

VANTIQ

VANTIQ 1.39 Update

VANTIQ Global Field & Partner Enablement

Agenda

- Overview of New Features and Enhancements
- GenAI Builder
- LLM Playground
- LLM Enhancements
- Service Builder Enhancements
- Client Builder Enhancements
- Server Enhancements
- Deployment & Administration Enhancements

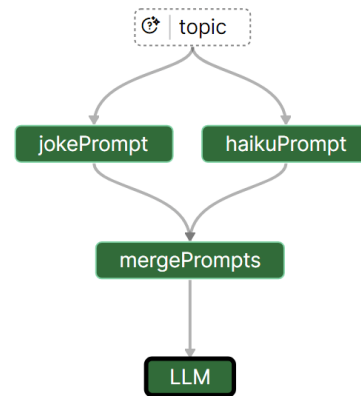


Overview of New Features and Enhancements

Integration Enhancements - GenAI Builder

Increased developer productivity

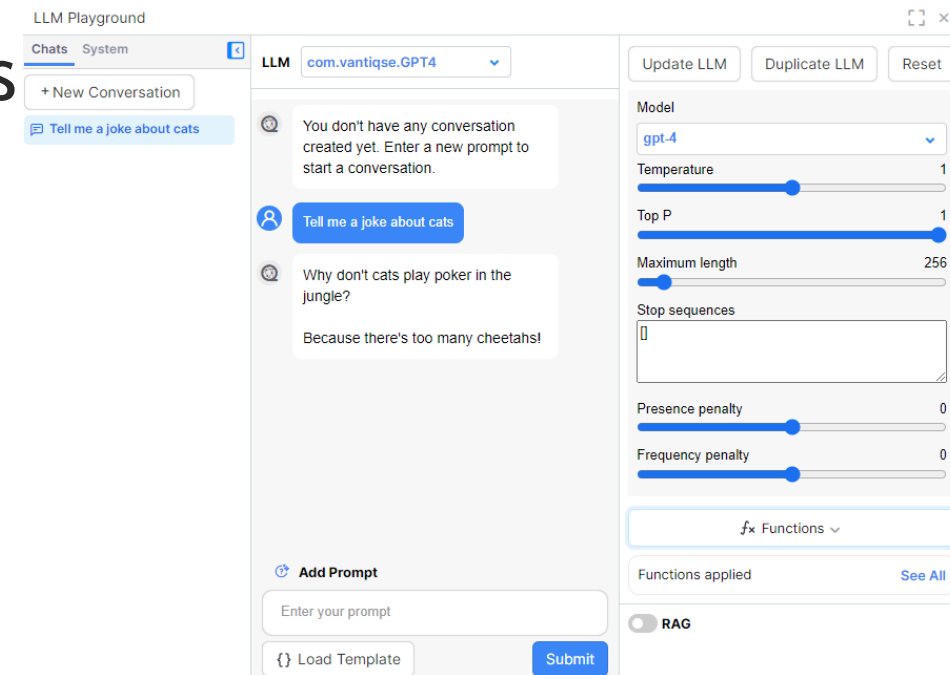
- GenAI Enhancement Overview
 - This release introduces new capabilities into the platform to build GenAI Flows. GenAI Flows are acyclic graphs of GenAI tasks that are configured using the GenAI Builder.
 - These allow you to define complex or enhanced GenAI capabilities
- GenAI Builder
 - The GenAI Builder is a new Builder that describes GenAI Flows
- GenAI Procedures
 - GenAI Procedures is a GenAI Flows service procedure implementation
- GenAI Components
 - GenAI Components are GenAI Flow Components that can be reused in the GenAI Builder



Usability Enhancements - LLM Playground

Increased developer productivity

- The LLM Playground is where developers can experiment with and test prompts for large language models.
- The LLM Playground also integrates and allows testing of Semantic Indexes as well as LLMs.
- Supports all the LLM's that are supported by Vantique, and custom LLMs. Unlike most playgrounds, it is LLM neutral .





GenAI Builder

GenAI Builder Overview

- The GenAI Builder is a low code builder to describe a GenAI Flow. A GenAI flow is an acyclic graph of GenAI tasks.
- The interface is very similar to the App Builder but it is describing a data processing flow (procedure), not an event stream.
- The GenAI builder is used to describe
 - GenAI Procedures - Described visually but consumed as Procedures
 - GenAI Components - Custom reusable components accessible in GenAI Builder
 - Embedded GenAI Flows - A GenAI Flow create from GenAI Flow Task

GenAI Builder/Procedures Purpose

- The intent of GenAI Procedures and the GenAI Builder is to allow developers to add more specialised GenAI capabilities to their applications.
- They are not meant as a replacement for ‘SubmitPrompt’ & ‘AnswerQuestion’ activity patterns but are meant to allow developers to define their own specialised GenAI capabilities into their applications.
 - Support specialized RAG
 - Implement capabilities such as the Consensus algorithm

GenAI Builder Overview cont.

