

QAD Online Help

QAD Online Help

Published date: 06/30/2025

Table of Contents

Foundation.....	9
Action Centers.....	10
Predefined QAD Action Centers.....	11
Customer Management Predefined Action Centers.....	15
CRM Business Development Action Center.....	16
CRM Sales Management Action Center.....	17
Customer Schedules Action Center.....	20
Customer Sales Action Center.....	22
Customer Sales Profitability Action Center.....	23
Customer Service Action Center.....	25
FSM Depot Repair Action Center.....	27
FSM Field Service Action Center.....	28
FSM Repair Activity Action Center.....	30
FSM RMAs & RTSS Action Center.....	32
FSM Warranty & Contracts Action Center.....	32
TAM Contract Action Center.....	33
TAM Promotion Action Center.....	34
Financials Predefined Action Centers.....	36
Revenue and Margin Analysis.....	36
Treasury Analysis.....	38
Fixed Asset Management Action Center.....	40
Inventory Predefined Action Centers.....	42
Inventory Contextual Insights Action Center.....	42
Inventory Cycle Count Action Center.....	45
Inventory Data Health Action Center.....	48
Inventory Days on Hand Analysis by Buyer Planner.....	51
Inventory Days on Hand by Product Family.....	54

Inventory Excess and Obsolescence.....	58
Inventory Expired and Expiring.....	61
Inventory Shortages and Scrap.....	63
Inventory Turns Action Center.....	66
Inventory Value.....	69
Maintenance Predefined Action Centers.....	71
Equipment Analysis Action Center.....	71
Equipment Cost Action Center.....	74
Failure Analysis Action Center.....	75
Maintenance Backlog Action Center.....	76
PM Compliance Action Center.....	80
Indirect Inventory Analysis Action Center.....	82
Project Analysis Action Center.....	83
Production Predefined Action Centers.....	83
Production Andon Board.....	84
Production Eff and Util by Prod Line.....	87
Production Eff and Util by Work Ctr.....	91
Production Material Shortages.....	94
Production OEE at a Glance by Production Line.....	96
Production OEE at a Glance by Work Center.....	100
Production OEE by Date by Production Line.....	103
Production OEE by Date by Work Center.....	106
Production OTIF Action Centers.....	109
Purchasing Predefined Action Centers.....	116
Purchasing Commitments and Spending Action Center.....	116
Purchasing Data Integrity Action Center.....	122
Purchasing Future Spending Action Center.....	124
Purchasing Inventory Effectiveness Action Center.....	125

Purchase Price Variance Action Center.....	127
Purchasing Supplier Performance Action Center.....	129
Purchasing Supply Chain Risk Action Center.....	137
Purchasing Receipts Action Center.....	140
Purchasing Requisitions Action Center.....	142
Purchasing Returns Action Center.....	145
Purchasing Supplier Schedules Action Center.....	146
Planning Stability Predefined Action Centers.....	148
Planning Stability Action Center.....	148
Planning Stability Purchased Parts Action Center.....	150
Quality Order Status Action Center.....	155
Quality Order Status.....	155
Predefined QAD KPIs.....	156
Developing Action Centers.....	157
Accessing Action Centers.....	157
Visual Analysis Options.....	158
The Radial Menu.....	160
The Visual Drop-Down Menu.....	161
Creating an Action Center.....	163
Copying an Action Center.....	164
Adding Visuals to an Action Center.....	166
Modifying, Resizing, and Removing Action Center Visuals.....	168
Linking Action Center Visuals.....	170
Linking a Visual to Another Action Center.....	170
Adding a List Filter Visual to an Action Center.....	171
Derived Fields and Custom Metrics.....	174
Adding a User Attribute Filter to a Visual.....	174
Manually Refreshing Visuals.....	175

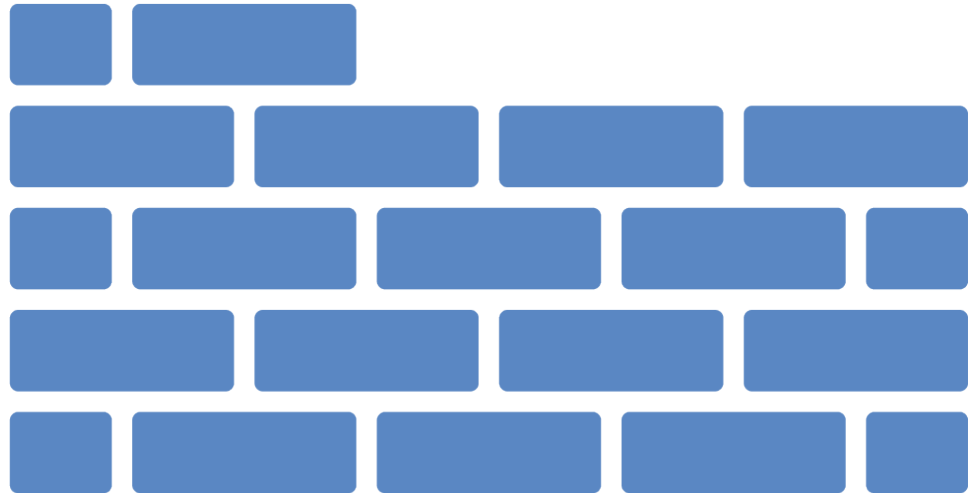
Deleting an Action Center and its Visuals.....	176
Renaming an Action Center.....	176
Refreshing an Action Center.....	177
Favoriting an Action Center.....	178
Favoriting an Action Center on the Action Center.....	178
Favoriting an Action Center from the Menu Search Bar.....	178
Favoriting an Action Center from Favorites Setup.....	178
Removing an Action Center from Favorites.....	178
Viewing Action Center Properties and Export Options.....	179
Export and Import Action Centers.....	181
Exporting and Importing Action Centers as Configuration Data...	182
Action Centers View.....	184
Main Panel.....	185
Visuals Panel.....	185
Actions.....	186
Action Center Permissions.....	186
Action Center User Categories.....	187
Action Center Permission Matrix.....	188
Updating the Permissions for an Action Center.....	189
Action Centers Maintenance Permissions.....	189
Action Centers View Permissions.....	190
KPI Permissions.....	190
Controlling Permissions for the KPIs View.....	191
Browse Permissions.....	192
Record-Level Permissions.....	193
Visual Permissions.....	194
KPIs.....	195
KPIs View.....	195

Summary Panel.....	195
Main Panel.....	196
Browse Panel.....	199
Domains and Entities Panel.....	200
Fields Panel.....	201
Refresh Options Panel.....	203
Visuals Panel.....	205
Where Used Panel.....	206
Snapshot History Panel.....	207
Additional Details Panel.....	208
Creating a KPI.....	208
Copying KPIs.....	209
Assigning Domains and Entities to KPIs.....	209
Refreshing KPIs and Creating Interim Snapshots.....	211
Deleting a KPI and its Visuals.....	212
Deleting a Visual from a KPI and the Gallery.....	212
Export and Import KPIs.....	213
Exporting and Importing KPIs as Configuration Data.....	214
Applying Complex Filters to a KPI.....	218
Visuals.....	220
Visual Settings and the Visual Builder.....	220
Creating a Visual.....	223
Visual Gallery.....	224
KPI Visuals Gallery.....	225
Summary Panel.....	225
Main Panel.....	225
Visual Panel.....	225
Where Used Panel.....	226

KPI Properties Panel.....	227
Additional Details Panel.....	227
Visual Insights.....	227
Platform Development.....	230
Apps.....	230
Registering an App.....	233
Registering an App Before Business Component Deployment....	233
Registering an App After Business Component Deployment.....	234
My Developer Settings.....	235
Data Store.....	236
Business Components.....	237
Main.....	237
Options.....	239
Fields.....	239
Recalculate Formulas.....	244
Field Groups.....	244
Drop-Down Lists.....	244
Indexes.....	245
Relationships.....	246
Business Services.....	248
Business Document.....	248
Form.....	250
Views.....	250
Source File Generation.....	251
Deployment.....	251
Business Components - Field Overrides.....	252
Creating Overrides from Business Component.....	254
Creating System Field Overrides from Business Component.....	255

Creating Domain Field Overrides from Business Component.....	255
Creating Overrides from Design Layout.....	256
Creating System Field Overrides from Design Layout.....	256
Creating Domain Field Overrides from Design Layout.....	256
Business Components - Build Form.....	257
Business Components - Edit Grid.....	267
Business Components - Grid Definition.....	271
Business Components - Conditional Styling.....	273
Business Components - Event Handlers.....	276
Business Components - Views.....	276
Business Components - Drill Downs.....	286
Business Components - Insights.....	288
Logging Options.....	289
Configuration Data Overview.....	290
Configuration Data.....	294
Configuration Data Export and Import.....	295
Artifact Conflicts.....	298
No OS Access Developer Model.....	299
OS Scripts.....	299
OS Script Processing.....	302
Development Projects.....	303
Business Document API Documentation.....	305
Business Service API Documentation.....	306
Index.....	308

Foundation



QAD Foundation provides core technology used throughout the application, including action centers and the platform functions for the QAD Enterprise Platform.

Action Centers

Action centers provide managers with insights into their business in a visual format. They offer next-generation analytics, which allow managers to monitor KPIs that provide insights into particular areas of responsibility. Slice-and-dice capabilities ensure that you can modify the data output according to your needs. These embedded analytics read the data directly from the core ERP system in real time or daily, depending on your needs.

The KPIs are based on operational or financial browses created in the .NET UI, and on browses built in the Web UI using the platform business component builder functionality. KPIs allow you to specify the content from these browses that you want to make available for analysis in the Web UI.

Visuals are graphical representations of the KPI data, and are based on the KPIs. When you create a visual, you can save it to the Visual Gallery. You can create an action center with multiple sections or panels displaying visuals from the Gallery or visuals that you create directly in the action center. You can create personal action centers, and administrators can create shared action centers for distribution to users based on a user role. QAD provides a number of predefined QAD action centers relevant to customer management, manufacturing operations, and other areas of the business.

Important This version of the online help describes the user experience for action centers, KPIs, and visuals based on the new QAD Analytics for Adaptive UX user experience. [The March 2022 version of the online help](#) described the user experience for action centers based on Logi Platform Services and Thinkspace visuals.

QAD no longer supports Logi Thinkspace visuals. If you are a new Adaptive UX customer, you have access to the new user experience—and compatible predefined QAD action centers, KPIs, and visuals—automatically upon installation. If you are an existing customer upgrading to 2024, you must upgrade to the new version. QAD provides migration software to quickly convert existing Thinkspace visuals to the new Composer visual type. For more information, contact QAD Support.

To check the version of Logi in your environment, open **KPIs** and click New. In the form that opens, check the value in the Visual Type field. The field is set to Composer or Thinkspace to indicate the Logi version.

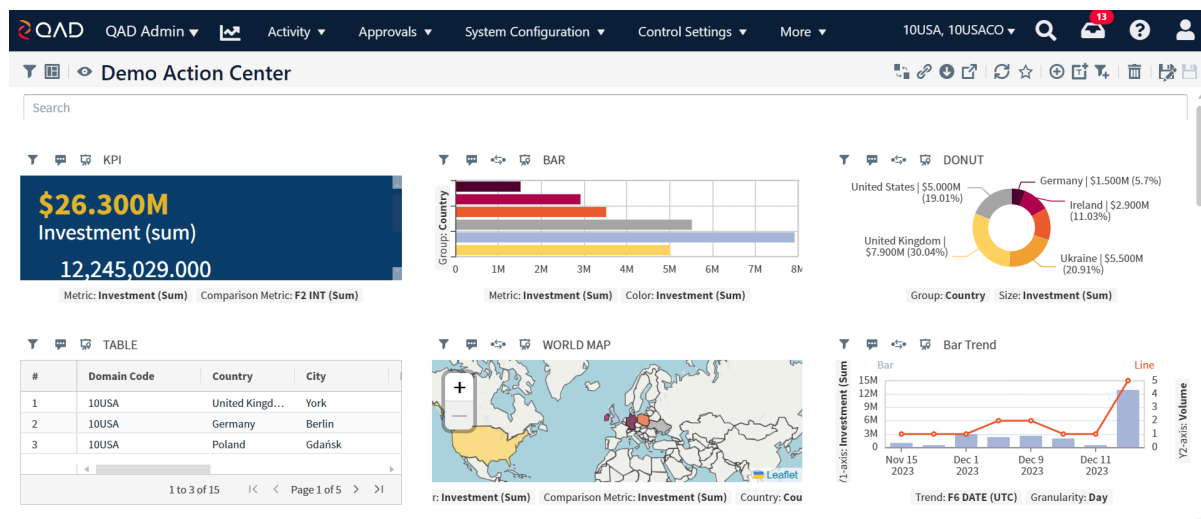
All action centers are part of Configuration Data and are app-neutral. Provided you have the requisite permissions, you can modify these action centers regardless of what app is set as the active app.

To view an action center, click the Action Centers drop-down menu icon



from the menu bar and select an action center. This menu includes the available action center dashboards. The action centers in this menu

are arranged in ascending alphanumeric order. You are only able to see action centers that have been marked as visible in the **Action Centers** view and that you have role permission to view.

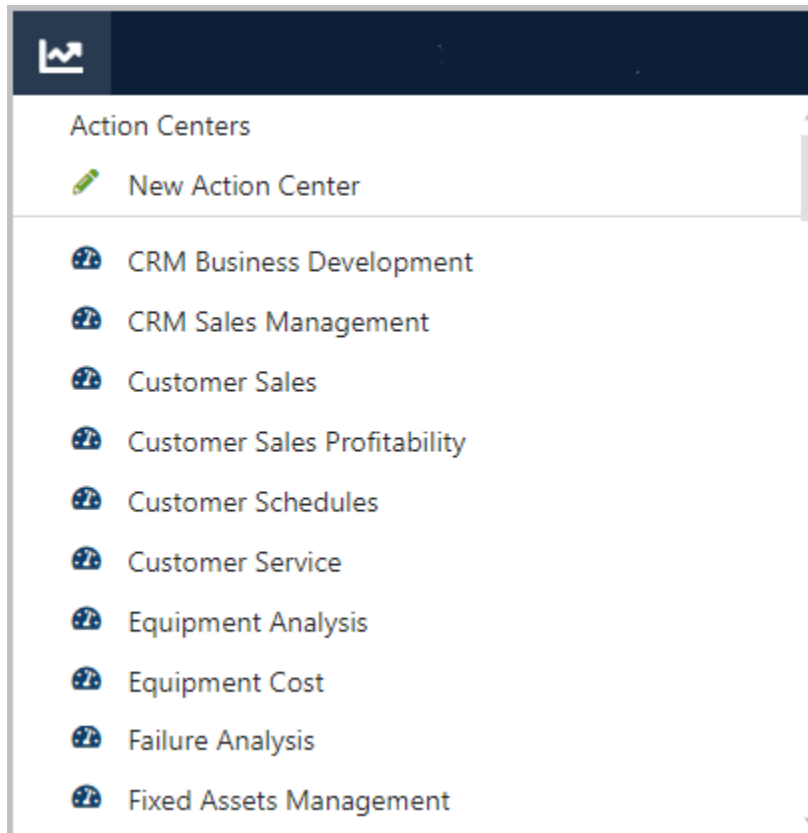


In addition to displaying visuals in action centers, you can also include visuals in the Insights panel that appears to the right of many business component views. For more information, see [Visual Insights on page 227](#).

Predefined QAD Action Centers

The Web UI contains predefined QAD action centers with KPI visuals that are relevant for particular roles. You can edit these action centers to suit your business needs. QAD is continuously improving these action centers and adding new ones. With each software upgrade, QAD adds any new predefined action centers to your environment, but QAD does not update your existing QAD action centers. This section provides a detailed description of each of these action centers.

The predefined QAD action centers are available from the Action Centers drop-down menu.



Note For information on analyzing visuals, see [Visual Analysis Options](#) on page 158.

These action centers are grouped by related business area and app. Although these action centers are part of Configuration Data, each one is associated with a particular app through the Origin App URI field in the **Action Centers** view.

Predefined QAD Action Centers

Business Area	App	Action Center
Asset Management	assetmgmt-app	Equipment Analysis
		Equipment Cost
		Maintenance Backlog
		PM Compliance
		Indirect Inventory Analysis
		Project Analysis
		Failure Analysis

Business Area	App	Action Center
Customer Management	custrelmgmt-app	CRM Business Development
		CRM Sales Management
	service-app	FSM Depot Repair
		FSM Field Service
		FSM Repair Activity
		FSM RMAs and RTSs
		FSM Warranty and Contracts
	sales-app	Customer Sales
		Customer Sales Profitability
		Customer Schedules
		Customer Service
	tam-app	TAM Contracts
		TAM Promotion
Production	pushproduction-app	Production Andon Board
		Production Eff and Util by Prod Line
		Production Eff and Util by Work Ctr
		Production Material Shortages
		Production OEE at a Glance by Production Line
		Production OEE at a Glance by WkCtr
		Production OEE by Date by Production Line

Business Area	App	Action Center
		Production OEE by Date by Wrk Ctr
		Production OTIF Analysis MPS/ Production Orders
		Production OTIF by Product Family
		Production OTIF Operations by Work Center
Inventory Management	inventory-app	Inventory Contextual Insight
		Inventory Cycle Count
		Inventory Data Health
		Inventory Days On Hand by Buyer Planner
		Inventory Days On Hand by Product Family
		Inventory Excess and Obsolescence
		Inventory Expired and Expiring
		Inventory Shortages and Scrap
		Inventory Turns
		Inventory Value
Purchasing	purchasing-app	Purchasing Commitments and Spending
		Purchasing Data Integrity
		Purchasing Future Spending

Business Area	App	Action Center
		Purchasing Inventory Effectiveness
		Purchasing Supplier Performance
		Purchasing Supply Chain Risk
		Purchase Price Variance
		Purchasing Receipts
		Purchasing Returns
		Purchasing Requisitions
		Purchasing Supplier Schedules
Manufacturing	planning-app	Planning Stability
		Planning Stability Purchased Parts
Finance	fixed-assets-app	Fixed Assets Management
	financials-qra-app	Revenue and Margin Analysis
		Treasury Analysis
Quality	quality-app	Quality Order Status

These action centers are based on predefined QAD KPIs and associated predefined QAD visuals. For more information, see [Predefined QAD KPIs on page 156](#).

You can export app data, and associated predefined QAD action centers and KPIs saved as Configuration Data, from an environment in a format that can be easily packaged and installed in another environment. For more information, refer to the *QAD Enterprise Platform Developer Guide*.

Customer Management Predefined Action Centers

This section includes Customer Management predefined action centers.

CRM Business Development Action Center

The predefined CRM Business Development action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed decisions surrounding your business and marketing initiatives.

CRM Business Development Visuals

Visual Name	Description	Purpose
Leads By Quarter	This horizontal bar chart shows leads by quarter. KPI: Leads By Quarter Data Source: Leads	This visual displays all leads entered into the system, organized by quarter. Each bar is color coded to display the lead source, allowing you to locate the primary sources of your leads.
Leads By Marketing Campaign	This pie chart shows leads by marketing campaign. KPI: Leads by Campaign Data Source: Leads	This visual displays all leads entered into the system, organized by marketing campaign. Each color represents a different marketing campaign and is labeled appropriately.
Campaign Costs	This vertical bar chart shows campaign costs by marketing campaign. KPI: Campaign Costs Data Source: Costs	This visual shows campaign costs, ranked by marketing campaign. The vertical axis represents cost, and the horizontal axis represents the various marketing campaigns. Each campaign has bars representing the Total Budget Amount and Total Actual Amount.
Campaign Stages	This table shows campaign stage information by marketing campaign. KPI: Campaign Stages	This visual displays campaign stage information for your marketing campaigns, organized

Visual Name	Description	Purpose
	Data Source: Campaign Stages	by Stage Sequence, Stage Description, Anticipated Members, and Start Date. This visual can be filtered using the Market Campaigns widget.

CRM Sales Management Action Center

The predefined CRM Sales Management action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed sales and planning decisions.

CRM Sales Management Visuals

Visual Name	Description	Purpose
Weighted Sales Funnel By Quarter	This vertical bar chart shows the total weighted sales funnel amount by quarter. KPI: Sales Funnel By Quarter Data Source: Sales Opportunity Lines	This visual displays the weighted sale funnel broken down quarterly. This KPI only includes records with Include in Funnel selected on Sales Opportunities. The graph aggregates total weighted funnel revenue across opportunities by quarter and is calculated as the <i>unweighted Sales Funnel * Probability% * Sales Probability%</i> .
Unweighted Sales Funnel by Quarter	This vertical bar chart shows the total unweighted sales funnel amount by quarter. KPI: Unweighted Sales Funnel by Quarter Data Source: Sales Opportunity Lines	This visual displays the unweighted sale funnel broken down quarterly. This KPI only includes records with Include in Funnel selected on Sales Opportunities. The graph aggregates total unweighted funnel revenue across opportunities by quarter and is calculated as the sum

Visual Name	Description	Purpose
		of the total extended price.
Opportunities By Stage	This donut chart shows sales opportunities by opportunity stages. KPI: Opportunities By Stage Data Source: Sales Opportunities	This visual breaks down all sales opportunities based on current stage, giving you an overall outlook on the status of all your opportunities.
Past Due Opportunities	This table shows past due opportunities by stage and past due days. KPI: Past Due Opportunities Data Source: Sales Opportunities	This visual displays all opportunities with an overdue next stage date, ranked by sales opportunity stage. The vertical axis is organized by Past Days, while the horizontal axis is organized by sales opportunity stages.
Tasks Due in 2 Weeks	This KPI gauge displays the number of tasks due in the next two weeks by salesperson. KPI: Tasks Due in 2 Weeks Data Source: Tasks	This visual displays the total number of tasks due in the next two weeks for the currently selected salesperson. This visual can be filtered using the Salespersons widget.
This Week Events	This KPI gauge displays the number of events occurring this week by salesperson. KPI: This Weeks Events Data Source: Events	This visual displays the total number of events this week associated with the currently selected salesperson. This visual can be filtered using the Salespersons widget.
Past Due Events by Salesperson	This vertical bar chart shows all past due events by salesperson.	This visual displays the number of past due events assigned to each salesperson, ranked by the

Visual Name	Description	Purpose
	KPI: Past Due Events By Salesperson Data Source: Events	aggregated days past due of all open events belonging to that salesperson. This visual can be filtered using the Salespersons widget.
Open Opportunities with Invalid Forecast Date	This number chart shows open opportunities with an invalid forecast date. KPI: Open Opportunities with Invalid Forecast Date Data Source: Sales Opportunities	This visual displays the total number of open opportunities in the system with a forecast date considered as invalid. Invalid dates are all forecast dates that exist before the current quarter.
Lost Opportunities by Reason	This donut chart shows opportunities lost by the reason given for loss. KPI: Lost Opportunities by Reason Data Source: Sales Opportunities	This visual displays lost opportunities organized by the reason they were lost. Each color represents a different reason.
Top 5 Opportunities	This KPI gauge shows the top five opportunities based on funnel amount. KPI: Top 5 Opportunities Data Source: Sales Opportunities	This visual displays the current top five sales opportunities based on total funnel amount. The funnel amount is converted to the base currency and then calculated. This visual can be filtered using the Top 5 Date Range widget.
Weighted Sales Funnel by Date and Type	This vertical bar chart shows the weighted sales funnel by both date and type. KPI: Weighted Sales Funnel by Date and Type	This visual displays the total weighted sales funnel by both date and type. This KPI only includes records with Include in Funnel selected on Sales Opportunities.

Visual Name	Description	Purpose
	Data Source: Sales Opportunity Lines	This visual is based on historical data; at the beginning of each month, a snapshot is taken and from this the sales funnel trend will be displayed. The weighted sales funnel amount is calculated as <i>Unweighted Sales Funnel * Probability% * Sales Probability%</i> .
Unweighted Sales Funnel by Date and Type	This vertical bar chart shows the unweighted sales funnel by both date and type. KPI: Unweighted Sales Funnel by Date and Type Data Source: Sales Opportunity Lines	This visual displays the total unweighted sales funnel by both date and type. This KPI only includes records with Include in Funnel selected on Sales Opportunities. This visual is based on historical data; at the beginning of each month, a snapshot is taken and from this the sales funnel trend will be displayed. The unweighted sales funnel amount is calculated as the sum of the total extended price.

Customer Schedules Action Center

The predefined Customer Schedules action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer schedule decisions.

Customer Schedules Visuals

Visual Name	Description	Purpose
Releases Received Today	This visual displays the total number of scheduled releases	This visual allows you to view the total number of plan and ship schedules

Visual Name	Description	Purpose
	<p>received on the current day.</p> <p>KPI: CSO Releases</p> <p>Data Source: Customer Scheduled Releases</p>	<p>(DELFORs and DELJITs) created today either manually or through EDI. The visualization settings can be adjusted to have a different background color depending on the number received. It can be filtered by Ship-To Customer and Ship-From Site.</p>
Active Releases with Variances	<p>This visual displays the total number of active scheduled releases with variances.</p> <p>KPI: Customer Schedules Active with Variances</p> <p>Data Source: Customer Scheduled Releases</p>	<p>This visual allows you to view the total number of active Customer Schedules Releases that have a variance outside of the tolerance specified in the Customer Scheduled Order. It can be filtered by Ship-To Customer and Ship-From Site.</p>
Active Releases with Variances by Customer	<p>This table displays the number of active scheduled releases with variances by customer.</p> <p>KPI: Customer Schedules Active with Variances</p> <p>Data Source: Customer Scheduled Releases</p>	<p>This visual allows you to view the total number of active Customer Schedules Releases that have a variance outside of the tolerance specified in the Customer Scheduled Order grouped by customer. Each customer can be expanded to show individual lines with variances. It can be filtered by Ship-To Customer and Ship-From Site.</p>
Open Quantity to Ship Today by Item Number	<p>This vertical bar chart shows the open</p>	<p>This visual allows you to view the quantities for each item that</p>

Visual Name	Description	Purpose
	quantities of items due today on active RSS. KPI: Active RSS Due Today Data Source: Customer Req Ship Schedule Detail - Active	are due today on active Required Ship Schedules (RSS). It can be filtered by Ship-To Customer and Ship-From Site.
Customer Releases Received Last 3 Months	This vertical bar chart displays the total number of plan and ship schedules received in the past 3 months. KPI: Customer Schedules Received Last 3 Months Data Source: Customer Invoices	This visual allows you to view the total number of plan and ship schedules (DELFORs and DELJITs) created in the past 3 months either manually or through EDI. It can be filtered by Ship-To Customer and Ship-From Site.

Customer Sales Action Center

The predefined Customer Sales action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer sales decisions.

Customer Sales Visuals

Visual Name	Description	Purpose
Top Customers	This horizontal bar chart displays the top 10 customers based on total sales year to date. KPI: Top Customers Data Source: Sales by Customer browse	This visual allows you to view your top customers on a yearly basis. It displays an Others column that allows you to view the remaining customers. You can change the year you are viewing using the Year widget. The default value is all years.
Top Items	This horizontal bar chart displays the top	This visual allows you to view your top-selling items on a yearly

Visual Name	Description	Purpose
	10 items based on total sales year to date. KPI: Top Items Data Source: Sales by Item browse	basis. It displays an Others column that allows you view the remaining items. You can change the year you are viewing using the Year widget. The default value is all years.
Sales Orders on Hold	This pie chart displays sales orders on credit hold grouped by action status. KPI: Orders on Credit Hold Data Source: Sales Order Credit browse	This visual allows you to view the number of open sales orders with a non-blank Action Status and the percentage breakdown of each of these statuses. When an order is put on credit hold, the system-generated Action Status is HD, but other statuses can be user defined.
Late Open Payments	This vertical bar chart displays late open payments. KPI: Late Payments Data Source: Customer Invoices browse	This visual allows you to view the amount of late payments broken down into five time buckets, from current (not overdue) to overdue by greater than 90 days.
Invoice Value by Week	This vertical bar chart displays invoice value by week. KPI: Invoice Value by Week Data Source: Customer Invoices browse	This visual allows you to view the value of invoices generated each week for the current fiscal year.

Customer Sales Profitability Action Center

The predefined Customer Sales Profitability action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer sales decisions.

Customer Sales Profitability Visuals

Visual Name	Description	Purpose
Sales - Year to Date	This gauge displays the total sales amount for the year to date. KPI: Sales Profitability Data Source: Invoice History browse	This visual allows you to view your total sales value for the year to date, expressed in a dollar amount. You can filter this result by Item Group, Item Type, or Product Line using the widgets at the top of the page.
Monthly Sales	This vertical bar chart displays the total sales shipped by month. KPI: Sales Profitability Data Source: Invoice History browse	This visual allows you to view your monthly shipped sales, broken down by month. You can filter this result by Item Group, Item Type, or Product Line using the widgets at the top of the page.
YTD Sales Margin	This dial gauge displays the total margin value. KPI: Sales Profitability Data Source: Invoice History browse	This visual allows you to view your total margin value. Low values on the gauge are indicated in red, medium values in yellow, and high values in green. You can filter this result by Item Group, Item Type, or Product Line using the widgets at the top of the page.
Margin Contribution by Item Type	This horizontal bar chart displays total margin shipped by month, grouped by item type. KPI: Sales Profitability	This visual allow you to view your total margin shipped each month. Each bar is broken down by item type. You can filter this result by Item Group, Item Type, or Product Line using

Visual Name	Description	Purpose
	Data Source: Invoice History browse	the widgets at the top of the page.
Quarterly Sales by Item Group	This vertical bar chart displays total sales shipped by quarter, grouped by item group. KPI: Sales Profitability Data Source: Invoice History browse	This visual allows you to view your total sales shipped each quarter. Each bar is broken down by Item Group. You can filter this result by Item Group, Item Type, or Product Line using the widgets at the top of the page.
YTD Sales by Item Type	This pie chart displays total sales by item type. KPI: Sales Profitability Data Source: Invoice History browse	This visual allows you to view your year-to-date sales, broken down by Item Type. You can filter this result by Item Group, Item Type, or Product Line using the widgets at the top of the page.
Quarterly Sales by Item Type	This pie chart displays year-to-date margin by item type. KPI: Sales Profitability Data Source: Invoice History browse	This visual allows you to view your year-to-date margin, broken down by item type. You can filter this result by Item Group, Item Type, or Product Line using the widgets at the top of the page.
Monthly Sales & Units	This combo chart displays total sales and invoiced quantity shipped by month. KPI: Sales Profitability Data Source: Invoice History browse	This visual allows you to view the total sales and invoiced quantity shipped each month. You can filter this result by Item Group, Item Type, or Product Line using the widgets at the top of the page.

Customer Service Action Center

The predefined Customer Service action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer service decisions.

Customer Service Visuals

Visual Name	Description	Purpose
Open Sales Order Lines by Due Date	This vertical bar chart and line chart display the total value and number of open sales order lines in a timeline relative to today. KPI: Open Sales Order Lines by Due Date Data Source: Sales Order Detail browse	This visual allows you to view the value and number of open sales order lines by date broken down into nine time buckets, from open order lines overdue by greater than 7 days to open order lines due 30 days ahead.
Number of Overdue Sales Order Lines	This visual displays the number of sales order lines considered overdue based on the due date. KPI: Open Sales Order Lines Summary Data Source: Sales Order Detail	This visual shows the total number of overdue sales order lines based on due date where the open quantity is greater than zero.
Summary of Open Sales Order Lines	This semi-doughnut chart displays the total number of open sales order lines. KPI: Open Sales Order Lines Summary Data Source: Sales Order Detail browse	This visual displays the total number of open sales order lines in two categories: overdue or not overdue.
Average Days Late for Shipments in the past 12 months	This line chart displays the average number of days invoiced order lines are late based on a comparison of ship date to due date. KPI: Late Shipments Data Source: Invoice History Browse	This visual compares ship date to due date, allowing you to view the average number of days invoiced order lines have shipped late.

