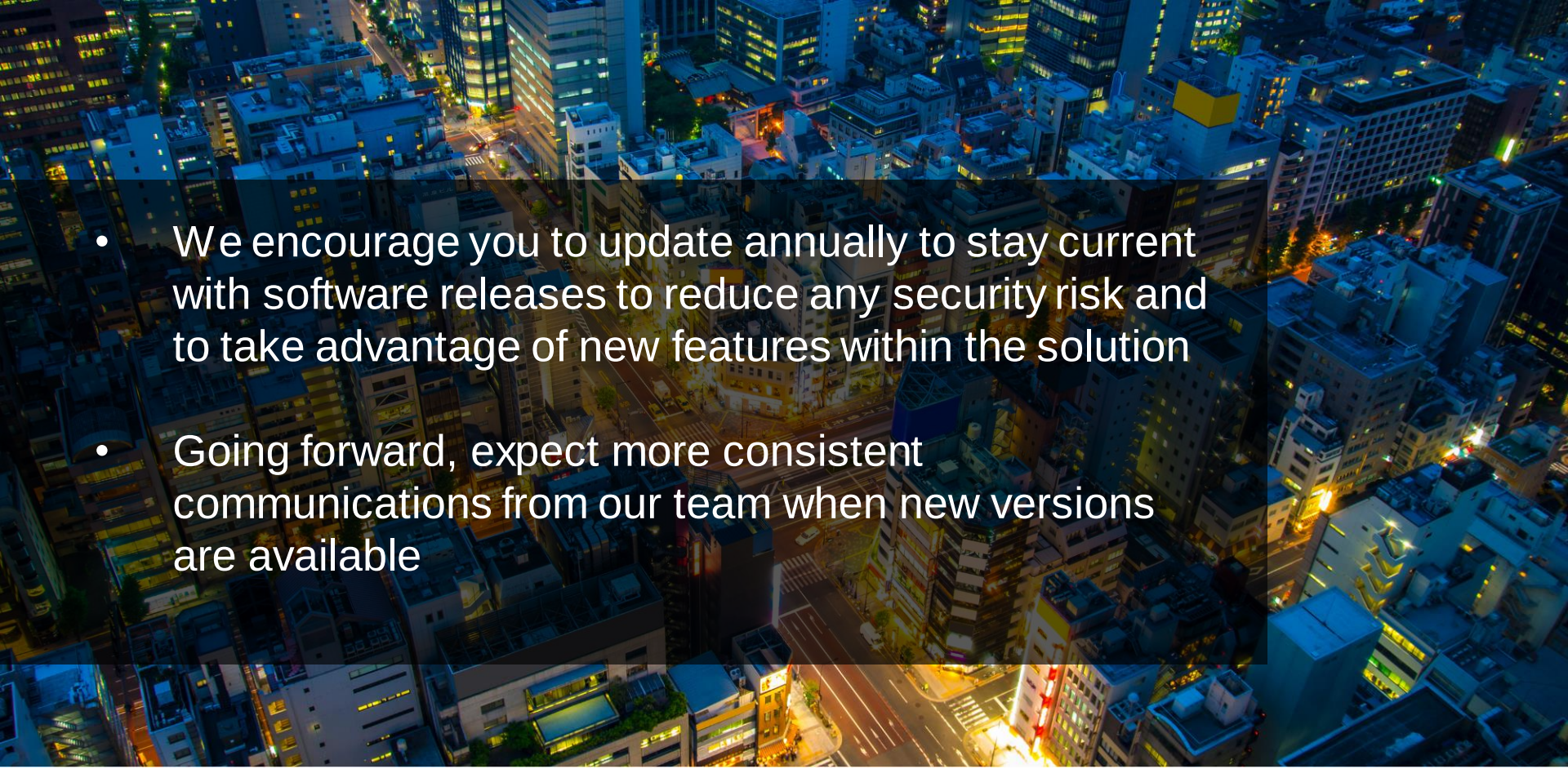

- We encourage you to update annually to stay current with software releases to reduce any security risk and to take advantage of new features within the solution
- Going forward, expect more consistent communications from our team when new versions are available

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Recent New Features and Improvements

Yukon v9.2

Released Q2 2022

Yukon v9.2 – Release April 2022

- General rebranding
  - Effort to coordinate a common look and feel to Eaton's software platforms
- RFN Gateway configuration
  - Ability to configure the IP / Port of each RFN gateway from Yukon
- Ability to manage RFN outage event processing
  - Option to limit email notifications and MultiSpeak messaging to RFN alarm reporting only
- Device Support
  - Gas Node
  - Cellular based LCR
  - IPLink Relay platform
- IVVC logging improvements
  - Invalid power flow issues are logged

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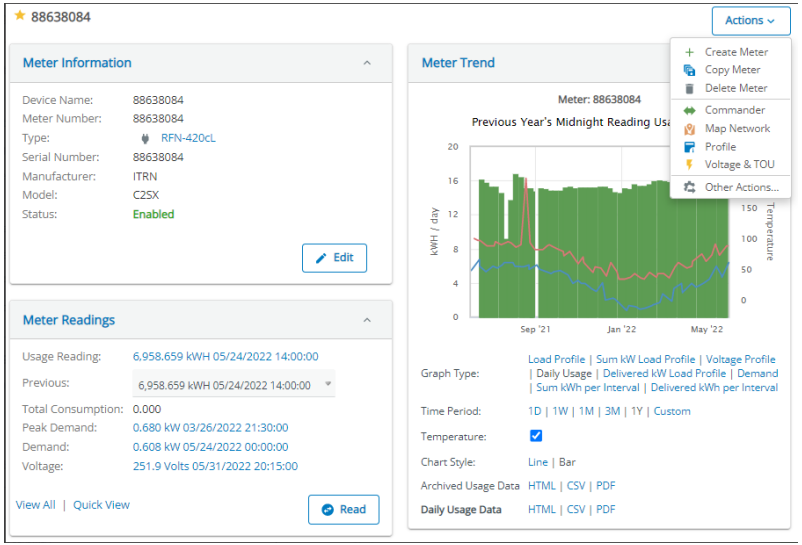
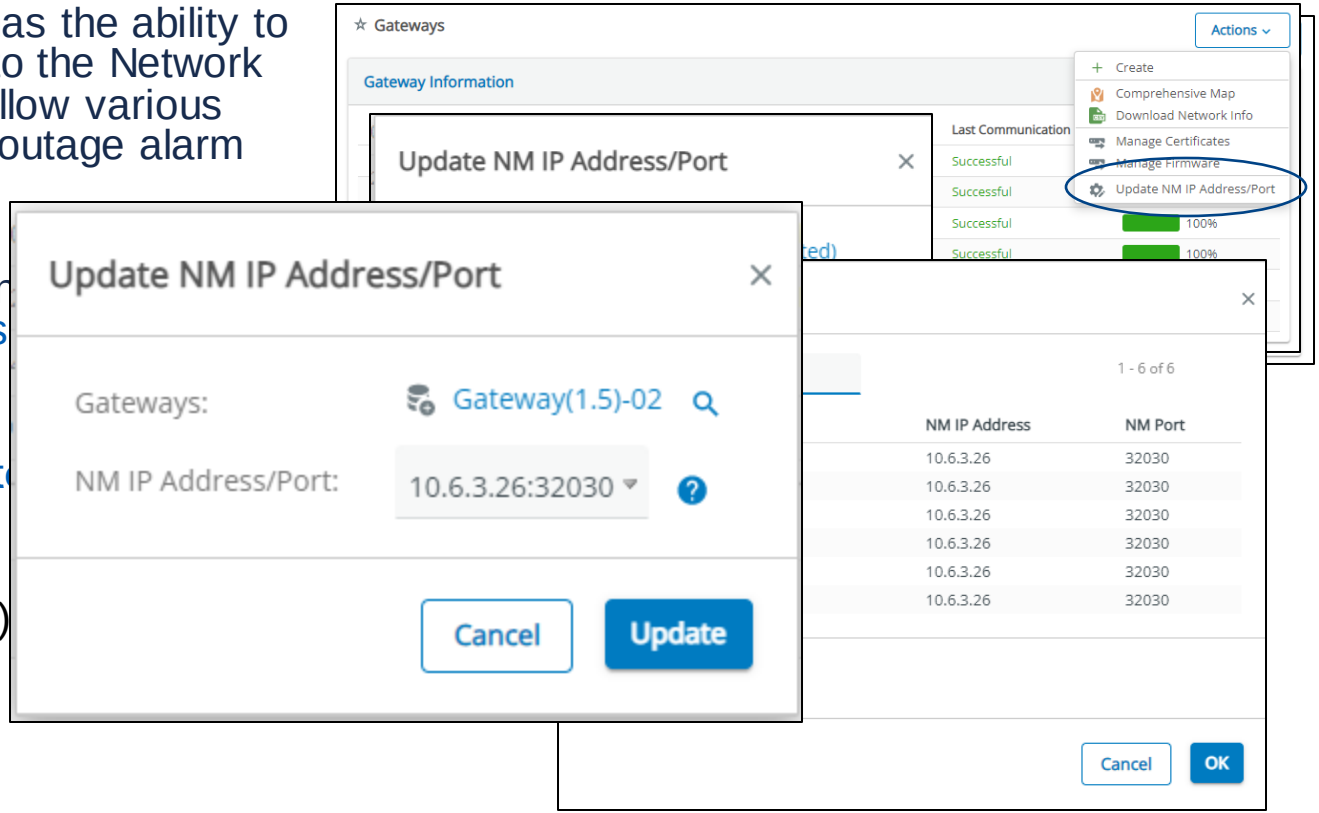
General Rebranding

