



System Platform 2023

What's New

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AUGUST 2022

InTouch 2023

AVEVA

InTouch 2023

What's new

- 01 Application manager modern UI/UX
- 02 WindowMaker modern UI/UX
- 03 Unlimited InTouch tags
- 04 Longer InTouch tag and item name
- 05 Supertags workflow improvement
- 06 Map widget
- 07 InTouch Web enhancements
- 08 EAC runtime language switching of alarm group name
- 09 Secure SuiteLink and unsecure fallback support
- 10 Update InTouch demo application

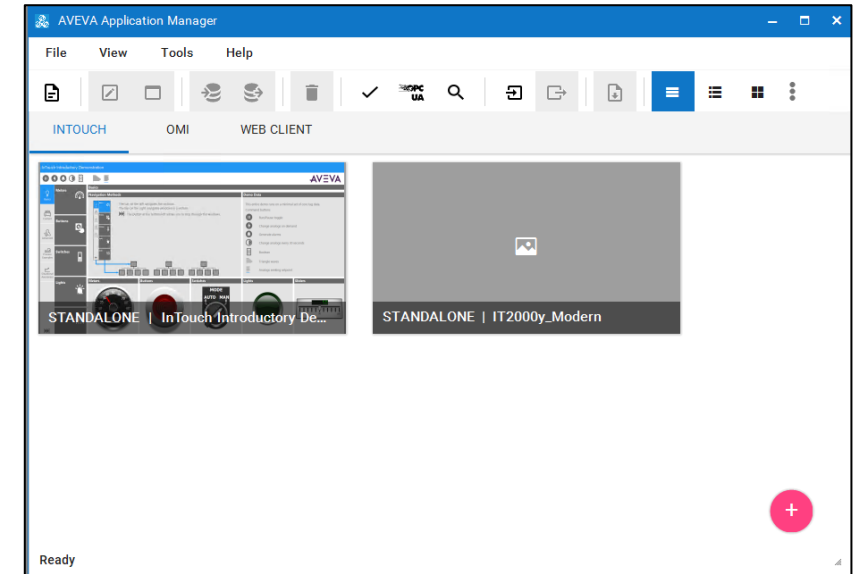
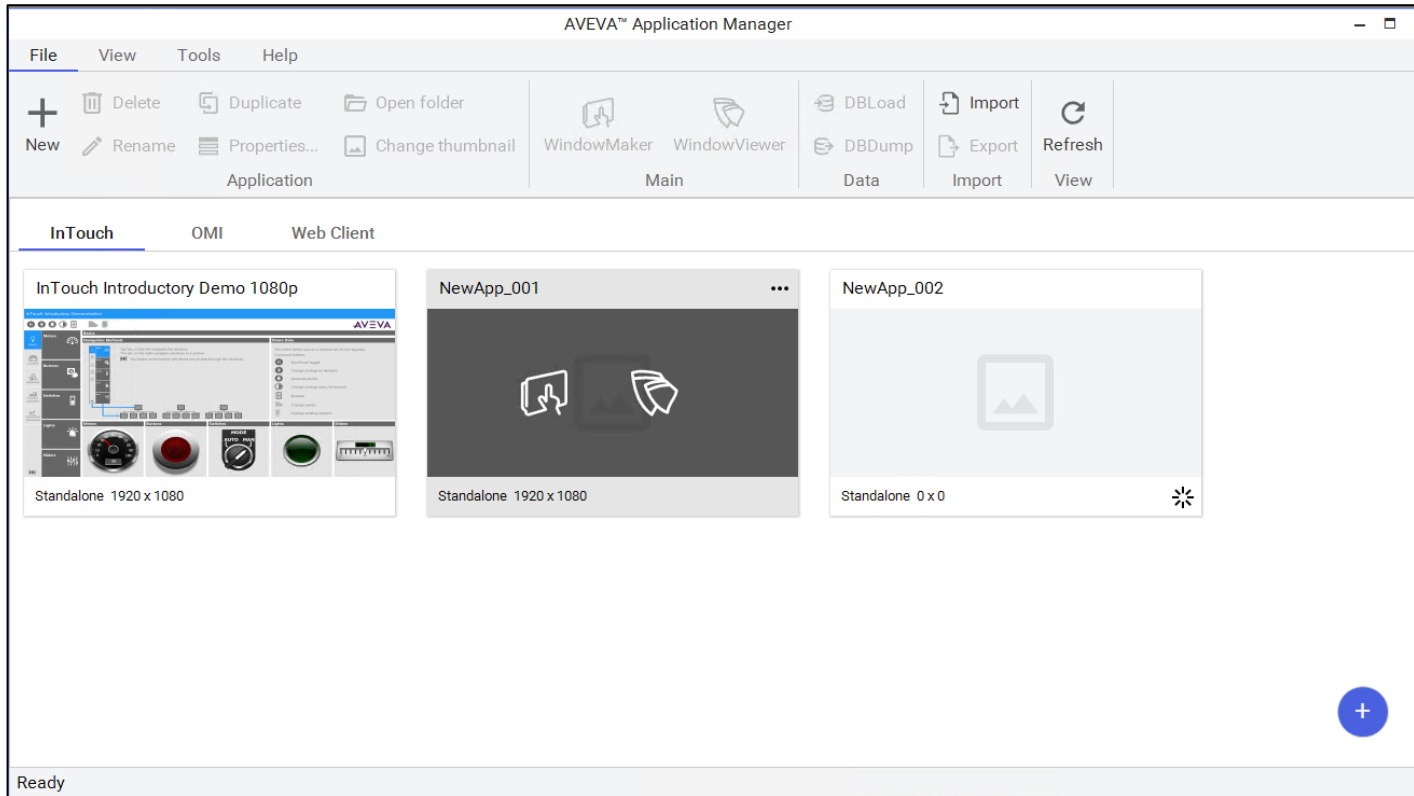
Intouch 2023: Intouch features

InTouch features

- Application Manager modern UI/UX improvement
- WindowMaker modern UI/UX
- Unlimited InTouch tags
- Longer InTouch tag and item name
- Supertags workflow improvement
- Map widget
- InTouch Web enhancements
- Script editor enhancements
- EAC runtime language switching of the alarm group name
- Secure SuiteLink and insecure fallback support
- Update InTouch demo application



