NOVEMBER 2022

Integrating AVEVA Model-Driven MES Forms into AVEVA OMI

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Agenda

- Integrating MDM Forms in OMI
  - Prerequisites
  - Galaxy Configuration
  - OMI Configuration
- Integrating OMI in Work Tasks

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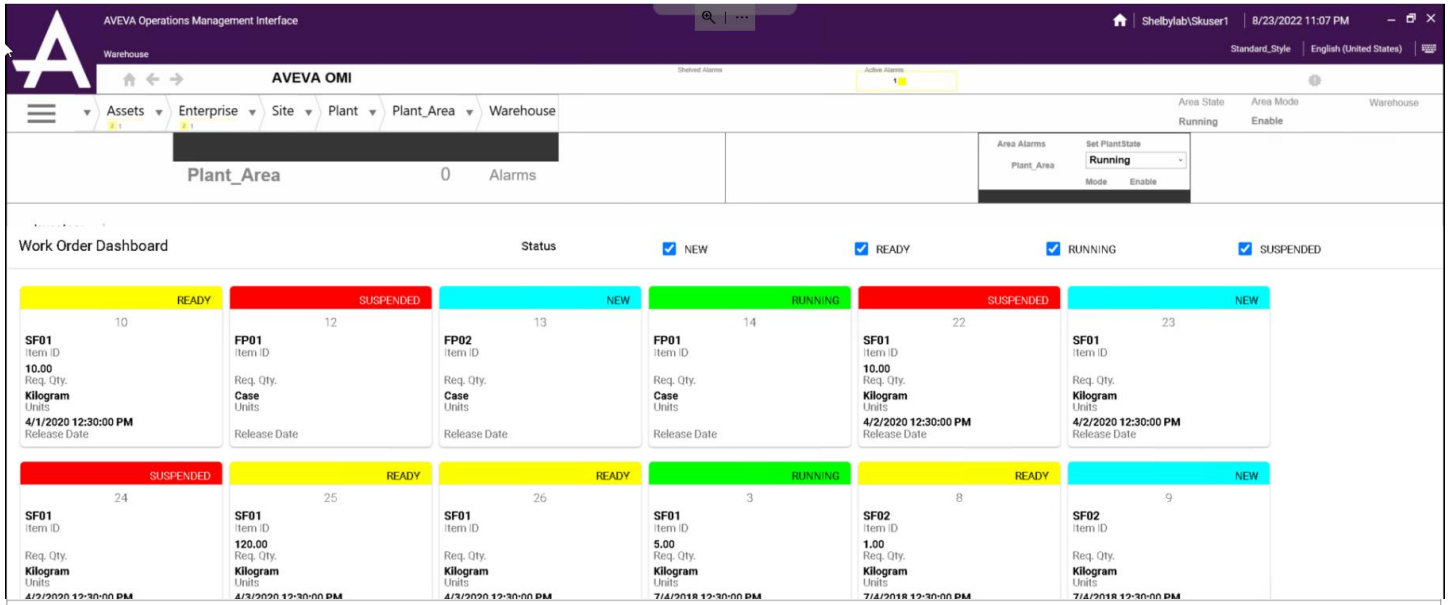
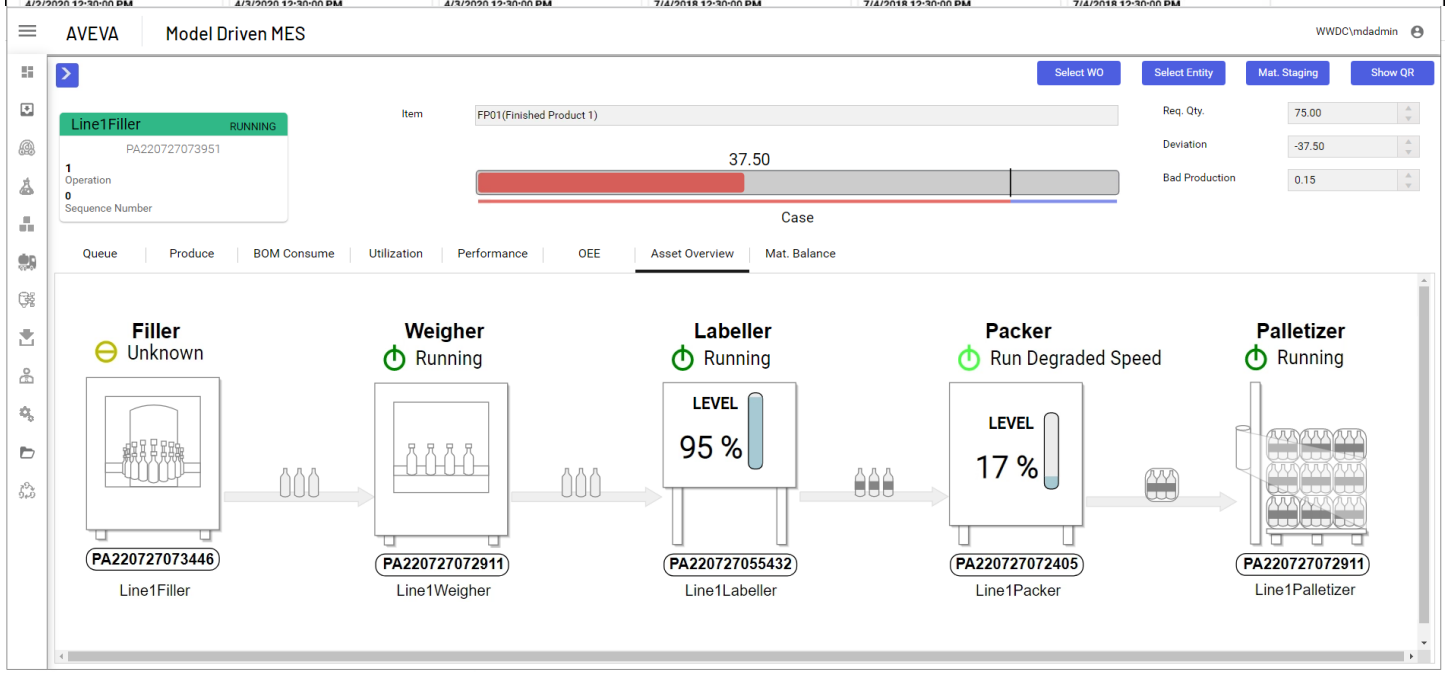
Bidirectional Embedding

- Embed Model-Driven MES Work Task Forms into OMI
- Embed OMI/Web Graphics into Work Tasks





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Integrate Operations Management and Operations Control

Challenge

Operations Management and Operations Control systems work best when they are integrated together

Solution

Augment existing OMI Applications and engineering investments with pre-built Model-Driven MES web-based forms found in Work Tasks

Benefits

Efficient and accurate communication between planning and production, increased production and operational efficiency, increased visibility of current production status.

