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Canary User Conference
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Canary Version 24, 25 and Beyond

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Version 24 – Eliminate Windows Dependencies

Ability to support running software on Linux

Eliminate Windows Dependencies

- **Move to .NET 8 Framework**
- **Stop relying on Windows User Accounts and Impersonation**
- **Use gRPC instead of WCF (Windows Communication Foundation)**

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Version 24 – Code Modernization & Enhancements

Code modernization allows us to take advantage of advances in technology and meet the ever-changing needs or our customers

- Move to .NET 8
  - More performant than older .NET Framework
  - Support for Windows and Linux
- Implement gRPC (Google Remote Procedure Calls) across all products
  - Internal and Public APIs
  - High-performance, opensource RPC framework
  - Numerous language bindings for binary APIs
- Use OpenID Connect / OAuth 2.0
  - Federated Identity protocol for authentication

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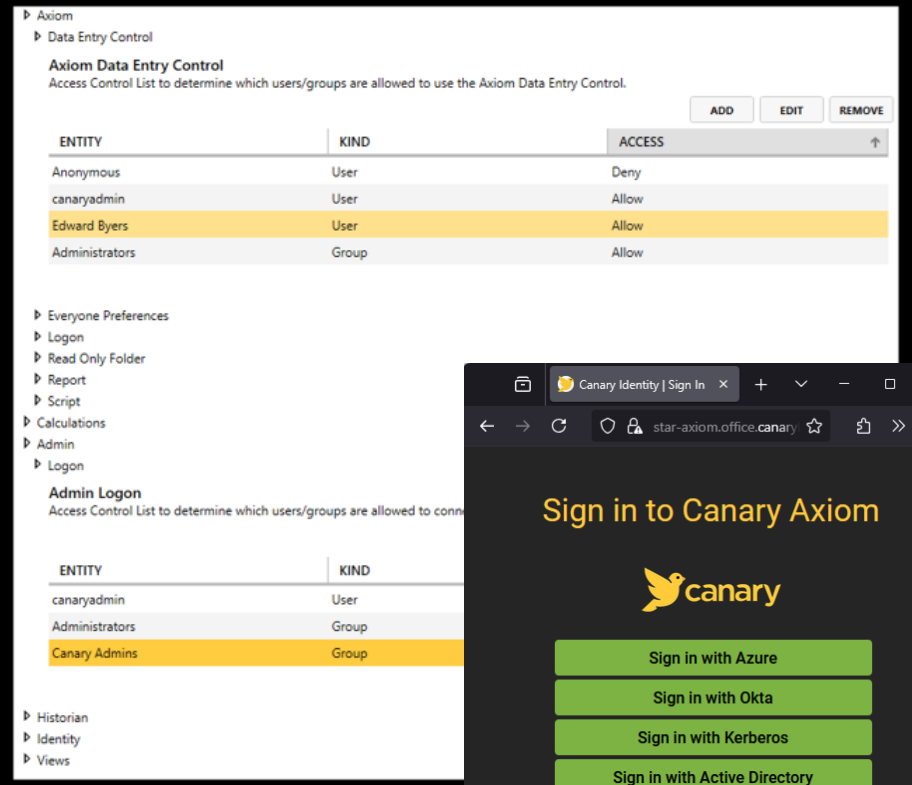
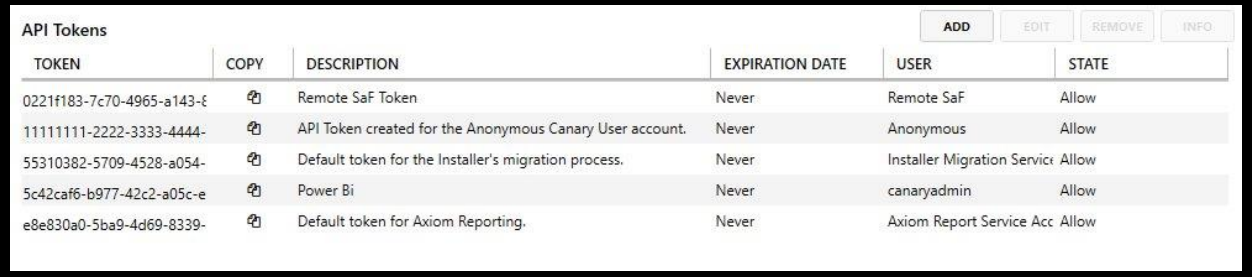
Version 24 – Enhanced Security