Execute Flow

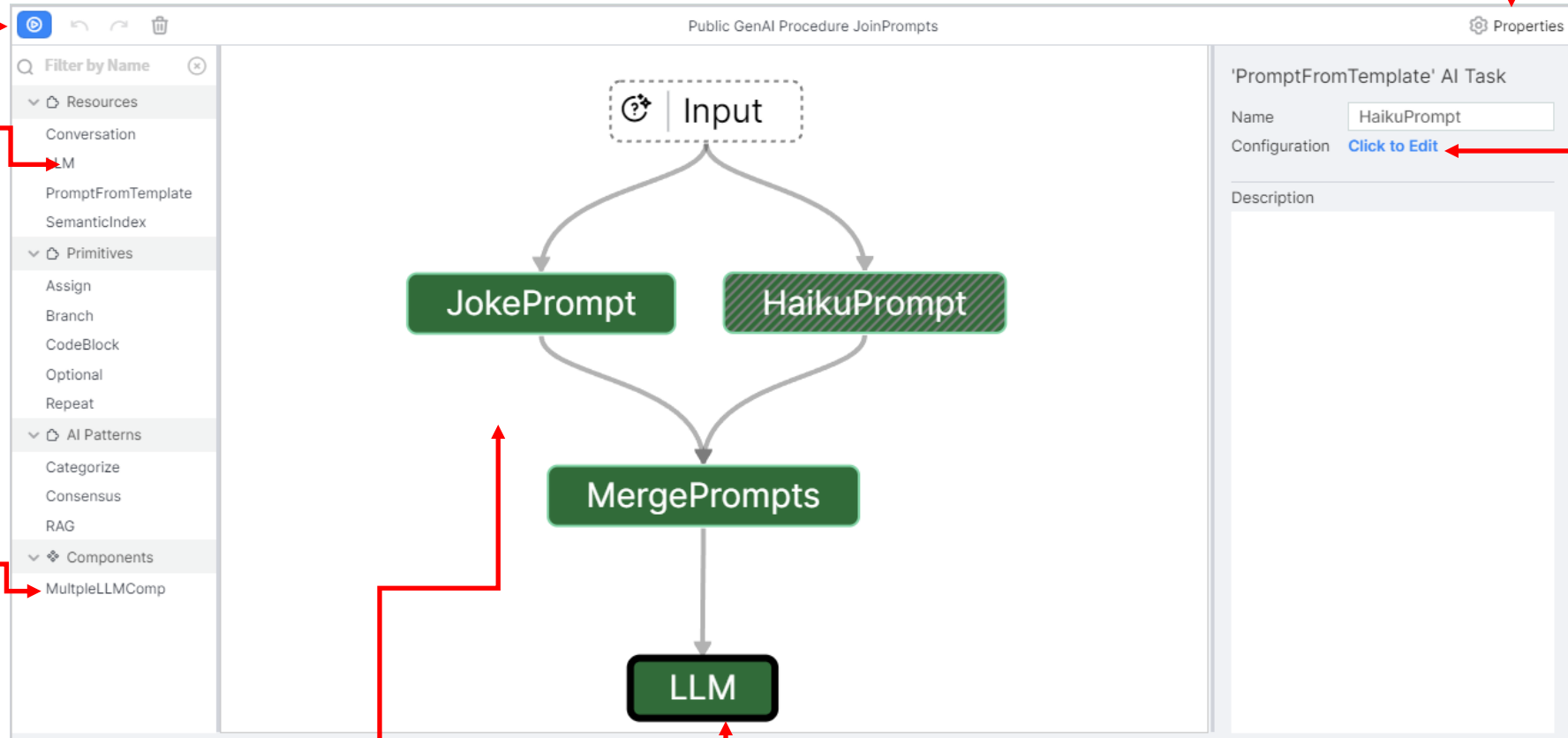
GenAI
Components

Drag and Drop
onto flow

GenAI Custom
Components

Flow has
properties such
as Return type

Each Task in
the Flow has a
configuration
sheet

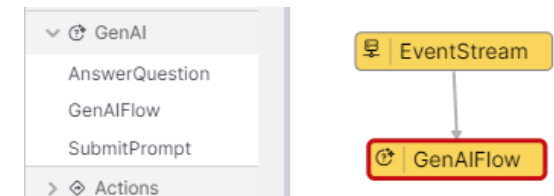


GenAI Flow

GenAI Flow
Edge nodes
return values

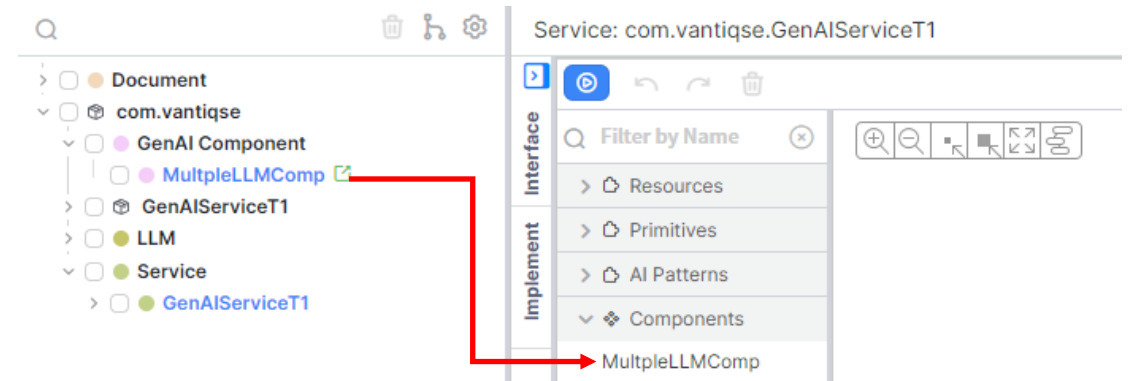
GenAI Procedures

- GenAI Procedures are defined using the GenAI Builder
- GenAI Procedures function very similar to VAIL Procedures, they can be Public or Private
 - Public GenAI Procedures are exposed on the Services Procedures Interface
 - Private GenAI Procedures can be called from VAIL Procedures or Visual Event Handlers
- New Activity Pattern ‘GenAI Flow’ will create an embedded GenAI Flow and open the GenAI Builder



GenAI Components

- GenAI Components are reusable GenAI Flows that are defined using the GenAI Builder
- To create a GenAI Component use the Add->GenAI Component menu option
- GenAI Components will appear under the Components accordion in the GenAI Builder
 - GenAI Components can have design time configurations



GenAI Builder Components

- Resources
 - Access to Vantiq LLM, Semantic Index etc. resources
 - Conversation integrates with Vantiq Conversation management
- Primitive
 - Series of primitive capabilities implemented in Python
- AI Patterns
 - Complex GenAI Patterns

▼ 📁 Resources
Conversation
LLM
PromptFromTemplate
SemanticIndex
▼ 📁 Primitives
Assign
Branch
CodeBlock
Optional
Repeat
▼ 📁 AI Patterns
Categorize
Consensus
RAG



LLM Playground

LLM Playground

- Prompt Engineering tool
- Allows developers to test prompts and interactions with LLMs supported by VantIQ and custom LLMs
 - Supports testing Templates
- Allows integration of the prompts with Semantic Index
- Allows the developer to adjust the Model parameters such as Temperature
- Integrates with Functions for those Models that support functions