Application manager modern UI/UX



Application Manager
Desktop app

SP 2023



InTouch HMI Application Manager
Desktop app

SP 2020R2SP1

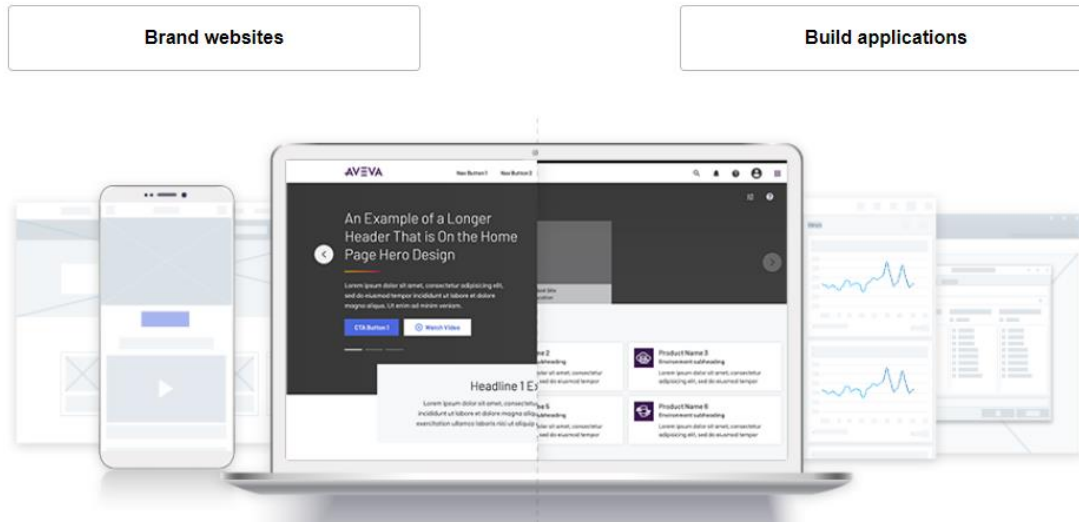
AVEVA Design System

Consistent end-to-end user experience

AVEVA

Design, Brand, Build

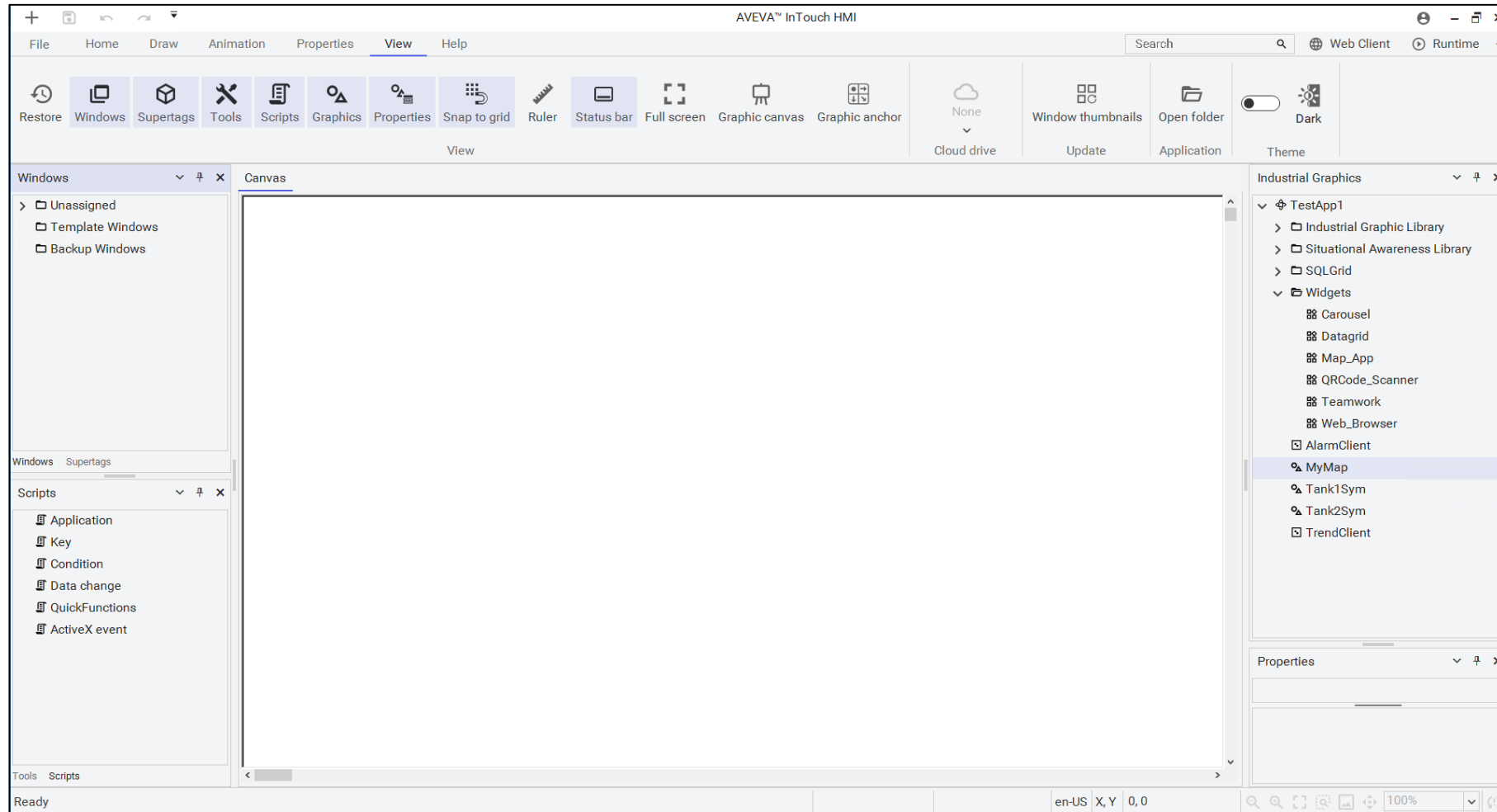
Creating a consistent end-to-end user experience across AVEVA's digital space