Support and enhance our customers security policies

Improve Security Through adoption of Best Practices

- Eliminate need to store user credentials
- Expanded API tokens
- Support Single Sign On (SSO) with organization defined login flow
- Eliminate Unencrypted Endpoints





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Version 24 – Identity Service

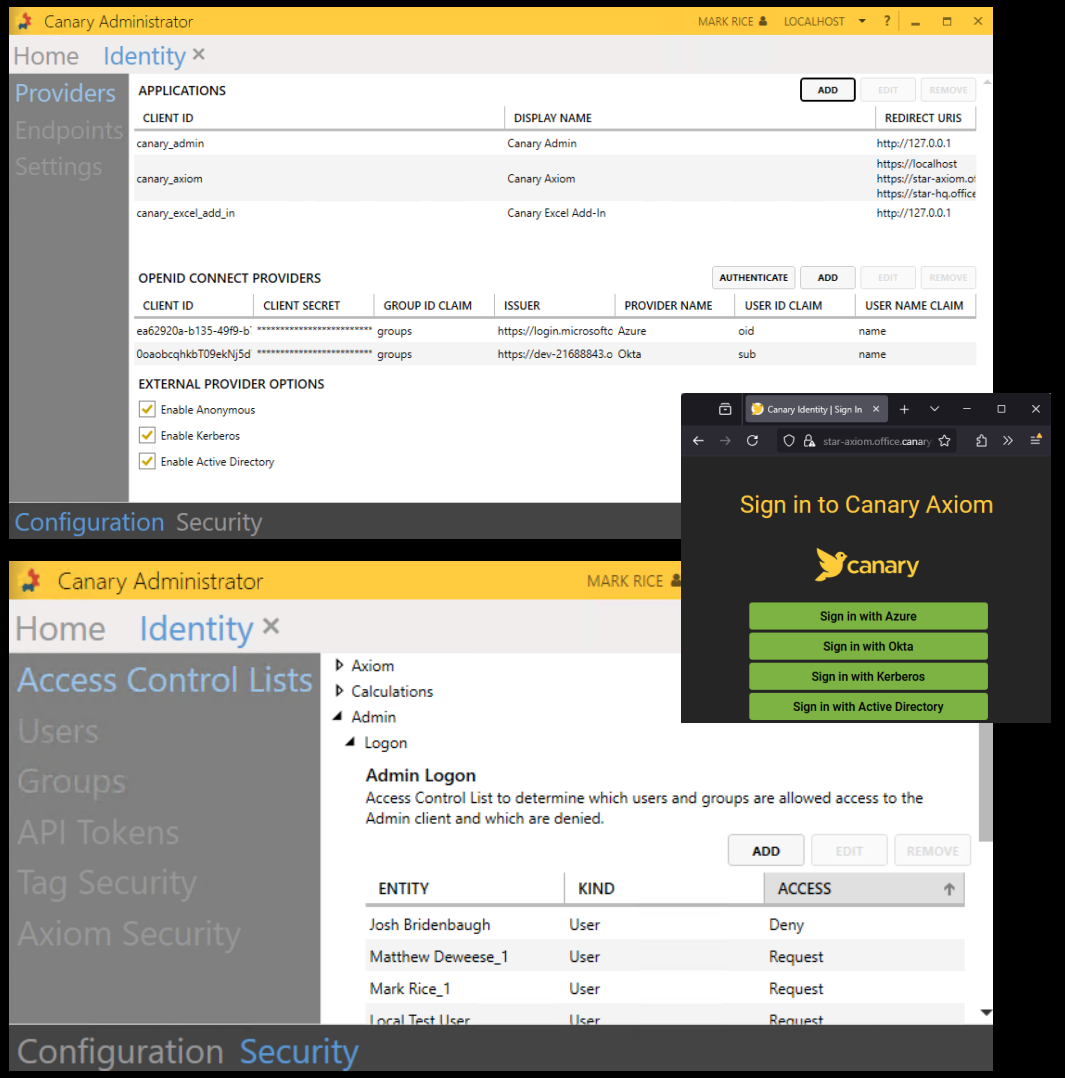
Manage the authentication flow and security for all Canary services and clients