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Prerequisites to Embed MDM Forms in OMI

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Prerequisites for Using Model-Driven MES Forms in OMI

Properly configured and integrated per the Model-Driven MES and other Product Installation Guides

AVEVA System Platform 2020 R2*

- Galaxy configured for OS security
- System Management Server (SMS)
- AVEVA OMI installed on view nodes
  - New or existing OMI application

AVEVA Manufacturing Execution System 2020 (MES)*

- MES configured for OS security

AVEVA Model-Driven MES Application Content v5.5

- All included hotfixes installed
- Work Tasks Connector for MES v6.7

AVEVA Work Tasks 2020 U2

- Active Directory security with Token authentication
- System Platform Connector and Extension for Work Tasks
- Work Tasks OMI Application
- Workflow Gateway object
- Galaxy platform deployed to Work Tasks server

Integration covered in Model-Driven MES Installation Guide

*System Platform 2020 R2 SP1 and MES 2020 Patch 02 is also a valid combination

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Galaxy and Workflow Gateway Configuration

System Platform IDE

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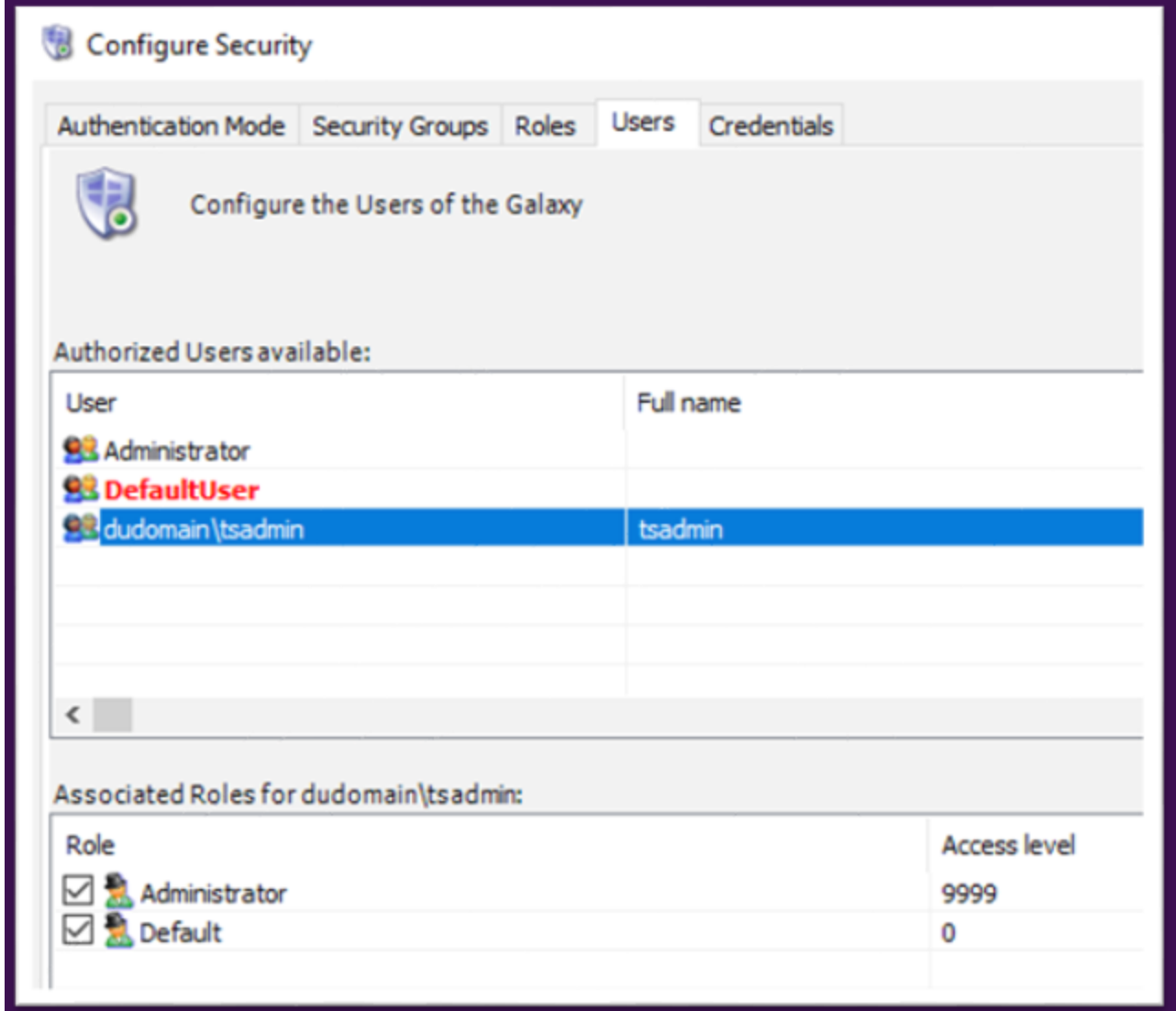
Configure Galaxy Security

- Users appear in this list when configured or after logging on to a system
  - **System Platform IDE - Galaxy – Configure Security**
- Workflow Gateway object will sync galaxy users to Work Tasks repository



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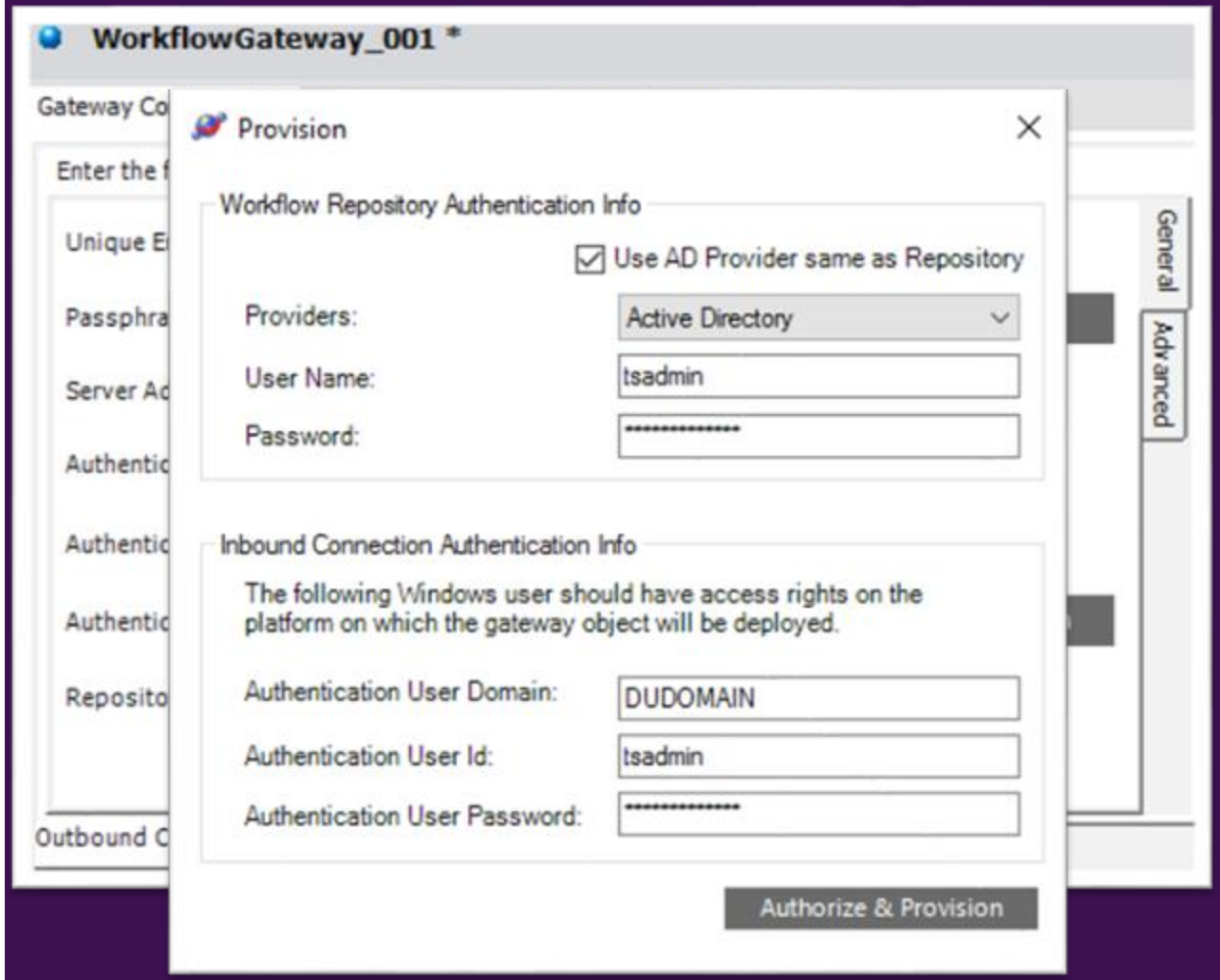
Configure Workflow Gateway