- Rebranding of Yukon's UI using Eaton standard components for icons, colors and buttons
  - Utilities will find the color scheme, icon sets and look and feel of buttons, titles, etc. slightly different than previous versions of Yukon.
  - This is the beginning of rebranding effort to bring a common look and feel to all of Eaton's software products
  - These changes do not affect navigation nor functionality within the software



RFN Gateway Configuration

- Each RFN gateway has the ability to initiate a connection to the Network Manager service to allow various functionality such as outage alarm reporting
- To configure the IP ar gateway from the Ass Gateways page
- Actions button "Updat Address/Port"
- Select the gateway(s) enter the appropriate



Ability to manage RFN outage event processing

- Meter Outage Events, which arrive during the meter's reporting interval, occasionally result in outage notification emails being sent from Yukon.
  - This is due to the outage and restoration events being processed out of order

- To address this issue, an option to "Notify on Alarms Only" has been added to the Device Data monitor configuration

- While the Data Monitor will continue to process data as before, when configured, a notification will only be provided when an RFN Outage or Restoration Alarm is received

- A similar option labeled "Notify on Alarms Only" has been added to the Outage Notification monitor used to publish RFN outage and restoration alerts via MultiSpeak to the Outage Management System (OMS) in real time

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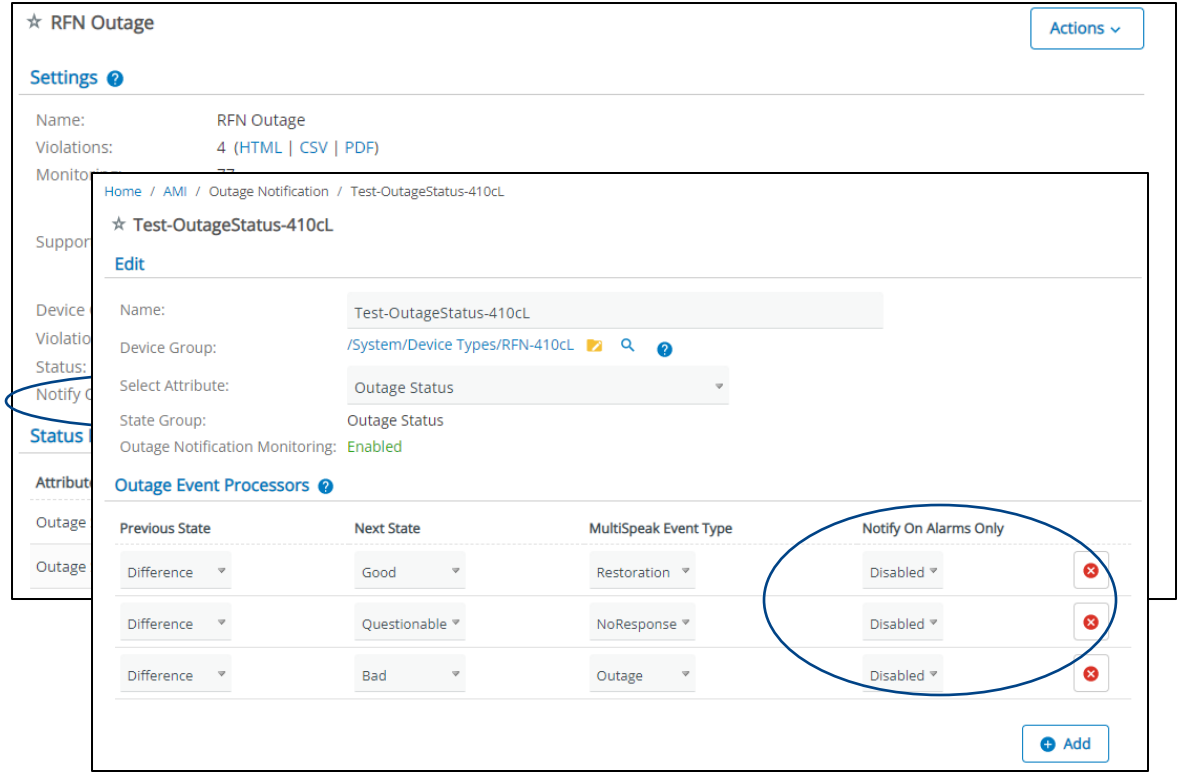
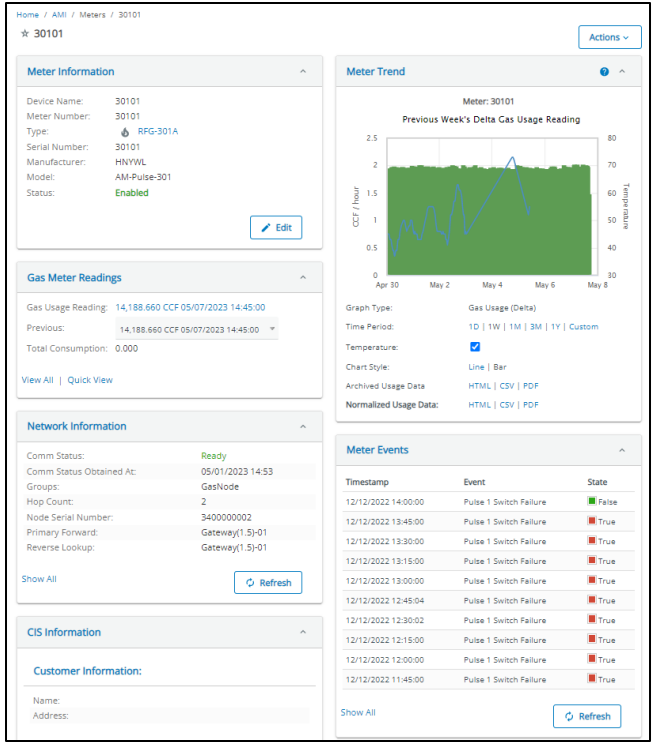
Ability to manage RFN outage event processing

- Device Data Monitor
  - Per monitor setup
- Outage Notification Monitor
  - Per MultiSpeak message type



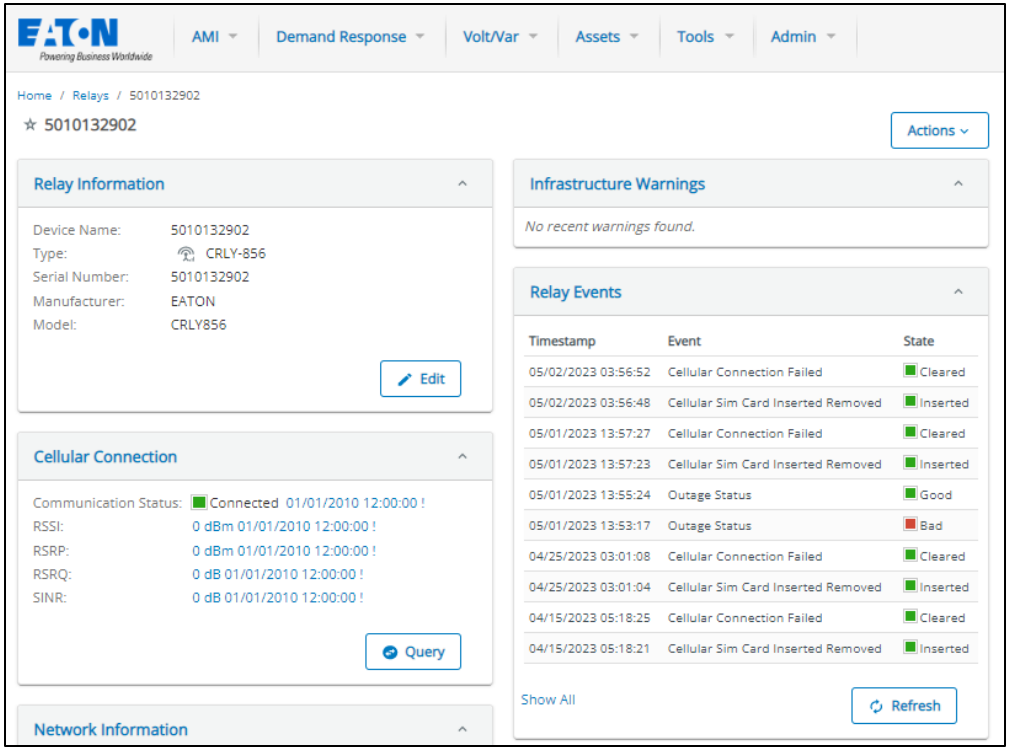
Device Support

- RFN Integrated gas nodes
  - Added support for two integrated gas nodes types; the RFG-301A and the RFG-301R.
  - Battery-powered nodes that provide register, channel and event data across the RF network.
  - The device's recording and reporting intervals are configurable.