Authentication flow

- Interface between customer configured OpenID Connect provider(s) and Canary software

Authorization security

- Provide authorization security for Canary software



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Version 24 – OpenID Connect / OAuth 2.0

Enhanced authentication flows utilizing standard Identity providers

Use existing authentication system

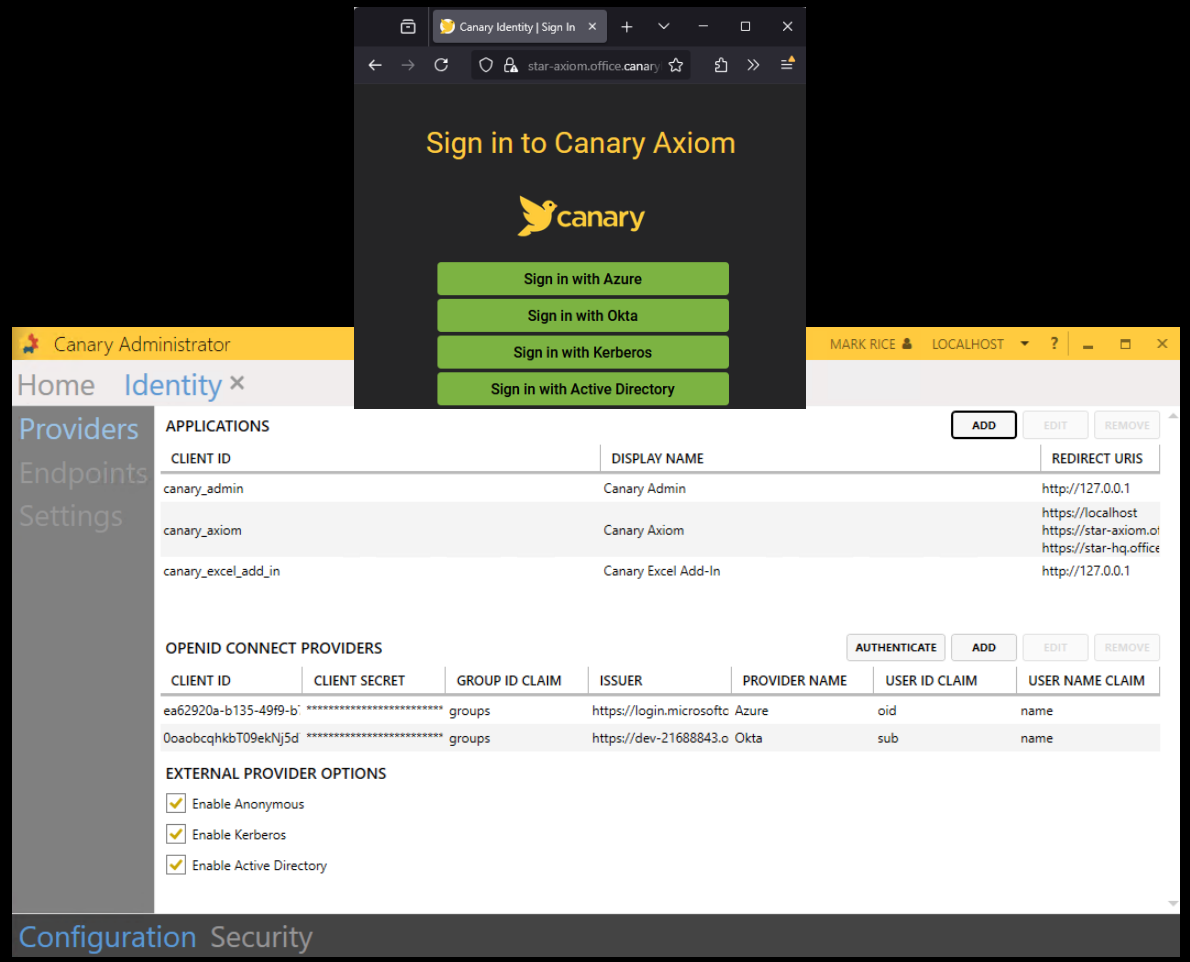
- Familiar authentication workflow
- Utilize existing IT users and groups