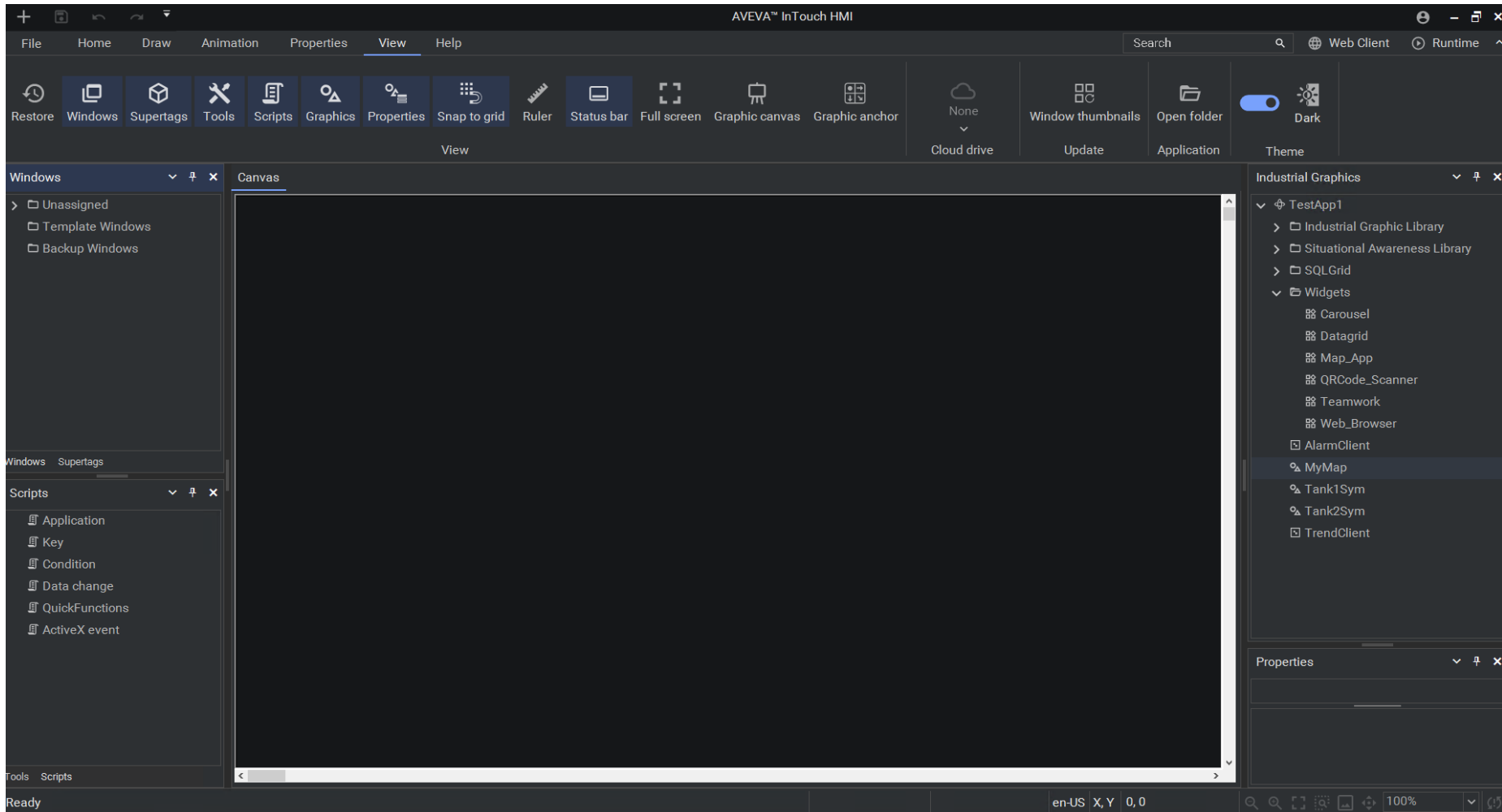
BRAND WEBSITES

BUILD APPLICATIONS

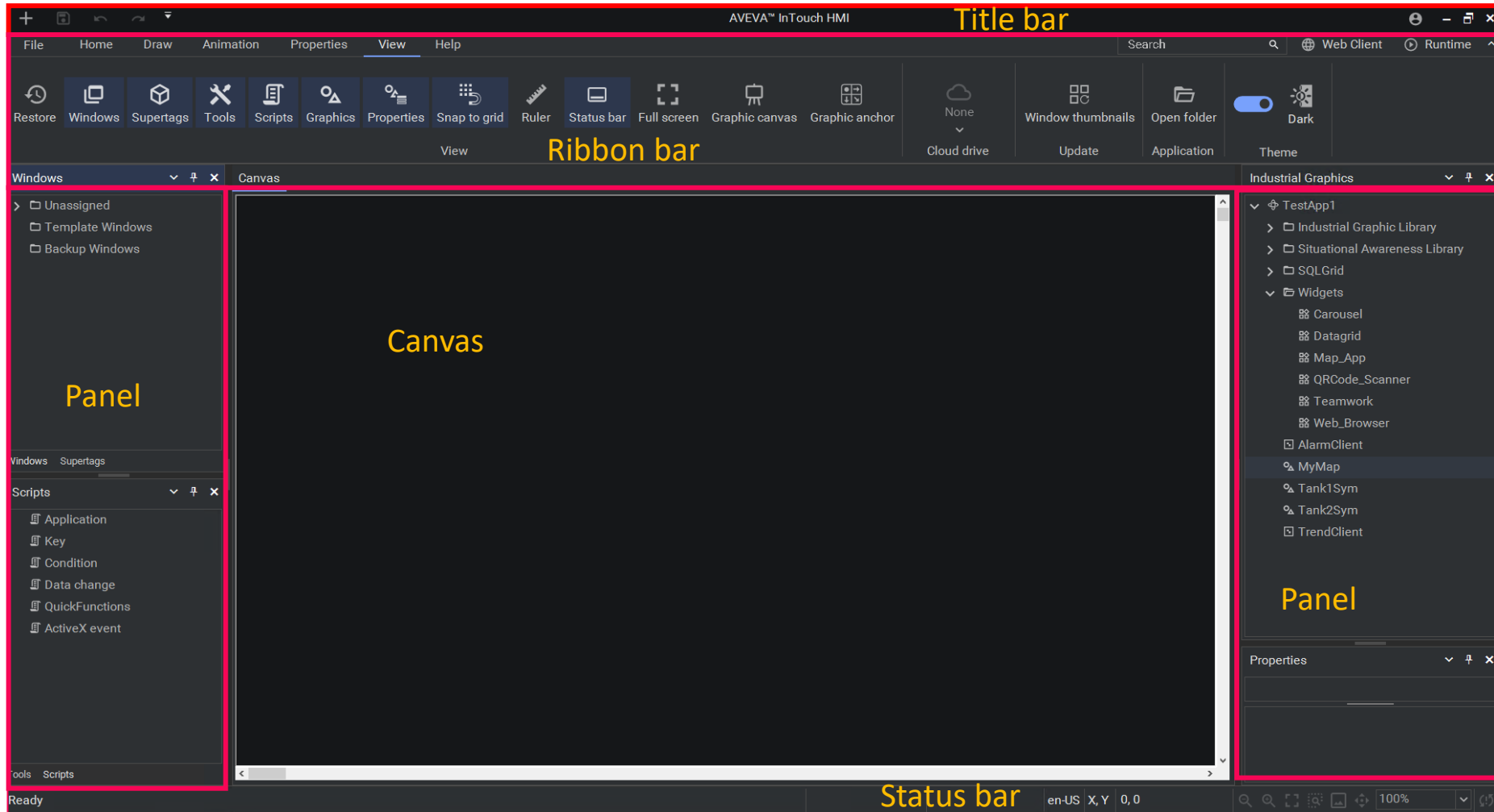
Windowmaker modern UI/UX



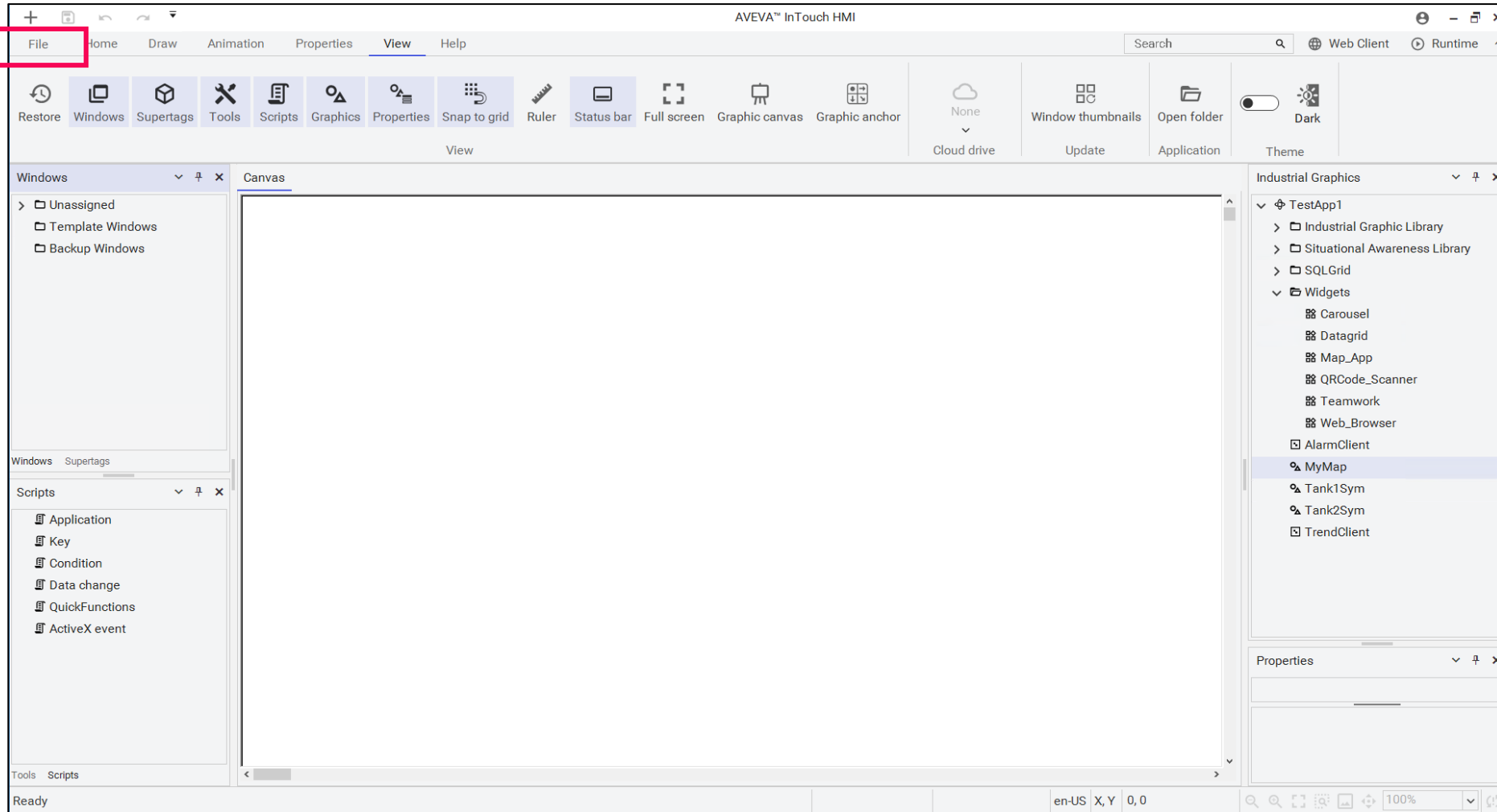
Windowmaker modern UI/UX: dark mode



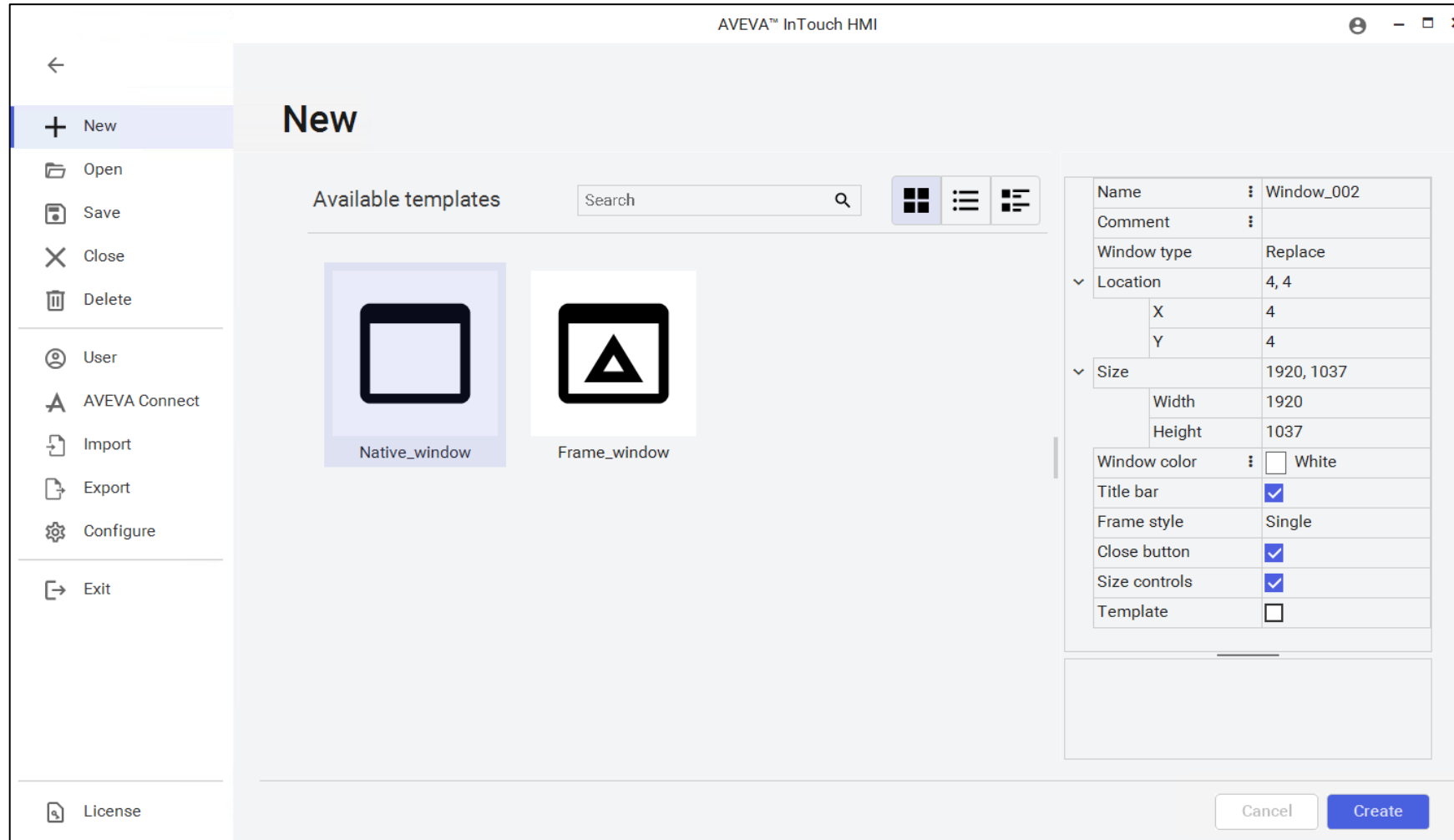
Windowmaker modern UI/UX: dark mode



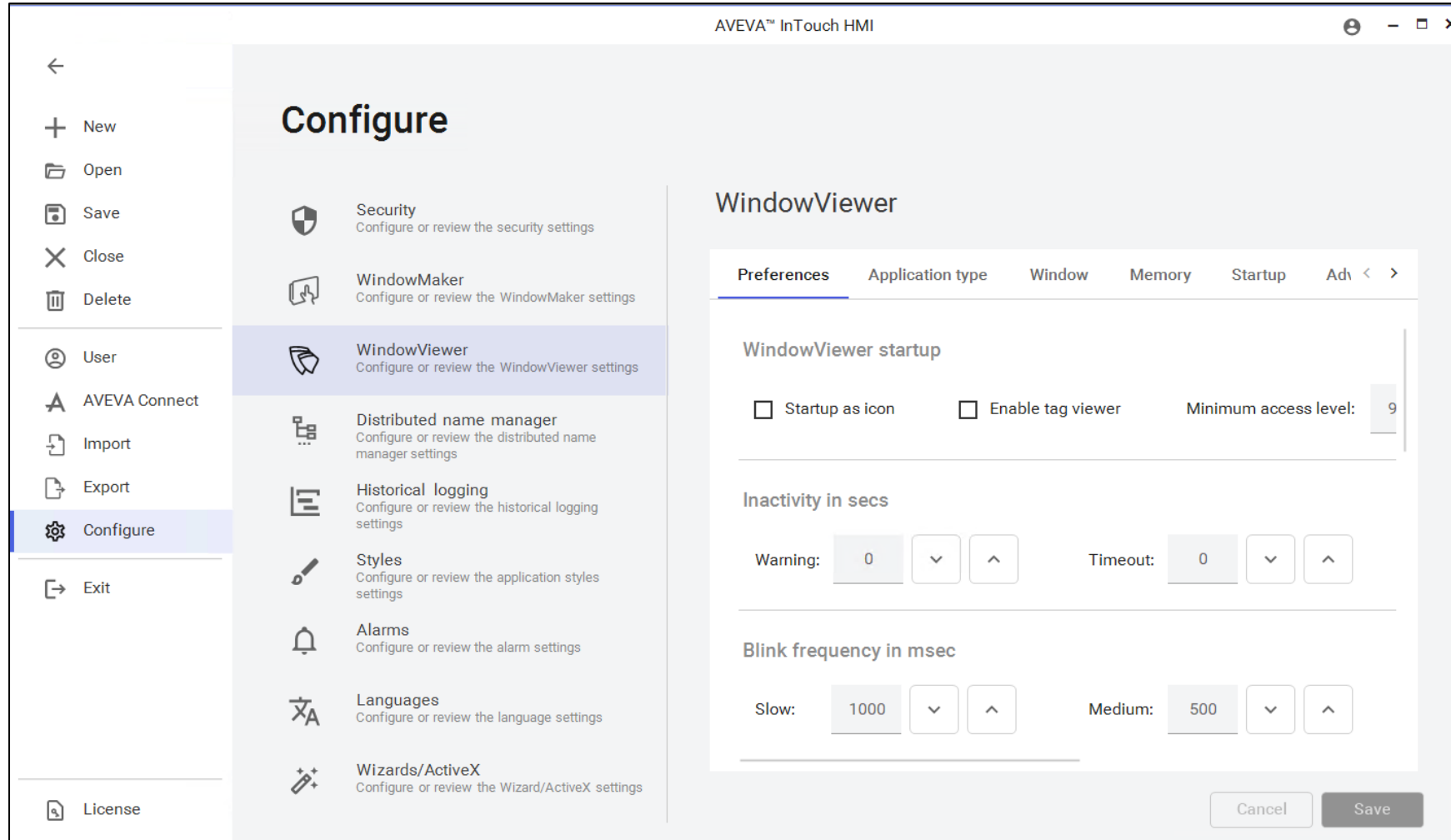
Windowmaker modern UI/UX: light mode