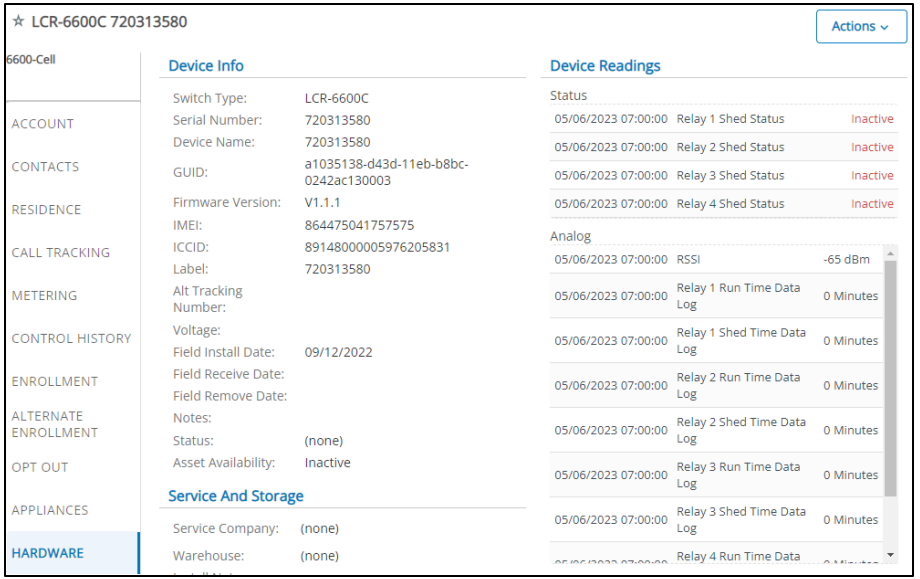
Device Support

- RFN Cellular IPLink Relay
  - Added support for a cellular based relay that can be used to provide an RF communications point in weak areas of the network.
  - The CRLY-856 reports data over the cellular network into a Virtual Gateway service that is installed on the Yukon application server



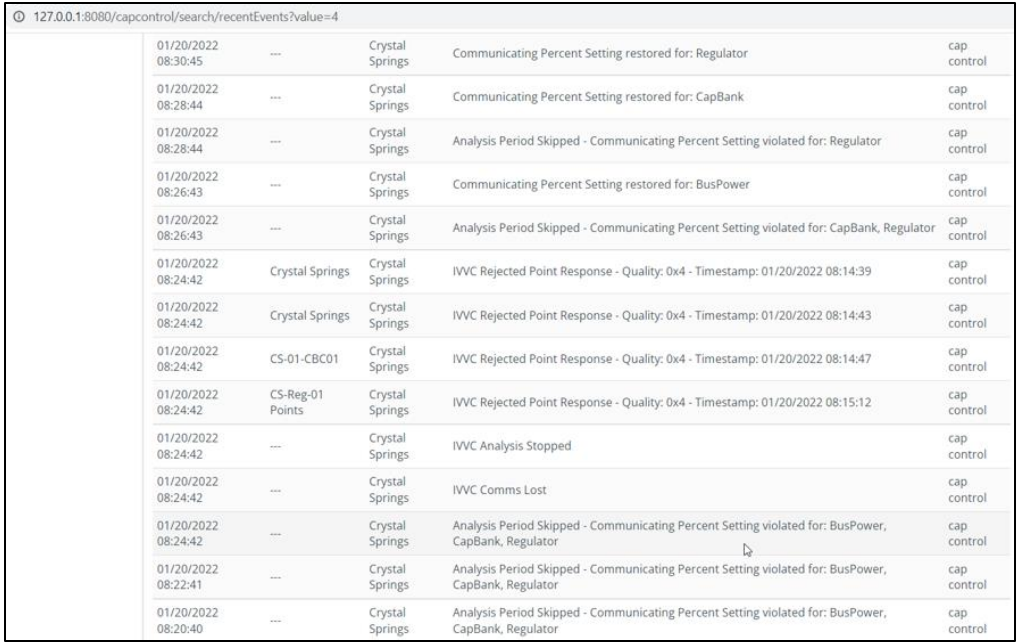
Device Support

- Cellular LCR family of devices
  - This feature provides device management, controls and data retrieval functions for a cellular based LCR by integrating to Eaton's Brightlayer Cloud through the Brightlayer Utility Cloud API.
  - Traditional data such as 60 minute interval run time and shed time per relay as well as event statuses are provided.
  - In addition, Activation Status, Load State, Shed Status per relay are also available



IVVC Logging Improvements

- Invalid power flow issues are logged
  - Improvements in the application's indication that an invalid power flow issue has caused the algorithm to revert to local control or has skipped an analysis period entirely



01/20/2022 08:30:45	---	Crystal Springs	Communicating Percent Setting restored for: Regulator	cap control
01/20/2022 08:28:44	---	Crystal Springs	Communicating Percent Setting restored for: CapBank	cap control
01/20/2022 08:28:44	---	Crystal Springs	Analysis Period Skipped - Communicating Percent Setting violated for: Regulator	cap control
01/20/2022 08:26:43	---	Crystal Springs	Communicating Percent Setting restored for: BusPower	cap control
01/20/2022 08:26:43	---	Crystal Springs	Analysis Period Skipped - Communicating Percent Setting violated for: CapBank, Regulator	cap control
01/20/2022 08:24:42	Crystal Springs	Crystal Springs	IVVC Rejected Point Response - Quality: 0x4 - Timestamp: 01/20/2022 08:14:39	cap control
01/20/2022 08:24:42	Crystal Springs	Crystal Springs	IVVC Rejected Point Response - Quality: 0x4 - Timestamp: 01/20/2022 08:14:43	cap control
01/20/2022 08:24:42	CS-01-CBC01	Crystal Springs	IVVC Rejected Point Response - Quality: 0x4 - Timestamp: 01/20/2022 08:14:47	cap control
01/20/2022 08:24:42	CS-Reg-01 Points	Crystal Springs	IVVC Rejected Point Response - Quality: 0x4 - Timestamp: 01/20/2022 08:15:12	cap control
01/20/2022 08:24:42	---	Crystal Springs	IVVC Analysis Stopped	cap control
01/20/2022 08:24:42	---	Crystal Springs	IVVC Comms Lost	cap control
01/20/2022 08:24:42	---	Crystal Springs	Analysis Period Skipped - Communicating Percent Setting violated for: BusPower, CapBank, Regulator	cap control
01/20/2022 08:22:41	---	Crystal Springs	Analysis Period Skipped - Communicating Percent Setting violated for: BusPower, CapBank, Regulator	cap control
01/20/2022 08:20:40	---	Crystal Springs	Analysis Period Skipped - Communicating Percent Setting violated for: BusPower, CapBank, Regulator	cap control