Gateway Configuration – General tab

- **Unique environment name:** Galaxy name
- **Passphrase:**
  Set during Work Tasks farm creation
- **Server Address:** Work Tasks server
- **Authentication User Domain:**
  Work Tasks server domain
- **Authentication User ID:**
  Access to both Work Tasks and MES
- **Authentication User Password**



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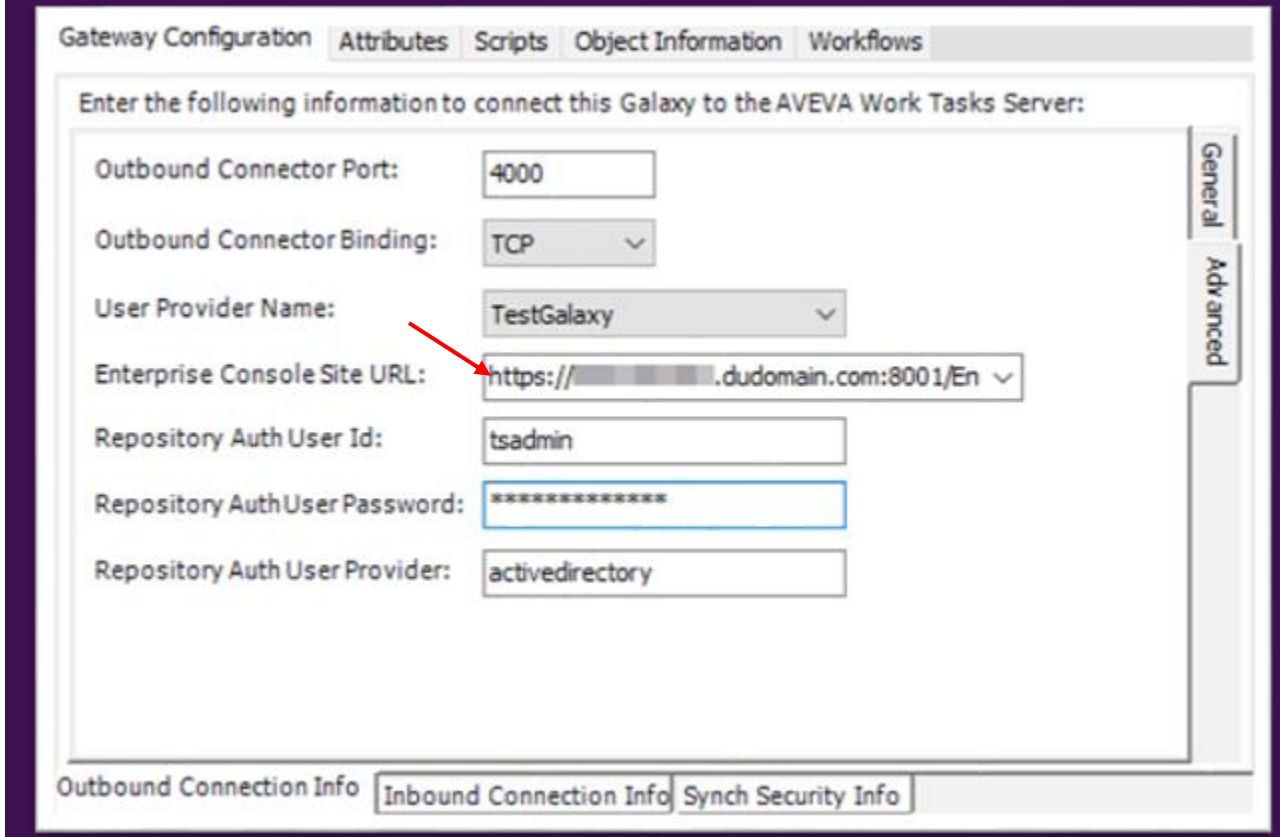
Configure Workflow Gateway

Gateway Configuration – Advanced tab

- **Enterprise Console Site URL**
  - Remove the leading dashes
  - URL contains the Fully Qualified Domain Name



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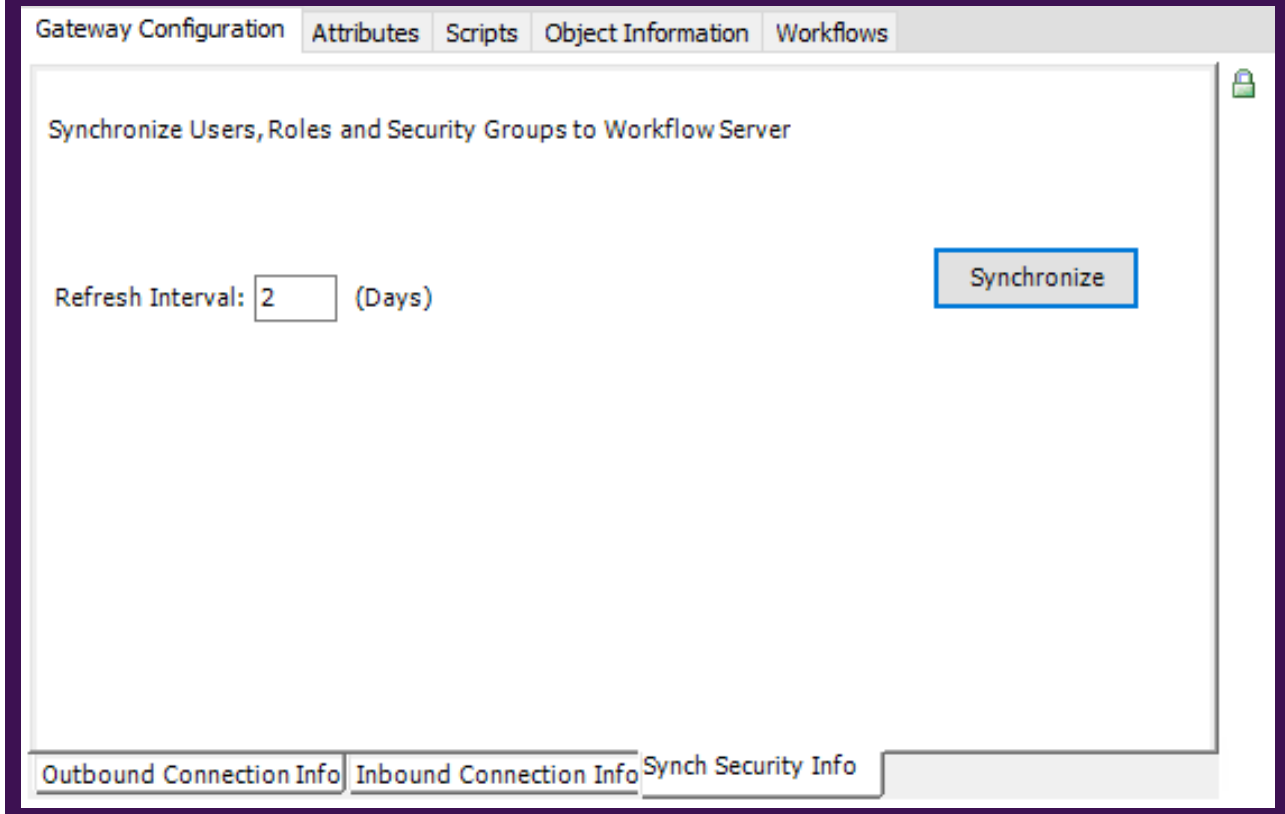
Configure Workflow Gateway