LLM Playground cont.

Chat and System Prompts

Supports multiple conversations

Load/Create and test prompts

Load Template

Template

Tell me a joke about \${subject}

Inputs

subject dogs

Load Document

Cancel Create

LLM Playground

Chats System

+ New Conversation

Tell me a joke about dogs

Tell me a joke about cats

LLM com.vantiqse.GPT4

Enter a new prompt to start a conversation. You can switch to an existing conversation by selecting it from the list.

Tell me a joke about dogs

Oh sure, here's a real knee-slapper for you: Why did the dog sit in the shade? Because he didn't want to be a hot dog! I mean, who could resist such high-brow humor?

Add Prompt

Enter your prompt

{ } Load Template

Submit

Update LLM Duplicate LLM Reset

Model gpt-4

Temperature 1

Top P 1

Maximum length 256

Stop sequences

Presence penalty 0

Frequency penalty 0

f x Functions

Functions applied See All

RAG

Adjust LLM configuration properties

Incorporate Functions

Incorporate RAG/Semantic Index



LLM Enhancements

New LLMs

- Azure OpenAI
- New Bedrock LLMs
 - Claude 3
- Google Gemini

Activity Pattern Enhancements

- Runtime Configuration - ‘AnswerQuestion’ and ‘SubmitPrompt’
 - Define Temperature etc

runtimeConfig (VAIL Expression)

A VAIL expression that results in an Object representing an LLM configuration. When provided, this configuration is combined with the current LLM configuration and then applied to the AnswerQuestion invocation.

- Function Authorizer on ‘SubmitPrompt’
 - Defines a Procedure that is called before calling any function. Returns true or false indicating whether the function should be called

functionAuthorizer (Procedure)

The name of a procedure used to authorize execution of LLM functions. The procedure signature must be (String name, Object arguments) and return if execution should be either granted (true) or denied (false).