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Yukon v9.3

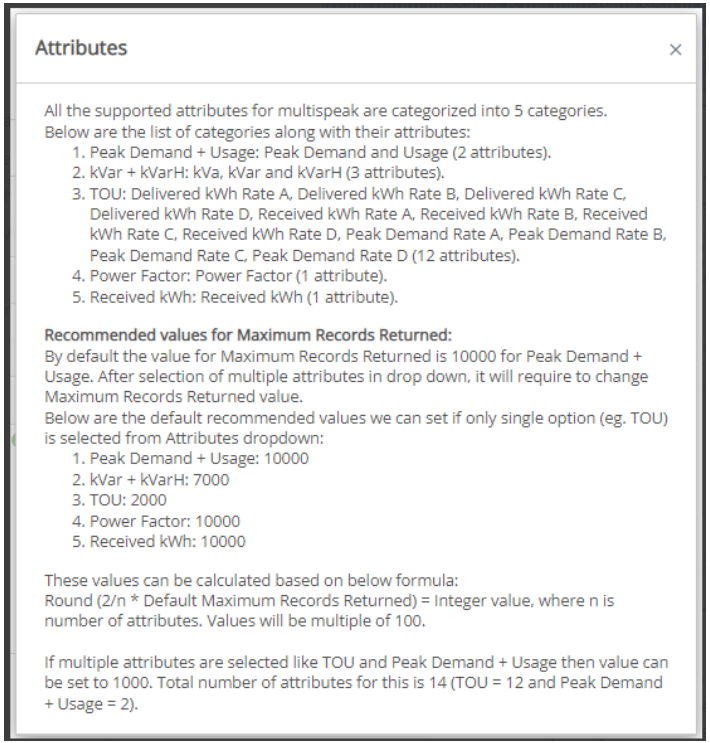
Released Q4 2022

Yukon v9.3 – Release November 2022

- MultiSpeak Integration Options
  - Additional metering attributes are available to pass via MultiSpeak to third-party systems
  - Addition of the MultiSpeak v4.1 specification in support of gas and water integrations
- Meter Event
  - A blink event marker was added to the meter event report
- Mapping improvements
  - Hops within a node's primary path are colored by ETX band to indicate link quality
  - Path cost was added to the network information downloads
- Database Editor migration
  - Paging transmitter setup
  - Notification group setup
- Asset Availability
  - Metrics are archived daily to provide historical context across demand response seasons
- IVVC UI Updates
  - Various chart and configuration updates

MultiSpeak Integration Options

- Additional Metering Attributes available for publishing via MultiSpeak
  - The MultiSpeak implementations have been expanded to include additional meter attributes.
  - These attributes are optional and are activated via configuration to ensure backwards compatibility with existing integrations
  - Attributes categories
    - Rate A - D Delivered kWh
    - Rate A - D Peak Demand (delivered kw)
    - Rate A - D Received kWh
    - Received kWh
    - kVar
    - kVarh
    - kVA and PF



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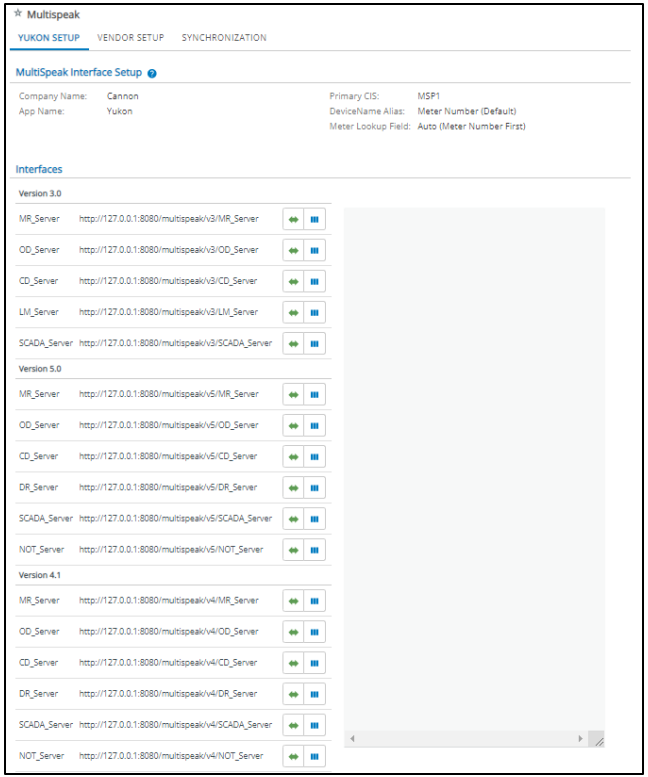
MultiSpeak Integration Options

- MultiSpeak v4.1 Specification
  - Implemented with similar functionality as the v3.0 specification
  - In addition, it provides support for gas and water meters inventory management and billing reading methods



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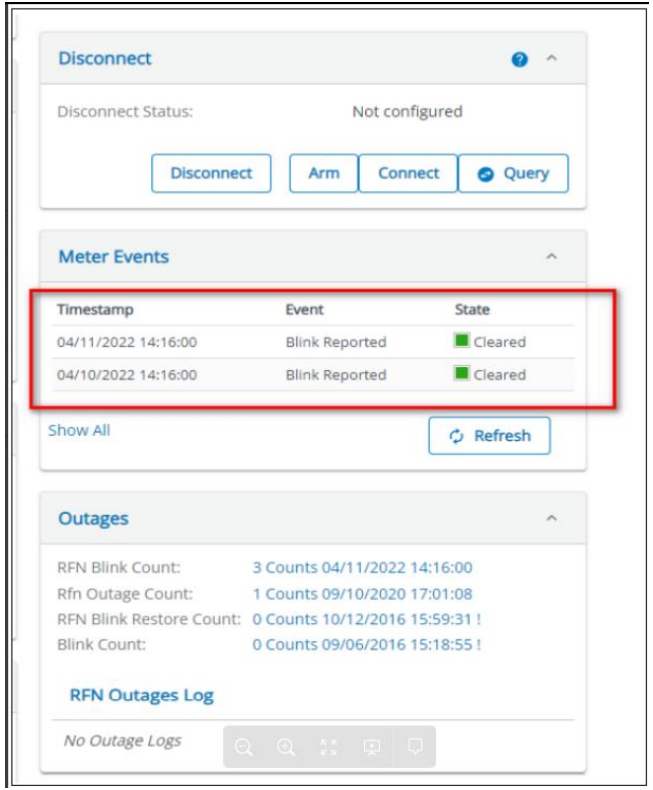
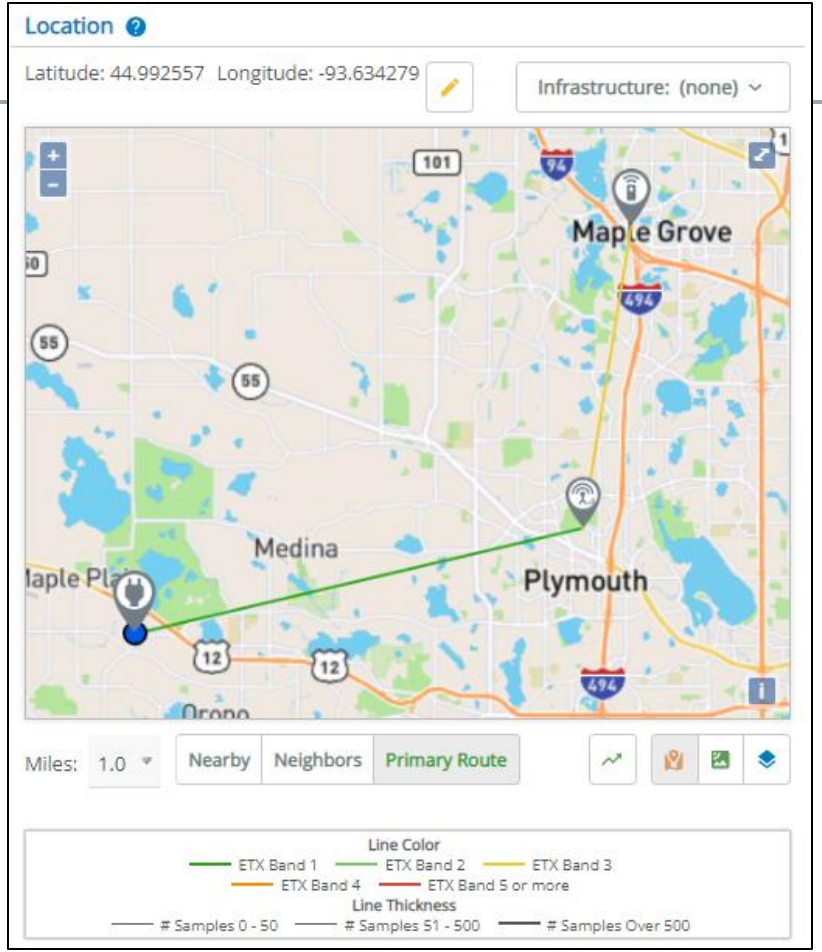
Meter Event

- Blink meter event
  - Blink events have been added to the Meter Event processing for individual meters and will display on the Meter Details page.
  - Users will also be able to review the blink events across a selectable time frame using the attribute “RFN Blink Reported” and the Meter Events report