Security Synchronization

- Manually synchronize initial user list
- Setup sync refresh interval



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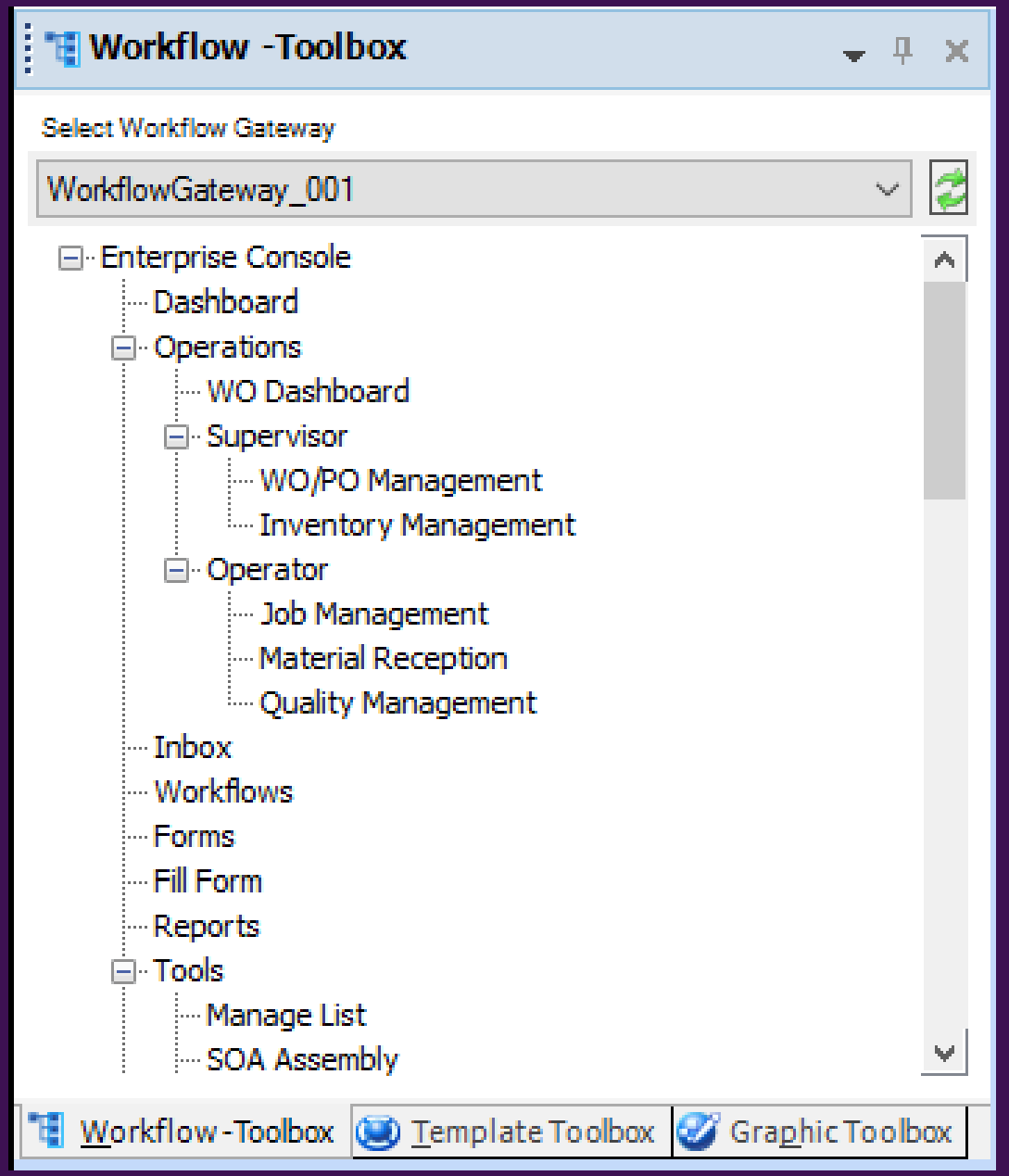
Configure Workflow Gateway

Verify Connection and Deploy

- **Workflow – Toolbox** displays repository contents

- **Deploy** an instance of the Workflow Gateway



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AVEVA OMI Configuration

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Enabling OMI for Token Security

- Enable OMI token security by editing the **view.exe.config** file in the OMI application directory

- The application directory could be in multiple locations:
  - Individual OMI deployed application:
    C:\Program Files (x86)\ArchestrA\Framework\Bin\ViewAppFramework
  - Preview application launched by the IDE:
    C:\Program Files (x86)\ArchestrA\Framework\Bin\ModernEditors\Preview\ViewAppFramework

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Editing OMI view.exe.config

Before

```
<!-- Configure the Archestra Identity Manager Service (the OpenId Connect endpoint) by adding the following key value pairs.
       Replace "your_token_server" and "your_client_id" with proper values.

    <add key="TokenServiceBase" value="https://your_token_server/IdentityManager" />
    <add key="ClientId" value="your_client_id" />
    <add key="Scope" value="openid profile system offline_access" />
   -->
```

After

```
<!-- Configure the Archestra Identity Manager Service (the OpenId Connect endpoint) by adding the following key value pairs.
       Replace "your_token_server" and "your_client_id" with proper values.  -->

    <add key="TokenServiceBase" value="https://MySMSServer.mydomain.com/IdentityManager/connect/token" />
    <add key="ClientId" value="SE_WSP_NG" />
    <add key="Scope" value="openid profile system offline_access" />
```