Single Sign On (SSO)

- Enables seamless login across multiple applications in the browser

Flexible Identity Provider support

- Support of any OpenID Connect provider such as Microsoft Entra ID and Okta
- Built-in support for Windows AD and Kerberos



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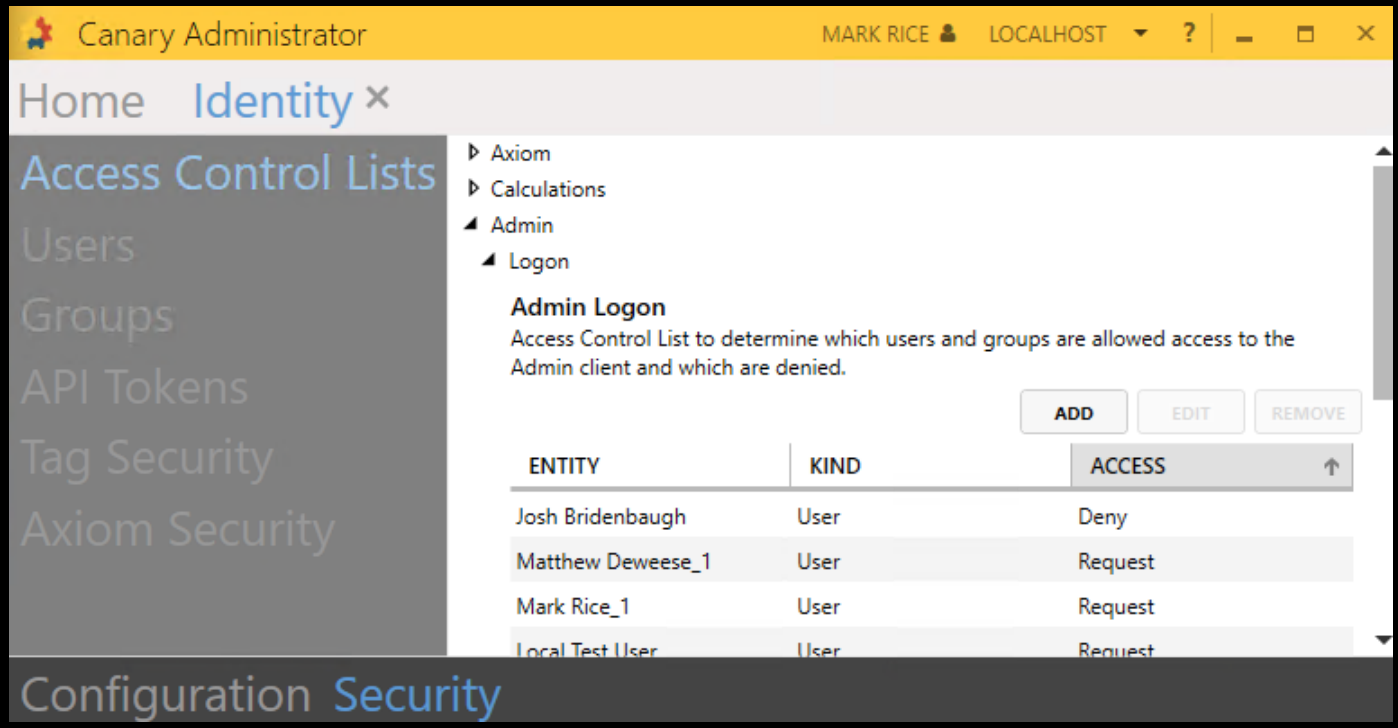
Version 24 – Centralized Identity Management

One place to manage all your Canary security across the network

- Configure Identity Providers
- Access Control Lists
- Map external Users and Groups to Canary Users and Groups
- API Tokens
  - Authentication mechanism in APIs
  - Tied to a specific user
  - Expiration date
- Tag Security



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Version 24 – Store and Forward (SaF)

The Canary Store & Forward (SaF) Service is a data reliability and redundancy feature to ensure no data is lost during transmission between systems, especially in environments with unreliable networks or intermittent connectivity