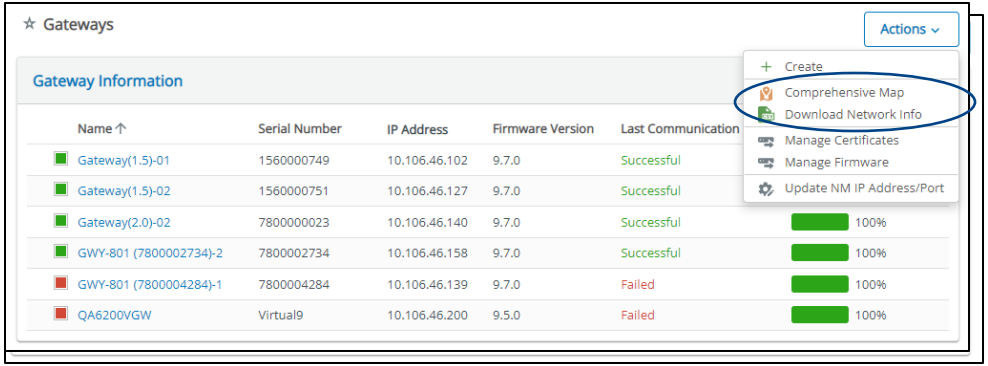
Mapping Improvements

- Hops within a node's primary path are colored by ETX band to indicate link quality
  - This will allow the user to review the link quality of every node in a meter's path back to the gateway to find the weakest area
  - From the Meters Details page, find the Actions button "Map Network"
  - Clicking on the Primary Route button on the Map Network page will result in the route lines being color coded by ETX Band.



Mapping Improvements

- Path cost was added to the network information downloads
  - The RF node's path cost is now included in the Comprehensive Map and the Download Network Info CSV download

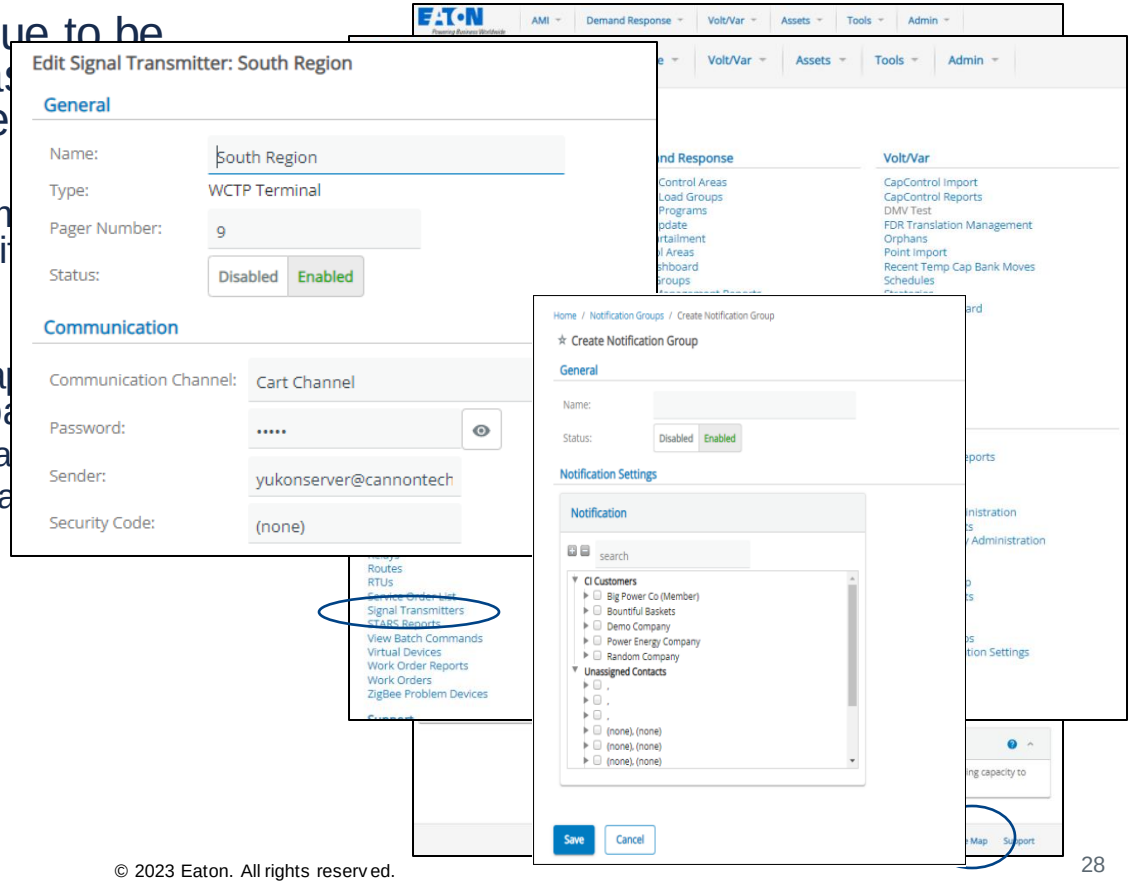


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Device	Meter Number	Type	Sensor S/N	Latitude	Longitude	Primary Forward	Comm Status	MAC Address	Node S/N	Link Quality	Hop Count	Descendant Count	Next Hop	Path Cost
2	RFNtniv420	123	RFN-420cD	14857	44.690265	-92.998896	Fake Gateway 800	Ready	11:22:33:44:91:11	4260060913	Below Average	23	95	Fake Gateway 800	2
3	RFN-530eRXR Meter	123456	RFN-530S4eRXR	123456	44.917717	-92.859145	Fake Gateway 800	Not Ready	11:22:33:44:91:11	4260060913	Excellent	24	60	Fake Gateway 800	2

  - Actions button "Comprehensive Map" or "Download Network Info"

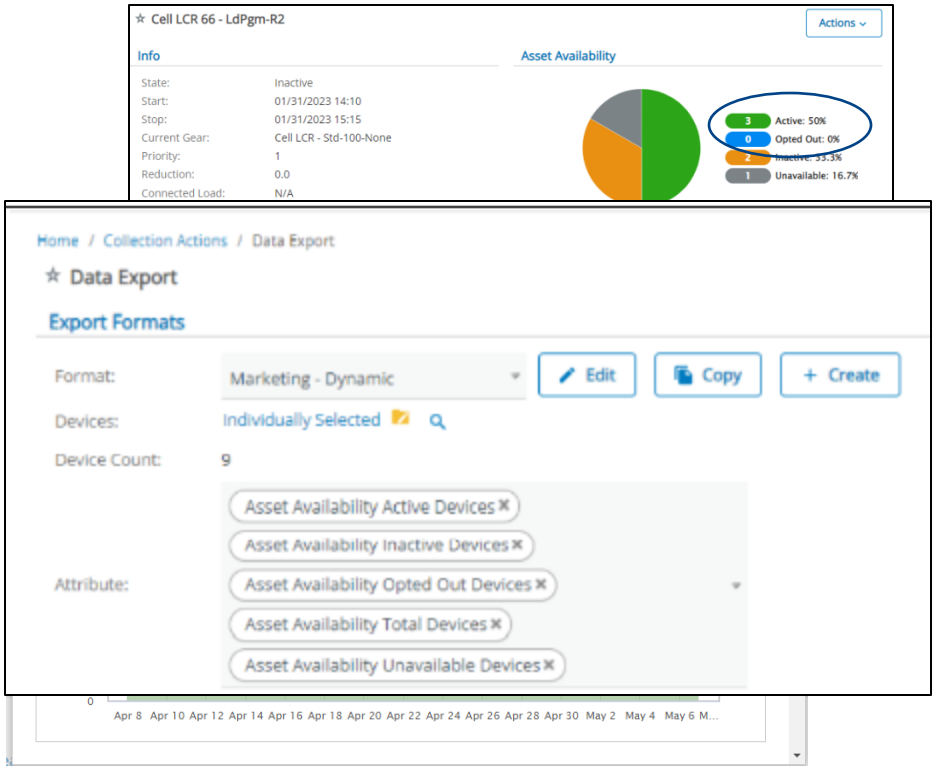
Database Editor Migration

- Configuration tools continue to be migrated from the Databas Java application to the we
  - Users will now be able to n Transmitter setup and Noti through the web UI.
  - Accessible via the Site Ma bottom of the Yukon webpa
    - Category Assets: Signa
    - Category Tools: Notifica
  - Signal Transmitters
  - Notification Groups