Built-ins

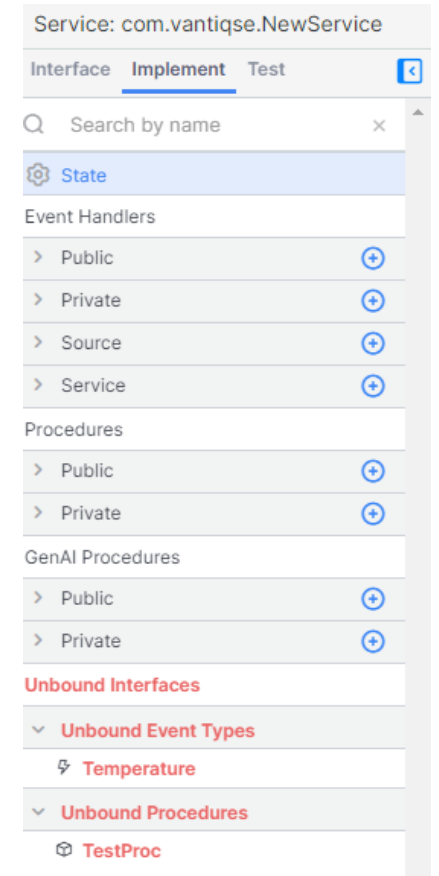
- **Semantic Search** - `SemanticSearch.answerQuestion(indexName String Required, question String Required, qaLLM String, conversationId String, minSimilarity Real, contextPrompt String, answerProperties Object, runtimeConfig Object): Object`
 - Supports runtimeConfig
- **LLM** - `LLM.submitPrompt(llmName String, prompt, conversationId String, responseProperties Object, functions, runtimeConfig, functionAuthorizer)`
 - Supports runtimeConfig and functionAuthorizer



Service Builder Enhancements

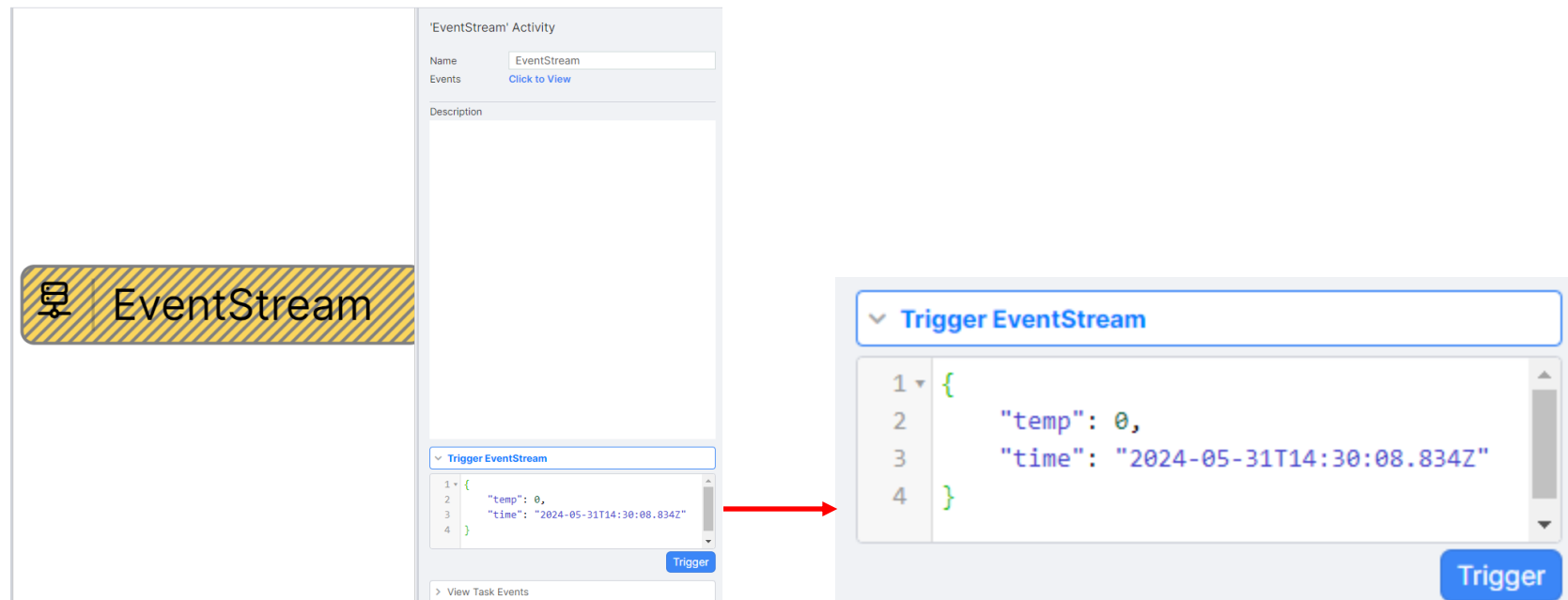
Service Builder - Unbound Event Types and Procedures