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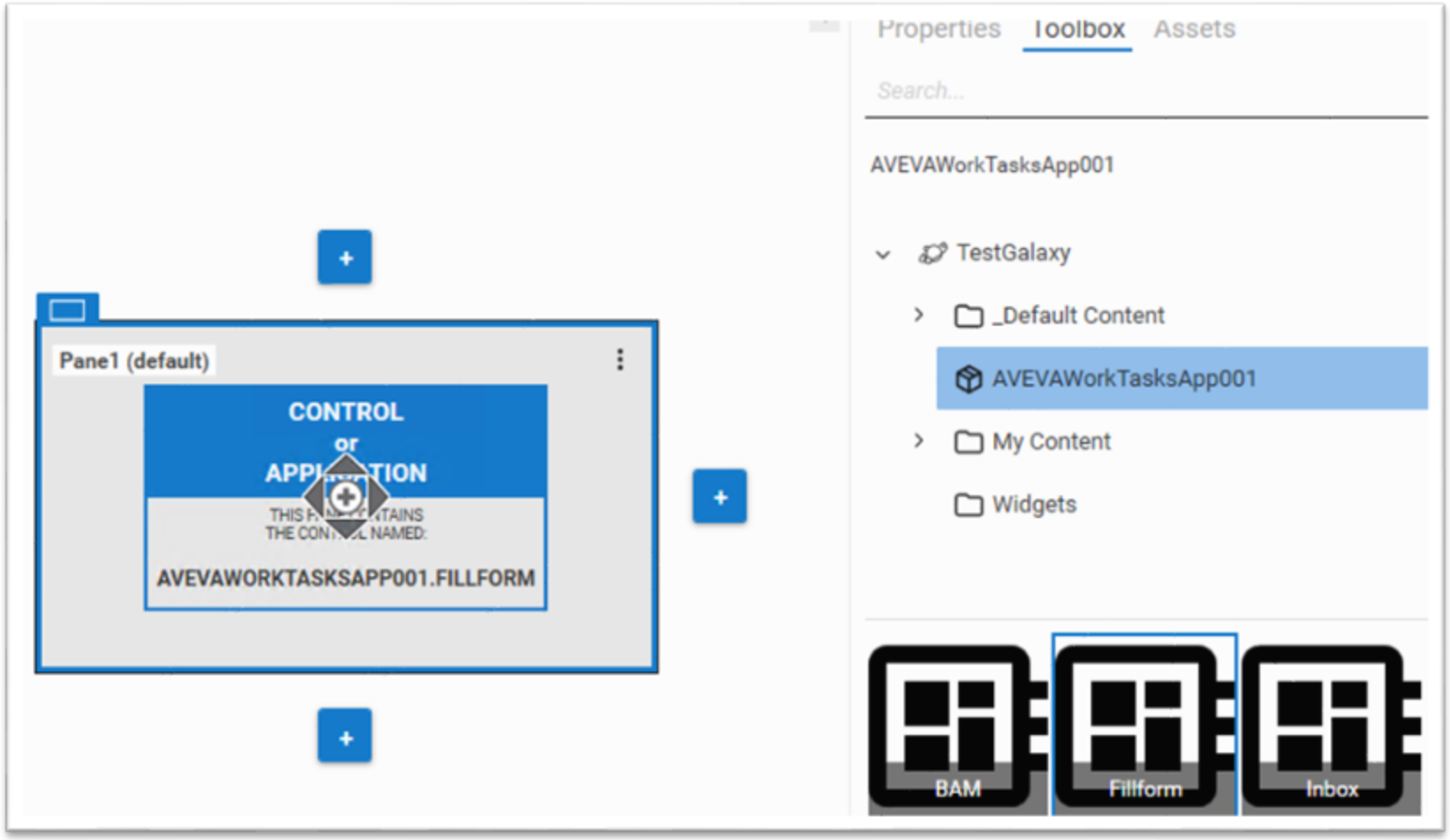
Embedding MDM Forms in OMI

Add Work Tasks FillForm OMI Application in an OMI Layout



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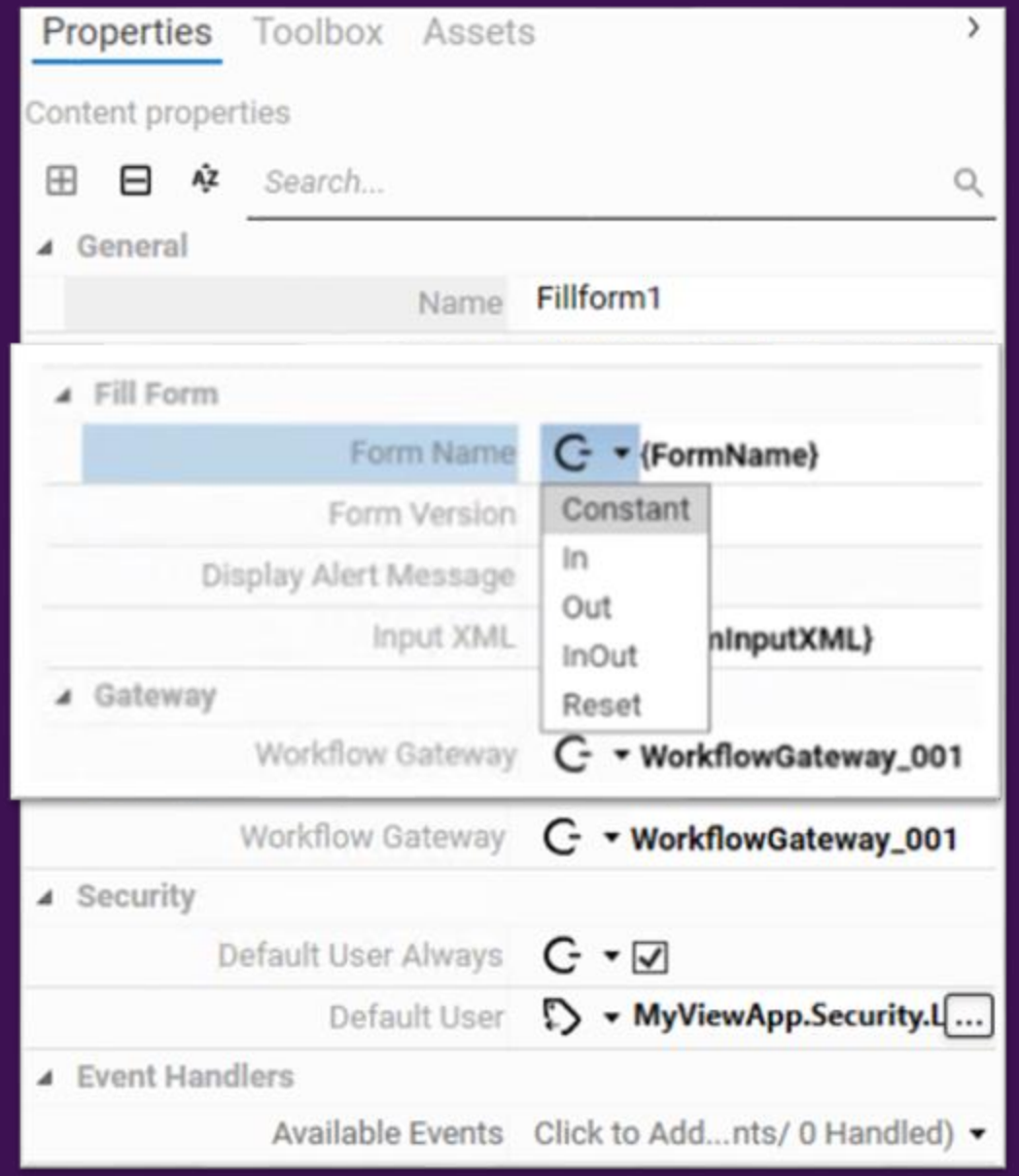
Fillform Properties

- **Workflow Gateway:**
  Work Tasks Gateway object
- **Form Name:** MDM form name
- **Form Version:** 0 (or alternate version #)
- **Input XML:** Formatted as provided
- **Default User:** Domain\MES_OS)user or
  the current logged on user view app attribute:
  MyViewApp.Security.LoggedInUserName
  passed logged on OMI user to MES WEB API
  via Work Tasks

- 3 options for setting Form Name, Version, Input XML
- Settings can be Constant or Input