Visual Name	Description	Purpose
Late Shipments in the past 12 months by Site	<p>This vertical bar chart displays the monthly number of invoiced order lines that were late based on a comparison of ship date to due date grouped by month per site.</p> <p>KPI: Late Shipments Last 12 Months by Site</p> <p>Data Source: Invoice History</p>	This visual compares ship date to due date, calculating how many lines were late each month grouped by site.

FSM Depot Repair Action Center

The predefined FSM Depot Repair action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer support decisions regarding depot orders.

FSM Depot Repair Visuals

Visual Name	Description	Purpose
Depot Orders by Queue	<p>This bar chart shows depot orders organized by count and queue.</p> <p>Use the Date From widget to filter the displayed dates.</p> <p>Use the Filter by Service Area widget to filter this visual by a specific area.</p> <p>KPI: All Depot Orders</p> <p>Data Source: Depot Orders</p>	This visual allows you to match your depot orders with their corresponding queue placement.
Overdue Depot Orders	<p>This table shows all depot orders considered overdue.</p> <p>Use the Filter by Service Area widget</p>	<p>This table organizes all overdue depot orders by end user name for easy viewing.</p> <p>Click the + icon to drill down into a line.</p>

Visual Name	Description	Purpose
	<p>to filter this visual by a specific area.</p> <p>KPI: All Depot Orders Lines</p> <p>Data Source: Depot Order Detail</p>	

FSM Field Service Action Center

The predefined FSM Field Service action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer support decisions regarding your field service engagements.

FSM Field Service Visuals

Visual Name	Description	Purpose
Outstanding Service Orders	<p>This KPI gauge displays the number of outstanding service orders.</p> <p>Use the Date From widget to filter the displayed dates.</p> <p>KPI: Open Service Orders</p> <p>Data Source: All Service Orders</p>	This visual displays the total number of outstanding service orders in the system next to the total number of all service orders.
Open Action Requests by Severity	<p>This bar chart shows open action requests organized by date and severity.</p> <p>Use the Date From widget to filter the displayed dates.</p> <p>Use the Filter by Customer widget to filter action requests by specific customer.</p> <p>KPI: Open Action Requests</p> <p>Data Source: Action Requests</p>	This visual breaks down open action requests by month and severity, providing you with an overview of your service over time.

Visual Name	Description	Purpose
Open Service Orders by Severity	<p>This line graph shows all open service orders organized by severity and date.</p> <p>Use the Filter by Service Area widget to filter this visual by a specific area.</p> <p>Use the Date From widget to filter the displayed dates.</p> <p>KPI: Open Service Orders</p> <p>Data Source: Service Orders</p>	<p>This visual allows you to pinpoint the number of service orders at certain severity levels you have had over a certain time period.</p>
First Visit Resolution	<p>This semi-doughnut chart displays the number and percentage of the service orders fixed by one visit among all closed service orders.</p> <p>Use the Date From widget to filter the displayed dates.</p> <p>KPI: All Service Order Lines</p> <p>Data Source: All Service Orders</p>	<p>This visual shows the rate of all service orders completed during a single visit, allowing you to make decisions about the efficiency and productivity of the service organization.</p>
Service Orders by Cause	<p>This semi-pie chart shows service orders organized by cause.</p> <p>Use the Date From widget to filter the displayed dates.</p> <p>KPI: Service Order Fault Codes</p> <p>Data Source: Fault Code Analysis</p>	<p>This visual allows you to easily view the various causes of all service orders.</p>

Visual Name	Description	Purpose
Open vs Closed Service Orders	This line chart shows open and closed service orders. KPI: Service Orders Over Time Data Source: Service Orders	This visual allows you to easily view all newly create service orders and closed service orders as of the current date.

FSM Repair Activity Action Center

The predefined FSM Repair Activity action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data, allowing you to make better technical support decisions regarding repair activity.

FSM Repair Activity Visuals

Visual Name	Description	Purpose
Outstanding Service Orders	This KPI gauge displays the number of outstanding service orders. KPI: Open Service Orders Data Source: All Service Orders	This visual displays the total number of outstanding service orders in the system.
Unassigned Open Orders	This KPI gauge displays the number of unassigned open orders. KPI: Open Service Orders Data Source: All Service Orders	This visual displays the total number of unassigned open orders in the system.
Engineer Utilization	This gauge shows average engineer utilization. Use the Filter by Service Area widget to filter this visual by a specific area. KPI: Engineer Utilization	This visual allows you to view the average utilization of engineers in the selected service area.

Visual Name	Description	Purpose
	Data Source: Engineer Utilization	
Mean Time to Repair	<p>This bar chart shows the mean time to repair organized by quarter and service category.</p> <p>Use the Filter By Item widget to apply specific items to this visual.</p> <p>KPI: Service Order Labor</p> <p>Data Source: Call Labor Browse</p>	This visual allows you to view the average engineer labor time charged in the Service Category field as Labor Cost.
Mean Time to Travel	<p>This bar chart shows mean time to travel organized by quarter and service category.</p> <p>Use the Filter By Item widget to apply specific items to this visual.</p> <p>KPI: Service Order Labor</p> <p>Data Source: Call Labor Browse</p>	This visual allows you to view the average engineer labor time charged in the Service Category field as Travel Labor.
Service Orders by Skill Set	<p>This pie chart shows service orders organized by skill set.</p> <p>Use the Date From widget to change the dates of this visual.</p> <p>KPI: Open Service Order Lines by Skill</p> <p>Data Source: Service Orders</p>	This pie chart allows you to analyze the amount of open service orders you have broken down by skill set.
Material Orders to Ship	<p>This table shows material orders to ship organized by engineer.</p> <p>KPI: Open Material Order Lines by Engineer</p>	This table allows you to analyze the amount of material orders you have ready to ship broken down by engineer.

Visual Name	Description	Purpose
	Data Source: Material Orders	

FSM RMAs & RTSs Action Center

The predefined Customer Support action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer support decisions regarding RMAs and RTSs.

FSM RMAs & RTSs Visuals

Visual Name	Description	Purpose
Unreturned RMAs by Item	<p>This bar chart shows unreturned RMAs organized by item and price.</p> <p>Use the Filter by Service Area widget to filter this visual by a specific area.</p> <p>KPI: RMA Return Lines</p> <p>Data Source: RMA Return Detail</p>	This visual summarizes the value of unreturned RMAs across all your items.
Overdue RMA Shipments	<p>This table shows all overdue RMA shipments.</p> <p>Use the Filter by Service Area widget to filter this visual by a specific area.</p> <p>KPI: Open RMA Lines</p> <p>Data Source: RMAs</p>	<p>This table displays all overdue RMA shipments by end user name.</p> <p>Click the + icon to drill down into each line.</p>

FSM Warranty & Contracts Action Center

The predefined Customer Support action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer support decisions.

Customer Support Visuals

Visual Name	Description	Purpose
Installed Base Warranty Expiring This Quarter	This column chart shows ISB warranties expiring this quarter. KPI: Service Order Labor Data Source: Installed Base	This visual allows you to determine the amount of Installed Base warranties currently at risk of expiring by the end of this quarter.
Service Contracts Expiring This Quarter	This column chart shows ISB warranties expiring this quarter. KPI: Service Contract Lines Data Source: Service Contract Detail	This visual allows you to determine the amount of service contracts currently at risk of expiring by the end of this quarter.

TAM Contract Action Center

The predefined TAM Contract action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer sales decisions.

TAM Contract Visuals

Visual Name	Description	Purpose
Contract Earned Discounts by Customer and Deal	This bar chart shows earned discounts by customer and deal. KPI: TAM Contract Earned Discounts Data Source: TAM Contract Earned Discounts	This visual displays the total contract earned discount for the current fiscal year grouped by both customer and deal. This visual can be filtered using the Date Range widget.
Contract Earned Discounts by Month	This column chart shows total earned discount for each month. KPI: TAM Contract Earned Discounts	This visual displays the total contract earned discount for each month in the current fiscal year. This visual can be filtered using the Date Range widget.

Visual Name	Description	Purpose
	Data Source: TAM Contract Earned Discounts	
Contract Earned Discounts by Deal	This dial gauge displays the total margin value. KPI: Sales Profitability Data Source: Invoice History browse	This visual displays the total contract earned discount for each deal in the current fiscal year. This visual can be filtered using the Date Range widget.
Contract Earned Discounts by Customer - Claimed / Open	This column chart shows how much earned discount has been claimed. KPI: Contract Earned Discounts by Customer - Claimed / Open Data Source: TAM Contract Earned Discount Totals	This visual displays how much of the total contract earned discount for the current fiscal year has been both claimed and unclaimed. This visual can be filtered using the Date Range widget.
Indirect Sales by Customer and Status	This bar chart shows indirect sales records by customer. KPI: TAM Indirect Sales Lines Data Source: TAM Indirect Sales Lines	This visual displays the number of indirect sales records of each status for each customer. This visual can be filtered using the Date Range widget.

TAM Promotion Action Center

The predefined TAM Promotion action center is accessible from the Action Centers drop-down menu.

This action center contains various visuals that display data at a glance, allowing you to make more informed customer sales decisions.

TAM Promotion Visuals

Visual Name	Description	Purpose
YTD Gross Sales	This KPI gauge shows the total gross sales amount for the current fiscal year. KPI: YTD Sales	This visual displays the total BC gross amount for the current fiscal year. This amount is calculated

Visual Name	Description	Purpose
	Data Source: Invoice History	based on BC Invoice Amount and discount percentage. This visual can be filtered by one or multiple customers or items using the Customers or Items widgets.
YTD Net Sales	This KPI gauge shows the total net sales amount for the current fiscal year. KPI: YTD Sales Data Source: Invoice History	This visual displays the total BC invoice amount for the current fiscal year. This visual can be filtered by one or multiple customers or items using the Customers or Items widgets.
Promotion Earned Discounts by Customer and Deal	This column chart shows earned discount for the current fiscal year by customer and deal. KPI: TAM Promotions Earned Discounts Data Source: TAM Promotion Earned Discounts	This visual displays the total promotion earned discount for the current fiscal year grouped by customer and deal type. This visual can be filtered using the Date Range widget.
Promotion Earned Discounts by Customer and Item	This bar chart shows earned discount for the current fiscal year by customer and item. KPI: TAM Promotion Earned Discounts Data Source: TAM Promotion Earned Discounts	This visual displays the total promotion earned discount for the current fiscal year grouped by customer and item. This visual can be filtered using the Date Range widget.
Promotion Earned Discounts by Customer - Claimed / Open	This column chart shows how much earned discount has been claimed. KPI: TAM Promotion Earned Discounts by	This visual displays how much of the total promotion earned discount for the current fiscal year has been both claimed and unclaimed. This

Visual Name	Description	Purpose
	Customer - Claimed / Open Data Source: TAM Promotion Earned Discount Totals	visual can be filtered using the Date Range widget.
Promotion Earned Discounts by Month	This column chart shows the total earned discount for each month in the current fiscal year. KPI: TAM Promotion Earned Discounts Data Source: TAM Promotion Earned Discounts	This visual displays the total promotion earned discount for each month in the current fiscal year grouped by month. This visual can be filtered using the Date Range widget.
Promotion Earned Discounts by Deal	This pie chart shows the total earned discount for each deal in the current fiscal year. KPI: TAM Promotion Earned Discounts Data Source: TAM Promotion Earned Discounts	This visual displays the total promotion earned discount for each deal in the current fiscal year. This visual can be filtered using the Date Range widget.

Financials Predefined Action Centers

This section includes Financials predefined action centers.

Revenue and Margin Analysis

The predefined Revenue and Margin Analysis action center is accessible from the Action Centers drop-down menu.

This action center contains six visuals that display data at a glance, allowing you to conduct financial analysis by default at the levels of Year/Period, Entity, and Reporting Group.

Note If you have the requisite permissions, you can view the KPI on which a visual is based directly from an action center. To do this, on the top right of the visual, click the Show More icon and then choose Edit KPI. The **KPIs** view opens in a modal window.

Revenue and Margin Analysis Visuals

Visual Name	Description	Purpose
Gross Income	<p>This bar chart displays the gross income by Year/Period and Entity. You can click on the chart to zoom into or filter the data.</p> <p>KPI: Revenue & Expense Analysis</p> <p>Data Source: Cube Trial Balance View</p>	Gross income is the overall income of a company over a specified period, minus the cost of goods sold (COGS). This visual is based on the Revenue & Expense Analysis KPI.
Net Income	<p>This bar chart displays the net income by Year/Period and Entity. You can click on the chart to zoom into or filter the data.</p> <p>KPI: Revenue & Expense Analysis</p> <p>Data Source: Cube Trial Balance View</p>	Net income is the overall income of a company over a specified period after all expenses and costs have been deducted from total revenue. This visual is based on the Revenue & Expense Analysis KPI.
Revenue	<p>This bar chart displays the Revenue by Year/Period. You can click on the chart to zoom into or filter the data.</p> <p>KPI: Revenue & Expense Analysis</p> <p>Data Source: Cube Trial Balance View</p>	Revenue is the total amount of money brought in by a company's operations over a specified period. This visual is based on the Revenue & Expense Analysis KPI.
Expenses	<p>This bar chart displays the Expenses by Year/Period and Reporting Group. You can click on the chart to zoom into or filter the data.</p> <p>KPI: Revenue & Expense Analysis</p> <p>Data Source: Cube Trial Balance View</p>	Expenses are the outflow of money or assets as payment for an item or service. This visual is based on the Revenue & Expense Analysis KPI.
Net Profit Margin %	This bar chart displays the Net Profit Margin Percent by Year/Period	Net profit margin is the ratio of net profits to revenues

Visual Name	Description	Purpose
	and Entity. You can click on the chart to zoom into or filter the data. KPI: Net Profit Margin % Data Source: Cube Trial Balance View	for a company. It is typically expressed as a percentage, and reveals the amount of profit that a company can extract from its sales. This visual is based on the Net Profit Margin % KPI.
Margin Elements by Entity Over Period	This table displays Net Sales, Expenses, and Net Profit Margin % by Entity and Year/Period. You can click on the chart to zoom into or filter the data. KPI: Net Profit Margin % Data Source: Cube Trial Balance View	Financial analysts use the margin amount to analyze the return on investment and the performance of a business. This visual is based on the Net Profit Margin % KPI.

Treasury Analysis

The predefined Treasury Analysis action center is accessible from the Action Centers drop-down menu.

This action center contains four visuals that display data at a glance, allowing you to conduct financial analysis by default at the level of Year/Period.

Note If you have the requisite permissions, you can view the KPI on which a visual is based directly from an action center. To do this, on the top right of the visual, click the Show More icon and then choose Edit KPI. The **KPIs** view opens in a modal window.

Treasury Analysis Visuals

Visual Name	Description	Purpose
Cash Flow	This bar chart displays the Cash Flow by Year/Period. You can click on the chart to zoom into or filter the data. KPI: Cash Flow Data Source: Cube Trial Balance View	Cash flow is a key indicator of financial health. Cash flow analysis reveals how the cash and cash-equivalents move into and out of a business. This visual is based on the Cash Flow KPI.

Visual Name	Description	Purpose
Working Capital Analysis	<p>This bar chart displays the working capital by Year/Period. You can click on the chart to zoom into or filter the data.</p> <p>KPI: Working Capital Analysis</p> <p>Data Source: Cube Trial Balance View</p>	<p>Working Capital is the difference between the current assets and the current liabilities. It is a measure of a company's short-term financial health, and represents the operating liquidity available to the business. This visual is based on the Working Capital Analysis KPI.</p>
Days Payables Outstanding	<p>This bar chart displays the average number of days that a company takes to pay its invoices from trade creditors.</p> <p>KPI: Days Payable Outstanding</p> <p>Data Source: Supplier Invoice Detail</p>	<p>Days Payable Outstanding provides a measure of how long a company takes to pay its invoices from suppliers. It is often used to analyze the company's payment policies. This visual is based on the Days Payable Outstanding KPI.</p>
Days Sales Outstanding	<p>This bar chart displays the average number of days that a company takes to collect revenue after a sale has been made.</p> <p>KPI: Days Sales Outstanding</p> <p>Data Source: Customer Invoice</p>	<p>This financial ratio shows how efficiently a company collects cash from its customers. A low DSO value—relative to competitors—means that it takes a company fewer days to collect its accounts receivable. A high DSO number—relative to competitors—shows that a company is selling its product to customers on credit and taking longer to collect money. This visual is based on the Day Sales Outstanding KPI.</p>

Fixed Asset Management Action Center

The predefined Fixed Asset Management action center is accessible from the Action Centers drop-down menu. It contains general information about the fixed asset register, which is relevant to the Fixed Assets Manager role.

This action center contains six visuals that display data at a glance, allowing you to conduct financial analysis on fixed assets. Use the Entities selector box to select one or more entities to populate the visuals. All visuals in the action center immediately update, based upon the selections you make. If no data is available to support the selected criteria, the visual displays, "There is no data available."

When you access the underlying KPI browse results using the Browse Source button below a visual, you can then click the Drill-Down Links option on the right to see a link to the Fixed Assets browse. Double-click the link to open the browse. This feature allows you to drill down to an individual asset record. For more information on this functionality, see [Visual Analysis Options on page 158](#).

Note If you have the requisite permissions, you can view the KPI on which a visual is based directly from an action center. To do this, on the top right of the visual, click the Show More icon and then choose Edit KPI. The **KPIs** view opens in a modal window.

Fixed Asset Management Action Center Visuals

Visual Name	Description	Purpose
Asset Cost	Vertical bar graph that shows fixed asset costs for the current year and previous year, grouped by asset class. KPI: Fixed Assets KPI Sept 2019 Data Source: Fixed Assets Browse	This visual allows you to see the total costs of all assets, split by asset class, allowing you to track the total cost of the fixed asset register. The KPI not only tracks the total cost of assets, by class, for the current year. It also tracks the cost of the assets for the prior year. This approach allows you to compare the growth (positive or negative) of the cost of the fixed asset register.
Net Book Value	Vertical bar graph that shows the net book value of fixed assets	This visual allows you to see the net book value of all assets,

Visual Name	Description	Purpose
	<p>for the current year and previous year, grouped by asset class.</p> <p>KPI: Fixed Assets KPI Sept 2019</p> <p>Data Source: Fixed Assets Browse</p>	<p>split by asset class, allowing you to track the net book value of the fixed asset register. The KPI not only tracks the net book value of assets, by class, for the current year. It also tracks the net book value of the assets for the prior year. This approach allows you to compare the growth (positive or negative) of the net book value of the fixed asset register.</p>
Acquisitions	<p>Vertical bar graph that shows the number of fixed asset acquisitions for the current year and previous year, grouped by asset class.</p> <p>KPI: Fixed Assets KPI Sept 2019</p> <p>Data Source: Fixed Assets Browse</p>	<p>This visual allows you to see the acquisitions of all assets, split by asset class, allowing you to track the new acquisitions to the fixed asset register. The KPI not only tracks the new acquisitions by class, for the current year. It also tracks the prior year acquisitions. This approach allows you to compare the growth (positive or negative) of acquisitions.</p>
Accumulated Depreciation	<p>Vertical bar graph that shows the accumulated depreciation amount for the current year and previous year, grouped by asset class.</p> <p>KPI: Fixed Assets KPI Sept 2019</p> <p>Data Source: Fixed Assets Browse</p>	<p>This visual allows you to view the accumulated depreciation by asset class. The KPI not only tracks the accumulated depreciation by asset class for the current year. It also tracks the accumulated depreciation for the prior year, allowing you to make comparisons</p>

Visual Name	Description	Purpose
		between the two values.
YTD Depreciation	Vertical bar graph that shows the YTD depreciation amounts for the current year and previous year, grouped by asset class. KPI: Fixed Asset KPI Sept 2019 Data Source: Fixed Assets Browse	This visual allows you to view the Year to Date (YTD) depreciation split by the asset class. Both the current and prior year data is tracked. This approach allows you to compare the current YTD depreciation position with the prior YTD position, aiding in analysis and decision making.
Retirements	Vertical bar graph that shows the number of fixed asset acquisitions for the current year and previous year, grouped by asset class. KPI: Fixed Assets KPI Sept 2019 Data Source: Fixed Assets Browse	This visual allows you to view the retirements made for each asset class. Both the current and prior year data is tracked. This approach allows you to keep track of the rate of retirement of assets over time. Current domain only.

Inventory Predefined Action Centers

This section includes Inventory predefined action centers.

Inventory Contextual Insights Action Center

The predefined Inventory Contextual Insights action center is accessible from the Action Centers drop-down menu.

This action center displays a collection of selected KPIs from other Inventory action centers to give insights on how effective and efficient inventory is managed in an organization. It provides managers with a high-level view of inventory management, allowing them to easily see where potential issues might occur so that they can take direct action.

The KPIs displayed in this action center are also shown in other Inventory action centers, such as Inventory Value, Inventory Days on Hand Analysis, Inventory Turns, Inventory Shortages and Scrap, Inventory Cycle Count, Inventory Excess and Obsolescence, and Inventory Expired

and Expiring. If necessary, you can view the associated Inventory action centers to dive deeper into the root causes of any inventory issues that may arise.

For information on the icons in the visuals, refer to [Visual Analysis Options on page 158](#).

Inventory Cycle Count

The following selector boxes, which allow you to filter data based on the selections you make, are included in this action center:

- Select Item(s)
- Select Site(s)

Visual Name	Description	Purpose
Inventory Value	This panel displays the sum value of usable (nettable) inventory. KPI: Inventory Value Data Source: Inventory Value by Item browse	For more information about this visual, see Inventory Value on page 69 .
Projected QOH by Week	This bar graph displays the projected QOH sum values by week. The weekly increments are displayed along the x axis and the Horizon Work Days (sum) are displayed along the y axis. KPI: Inventory DOH Analysis All Periods by Buyer Planner Data Source: Days On Hand Analysis	For more information about this visual, see Inventory Days on Hand Analysis by Buyer Planner on page 51 .
Inventory Turns	This panel displays the average inventory turns made over the year. KPI: Inventory Turns Data Source: Inventory Value and Usage	For more information about this visual, see Inventory Turns Action Center on page 66 .
Items with Shortages	This panel displays the total number of items in a shortage condition.	For more information about this visual, see Inventory Shortages

Visual Name	Description	Purpose
	KPI: Inventory Stockouts by Buyer-Planner Data Source: Inventory Value by Item browse	and Scrap on page 63.
Avg of Days on Hand	This panel displays the current average days on hand of all inventory. KPI: Inventory DOH Analysis All Periods by Buyer Planner Data Source: Days On Hand Analysis	For more information about this visual, see Inventory Days on Hand Analysis by Buyer Planner on page 51.
Cycle Count - Counts Last 90 days	This panel displays the total number of cycle counts performed in the last 90 days. KPI: Inventory Cycle Count Data Source: Inventory Value By Item Browse	For more information about this visual, see Inventory Cycle Count Action Center on page 45.
Total Scrap Cost	This panel displays the total value of inventory and production scrap. KPI: Inventory Item Scrap Data Source: Inventory Activity by Item	For more information about this visual, see Inventory Shortages and Scrap on page 63.
Total Obsolescence	This panel displays the total potential value of obsolete inventory. It is calculated as the sum of the Obsolescence - No Demand value, Obsolescence Non Nettable Inventory value, and Potential Excess Inventory value.	For more information about this visual, see Inventory Excess and Obsolescence on page 58.

Visual Name	Description	Purpose
	KPI: Inventory Obsolescence Potential Data Source: Inventory Value by Item Browse	
Expired Inventory	This panel displays the total value in terms of dollars of expired inventory. KPI: Inventory to Expire Data Source: Inventory Value by Item Browse	For more information about this visual, see Inventory Expired and Expiring on page 61 .
Inventory Expires in 30 Days Value	This panel displays the total value of inventory in terms of dollars that will expire in 30 days. KPI: Inventory to Expire Data Source: Inventory Value by Item Browse	For more information about this visual, see Inventory Expired and Expiring on page 61 .

Inventory Cycle Count Action Center

The predefined Inventory Cycle Count action center is accessible from the Action Centers drop-down menu.

This action center includes visuals that let inventory personnel examine values of specific subclasses of ABC items or all ABC items in terms of cycle counts. It provides the user with an indication on how well expected cycle counting has been executed, whether an item at a specific site has been cycle counted, and when the last count occurred.

Cycle counts help determine and resolve discrepancies between the quantities in the inventory records and the quantities that are actually present. By identifying inventory record errors and the causes of those errors, stockroom and warehouse personnel can raise the overall level of inventory record accuracy and improve the company planning and scheduling and inventory replenishment activities.

The Inventory Cycle Count KPI is measured against the inventory record (in_mstr) and evaluates the Last Count data (in_cnt_date).

For information on the icons in the visuals, refer to [Visual Analysis Options on page 158](#)

Inventory Cycle Count

The following selector boxes, which allow you to filter data based on the selections you make, are included in this action center:

- Select Site(s)
- Select Product Family
- Select Item Type(s)
- ABC Class

Visual Name	Description	Purpose
ABC Class	Lets you select an ABC class item, combination of ABC class items, or all ABC class items to use in the visuals. When you hover over the funnel icon widget in a visual, the system displays which class of ABC class codes you selected.	This selector box lets people responsible for inventory accuracy select specific groups of items for analysis.
Inventory Value By ABC Class	This graph shows how much usable (nettable) inventory is in each ABC class and the value of items. Hover over the sections to see the nettable value by ABC analysis code. Metrics shown here display the dollar value in the millions in the x axis of the graph and the inventory amounts by the class you choose in the ABC Class list widget in the y axis. KPI: Inventory Cycle Count Data Source: Inventory Value By Item Browse	The graph provides value of inventory for each ABC class. Data can help materials managers, material planners, or buyer-planners determine how much money is invested in inventory or how a site compares to other sites in the same grouping.

Visual Name	Description	Purpose
Cycle Count Frequency by ABC Class	<p>This graph shows how frequently cycle counts have occurred by ABC code. Hover over the bars relative to the ABC code to see a breakdown of the cycle count frequency for items in that class. These include frequencies in broad categories, such as never counted, last count > 90 (days ago), last count > 60 (days ago), or last count > 30 (days ago) respectively. The visual depicts the count frequencies in the legend at the bottom of the graph.</p> <p>KPI: Inventory Cycle Count</p> <p>Data Source: Inventory Value By Item Browse</p>	<p>This visual lets those who are responsible for cycle counts determine the actual counting frequency for items in particular ABC classes. This allows them to determine if the cycle counting program is being executed as planned. For example, the company objective may be to count all A items every 30 days, B items every 60 days, and C items every 90 days. The Cycle Count Frequency metric lets them see how well they are meeting these targets.</p>
Inventory Cycle Count Achievement	<p>This semi-circular arc graph shows the total number of cycle counts achieved in predefined time periods. From this graph, you can determine the number counted in each time period, as well as the percentage of the total items in all counting periods.</p> <p>KPI: Inventory Cycle Count</p> <p>Data Source: Inventory Value By Item Browse</p>	<p>This graph helps inventory personnel see how frequently all items are being counted, in broad counting periods.</p>
Cycle Count - Counts Last 90 Days	<p>This panel displays the total number of cycle</p>	<p>This panel gives inventory personnel</p>

Visual Name	Description	Purpose
	counts performed in the last 90 days. KPI: Inventory Cycle Count Data Source: Inventory Value By Item Browse	a quick glance of whether enough cycle counts have been performed in the last 90 days.
Cycle Count - Items Counted in the Last 90 Days	This gauge shows the actual number of inventory items counted within the last 90 days by ABC analysis code. KPI: Inventory Cycle Count Data Source: Inventory Value By Item Browse	The gauge lets inventory personnel monitor counting frequency by looking at the number of items counted in the last 90 days.
Cycle Count - Items Not Counted in the Last 90 Days	This gauge shows the actual number of inventory items not counted within the last 90 days by ABC analysis code. KPI: Inventory Cycle Count Data Source: Inventory Value By Item Browse	The gauge lets inventory personnel monitor how many items have not been counted in the last 90 days.

Inventory Data Health Action Center

The predefined Inventory Data Health action center is accessible from the Action Centers drop-down menu.

This action center contains KPI visuals that allow inventory managers and buyer-planners to evaluate whether information has been correctly defined in the system.

The Items with Inventory and Zero Cost by Buyer-Planner by Site and Items with Inventory and Zero Cost by Item Type and Site visuals provide information on whether items have a standard cost assigned.

The Items No Activity Last 90 Days by Status over Item Type visual provides users with an indication of activities during the last 90 days, by inventory status. This helps users to spot items to be retired that are still currently considered to be active items.

Visuals within this action center show zero cost inventory item data, including zero cost inventory by buyer, item type, or site.

The data source for the Inventory Data Health KPI is the Inventory Value by Item browse. Items/sites are evaluated based on whether the Last Issue (in_iss_date) and the Last Receipt Date (in_rec_date) are larger than 90 days.

For information on the icons in the visuals, refer to [Visual Analysis Options](#). on page 158

Inventory Data Health

Entry	Description	Purpose
Select Buyer Planner	This selector box lets you select items for display in the graphs, based on a valid buyer-planner code or codes specified in the Item Planning Data portions of Item Master functions.	Allows the viewer (planner, materials manager, inventory manager) to limit which items are displayed in the graphs. Selection is by buyer-planner.
Select Item Types	This selector box lets you select items for display in the graphs, based on a valid inventory type or types as specified in Inventory Type Maintenance functions.	Lets the viewer (planner, materials manager, inventory manager) limit which items are displayed in the graphs. Selection is by item type.
Select Site(s)	This selector box lets you select items for display in the graphs, based on their site or sites.	Lets the viewer (planner, materials manager, inventory manager) limit which items are displayed in the graphs. Selection is by buyer-planner.
Items with Inventory and Zero Cost by Buyer-Planner by Site	This graph shows the number of items by site with zero costs. The sites are color coded; the color legend displays below the graph. Hovering over the data in the graph	Data in the graph lets inventory managers and buyer-planners view the number of items with zero cost. Normally, all items have a standard or current cost, so this identifies record

Entry	Description	Purpose
	<p>reveals the number of items.</p> <p>KPI: Inventory Data Health</p> <p>Data Source: Inventory Value By Item Browse</p>	<p>errors that need to be corrected.</p>
Items with Inventory and Zero Cost by Item Type and Site	<p>This graph shows zero-cost inventory item data for items associated with the selected buyer-planners at the selected site. The sites are color coded; the color legend displays below the graph. Hovering over the data in the graph reveals the number of items of a particular item type. It is based on the Inventory Value by Item definition.</p> <p>KPI: Inventory Data Health</p> <p>Data Source: Inventory Value By Item Browse</p>	<p>Data in the graph lets inventory managers and buyer-planners view the number of items with zero cost.</p> <p>Normally, all items have a standard or current cost, so this identifies record errors that need to be corrected.</p>
Items No Activity Last 90 Days by Status over Item Type	<p>This graph shows the items by item type and item status that have had no activity in the last 90 days. The item types are color coded; the color legend displays below the graph. Hovering over the data in the graph reveals the number of items of a particular item type. It is based on the Inventory Value by Item definition.</p> <p>KPI: Inventory Data Health</p>	<p>This graph provides users an indication of activities during the last 90 days, by inventory status. This helps users to spot items to be retired that are still considered to be active items.</p>

Entry	Description	Purpose
	Data Source: Inventory Value By Item Browse	

Inventory Days on Hand Analysis by Buyer Planner

The predefined Inventory Days on Hand Analysis by Buyer Planner action center is accessible from the Action Centers drop-down menu. It contains KPI visuals to aid anyone responsible for inventory levels, including materials managers, material planners, and buyer-planners.