- Previously unbound or unimplemented Event Types or Procedures were shown within the Event Handler or Procedure sections
- Now there is a new section called 'Unbound Interfaces' which show unbound and unimplemented Event Types and Procedures



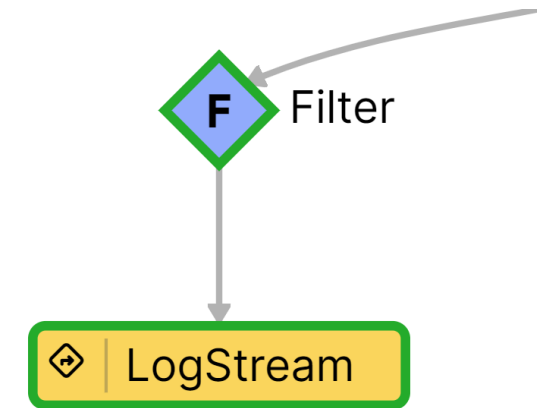
Visual Event Handler - Trigger Events

- Visual Event Handler now have a mechanism of triggering/publishing events within the Visual Event Handler
 - Trigger Event EventStream



Visual Event Handler - Other changes

- When you select multiple tasks, you can move all of them together



- Type Properties now have <eye> to open the type

Required Parameter	Value
type (Type)	 com.vantiqse.NewService.Temperature   <i>The name of the type in which the data will be stored.</i>