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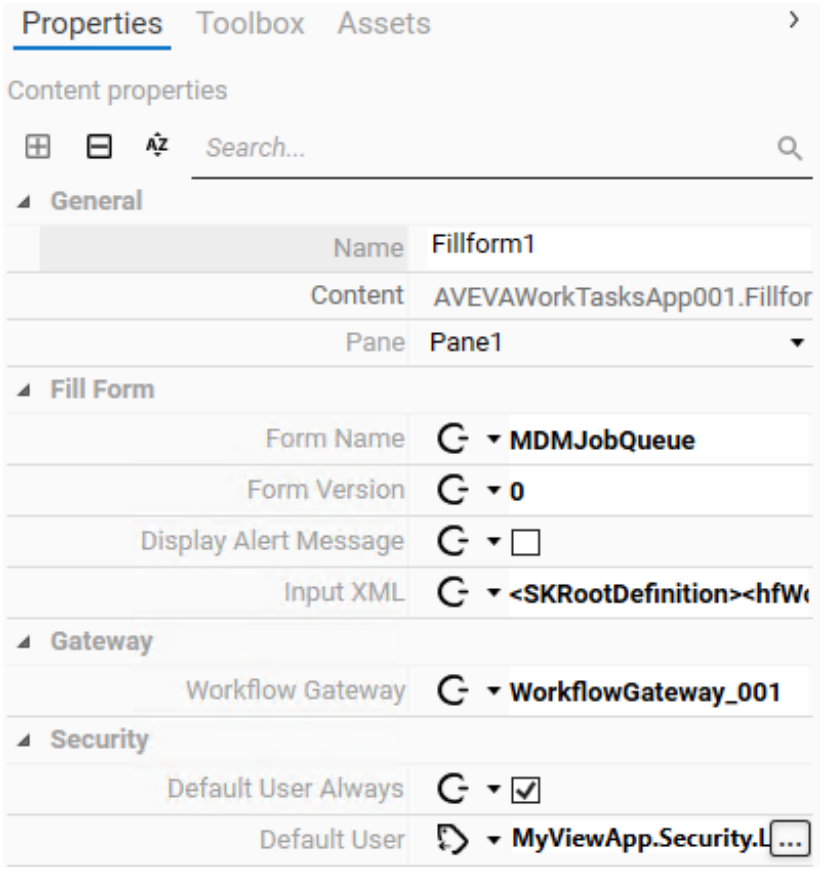
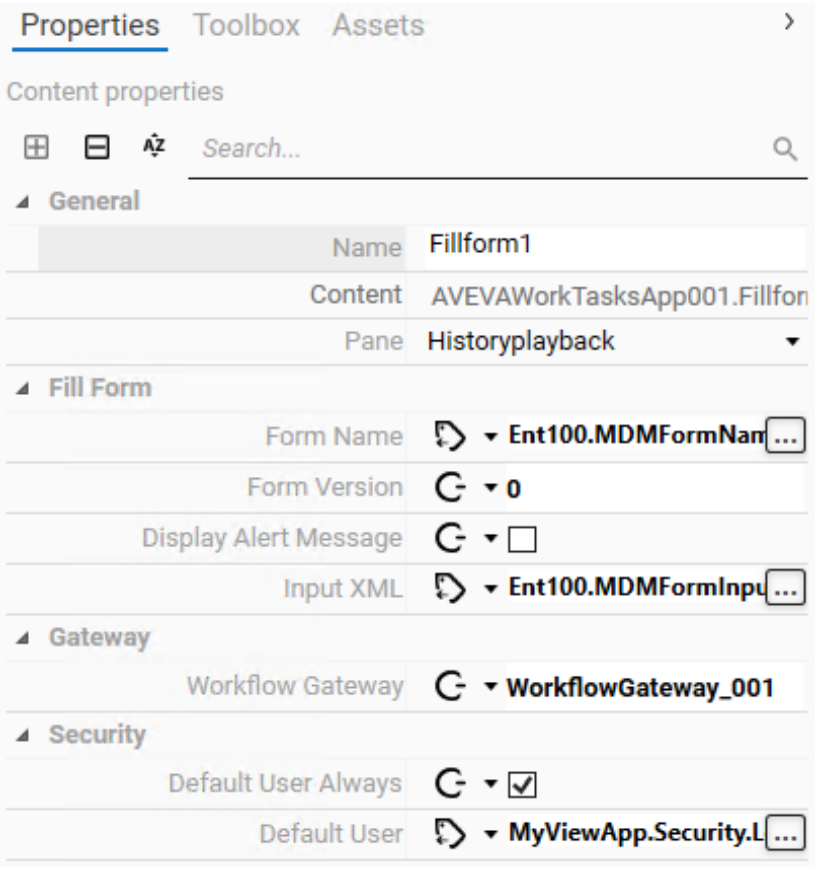
Fillform Properties Options

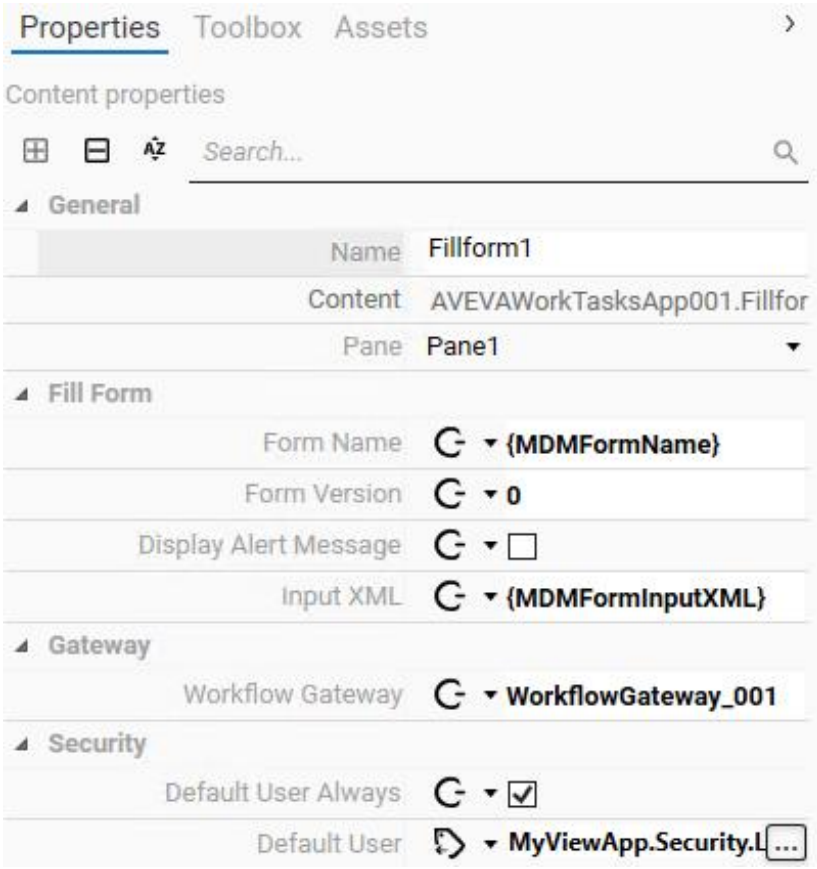
Hardcode (Constant)



Galaxy Object.Attribute (In)