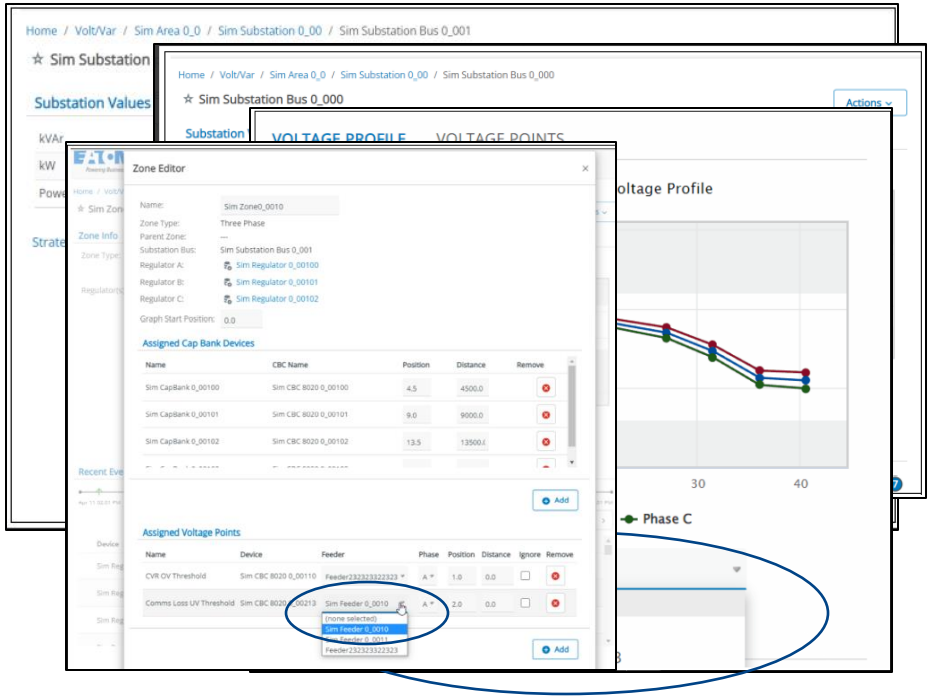
Asset Availability

- Metrics are archived daily to provide historical context across demand response seasons
  - Asset Availability categories are archived daily at each level of the Demand Response hierarchy (Groups, Programs, Control Areas, Scenarios)
  - As attribute data, this will be available to display via popup
  - As well as via export for further analysis and review



IVVC UI Updates

- Various chart and configuration updates
  - Outdated data will not be shown on the chart and will be marked as ignore
  - When Override Strategy Limits are specified, a diamond shaped data point pin will display, and the values will show in the tool tip
  - Added filter by feeder(s) option
  - Added feeder drop-down to Assigned Voltage Points in the Zone Wizard



Yukon v9.4

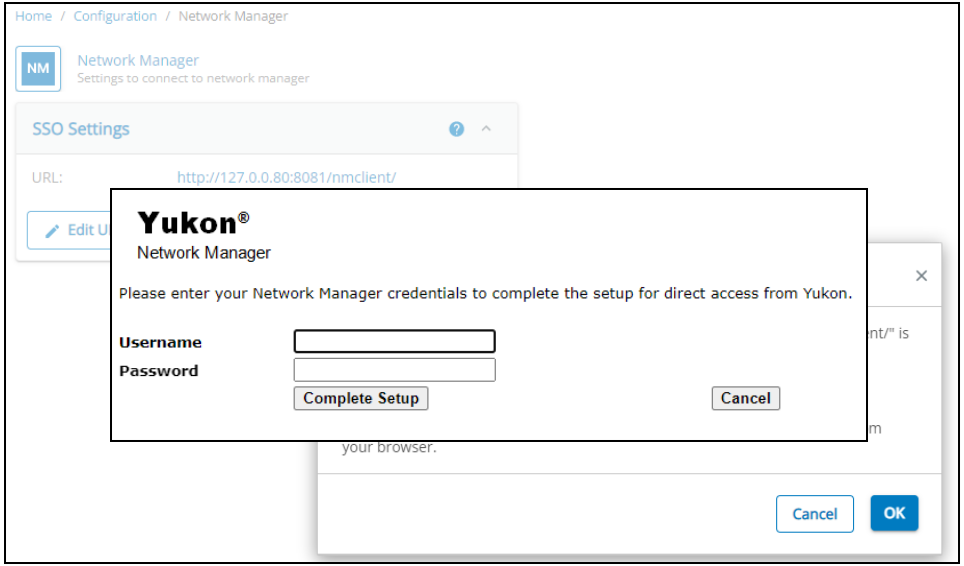
Released Q2 2023 – Available Today!

Yukon v9.4 – Release May 2023

- Network Manager Direct Access
  - Allows system administrator to pair the NM service with Yukon and control access via a user role instead of a second login
- Mapping Improvements
  - The mapping visualization tools will now support the display of user provided shapefiles
- Infrastructure Warning Improvements
  - Ability to disable notifications for specified warnings

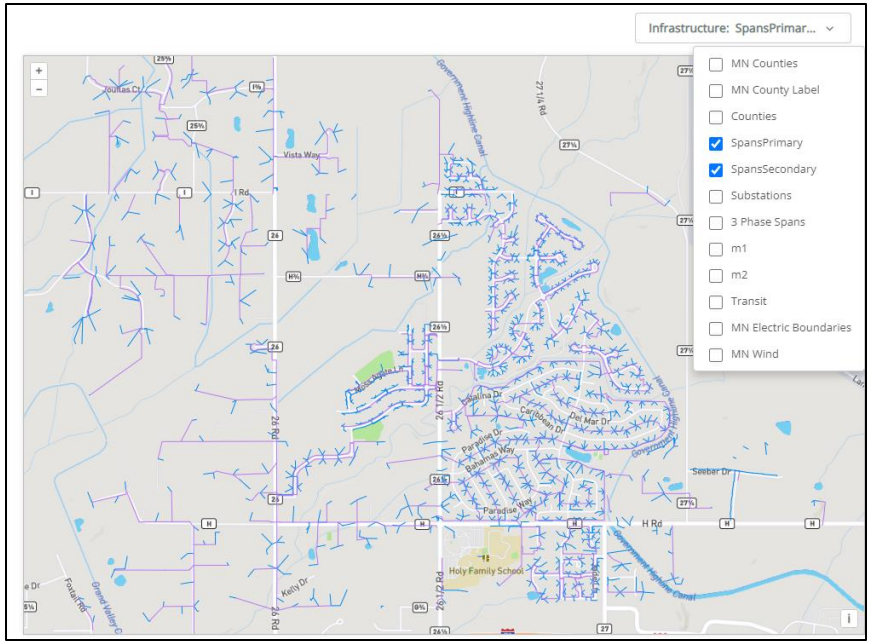
Network Manager Direct Access

- Direct Access pairs the authentication services in NM and Yukon
  - Allows users with the Network Manager Access role to access NM Client directly without the need to authenticate a second time
  - System administrator configuration requires valid Yukon credentials to initiate and valid NM credentials to complete the pairing



Mapping Improvements

- The mapping visualization tools will now support the display of user provided shapefiles
  - System administrators can import single layer shapefiles into the platform and choose to optionally display them on the maps
  - Meta data within is displayed by clicking in the map