- **Data Buffering:** If the connection to the destination (is lost, the SaF service automatically buffers data to local disk. Once the connection is restored, it backfills the data to the destination without user intervention
- **Reduced Complexity:** **M**erged Sender/Receiver functionality into single service
- **Secure Transmission:** Data in transit is encrypted using TLS and gRPC for communications
- **Advanced Session Management:** Ability to pause and un-pause sessions and see session dependencies
- **Proxy Capable:** In environments with DMZs the SaF service has robust support to proxy/forward data to the next destination including advanced tag data routing capabilities
- **Integrated with Collectors:** Each Canary Collector pairs with a SaF service to forward data to its next destination
- **Write API Support:** The SaF service includes a Write API (gRPC and HTTPS) for custom data ingestion

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Version 25 – Calculations & Events

Calculations & Events gain significant enhancements

Steam Functions (V24)

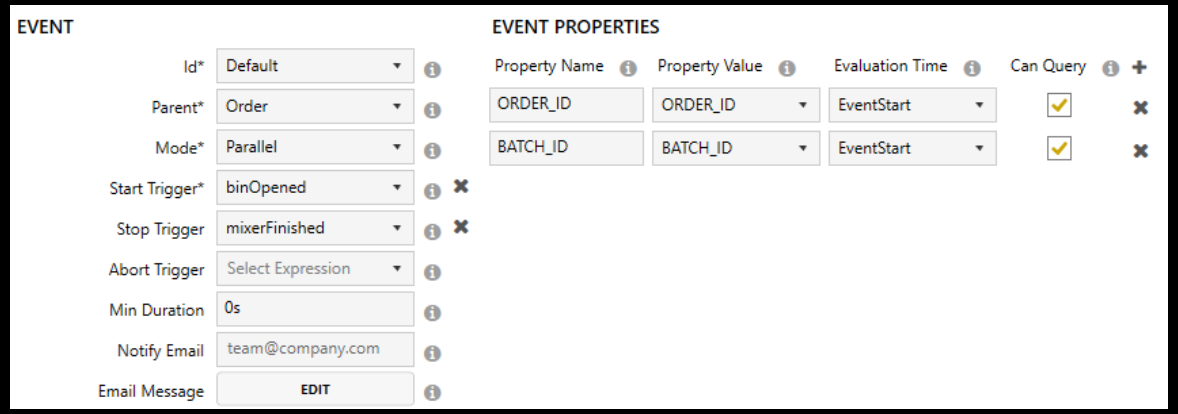
- Support the calculation of thermodynamic properties of steam (like enthalpy, entropy, and specific volume) under various conditions, and to calculate energy transfer rates and heat transfer coefficients in systems using steam.