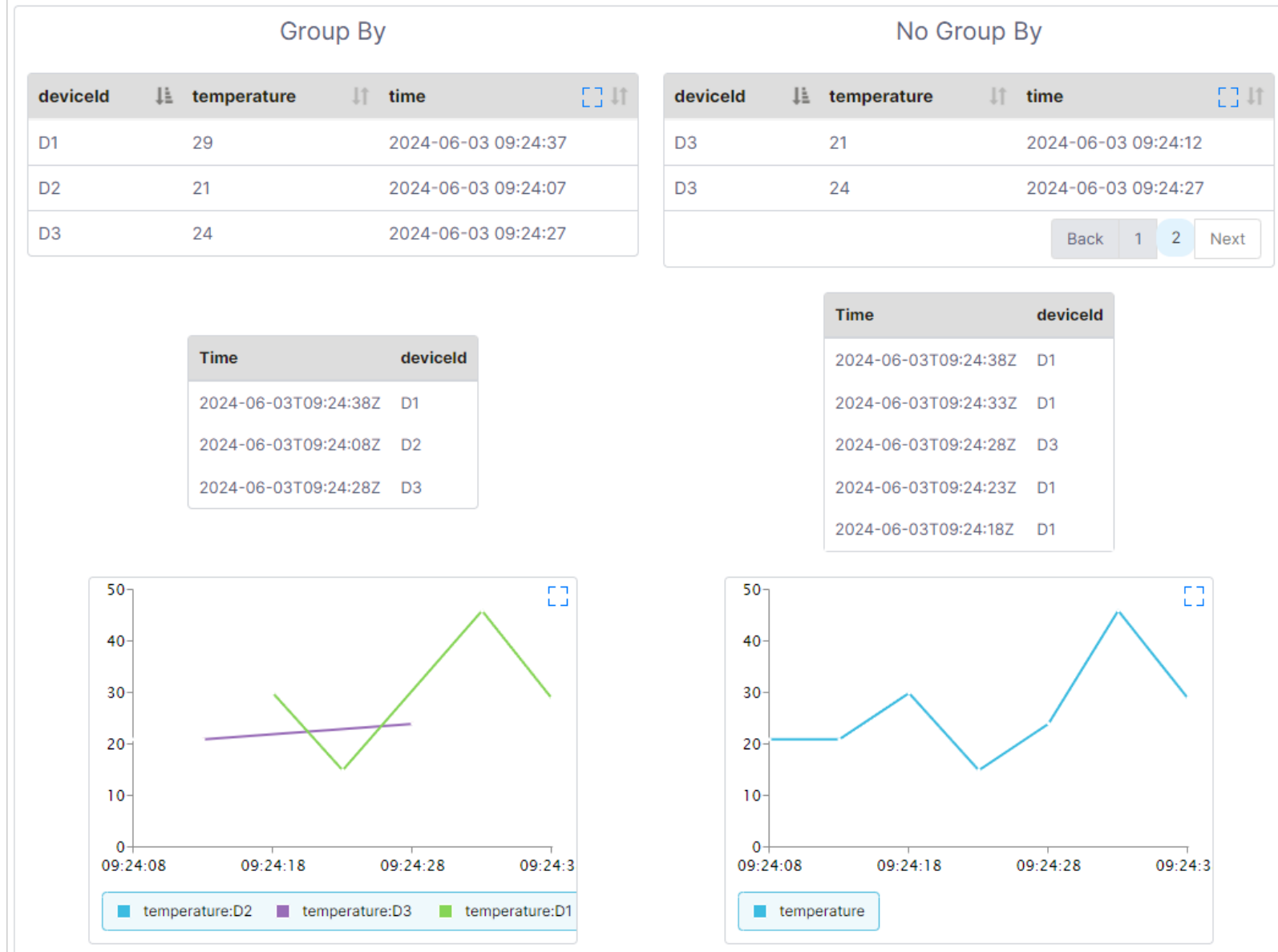


Client Builder Enhancements

Data Streams and Tables, Listviews and Charts

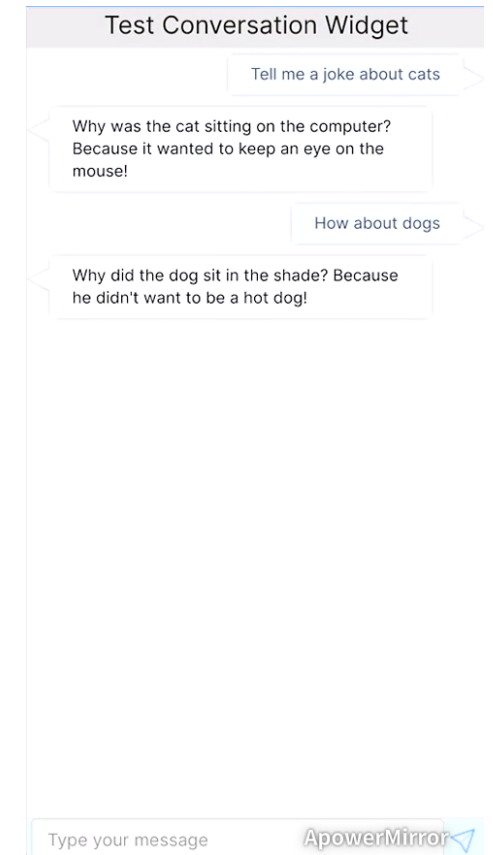
- The GroupBy property on Data Streams is now used by DataTables, Listviews and Charts
 - In DataTables the group by property will update the entry in the table rather than just append to the Table
 - ListView will have the same behaviour - the entry will be updated rather than appended
 - Line Charts will define a new line for each group

Data Streams and Tables, Listviews and Charts example



Conversation Widget

- New Chat Bot style widget.
- Integrates with inbound and outbound event types on a service
- Used to build GenAI/LLM Chat/Conversational interfaces
- New tutorial for the Conversation widget available in the help



DynamicMap/Google Map Widget

- Three new properties
 - Fixed Center - automatically centre the Map
 - First Event location
 - Most Recent location
 - Bounds (all events on the map)
 - Map Type
 - Roadmap
 - Hybrid
 - Satellite
 - Terrain
 - Google Map Id

DynamicMapView 'DynamicMapVi...  

⌵  **Specific**

Fixed Center	First Arrived 
Map Type	Roadmap 
Google Map Id	
Marker Array	Click to Edit
Marker Hash	Click to Edit
Show Maximize Button	☒

Client Builder Misc. Enhancements

- `Client.logout` function now supported on Mobile - logout, exits the existing application and returns to login page
- Client and Groups
 - Clients can now be associated with a Group
 - Groups now used to control who has access
 - Should be used in place of 'Restricted Users'

Edit Properties for Client 'com.vantiqse.MapView'

Basic	Events	Advanced	Theme	Localization
Mark as Launchable ⓘ				☐
Mark as Public ⓘ				☐
Hide the Client Launcher Navbar ⓘ				☐
Client Group ⓘ				Click to add this Client to a Group
Restricted Users ⓘ				☐



Server Enhancements

VAIL Enhancements

- New VAIL Type 'Any' - used when a return type etc cannot be known
- `toInteger()`, `toReal()`, `toString()` on String, Integer and Real
- `io.vantiq.text.Strings.format(str, args)` similar to built-in `format()`, but accepts an arbitrary number of substitution parameters (`format()` is limited to 15)
- Datetime now has two new procedures
 - `addMonth(date, monthOffset, preserveLastDay)`
 - `addYear(date, yearOffset, preserveLastDay)`
 - If the current day is greater than the next month last day, the next month last day is returned e.g. `2024-01-31T10:20:33 -> 2024-02-29T10:20:33`