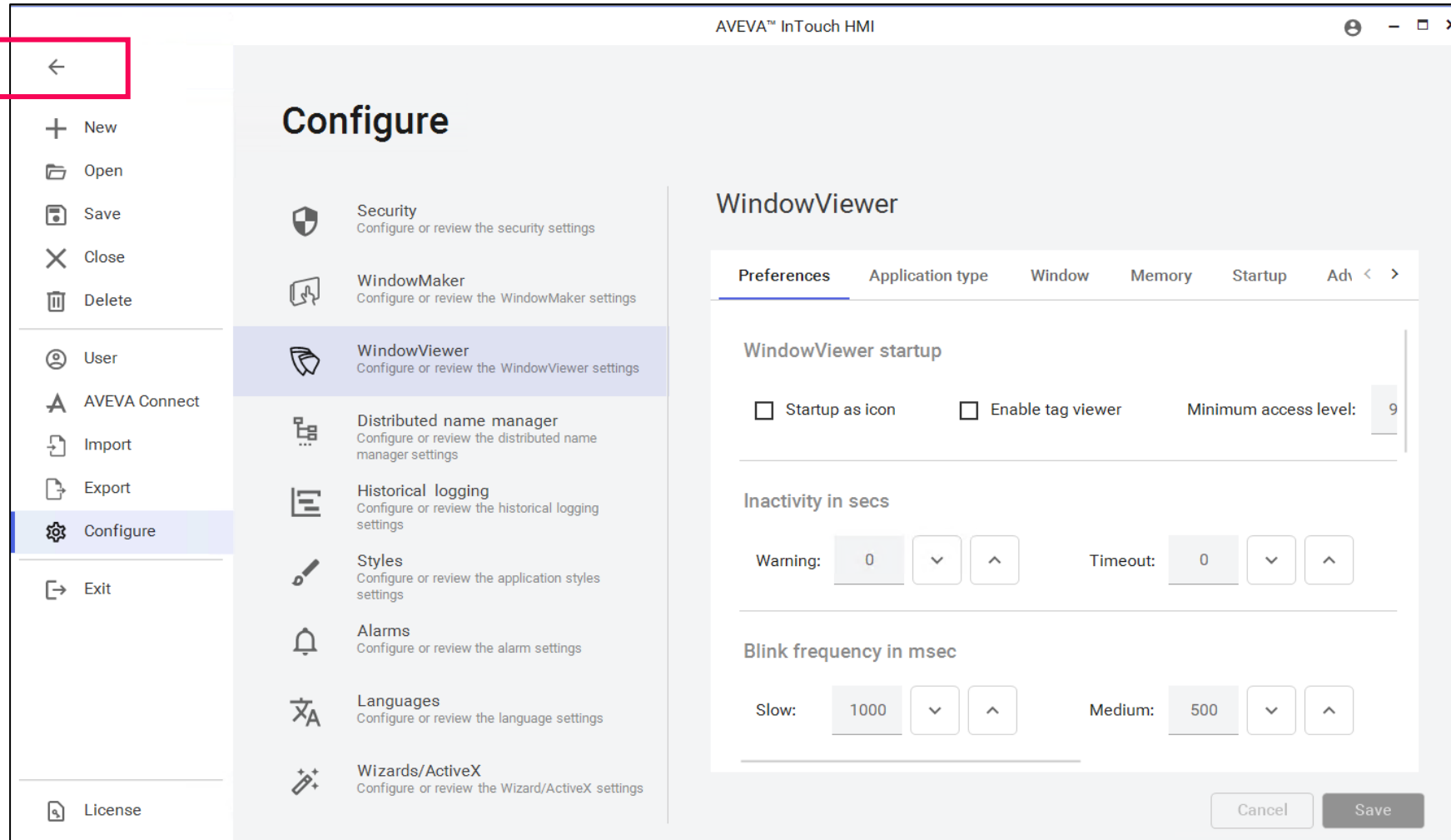
Windowmaker modern UI/UX: backstage



Windowmaker modern UI/UX: backstage -> configure



Windowmaker modern UI/UX: exit backstage



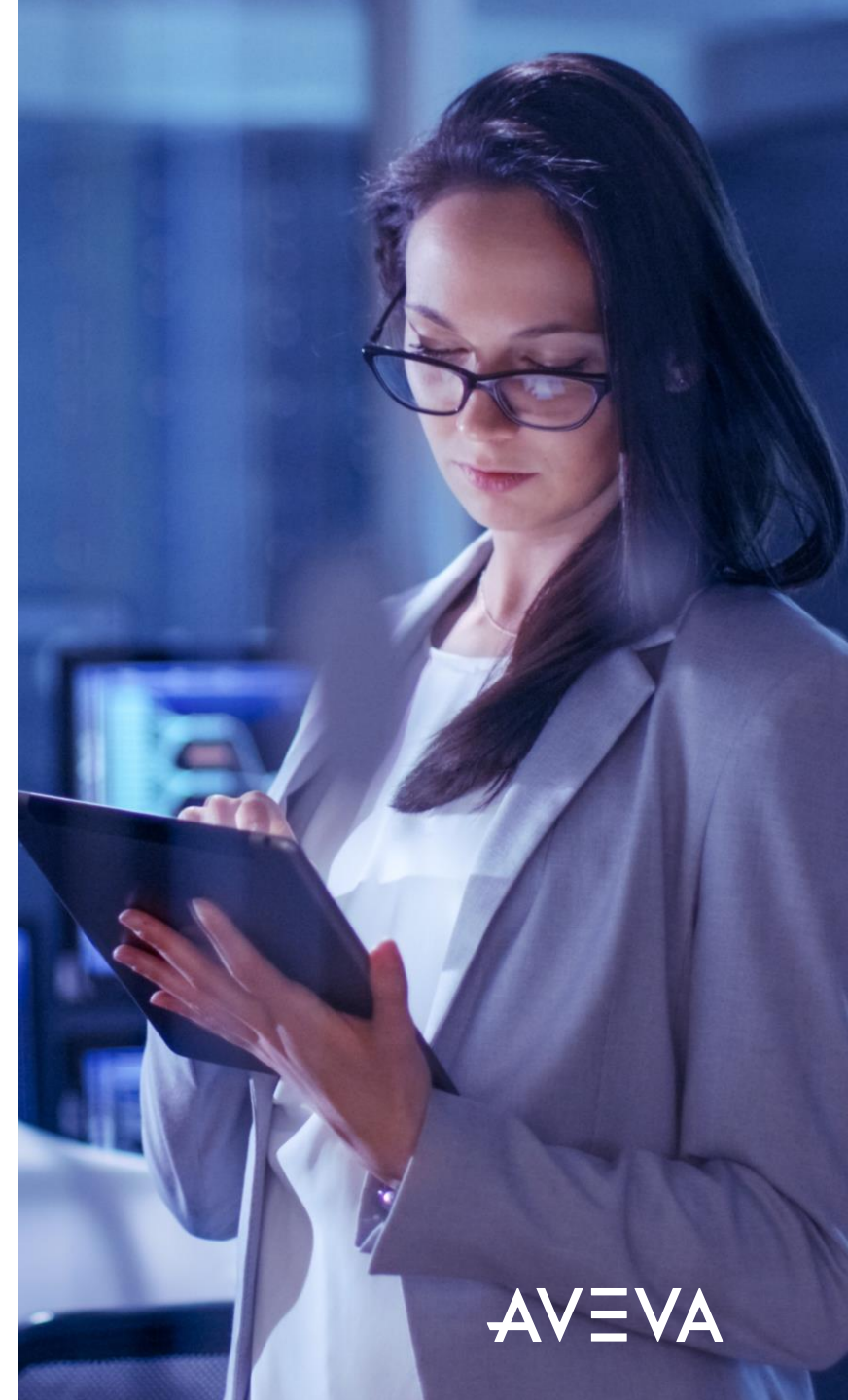
Unlimited InTouch tags

Unlimited InTouch tags

- 100K -> 300K -> Unlimited
- Tested up to 300K tags ONLY
- New “unlimited” licenses (internal max limit is 900,000)