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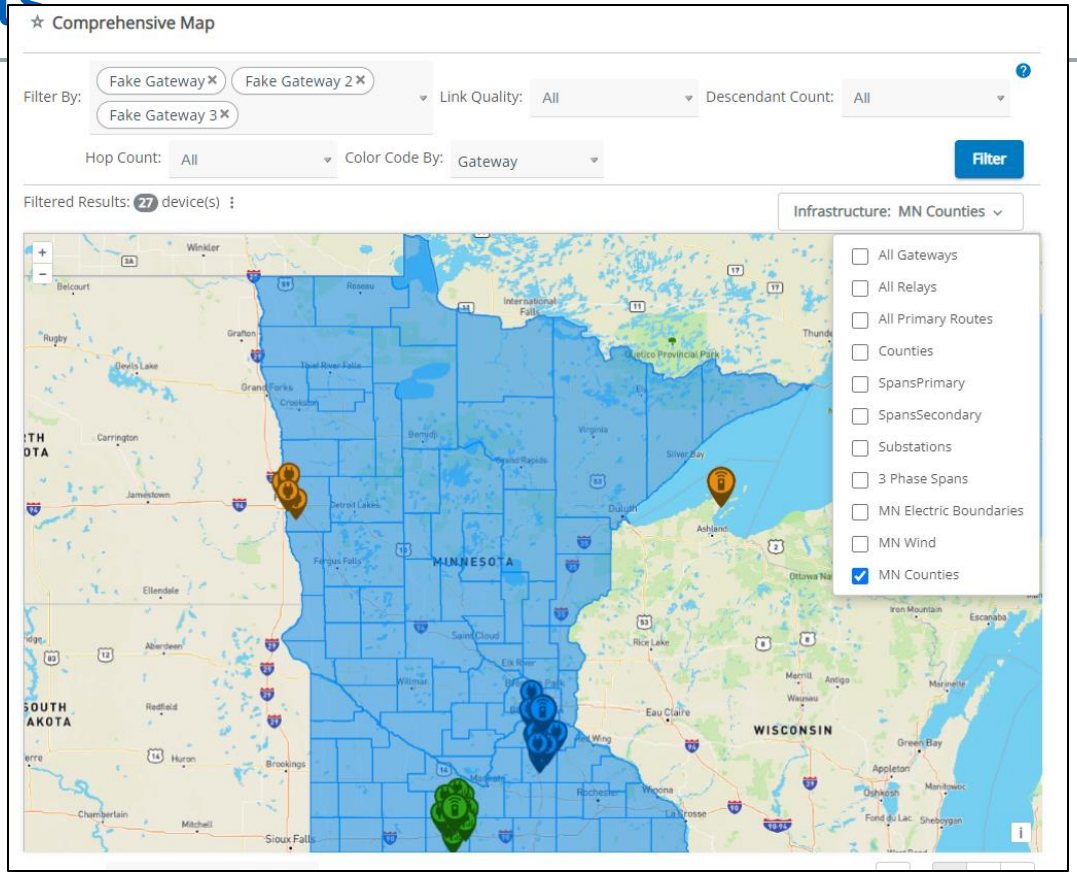
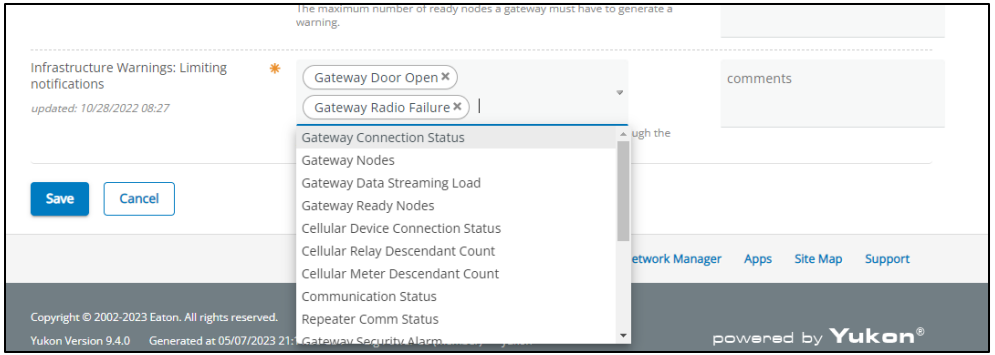
Mapping Improvements

- Shapefile Configuration
  - System administrators add shapefiles via the Admin menu, Configuration and Mapping
  - From the Mapping page, click the Add button to bring in additional files
  - Select the appropriate zip file and a color to render the contents with
  - Contents are now available throughout Yukon from the Infrastructure drop down available in all mapping tools



Infrastructure Warning Improvements

- Ability to disable notifications for specified warnings
  - Certain low risk infrastructure warnings cause unnecessary email traffic and at worst, false positives
  - System administrators may configure which warnings result in notifications to reduce the categories to just those that require immediate attention
  - This setting affects email notifications only. The remainder of the infrastructure warning process continues as before



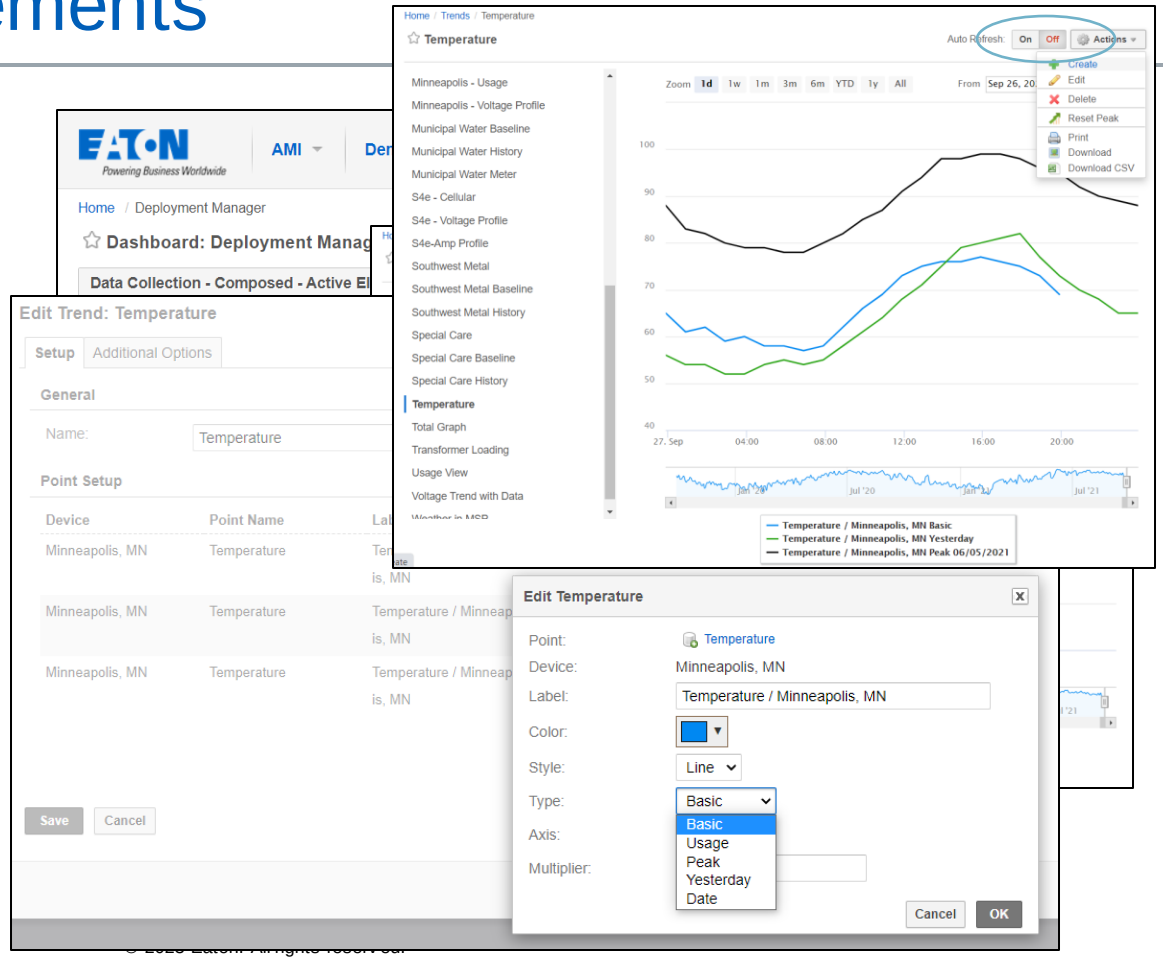
Migration of Java Client Functionality

Java Client Retirements

- Java Client Retirements
  - The Trending, Commander and TDC Java clients **have been retired** and are no longer included in the install or upgrade process.
  - Web based options are available for those systems still needing access to the functionality previously provided by these clients.
  - The Database Editor and NM Clients continue to be migrated into the existing Yukon structure