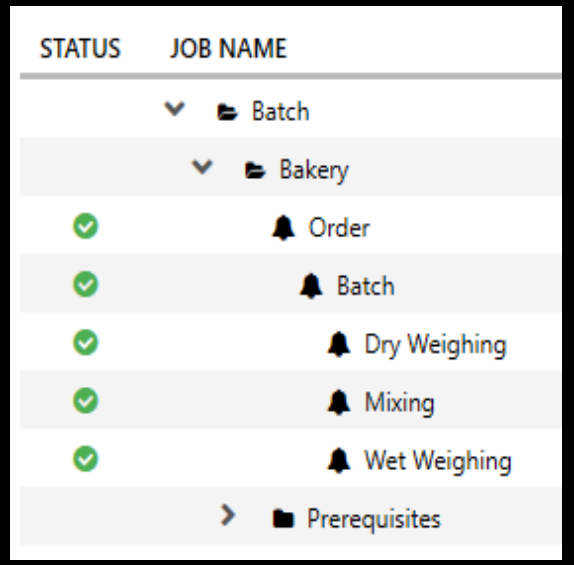
Advanced Event Capabilities

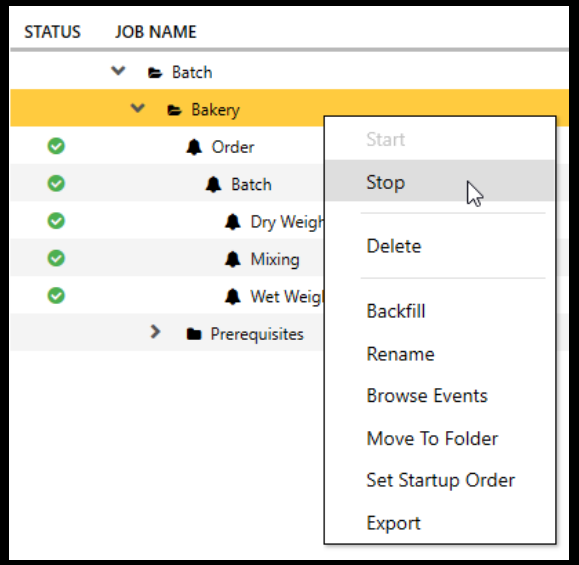
- Support for multi-level events (aka Batch events)
- Parent/Child relationships
- Parallel event processing