Longer InTouch tag, description, and item name

- Extend tag name length from 32 to 128 characters
- Extend tag description to from 50 to 160 characters
- Extend item name length from 79 to 254 characters



What's New in Communication Drivers 2023

Communication Drivers 2023

- **MQTT Sparkplug Publisher**
Already a consumer of Sparkplug data since previous versions, System Platform is now extended with a Publisher of Sparkplug data via MQTT with a clear aim towards Enterprise system and cloud services. The new Publisher is easily configured and require no engineering changes to the underlying application
- **MQTT Publisher import/export**
The ability to export and import Publisher configuration to and from files, enables engineers to ingest bulk-generated configuration sets as well as to backup and restore the Publisher configuration
- **OPC UA Reverse Connect**
Enhancements to OI Gateway strengthens the security posture by implementation of new security policies as well as Reverse Connect which enables communication with servers behind strict firewalls and server-side whitelisting of client connections
- **Deprecation of Device Integration (DI) objects**
With the 2023 release, AVEVA System Platform provides a migration path from legacy DI objects to the latest OI Server technology with minimal reconfiguration and no refactoring if IO references

AVEVA Historian 2023 – what's new

Create more meaningful metrics using ad hoc expressions

- Rich function library
- Interactive editor in Historian Client web
- Use directly in SQL, REST and SDK interfaces

Improved share data with other systems

- Replication to AVEVA PI System & AVEVA Data Hub
- Simple, faster backfill

Modernized user interfaces

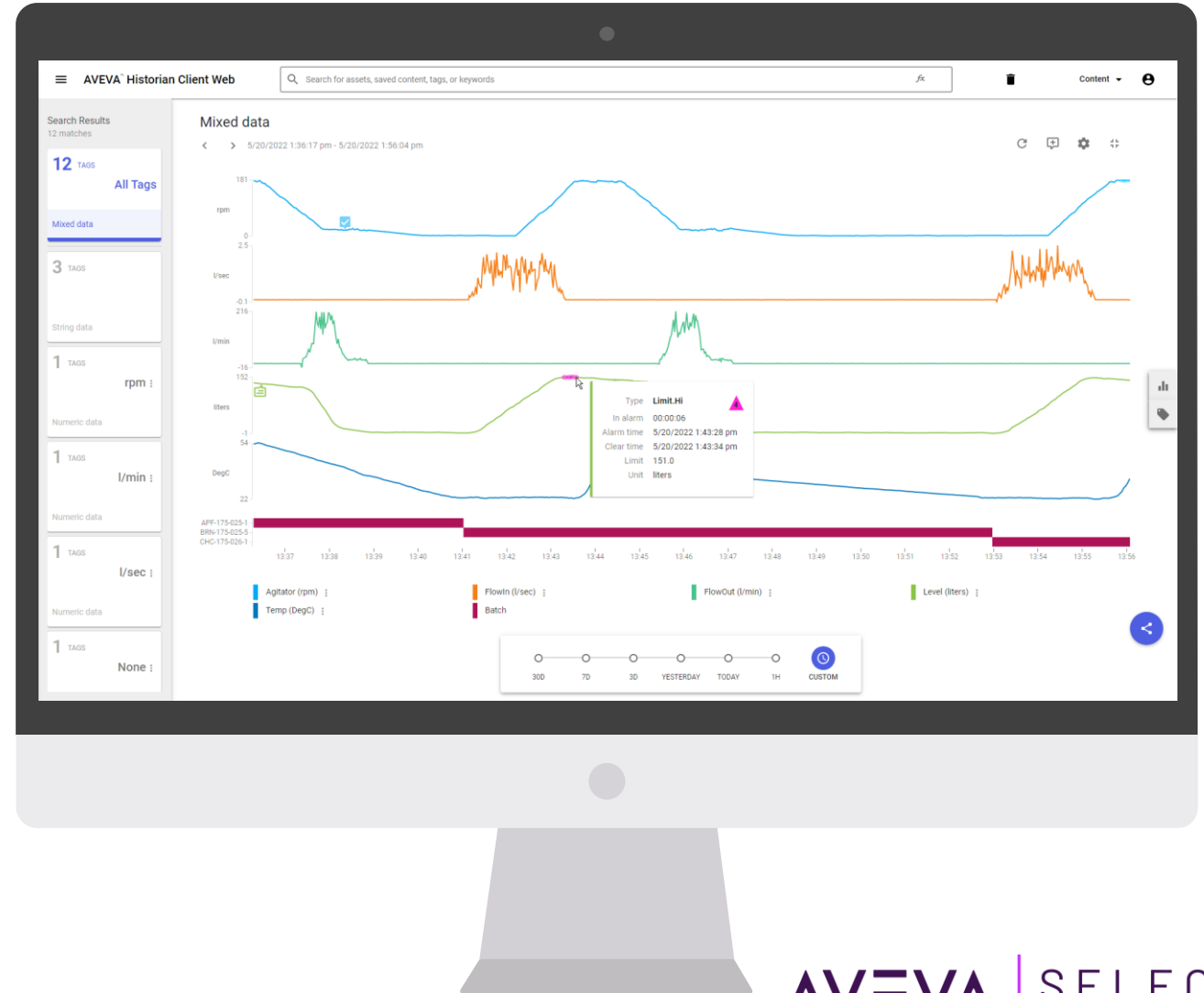
- Ribbon in Historian Client desktop
- New modern look in Historian Client web
- New icons in Operations Control Management Console

Improved Excel Task Pane add-in

- Access detailed data (full, delta)
- Streamlined workflows

Security Hardening

- Simple HTTPS option for Historian Client web
- Insecure communications disabled by default
- Remote data collection hardening (Remote IDAS)



AVEVA Historian 2023 what's new

UI/UX

Replication

Expressions

Excel add-in

Miscellaneous

Secure communications

Icon refresh

The screenshot shows the ArchestrA System Management Console (SVR19) interface. On the left is a tree view with the following structure:

- Historian
 - Historian Group
 - SVR19
 - Management Console
 - Status (highlighted)
 - Data Acquisition
 - Replication
 - Clients
 - History Blocks
 - Configuration Editor
 - System Configuration
 - Parameters
 - Data Acquisition
 - Storage
 - Tag Configuration
 - Replication
 - Replication Schedules
 - Replication Servers
 - Public Groups
 - Private Groups
- Galaxy Database Manager
- Operations Integration Server Manager
- Log Viewer

On the right is a table with the following data:

Item	Value	Module	Status
System time	3/7/2022 1:21:36 PM	✓ Storage	Started
Time of last start	3/4/2022 6:18:35 AM	✓ Classic data redirector	Started
Elapsed time since last start	3 dys 7 hrs 3 mins	✓ Data import	Started
Time of last stop	3/4/2022 6:18:20 AM	✓ Replication	Started
Time of last reconfiguration	3/4/2022 6:18:20 AM	✓ Classic event system	Started
Configuration status	Normal	✓ Retrieval	Started
System status	Running	✓ Indexing	Started
License status	Valid	✓ OLE-DB provider	Started
Licensed tag count	2,000,000	✓ Historian I/O server	Started
Allocated tag count license	200	✓ Client access point	Started
Total tags defined	390	✓ Metadata server	Started
Tags requiring a license	194	✓ Event storage	Started
Total tag count available	1,999,806	✓ System driver	Started
Total number of data values received	142,354,722	✓ Data acquisition on \\svr19	Started
Overall data rate (per sec.)	39.59		
Fatal errors	0		
Critical errors	0		
Errors	0		
Warnings	1,753		
Time of last error reset	3/4/2022 6:18:20 AM		
Space available on circular path	32.9 GB		
Space available on alternative path	Undefined or invalid path		
Space available on buffer path	32.9 GB		
Space available on permanent path	32.9 GB		
System version	23,0,000,000		

Previous Windows XP-style icons introduced in InSQL 9.0 in 2005

Historian client look & feel

Applications use “ribbon bar”

The screenshot displays the AVEVA Historian Trend interface. At the top, there is a ribbon bar with tabs for File, Home, Query, and Help. Below the ribbon bar, there is a toolbar with various icons for navigation and data manipulation. The main area shows a trend chart with multiple data series plotted over time. A 'Tag Picker' is visible on the left side, listing various tags and their descriptions. Below the chart, there is a table with columns for Tag Name, Description, Number, Server, Display Units, Original Units, Color, Minimum, Maximum, IO Address, Time Offset, Source Tag, Source Server, Value at X1, and Value at X2.