The Inventory Days on Hand Analysis by Buyer Planner Action Center focuses on days on hand (DOH) data and projected QOH.

The Projected QOH Value is the projected QOH value for the current week and is based on the stand-alone calculation of DOH inventory using a 90-day horizon parameter. Visuals in this action center that display QOH values are dependent upon a batch function in .NET UI called Build Days On Hand Analysis (3.5.3.3). The function computes the DOH for each item as well as for each product line (product family) over some specified horizon. Other batch functions compute the DOH for each item as well as the DOH for all items managed by a particular buyer-planner, or of a particular item type. To use the visuals in this action center, you must run Build Days On Hand Analysis with one of the horizon parameters set to 90 days. If you have the proper permissions, you can base the horizon on some other period.

DOH represents the total number of days (beginning with today) over which the projected quantity on hand is sufficient to meet projected demand. The calculation considers all sources of future demand (customer orders, schedules, intersite requests, safety stock demand, and so on). It uses net forecasts, rather than gross forecasts. The quantity on hand is at the time the calculation is made, both for today and projected for future days. The projected DOH calculation determines the number of working days that the projected available balance (PAB) can supply demand.

The data source for the Inventory DOH Analysis All Periods by Buyer Planner KPI is the Days On Hand Analysis browse. The KPI is built using information from the Days on Hand record and Average Daily Demand table (doh_mstr/dohh_det).

- $\text{Projected Qty On Hand Value} = (\text{doh_pqoh} * \text{doh_cost})$
- $\text{Horizon Demand Value} = (\text{dohh_horizon_demand_qty} * \text{doh_cost})$
- $\text{doh_days_on_hand} - \text{Days on Hand}$

Inventory Days on Hand Analysis

Visual Name	Description	Purpose
Select Site(s)	This selector box lets you select a site code associated in the Item Planning Data portions of Item Master functions.	Selecting by site lets inventory personnel, buyers, or planners examine only DOH- or QOH-related data for a specific site.
Select Product Family	This selector box lets you select items based on specific product family or families (prod line or lines).	Lets inventory personnel view days on hand data of only items within a specific product family or compare data among several product families.
Select Item Type	This selector box lets you select from valid item type codes as specified in Inventory Type Maintenance functions.	Examining inventory by type lets inventory personnel analyze, compare, and review specific types of the same item number. This information helps in reviewing successful sales as well as forecasting and planning.
Select Buyer-Planner	This selector box lets you select a valid buyer-planner code associated in the Item Planning Data portions of Item Master functions.	Selecting by buyer-planner lets inventory personnel, buyers, or planners examine only DOH- or QOH-related data of interest to them.
Average of Days on Hand	This panel displays the current average days on hand of all inventory. KPI: Inventory DOH Analysis All Periods by Buyer Planner Data Source: Days On Hand Analysis	The DOH is a useful metric for planners and materials managers. The number of days shown provides immediate insight into the inventory level of critical materials, including visibility of potential supply

Visual Name	Description	Purpose
		problems or excess inventory. For example, if the value of on-hand inventory for an excessive number of days might have a negative impact on overall financial performance, management can adjust ordering policies or safety stock level.
Projected QOH Value by Date	<p>This bar graph lets you see the projected QOH sum values by date. The graph displays the value in dollars on the y axis and the date on the x axis.</p> <p>KPI: Inventory DOH Analysis All Periods by Buyer Planner</p> <p>Data Source: Days On Hand Analysis</p>	See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.
Current Period Projected QOH Value by Buyer/Planner	<p>This bar graph lets you see the projected QOH sum values in the current period by buyer-planner. The graph displays the value in dollars on the y axis and the date on the x axis. The average days on hand displays on the right vertical grid and is shown with a yellow line in the graph.</p> <p>KPI: Inventory DOH Analysis All Periods by Buyer Planner</p> <p>Data Source: Days On Hand Analysis</p>	See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.

Visual Name	Description	Purpose
Inventory Days On Hand by Buyer/Planner by Date	<p>This bar graph shows you the product line by buyer-planner by particular dates. Dates are displayed along the x axis in terms of periods. Buyer-planners are color coded and color legend displays below the graph.</p> <p>KPI: Inventory by Days on Hand</p> <p>Data Source: Inventory Days On Hand Browse</p>	See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.
Inventory Projected QOH Value by Buyer/Planner by Date	<p>This bar graph lets you see the projected QOH sum values based on buyers or planners and date. The graph displays the value in dollars (M) on the y axis and the date on the x axis. Buyer-planners are color coded and the color legend displays below the graph.</p> <p>KPI: Inventory by Days on Hand</p> <p>Data Source: Inventory Days On Hand Browse</p>	See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.

Inventory Days on Hand by Product Family

The predefined Inventory Days on Hand by Product Family action center is accessible from the Action Centers drop-down menu. It contains KPI visuals to aid anyone responsible for inventory levels, including materials managers, material planners, and buyer-planners.

The Inventory Days on Hand Analysis action center focuses on days on hand (DOH) data and projected QOH.

The Projected QOH Value is the projected QOH value for the current week and is based on the stand-alone calculation of DOH inventory using a 90-day horizon parameter. Visuals in this action center that display QOH values are dependent upon a batch function in .NET UI called Build

Days On Hand Analysis (3.5.3.3). The function computes the DOH for each item as well as for each product line (product family) over some specified horizon. Other batch functions compute the DOH for each item as well as the DOH for all items managed by a particular buyer-planner, or of a particular item type. To use the visuals in this action center, you must run Build Days On Hand Analysis with one of the horizon parameters set to 90 days. If you have the proper permissions, you can base the horizon on some other period.

DOH represents the total number of days (beginning with today) over which the projected quantity on hand is sufficient to meet projected demand. The calculation considers all sources of future demand (customer orders, schedules, intersite requests, safety stock demand, and so on). It uses net forecasts, rather than gross forecasts. The quantity on hand is at the time the calculation is made, both for today and projected for future days. The projected DOH calculation determines the number of working days that the projected available balance (PAB) can supply demand.

The data source for the Inventory DOH Analysis All Periods by Buyer Planner KPI is the Days On Hand Analysis browse. The KPI is built using information from the Days on Hand record and Average Daily Demand table (doh_mstr/dohh_det).

- $\text{Projected Qty On Hand Value} = (\text{doh_pqoh} * \text{doh_cost})$
- $\text{Horizon Demand Value} = (\text{dohh_horizon_demand_qty} * \text{doh_cost})$
- $\text{doh_days_on_hand} - \text{Days on Hand}$

Inventory Days on Hand Analysis

Visual Name	Description	Purpose
Select Buyer-Planner	This selector box lets you select a valid buyer-planner code associated in the Item Planning Data portions of Item Master functions.	Selecting by buyer-planner lets inventory personnel, buyers, or planners examine only DOH- or POH-related data of interest to them.
Select Product Family	This selector box lets you select items based on specific product family or families (prod line or lines).	Lets inventory personnel view days on hand data of only items within a specific product family or compare data among several product families.
Select Item Type	This selector box lets you select from valid	Examining inventory by type lets inventory

Visual Name	Description	Purpose
	item type codes as specified in Inventory Type Maintenance functions.	personnel analyze, compare, and review specific types of the same item number. This information helps in reviewing successful sales as well as forecasting and planning.
Average of Days on Hand	<p>This panel displays the current average days on hand of all inventory.</p> <p>KPI: Inventory DOH Analysis All Periods by Buyer Planner</p> <p>Data Source: Days On Hand Analysis</p>	<p>The DOH is a useful metric for planners and materials managers. The number of days shown provides immediate insight into the inventory level of critical materials, including visibility of potential supply problems or excess inventory. For example, if the value of on-hand inventory for an excessive number of days might have a negative impact on overall financial performance, management can adjust ordering policies or safety stock level.</p>
Projected QOH Value by Date	<p>This bar graph lets you see the projected QOH sum values by date. The graph displays the value in dollars on the y axis and the date on the x axis.</p> <p>KPI: Inventory DOH Analysis All Periods by Buyer Planner</p> <p>Data Source: Days On Hand Analysis</p>	<p>See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.</p>

Visual Name	Description	Purpose
Current Period Projected QOH Value by Product Family	<p>This bar graph lets you see the projected QOH sum values in the current period by product family. The graph displays the value in dollars on the y axis and the date on the x axis. The average days on hand displays on the right vertical grid and is shown with a yellow line in the graph.</p> <p>KPI: Inventory DOH Analysis All Periods by Buyer Planner</p> <p>Data Source: Days On Hand Analysis</p>	See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.
Average Days on Hand by Date Over Product Family	<p>This bar graph shows you the product line by product family by particular dates. Dates are displayed along the x axis in terms of periods. Product families are color coded and color legend displays below the graph.</p> <p>KPI: Inventory DOH Analysis All Periods by Buyer Planner</p> <p>Data Source: Days On Hand Analysis</p>	See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.
Sum of Projected QOH Value by Date over Product Family	<p>This bar graph lets you see the projected QOH sum values based on product families and date. The graph displays the value in dollars (M) on the y axis and the date on the x axis. Buyer</p>	See Projected QOH purpose for Current Period DOH and Projected QOH Values by Buyer Planner.

Visual Name	Description	Purpose
	<p>planners are color coded and the color legend displays below the graph.</p> <p>KPI: Inventory DOH Analysis All Periods by Buyer Planner</p> <p>Data Source: Days On Hand Analysis</p>	

Inventory Excess and Obsolescence

The predefined Inventory Excess and Obsolescence action center is accessible from the Action Centers drop-down menu. It contains KPI visuals to aid the inventory managers.

This action center provides the user tools to quickly see if inventory is becoming obsolete or excess stock has been purchased or manufactured.

The Inventory Value by Item browse is used to calculate the Inventory Excess and Obsolescence KPI.

The formulas are based on inventory master records (in_mstr):

- Obsolescence - No Demand contains the total value of all nettable inventory (quantity * standard cost) if inventory without requirements is less than or equal to zero ($\text{in_req_qty} \leq 0$)
- Obsolescence - Non Nettable inventory is similar to Obsolescence - No Demand but only for the non-nettable quantities.
- The Potential Excess Inventory represents all inventory for which there are requirements but the requirements are less than the total available quantity on hand.
 $(\text{Qty Oh} - \text{Qty Req}) * \text{Std Cost}$, if in_qty_req (Qty Required) > 0 and in_qty_oh (Qty On Hand) $> \text{in_qty_req}$
- The Total (Potential) Obsolescence Value = the sum of these 3 values (Obsolescence - No Demand, Obsolescence Non Nettable Inventory, and Potential Excess Inventory).

For information on the icons in the visuals, refer to [Visual Analysis Options](#). on page 158

Inventory Excess and Obsolescence

Visual Name	Definition	Purpose
Select Product Family	This selector box lets you select product lines, as specified in	By selecting product lines, inventory managers can focus on only those excess or

Visual Name	Definition	Purpose
	the item master, to display in the visuals.	obsolete or defective (non-conforming) items within a particular product family.
Select Item Type(s)	This selector box lets you select item types, as specified in inventory type maintenance functions, to display in the visuals.	By selecting item types, inventory managers can focus on only those excess or obsolete or defective (non-conforming) items of a specific item type.
Nonconformant (Non Nettable) Inventory - Top 10 Items	This bar graphs shows the total value for each of the top ten items with non-conforming (non-nettable) inventory. KPI: Inventory Obsolescence Potential Data Source: Inventory Value by Item Browse	This graph lets inventory managers zero in on only the top ten items by value that are non-conforming and non-nettable (unavailable) inventory. Non-conformance implies items that do not meet specifications or requirements.
Obsolete Inventory - Top 10 Items	This bar graphs shows the total obsolescence value for each of the top ten items, by item number, that are obsolete and have no demand. KPI: Inventory Obsolescence Potential Data Source: Inventory Value by Item Browse	The graph lets inventory managers zero in on only the top ten items by value that are obsolete.
Potentially Excess Inventory - Top 10 Items	This bar graphs shows the top ten items, by item number and value summary, that are potentially excess inventory. KPI: Inventory Obsolescence Potential	This graph helps inventory managers find the top 10 potentially excess inventory items. Excess inventory can increase costs due to storage, damage, shrinkage, and so on.

Visual Name	Definition	Purpose
	Data Source: Inventory Value by Item Browse	The company must plan to dispose of excess material currently on hand and make corrections to prevent purchase of more items that are currently in excess.
Total Obsolescence	<p>This panel displays the total potential value of obsolete inventory. It is calculated as the sum of the Obsolescence - No Demand value, Obsolescence Non Nettable Inventory value, and the Potential Excess Inventory value.</p> <p>KPI: Inventory Obsolescence Potential</p> <p>Data Source: Inventory Value by Item Browse</p>	This panel allows inventory managers to quickly see the total value of obsolete inventory.
Obsolete Inventory at a Glance	<p>This table-type chart includes many aspects of obsolete inventory. Columns show item number, item type, and total inventory for three different categories:</p> <ul style="list-style-type: none"> • Obsolete (no demand) • Potentially excess • Non-defective (non-conforming or non-nettable) <p>KPI: Inventory Obsolescence Potential</p> <p>Data Source: Inventory Value by Item Browse</p>	This chart lets inventory managers quickly identify inventory investments that depreciate from obsolescence. Once they identify and analyze obsolete inventory and the cost of the obsolete inventory, company financial experts can book a reserve, then use the reserve to create an inventory write-off.

Visual Name	Definition	Purpose
Inventory Obsolescence by Buyer-Planner	<p>This pie chart shows the total potential value of inventory obsolescence by buyer-planner.</p> <p>KPI: Inventory Obsolescence Potential</p> <p>Data Source: Inventory Value by Item Browse</p>	This chart allows inventory managers to quickly identify the buyers and planners who are managing the most inventory that is becoming obsolete by potential value.

Inventory Expired and Expiring

The predefined Inventory Expired and Expiring action center is accessible from the Action Centers drop-down menu. This action center contains visuals to aid the inventory manager.

This action center provides inventory managers with information about inventory that is already expired or due to expire within the 30 days.

The Inventory Value by Item browse is used to calculate the Inventory Expired and Expiring KPI. The calculations are based on the total inventory detail records (Id_det) for which Id_expire is smaller than today / today + 30 respectively.

For information on the icons in the visuals, refer to [Visual Analysis Options. on page 158](#)

Inventory Expired and Expiring

Visual Name	Description	Purpose
Select Product Family	This selector box lets you select which items to view based on a selected product line or lines.	By selecting product lines, inventory managers can focus on only those expired or expiring items within a particular product family.
Select Item(s)	This selector box lets you select which items to view.	By selecting items, inventory managers can focus on only those expired or expiring items and their values.
Select Site(s)	This selector box lets you select which items	By selecting sites, inventory manager can compare expired or

Visual Name	Description	Purpose
	to view based on a selected site or sites.	expiring items and their values by site.
Inventory Expiring in 30 Days by Buyer Planner Over ABC Class	<p>This bar graph shows inventory to expire in 30 days in terms of inventory quantity by buyer-planner and ABC class. The ABC class is color coded, with the color legend displayed below the graph. The y axis displays the buyer-planner, while the x axis displays inventory quantity.</p> <p>KPI: Inventory Expired and Expiring</p> <p>Data Source: Inventory Value by Item Browse</p>	<p>This graph aids inventory managers in determining which buyer-planner is managing the most inventory (in value) that will soon expire. With enough time to expiration, the person responsible may be able to use or sell the item, or there may be enough time to retest and extend the expiration date.</p>
Expired Inventory by Buyer Planner over ABC Class	<p>This bar graph shows expired inventory totals (sum) by buyer-planner and ABC class. The ABC class is color coded, with the color legend displayed below the graph. The y axis displays the buyer-planner, while the x axis displays inventory totals in terms of dollars.</p> <p>KPI: Inventory to Expire</p> <p>Data Source: Inventory Value by Item Browse</p>	<p>This graph aids in determining which buyer-planner is managing the most inventory (in value) that will soon expire. A person responsible for these items may want to take action to retest and recertify the items so that they can be used, or scrap or repurpose them.</p>
Expired Inventory	<p>This panel displays the total value in terms of dollars of expired inventory.</p> <p>KPI: Inventory to Expire</p>	<p>This gives inventory managers an immediate view of the total value of expired inventory currently in stock.</p>

Visual Name	Description	Purpose
	Data Source: Inventory Value by Item Browse	
Inventory Expires in 30 Days Value	<p>This panel displays the total value of inventory in terms of dollars that will expire in 30 days.</p> <p>KPI: Inventory to Expire</p> <p>Data Source: Inventory Value by Item Browse</p>	This gives inventory managers an immediate view of the total value of inventory that will expire in 30 days.
Expired and Expiring Inventory at a Glance	<p>This table-type chart shows inventory that has expired or will soon expire. Columns within the graph show Site, Buyer Planner, Item Type, Prod Line, Item Number, and the value (sum) of expiring and expired quantities.</p> <p>KPI: Inventory Expired and Expiring</p> <p>Data Source: Inventory Value by Item Browse</p>	Lets inventory managers quickly examine inventory that has expired or will soon expire. Companies cannot ship or issue expired or expiring inventory, so this inventory is not considered available inventory. Examining expired inventory helps when comparing the value of usable inventory to the value of expired inventory.

Inventory Shortages and Scrap

The predefined Inventory Shortages and Scrap action center is accessible from the Action Centers drop-down menu. It contains KPI visuals to aid the inventory managers.

This action center shows you inventory shortages and scrap. It shows counts of items where the quantity on hand is less than the allocated quantity, which is a shortage condition. Material shortages are reported as downtime, which affects costs. Likewise, scrap inventory reduces the total quantity, and includes inventory that has been damaged, destroyed, or leftover in production. Reducing the cost impact of shortages and scrap is a target for inventory managers.

This action center provides the following KPIs:

- **Inventory Stockouts by Buyer-Planner.** This KPI, which utilizes the Inventory Value by Item browse in its calculations, provides the number of stockouts in inventory by item/site. Inventory stockouts are calculated as the number of inventory records (in_mstr) where

Quantity On Hand is less than the allocated inventory ($\text{in_qty_oh} < \text{in_qty_all}$).

- **Inventory Item Scrap.** This KPI, which utilizes the Inventory Activity by Item browse in its calculations, provides the cost of inventory and production scrap.

Inventory scrap is calculated from Inventory Transactions (tr_hist where tr_hist.tr_type = "ISS-SCRAP"). The calculated value of inventory scrap is based on standard cost (GL Cost Set).

Production scrap is calculated from operation history transactions (op_hist where op_type = "SCRAP"). The calculated value of production scrap is based on the cost in WIP at the moment of scrap ($\text{op_qty_scrap} * (\text{op_lbr_cost} + \text{op_sub_cost} + \text{op_bdn_cost} + \text{itemMaterialCost})$).

For information on the icons in the visuals, refer to [Visual Analysis Options. on page 158](#)

Inventory Shortages and Scrap

Visual Name	Description	Purpose
Select Buyer-Planner	This selector box lets you select a valid buyer-planner code associated in the Item Planning Data portions of Item Master functions.	Lets inventory managers view shortage, scrap, and stockout inventory data by buyer-planner, which helps determine which buyers or planners are at greatest risk.
Select Product Family	This selector box lets you select items based on specific product family or families (prod line or lines).	Lets inventory managers view shortage, scrap, and stockout inventory data by product family, which is useful when companies that manage inventory want to reduce the cost impact of shortages and scrap or avoid stockouts.
Items with Shortages	This panel displays the total number of items in a shortage condition.	Provides inventory managers a quick view of the total amount of item shortages.

Visual Name	Description	Purpose
	KPI: Inventory Stockouts by Buyer-Planner Data Source: Inventory Value by Item Browse	
Stockouts at a Glance by Site, Buyer-Planner, Type, Product Family, and Item	This table type chart shows stockout inventory data. You can see inventory stockout with columns for Site, Buyer/Planner, Item Type, Prod Line, Item Number, and Number of Stockouts. Blank stockouts also display in the table. KPI: Inventory Stockouts by Buyer-Planner Data Source: Inventory Value by Item Browse	Reviewing multiple aspects of stockout information quickly saves time when planning or dealing with the consequences of stockouts.
Stockouts by Buyer-Planner	This bar graph shows the total number of stockouts by buyer-planner code or when there is no stockout for the buyer-planner. KPI: Inventory Stockouts by Buyer-Planner Data Source: Inventory Value by Item Browse	Lets inventory managers view stockout items—where the demand requirement for an item cannot be fulfilled from the current inventory—by the selected buyer-planner. Stockouts result in significant cost to the company, so it is useful to analyze stockout inventory to plan for potential customer back orders, order cancellations, changes in schedules, or possible customer loss.
Total Scrap Cost	This panel displays the total value of inventory and production scrap.	Provides inventory managers a quick glance at the total

Visual Name	Description	Purpose
	KPI: Inventory Stockouts by Buyer-Planner Data Source: Inventory Activity by Item	value of inventory and production scrap.
Inventory Scrap at a Glance by Site, Type, Product Family, and Item	This graph shows scrap inventory data. You can see inventory scrapped with columns for product line, site, item number, and more. KPI: Inventory Item Scrap Data Source: Inventory Activity by Item	Reviewing multiple aspects of scrap information quickly saves time when analyzing and attempting to reduce scrapped inventory.
Total Scrap Cost by Buyer Planner	This pie chart shows the total value of inventory and production scrap by buyer-planner. The buyer-planners are color coded and the color legend is below the graph. KPI: Inventory Item Scrap Data Source: Inventory Activity by Item	Allows inventory managers to easily see which buyer-planners are managing the largest proportion of inventory and production scrap in terms of cost.

Inventory Turns Action Center

The predefined Inventory Turns action center is accessible from the Action Centers drop-down menu.

This action center includes visuals that let inventory personnel examine the average inventory turns made over the year.

The inventory turn, or inventory turnover, metric shows you the inventory productivity at each site. Typically, inventory turnover can be measured in several different ways. It can be measured using historical usage, where actual consumption is based on inventory transactions, or future demand. The horizon for computing historical usage can be fixed (like a rolling year), or variable (year to date usage) that is converted to period usage (annual usage typically). It can be measured based on the actual

inventory value at a specified point in time, from the average actual inventory value during a period, or based on the projected inventory value at some point in the future.

The period used for calculating turnover can be a year, quarter, month, week or any other slice of time.

Turnover is most frequently expressed as an annual value.

All the various inventory turnover metrics express the number of times that a company cycles through its inventory in the particular period. For example, one inventory turn indicates that the inventory has been used and replaced one time during the period in question. Two inventory turns indicates that inventory has been used and replaced twice during the period. Twelve inventory turns per year would indicate that the inventory has been used—or will be used—and replaced completely each month, or twelve times per year.

In general, if the inventory ratio is higher, then inventory is being used more productively. If the inventory ratio is lower, then not only is the inventory being used less productively but as a result the company or location is less successful financially. In cases where the turnover ratio is small, the inventory exists but it is not generating revenue and it is generating cost because it must be warehoused, secured, tracked, and maintained. For example, in a company that turns inventory one time a year, the inventory sits around gathering dust, generating cost, and reducing financial results.

Having said that though, there is no standard or absolute value that you can use to determine whether you are doing well or poorly in inventory management. Three inventory turns might be industry-best performance for some companies. For others, in different markets, three inventory turns might signal serious problems in the inventory management processes of the company. In manufacturing enterprises, it is not surprising to see inventory turns ranging from 2 to 150 depending on their markets, customers, products, demand variability, product shelf life, product life cycle, and so on.

However, what is universally true is this:

- Higher inventory turns are better than lower inventory turns.
- Position is not necessarily meaningful but direction is. Position is the kind of turns you are getting at one specific point and direction is whether the turns are improving or getting worse.

Typically, finance and accounting departments prefer to see a computation of inventory turnover based on historical usage. They feel that using historical demand is preferable to future demand because of the uncertainty of the forecast. After all, everyone agrees that the forecast is wrong.

On the other hand, operations departments, such as manufacturing, materials, purchasing, operations, and supply chain management, typically prefer to use future demand. Future demand is based on the forecast, existing customer orders, dependent demands for components computed from the explosion of the master schedule, and so on. Their position is that the inventory that exists today is there to satisfy future requirements, and the only way to evaluate how productive that inventory will be is to use future demand in the calculation.

The inventory turnover metric in this action center is based on historical usage for the year-to-date and the value of inventory on hand at the end of the month. It is expressed as the number of turns per year.

For information on the icons in the visuals, refer to [Visual Analysis Options on page 158](#).

Inventory Turns

The following selector boxes, which allow you to filter data based on the selections you make, are included in this action center:

- Select Site(s)
- Select Product Family
- Select Item Type(s)
- Select Buyer/Planner

Visual Name	Description	Purpose
Inventory Turns	This panel displays the average inventory turns made over the year. KPI: Inventory Turns Data Source: Inventory Value and Usage	Allows users to see the number of times that a company cycles through its inventory in the particular period.
Inventory Turns by Prod Line	This graph displays the average inventory turns made over the year by production line. KPI: Inventory Turns Data Source: Inventory Value and Usage	Allows users to see which production lines have the highest and lowest turns over the year.
Inventory Turns by Site by Buyer-Planner by Type by Product Family	This table-type chart displays the average inventory turns made over the year by Site, by Buyer-Planner, by	Allows users to easily drill down and see the specific number of inventory turns by Site, by Buyer-Planner, by Item Type, and

Visual Name	Description	Purpose
	Type, and by Product Family. KPI: Inventory Turns Data Source: Inventory Value and Usage	by Product Family. For example, users could use this chart to easily determine which product family at a given site has the highest and lowest inventory turns.

Inventory Value

The predefined Inventory Value action center is accessible from the Action Centers drop-down menu. It contains KPI visuals to aid inventory managers.

The Inventory Value Action Center lets inventory personnel examine the value of usable (nettable) inventory. The visuals in this action center map inventory by proportion of current inventory, by safety stock and safety time value, by product family, and by item type, letting inventory managers see where their value lies. The inventory value metric is one that can be useful to determine where to focus inventory reduction efforts.

The Inventory Value by Item browse is used to calculate the Inventory Value KPI.

- The Nettable Value is calculated at the Quantity On Hand multiplied by the standard cost.
- The Safety Stock Value is calculated as the safety time in days defined in **Items** > Site panel multiplied by the standard cost.
- The Safety Time Value is calculated as the Safety Stock Value multiplied by the Average Issue Quantity (in_avg_issue).

For information on the icons in the visuals, refer to [Visual Analysis Options. on page 158](#)

Inventory Value

Visual Name	Description	Purpose
Select Item Type(s)	This selector box lets you select items based on inventory types as specified in Inventory Type Maintenance functions.	Lets inventory personnel view the value of items or groups of items, letting them focus on only item types of interest.
Select Product Family(s)	This selector box lets you select items based on specific product	Lets inventory personnel view the value of only items within a specific

Visual Name	Description	Purpose
	family or families (prod line or lines).	product family (prod line) or compare item value among several product families.
Inventory Value by Item Type	This bar chart displays the total value of inventory items by the item type. The inventory value is displayed on the y axis and the item type is displayed on the x axis. KPI: Inventory Value Data Source: Inventory Value By Item Browse	Lets inventory personnel view the value of only items of a specific item type or compare item value among several item types.
Safety Stock and Safety Time by Buyer-Planner	This bar chart displays the total safety stock value and the total safety time value by buyer-planner. Safety stock and safety time values are color coded with the color legend displaying below the chart. KPI: Inventory Value Data Source: Inventory Value By Item Browse	Safety stock is extra inventory beyond expected demand which companies keep to avoid stockouts. It is important to calculate safety stock carefully because too little stock results in shortages, while too much stock inflates inventory costs. This graph lets inventory managers view the value of their safety stock. Safety time provides a buffer for variations in delivery and lead time. Safety time is an alternative to safety stock with the end result maintaining a safety buffer while reducing inventory investment. So, safety time results in your company bringing in inventory prior to the time it is needed. This graph lets you see the

Visual Name	Description	Purpose
		value of the safety time inventory.
Sum of Nettable Value	This panel displays the sum value of usable (nettable) inventory. KPI: Inventory Value Data Source: Inventory Value By Item Browse	Provides inventory managers a quick view of the total sum value of usable (nettable) inventory that is currently on hand.
Inventory Value by Site, by Item Type, by Product Family	This table-type chart shows the nettable value, safety stock value, and the safety time value by site. Columns within the graph show Site, Item Type, Production Line, Item Number, Nettable Value, Safety Stock Value, and Safety Time Value. KPI: Inventory Value Data Source: Inventory Value By Item Browse	Allows inventory managers to quickly drill down and view the inventory values by site, by item type, by production line, and by item number.

Maintenance Predefined Action Centers

This section includes Maintenance predefined action centers.

Equipment Analysis Action Center

The predefined Equipment Analysis action center is accessible from the Action Centers drop-down menu.

This action center allows you to analyze the types of failures and the downtime affecting equipment. The visuals are based on underlying KPIs, which are identified in the Description column for each visual. When filtering data using the selector boxes, all linked visuals immediately update based upon the selections you make. If no data is available to support the selected criteria, the visual displays, "There is no data available."

Visual Name	Description	Purpose
Top Percentage of Equipment with Failures	This pie chart shows the top individual pieces of equipment	Planners may need to evaluate the current routine maintenance that is being provided

Visual Name	Description	Purpose
	<p>associated with failures.</p> <p>KPI: Failures by Equipment Type</p> <p>Data Source: All Failures Detail browse</p>	<p>for the equipment to avoid these failures from consistently occurring. Select or clear a piece of equipment in the legend to add or remove it from the graph.</p>
Percentage of Failures by Equipment Type	<p>This pie chart shows the percentage of failures by equipment type.</p> <p>KPI: Downtime by Equipment Type</p> <p>Data Source: All Downtime browse</p>	<p>This visual measures which equipment types are recording the highest percentage of failures. Select or clear a type of equipment in the legend to add or remove it from the graph.</p>
Mean Time To Repair	<p>This bar chart shows the mean time it takes to repair equipment, based upon the failure reported.</p> <p>KPI: Mean Time To Repair</p> <p>Data Source: Mean Time To Repair browse</p>	<p>This visual illustrates which failures require the most time to repair and provides the opportunity to analyze and reduce that repair time.</p>
Equipment	<p>This selector box lets you choose one, multiple, or all pieces of equipment to display in the Total Hours Down by Equipment Failure Types over Equipment visual.</p>	<p>By selecting specific pieces of equipment, maintenance managers can view the downtime for that equipment by equipment failure type.</p>
Equipment Type	<p>This selector box lets you choose one, multiple, or all equipment types to filter the visuals for both Total Hours Down by Equipment Types over Reasons and</p>	<p>By selecting equipment types, maintenance managers can gain insight into equipment groups that are experiencing higher than normal downtimes.</p>

Visual Name	Description	Purpose
	Failures by Equipment Type.	
Failure	This selector box lets you choose one, multiple, or all failure types to filter the visuals for both Total Hours Down by Equipment Types over Reasons and Failures by Equipment Type.	By filtering by failures, maintenance managers can more easily view equipment types that are most affected by certain failures.
Total Hours Down by Equipment Failure Types over Equipment	<p>This bar chart shows the amount of downtime by equipment and the equipment failure type associated with these hours, based upon the selections in the Equipment selector box.</p> <p>KPI: Downtime by Equipment Type</p> <p>Data Source: All Downtime browse</p>	Equipment records are associated with failure types. Viewing the downtime for equipment by equipment failure type provides another view of equipment failures.
Total Hours Down by Equipment Types over Reasons	<p>This bar chart shows the amount of downtime by equipment and the equipment type associated with these hours, based upon the selections in the Equipment Type and Failure selector boxes.</p> <p>KPI: Downtime by Equipment Type</p> <p>Data Source: All Downtime browse</p>	Equipment records are associated with type codes that group equipment by common characteristics. Viewing the downtime for equipment by equipment type provides visibility to equipment groups that are experiencing higher than normal downtimes.
Failures by Equipment Type	This bar chart shows the count of reported failures by equipment type, based upon	Consolidating equipment records by equipment types shows the types

Visual Name	Description	Purpose
	<p>the selections in the Equipment Type and Failure selector boxes. Each bar represents a different equipment type, with different colors representing the failures reported.</p> <p>KPI: Downtime by Equipment Type</p> <p>Data Source: All Downtime browse</p>	<p>of failures that are occurring, based on a group of equipment. If there are multiple failures occurring with a particular equipment type, you can see which failures are occurring, based on the type of equipment. Select or clear a failure code in the legend to add or remove it from the graph.</p>

Equipment Cost Action Center

The predefined Equipment Cost action center is accessible from the Action Centers drop-down menu.