Selected Asset in OMI (Constant) wrapped in curly braces



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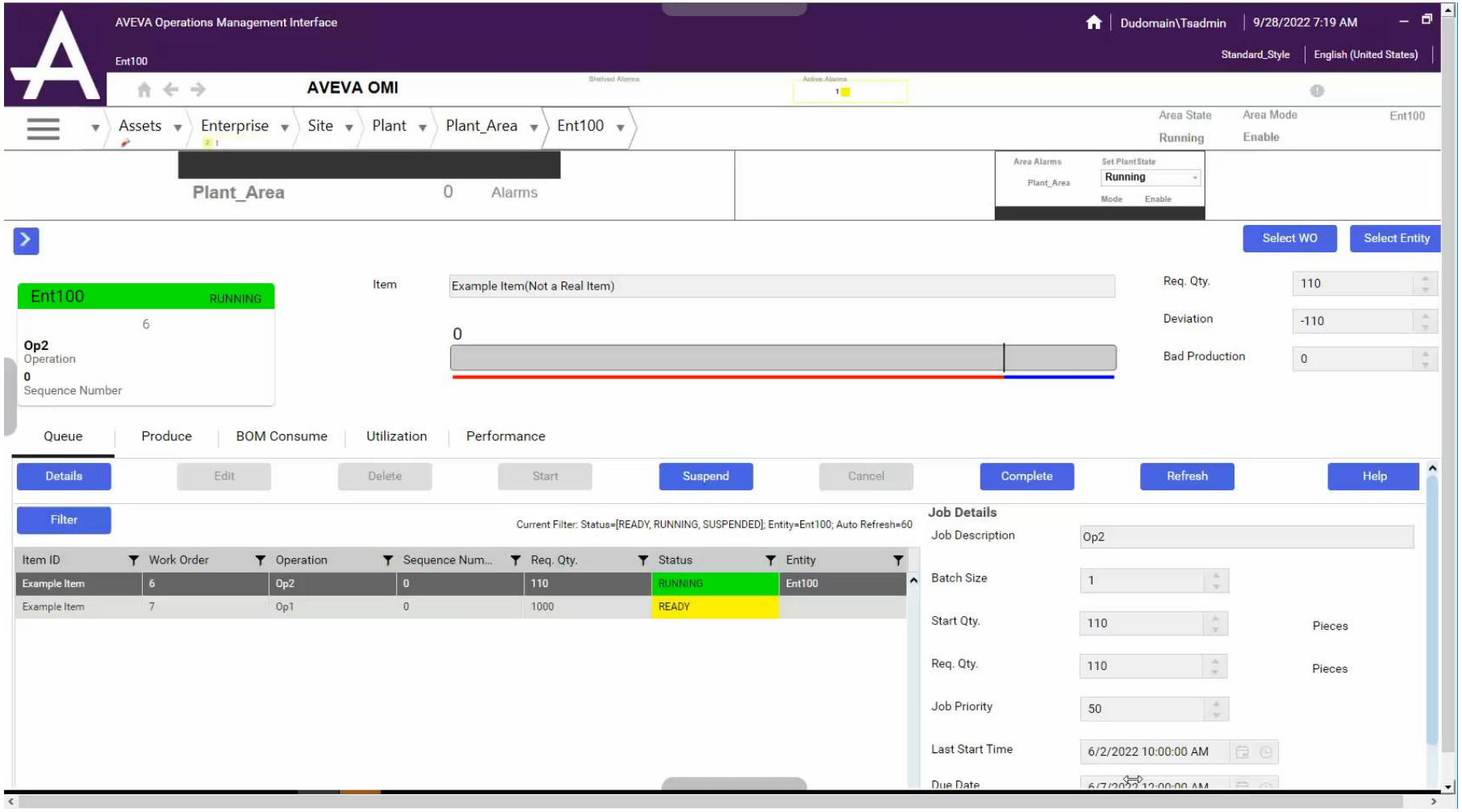
MDM Form Displayed in OMI



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MDM Input XML Parameters

FORM NAME	CONTEXT	INPUT XML Format
MDMWorkOrderManagementForm	Not applicable	
MDMJobManagementForm	Work Order ID and/or Entity Name	<SKRootDefinition> <hfWoId>**WoX**</hfWoId> <hfEntName>**Blender1**</hfEntName> </SKRootDefinition>
MDMJobQueue	Work Order ID and/or Entity ID	<SKRootDefinition> <hfWo_Id>**WoX**</hfWo_Id> <hfEntityID>**12**</hfEntityID> </SKRootDefinition>
MDMJobProduce	Entity ID Work Order ID Operation ID Sequence Number	<SKRootDefinition> <ParameterWoId>**Wo1**</ParameterWoId> <ParameterOperId>**Blending**</ParameterOperId> <ParameterSeqNo>**0**</ParameterSeqNo> <hfEntID>**12**</hfEntID> </SKRootDefinition>

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MDM Input XML Parameters

FORM NAME	CONTEXT	INPUT XML Format
MDMJobConsume	Entity ID Work Order ID Operation ID Sequence Number	<SKRootDefinition> <ParameterWoId>**Wo1**</ParameterWoId> <ParameterOperId>**Blending**</ParameterOperId> <ParameterSeqNo>**0**</ParameterSeqNo> <hfEntID>**12**</hfEntID> </SKRootDefinition>
MDMInventoryForm	Entity ID	<SKRootDefinition> <hfEntityId>**12**</hfEntityId> </SKRootDefinition>
MDMUtilizationForm	Entity ID	<SKRootDefinition> <hfEntityID>**12**</hfEntityID> </SKRootDefinition>

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MDM Input XML Parameters

FORM NAME	CONTEXT	INPUT XML Format
MDMPerformanceMonitorForm	Entity ID	<SKRootDefinition> <hfEntityID>**12**</hfEntityID> </SKRootDefinition>
MDMQualityManagementForm	Entity Name	<SKRootDefinition> <hfEntName>**Blender1**</hfEntName> </SKRootDefinition>

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Tech Tips

- OS security must be enabled across all involved AVEVA software
- Carefully follow the MDM Installation Guide
  - FQDN is mandatory in certain configuration areas (but not all)
  - Hotfixes included with MDM installation are required for some MDM content to work properly
- Work Tasks documentation contains generic instructions for installing and configuring the Workflow Gateway, OMI Applications, and supporting components
- Work Tasks upgrades and hotfixes require running a separate upgrade utility manually. Details are in the instructions.
- If running System Platform 2020 R2 Sp1, you MUST install MES 2020 p02.
  - Patch installer is located on the System Platform 2020 R2 Sp1 installation media only.
- MES 2020.x is not supported with System Platform 2023
  - MES 2023 (Q1 2023*), Work Tasks 2023 (Q4 2022*), and MDM v6 (Q2 2023*) will be minimum versions for use with SP 2023

**Estimated release timeframe at the time of this presentation. Subject to change.*

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Reference

Tech Note TN000033860 for step-by-step instructions and more details

https://softwaresupportsp.aveva.com/#/okmimarticle/docid/tn000033860

Model-Driven MES v5.5 Installation Guide

https://gcsresource.aveva.com/support/Wonderware/MES/MDM/55/MDM%20Installation%20Guide.pdf

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Integrating OMI Web Inside Work Tasks