Tag Name	Description	Number	Server	Display Units	Original Units	Color	Minimum	Maximum	IO Address	Time Offset	Source Tag	Source Server	Value at X1	Value at X2
M21.Agitator	Agitator speed in mixer M21	3	LOCALH...	rpm	rpm	Green	0.00	190.00	\\SVR19\hSQL_MDA...	0:00:00.000			103.25	0.95
M21.Level	Level in mixer M21	4	LOCALH...	liters	liters	Blue	-10.00	160.00	\\SVR19\hSQL_MDA...	0:00:00.000			145.71	32.02
M21.Temp	Temperature in mixer M21	5	LOCALH...	DegC	DegC	Red	20.00	60.00	\\SVR19\hSQL_MDA...	0:00:00.000			22.78	23.56
M21.FlowOut	Flow rate out of mixer M21	6	LOCALH...	l/min	l/min	Yellow	-10.00	230.00	\\SVR19\hSQL_MDA...	0:00:00.000			0.78	0.70

Controls use new icons in “toolbar”

Historian client web: classic & modern

The image displays the AVEVA Historian Client Web interface, which is split into two views: 'Classic Look' and 'Modern Look'. The 'Modern Look' view on the left features a sidebar with navigation options: Home, Manage Content, Alarms, and Modern Look (highlighted with a hand cursor). The 'Classic Look' view on the right features a navigation menu with options: Home, Content (highlighted with a right arrow), Alarms, Dashboards, and Classic Look (highlighted with a hand cursor). The main content area shows a 'Mixer' dashboard with a time-series chart for 'Agitator (rpm)' from 12:11 to 12:28. The chart shows a blue line for rpm, a green line for temperature, and a red line for another variable. The interface includes a search bar, a 'Cursor' button, a 'Data' button, a 'Settings' button, and a 'Save' button. The bottom of the screen shows a Windows taskbar with the time 12:50 PM on 3/4/2022.

AVEVA Historian 2023 - what's new

UI/UX

Replication

Expressions

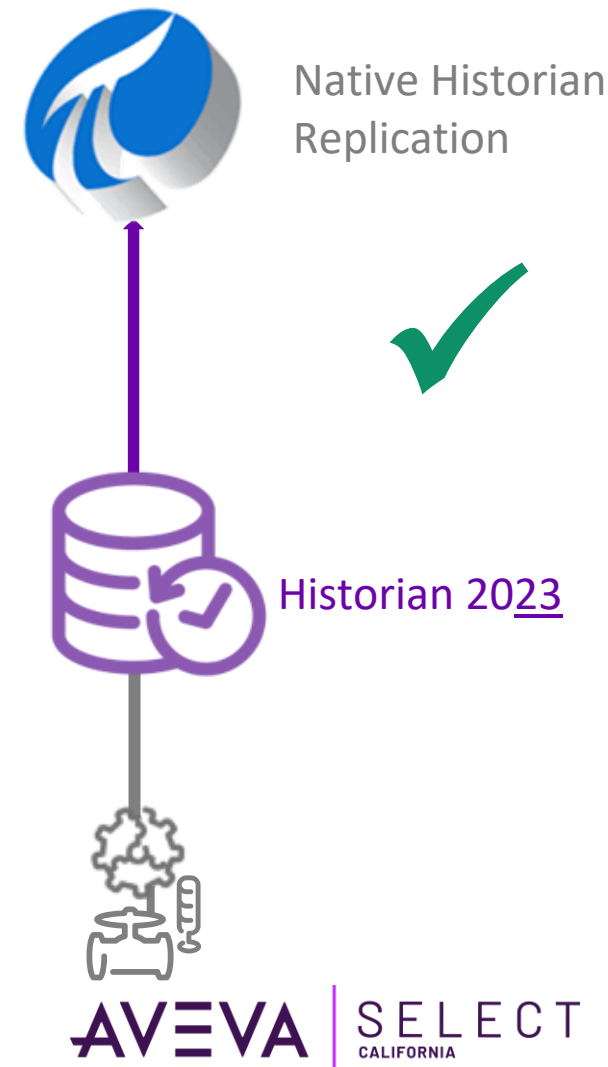
Excel add-in

Miscellaneous

Secure communications

Integrating With AVEVA PI System

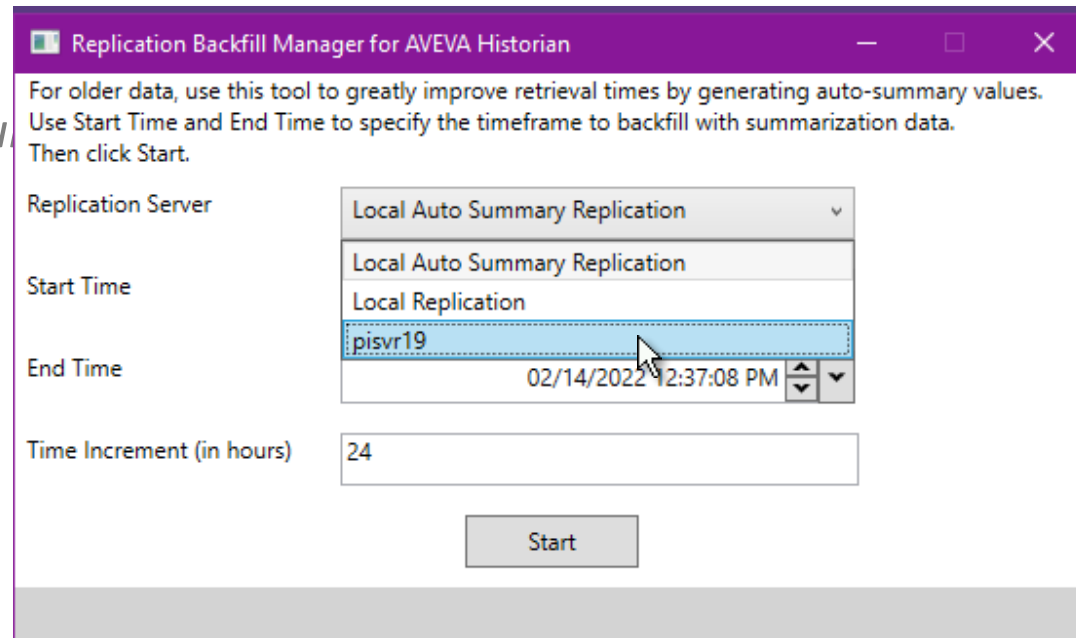
- Will Include
 - “Simple” replications (every value)
 - Tag meta data
 - Asset Framework model from “Model View” (Location)
 - “Original” data
- Will Not Support
 - “Summary” replication
 - Alarm history
 - “Versioned” data (CSV/SQL/SDK updates)
- Based on OMF/Adapter Framework
- Also works with Data Hub (OCS)



Replication Timeline



- **2017:** No backfill *also applies to "auto-sum"*
- **2017 U1:** Backfill for Auto-summary
- **2023:**
 - Generalized Backfill
 - Up to 10x faster

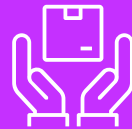


Specific use cases targeted



Simple engineering

- Pump Efficiency
- Find process lag based on flow rate
- Compensate for a process lag



Exception handling

- Substitute bad/stale values
- Find last good value



Logical expressions

- Simple comparisons
- Time “true”
- “True” for min/max time

Ad hoc expressions*

Arithmetic

+
-
/
*
^
%

Units

UOM
CASTUOM

Scalar

SIGN
ABS
SQRT
LOG
ROUND
TRUNCATE

AND
OR
NOT

IF
IFBAD

Statistics

AVERAGE
AVERAGES
TOTAL
TOTALS
MIN
MAX

Time weighted

Simple statistical

```
graph LR; TW[Time weighted] --> AVERAGE; TW --> AVERAGES; SS[Simple statistical] --> TOTALS;
```

Time Series

TIMESHIFT
DURATION
PREV
PREVGGOOD

Documentation

HistorianRetrieval.pdf, page 131

Unit Conversion

What is the value range of the results of this expression?

`SysTimeSec` + `SysTimeMin`
0-59 seconds 0-59 minutes

- ✗ ~~a. 0 - 118~~
 - ✓ b. 0 - 3599 seconds
- ?

Unit conversion

Might be confusing, but consider this:

FI101.PV + FI202.PV
0-35.0 0-0.58
liters/minute liters/second

Result will be in units of first tag:

0-70.0 liters/minute

Alternative puts burden on user to convert:

~~FI101.PV + FI202.PV/60.0~~ ❌

FI101.PV + FI202.PV * 60.0 ✅

Application Server 2023

Application Server - what's new

- New look for Application Server
- User authentication and single sign-on via Azure Active Directory
- Integrated web help system
- Object wizard performance
- Deprecated DI objects
- Enhanced management of cloud graphics
- Enhanced Galaxy Load/Dump
- New BigString data type
- Alarm count inclusion/exclusion
- AVEVA Flex subscription enhancements
- Cybersecurity enhancements

Application Server - what's new

New look for Application Server

- IDE UI is modernized as per the new ADS UI guidelines. We have used 'Telerik framework for WinForms' for development.