This action center shows different types of equipment maintenance costs—material, labor, and contractor costs. Use the Equipment and Cost Center selector boxes to select one or more pieces of equipment and cost centers to create visuals. All visuals in the action center immediately update, based upon the selections you make. If no data is available to support the selected criteria, the visual displays, "There is no data available."

Visual Name	Description	Purpose
Equipment	This selector box lets you choose one, multiple, or all pieces of equipment to filter the visuals for Labor Costs, Material Costs, and Contractor Costs.	By filtering by equipment, maintenance managers can visualize labor, material, and contractor costs by the selected equipment.
Cost Center	This selector box lets you choose one, multiple, or all cost centers to filter the visuals for Labor Costs, Material Costs, and Contractor Costs.	By filtering by cost center, maintenance managers can gain insight into the labor, material, and contractor costs, based on the selected cost centers.

Visual Name	Description	Purpose
Labor Cost	This bar chart shows the labor cost summarized by site, based upon the selections in the Equipment and Cost Center selector boxes. KPI: Labor Cost Data Source: Labor History browse	On a site basis, this visual displays the total amount of labor cost charged for maintenance repairs over time. It measures all labor hours posted for maintenance activities.
Material Cost	This bar chart shows the material costs summarized by site, based upon the selections in the Equipment and Cost Center selector boxes. KPI: Material Cost Data Source: Maintenance Cost browse	On a site basis, this visual displays the total amount of indirect material cost charged for maintenance repairs over time. It measures all indirect material purchases and indirect inventory used for maintenance activities.
Contractor Cost	This bar chart shows the contractor costs summarized by site, based upon the selections in the Equipment and Cost Center selector boxes. KPI: Contractor Cost Data Source: Contractor Cost browse	On a site basis, this visual displays the total amount of contractor costs charged for maintenance repairs over time. It measures all contractor purchases charged for maintenance activities.

Failure Analysis Action Center

The predefined Failure Analysis action center is accessible from the Action Centers drop-down menu.

This action center allows you to analyze types of failures and the downtime affecting equipment. The visuals are based on underlying KPIs, which are identified in the Description column for each visual.

Visual Name	Description	Purpose
Mean Time Between Failures	<p>This bar chart shows the average time between corrective work orders for a piece of equipment.</p> <p>KPI: Mean Time Between Failures</p> <p>Data Source: Equipment Failure Analysis browse</p>	<p>Maintenance managers and plant managers can determine which pieces of equipment are reliable, with few unexpected failures, and which may be costing the company extra money because they are frequently unavailable due to unplanned maintenance.</p>

Maintenance Backlog Action Center

The predefined Maintenance Backlog action center is accessible from the Action Centers drop-down menu.

This action center includes information about received maintenance requests that have not yet been turned into an asset work order. You can use the visuals to monitor these requests and ensure that action is taken in a timely manner. It also shows information about existing asset work orders that are not closed, canceled, or finished—the backlog.

Visual Name	Description	Purpose
Open Maintenance Request without Work Order	<p>This bar graph shows the number of maintenance requests that are not associated with a work order. The service requests are broken down by calendar month.</p> <p>KPI: Open Maintenance Request</p> <p>Data Source: Maintenance Request browse</p>	<p>A planner should react quickly to new maintenance requests, and this visual provides a quick view of any outstanding requests by month.</p>
Open Maintenance Request without Work Orders by Notify	<p>This bar graph shows the number of maintenance requests received each month that are not associated with a work order. It</p>	<p>This visual provides a monthly breakdown of maintenance requests by the Notify field. It can help you to</p>

Visual Name	Description	Purpose
	<p>also shows the people who are expected to take action on each request—the Notify group.</p> <p>KPI: Open Maintenance Request</p> <p>Data Source: Maintenance Request browse</p>	understand who has open requests.
Open Maintenance Request without Work Order by Equipment by Priority	<p>This bar graph shows the number of maintenance requests that are not associated with a work order. It categorizes these requests based on the associated piece of equipment, and the priority assigned to the request.</p> <p>KPI: Open Maintenance Request</p> <p>Data Source: Maintenance Request browse</p>	<p>This visual shows which equipment records have open maintenance requests, and the priority of these requests. A planner can take action in the order of priority. You can click the legend icon to select different priorities for easier analysis. In this way, you can narrow down the view based on particular priorities.</p>
Backlog Percentage by Work Order Type	<p>This pie chart shows the percentage of work orders by work order type—corrective maintenance or preventive maintenance work orders.</p> <p>KPI: Work Order Backlog</p> <p>Data Source: Asset Work Order browse</p>	<p>A higher percentage of preventive maintenance work orders indicates that a stronger maintenance program is in place and less corrective, unplanned work is being generated.</p>
Backlog by Work Order Status	<p>This pie chart shows the work orders in the backlog, categorized by status. This information can be</p>	<p>This visual is dependent on how statuses are implemented in the system, but it</p>

Visual Name	Description	Purpose
	<p>helpful to estimate when the work order will be completed.</p> <p>KPI: Work Order Backlog</p> <p>Data Source: Asset Work Order browse</p>	<p>can provide useful information on the stage of the work order, based on a particular status. For instance, it could show the number of work orders waiting to be assigned compared to work orders that are currently being worked on.</p>
Backlog by Equipment Type by Work Order Status	<p>This bar chart shows the work orders in the backlog, broken down by the equipment type. For each equipment type, it then provides a further level of categorization to show the status of these work orders.</p> <p>KPI: Work Order Backlog</p> <p>Data Source: Asset Work Order browse</p>	<p>Consolidating work orders by equipment type, rather than displaying all individual equipment records, makes this visual easier to interpret. You can click the legend icon to select different work order statuses.</p>
Backlog by Planner by Work Order Type	<p>This bar chart shows the work orders in the backlog, broken down by associated planner and then by work order type—corrective or preventive maintenance.</p> <p>KPI: Work Order Backlog</p> <p>Data Source: Asset Work Order browse</p>	<p>This information is helpful in that it shows the type of work orders that planners are managing, and how many orders fall under that category.</p>
Backlog Percentage by Priority	<p>This pie chart shows the work orders in the backlog, categorized by priority.</p>	<p>This visual displays the percentage of active work orders by priority. Priority can range from the highest or most urgent priority to a very</p>

Visual Name	Description	Purpose
	KPI: Work Order Backlog Data Source: Asset Work Order browse	low priority. It is very useful to understand the percentage of work based on a priority.
Backlog by Equipment Type by Planner	This bar chart shows the work orders in the backlog, broken down by the equipment type and planner. KPI: Work Order Backlog Data Source: Asset Work Order browse	This visual shows if multiple planners are managing work orders for the same type of equipment. Click the legend icon to select different planners.
Backlog by Planner by Status	This bar chart shows the work orders in the backlog, broken down by associated planner and status. KPI: Work Order Backlog Days Open Data Source: Asset Work Order browse	The work order status can indicate the stage that the work order is at, which can provide an indicator of how many work orders are either not yet assigned or are in process and may be closed soon. Click the legend icon to select different statuses.
Monthly Backlog by Work Order Type	This bar chart provides an aging report to show the work orders created each month. It divides these work orders into corrective and preventive maintenance work orders. KPI: Aging Work Order Backlog Data Source: Asset Work Order browse	The visual displays, by month, how many active work orders are in the backlog and is also broken down by work order type of Corrective Maintenance (CM) or Preventive Maintenance (PM). This provides an overview of how long work orders are aging and can be broken down by CM or PM type work orders. You can click the legend icon to select the different types of work

Visual Name	Description	Purpose
		orders—CM or PM—to be able to easily see how many of each order type are aging each month.
Monthly Backlog by Planner	This bar chart provides an aging report to show the work orders created each month. It differentiates these work orders based on the associated planner. KPI: Aging Work Order Backlog Data Source: Asset Work Order browse	The visual shows, on a monthly basis, how many work orders are open for each planner. This information helps you to analyze the backlog of work orders that each planner is managing and the length of time that work orders remain open.

PM Compliance Action Center

The predefined PM Compliance action center is accessible from the Action Centers drop-down menu.

This action center allows you to compare the volume of corrective maintenance and preventive maintenance asset work orders. The visuals are based on underlying KPIs, which are identified in the Description column for each visual.

Visual Name	Description	Purpose
Total PM CM Ratio Percentage	This pie chart shows the percentage of work orders for preventive maintenance and the percentage of work orders for corrective maintenance. KPI: Work Order Compliance Data Source: PM Compliance browse	This visual displays the percentage of corrective maintenance (CM) versus preventive maintenance (PM) over time. This ratio provides an indicator of the quality of maintenance. If there is a higher ratio of preventive work orders, it indicates a strong preventive maintenance program. This means that the maintenance department is proactive, rather

Visual Name	Description	Purpose
		than reactive, with equipment repairs, reducing the amount of unexpected downtime.
Total CM PM Ratio per Year	<p>This bar chart shows the total number of work orders on an annual basis, and breaks down those figures to show the ratio of preventive to corrective maintenance work orders.</p> <p>KPI: Work Order Compliance</p> <p>Data Source: PM Compliance browse</p>	<p>This visual allows you to identify any trends and to identify if the maintenance program is improving over time with more preventive maintenance work orders compared to corrective maintenance work orders. Click the legend icons to select work order types.</p>
Planned versus Unplanned Work Orders by Year	<p>This bar chart shows the total number of work orders on an annual basis, and breaks down those figures to show the ratio of planned to unplanned maintenance work orders. This information is important because not all corrective maintenance is unplanned; some corrective maintenance work orders are created as a result of preventive maintenance. All preventive maintenance is planned. These measurements allow you to assess the impact of unplanned work orders.</p>	<p>This KPI provides data to analyze how well a group is doing to reduce unplanned work. Planning work is different than scheduling work. Planning work is the process of evaluating a task, determining what parts are needed to complete that task, securing any specialized rental equipment needed (such as a crane), and evaluating if in-house skills are sufficient for the task or if specialized contractors are required. Statistically, unplanned work costs three to four times more than planned work, and world-class maintenance organizations strive</p>

Visual Name	Description	Purpose
	KPI: Work Order Compliance Data Source: PM Compliance browse	to plan as much work as possible before the actual work starts.
PM Schedule Compliance by Year	<p>This bar graph compares the number of PMs that were completed by their Target Date versus those that were not completed as scheduled, and thus are non-compliant.</p> <p>Note The system excludes records that do not have a valid Target Date or Finish Date. If Target Date is not a mandatory field and target dates have not been entered, the associated asset work orders do not appear in the KPI. In addition, if you close an asset work order without going through the finish step, EAM populates the Finish Date with the Close Date to ensure this KPI has as much data as possible.</p> <p>KPI: Work Order Compliance Data Source: PM Compliance browse</p>	Compliance to a preventive maintenance schedule is not only critical to ensuring machinery continues to function at optimum levels, but is now often a required measure for maintaining regulatory certification. A large percentage of PMs being completed on time is an indication of the health of the overall maintenance organization and the reliability of the facility.

Indirect Inventory Analysis Action Center

The predefined Indirect Inventory Analysis action center is accessible from the Action Centers drop-down menu.

This action center allows you to analyze the number of parts issued for a defined time period, rolled up by month. The visual is based on the Indirect Inventory Usage KPI.

Note The Indirect Inventory Usage visual also can be viewed on the Indirect Inventory screen by clicking the lightbulb in the Vertical Menu on the right side of the screen.

Visual Name	Description	Purpose
Indirect Inventory Usage	This bar chart shows the total number of parts, based on the selection in the Parts menu, that have been issued per month, up to the last 12 months. KPI: Indirect Inventory Usage Data Source: Indirect Inventory browse	Maintenance managers, storeroom managers, and plant managers can evaluate part usage for effectively managing stock levels and reorder points.

Project Analysis Action Center

The predefined Project Analysis action center is accessible from the Action Centers drop-down menu.

This action center shows you the authorized spending for an approved project (budget) vs the actual spending for the same project (actual). The visual is based on the Authorized vs Actuals KPI.

Visual Name	Description	Purpose
Authorized Spending vs Actual Spending	This bar chart illustrates the spending for the selected projects with one bar for authorized spending and one bar for actual spending for each project. KPI: Authorized vs Actuals Data Source: Projects browse	Financial controllers, project engineers, plant managers, and fixed asset accountants can use this visual to monitor the progress of projects against their authorized budgets.

Production Predefined Action Centers

This section includes Production predefined action centers.

Production Andon Board

The predefined Production Andon Board action center is accessible from the Action Centers drop-down menu.

This action center presents a kind of production Andon board. An Andon board is a term for a visual aid production device that shows the changing status of a production line. Andon boards are a system to notify management, maintenance, and other workers of a quality or process problem.

This Andon board collects and displays data about manufacturing mix and volume performance in the recent past for all the products produced on a particular production line or lines. The Andon board helps production people answer the two most important questions that they typically have: did we make the required volume, and did we make the right ones?

Production Andon board

Visual Name	Description	Purpose
Select Production Line(s)	This selector box lets you select Andon board data to view based on a selected production line or production line(s).	In the visuals, items are selected based on the production line on which they are produced. By selecting a specific production line, you can view performance for all the products produced on that line during the period in question.
Select Site(s)	This selector box lets you select Andon board data to view based on a selected site or site(s).	By selecting site(s), production managers, schedulers, and planners can focus on only the Andon board data for the site(s) of interest.
Production Andon Board At a Glance	This table-type chart includes many aspects of Andon board data. Columns show period; production line; site; orders scheduled, received, and on-time performance percentage; units scheduled; hours scheduled; units	Lets production managers, schedulers, and planners quickly analyze Andon board data. For the selected production line, site, and period, the system displays on-time performance statistics

Visual Name	Description	Purpose
	<p>delivered; hours delivered; absolute units variance percentage; absolute hours variance percentage; units variance percentage; and hours achieved.</p> <p>KPIs: Operations OEE and Eff by Site at a Glance, Operations OEE by Production Line at a Glance, and Operations OEE Metrics by Production Line Baseline</p> <p>Data Source: Andon boards by Production Line</p>	<p>(mix) for the orders received during the specified time period, measurements of whether the family is achieving the required volumes based on the schedule, and whether what is being produced is on time.</p> <p>Statistics in the Andon board for the selected time period show close to real-time performance for the orders received during that time. At any point, you can see the percentage of orders produced so far during that time that were actually on time. For Andon boards, the on-time metric is based on the orders that were received in the period and not on the orders scheduled in the period.</p> <p>You can also view the volume in units statistics, which includes the units scheduled, units delivered, and unit variance percentages.</p> <p>Volume statistics are accumulated for both units and standard hours.</p> <p>Volume performance refers to the number of hours and units that were actually received in a period, measured against the total hours</p>

Visual Name	Description	Purpose
		<p>produced and units scheduled.</p> <p>For more information on Andon board data for production, refer to the Manufacturing Dashboard chapter of the <i>QAD Manufacturing User Guide</i>.</p>
Hours Achievement- Today/Yesterday/ Current Week (to Date)	<p>This gauge shows the percentage of volume scheduled for the specified period that was delivered in the period. This is <i>(units delivered / units scheduled) x 100%</i>.</p> <p>The graph depicts color coded low, medium, and high ranking performance percentages with a legend of colors below the graph. The needle indicates where the determined percentage lies within the ranking.</p> <p>KPI: Operations Production Andon board</p> <p>Data Source: Andon boards by Production Line</p>	<p>To understand whether the necessary volumes are being produced over the course of the specified time period, production managers, schedulers, and planners should have a sense of how far into the period it is currently versus the percentage achievement.</p> <p>For example, if the percentage achievement is shown as 50% but the day is 90% over, then the necessary volumes are not being produced.</p>
On Time Performance - Today/Yesterday/ Current Week (to Date)	<p>This gauge shows the percentage of all orders received that were on-time for the period. The on-time performance is the <i>(number of orders received on-time / number of orders received) x 100%</i>.</p>	<p>Lets production managers, schedulers, and planners see the on-time metric on each of the two boards (today, current week).</p>

Visual Name	Description	Purpose
	<p>The graph depicts color coded low, medium, and high ranking performance percentages with a legend of colors below the graph. The needle indicates where the determined percentage lies within the ranking.</p> <p>KPI: Operations Production Andon board</p> <p>Data Source: Andon boards by Production Line</p>	

Production Eff and Util by Prod Line

The predefined Production Eff(iciency) and Util(ization) by Prod Line action center is accessible from the Action Centers drop-down menu.

This action center lets you view efficiency, utilization, and productivity data by site or production line overall, or by site or production line by date. You can also view several aspects of the data at once in the visuals that display data at a glance.

Production Eff and Util by Prod Line

Visual Name	Description	Purpose
Select Production Line(s)	This selector box lets you select the utilization and efficiency data to view based on a selected production line or production lines.	By selecting product line(s), production people can focus on only the efficiency and utilization data for the product line(s) of interest.
Select Site(s)	This selector box lets you select the utilization and efficiency data to view based on a selected site or sites.	By selecting site(s), production people can focus on only the efficiency and utilization data for the product line(s) of interest.
Date	This date range filter lets you select	By selecting the date range, production

Visual Name	Description	Purpose
	the utilization and efficiency data to view based on a selected date range.	people can focus on only the efficiency and utilization data for the dates of interest.
Productivity Factor	<p>This arc gauge graph displays the average productivity by production line at a glance.</p> <p>KPI: Production OEE by Production Line At a Glance</p> <p>Data Source: OEE By Site and Production Line - 3 Months</p>	Lets schedulers, production personnel, and managers quickly analyze the average productivity for specified production line(s) and site(s) over time.
Efficiency	<p>This arc gauge graph displays the average efficiency by production line at a glance.</p> <p>KPI: Production OEE by Production Line At a Glance</p> <p>Data Source: OEE By Site and Production Line - 3 Months</p>	Lets schedulers, production personnel, and managers quickly see the average efficiency for specified production line(s) and site(s) over time.
Avg of Utilization	<p>This arc gauge graph displays the average utilization by production line at a glance.</p> <p>KPI: Production OEE by Production Line At a Glance</p> <p>Data Source: OEE By Site and Production Line - 3 Months</p>	Lets schedulers, production personnel, and managers quickly see the average utilization for specified production line(s) and site(s) over time.
Efficiency and Utilization by Site -At a Glance-3 Months	This table-type chart includes many aspects of utilization and efficiency. Columns show site, efficiency,	Lets schedulers, production personnel, and managers quickly analyze measurements of overall factory performance for

Visual Name	Description	Purpose
	<p>utilization, and productivity factor.</p> <p>KPI: Production OEE and Eff by Site at a Glance</p> <p>Data Source: OEE By Site - 3 Months</p>	<p>specified site(s) for a three-month period so that they can evaluate the availability and effective use of capacity in the plant and make adjustments as required. The goal is to maximize productive time. Efficiency is the ratio of the total number of standard hours earned by completing units at production to the total number of hours worked. The utilization percentage is the actual hours worked divided by the scheduled clock time multiplied by 100. Productivity is the ratio of standard hours earned divided by the number of available hours; it is calculated by multiplying utilization by efficiency.</p>
<p>Efficiency and Utilization by Production Line and Site At a Glance-3 Months</p>	<p>This table-type chart includes many aspects of utilization and efficiency. Columns show line and site, efficiency, utilization, and productivity factor.</p> <p>KPIs: Production OEE and Eff by Site at a Glance and Production OEE by Production Line at a Glance</p> <p>Data Source: OEE By Site and Production Line - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly analyze measurements of overall factory performance for specified production line(s) and site(s) for a 3-month period. For more information, see the purpose for Efficiency and Utilization by Site -At a Glance-3 Months.</p>

Visual Name	Description	Purpose
Efficiency By Production Line by Date	<p>This chart displays the efficiency percentage for specified production line(s) in the specified date range. Dates display on the x-axis, while the efficiency percentages display in the y-axis. Production lines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Production Line Baseline</p> <p>Data Source: OEE By Site and Production Line - 13 Weeks Browse</p>	<p>Lets schedulers, production personnel, and managers analyze efficiency percentages over time. For more information, see the Purpose for Efficiency and Utilization by Site - At a Glance-3 Months.</p>
Utilization By Production Line By Date	<p>This chart displays the utilization percentage for specified production line(s) in the specified date range. Dates display on the x-axis, while the utilization percentages display in the y axis. Production lines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Production Line Baseline</p> <p>Data Source: OEE By Site and Production Line - 13 Weeks Browse</p>	<p>Lets schedulers, production personnel, and managers analyze utilization by the specified production line(s) over time. For more information, see the purpose for Efficiency and Utilization by Site -At a Glance-3 Months.</p>
Productivity Factor By Production Line By Date	<p>This chart displays the productivity by specified production line(s) in the specified</p>	<p>Lets schedulers, production personnel, and managers analyze productivity by the</p>

Visual Name	Description	Purpose
	<p>date range. Dates display on the x-axis, while the productivity percentages display on the y- axis. Production lines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Production Line Baseline</p> <p>Data Source: OEE By Site and Production Line - 13 Weeks Browse</p>	specified production line(s) over time. For more information, see the Purpose for Efficiency and Utilization by Site -At a Glance-3 Months.

Production Eff and Util by Work Ctr

The predefined Production Eff(iciency) and Util(ization) by Work Center action center is accessible from the Action Centers drop-down menu.

This action center lets you view efficiency, utilization, and productivity data by department, work center, and even machine. You can view several aspects of the data at once in the visuals that display data at a glance, or analyze the aspects of the data by date.

Production Eff and Util by Work Ctr

Visual Name	Description	Purpose
Select Department(s)	This selector box lets you select the utilization and efficiency data to view based on a selected department(s).	By selecting department(s), production people can focus on only the efficiency and utilization data for the department(s) of interest.
Select Work Center(s)	This selector box lets you select the utilization and efficiency data to view based on a selected work center(s).	By selecting work center(s), production people can focus on only the efficiency and utilization data for the work center(s) of interest.

Visual Name	Description	Purpose
Select Machine(s)	This selector box lets you select the utilization and efficiency data to view based on a selected machine(s).	By selecting machine(s), production people can focus on only the efficiency and utilization data for the machine(s) of interest.
Select Period	This date range filter lets you select the utilization and efficiency data to view based on a selected date period.	By selecting the date range, production people can focus on only the efficiency and utilization data for the dates of interest.
Productivity Factor	This arc graph displays the average productivity by work center at a glance. KPI: Production OEE by Work Center At a Glance Data Source: OEE By Work Center - 3 Months	Lets schedulers, production personnel, and managers quickly see the average productivity for specified department(s), work center(s), and machine(s) over time.
Efficiency	This arc graph displays the average efficiency by work center at a glance. KPI: Production OEE by Work Center At a Glance Data Source: OEE By Work Center - 3 Months	Lets schedulers, production personnel, and managers quickly see the average efficiency for specified department(s), work center(s), and machine(s) over time.
Utilization	This arc graph displays the average utilization by work center at a glance. KPI: Production OEE by Work Center At a Glance Data Source: OEE By Work Center - 3 Months	Lets schedulers, production personnel, and managers quickly see the average utilization for specified department(s), work center(s), and machine(s) over time.

Visual Name	Description	Purpose
Efficiency and Utilization by Department, Work Center and Machine	<p>This table-type chart includes many aspects of utilization and efficiency. Columns show department, work center, machine, efficiency, utilization, and productivity factor.</p> <p>KPI: Production OEE and Eff by Work Center at a Glance</p> <p>Data Source: OEE By Work Center - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly analyze measurements of overall factory performance for specified department(s), work center(s), and machine(s) so that they can evaluate the availability and effective use of capacity in the plant and make adjustments as required. The goal is to maximize productive time.</p> <p>Efficiency is the ratio of the total number of standard hours earned by completing units at production to the total number of hours worked. The utilization percentage is the actual hours worked divided by the scheduled clock time multiplied by 100. Productivity is the ratio of standard hours earned divided by the number of available hours; it is calculated by multiplying utilization by efficiency.</p>
Productivity Factor by Department by Date	<p>This chart displays the productivity by specified department(s) in the specified date range. Dates display on the x-axis, while the productivity</p>	<p>Lets schedulers, production personnel, and managers analyze productivity by the specified department(s) in the specified date range.</p>

Visual Name	Description	Purpose
	percentages display on the y- axis. Departments are color coded with the color legend displayed beside the chart. KPI: Production OEE Metrics by Work Center Baseline Data Source: OEE By Work Center - 13 Weeks	

Production Material Shortages

The predefined Production Material Shortages action center is accessible from the Action Centers drop-down menu.

This action center lets you view material shortages of either purchased items or manufactured items. You can identify which items have a shortage based on site, buyer or planner, item status, and production order status.

Production Material Shortages

Visual Name	Description	Purpose
Select Site(s)	This selector box lets you select the material shortage data to view based on selected site(s).	By selecting site(s), production people can focus on only the material shortages data for the site(s) of interest.
Select Buyer-Planner	This selector box lets you select the material shortage data to view based on selected buyer(s) or planner(s).	By selecting buyer(s) or planner(s), production people can focus on only the material shortages data for the buyer(s) or planner(s) of interest.
Select Item Status	This selector box lets you select the material shortage data to view based on selected item status.	By selecting item status, production people can focus on only the material shortages data for the item status of interest.

Visual Name	Description	Purpose
Select Order Status	This selector box lets you select the material shortage data to view based on selected order status.	By selecting order status, production people can focus on only the material shortages data for the order status of interest.
Quantity Short Purchased Items by Buyer over Order Status	This chart displays the shortage quantities of purchased items by buyer/planner with order status marked in different colors. KPI: Material Shortages Data Source: Component Check by Item & Order	Lets schedulers, production personnel, and managers quickly see the shortage quantities of purchased items for specified buyer(s) or planner(s), with clear visuals of order status.
Purchased Items by Status	This graph displays the item status of purchased items. KPI: Material Shortages Data Source: Component Check by Item & Order	Lets schedulers, production personnel, and managers quickly determine if there are shortages for purchased items.
Quantity Short Manufactured Items by Planner over Order Status	This chart displays the shortage quantities of manufactured items by buyer/planner with order status marked in different colors. KPI: Material Shortages Data Source: Component Check by Item & Order	Lets schedulers, production personnel, and managers quickly see the shortage quantities of manufactured items for specified buyer(s) or planner(s), with clear visuals of order status.
Manufactured Items by Status	This graph displays the item status of manufactured items. KPI: Material Shortages	Lets schedulers, production personnel, and managers quickly determine if there are shortages for manufactured items.

Visual Name	Description	Purpose
	Data Source: Component Check by Item & Order	
Material Shortages Purchased Items	<p>This table displays the detailed information about material shortages for purchased items. Columns includes site, buyer/planner, item status, component code, order status, shortage quantity, supplier and so on.</p> <p>KPI: Material Shortages</p> <p>Data Source: Component Check by Item & Order</p>	Lets schedulers, production personnel, and managers view a wide range of attributes related to purchased items. Having this information helps expedite item purchase and keep production running.
Material Shortages Manufactured Items	<p>This table displays the detailed information about material shortages for manufactured items. Columns includes site, buyer/planner, item status, component code, order status, shortage quantity, gross requirement and so on.</p> <p>KPI: Material Shortages</p> <p>Data Source: Component Check by Item & Order</p>	Lets schedulers, production personnel, and managers view a wide range of attributes related to manufactured items. Having this information helps keep production running and expedite order processing.

Production OEE at a Glance by Production Line

This action center lets you view OEE metrics by production line. Overall Equipment Effectiveness (OEE) is a set of industry standard performance metrics.

OEE is a composite assessment of performance produced from the ratio of fully productive time to planned production time.

OEE metrics attempt to simplify complicated production issues via simpler, more intuitive graphs of performance that can be used to trace problems back to their root causes—whether they are downtime, bottlenecks, excessive setup, efficiency problems, scrap and rework, and so on.

Production OEE at a Glance by Production Line

Visual Name	Description	Purpose
Select Site(s)	This selector box lets you select OEE data to view based on a selected site(s).	By selecting site(s), production people can focus on only the OEE metric data for the site(s) of interest.
Select Production Line(s)	This selector box lets you select OEE data to view based on a selected production line(s).	By selecting product line(s), production people can focus on only the OEE metric data for the production line(s) of interest.
Select Period	This date range filter lets you select OEE data to view based on a selected date range.	By selecting the date range, production people can focus on only the OEE metric data for the dates of interest.
OEE	<p>This arc graph displays the average OEE by production line at a glance.</p> <p>KPI: Production OEE Metrics by Production Line Baseline</p> <p>Data Source: OEE By Site and Production Line - 13 Weeks</p>	<p>Lets schedulers, production personnel, and managers quickly see the OEE metric data for specified production line(s) and site(s) over time.</p> <p><i>OEE (overall equipment effectiveness)</i> $= \text{Availability} \times \text{Performance} \times \text{Quality}$</p> <p>Where:</p> <ul style="list-style-type: none"> • Availability is the percentage of the time that the equipment is up and available

Visual Name	Description	Purpose
		<ul style="list-style-type: none"> • Performance is how efficiently parts are produced • Quality is the percentage of the parts produced that are good parts
Availability	<p>This arc graph displays the average equipment availability by production line at a glance.</p> <p>KPI: Production OEE Metrics by Production Line Baseline</p> <p>Data Source: OEE By Site and Production Line - 13 Weeks</p>	Lets schedulers, production personnel, and managers quickly see the equipment availability for specified production line(s) and site(s) over time.
Performance	<p>This arc graph displays the average performance by production line at a glance.</p> <p>KPI: Production OEE Metrics by Production Line Baseline</p> <p>Data Source: OEE By Site and Production Line - 13 Weeks</p>	Lets schedulers, production personnel, and managers quickly see how efficient parts are produced on specified production line(s) and site(s) over time.
Quality	<p>This arc graph displays the average quality by production line at a glance.</p> <p>KPI: Production OEE Metrics by Production Line Baseline</p> <p>Data Source: OEE By Site and Production Line - 13 Weeks</p>	Lets schedulers, production personnel, and managers quickly see the quality level for specified production line(s) and site(s) over time.
Downtime by Reason	This pie chart displays the downtime percentage due to	Lets schedulers, production personnel, and managers

Visual Name	Description	Purpose
	<p>various reasons, such as machine failures, component missing and so on.</p> <p>KPI: Downtime by Reason Code</p> <p>Data Source: Downtime</p>	<p>quickly identify which resources are constantly not available for specified production line(s) and site(s).</p>
OEE by Site - At a Glance-3 Months	<p>This table-type chart includes many aspects of OEE. Columns show site, OEE, availability, performance, quality, and total unplanned downtime.</p> <p>KPI: Production OEE and Eff by Site at a Glance</p> <p>Data Source: OEE By Site - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly analyze measurements of overall factory performance for specified site(s) over time so that they can evaluate the availability and effective use of capacity in the plant and make adjustments as required. The goal is to improve equipment availability and efficiency, but not at the expense of quality levels.</p>
OEE by Production Line and Site At a Glance-3 Months	<p>This table-type chart includes many aspects of utilization and efficiency. Columns show line and site, OEE, availability, performance, quality, and total unplanned downtime.</p> <p>KPI: Production OEE by Production Line at a Glance</p> <p>Data Source: OEE By Site and Production Line - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly analyze measurements of overall factory performance for specified production line(s) and site(s) over time so that they can evaluate the availability and effective use of capacity in the plant and make adjustments as required. The goal is to improve equipment availability and efficiency, but not at the expense of quality levels.</p>

Production OEE at a Glance by Work Center

This action center lets you view OEE metrics by work center. Overall Equipment Effectiveness (OEE) is a set of industry standard performance metrics.