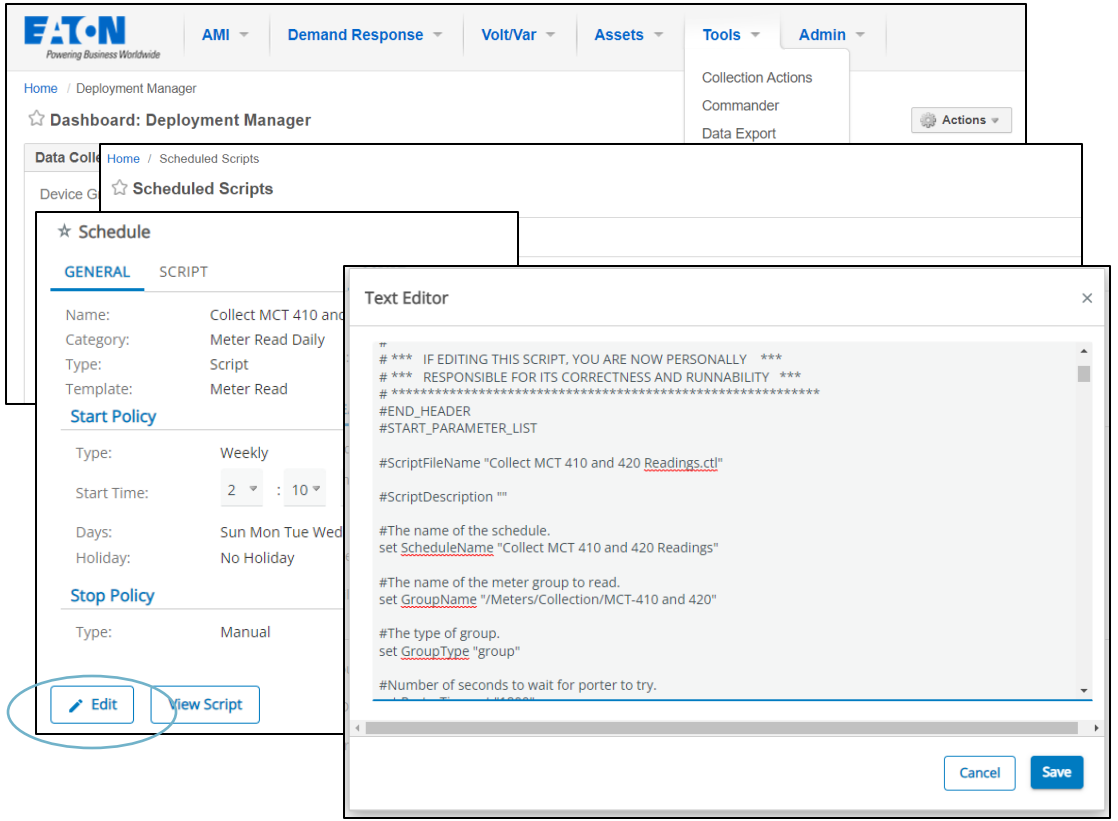
Java Client Retirements

- Trending
  - Navigate to **Trends** under the Tools menu
  - Click **Actions** on the righthand side to Create and Edit
  - Select the data points to trend, line colors and line type.
  - Turn the Auto Refresh option On and the trend will update automatically while the browser session is active



Java Client Retirements

- MACS Schedules - Tabular Data Console (TDC)
  - Navigate to **Scripts** under the Tools menu
    - Primarily used for PLC data collection and other actions
  - Web based options to start and stop the script
  - Web based editing of the script



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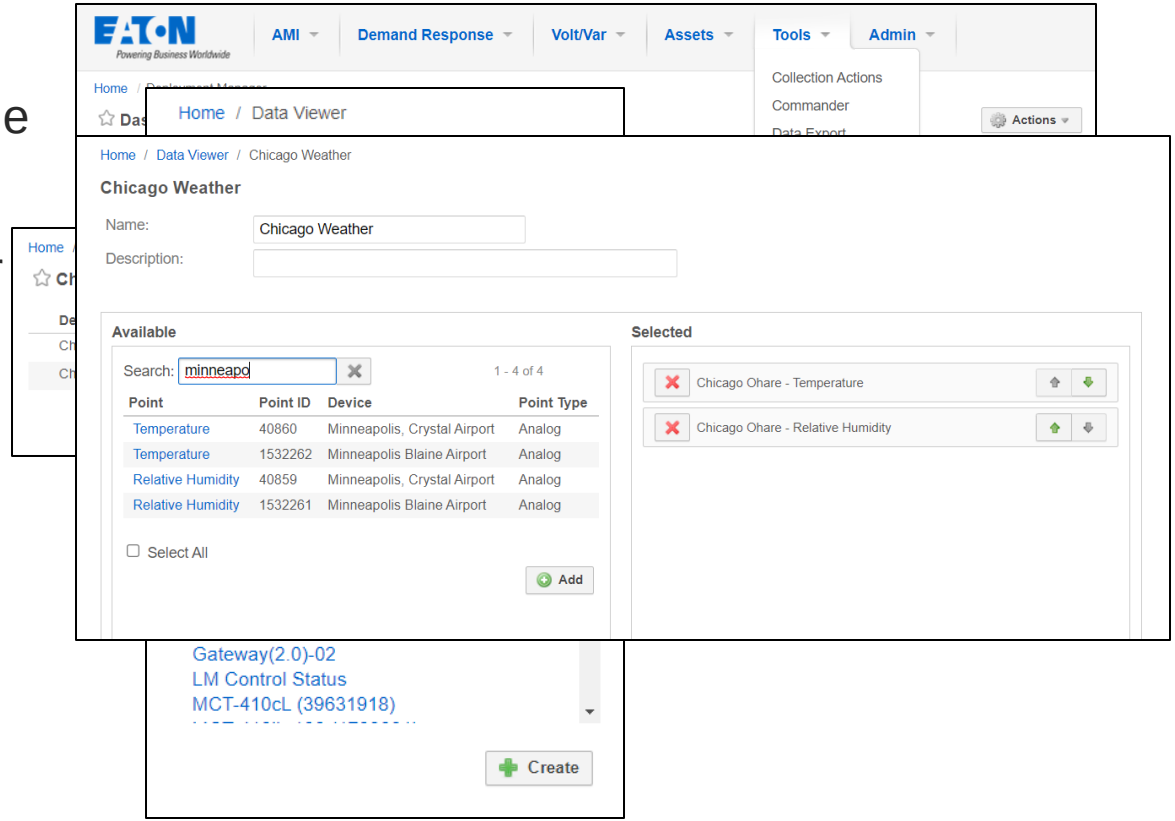
Java Client Retirements

- Custom Displays - Tabular Data Console (TDC)
  - Navigate to **Data Viewer** under the Tools menu
  - Existing custom displays
  - Primarily used to display ad hoc tables of related data points
  - Easily find related data points by device or point names



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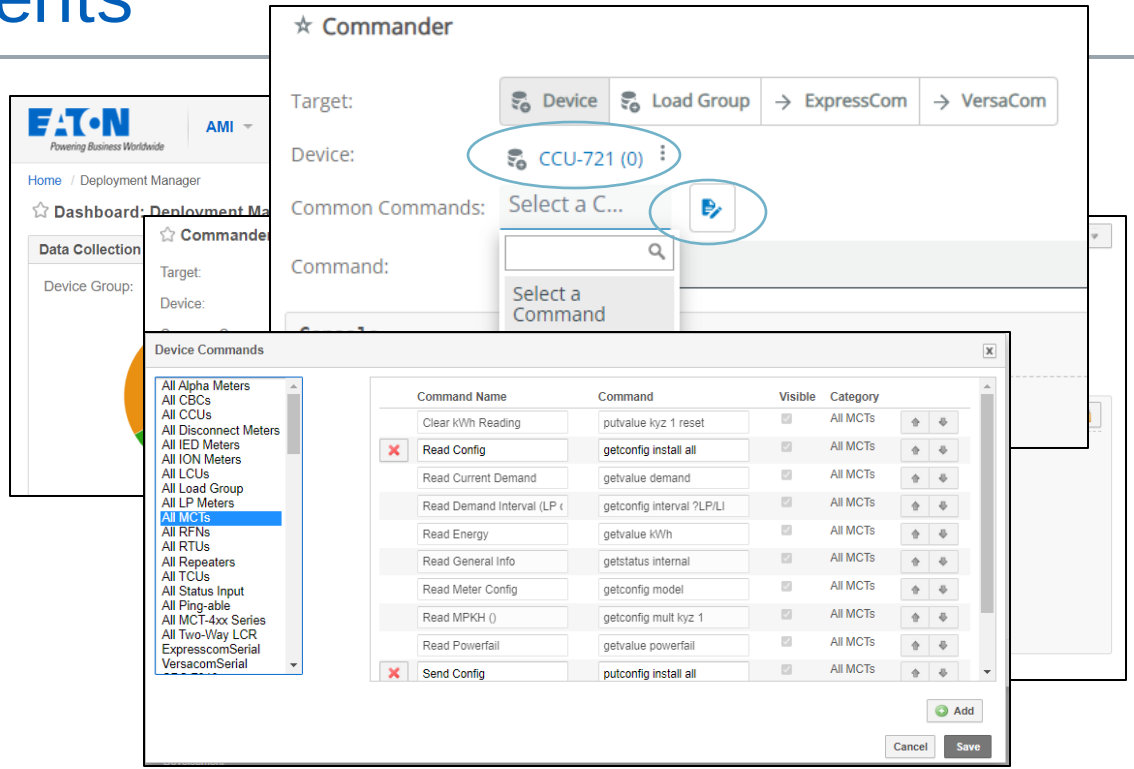
Java Client Retirements

- Commander
  - Navigate to **Commander** under the Tools menu
    - Note the Commander option is available under the Actions button on the Meter Details pages as well
  - Primarily manual PLC based commands to one or more devices
    - Device and command selections
  - Option to setup custom command selections also available



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Java Client Retirements

The retired Java Clients were removed with the release of Yukon v9.0 in May of 2021

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04 Migration of Java Client Functionality

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Next in Grand Station 2

- Customer Forum on EV Chargers and other Emerging Grid Challenges

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