What is covered

- Ribbon bar
- Landing page and Backstage
- IDE views
- Dialogs
- Message boxes

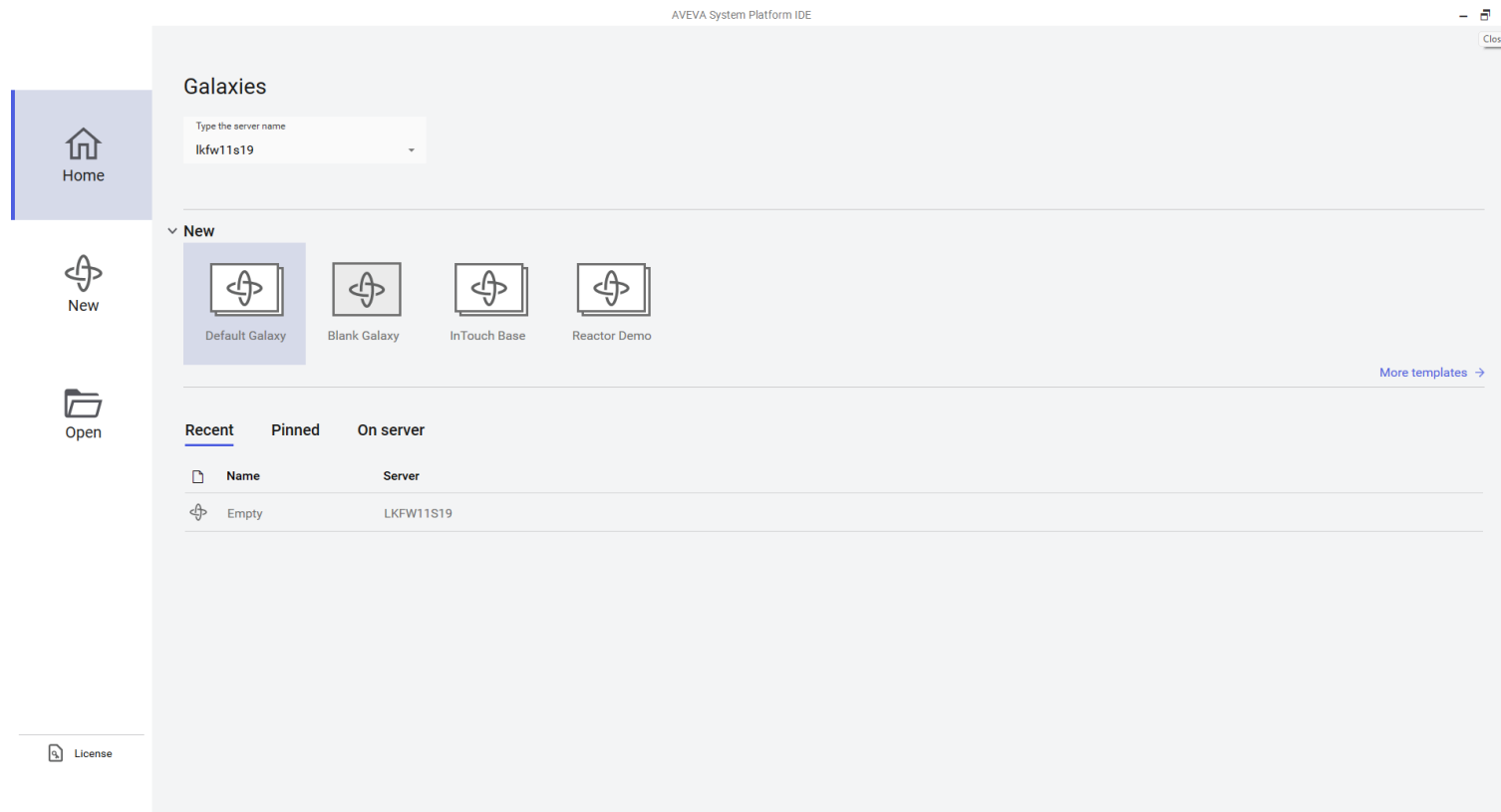
What is not covered

- Object editors (Only font and color changes to align with the new UI).
- Galaxy browser
- Graphic editor

Application Server - what's new

New look for Application Server

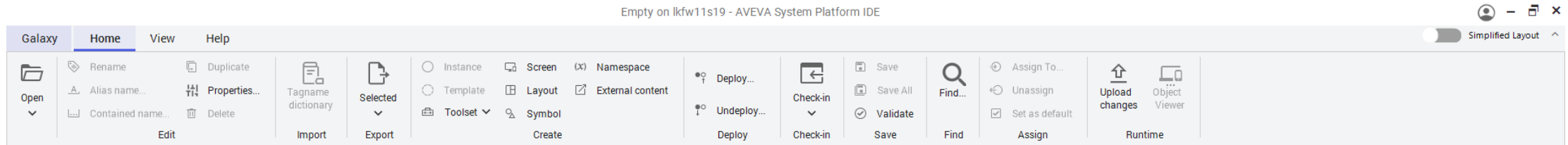
Landing page



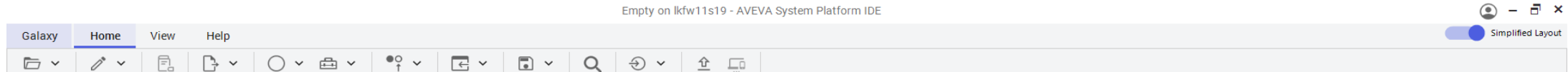
Application Server - what's new

New look for Application Server

Ribbon bar



Ribbon bar – Simplified view



Application Server - what's new

Backstage

The screenshot displays the Backstage application server configuration interface. On the left is a navigation sidebar with options: Home, New, Open, User, AVEVA Connect, Import, Export, **Configure** (highlighted), and Close. The main content area is divided into several panels:

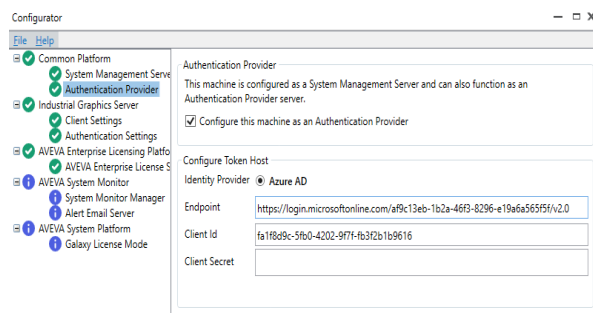
- User**: Galaxy User (View or change the current Galaxy user) and Preferences (Configure warnings, scans, and default user preferences).
- Configure**: Security (Configure or review the galaxy's security settings), Galaxy (Styles, Alarms and events, Languages), Integrated development environment (Toolset, Convert UDO), Communication (Multi-Galaxies, Service discovery servers, Advanced communications management), System (Time master, Services).
- Import**: Objects (From package, From CSV, Tagname dictionary from CSV, Explore product hub), Visualization (Client controls, OMI App, Web Widgets), Style Libraries, Script Library, Localization (Industrial Graphics translations, Alarm fields).
- Export**: Objects (Selected objects, Selected as protected, Selected as CSV, All objects, Tagname dictionary as CSV), All Style libraries, Script Library, Localization (Selected Industrial Graphics translations, All Industrial Graphics translations, Alarm fields from selected areas, Alarm fields).

Application Server - what's new

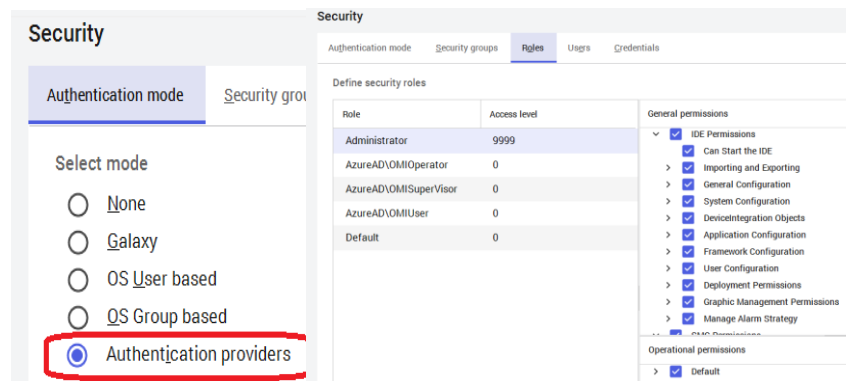
User authentication and single sign-on via Azure Active Directory

- Use Azure AD authentication provider to configure roles for development and runtime
- New Security mode based on Azure Active Directory
 - Works like group-based Authentication mode
- New Login Screen to support Azure AD authentication
 - Can be invoked in same way as existing login screen for other authentication modes