OEE is a composite assessment of performance produced from the ratio of fully productive time to planned production time.

OEE metrics attempt to simplify complicated production issues via simpler, more intuitive graphs of performance that can be used to trace problems back to their root causes—whether they are downtime, bottlenecks, excessive setup, efficiency problems, scrap and rework, and so on.

Production OEE at a Glance by Production Line

Visual Name	Description	Purpose
Select Department(s)	This selector box lets you select OEE data to view based on a selected department(s).	By selecting department(s), production people can focus on only the OEE metric data for the department(s) of interest.
Select Work Center(s)	This selector box lets you select OEE data to view based on a selected work center(s).	By selecting work center(s), production people can focus on only the OEE metric data for the work center(s) of interest.
Select Machine(s)	This selector box lets you select OEE data to view based on a selected machine(s).	By selecting machine(s), production people can focus on only the OEE metric data for the machine(s) of interest.
Select Period	This date range filter lets you select OEE data to view based on a selected date range.	By selecting the date range, production people can focus on only the OEE metric data for the dates of interest.
OEE by Work Center	This arc graph displays the average OEE by work center at a glance.	Lets schedulers, production personnel, and managers quickly see the OEE metric

Visual Name	Description	Purpose
	<p>KPI: Production OEE by Work Center At a Glance</p> <p>Data Source: OEE By Work Center - 3 Months</p>	<p>data for specified department(s), work center(s) and machine(s) over time.</p> <p><i>OEE (overall equipment effectiveness)</i> $= \text{Availability} \times \text{Performance} \times \text{Quality}$</p> <p>Where:</p> <ul style="list-style-type: none"> • Availability is the percentage of the time that the equipment is up and available • Performance is how efficiently parts are produced • Quality is the percentage of the parts produced that are good parts
Availability by Work Center	<p>This arc graph displays the average equipment availability by work center at a glance.</p> <p>KPI: Production OEE by Work Center At a Glance</p> <p>Data Source: OEE By Work Center - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly see the equipment availability for specified department(s), work center(s) and machine(s) over time.</p>
Performance by Work Center	<p>This arc graph displays the average performance by work center at a glance.</p> <p>KPI: Production OEE by Work Center At a Glance</p> <p>Data Source: OEE By Work Center - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly see how efficient parts are produced on specified department(s), work center(s) and machine(s) over time.</p>

Visual Name	Description	Purpose
Quality by Work Center	<p>This arc graph displays the average quality by work center at a glance.</p> <p>KPI: Production OEE by Work Center At a Glance</p> <p>Data Source: OEE By Work Center - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly see the quality level for specified department(s), work center(s) and machine(s) over time.</p>
Downtime by Reason	<p>This pie chart displays the downtime percentage due to various reasons, such as machine failures, component missing and so on.</p> <p>KPI: Downtime by Reason Code</p> <p>Data Source: Downtime</p>	<p>Lets schedulers, production personnel, and managers quickly identify which resources are constantly not available for specified department(s), work center(s) and machine(s).</p>
OEE by Dept/Work Center at a Glance	<p>This table-type chart includes many aspects of OEE. Columns show department, work center, machine, OEE, availability, performance, quality, and total unplanned downtime.</p> <p>KPI: Production OEE by Work Center at a Glance</p> <p>Data Source: OEE By Work Center - 3 Months</p>	<p>Lets schedulers, production personnel, and managers quickly analyze measurements of overall factory performance for specified department(s), work center(s) and machine(s) over time so that they can evaluate the availability and effective use of capacity in the plant and make adjustments as required. The goal is to improve equipment availability and efficiency, but not at the expense of quality levels.</p>

Production OEE by Date by Production Line

This action center lets you view OEE metrics by production line. Overall Equipment Effectiveness (OEE) is a set of industry standard performance metrics.

OEE is a composite assessment of performance produced from the ratio of fully productive time to planned production time.

OEE metrics attempt to simplify complicated production issues via simpler, more intuitive graphs of performance that can be used to trace problems back to their root causes—whether they are downtime, bottlenecks, excessive setup, efficiency problems, scrap and rework, and so on.

Production OEE by Date by Production Line

Visual Name	Description	Purpose
Select Site(s)	This selector box lets you select OEE data to view based on a selected site(s).	By selecting site(s), production people can focus on only the OEE metric data for the site(s) of interest.
Select Production Line(s)	This selector box lets you select OEE data to view based on a selected production line or production lines.	By selecting product line(s), production people can focus on only the OEE metric data for the production line(s) of interest
Select Period	This date range filter lets you select OEE data to view based on a selected date range.	By selecting the date range, production people can focus on only the OEE metric data for the dates of interest.
OEE By Production Line by Date	This chart displays the OEE percentage for specified production line(s) in the specified date range. Weekly buckets display on the x-axis, while the OEE percentage displays on the y-axis. Production lines are color coded with the color legend displayed beside the chart.	Lets schedulers, production personnel, and managers analyze OEE percentages for specific production lines over time. <i>OEE (overall equipment effectiveness)</i> <i>= Availability x Performance x Quality</i> Where:

Visual Name	Description	Purpose
	KPI: Production OEE Metrics by Production Line Baseline Data Source: OEE By Site and Production Line - 13 Weeks	<ul style="list-style-type: none"> • Availability is the percentage of the time that the equipment is up and available • Performance is how efficiently parts are produced • Quality is the percentage of the parts produced that are good parts
Performance By Production Line By Date	This chart displays performance percentages by specified production line(s) in the specified date range. Weeks display on the x-axis, while the performance percentage displays on the y-axis. Production lines are color coded with the color legend displayed beside the chart. KPI: Production OEE Metrics by Production Line Baseline Data Source: OEE By Site and Production Line - 13 Weeks	Lets schedulers, production personnel, and managers analyze how efficient parts are produced on the specified production line(s) over time.
Quality Performance By Production Line By Date	This chart displays the quality performance for specified production line(s) in the specified date range. Weeks of the bucket display on the x-axis, while the quality performance percentage displays on the y-axis. Production lines are color coded with the color legend displayed beside the chart. KPI: Production	Lets schedulers, production personnel, and managers analyze the percentage of the good parts produced by the specified production line(s) over time.

Visual Name	Description	Purpose
	OEE Metrics by Production Line Baseline Data Source: OEE By Site and Production Line - 13 Weeks	
Availability By Line and Site By Date	This chart displays the equipment availability by specified production line(s) in the specified date range. Weeks of the bucket display on the x-axis, while the availability percentage displays on the y-axis. Production lines are color coded with the color legend displayed beside the chart. KPI: Production OEE Metrics by Production Line Baseline Data Source: OEE By Site and Production Line - 13 Weeks	Lets schedulers, production personnel, and managers analyze the equipment availability by the specified site(s) and production line(s) over time.
Unplanned Downtime By Production Line By Date	This chart displays the unplanned downtime hours by specified production line(s) in the specified date range. Weeks display on the x-axis, while the downtime hours display on the y-axis. Production lines are color coded with the color legend displayed beside the chart. KPI: Production OEE Metrics by Production Line Baseline Data Source: OEE By Site and Production Line - 13 Weeks	Lets schedulers, production personnel, and managers analyze unplanned downtime by the specified production line(s).Availability must include deductions for downtime. Downtime is time that is long enough to log as a traceable event, including equipment failures, material shortages, and setup time.

Production OEE by Date by Work Center

This action center lets you view OEE metrics by production line. Overall Equipment Effectiveness (OEE) is a set of industry standard performance metrics.

OEE is a composite assessment of performance produced from the ratio of fully productive time to planned production time.

OEE metrics attempt to simplify complicated production issues via simpler, more intuitive graphs of performance that can be used to trace problems back to their root causes—whether they are downtime, bottlenecks, excessive setup, efficiency problems, scrap and rework, and so on.

Production OEE by Date by Work Center

Visual Name	Description	Purpose
Select Department(s)	This selector box lets you select OEE data to view based on a selected department(s).	By selecting department(s), production people can focus on only the OEE metric data for the department(s) of interest.
Select Work Center(s)	This selector box lets you select OEE data to view based on a selected work center(s).	By selecting work center(s), production people can focus on only the OEE metric data for the work center(s) of interest.
Select Machine(s)	This selector box lets you select OEE data to view based on a selected machine(s).	By selecting machine(s), production people can focus on only the OEE metric data for the machine(s) of interest.
Select Period	This date range filter lets you select OEE data to view based on a selected date range.	By selecting the date range, production people can focus on only the OEE metric data for the dates of interest.
OEE by Work Center and Machine by Date	This chart displays the OEE data by work center and machine in the specified date	Lets schedulers, production personnel, and managers quickly see the OEE metric

Visual Name	Description	Purpose
	<p>range. Weekly buckets display on the x-axis, while the OEE percentage displays on the y-axis. Work centers and machines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Work Center Baseline</p> <p>Data Source: OEE By Work Center - 13 Weeks</p>	<p>data for specified work center(s) and machine(s) over time.</p> <p><i>OEE (overall equipment effectiveness)</i> $= \text{Availability} \times \text{Performance} \times \text{Quality}$</p> <p>Where:</p> <ul style="list-style-type: none"> • Availability is the percentage of the time that the equipment is up and available • Performance is how efficiently parts are produced • Quality is the percentage of the parts produced that are good parts
Availability by Work Center and Machine by Date	<p>This chart displays the equipment availability by work center and machine in the specified date range. Weeks of the bucket display on the x-axis, while the availability percentage displays on the y-axis. Work centers and machines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Work Center Baseline</p> <p>Data Source: OEE By Work Center - 13 Weeks</p>	<p>Lets schedulers, production personnel, and managers quickly see the equipment availability for specified work center(s) and machine(s) over time.</p>

Visual Name	Description	Purpose
Performance by Work Center and Machine by Date	<p>This chart displays the performance by work center and machine in the specified date range. Weeks display on the x-axis, while the performance percentage displays on the y-axis. Work centers and machines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Work Center Baseline</p> <p>Data Source: OEE By Work Center - 13 Weeks</p>	<p>Lets schedulers, production personnel, and managers quickly see how efficient parts are produced on specified work center(s) and machine(s) over time.</p>
Quality by Work Center and Machine by Date	<p>This chart displays the quality level by work center and machine in the specified date range. Weeks of the bucket display on the x-axis, while the quality performance percentage displays on the y-axis. Work centers and machines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Work Center Baseline</p> <p>Data Source: OEE By Work Center - 13 Weeks</p>	<p>Lets schedulers, production personnel, and managers quickly see the quality level for specified work center(s) and machine(s) over time.</p>
Unplanned Downtime by Work Center and Machine by Date	<p>This chart displays the unplanned downtime hours by specified</p>	<p>Lets schedulers, production personnel, and managers analyze</p>

Visual Name	Description	Purpose
	<p>work centers and machines in the specified date range. Weeks display on the x-axis, while the downtime hours display on the y-axis. Work centers and machines are color coded with the color legend displayed beside the chart.</p> <p>KPI: Production OEE Metrics by Work Center Baseline</p> <p>Data Source: OEE By Work Center - 13 Weeks</p>	<p>unplanned downtime by the specified work center(s) and machine(s). Availability must include deductions for downtime. Downtime is time that is long enough to log as a traceable event, including equipment failures, material shortages, and setup time.</p>

Production OTIF Action Centers

The predefined Production OTIF action centers are accessible from the Action Centers drop-down menu. These action centers display KPI visuals to aid in understanding plant production performance. They would be of particular interest to master schedulers, material planners, shop schedulers, as well as plant managers and supervisors.

These action centers allow you to check if production orders and production order operations have been completed on time and in full (OTIF). They also allow you to check the number of orders past due, and the aging of these orders. By understanding where the past due orders actually fall, you can learn more about the quality of your schedule planning system.

Three Production OTIF Action Centers are delivered with the system:

- Production OTIF Analysis MPS/Production Orders (Production On Time and In Full Analysis of Master Schedule/Production Orders)
- Prod OTIF by Product Family (Production On Time and In Full by Product Family)
- Prod OTIF Operations by Work Center (Production On Time and In Full Operations by Work Center)

An additional set of graphs, analogous to those in the Prod OTIF by Product Family but corresponding to production lines rather than product families, are also delivered with the system and can be found in the

Gallery of graphs. They can be used to construct a Prod OTIF by Production Line (Production On Time and In Full by Production Line) Action Center.

Note The visuals in the Prod OTIF action centers cover particular time periods working backwards from the current date. If you have the necessary permissions, you can modify the reporting periods. For more information, see [Predefined QAD KPIs on page 156](#).

Note If you have the requisite permissions, you can view the KPI on which a visual is based directly from an action center. To do this, on the top right of the visual, click the Show More icon and then choose Edit KPI. The **KPIs** view opens in a modal window.

The terms used for KPIs are defined in the following table:

Terms	Definition
OTIF Closed Order	A closed order is OTIF if all receipts against the order were in the period defined by Due Date – 3 Days and Due Date + 3 Days, and the total quantity received is within 3% +/- of the order quantity.
OTIF Open Order	An open order is OTIF if it is not past due, and the total quantity received against the order is less than the order quantity plus 3% and all receipts against the order were on days in the period defined by Due Date – 3 Days and Due Date + 3 Days.
OTIF Closed Operation	A closed operation is OTIF if all op_hist transactions reporting operation completions, scrap, setup, or labor against the order were in the period defined by Operation Start Date and Operation Due Date, and the total quantity completed against the order is within 3% +/- of the order quantity. There is no tolerance on the start or due dates. As long as the op_hist transaction was between the start and due dates of the operation, it was “on-time.”
OTIF Open Operation	An open operation is OTIF if it is not past due, and the total quantity completed against the order is less

Terms	Definition
	than the operation quantity plus 3% and all op_hist transactions reporting operation completions, scrap, setup, or labor against the order were in the period defined by Operation Start Date and Operation Due Date. There is no tolerance on the start or due dates. As long as the op_hist transaction was between the start and due dates of the operation, it was “on-time.”
Overdue Order	An order is overdue if its due date is less than the current date. No tolerance is used in this comparison.
Planned Master Schedule Order	Planned master schedule orders include those with status P (planned order), F (firm planned order), and B (batch).
Open Master Schedule Order	Open master schedule orders include those with status E (exploded), A (allocated), and R (released).
Closed Master Schedule Orders	Closed master schedule orders include those with the status C.

Prod OTIF Analysis MPS/Production Orders

This action center includes OTIF analysis information based on sites, product families, buyers or planners, or dates.

Visual Name	Description
Select Site(s)	This selector box lets you select OTIF data to view based on selected site(s).
Select Buyer-Planner	This selector box lets you select OTIF data to view based on selected buyers or planners.
Select Product Family	This selector box lets you select OTIF data to view based on selected product families.

Visual Name	Description
Date Range	This selector box lets you select OTIF data to view based on selected date range.
OTIF Analysis - All Master Schedule Orders by Product Family	Horizontal bar graph, with each bar representing production orders created for a particular product line in all past periods. Within each bar, the OTIF and non-OTIF production orders are shown in different colors.
Overdue Analysis - Open MPS Orders by Master Scheduler	Horizontal bar graph, with each bar representing open and overdue production orders associated with a particular buyer or planner. Note that the visual does not currently have a filter in place to exclude closed orders. To exclude closed orders from the visual, add a filter on the Status field using the Filter option.
Overdue Analysis - All Open and Planned Master Schedule Orders	Pie chart that shows the percentage of all open and planned production orders for master schedule items that are: <ul style="list-style-type: none"> • Overdue • Not overdue
Overdue Analysis - MPS Open Orders	Pie chart that shows the percentage of MPS open orders that are: <ul style="list-style-type: none"> • Overdue • Not overdue
MPS OTIF - Last 30 Days	This chart shows the percentage of production orders for master schedule items that were delivered on time and in full compared to the percentage of production orders not delivered on time and in full. The period for this measurement ends on the current date and starts 30 days prior to the current date.

Visual Name	Description
MPS OTIF by Product Family - Last 30 Days	Bar graph that shows a series of horizontal bars, with each bar representing production orders created for a particular product line. The period for this measurement ends on the current date and starts 30 days prior to the current date. Within each bar, the OTIF and non-OTIF production orders are shown in different colors.
Overdue Production Orders	Pie chart that shows the percentage of all production orders that are overdue compared to the percentage of production orders that are not overdue.
Overdue Open and Firm Production Orders	Pie chart that shows the percentage of all open and firm production orders that are: <ul style="list-style-type: none"> • Overdue • Not overdue
Past Due and Future Production Orders by Period	Line graph that shows two separate lines for overdue and future (not overdue) production orders by date.
Past Due Open and Planned Master Schedule Orders by Master Scheduler	Horizontal bar graph, with each bar representing overdue open and planned production orders associated with a particular buyer or planner.

Prod OTIF by Product Family

This action center includes OTIF measurements based on sites, product families, buyers or planners, or dates. The glance visuals show the measurements summarized over a three-month period or time bucket. Product families are defined by the item master field Prod Line.

Visual Name	Description
Select Site(s)	This selector box lets you select OTIF data to view based on selected site(s).

Visual Name	Description
Select Buyer-Planner	This selector box lets you select OTIF data to view based on selected buyers or planners.
Select Product Family	This selector box lets you select OTIF data to view based on selected product families.
Select Period	This selector box lets you select OTIF data to view based on selected date range.
Site Prod OTIF At a Glance - 3-Month Periods	Table showing the OTIF performance and key statistics based on sites for a 3-month period. Columns include site, due date, OTIF percentage of all orders, number of OTIF production orders, and number of non-OTIF production orders.
Product Family OTIF % At a Glance - 3-Month Periods	Table showing the OTIF performance and key statistics based on product families for a 3-month period. Columns include product family, due date, OTIF percentage of all orders, number of OTIF production orders, and number of non-OTIF production orders.
Prod OTIF % All Orders by Product Family by Due Date	Line graph showing, by week, the OTIF performance for each selected product family.
Avg of OTIF % All Orders by Due Date over Site	Line graph showing, by week, the average OTIF performance for each selected site.

Prod OTIF Operations by Work Center

This action center includes OTIF measurements for production order operations scheduled in various work centers and departments. The visuals show the measurements summarized over a three-month period or time bucket.

Visual Name	Description
Select Department(s)	This selector box lets you select OTIF data to view based on selected department(s).
Select Work Center(s)	This selector box lets you select OTIF data to view based on selected work center(s).
Select Machine(s)	This selector box lets you select OTIF data to view based on selected machine(s).
Operations OTIF by Department Summary - At a Glance	Table showing manufacturing departments and the key OTIF data for all operations in a 3-month period. Columns include department, number of total operations, number of total operations OTIF, OTIF percentage of all operations.
3 Month Summary Operations OTIF by Work Center and Machine - At a Glance	Table showing work centers and the key OTIF data for all operations in a 3-month period. Columns include work center, number of total operations, number of total operations OTIF, OTIF percentage of all operations.
OTIF % All Operations by Bucket Start over Department	Line graph displaying the percentage of operations OTIF by department in weekly buckets. Weeks of the bucket display on the x-axis, while the percentage of operations OTIF displays on the y-axis. Departments are color coded with the color legend displayed beside the chart.
OTIF % All Operations by Work Center and Machine	Line graph displaying the percentage of operations OTIF by work center and machine in weekly buckets. Weeks of the bucket display on the x-axis, while the percentage of operations OTIF displays on the y-axis. Work centers and machines are

Visual Name	Description
	color coded with the color legend displayed beside the chart.

Purchasing Predefined Action Centers

This section includes Purchasing predefined action centers.

Purchasing Commitments and Spending Action Center

The predefined Purchasing Commitments and Spending action center is accessible from the Action Centers drop-down menu.

Negotiators and buyers are frequently interested in current commitments and past spending because this data is useful in negotiating new supply agreements with existing suppliers, and in demonstrating past volumes to new sources. Often, it is helpful to organize these purchases by commodity code, by supplier, or by buyer.

Metrics shown in the Purchasing Commitments and Spending Action Center display the dollar value of past purchases—spend—as well as the value of purchase orders that are placed but not received—commitments.

The terms used for the KPIs are defined as shown in the following table:

Terms	Definition
Spend	The amount of money spent on a purchase order, based on the quantity received.
Commitment	The amount of money committed but not yet spent on a purchase order, based on the number of items ordered but not yet received.

Commitments and Spending

Visual Name	Description	Purpose
Commitments by Month	Vertical bar graph showing the current commitments, in the base currency, based on the month in which the purchase order is due. KPI: Purchasing - Commitments and Historical Spending - (QAD)	This graph can be useful for understanding committed cash flows by month due.

Visual Name	Description	Purpose
	Data Source: browse po804	
Select Site(s)	This selector box lets you select spending data to view based on one or more selected sites.	By selecting one or more sites, purchasing managers can focus on only the spending data for the sites of interest.
Spending and Commitments by Site	<p>Horizontal bar graph. Each bar represents the extended amount, in the base currency, for orders at a particular site. The top five sites are represented in separate bars; the remaining sites are represented in a single Other bar.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	This metric can be useful as input to budgeting by site. It also enables comparisons of site to site spending. It can also be useful for focusing process improvements, like value analysis to reduce material usage or shift it to other less expensive items, commodities, or suppliers.
Top Spending by Site	<p>Horizontal bar graph. Each bar represents, for a particular site, the spend on purchase orders. Amounts are shown in the base currency. The top five sites are represented in separate bars; the remaining sites are represented in a single Other bar.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	Purchasing management often wants a ranking of items, sites and commodities by money spent. This metric looks at actual historical purchases to rank the top sites.

Visual Name	Description	Purpose
Select Commodity Code(s)	This selector box lets you select spending data to view based on one or more selected commodity codes.	By selecting one or more commodity codes, purchasing managers can focus on only the spending data for the commodity codes of interest.
Spending and Commitments by Commodity	<p>Horizontal bar graph. Each bar represents the extended amount, in the base currency, for orders of a particular item. The top five commodity codes are represented in separate bars; the remaining codes are represented in a single Other bar.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	<p>This metric can be useful as input to budgeting by commodity. It also enables comparisons of commodity to commodity spending. It can also be useful for focusing process improvements, like value analysis to reduce material usage or shift it to other less expensive commodities.</p>
Top Spending by Commodity	<p>Horizontal bar graph. Each bar represents, for a particular commodity, the spend on purchase orders. Amounts are shown in the base currency. The top five commodities are represented in separate bars; the remaining commodities are represented in a single Other bar.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	<p>Purchasing management often wants a ranking of items, sites and commodities by money spent. This metric looks at actual historical purchases to rank the top commodities.</p>

Visual Name	Description	Purpose
Commitments by Year by Commodity	<p>Vertical bar graph showing the current commitments, in the base currency, for each year. Within each year, commitments are separated by commodity code, with each code represented by a different color.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	<p>This graph can be useful for understanding committed cash flows by commodity.</p>
Spending by Quarter by Commodity	<p>Vertical bar graph showing the extended amount, in the base currency, for each quarter since the start of the previous year. Within each quarter, the extended amount is separated by commodity, with each commodity represented by a different color.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	<p>This graph helps you to understand the volume of past purchases and how they may have changed by commodity. In a company with active value analysis programs in place, this information may also help with monitoring the shift of purchases from one commodity to another, or the reduction in material cost that has been achieved in a particular commodity over time.</p>
Select Supplier(s)	<p>This selector box lets you select spending data to view based one or more selected suppliers.</p>	<p>By selecting one or more suppliers, purchasing managers can focus on only the spending data for the suppliers of interest.</p>

Visual Name	Description	Purpose
Spending and Commitments by Supplier	<p>Horizontal bar graph. Each bar represents the extended amount, in the base currency, for orders from a particular supplier. The top five supplier names are represented in separate bars; the remaining suppliers are represented in a single Other bar.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	<p>This metric can be useful as input to budgeting by supplier. It also enables comparisons of supplier to supplier spending. It can also be useful for focusing process improvements, like value analysis to reduce material usage or shift it to other less expensive suppliers.</p>
Top Spending by Supplier	<p>Horizontal bar graph. Each bar represents, for a particular supplier, the spend on purchase orders. Amounts are shown in the base currency. The top five suppliers are represented in separate bars; the remaining suppliers are represented in a single Other bar.</p> <p>KPI: Purchasing - Commitments and Historical Spending - (QAD)</p> <p>Data Source: browse po804</p>	<p>Purchasing management often wants a ranking of items, sites and commodities by money spent. This metric looks at actual historical purchases to rank the top suppliers.</p>
Commitments by Supplier	<p>Horizontal bar graph. Each bar represents the current commitments, in the base currency, for orders from a particular supplier.</p>	<p>This graph can be useful for understanding committed cash flows by supplier.</p>

Visual Name	Description	Purpose
	KPI: Purchasing - Commitments and Historical Spending - (QAD) Data Source: browse po804	
Select Item(s)	This selector box lets you select spending data to view based one or more selected items.	By selecting one or more items, purchasing managers can focus on only the spending data for the sites of interest.
Spending and Commitments by Item	Horizontal bar graph. Each bar represents the extended amount, in the base currency, for orders of a particular item. The top five item numbers are represented in separate bars; the remaining items are represented in a single Other bar. KPI: Purchasing - Commitments and Historical Spending - (QAD) Data Source: browse po804	This metric can be useful as input to budgeting by item. It also enables comparisons of item to item spending. It can also be useful for focusing process improvements, like value analysis to reduce material usage or shift it to other less expensive items.
Top Spending by Item	Horizontal bar graph. Each bar represents, for a particular item, the spend on purchase orders. Amounts are shown in the base currency. The top five items are represented in separate bars; the remaining items are represented in a single Other bar. KPI: Purchasing - Commitments and	Purchasing management often wants a ranking of items, sites and commodities by money spent. These metrics look at actual historical purchases to rank the top items.

Visual Name	Description	Purpose
	Historical Spending - (QAD) Data Source: browse po804	

Purchasing Data Integrity Action Center

The predefined Purchasing Data Integrity action center is accessible from the Action Centers drop-down menu.

Metrics shown here display purchasing data that is missing or likely to be in error, including purchased parts and raw materials with no primary supplier on record, buyers or commodities with no assigned supplier, and purchased parts and raw materials with no assigned commodity code.

These metrics may be used in data clean up efforts, as well as in work load balancing for buyer-planner responsibilities.

Data Integrity

Visual Name	Description	Purpose
Items without Primary Supplier	Pie chart that shows the percentage of purchased items with a primary supplier, compared to the percentage of purchased items with no primary supplier. KPI: Purchasing - Data Integrity Analysis - (QAD) Data Source: browse po083	Every active item typically has a default or primary supplier. It is probably an error or oversight if an item does not have a primary supplier recorded, and indicative of a basic data quality problem in purchasing and sourcing data. This metric might trigger a larger audit of this kind data, or an improvement program to update basic sourcing records.
Select Buyer-Planner(s)	This selector box lets you select purchasing data to view based on one or more selected buyer-planners.	By selecting one or more items, purchasing managers can focus on only the data for specific buyer-planners.

Visual Name	Description	Purpose
Number of Primary Suppliers for Each Buyer-Planner	Horizontal bar graph. Each bar represents, for a particular buyer-planner, the number of primary suppliers associated with purchased items. KPI: Purchasing - Data Integrity Analysis - (QAD) Data Source: browse po083	Buyer/planners who carry out commodity purchasing may have a large number of primary suppliers for the items they manage. This may be perfectly workable since the job largely revolves around checking price and availability and placing an order when an item is needed. For buyer/planners who are responsible for supplier scheduling, there is much more monitoring and relationship building, and it is generally preferable to have fewer suppliers rather than more. These metrics give a picture of how many different suppliers and items a given buyer/planner is dealing with. It may necessitate balancing of work load across the group of buyer/planners.
Number of Items Assigned Suppliers by Buyer Planner	Vertical bar graph. Each bar represents, for a particular buyer-planner, the total number of items provided by the suppliers assigned to that buyer-planner. KPI: Purchasing - Data Integrity Analysis - (QAD) Data Source: browse po083	
Select Commodity Code(s)	This selector box lets you select purchasing data to view based on one or more selected commodity codes.	By selecting one or more commodity codes, purchasing managers can focus on only the data for the commodity codes of interest.
Supplier Count by Commodity	Pie chart that shows, for a particular commodity code, the percentage of purchased items with a primary supplier.	This is similar to the Number of Primary Suppliers by Buyer-Planner metric. For commodities containing a lot of key or critical items, it may

Visual Name	Description	Purpose
	KPI: Purchasing - Data Integrity Analysis - (QAD) Data Source: browse po083	be desirable to keep the number of primary suppliers to a small number—two or three—so that the buyer/planner knowledgeable about the commodity can focus his or her attention on them.
Commodity Codes with Items Having No Primary Supplier	Pie chart that shows the percentage of items without a primary supplier, organized by commodity code. KPI: Purchasing - Data Integrity Analysis - (QAD) Data Source: browse po083	This metric can be used in conjunction with the buyer-planner metrics to aid in work load analysis.

Purchasing Future Spending Action Center

The predefined Purchasing Future Spending action center is accessible from the Action Centers drop-down menu.

Metrics shown here display future planned purchase dollars based on planned orders in the system. Future spending projections like these are a primary input to sourcing negotiations and pricing negotiation for future purchases.

Future Spending

Visual Name	Description	Purpose
Select Commodity Code(s)	This selector box lets you select spending data to view based on one or more selected commodity codes.	By selecting one or more commodity codes, purchasing managers can focus on only the spending data for the commodity codes of interest.
Planned Purchases by Month	Line graph showing the expected cost of purchases, in the base currency, based on supply/demand records related to	This information might be used for future budgeting purposes, or broken down into commodity projections for the purpose of

Visual Name	Description	Purpose
	<p>purchasing. Amounts are summarized based on the month in which the supply/demand record is due.</p> <p>KPI: Purchasing - Future Planned Purchases - (QAD)</p> <p>Data Source: po082</p>	price negotiations, or broken down by item for negotiating supplier scheduling agreements.
Planned Purchases by Commodity Code	<p>Horizontal bar graph. Each bar represents, for a particular commodity, the expected cost of purchases based on supply/demand records related to purchasing. Amounts are shown in the base currency.</p> <p>KPI: Purchasing - Future Planned Purchases - (QAD)</p> <p>Data Source: po082</p>	This kind of projection might be used for negotiating future sourcing agreements and future pricing in a particular commodity grouping.

Purchasing Inventory Effectiveness Action Center

The predefined Purchasing Inventory Effectiveness action center is accessible from the Action Centers drop-down menu.

Metrics shown here display how much obsolete, defective, and excess inventory is being held in purchased parts and raw material. These metrics are displayed in the form of ratios—obsolete and defective inventory to total inventory, and obsolete, defective, and excess inventory to total inventory.

These measurements show the portion of the inventory that is no longer usable, or may be unusable some time in the near future.

Actions taken to improve inventory effectiveness—reduce obsolete, defective, or excess inventory, or plan for the financial consequences of writing off such inventory—can include:

- Changes in the reserve for this kind of inventory.
- Changes to sell off or otherwise dispose of inventory in a manner as advantageous as possible.
- Changes to purchasing, manufacturing, and engineering practices such as buying in smaller quantities, switching to an order fulfillment

methodology based on making to order or finishing to order, and better management of engineering change orders.