Improved UI workflow

- Calculation Folders
- Startup ordering







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Version 25 – Axiom

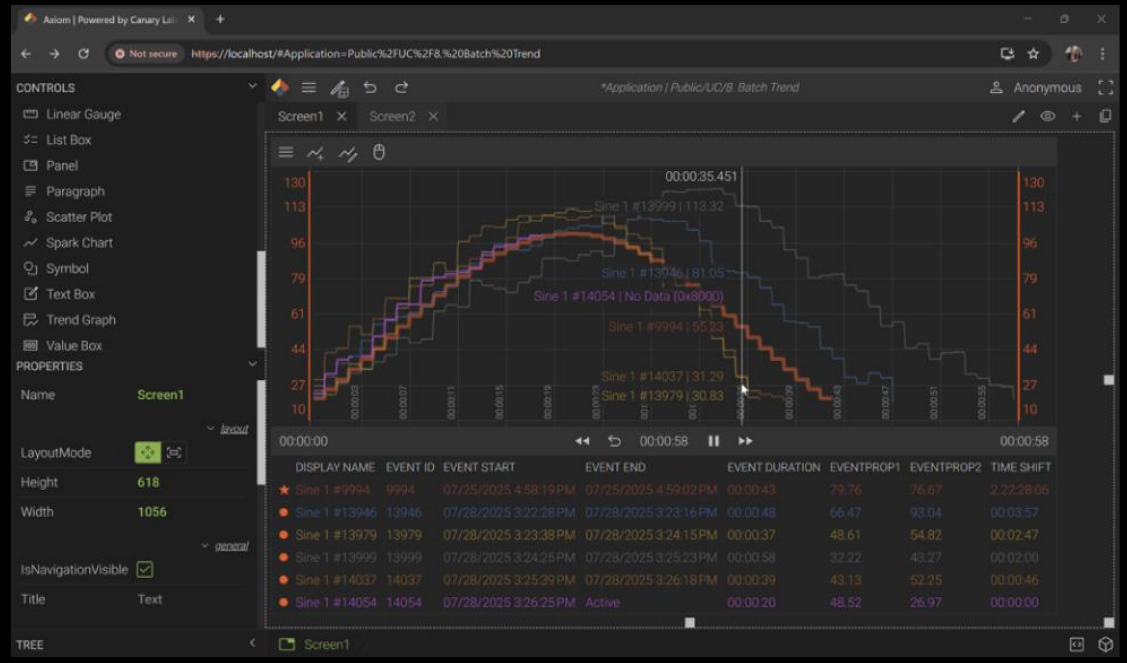
Batch oriented event visualization

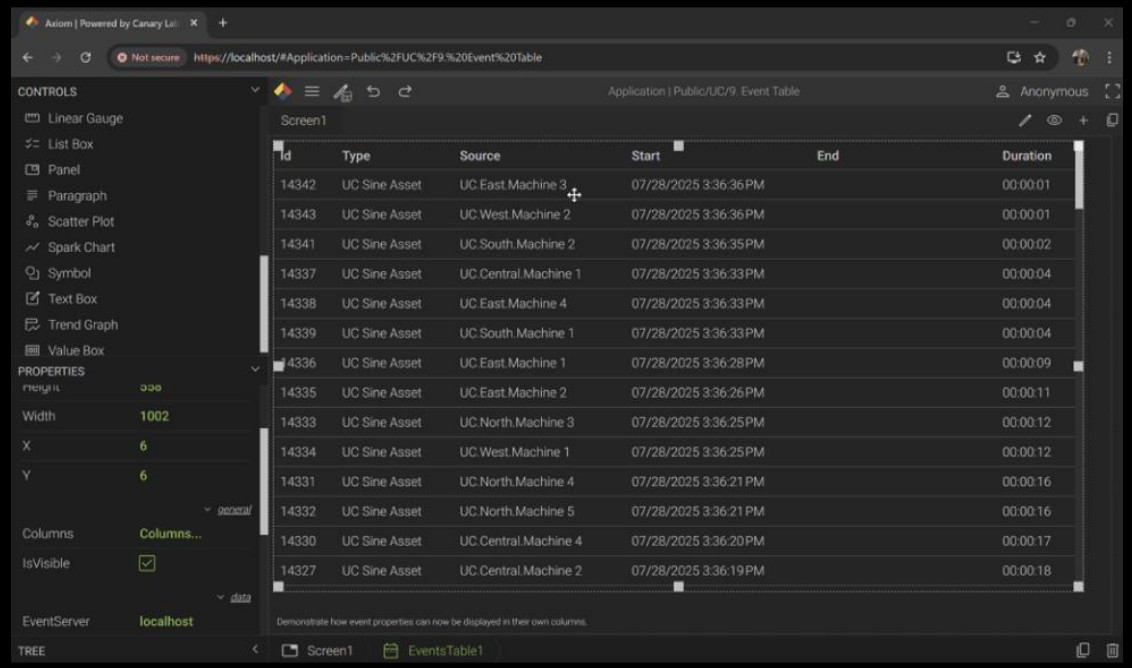
New event features

- TrendGraph event mode
- EventTable control enhancements
- Event filtering

Application and Chart security

- Using Identity, set permissions for users or groups to have read/write, read, or no permissions on specific Applications, Charts, or Folders.

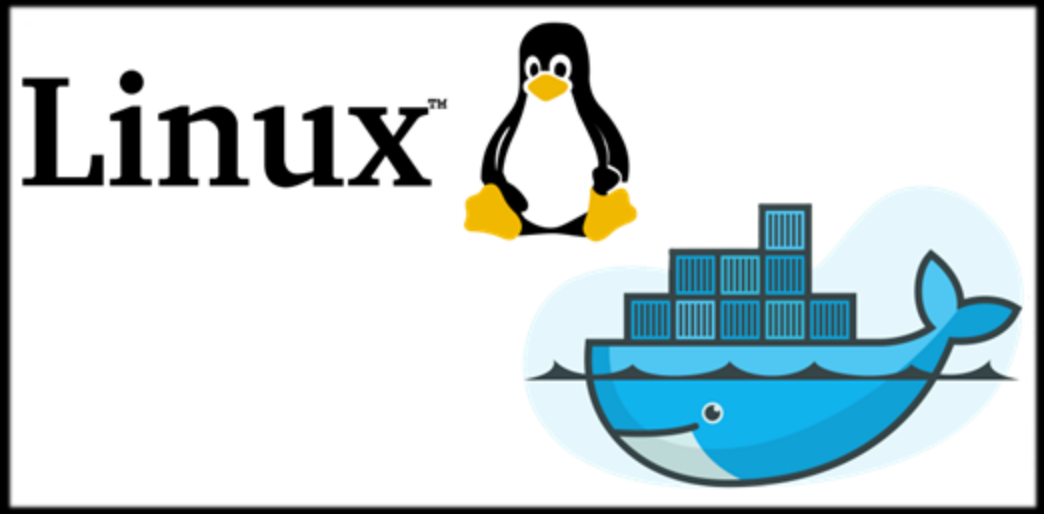




Beyond Version 25 – Phased Linux support

Collector support for Linux utilizing containers

- **MQTT and OPC UA Collectors**
  - Store & Forward service
  - Administrator and Identity services as needed
- **Distributed via containers**
- **Alpha version of MQTT collector running in test environment**
  - Beta testers?



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Beyond Version 25

Continued investment in modernizing code base

- Enhanced performance
- Scalability
- Robustness
- New features

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Thankyou

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Questions

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