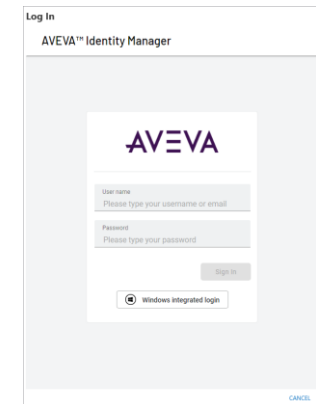
Configurator settings



IDE settings



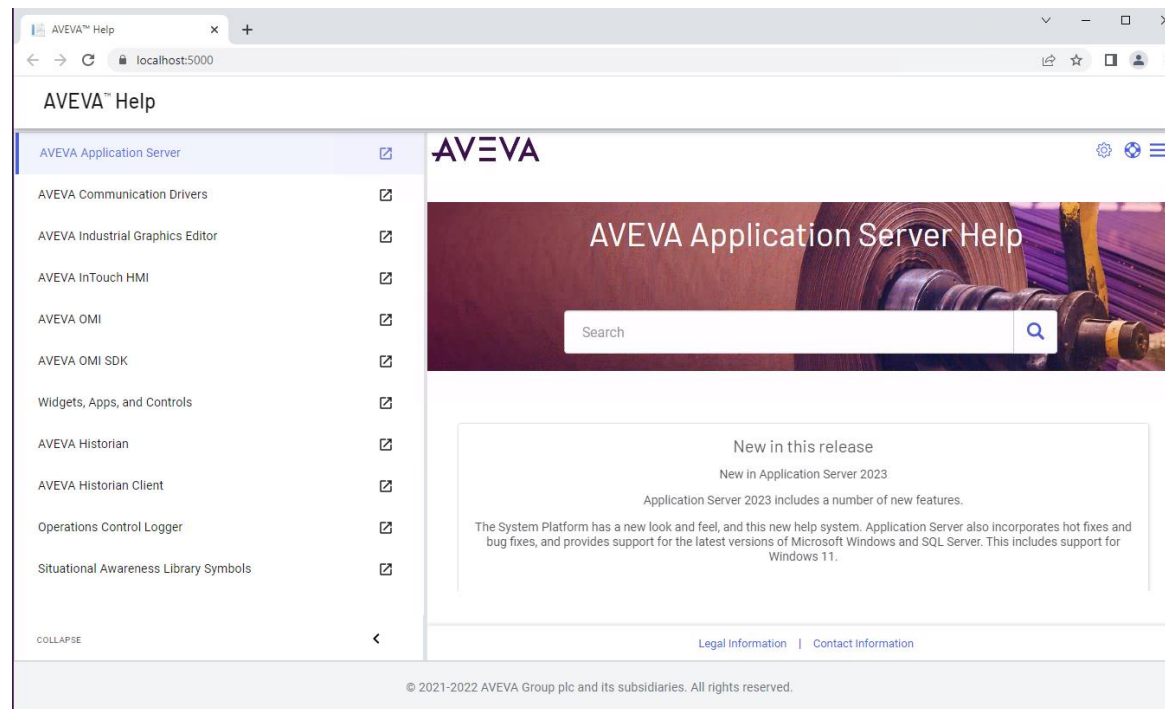
OMI login screen



Application Server - what's new

Integrated web help system

- Help for Application Server is now available as web help and can be viewed and searched in your default browser. Help for other System Platform products has also been migrated to web help, allowing you to more easily view and search across all System Platform products.
- Windows -> AVEVA -> **AVEVA Help**



Application Server - what's new

Alarm count inclusion/exclusion

- This feature allows the user to configure which alarms are included in the AlarmsCntsBySeverity array attributes based on the alarm states/modes
- The alarm states/modes that are configurable are Inhibited, Disabled, Silenced and Shelved
- Previous behavior of AlarmCntsBySeverity attribute:
 - In the currently released product, Silenced and Shelved alarms are always included in the AlarmsCntsBySeverity array attribute, whereas Disabled and Inhibited alarms are never included in the AlarmCntsBySeverity array attribute.

Application Server - what's new

Alarm count inclusion/exclusion

- Galaxy-wide Alarm state inclusion/exclusion configured in IDE via:
 - Galaxy->Configure->Galaxy->Alarms and events (then select the States tab)
- If the configuration options are kept at there default selections, there is no change in behavior from previous releases

The screenshot shows the 'Configure' window in the IDE, specifically the 'Alarms and events' section. The 'States' tab is selected. The interface is divided into several panels:

- Severities:** A list of severity levels with checkboxes: Critical (checked), High (checked), Medium (checked), and Low (checked).
- Alarm states:** A list of alarm states with checkboxes: UNACK (Un-Acknowledged) (checked), ACK (Acknowledged) (checked), and RTN (Return to normal) (checked).
- Options for aggregated alarm counters by severity:** A section with checkboxes for 'States and modes included': Inhibited (unchecked), Disabled (unchecked), Silenced (checked), and Shelved (checked).
- Alarm plant state:** A table with columns 'Description' and 'AlarmMode'. The table has a '+ -' control to its right.

Description	AlarmMode
Running	Enable
Maintenance	Disable
Startup	Silence
Shutdown	Disable
Testing	Silence

OMI what's new

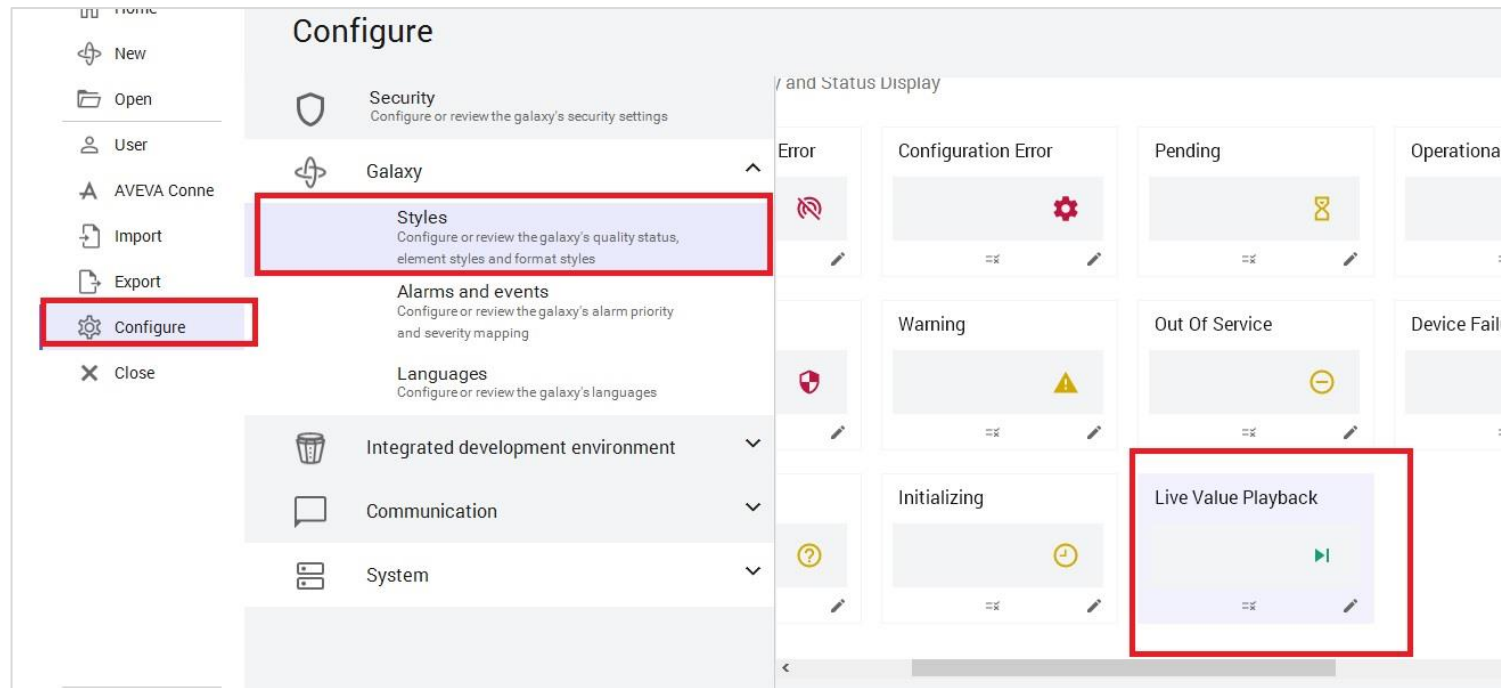
Security identity event logging

- First requirement for pharma industry
- ViewApp logs the user events to the alarm event systems
- The following are the events
 - Successful login
 - Successful logoff
 - Failed login
 - Application startup
 - Application exit.
- Introduced new security attributes to the ViewApp security namespace.
 - Last unsuccessful login
 - Attempted login username
 - Last logon attempt failed

OMI what's new

Updates for historical playback capability

Design time: Galaxy style configuration



OMI what's new

Updates for historical playback capability



The screenshot displays the AVEVA Operations Management Interface (OMI) for the Florida area. The interface includes a navigation menu with "Assets", "United_States", "Southeast", and "Florida". The main display area shows "Florida" with two large numerical values: "60.0" in yellow and "58.4" in black, separated by a minus sign. A play button is visible below the numbers. At the bottom, a playback control bar is shown with a "SCADA Playback" toggle, a timeline from "07-06-22 22:23:29 PM" to "07-07-22 6:23:29 AM", and a "Current" time of "07-07-22 3:36:02 AM". A speed control slider is also present.

OMI apps

1. 3D Viewer OMI app/service
2. Alarm OMI app
3. AVEVA Batch Management OMI app
4. AVEVA Insight OMI App (AI)
5. AVEVA Insight OMI App (Trends)
6. AVEVA NET DataViewer OMI app
7. AVEVA NET DocumentViewer OMI app
8. AVEVA PI Vision OMI app Enterprise
9. AVEVA Recipe Management OMI app
10. AVEVA System Platform Asset Template Library
11. AVEVA Teamwork Widget
12. Content Presenter OMI app
13. File Viewer OMI app
14. Graphic Repeater OMI app
15. Hamburger OMI app
16. Historical Trend OMI app
17. Map OMI app
18. Navigation OMI app
19. OMI app for GISIZE GEOSpatial Partner
20. OMI app for Longwatch Partner
21. OMI app for Microsoft Power BI Enterprise
22. PLC Viewer OMI app Flex
23. Remote Response Objects Library
24. Sankey Diagram OMI app Enterprise
25. Scheduler OMI app
26. Screen Capture and Print OMI app
27. Title Bar OMI app
28. Video Viewer OMI app
29. Vision AI Assistant OMI app/service Flex
30. Web Controls OMI app
31. Hidden ones (RTSP, SQL)