Inventory Effectiveness

Visual Name	Description	Purpose
Select Buyer-Planner(s)	This selector box lets you select purchasing data to view based on one or more selected buyer-planners.	By selecting one or more buyer-planners, purchasing managers can focus on only the data for the buyer-planners of interest.
Select Item(s)	This selector box lets you select data to view based on one or more selected items.	By selecting one or more items, purchasing managers can focus on only the data for the items of interest.
Obsolete and Excess Inventory Ratio by Item	Horizontal bar graph, showing the top 10 worst performing items, based on the ratio of obsolete and defective inventory to total inventory for the item. Items with higher ratios are worse than items with lower ratios. KPI: Purchasing - Inventory Effectiveness - (QAD) Data Source: ic761	Normally, obsolete and defective inventory should be a small percentage of the overall inventory for an item. This graph shows the worst performing items based on this ratio, so that you can take action on the items that have the biggest impact in inventory investment.
Obsolete and Excess Inventory Ratio by Buyer-Planner	Vertical bar graph and line graph. Each bar represents, for a particular buyer-planner, the ratio of obsolete and defective inventory to total inventory. The line graph represents the number of items for each buyer-planner. KPI: Purchasing - Inventory Effectiveness - (QAD)	One buyer/planner may do a much better job of managing his or her purchased part and raw material inventory than other buyer/planners. This metric breaks down the more general Obsolete and Defective Inventory to Total Inventory Ratio by Item into statistics by buyer/planner.

Visual Name	Description	Purpose
	Data Source: ic761	
Obsolete and Excess Inventory Value by Buyer-Planner	<p>Vertical bar graph and line graph. Each bar represents, for a particular buyer-planner, the total inventory value. The line graph shows the amount of inventory (in the inventorying unit of measure).</p> <p>KPI: Purchasing - Inventory Effectiveness - (QAD)</p> <p>Data Source: ic761</p>	<p>This metric extends the Average Obsolete and Defective Inventory Ratio by Buyer-Planner metric by the amount of excess or potentially excess inventory that the buyer/planner is managing. A buyer/planner might have done an excellent job of managing obsolete and defective inventory in the past but have looming excesses in the future based on his or her ordering patterns and order quantities. This metric helps focus improvement on areas that are not yet problems but which may be in the near future.</p>

Purchase Price Variance Action Center

The predefined Purchase Price Variance action center is accessible from the Action Centers drop-down menu.

Purchase Price Variance (PPV) is the difference between the actual price paid to buy an item and the standard price, multiplied by the actual quantity of units purchased. PPV metrics are a key measure for procurement and it is an important indicator for both price predictability and savings delivered. This is because the variance shows that some costs need to be addressed as they exceed or do not meet expected costs.

You can use PPV as an indicator that a material price has changed from your planning data. You can also be aware that finished goods, which includes the materials, have a variance in the gross margin when sold. Typically, materials make up a large portion of costs in manufacturing, so you can use PPV to assess and control costs and to determine when standard costs are set correctly. By viewing PPV data, you can react in a timely manner to protect margins.

The terms used for the KPIs are defined as shown in the following table:

Purchase Price Variance

Visual Name	Description	Purpose
Select Description	This selector box lets you choose all or specific item(s) data to view by the item's description. Since many items have alphanumeric codes to identify them, the description lets you quickly recognize the item.	By selecting one or more items, purchasing managers, buyers, and planners can focus on only on specific item data of interest, or compare PPV data among several items.
Select Suppliers	This selector box lets you select all or specific supplier(s) and their item data to view.	By selecting one or more suppliers, purchasing managers, buyers, and planners can focus on only specific supplier data of interest, or compare supplier data among several suppliers. Supplier comparisons aid when analyzing procurement strategies to solicit supplier bids.
Average and Total Purchase Price Variance	Horizontal line graph. The bar displays the PPV unit variance percentage (average) in blue and the PO price variance PPV sum in yellow for the items you selected by supplier. The X axis displays the items. Left Y axis displays the quantity in units, while the right Y axis displays the PO price PPV sum. KPI: MFG PO Receipt Cost	This metric displays PPV results when the actual price paid for purchased materials is different from the budgeted cost of those materials. A positive price variance (an unfavorable variance) means the actual costs have increased over the standard price. A negative price variance (a favorable variance) means the actual costs have decreased over the standard price. Average and

Visual Name	Description	Purpose
	Data Source: pobr005.p browse	total PPV are typically used as indicators when determining procurement efficiency.
PPV by Type and Item of Supplier	<p>This horizontal line graph displays the positive or negative PPV variance percentage by item description. Suppliers are color coded; the color codes display below the X axis. You can deselect a supplier by selecting the color. The left Y axis displays the item descriptions; the right Y axis displays a bar that lets you maneuver through list of descriptions when multiple descriptions display in the chart. The X axis displays the PPV percentage.</p> <p>KPI: MFG PO Receipt Cost</p> <p>Data Source: pobr005.p browse</p>	<p>This display lets you compare PPV by specific items and suppliers, which is important for budgeting and planning purposes, particularly when determining the quantities of items to order. Any positive purchase price variance means that your company is gaining the cost competitiveness from suppliers. This can indicate that procurement personnel may need to negotiate pricing deals or strategies differently when gathering bids from multiple suppliers. Negative PPV indicates the actual costs have decreased over the standard price. The negative PPV can be attributed to various factors, such as the purchased item may have a lower quality than the standard, or there is an overall decrease in the material price.</p>

Purchasing Supplier Performance Action Center

The predefined Purchasing Supplier Performance action center is accessible from the Action Centers drop-down menu.

Metrics shown here display delivery performance for purchase orders, including the percentage of purchase order lines delivered on time and in full, and the percentage of purchase order lines that are overdue. The on time and in full metrics consider both early and late deliveries as missed deliveries (not on time), and also consider both under delivery and over delivery against the quantity to be not “in full” in determining OTIF. There are tolerances of ± 3 days and $\pm 3\%$ for both on-time and in-full. The overdue metrics consider any order lines that are still open and due in the past, even those with zero or small remaining balances, to be overdue.

Buyer/planners are typically interested in schedule performance because it affects inventory effectiveness, the number of shortages, and inventory investment. Improving schedule performance typically improves inventory availability, without inflating stock levels.

Negotiators and buyers are typically interested in the schedule performance of existing suppliers when committing to additional volumes with an existing source, or when committing to new sources of supply.

Overall supplier performance is typically based on schedule performance, quality performance, and cost performance. Anyone interested in overall supplier performance will want to factor in schedule performance metrics like the ones included here, since placing new orders with suppliers with a poor delivery history—even if those suppliers offer a lower cost—ends up being false economy. Whatever is saved in direct cost is made up for in increased expediting, excess inventory, shortages and their effects on manufacturing and distribution, and other indirect costs.

The terms used for the KPIs are defined as shown in the following table:

Terms	Definition
OTIF Closed Purchase Order	A closed purchase order is OTIF if all receipts against the order were in the period defined by Due Date – 3 days and Due Date + 3 days, and the total quantity received is within 3% of the order quantity.
OTIF Open Purchase Order	An open purchase order is OTIF if it is not past due, and the total quantity received against the order so far is within 3% of the order quantity and all receipts against the order were on days in the period defined by Due Date – 3 days and Due Date + 3 days.
Overdue Purchase Order	A purchase order is overdue if it is not closed and its due date is less

Terms	Definition
	than the current date. No tolerance is used in this comparison.

Supplier Performance

Visual Name	Description	Purpose
Select Buyer-Planner(s)	This selector box lets you select supplier performance data to view based on one or more selected buyer-planners.	By selecting one or more buyer-planners, purchasing managers can focus on only the supplier performance data for the buyer-planners of interest.
OTIF Percent for Last Weeks	<p>Pie chart that shows the percentage of purchase orders due in the current week or previous week that were:</p> <ul style="list-style-type: none"> Received on time and in full (OTIF). Not received OTIF. <p>KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD)</p> <p>Data Source: browse po080</p>	This metric shows purchasing delivery performance across all deliveries in the recent past. Typically, a value of 95% or higher is seen as good purchasing delivery performance. A lower value would trigger analysis and corrective action.
Not OTIF Order Count for Last Weeks by Buyer-Planner	<p>Horizontal bar graph. Each bar represents, for a particular buyer-planner, the number of purchase orders with a due date in the current week or previous week that are not OTIF.</p> <p>KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD)</p>	This metric breaks down the overall purchasing OTIF metric by buyer/planner, so that attention can be focused on the specific buyer/planner with the greatest number of missed deliveries.

Visual Name	Description	Purpose
	Data Source: browse po080	
Overdue Order Line Count	<p>Pie chart that divides overdue purchase orders that are not closed into two separate segments:</p> <ul style="list-style-type: none"> • Overdue • Not Overdue <p>KPI: Purchasing - Past Due Analysis - (QAD) Data Source: browse po080</p>	<p>Any purchase order line that is open, irrespective of whether there is an outstanding balance due, with a due date in the past is considered "overdue."</p> <p>Any purchase order line that is open and due in the future, irrespective of the quantity, is considered "not overdue."</p>
Purchase Order Aging	<p>Line graph based on overdue purchase orders that are not closed. The graph shows the number of orders that are past due on each day.</p> <p>KPI: Purchasing - Past Due Analysis - (QAD) Data Source: browse po080</p>	<p>This display of outstanding purchase order lines gives a visual depiction of how overdue all past due purchase order lines really are, and can be useful in determining why purchase order lines are overdue. For example, if all the overdue orders were scheduled one or two weeks before the current date, you might reasonably conclude that there is an actual delivery problem—bad weather, overloaded suppliers, or customs delays. On the other hand, if the graph shows a cluster of past due orders that were scheduled one, two, and three years earlier, a reasonable conclusion might be that the planning and scheduling system</p>

Visual Name	Description	Purpose
		<p>is not working, and that suppliers do not believe the delivery dates that they are being given. After all, if a large percentage of orders are overdue and scheduled for the distant past and no one is expediting them, why should the dates on any orders mean anything?</p>
OTIF Percent for Last Quarter	<p>Pie chart that shows the percentage of purchase orders due in the last three months that were delivered on time and in full (OTIF) compared to the percentage of purchase orders not received OTIF.</p> <p>KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD)</p> <p>Data Source: browse po080</p>	<p>This metric shows purchasing delivery performance across all deliveries over the prior three months. Typically, a value of 95% or higher is seen as good purchasing delivery performance. A lower value would trigger analysis and corrective action. In addition, by comparing weekly performance (OTIF % for Current and Prior Week) to this metric, you can get a sense of the overall performance trend. It allows you to detect whether performance is getting better or worse, or remaining stable. Even though current performance may be acceptable, if it is less than the average of the last three months, you may need to perform root cause analysis to see why it has deteriorated.</p>

Visual Name	Description	Purpose
Not OTIF Order Count for Last Quarter by Buyer-Planner	<p>Horizontal bar graph of purchase orders due in the last three months. Each bar represents, for a particular month, the number of purchase orders due in that month that are not received OTIF. Within each bar, different colors represent different buyer-planners.</p> <p>KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD)</p> <p>Data Source: browse po080</p>	<p>This metric shows purchasing delivery performance by buyer/planner over the prior three months. By comparing weekly performance (Breakdown of Not OTIF Orders by Buyer-Planner and Current and Prior Week) to this metric, you can get a sense of the overall performance trend. It allows you to detect whether performance is getting better or worse, or remaining stable. Even though current performance may be acceptable, if it is less than the average of the last three months, you may need to perform root cause analysis to see why it has deteriorated.</p>
Overall OTIF Percent	<p>Pie chart that shows the percentage of all open and closed purchase orders that were received OTIF compared to the percentage of purchase orders not received OTIF.</p> <p>KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD)</p> <p>Data Source: browse po080</p>	<p>This metric shows purchasing delivery performance across all deliveries in the past. This graph can provide a useful comparison with recent performance, as well as performance over the last three months. It can be useful in trend analysis and in comparing overall history (this metric) to the prior three months and to the immediate past (one past week and current week). When performance</p>

Visual Name	Description	Purpose
		is deteriorating, you may need to identify the root causes of declining performance and take corrective action.
OTIF % by Date - All Orders at a Glance	<p>Tabular format. Shows, by year and quarter, the overall percentage of purchase order lines that were delivered OTIF. Detail columns display number of OTIF and non-OTIF orders.</p> <p>KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD)</p> <p>Data Source: browse po080</p>	<p>Click on the "+" sign to drill to additional detail. For example, when you click on the "+" sign next to the Due Date (the quarter in which the order lines are due), the system displays individual due dates and order details.</p> <p>You can scroll up and down through this chart to see all orders and their performance.</p>
OTIF % by Date - All Orders	<p>Line graph. Shows, by year and quarter, the overall percentage of purchase orders that were delivered OTIF.</p> <p>KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD)</p> <p>Data Source: browse po080</p>	This graph shows OTIF performance for each period in the past.
Not OTIF Order Count by Commodity	<p>Horizontal bar graph. Each bar represents, for a particular commodity, the number of open and closed purchase orders that are not OTIF.</p> <p>KPI: Purchasing - On Time and In Full</p>	This metric breaks down purchasing delivery performance problems across all deliveries into a statistic for each commodity, so that attention can be focused on the specific commodity or

Visual Name	Description	Purpose
	Analysis for Current and Prior Week - (QAD) Data Source: browse po080	commodities with the greatest number of missed deliveries.
Select Supplier(s)	This selector box lets you select performance data to view based on one or more selected suppliers.	By selecting one or more suppliers, purchasing managers can focus on only the performance data for the suppliers of interest.
Supplier OTIF Statistics at a Glance	Tabular format. For the selected supplier, shows, by year and quarter, the overall percentage of purchase orders that were delivered OTIF. Detail columns display number of OTIF and non-OTIF orders. KPI: Purchasing - On Time and In Full Analysis for Current and Prior Week - (QAD) Data Source: browse po080	The "Bottom 5" rankings below are limited to the worst of the worst. This chart allows a user to see any supplier and its OTIF performance expressed in terms of a percentage as well as counts of OTIF lines and not-OTIF lines.
Bottom 5 OTIF Suppliers	Horizontal bar graph. Each bar represents, for a particular supplier, the number of open and closed purchase orders that are not OTIF. The top 10 suppliers are represented in separate bars; the remaining suppliers are represented in a single Other bar. KPI: Purchasing - On Time and In Full	This metric helps to focus improvement efforts on the worst performing suppliers, based on their on time and in full performance.

Visual Name	Description	Purpose
	Analysis for Current and Prior Week - (QAD) Data Source: browse po080	
Bottom 5 Overdue Order Suppliers	Horizontal bar graph based on overdue purchase orders from the past 14 weeks that are not closed. Each bar represents, for a particular supplier, the number of orders that are past due. The top five suppliers are represented in separate bars; the remaining suppliers are represented in a single Other bar. KPI: Purchasing - Past Due Analysis - (QAD) Data Source: browse po080	This metric helps you to focus improvement efforts on the worst performing suppliers based on their missed (overdue) deliveries.

Purchasing Supply Chain Risk Action Center

The predefined Supply Chain Risk action center is accessible from the Action Centers drop-down menu.

Metrics shown here display risks to uninterrupted inventory supplies of purchased parts and raw material.

These metrics show how many critical or key items and commodities have no secondary source of supply, and long term supplier agreements, such as blanket orders and supplier schedules, that will expire soon. To mitigate risk to the supply chain, the purchasing organization may wish to develop qualified secondary sources for critical parts and material, and renew or renegotiate expiring supplier agreements.

Supply Chain Risk

Visual Name	Description	Purpose
Select Commodity Code(s)	This selector box lets you select data to view based on one or more	By selecting one or more commodity codes, purchasing managers can focus

Visual Name	Description	Purpose
	selected commodity codes.	on only the data for the commodity codes of interest.
Select Supplier(s)	This selector box lets you select data to view based on one or more selected suppliers.	By selecting one or more suppliers, purchasing managers can focus on only the data for the suppliers of interest.
Critical Sourcing Issues Count	<p>Pie chart that divides purchased items into three separate segments:</p> <ul style="list-style-type: none"> Items with a critical sourcing issue—it is a key item and there is no qualified secondary source Items with a non-critical sourcing issue—it is not a key item, but there is no qualified secondary source Items with no sourcing issue—it is not a key item and there is a qualified secondary source <p>KPI: Purchasing - Critical Items with No Qualified Secondary Source - (QAD)</p> <p>Data Source: browse po083</p>	While sole sourcing or single sourcing is often the best strategy for building positive supplier relationships, it can also be risky if there is no qualified second source for a critical part or material. This metric identifies the percentage of items that are key where there is only a single supplier and no qualified second source, the percentage of items that are not key where there is only a single supplier, and the percentage of items where there are multiple suppliers.
Critical Sourcing Issues at a Glance - by Commodity and Item	Tabular chart that summarizes critical sourcing issues (CSI) to the item level, grouped by commodity code.	Click on the "+" sign to drill to specific commodity codes and items.

Visual Name	Description	Purpose
	KPI: Purchasing - Critical Items with No Qualified Secondary Source - (QAD) Data Source: browse po083	
Current Blanket and Supplier Schedule Source Agreements Status	Pie chart that compares the percentage of blanket and supplier schedule source agreements expiring within the next 20 days to those that are not. KPI: Purchasing - Source Agreement Analysis - (QAD) Data Source: browse po081	Both blanket purchase orders and supplier schedules are typically covered by a supplier agreement with a definitive start date and end date. If a blanket order or supplier schedule agreement expires (goes past its end date without being renegotiated and extended), the supplier may have every right to refuse to honor the original order's terms and conditions. There is a significant risk to uninterrupted supply when this happens. These metrics identify the source agreements that need to be renegotiated and extended, by looking at orders due to expire in the next 20 days.
Expiring Source Agreements Count	Horizontal bar graph that displays information about expiring open blanket orders and supplier schedules. Each bar represents a blanket end date within the next 20 days, and shows the number of orders and schedules that expire on that date. Within a bar, individual orders are represented by different colors. KPI: Purchasing - Source Agreement Analysis - (QAD) Data Source: browse po081	

Purchasing Receipts Action Center

The predefined Purchasing Receipts action center is accessible from the Action Centers drop-down menu.

Use this action center to have visibility into receiving activity. You can use the data in the KPIs to get information on receipt volumes by different criteria (site, item type, product family, supplier).

The terms used for the KPIs are defined as shown in the following table:

Purchasing Receipts

Visual Name	Description	Purpose
Select Sites	This selector box lets you choose all or specific sites to view receipt data.	By selecting one or more sites, purchasing managers, buyers, and planners can focus on only specific sites of interest, or compare among several sites to measure how accurate ordering is against receipt dates or other criteria.
Select Buyer-Planners(s)	This selector box lets you choose all or specific buyer-planners to examine purchases against receipts.	By selecting one or more buyer-planners, purchasing managers can track aspects of buying goods and services against the actual receipts of the goods/services. This helps the purchasing department improve timing in the purchasing processes.
Select Supplier(s)	This selector box lets you select all or specific suppliers and their item data to view.	By selecting one or more suppliers, purchasing managers, buyers, and planners can focus on only specific supplier receipt data of interest, or compare supplier receipt data among several suppliers. Supplier comparisons aid when analyzing

Visual Name	Description	Purpose
		procurement strategies to solicit supplier bids or when tracking specific suppliers.
Receipt Date	This range box lets you set a single date or a range of dates upon which receipts occurred.	Focusing on specific dates lets you narrow the scope of the receipt accuracy assessment.
Purchase Receipts Count	This panel displays the total number of receipts you selected for examining data. KPI: Purchasing Receipts Data Source: PO Receipt Browse	Use this display to view a total count of purchase receipts by other selected criteria, such as date.
Purchasing Receipts by Site by Buyer-Planner by Supplier by Product Family	This table-type chart displays the PO site, buyer-planner, supplier, product line, item number, receipt quantities, quantity ordered, and the receipt date in columns. KPI: Data Source: PO Receipt Browse	This table is an all-encompassing view of receipt data, letting you track aspects of the purchase receipt by site, buyer-planner, supplier, and product family. Use the data as indicators when determining your inbound efficiency.
Purchasing Receipts by Item Type	This pie chart displays the total number of items received by type; for example, you can see the total number of a particular auto part received in the automotive area. KPI: Purchasing App Data Source: PO Receipt Browse	Use the chart to examine the volume of items that were received for a particular area. By comparing deliveries by item, you can improve your inbound processes.

Visual Name	Description	Purpose
Number of Receipts by Receipt Date over Supplier	<p>This chart displays the total number of items received by date over the supplier. The suppliers are color coded along the X axis, with the color legend under the chart.</p> <p>KPI: Purchasing App</p> <p>Data Source: PO Receipt Browse</p>	Use the chart to examine the volume of receipts on specific dates from specific suppliers. Use the data to compare supplier deliveries and improve your inbound performance.

Purchasing Requisitions Action Center

The predefined Purchasing Requisitions action center is accessible from the Action Centers drop-down menu.

Use this action center to have visibility into requisition processes. You can monitor the status of requisitions by requester to have visibility on planned costs. There are also KPIs available to control your buyers' efficiency in converting requisitions to POs and metrics on POs created without requisitions.

The terms used for the KPIs are defined as shown in the following table:

Purchasing Requisitions

Visual Name	Description	Purpose
Select Site/Ship-To(s)	This selector box lets you choose all or specific sites or ship-to codes to view requisition data.	By selecting one or more sites or ship-to codes, purchasing managers, buyers, and planners can focus on only specific sites/ship-tos of interest, or compare among several sites/ship-tos to measure requisition processing accuracy.
Select Buyer-Planners(s)	This selector box lets you choose all or specific buyer-planners to examine requisition count and conversions by specific buyer-planners.	By selecting one or more buyer-planners, purchasing managers can track or compare aspects of planning and purchasing and converting the requests to purchase documents

Visual Name	Description	Purpose
		for specific buyer-planners.
Select Supplier(s)	This selector box lets you select all or specific suppliers to view the requisitions created for or purchase documents sent to them.	By selecting one or more suppliers, purchasing managers, buyers, and planners can focus on only specific suppliers, or compare requisition data among several suppliers. This helps you determine purchasing dollars spent on suppliers.
Select Requester(s)	This selector box lets you select all or specific requesters to view their requisition data.	Focusing on a specific requester lets you narrow the scope of the requisition process. You can focus on the total requisitions per requester or compare requisition data among different requesters.
Number of Requisitions by Requester	This pie chart displays the total number of requisitions by requester. Requesters are color coded, with the color legend displayed below the chart. KPI: Purchasing Requisitions Data Source: Requisitions Browse	Comparing the number of requisitions by requester can aid in improving the cost of creating requisitions and placing purchase orders. You can determine the average number of requisitions per requester and improve the requester's workflow.
Number of Requisitions by Approval Status	This pie chart displays the total number of requisitions that are approved or null by requester. Null or approved requisitions are color coded, with the color legend	Comparing the number of approved requisitions by requester can aid in improving the cost of creating requisitions and placing purchase orders. It can help purchasing employees

Visual Name	Description	Purpose
	<p>displayed below the chart.</p> <p>KPI: Purchasing Requisitions</p> <p>Data Source: Requisitions Browse</p>	plan their purchases better and optimize organizational spending.
Requisitions by Requester Over Approval Status	<p>This chart displays the number of approved requisitions over the number of null requisitions by requester. The Y axis displays the number of requisitions, while the X axis displays the requester. Approved and null requisitions are color coded with the color legend below the chart.</p> <p>KPI: Purchasing Requisitions</p> <p>Data Source: Requisitions Browse</p>	This chart helps you determine which requesters produce more approved requisitions. The information is useful when assessing the legitimacy of the requisition needs.
Requisition Conversion Count by Buyer	<p>This chart displays the number of requisitions converted to a purchasing document in the Y axis and the buyer in the X axis.</p> <p>KPI: Purchasing Requisitions</p> <p>Data Source: Requisitions Browse</p>	Use the chart to help you control your buyers' efficiency in converting requisitions to POs.
Number of PO lines without requisitions by Supplier	<p>This chart displays the number of PO lines in the Y axis and suppliers in the X axis.</p> <p>KPI: Purchasing Requisitions</p> <p>Data Source: Requisitions Browse</p>	Use the chart to help you determine purchases without a requisition. This information can help you improve the procurement process and eliminate unnecessary steps.

Purchasing Returns Action Center

The predefined Purchasing Returns action center is accessible from the Action Centers drop-down menu.

Use this action center to measure the rate of return at which shipped items were returned to the supplier. The key to these metrics is to view a breakdown for the reasons why items are returned so that you can identify trends and reduce your rate of return by addressing issues at their source. Analyzing the rate and reasons for return can help you reduce return processing time and costs and improve warehouse and order fulfillment performance.

The terms used for the KPIs are defined as shown in the following table:

Purchasing Returns

Visual Name	Description	Purpose
Select Site(s)	This selector box lets you choose all or specific sites to view return data.	By selecting one or more sites, purchasing managers, buyers, and planners can focus on only specific sites of interest, or compare among several sites to measure product deliveries returned to a particular site.
Select Buyer-Planner(s)	This selector box lets you choose all or specific buyer-planners to examine returns.	By selecting one or more buyer-planners, purchasing managers can track aspects of buying goods against the actual quality of the received goods. When buyers-planners purchase from suppliers that deliver items with a high return rate, finding new suppliers can be a solution.
Item Type(s)	This selector box lets you select all or specific item types when viewing return data.	By selecting one or more item types, purchasing managers, buyers, and planners can focus on only

Visual Name	Description	Purpose
		specific types when viewing return data.
Select Date Range	This range box lets you set a single date or a range of dates upon which returns occurred.	Focusing on specific dates lets you narrow the scope of the return assessment.
Total Returns	This panel displays the total number of returns you selected for examining data. KPI: Purchasing Returns Data Source: PO Receipt Browse	Use this display to view a total count of purchase returns by other selected criteria, such as date or item.
Purchasing Returns by Reason	This chart displays the returns by reasons. KPI: Purchasing Returns Data Source: PO Receipt Browse	This chart helps you determine why returns are occurring by examining the reason for return. Purchasing personnel can identify the exact reasons for returns and plan out strategies to resolve the issues, possibly by changing suppliers.
Purchasing Returns by Date	This chart displays returns by date with the dates you selected. KPI: Purchasing Returns Data Source: PO Receipt Browse	Use the chart to examine the timeframe for returns by particular return reasons. This helps you determine when returns are affecting your production or delivery schedules.

Purchasing Supplier Schedules Action Center

The predefined Purchasing Supplier Schedules action center is accessible from the Action Centers drop-down menu.

Use this action center to have visibility on your release exceptions so that you can proactively communicate with your suppliers when requirements are unexpectedly changed. You can also react to communication issues. Supplier schedule KPI objectives are designed to help you improve

schedule disruption impacts, assess and monitor the overall schedule release process, and ensure that end-to-end processes run smoothly and optimally.

The terms used for the KPIs are defined as shown in the following table:

Purchasing Supplier Schedules

Visual Name	Description	Purpose
Select Ship-To Sites	This selector box lets you choose all or specific ship-to codes to view schedule release data.	By selecting one or more ship-to codes, purchasing managers, buyers, and planners can focus on only specific ship-tos of interest, or compare among several ship-tos to improve schedule processing.
Select Supplier(s)	This selector box lets you choose all or specific suppliers to view schedule release data.	By selecting one or more suppliers, buyers, purchasing managers, and planners can focus on only specific suppliers of interest, or compare release data among several suppliers.
Select Planner(s)	This selector box lets you select all or specific suppliers to view schedule release data created/processed by specific planners.	By selecting one or more planners, purchasing managers and buyers can focus on only specific planners, or compare schedule release data among several planners.
Supplier Schedule Releases with Variances by Planner(s)	This chart lists the number of releases with variances in the Y axis and the planner or buyer in the X axis. Planners are color coded with the color legend beneath the chart.	Focusing on releases with variances lets you analyze planner performance in terms of schedule releases that exceed positive or negative variance percentages for quantities needed in the schedule.

Visual Name	Description	Purpose
	KPI: Supplier Schedules not communicated by Planner Data Source: Supplier Scheduled Releases	Examining this data helps you improve schedule disruption impacts as well as assess the overall schedule release process.
Supplier Schedules Released by Communication Status by Planner	This chart lists the number of schedule releases in the Y axis and the method of communication the planner used to communicate the release in the X axis. Communication means are color coded for Printed, Ready to Print, or Sent to Supplier Portal with the color legend beneath the chart. KPI: Data Source: Supplier Scheduled Releases	Use the data in the chart to determine the type and urgency of communication of releases to suppliers. This information can help you monitor the accuracy and timing of communicated release data. For example, notifications of variances between ordered quantities and quantities dispatched by the supplier can improve, depending on the method of schedule release communication.

Planning Stability Predefined Action Centers

This section includes Planning Stability predefined action centers.

Planning Stability Action Center

The predefined Planning Stability action center is accessible from the Action Centers drop-down menu.

When you require a display of action message summaries for items, certain schedules, due dates and so on by production lines or sites, you can view the Action Message panels in this Action Center. Viewing action messages summary data can help you determine issues that require attention and appropriate action to evaluate and adjust the schedule appropriately.

This action center presents action message summary data for:

- Production lines and sites
- Non-PL (production line) manufactured parts
- All purchased parts and raw material

In each panel, you can click the plus sign (+) and drill down to summary data at different levels. For example, when you click the plus sign for any line in a panel, you can view summary action messages for the line and site.

Planning Stability

Visual Name	Description	Purpose
Select Production Line(s)	This selector box lets you select production lines to view action message data.	In the visuals, action messages are selected based on the production line on which they are produced. By selecting a specific production line, you can view action message counts for all the products produced on that line.
Select Site(s)	This selector box lets you select sites to view action message data.	By selecting site(s), operations managers, schedulers, and planners can focus on only the action messages for the site(s) of interest.
Action Message Summary for Production lines and Sites	<p>This table-type chart displays a summary of different materials planning action messages against items produced on selected production lines and sites.</p> <p>KPI: Planning Action Messages by Production Line and Site</p> <p>Data Source: Action Messages by Production Line Browse</p>	<p>Lets operations managers, schedulers, and planners quickly view a summary of action messages by:</p> <ul style="list-style-type: none"> • Production line • Site • Expedite (reschedule an order to an earlier date) • De-expedite (reschedule an order to a later date) • Cancel • Past due

Visual Name	Description	Purpose
		<ul style="list-style-type: none"> Due for release Totals
Action Message Summary for Non-PL Manufactured Parts	<p>This table-type chart displays a summary of different materials planning action messages for non-production line items.</p> <p>KPI: Planning Action Message Summary for Non PL Manufactured Parts</p> <p>Data Source: Action Messages by Site & Item browse</p>	Lets operations managers, schedulers, and planners quickly view a summary of action messages by all the same criteria as for production lines, except that production line criteria is replaced with item numbers as criteria.
Action Messages Summary for All Purchased Parts and Raw Material	<p>This table-type chart displays a summary for all purchased parts and raw materials planning action messages.</p> <p>KPI: Planning Action Message Summary for All Purchased Parts and Raw Material</p> <p>Data Source: Action Messages by Site & Item browse</p>	Lets operations managers, schedulers, and planners quickly view a summary of action messages by all the same criteria as for Action Message Summary for Non-PL Manufactured Parts.

Planning Stability Purchased Parts Action Center

The predefined Planning Stability Purchased Parts action center is accessible from the Action Centers drop-down menu.