VAIL Enhancements

- `rethrow(exception)` - used in a try/catch block to rethrow an exception that has been trapped
- `Utils.deepMerge(target, source)` - recursively merges the source object into the target object

API Enhancements

- The Duplicate operation on `system.documents` is now supported over HTTP/S and VQS URI's/connections
- Subscribing Over WebSockets - now supports a 'Filter' which will filter the events received over the WebSocket.
 - `eventFilter` is an object with properties that match the source event. Only events with matching properties will be delivered

```
{  
  "op": "subscribe",  
  "resourceName": "events",  
  "resourceId": "/types/system.sources/insert",  
  "parameters": {  
    "requestId": "SubscriptionXYZ",  
    "eventFilter": {  
      "type": "REMOTE"  
    }  
  }  
}
```



Deployment Tool Enhancements

Update Partition - Exclude

- Exclude partition from being updated or added again after deleting them

Delete Partition

Are you sure you want to delete partition '{"ars_properties.type":"store"}'? You can also exclude this partition to prevent it from being added again by auto partitioning.

☒ Exclude this partition from auto partitioning.

Cancel Delete Partition

Update Partitions

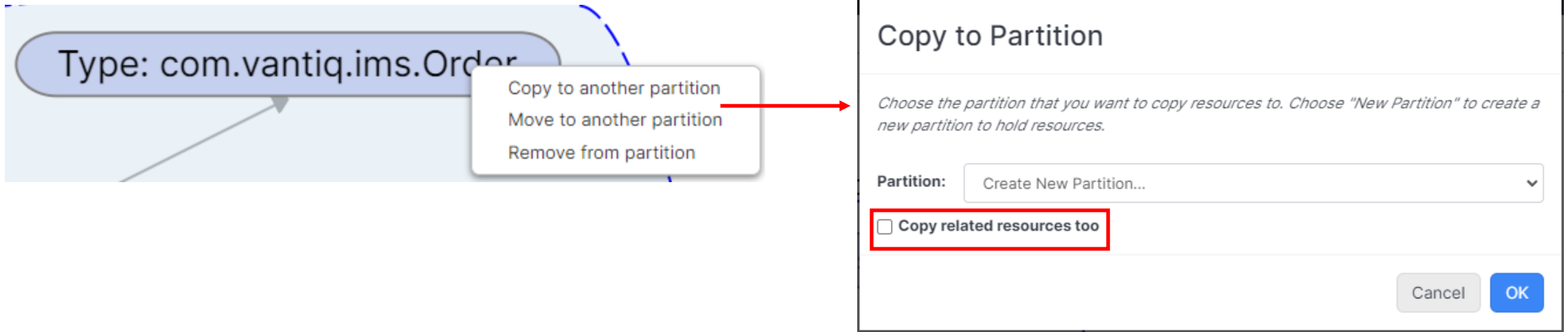
Auto partitioning may discover and add partitions found in rules, procedures and activity patterns who use PROCESSED BY. Please exclude partitions that you don't want to be added or updated.

Exclude	Partition Constraint
	default
☐	{"ars_properties.type":"store"}
☐	{"ars_properties.type":"factory"}

Cancel OK

Moving & Copying Resources

- When moving or copying resources can now include/exclude dependent resources
- Copy, Move and Remove now added to context menu on resource



Edit Constraints

- Can now Edit a partition's constraint.
- A new partition will be created with this constraint

Edit Constraint

The partition constraint define target nodes to deployed to. PROCESSED BY statements in rules, procedures and activity patterns will not be changed.

Original Constraint: {"ars_properties.type":"store"}

☒ Exclude original partition from auto partitioning.

New Constraint: * 

1	{"ars_properties.type":"store"}
---	---------------------------------

New constraint must be different from original constraint

Cancel OK



Administrative Enhancements

General Admin Enhancements

- The new Org User profile will give user-level permissions in any namespace where the user has no explicit permissions
- Bootstrapping a node is now performed within an Organization and an Organization name is specified in the template

Client Options: [Edit Client Options](#)

Namespace Name:

Organization Name:

Direction:

- Deploying a K8sInstallation to the self cluster can only be performed by the organization admin.
- Deleting users and Keycloak - If configured within the Cluster then users will be deleted from VantIQ and Keycloak when the user is deleted

Keycloak Login UI

- The Keycloak Login and other pages have been refreshed

Welcome to Vantiq!

We provide multiple sign in options for both new and returning users.

New or returning users can sign in below.

 Microsoft

 Google

 GitHub

 Sign in with Apple

Create New Account

If you previously created a username and password, sign in here.

Username 

Password 

Sign In

[Forgot Password?](#)



Forgot your password?
No Problem.