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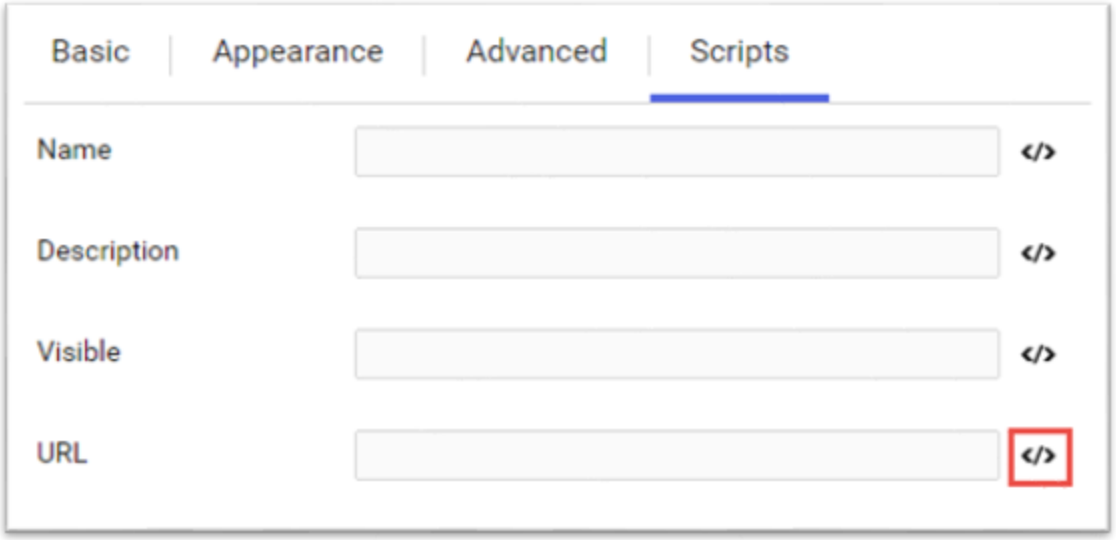
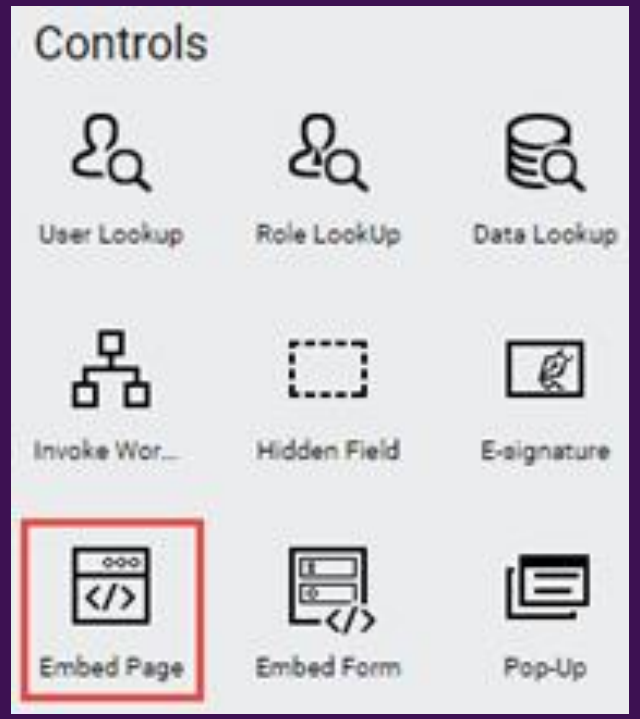
Embed a Web Page

- Create a new form or modify an MDM form in Work Tasks Enterprise Console – Forms
- Drag an Embed Page control onto the form
- Edit the control's Properties
- Go to the Scripts Tab and edit the URL parameter





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Example script

embITWebGraphics (

Basic | Appearance

Name

Description

Visible

URL

```
// sets the URL for the embeded page to open InTouchWeb in Process Graphics tab
// Date Created: 3-8-2019
// Author: Nick Nicholas
// Version: 1.0
// Modified to include share url

$('#E7frameEmbedPage').removeAttr("sandbox");

 var entName = control.findById("H1").value;


 if(entName && entName != "")
 {
 //nn test
   if( entName.startsWith("Line")) {

      var AreaNum = entName.substr(4,1);
      var formsURL ="https://mddemo.wwdc.local/InTouchWeb/?iframe=true&symbol=L" + AreaNum  + "Overview";

   }
   else {

      var AreaNum = entName.substr(entName.length - 1);
      var formsURL ="https://mddemo.wwdc.local/InTouchWeb/?iframe=true&symbol=P" + AreaNum  + "Overview";
   }
 }

console.log ("++++++++++++ URL == " + formsURL);

return formsURL;

//changed from https://mddemo.wwdc.local/InTouchWeb/api/symbol/L1Overview
// to https://mddemo.wwdc.local/InTouchWeb/?iframe=true&symbol=L1Overview
```

do | Revert | Clear All | In

um + "Overview";

lum + "Overview";

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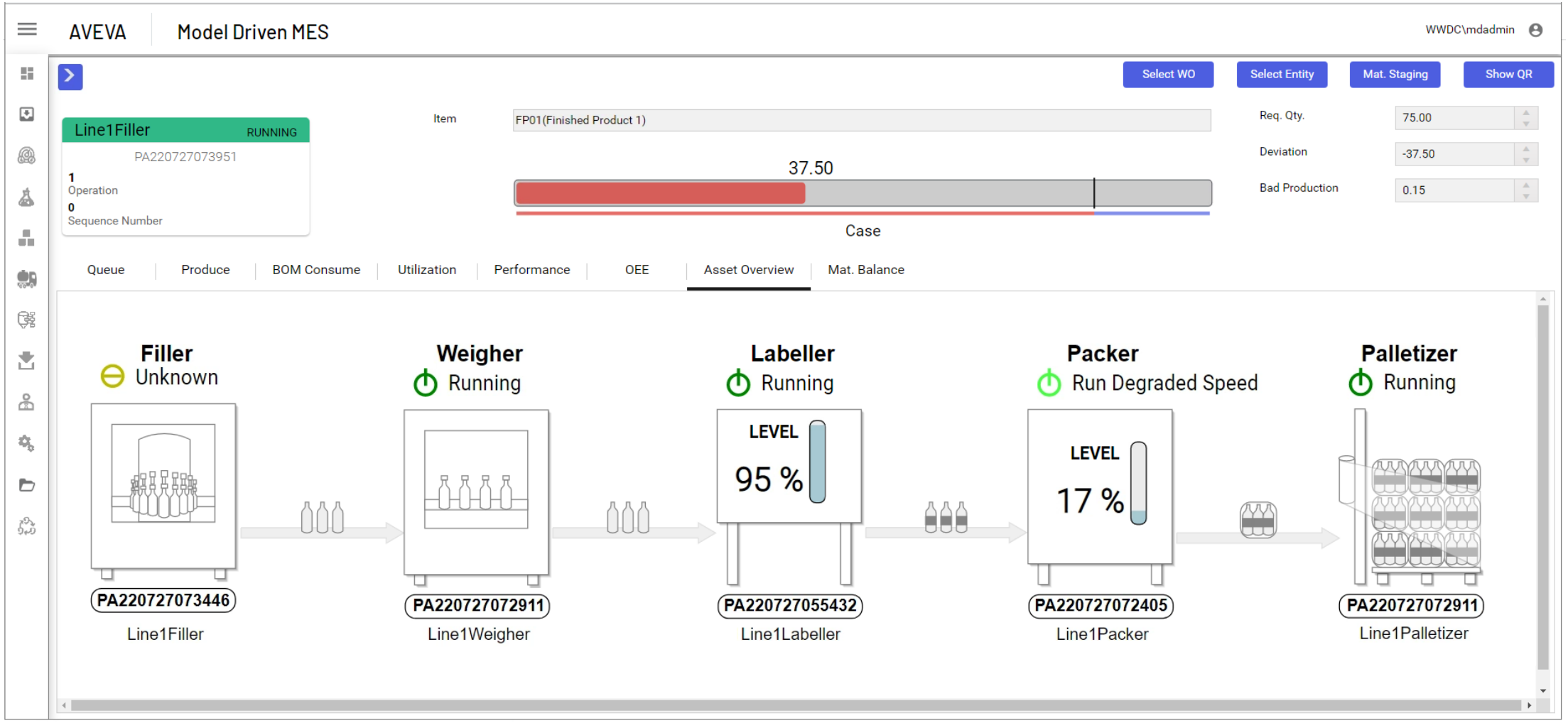
OMI Asset Overview in Work Tasks



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Questions?

Please wait for the microphone.

State your name and company.

Please remember to…

Navigate to this session in the mobile app to complete the survey.

Thank you!

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