When you require a display of action message summaries for items, due dates, and so on by production lines and sites or buyer planner(s), you can view the Action Message panels in this Action Center. You can also view KPI charts with semi-circle graphs of message summaries for expedited/de-expedited, canceled, due for release, and past due issues. A needle indicator points to color-coded low (green), middle (yellow) or high (red) message issues.

Viewing action messages summary data can help you determine issues that require attention and appropriate action to evaluate and adjust the schedule appropriately. Viewing the KPI data helps you track the success or failure of a plan and schedule. You can quickly determine which items

are on track or not by the level of action message summaries, which helps you determine the performance of your schedule and whether planned deadline dates adhere to the plan or require adjustment.

In each panel, you can click the plus sign (+) and drill down to summary data at different levels. For example, when you click the plus sign for any line in a panel, you can view summary action messages for the line and site.

KPIs display issues.

Planning Stability Purchased Parts

Visual Name	Description	Purpose
Select Site(s) with Production Line(s)	This selector box lets you select site(s) with production lines to view action messages or KPI data or summarized messages.	In the visuals, action messages are selected based on the site with a production line on which they are produced. By selecting a specific site, you can view action message counts for all the products produced on that line.
Select-Buyer Planner(s)	This selector box lets you select action messages or KPI data to display for selected buyer-planners.	Action messages associated with specific buyer-planners let you know when issues arise for each buyer-planner. It also lets you compare issues among various buyer-planners.
Select Items(s)	This selector box lets you select sites to view action message or KPI data.	By selecting site(s), operations managers, schedulers, and planners can focus on only the action messages for specific non-PL manufactured parts. When viewing KPI data and metrics for messages related to items, you can quickly determine when items will adhere,

Visual Name	Description	Purpose
		require expediting, are canceled, and more.
Total Messages	<p>Provide a count of total action messages based on your selected criteria.</p> <p>KPI: Planning Action Message Summary for All Purchased Parts and Raw Material</p> <p>Data Source: Action Messages by Site and Item Browse</p>	Viewing the total count of action messages lets you quickly determine whether issues exist for the plan and schedule. The count helps you improve your scheduling effectiveness.
Action Message Summary for All Purchased Parts and Raw Material	<p>This table-type chart displays a summary of all purchased parts and raw materials planning action messages for the selected items produced on selected production lines and sites.</p> <p>KPI: Planning Action Message Summary for All Purchased Parts and Raw Material</p> <p>Data Source: Action Messages by Site & Item Browse</p>	<p>Lets operations managers, schedulers, and planners quickly view a summary of action messages by:</p> <ul style="list-style-type: none"> • Production line • Site • Expedite (reschedule an order to an earlier date) • De-expedite (reschedule an order to a later date) • Cancel • Past due • Due for release • Totals
Total Messages by Buyer/Planner	This pie chart compares the quantity of action messages by buyer/planner. Buyer/planners are color coded with the color legend below the chart.	Lets operations managers, schedulers, and planners quickly compare the quantity of action messages for buyer planners. This information alerts personnel to issues

Visual Name	Description	Purpose
	KPI: Planning Action Message Summary for All Purchased Parts and Raw Material Data Source: Action Messages by Site & Item Browse	each buyer/planner is encountering.
Sum of Expedite	This semi-circle chart indicates a summary of expedited messages and the level (low, medium, or high) of the issue. KPI: Planning Action Message Summary for All Purchased Parts and Raw Material Data Source: Action Messages by Site & Item Browse	Lets operations managers, schedulers, and planners quickly view a summary of action messages pertaining to expediting planning orders of non-PL manufactured parts. When demand exceeds supply, MRP reschedules or creates planned orders, and generates action messages that suggest you expedite or create orders.
Sum of De-Expedite	This semi-circle chart indicates a summary of de-expedited messages and the level (low, medium, or high) of the issue. KPI: Planning Action Message Summary for All Purchased Parts and Raw Material Data Source: Action Messages by Site & Item Browse	Lets operations managers, schedulers, and planners quickly view a summary of action messages pertaining to de-expediting planned orders. This lets them know when orders are no longer critical and no longer require expediting. the balance between expediting and de-expediting is important to avoid overloading workforce and facilities.
Sum of Cancel	This semi-circle chart that indicates a summary of canceled-related messages and	Lets operations managers, schedulers, and planners quickly view a summary of

Visual Name	Description	Purpose
	<p>the level (low, medium, or high) of the issue.</p> <p>KPI: Planning Action Message Summary for Non PL Manufactured Parts</p> <p>Data Source: Action Messages by Site & Item browse</p>	<p>cancel-related Action messages for non-PL manufactured parts.</p> <p>Knowing canceled orders in advance lets personnel create accurate plans and effective schedules.</p>
Sum of Due for Release	<p>This semi-circle chart indicates a summary of due for release-related messages and the level (low, medium, or high) of the issue.</p> <p>KPI: Planning Action Message Summary for Non PL Manufactured Parts</p> <p>Data Source: Action Messages by Site & Item browse</p>	<p>Lets operations managers, schedulers, and planners quickly view a summary of due for release-related Action messages for non-PL manufactured parts.</p> <p>This information helps you regularly check whether open planned orders and scheduling agreement releases are due.</p>
Sum of Past Due	<p>This semi-circle chart indicates a summary of past due-related messages and the level (low, medium, or high) of the issue.</p> <p>KPI: Planning Action Message Summary for Non PL Manufactured Parts</p> <p>Data Source: Action Messages by Site & Item browse</p>	<p>Lets operations managers, schedulers, and planners quickly view a summary of past due-related Action messages for non-PL manufactured parts.</p> <p>This information helps you regularly check whether open planned orders are overdue.</p>
Sum of Past Due for Release	<p>This semi-circle chart indicates a summary of past due for release-related messages and the level (low, medium, or high) of the issue.</p>	<p>Lets operations managers, schedulers, and planners quickly view a summary of past due for release-related Action</p>

Visual Name	Description	Purpose
	<p>KPI: Planning Action Message Summary for Non PL Manufactured Parts</p> <p>Data Source: Action Messages by Site & Item browse</p>	<p>messages for non-PL manufactured parts.</p> <p>This information helps you regularly check whether open planned orders are overdue.</p>

Quality Order Status Action Center

The predefined Quality Order Status action center is accessible from the Action Centers drop-down menu.

This action center features KPIs highlighting quality results, open quality orders, and quality order status. For Quality personnel, it provides a quick glance at the status update of open orders and their aging, as well as insights as to the resolution results of quality order dispositions.

For information on the icons in the visuals, refer to [Visual Analysis Options on page 158](#).

Quality Order Status

The following selector boxes, which allow you to filter data based on the selections you make, are included in this Action Center:

- Select Site(s)
- Select Order Status
- Select Items
- Select Period

Visual Name	Description	Purpose
Quality Orders by Site Over Quality Result	<p>This graph displays the number of quality orders by site and quality results. The graph displays the number of open quality orders on the y axis and the site on the x axis. Quality results are color coded and the color legend displays below the graph.</p> <p>KPI: Quality Orders Status</p>	Provides quality managers a quick overview of the current status of all the quality orders at each site.

Visual Name	Description	Purpose
	Data Source: Quality and Lot Attribute Orders	
Open Quality Orders	<p>This panel displays the number of open quality orders.</p> <p>KPI: Quality Orders Status</p> <p>Data Source: Quality and Lot Attribute Orders</p>	Gives quality managers a quick view of the number of open quality orders.
Open Quality Orders by Date	<p>This graph displays the number of open quality orders by date and quality order result. The graph displays the number of open quality orders on the y axis and the date on the x axis. Quality results are color coded and the color legend displays below the graph.</p>	Gives quality managers a quick view of the open quality orders and their aging.
Quality Order Status	<p>This table-type chart displays a detailed view of each quality order. To view the quality orders, users can drill down by site, then by quality order status, then by quality order result.</p> <p>KPI: Quality Orders Status</p> <p>Data Source: Quality and Lot Attribute Orders</p>	Gives quality managers a detailed view of each quality order.

Predefined QAD KPIs

The Web UI includes predefined QAD KPIs with associated KPI visuals. These KPIs are the basis of the predefined QAD action centers, and are associated with the apps listed in [Predefined QAD Action Centers on page 11](#) through the Origin App URI field in **Action Centers**. You can

edit these KPIs and related visuals to suit your business needs. If there are critical updates for these KPIs, they will be available on the QAD Store as part of the predefined QAD action centers, so your administrator can install them again, if necessary. QAD is continuously improving these KPIs and adding new ones. With each software upgrade, QAD adds any new predefined action centers and KPIs to your environment, but QAD does not update your existing action centers and KPIs.

To view the KPIs, search for KPIs in the menu search and select the KPIs menu option to open the **KPIs** view.

Note If you have the requisite permissions, you can view the KPI on which a visual is based directly from an action center. To do this, on the top right of the visual, click the Show More icon and then choose Edit KPI. The **KPIs** view opens in a modal window.

Developing Action Centers

This section describes how to create an action center, add visuals to the action center, and modify the action center contents to meet your needs.

Action Centers are described in [Action Centers on page 10](#).

You can then access the action center at any time to view, analyze, and update the visuals. You can update the action center regularly to reflect the needs of your business.

You can edit an existing action center, copy an existing action center to make adjustments, or create a new action center.

Before you begin, ensure that:

- You have read the action center overview in [Action Centers on page 10](#).
- You have the necessary permissions to view action centers. For more information, see [Action Center Permissions on page 186](#).

Accessing Action Centers

This section describes how to access an existing action center.

You may want to access an action center to view the business information—in the form of visuals—included in the action center.

1. Click the Action Centers drop-down menu from the menu bar.



2. Select the action center from the list of action centers in the drop-down menu.

The action centers in the Action Centers drop-down menu are arranged in ascending alphanumeric order. You are only able to see action centers that you have permission to view.

The selected action center displays on the screen.

Note Some ad-blocker plugins for browsers can prevent you from seeing data in action centers, the **KPIs** view, the **Action Centers** view, the **KPI Visuals Gallery** view, and the Insights panel. If you are having issues viewing content in these screens even though you have all of the required security and role access, check if there is an ad blocker running. If an ad blocker is running, disable it or add URLs containing "api/analytics" to the list of allowed URLs maintained in the ad blocker.

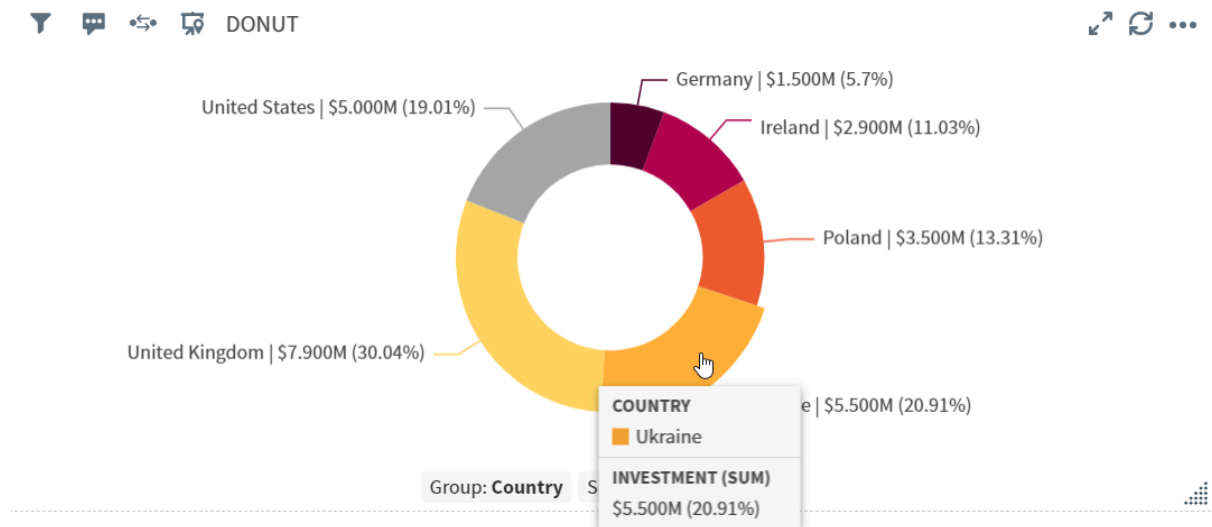
Visual Analysis Options

There are various options that allow you to analyze visuals in an action center more thoroughly. This section describes the options in the radial menu and the visual drop-down menu. It also describes how to refresh the contents of a visual.

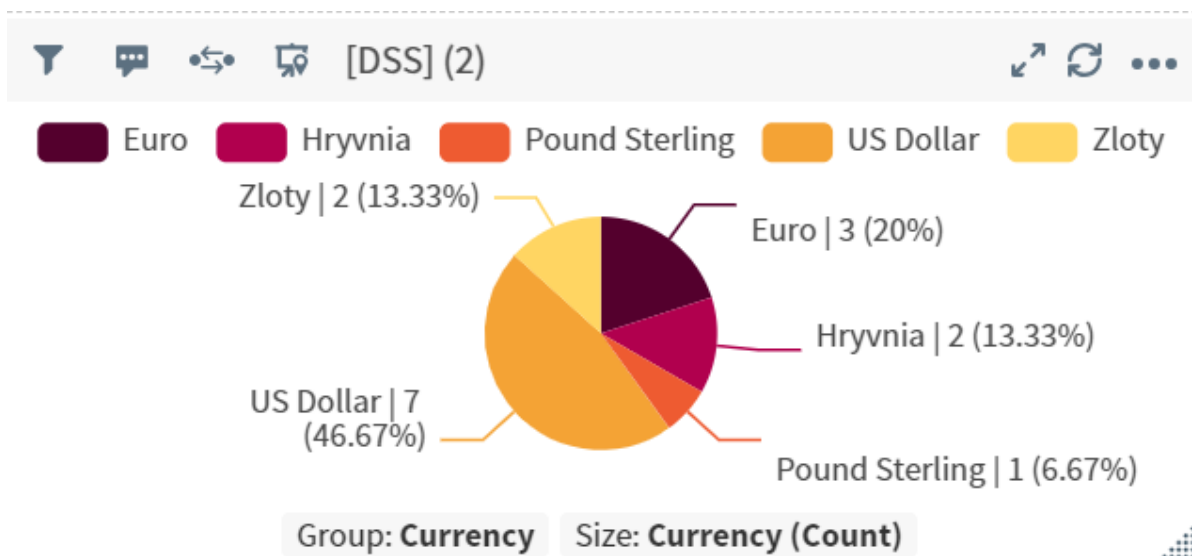
Note If visuals do not display or do not work as expected, delete your browser's cache and refresh the page.

Some visuals are configured to include a manual refresh icon. If you hover over this refresh icon, you can see the date and time when the data was most recently refreshed. For more information on how to refresh the visual data, see [Manually Refreshing Visuals on page 175](#).

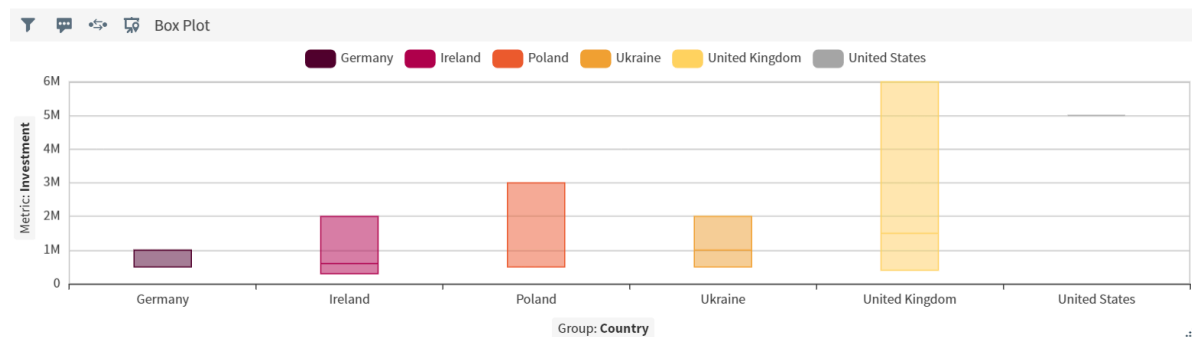
Within a visual, you can hover the cursor over a particular area to see the data point values.



If the visual has a legend, click the legend to show and hide the details of the chart.



There are many visual types or styles—for example, bar, map, table, or word cloud. These visual styles display metrics. Metrics are the values that you are measuring, and are aggregated numeric or attribute fields from the KPI data source. Metrics are used as the y-axis of visuals that support a y-axis.



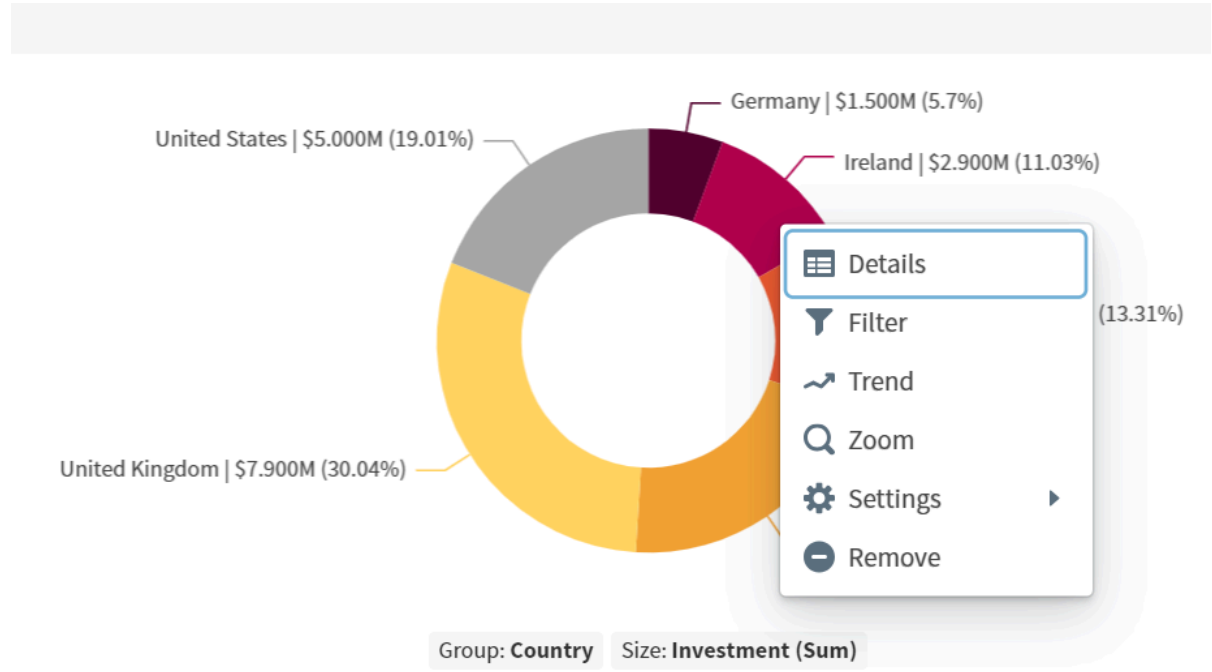
If you click the Metric label for the visual, you can change the metric that the visual is measuring. Similarly, you can use the Group, Granularity, Sub-Group, and Color labels to change the grouping, granularity, and color settings of the visual.

Some action centers contain list filter visuals, which are based on a single attribute, metric, or time field from the KPI data source. You can select one or more of the field values in the list filter visual to quickly apply a filter to other visuals in the dashboard that subscribe to a cross-visual

filter for the field. You can hover over the published filters icon  in the list filter visual to see which visuals have the filter applied to them.

The Radial Menu

The radial menu is available for all visual types, except for arc gauges, histograms, KPI charts, maps, and tables of raw data. To access the radial menu, click a data point in the visual.



The radial menu offers a number of options:

- **Details.** The Details option allows you to see the data in the source browse. Initially, it opens a table with the details of the data stored in the data lake. You can click any row in that table to open the ERP browse. The browse is filtered to show the same selection of data of the selected row, but restricted to the current logged-in domain because most transaction browses are automatically filtered by the current logged-in domain. You will see a flash warning when you have selected a record that belongs to another domain and, therefore, the ERP browse will be empty.
- **Filter.** Charts can be linked to each other so that one chart acts as a filter for another chart. By default, charts with the same KPI data source are linked. The Filter menu option allows you to filter other visuals in the action center that are subscribed to same-source or cross-source links by the data point you have selected.

Note If all of the visuals in an action center are based on the KPI, then you can filter the action center using the filter icon that appears at the top of the action center, to the left of the action center name.

- **Trend.** The Trend option allows you to view trends for a selected data point. The Trend menu option is not available for the following visual

styles: Line and Bars Trend, Line Trend: Attribute Values, and Line Trend: Multiple Metrics.

- **Zoom.** The Zoom option allows you to zoom or drill down into the selected data point and filter the data for that data point by another filter attribute in the data source. When you select Zoom, a menu appears from which you select the second filter attribute. If necessary, you can continue to zoom or drill down to lower levels. At the bottom left of the visual panel, a back icon appears. You can click this icon to return the chart to its original state.
- **Settings.** The Settings option allows you to access settings for the visual.
- **Remove.** The Remove option allows you to exclude the selected data element from your visual.

The Visual Drop-Down Menu

If you have the required permissions, you can use the visual drop-down menu to modify a visual and use it more effectively. To access this menu, click the ellipsis or Show More (...) icon at the top-right of the visual.

The options available from the visual drop-down menu depend on the visual type and the permissions that the administrator has granted you based on your roles in the system. The options can include:

- **Maximize/Minimize.** These options are also available directly from the visual. Click the maximize or minimize icon on the top-right of the visual.
- **Open Browse.** This option allows you to view the ERP browse used as the source for the KPI on which the visual is based. The visual's filters do not transfer to the browse when you open the browse through this menu—as opposed to when you open the browse from the drill-down Details screen, which is filtered. The Details screen is accessible from the radial menu.

Note In the case of a historical KPI visual, the data in the browse results is current. It is not taken from a snapshot.

Use the Drill-Down Links option on the right of the browse screen to see a list of browses and views. Click these links to view or add data, as appropriate. If you drill down through multiple levels of browses and views, a breadcrumb trail appears above the browse. The trail shows you the path to the current data, and allows you to select a higher level in the trail again. Use the configuration icon to reduce the list of available drill-down links. For information on the drill-down links feature, see the section of the online help.

- **Edit KPI.** If you have the requisite permissions, you can select this option to view the KPI on which the visual is based. When you select this option, the KPIs form opens in a pop-up window. For more information on KPIs, see [KPIs on page 195](#).

Note If you make and save adjustments to the KPI, you must reload the page in your browser (F5) to make these changes visible. Ensure that you have saved your changes before reloading the page.

Note If you do not have edit permission for an action center, you cannot update the visuals in it. However, you can click the maximize icon at the top-right of a visual panel to open the visual builder in read-only mode and analyze the visual.

- **Filters.** You can use this option to open the Filter dialog and apply filters to a visual. Define filter criteria and click Apply to apply the filter to the visual. A green icon appears on the filter icon at the top-left of the visual to show the number of filters applied to the visual



Hover over the icon to see information about the filters. Click the icon to open the filter dialog and edit the filters.

- **Time Bar.** If a visual has a date field, you can filter it by that field to create a time bar. Select the Time Bar option to open the Time Bar dialog and choose the relevant date field. Click Apply to apply the time filter. A time bar appears at the bottom of the screen, and the filtered visual shows with a blue border. Use the time bar to modify the time range of the visual. To remove the filter, select the Time Bar option from the visual drop-down menu and choose the None (Time Bar is Off) option.
- **Visual Style.** This option allows you to change the visual style used for the selected visual—for example, to change a pie chart to a donut chart.
- **Visual Settings.** This option allows you to change the settings for the selected visual. Different settings are available for different visual styles. Some visual styles do not have any settings that you can control in this way.
- **Sort & Limit.** You can use this option to sort and limit the data for the selected visual. Select the Sort & Limit option to open the Sort & Limit dialog. Use the Sort by field to select a field to sort by. If more than one sort field is used for a visual style, more than one Sort by field appears in the dialog. For numeric Sort by fields, you can indicate how the data should be aggregated for the visual using the Aggregation field. Use the Order field to select a sorting option. The sorting options available depend on the selected Sort by field. If the selected Sort by field is a metric, you can sort the data in ascending or descending order. If the selected Sort by field is an attribute, you can sort the data in alphabetical or reverse-alphabetical order. For time attribute-based visuals, you can sort in chronological or reverse-chronological order. Use the Limit field to specify the number of data points shown in the visual. If this setting is too large, browser

performance may be affected and the visual may not be able to render the data effectively. To apply these settings to the visual, click Apply.

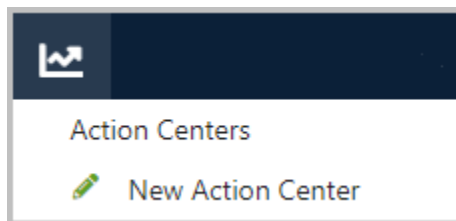
- **Color.** This option allows you to change the color settings for the selected visual. Different color settings are available for different chart styles.
- **Rulers.** The Rulers option allows you to control the rulers and reference lines on the selected visual.
- **Info.** This option allows you to change basic information for the selected visual.
- **Go to <action center name>.** If this visual is linked to another action center, you have the option to open that action center using this link. Depending on how the link was configured, the filters of the current action center may be carried over to the target action center. For more information, see [Linking a Visual to Another Action Center on page 170](#).
- **Copy Visual.** Select this option to copy the visual and to place the unsaved copy in the action center.
- **Export.** Select the Export option to export the visual in image (PNG or PDF) or CSV (raw data or aggregate visual data) format.
Note If you export a visual as a PNG image or PDF, only the visible part of the visual is exported. To export the entire visual, export the visual as a visual data or raw data CSV.
- **Save As.** Select this option to save the existing visual with a new name.
- **Remove Widget.** Use this option to remove the visual from the action center.

Creating an Action Center

This section describes how to create an action center.

You can create an action center to group important KPI visuals that you want to access quickly and easily.

1. Select the Action Centers drop-down menu from the menu bar and choose New Action Center, which appears as the first option in the drop-down menu.



2. In New Action Center, in the Name field, specify a unique name for the action center.

Action center names must be unique. Unique name-checking occurs when you create an action center or update an existing one, and the check is not case-sensitive.

3. Click Continue.

After a few moments, a pop-up Success message appears on the screen to indicate that the action center has been successfully created.

The action center is now accessible from the Action Centers drop-down menu or the **Action Centers** screen, which lists all of the action centers in the environment. Initially, the action center does not contain any visuals.

The action center is saved as Configuration Data, so you can export and import it across environments easily.

In development environments, which developers use to create apps before adding them to a production environment for use by end users, you can associate the action center with an app. You can use the Origin App URI field in **Action Centers** to associate the action center with an app so that it is part of the package and load procedure for moving app data between environments. In **My Developer Settings**, if Save New Artifacts to Configuration Data as Default is selected, the Origin App URI field is set to urn:app:pec (Configuration Data) in any new action centers that you create. Otherwise, Origin App URI is set to the active app.

For more information on Configuration Data and app data, see the *QAD Enterprise Platform Developer Guide*.

Now that you have created the action center, you can access the action center at any time to view, analyze, and update the content.

Update the action center regularly to reflect the needs of your business. For more information, see [Adding Visuals to an Action Center on page 166](#).

Copying an Action Center

This section describes how to copy an action center.

Provided that you have the requisite permissions, you can copy an action center. You can choose to make a copy of each visual in the action center or reference the original visuals in the new action center.

1. Access the action center, as in [Accessing Action Centers on page 157](#). Before copying the action center, it is best practice to ensure that there are no unsaved changes in your action center.
2. When the action center displays, click the Save As icon on the top right of the action center.

The Save As Options pop-up window opens. The default name for the action center copy is set to the same name as the existing action center.

3. In the Save As pop-up window, update the action center name and description. If you do not enter a new name, an error will occur when you try to save the action center copy.

Note If you add a description to the action center, the Action Centers



Description icon becomes available in the action center icons bar. Users who click this icon can view the description that you enter in the Description field.

4. Use the checkbox to indicate whether you also want to create copies of all pre-existing visuals on the action center.

If you select this option, copies of all the pre-existing visuals are made, along with the copy of the action center. You will be able to edit the copies of the visuals.

Note New unsaved visuals on the action center are not copied when this option is selected. New visuals must first be saved before they can be copied. Save the action center and the new visual first.

If you do not select this option, a warning indicates that any changes made to the pre-existing visuals will be carried over to the new action center. If you have appropriate permissions, you can save or undo the visual changes on the new action center.

Note

New unsaved visuals on the action center are removed from the copied action center. New visuals must first be saved before they can be used on another action center. Save the action center and the new visual first.

5. To save the copy of the action center, click Save. If there are new unsaved visuals in your original action center, you will see a message advising you that the new visuals will be removed from the current action center. If you click OK to continue with the copy, the new action center opens with the new visual. The original action center no longer has the new visual. If you have unsaved changes to existing, previously-saved visuals in your original action center, you will see a pop-up message warning about Unsaved Changes when you try to save the action center copy. To continue with the copy, click Leave. The unsaved edits are removed from the original action center.

The new action center opens on the screen and is also accessible from the Action Centers drop-down menu. If you chose to make copies of the pre-existing visuals, these have the same name as the original visual but an incremented number in parentheses, (<n>), is appended to the end of the name. For example, if the original visual name was Orders, the name of subsequent visuals with the same name is Orders (<n>), where <n> is a number that increments for each visual with the same name.

Adding Visuals to an Action Center

This section describes how to add visuals to an action center and to modify the action center contents to meet your needs.

You can create new visuals directly in an action center or place existing visuals in the action center from the Visual Gallery. You can modify the layout of the action center and adjust the visuals to best suit your needs.

1. Access the action center, as in [Accessing Action Centers on page 157](#).
2. To create a new visual directly in the action center, click the Add New Visual icon on the top right of the action center. In the drop-down menu that opens, click Add Visual.
3. In the Select a Source pop-up window, click the KPI that you want to use as a basis for the visual. If it is a new KPI, you may need to refresh the action center page to see it in the list of data sources. Also, ensure that you do not adjust the drop-down menu with the text All Connection Types.
4. In the Select Visual Type pop-up window, click the type of visual that you want to create; for example, a bar chart.

The visual builder opens with a visual based on the KPI data.

5. If necessary, click the Metric, Group, and Color values to adjust the visual.
6. The visual is automatically saved as a local visual that is exclusive to the action center you use. To save the visual to the Visual Gallery so that the visual is shared with other users, open the visual drop-down menu and click Add to Visuals.
7. In the Save Options pop-up window, review the Visual Name and Visual Description fields.
8. To update the local visual on the action center with the shared version from the Visual Gallery, select the Replace the visual on action center checkbox.
9. To complete the save action, click Save in the pop-up window.

A pop-up message appears on the screen to indicate that the visual has been successfully saved. The visual is now accessible from the KPIs view and the Visual Gallery.

10. To place an existing visual in the action center from the Visual Gallery, click the Add Visual icon on the top right of the action center. In the drop-down menu that opens, click Add Existing Visual.
11. In the Select a Visual pop-up window, review the list of visuals available. The Gallery consists of both visuals supplied by QAD—as part of the predefined QAD action centers and KPIs—and visuals created within your company to suit your specific business needs.

Note Search results only include visuals based on active KPIs. Visuals based on inactive KPIs are excluded from the results. Also, if

it is a new visual, you may need to refresh the action center page to see it in the list of data sources. If the visual is already a part of the action center, then it is not shown in the list of available visuals. You can use the visual drop-down menu to copy it instead.

The visuals are listed by name and creator, and grouped by KPI source. To refine the list, use the drop-down menu to select the KPI that you are interested in. You can use the case-insensitive search facility or scroll to locate the particular visual. When you have found the visual that you want to place in the action center, click the visual.