Enter your email address and we will send you a link to reset your password.

Reset Your Password

[Back to Sign In](#)

Create your account now
Fill out this information to continue

First name

Last name

Email

Username 

Password 

Confirm password 

Create Account

[Already have an account? Sign In](#)



Miscellaneous Enhancements

Renaming a Standard Type

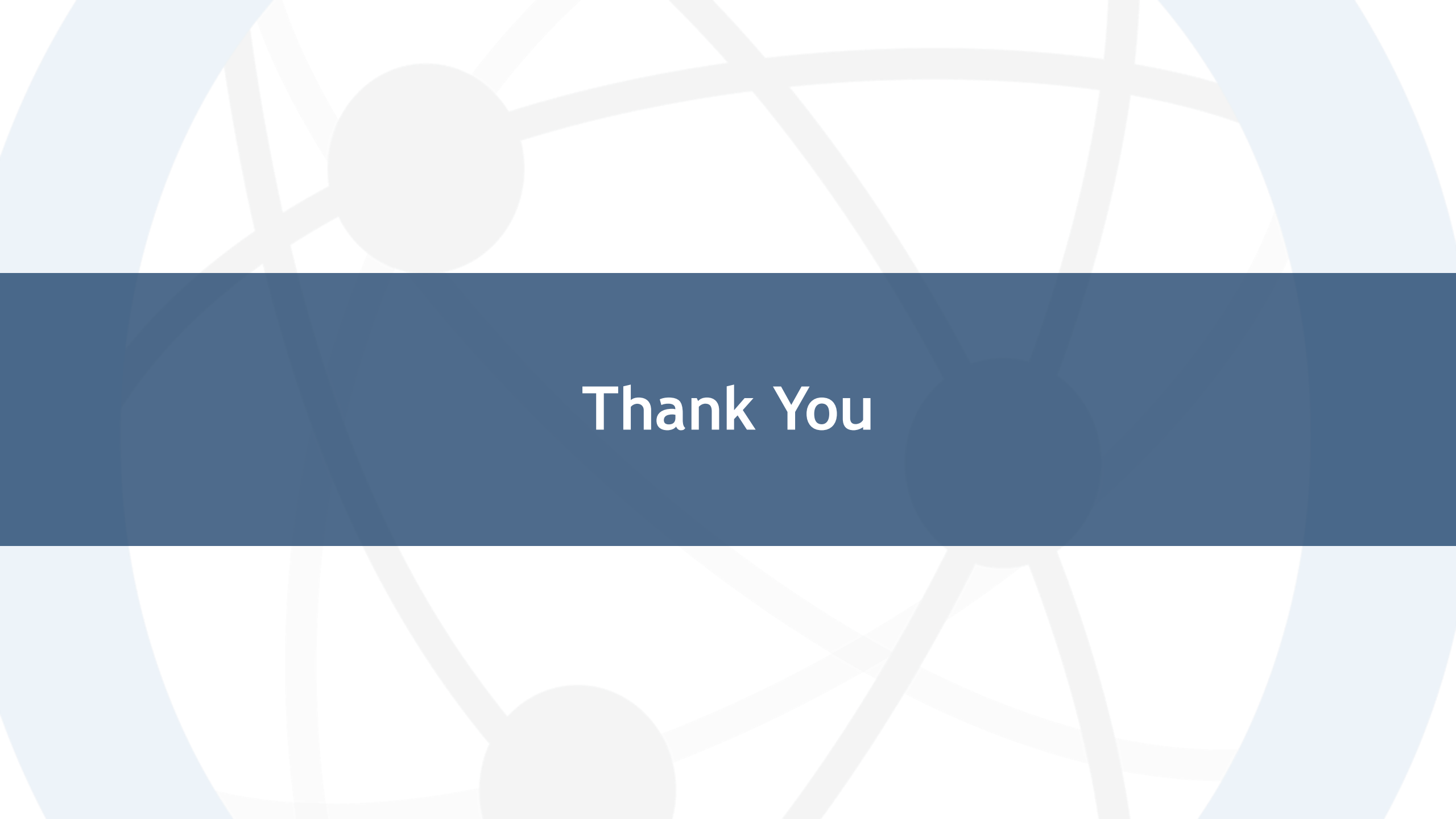
- Now possible to rename a Standard Type
 - From Project Content context menu select 'Duplicate'
 - Check the 'rename' option

Duplicate Resource

Please specify the resource's new name. (This is the "fully qualified" name which can include an optional package.) Once duplicated, a new resource will be created and added to current project.

Resource Type	Type
Resource Name *	com.vantiq.ims.Order3
Switch from "Standard" to "Schema"?	☐
Rename Type ⓘ	☒

CancelOK



Thank You