The visual displays in the action center. The visual title is appended with "(1)".

12. To update the name of the visual, double click the visual title and enter a new name.
13. Repeat the Add New Visual or Add Existing Visual process for each visual that you want to add to the action center. You can move the visuals around in the action center or resize them, as described in [Modifying, Resizing, and Removing Action Center Visuals on page 168](#).

Note If you place an existing visual in an action center, make adjustments to the visual settings and then save the action center, the adjustments that you make are reflected in the Visual Gallery and in any other action centers that include the same visual. Only one version of the visual exists in the Gallery and all action centers reference this single version. Similarly, any edits to this visual from the KPIs or KPI Visual Gallery screen show in all related action centers. The same is true of any visuals that you create directly in the action centers. These visuals are saved in the Visual Gallery and are available for other users to place in other action centers and to edit—provided that they have the requisite permissions. It's important to be aware of the impact of your edits on other users.

The screen updates to display the visuals in your chosen layout.

14. To save the action center, click the Save icon on the top right of the action center. In the Save Options pop-up window, review the Name field. Make any necessary adjustments to the Name and Description fields and click Save. Or, to revert changes, move to another screen—for example, select another action center from the Action Centers drop-down menu—and choose to leave the action center without saving changes. Then, return to the action center that you edited. It should look as it did when the action center was last saved, with later unsaved changes reverted. You can use the undo icon on the bottom left of each visual in the action center to step back changes one at a time. You can analyze and update the visuals in the action center, if necessary.

Note

When you attempt to save an action center, the system determines whether any of the pre-existing visuals on the action center have changed on the action center since it was last saved and whether any new visuals have been added. Use the checkbox to indicate whether to save existing visuals with unsaved changes when you save the action center. The default behavior is not to save them. New visuals that you have added to an action center are always saved with the action center.

15. Analyze the visuals in the action center, as described in [Visual Analysis Options on page 158](#). If you want to change the visual, click the ellipsis or Show More icon at the top right of the visual, and select from the available options to make your adjustments. The visual updates immediately. For more information on how to update your visuals, see [Visual Settings and the Visual Builder on page 220](#).

The action center is now accessible from the Action Centers drop-down menu, and contains the visuals that you added to it, in the chosen layout.

You can access the action center at any time to view, analyze, and update the KPI visuals. You can update the action center regularly to reflect the needs of your business.

You can create visuals in the action center, based on existing KPIs. For more information on creating KPIs and visuals, see the [KPIs on page 195](#) and [Visuals on page 220](#) sections.

Modifying, Resizing, and Removing Action Center Visuals

This section describes how to adjust the layout of visuals in an action center by resizing and moving visuals. It also describes how to modify and delete visuals in an action center. Deleting a visual from an action center does not delete it from the Gallery.

You can modify the layout of the action center to best suit your needs. You can also edit a visual from within an action center. You can rename a visual to better explain its purpose. This is useful if you have modified the settings of a visual and its original name is no longer representative of its contents. You can delete visuals from an action center when they are no longer useful.

Important Changes that you make to an action center are not saved automatically. To save changes, click Save. In the Save Options pop-up window, when you attempt to save an action center, the system determines whether any of the pre-existing visuals have changed on the action center since it was last saved and whether any new visuals have been added. A checkbox allows you to indicate whether to save existing visuals with unsaved changes when you save the action center. The default behavior is not to save them. New visuals that you have added to an action center will always be saved with the action center.

Note Visuals on an action center can either be local or shared to the Visual Gallery. Local visuals are indicated by the Local Visual icon  on the visual. Shared visuals are indicated by the Visual icon  on the visual. To save changes to a local visual, save the action center, as the changes only affect the instance of the visual on the action center. However, you must manually save changes to a shared visual with the Save icon on the visual because this changes the visual in the Visual Gallery.

1. Access the action center, as in [Accessing Action Centers on page 157](#).
2. To move a visual:
 - a. Hover the cursor over the title pane—to the right of the visual title and to the left of any icons—until the cursor displays the move symbol.
 - b. Drag and drop the visual at the desired location.
The screen updates to display the visuals in your chosen layout.
 - c. To save your changes to the action center, click Save.
3. To resize a visual:
 - a. Select it on your action center and drag it by the handle in the right-bottom corner.
 - b. To save your changes to the action center, click Save.
4. To edit visual content:
 - a. Click ... at the top right of the visual to access the visual sidebar menu.
 - b. Use the options in the visual sidebar menu to adjust the visual.
For more information on how to adjust the visual settings, see [Visual Settings and the Visual Builder on page 220](#).
 - c. Make the necessary changes to the visual, keeping in mind the implications for any visual linkages.
 - d. To save the changes to a shared visual, click the Save icon on the top right of the visual. A pop-up message appears advising you that any changes you make to the visual affect all action centers that use the visual. If you are happy to proceed, click OK.
5. To delete a visual:
 - a. Click ... on the top right of the visual.
 - b. In the visual sidebar menu that opens, click Remove Widget.
 - c. In the Remove Widget pop-up window, click Remove.
The visual is removed from the action center. Removing a visual from an action center does not delete the visual from the Gallery.
 - d. To save your changes to the action center, click the Save icon and then click Save.

The action center now shows the modified layout and any updated visuals.

Linking Action Center Visuals

This section describes how to link the visuals in an action center so that any filters you apply to the visual also apply to linked visuals.

Before you begin, ensure that:

- Each visual that you want to link shares a common field. For example, the source visual—widget—displays certain data for each week in a particular time period, and the target visual provides more detailed information for each week in a time period.

Important Ensure that you choose a KPI that is relevant to the visuals that you want to filter. Each visual that you want to link to this filter must be based on this KPI, so that you can filter on a field within the KPI, or based on KPIs that share the same data. You can check the KPI data source for a visual using the Info option in the visual drop-down menu.

You can link a source visual with other visuals in an action center. Selecting data points in the source visual updates the other visuals to display only the data that relates to the selected content in the source visual. This allows you to hide irrelevant content from the visuals.

1. Access the action center, as in [Accessing Action Centers on page 157](#).
2. Click the Action Center Interactions  icon at the top-right of the action center.
3. In the Action Center Interactions window that opens, use the Cross-Visual Filtering tab to control the links between visuals based on the same KPI. Use the Cross-Source Links tab to control the links between visuals based on different KPIs.
4. To save your updates, click Apply.

The visuals are now linked.

Linking a Visual to Another Action Center

This section describes how to link a visual in one action center to another action center.

Ensure that you have the requisite permission to share and link action centers.

While working with your action center, you may need to analyze data from other action centers. You can link a visual from your action center to another action center. This allows you to quickly access other action centers with related information. When linking one action center to

another, you can choose to have the target action center inherit the filters from the source action center.

1. Access the action center that you want to link, as in [Accessing Action Centers on page 157](#).

- 2.



Select the Action Center Links icon at the top-right of the action center.

3. In the Action Center Links dialog that opens, click Add Link.
4. In the Select Link dialog that opens, on the left of the screen, select the visual from the current action center that you want to add a link to. On the right of the screen, select the action center that you want to link to from the selected visual.
5. Click Apply.

The Select Link dialog closes and the new link appears in the Action Center Links dialog.

6. In the Action Centers dialog, review the Inherit Visual Filter setting for the new link. By default, Inherit Visual Filter is on, meaning that the action center passes the filters currently used on the action center—or the filters applied based on what is selected when the action center link occurs—to the linked action center. If you do not want the filters from the action center carried over, clear the Inherit Visual Filter field. The filters are only carried over if the action centers are using the same KPI data source.
7. Close the Action Center Links dialog.
8. Click the Save icon at the top-right of the action center to save your update.

The visual is now linked to the specified action center. You can use the Show More (...) menu—which is now green—to select the Go to <action center name> option, where <action center name> is the name of the action center that you linked to. When the linked action center opens, a Back button at the top-left of the action center allows you to return to the original action center.

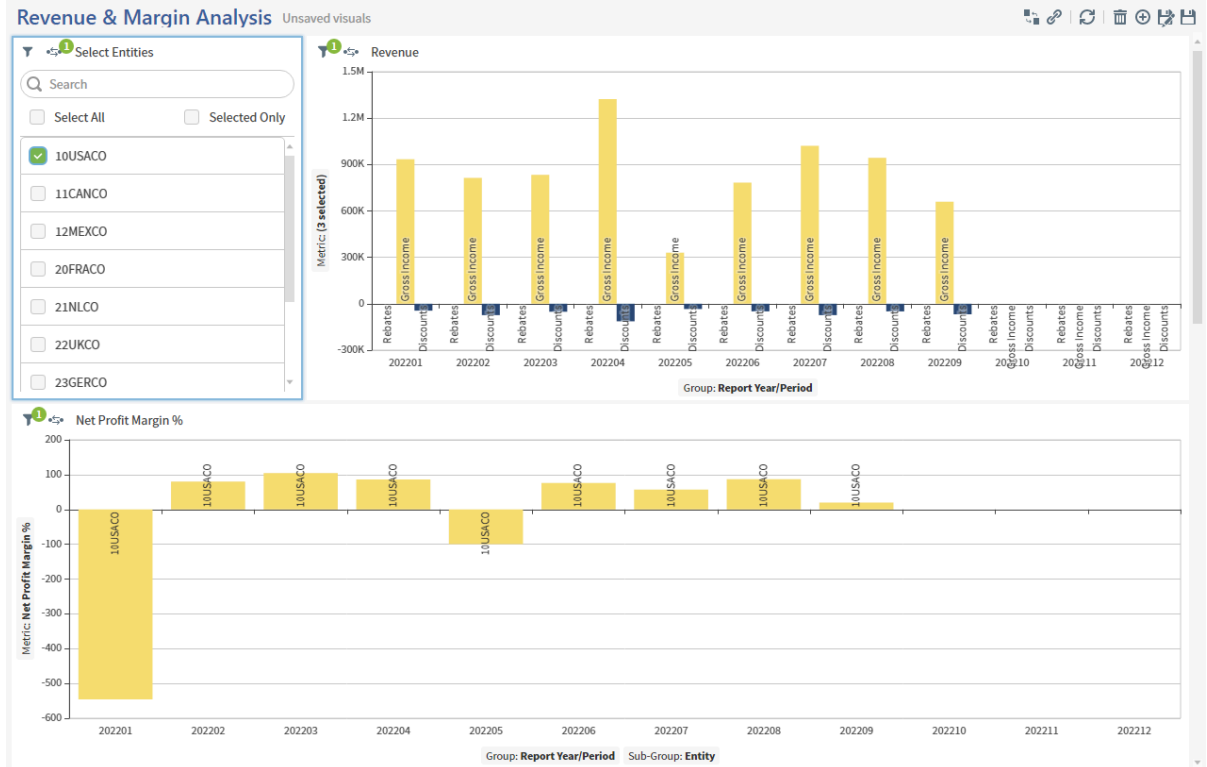
Adding a List Filter Visual to an Action Center

This section describes how to add a list filter visual to an action center.

You can add a list filter visual to an action center. This allows you, with one click, to filter the visuals based on a field that is shared by all of the visuals. For example, you can filter the visuals based on domains, entities, production lines, or sites. A list filter is based on a single attribute, metric, or time field from the KPI data source. You can select one or more of the field values in the list filter visual to quickly apply a filter to other visuals on the action center that subscribe to a cross-visual filter for the field. You can hover over the published filters icon



in the list filter visual to see which visuals have the filter applied to them. Regular visual filters can also be applied to a list filter visual itself. Filters applied to the list filter visual are saved when the visual or action center is saved. However, any filtering performed using the list filter visual is not saved when the action center is saved and any data selections made on the list filter visual are not saved.



1. Access the action center, as in [Accessing Action Centers](#) on page 157.
 2. Click the plus icon on the top-right of the action center, then click Add Visual.
 3. In the Select a Source dialog, select the KPI that you want to use as the basis for the list filter.
 4. In the Select Visual Type dialog, select List Filter.
- The list filter appears in the action center.**
5. Click the Show More (...) icon to open the visual drop-down menu.
 6. From the visual drop-down menu, select the Visual Settings option.

The List Filter Settings dialog appears.

The screenshot shows a settings dialog titled "My KPI" with standard window controls (maximize, minimize, close) in the top right corner. The dialog is organized into sections separated by dashed lines:

- List Filter Settings**
- General**
- Display Style**: Contains two radio buttons. "Fixed List" is selected with a green dot, and "Dropdown List" is unselected.
- Data Options**
- Display Column**: A text input field containing "ABC Class" with "Attribute" written in smaller text below it. A small pencil icon is to the right of the field.
- Use Display Column as Value Column**: A toggle switch that is currently turned on (green).
- Selection Behavior**
- Number of Selections**: Contains two radio buttons. "Single" is selected with a green dot, and "Multiple" is unselected.
- "No Selection" Label**: A text input field containing the word "None".

Below the "No Selection" label, there is a small note: "If blank, label will be set to 'None'". A vertical scrollbar is visible on the right side of the dialog.

7. Update the settings in the dialog, as necessary. Ensure that you set the Display Column to a field that will update the other visuals in the action center when you filter by it.
8. Close the dialog, then save the visual and action center.

The list widget updates to reflect the new settings, and a link icon appears next to the gear icon.

The list filter appears in the visual.

Derived Fields and Custom Metrics

Custom metrics serve as additional metrics to use with your visuals to help you analyze your data. You can create custom metrics in the Custom Metrics Editor, accessible from the Filters option in the visual drop-down menu or visual sidebar menu of a visual, or by clicking the Filter icon for a visual.

A derived field is an in-memory column for your data table that is populated with results from calculations performed on data already in your table. You can create derived fields using row-level expressions that are built using row-level functions. You can create custom metrics in the Custom Metrics Editor, accessible from the Filters option in the visual drop-down menu or visual sidebar menu of a visual, or by clicking the Filter icon for a visual.

In the Filters dialog, click Add Filter and then select the plus icon to access either the Add Derived Field or Add Custom Metric option. The corresponding editor opens. In the editor, you can create the derived field or custom metric. Ensure that you save the action center to save your changes. You can then use the derived field or custom metric within a visual.

Adding a User Attribute Filter to a Visual

You can add a user attribute filter visual to a visual on an action center to show user-specific data in visuals. User attributes are defined when a user signs in to the Web UI, and they can be updated on the **Users** view. If a user filter is applied, users only see data for the user's own attributes in visuals.

Enter filters in the format `${User.AttributeName}`.

Note User attribute filtering only works on users that are created in the Web UI. Attribute filtering does not work on users that are created in the .NET UI.

1. Sign in to the Adaptive UX as a user with the attributes which you want to filter by.
2. Open an action center.
3. On a visual, click the Filters icon on the top left of the visual.
4. In the Filters window, click the Add Filter button.
5. On the Row tab, select an Attribute field that you want to filter.
6. In the Select Values window, in the Customize field, enter a filter using the syntax that is outlined in the table.

User Filtering Attributes

Attribute	Syntax
Country Code	<code>\${User.CountryCode}</code>

Attribute	Syntax
Current Domain	<code>\${User.CurrentDomain}</code>
Current Entity	<code>\${User.CurrentEntity}</code>
ID	<code>\${User.ID}</code>
Email	<code>\${User.Mail}</code>
Username	<code>\${User.Name}</code>
Current Sites	<code>\${User.CurrentSites}</code>

Note You do not need to substitute a value into the filter variable after the dot. The values are automatically taken from the Users browse data of the user who is signed in.

7. Click the Add button.
8. Optionally, to remove the filter, click the minus icon on the right of the added filter.
9. Click the Apply button to close the Select Values screen and return to the Filters screen.
10. In the Filters screen, click the Apply button to filter the visual.

Note If no data is available for the applied filter, the visual shows a No Data Available message.

11. Save the visual and the action center.

Manually Refreshing Visuals

This section describes how to manually refresh a visual in an action center.

Depending on the settings chosen for the KPI associated with a visual, it may be possible to manually refresh the visual from the action center. If

so, a refresh icon  displays on the top right of the visual.

Note When you refresh one visual in an action center, other visuals in the action center that are based on the same KPI as that visual are also refreshed. Linked visuals based on a different KPI are not refreshed.

Note In the case of visuals based on historical KPIs, the refresh icon allows you to create an interim snapshot—provided that the KPI is configured to allow interim snapshots. If the data currently shown in the visual is based on an interim snapshot, a related information message appears as a tooltip when you hover over the refresh icon. Similarly, in the visual builder, visuals displaying interim snapshots are identified by a message in a yellow banner at the top of the screen. To avoid issues when filtering KPI data based on snapshot dates, validation prevents the creation and storage of more than one snapshot within a 24 hour period. For this reason, if you try to create an interim snapshot for a visual within

24 hours of the last historical snapshot created for the related KPI, you will see a warning message and the interim snapshot creation is skipped. If a historical snapshot was not created for the KPI within the last 24 hours, you can create multiple interim snapshots. Each interim snapshot overwrites the last one, so there is no snapshot date conflict.

1. Access the relevant action center, as in [Accessing Action Centers on page 157](#), and locate the visual that you want to update.
2. Click the refresh icon on the top right of the visual.

A Processing data message appears as a tooltip for the refresh icon. After a few seconds, this message disappears.

The visual updates with the current data. The tooltip for the refresh icon shows the text Last Refresh in the case of current KPIs and Interim Snapshot or Last Snapshot in the case of historical KPIs. This text is followed by the current date and time.

If the action was unsuccessful—for example, due to a database availability issue—you will see a message flash on the screen in red. The message informs you that the current KPI was not refreshed or the interim snapshot of the historical KPI was not created. It also advises you to contact your system administrator. In the case of a historical KPI visual, the Snapshot History panel in the **KPIs** view may also display the error information.

Deleting an Action Center and its Visuals

This section describes how to delete an action center and its visuals.

Important It is not possible to restore an action center after its deletion.

1. Access the action center, as in [Accessing Action Centers on page 157](#).
2. When the action center displays, click the delete icon  on the top right of the action center.

The Delete Action Center pop-up window displays, prompting you to confirm the deletion.

3. In the Delete pop-up window, click Delete to confirm your choice.

The action center has been deleted, and it is no longer listed in the Action Centers drop-down menu.

Renaming an Action Center

This section describes how to rename an action center.

If you have the requisite permissions, you can rename an existing action center to better reflect its contents or purpose.

1. Access the action center, as in [Accessing Action Centers on page 157](#).

2. When the action center displays, click the action center title to make it editable.
3. Update the text and then click on the page next to the title so that the Save icon becomes enabled.
4.  Click the Save icon  on the top right of the action center.
5. In the Save Options pop-up window, review the action center title. If necessary, you can also update the action center description.
6. To save your changes, click Save.

The action center name is updated and, if applicable, appears in the Action Centers drop-down menu.

Refreshing an Action Center

You can refresh all of the visuals in an action center that are based on active KPIs at once. In the case of visuals based on historical KPIs, the refresh results in the creation of an interim snapshot. This action skips any visuals of active current KPIs that do not have [Allow Manual Refresh on page 204](#) enabled. It also skips visuals from historical KPIs where Create Interim Snapshot is not selected.

Note Any visuals based on inactive KPIs are not included in the refresh.

Note To avoid issues when filtering KPI data based on snapshot dates, validation prevents the creation and storage of more than one snapshot within a 24 hour period. For this reason, the action center refresh skips any visuals based on a KPI for which a historical snapshot was created within the previous 24 hours. If a historical snapshot was not created for the KPI within the last 24 hours, you can refresh the visual multiple times from the action center. Each interim snapshot overwrites the last one, so there is no snapshot date conflict.

1. Access the action center, as in [Accessing Action Centers on page 157](#).
2. When the action center displays, click the Refresh icon  on the top right of the action center.

After the visuals have refreshed, each affected panel displays the updated contents. The tooltip for each visual's refresh icon shows the text Last Refresh in the case of current KPIs, and Interim Snapshot or Last Snapshot in the case of historical KPIs. This text is followed by the current date and time.

If the action was unsuccessful—for example, due to a database availability issue—you will see a message flash on the screen in red. The message informs you that the refresh of the action center data has failed. In the case of a visual based on a current KPI, cached data may show in the visual but the date and time at the bottom of the panel will not update. If there is no cached data available to display, an error message appears

advising you to contact your system administrator and the date and time are not present in the panel. In the case of a visual based on a historical KPI, the interim snapshot is not created. An error message may display in the visual panel and in the related Snapshot History panel in the **KPIs** view.

Favoriting an Action Center

This section describes how to access an existing action center.

You can favorite frequently-used action centers to easily access them from the menu bar.

There are several options for favoriting action centers or removing action centers from your favorites.

Favoriting an Action Center on the Action Center

1. From the Action Centers drop-down menu, open an action center that you want to favorite.
2. To favorite the action center and add it to the menu bar, click the Add to Favorites (star) icon on the top right of the action center.

Favoriting an Action Center from the Menu Search Bar

1. In the Adaptive UX menu search, enter the name of the action center that you want to favorite.
2. Click the star icon on the right of the action center's search result.
3. In the Add Favorite window, from the Folder drop-down menu, select Favorites.
4. Click OK.

Favoriting an Action Center from Favorites Setup

1. On the Adaptive UX menu bar, click the  icon on the right of the screen.
2. Click Favorites Setup.
3. On the Favorites Setup screen, click New Favorite.
4. In the New Favorite window, search for the action center that you want to favorite.
5. Click the star icon on the right of the action center's search result.
6. In the Add Favorite window, from the Folder drop-down menu, select Favorites.
7. Click OK.
8. In the New Favorite window, click Done.

Removing an Action Center from Favorites

1. To remove an action center from Favorites, choose one of the following options:
 - a. Open the favorited action center, then click the Add to Favorites icon again to clear it.

- b. In the menu search, search for the name of the favorited action center, then click the yellow star icon to clear it.
 - c. In the Favorites Setup screen, hover over the action center name, then click the x icon.
2. In the Remove Favorite pop-up, click Remove.

Viewing Action Center Properties and Export Options

This section describes how to view action center properties, and how to associate an action center with an app so that, when you import or load an app into another environment, the action center is also added to the target environment. The action center remains separate from the app because it is stored as Configuration Data.

Before you begin, check the Logi version (Composer or Logi Platform Services) used in your source and target environments. This version of the online help describes the user experience for action centers, KPIs, and visuals based on the new QAD Analytics for AUX user experience. [The March 2022 version of the online help](#) describes the user experience for action centers, KPIs, and visuals based on Logi Platform Services.

If your system uses Composer, the value of the Visual Type field of the **KPIs** view is set to Composer and the help content in this page is relevant for you. If your system uses Logi Platform Services, the value of the Visual Type field of the **KPIs** view is set to Thinkspace, so you should refer to the March 2022 help content.

Note For the export and import of action centers as Configuration Data or app data to work, the source and target environments must have the same Logi version. If your environments do not use the same Logi version, contact QAD Support to discuss your options.

You can use the **Action Centers** screen to view details of an action center, and to check if the action center is ready for export as part of an app. You can only export an action center if it is stored together with its visuals and the KPIs on which the visuals are based.

If an action center and its content are saved as Configuration Data, you can use **Configuration Data** to export it from the environment and import it into another environment. When an action center is stored as Configuration Data, you can maintain it and export and import it across environments more easily than when it is stored as app data. For more information, see the *QAD Enterprise Platform Developer Guide*.

If an action center is stored in an app, you must export and import it by packaging the app in the source environment and loading it in the target environment. For more information on this process, see the *QAD Enterprise Platform Developer Guide*.

1. Access the **Action Centers** screen.
2. Select the relevant action center from the browse.

- Use the Origin App URI field to specify the app that you want to associate the action center with. This field is set to Configuration Data (urn:app:pec) by default, and you can click the Change button to update it.

Note All action centers, KPIs, and visuals are saved as Configuration Data by default. Alternatively, in development environments—which developers use to create apps before adding them to a production environment for use by end users—you can associate the action center with an app so that, when you import or load an app into another environment, the action center is also added to the target environment. In **My Developer Settings**, if the Save New Artifacts to Configuration Data as Default checkbox is selected, the Origin App URI field is set to urn:app:pec (Configuration Data) in any new action centers that you create. To associate the action center with an app, clear the Save New Artifacts to Configuration Data as Default checkbox and use the Origin App URI field in **Action Centers** to associate the action center with an app. Otherwise, Origin App URI is set to the active app.

Important Be aware of the [Active on page 197](#) setting of a KPI that is imported into a target environment. It may differ from the setting in the source environment.

When new KPIs are imported into a target environment during the Import Configuration Data process or the app package and load process, the Active field value usually matches the value from the source environment. However, to conserve resources, [predefined QAD KPIs on page 156](#) are set to inactive when they are imported to an environment as new KPIs—regardless of whether they are current or historical KPIs.

Value of KPI's Active Field in Target Environment when Imported as a New KPI

User-Defined/QAD-Defined KPI	KPI Type	Active Field in Target Environment
User	Historical/Current	The value in the target environment is copied from the source environment.
QAD	Historical/Current	Inactive

If a KPI already exists in the target environment, the existing target environment settings for the environment-specific fields are maintained. These settings are comprised of the Active field and the settings in the Refresh Options panel and the Domains or Entities panel of the KPI.

For historical KPIs included in an import that already exist in the target environment, the active fields from the source environment are merged with those in the target environment on app import. This behavior ensures that all necessary fields are available for related visuals. Similarly, if the aggregation setting for a KPI field in the source environment is set to Sum, Avg, Min, & Max, then this setting is carried over to the target environment. Any existing snapshots in the target environment show a null or zero value for any newly introduced active fields or aggregation settings. It is important to note that an import does not change the snapshot schedule in the target environment. Browse filter criteria are also unchanged during import if the historical KPI has at least one historical snapshot in the target environment.

Export and Import Action Centers

This section outlines prerequisites for the import and export of an action center—and its KPIs and visuals—from one environment to another as Configuration Data.

The **Configuration Data** screen allows you to export artifacts, including action centers, from your environment. The export process extracts the action center, KPIs, and visuals as a ZIP file. You can then import this content to another environment using the same **Configuration Data** screen in the target environment.

The Configuration Data functionality is described in detail from a user perspective in the [Configuration Data on page 290](#) section of the online help. Read this section before exporting or importing Configuration Data.

Before you begin, check the following prerequisites.

- Read [Exporting and Importing KPIs as Configuration Data on page 214](#) for important details of how the import of KPIs as Configuration Data works. These points are also true when your action center KPIs are imported as Configuration Data.
- Check the Logi version (Composer or Logi Platform Services) used in your source and target environments. For the export and import of KPIs as configuration data to work, both environments must have the same Logi version. In the March 2023 QAD Adaptive UX release and later, all environments use Logi Composer and Configuration Data objects by default. Earlier versions of the software up to September 2022 used Logi Platform Services and app data objects. If Logi Platform Services is still being used, it is not possible to export action centers, visuals, and KPIs as part of an app. In this case, they must be exported as Configuration Data.

Note This March 2023 version of the online help describes the user experience for action centers, KPIs, and visuals based on the new QAD Analytics for AUX user experience. [The March 2022 version of](#)

[the online help](#) describes the user experience for action centers, KPIs, and visuals based on Logi Platform Services.

- Ensure that the KPIs that you want to export and import are saved as Configuration Data rather than app data. If your source system uses Logi Composer, indicated by the value Composer in the Visual Type field of the **KPIs** view, all KPIs are saved as Configuration Data. If your source system uses Logi Platform Services, indicated by the value Thinkspace in the Visual Type field, then KPIs are usually saved as Configuration Data but they can be saved as app data in certain circumstances. The App field in the **KPIs** view shows you whether the KPI is saved as configuration data or in an app.

See [Exporting and Importing Action Centers as Configuration Data on page 182](#) to steps on how to import or export an action center.

Exporting and Importing Action Centers as Configuration Data

This section outlines how to import and export an action center and its KPIs and visuals from one environment to another as Configuration Data.

Important

- Read [Export and Import Action Centers on page 181](#) before performing these tasks.
- If you import an action center into an environment that already contains an action center with the same URI (unique resource ID), the import overwrites the existing action center. To view an action center's URI, select the action center from the **Action Centers** view. Then, click the Permissions button and double-click a role to open the permissions tree and view the URI field.
- During an application import, there are cases where an action center in the target environment is removed—for example, if you import a set of action centers from a source with the same Namespace as the target, and these action centers were imported into the target previously, but some of the action centers were deleted from the source between the two import operations. In this case, any action center removed from the source is also removed from the target during the second import.
- Usually, if an action center is removed during an application import, the KPIs that were used in the removed action center are also removed. However, if any KPIs are used in another place, such as an Insight or another action center, the KPIs are not removed.

Exporting an Action Center

1. Sign in to the environment that you want to export the action centers from.
2. In **Configuration Data**, use search criteria to populate the browse with the list of action centers that you want to export.
3. From the Actions menu, choose Export Configuration Data.

4. In the Export Configuration Data window, ensure that you select the action centers that you want to export in the Export Artifacts grid. Note the value of the Export File Name field.
5. Click Submit.
6. When a message appears on the screen to advise you that the export request was submitted, click OK.
7. When the export completes successfully, your Inbox displays a notification that the export is available. Click the Download link in the notification to download the ZIP file. The ZIP file is saved in the default folder for your browser downloads. You can also access **Background Processing** to check the status of your export process. If the Status field shows a green tick or Success icon and the Completed field is set to 100%, **Submission Details** provides details of the action centers, KPIs, and visuals that were exported successfully. For each exported visual, it shows whether the visual is exported as a Gallery visual only, or as a Gallery visual and part of an action center. For example, an action center includes a KPI with two visuals. Visual A is saved in the KPI and to the Gallery, and is included in the action center. Visual B is saved with the KPI and in the Gallery, but it is not included in the action center. The messages detail this information.

Possible reasons for a failure of the export:

- The user does not have the appropriate permissions to export the artifacts. To resolve this issue, contact your system administrator.
 - The Logi service is not available. To resolve this issue, contact your system administrator.
 - Some expected KPI content in the action center does not exist or cannot be found. To resolve this issue, contact your system administrator.
 - An error occurred when reading the action center content for export. To resolve this issue, contact your system administrator.
8. Sign out of the environment.

Importing an Action Center

9. Sign in to the environment that you want to import the action centers to.
10. In **Configuration Data**, choose Import Configuration Data from the Actions menu.
11. In the Import Configuration Data window, specify the file that you want to import and review the content in the Import Artifacts panel, selecting the action centers that you want to import.

If the panel is empty, it means that there was an error reading or loading the file. Click the Messages icon on the left to open the Messages panel and read the errors. Possible errors include:

- The source and target environments are running different versions of Logi. To resolve this issue, contact your system administrator.
- You do not have the appropriate Web UI permissions to view the artifacts in the file. To resolve this issue, contact your system administrator.
- The underlying Logi service supporting this functionality is not available. To resolve this issue, contact your system administrator.
- Some expected action center or KPI content in the ZIP file is corrupt. To resolve this issue, contact your system administrator.

12. Click OK.

13. When a message appears on the screen to advise you that the import request was submitted, click OK.

14. When the import completes successfully, your Inbox displays a notification with this information. You can also access **Background Processing** to check the status of your import process. If the Status field shows a green tick or Success icon and the Completed field is set to 100%, the import was successful. Similar to the export process, **Submission Details** allows you to view details of the import. Before you can open the action center, you must refresh the browser window to update the Action Centers drop-down menu.

Possible reasons for the failure of the import:

- You do not have the appropriate permissions to view or import the artifacts. To resolve this issue, contact your system administrator.
- The underlying Logi service supporting this functionality is not available. To resolve this issue, contact your system administrator.
- One or more visuals in the action center are not saved as Configuration Data.
- An error occurred when reading the action center and KPI content for export. To resolve this issue, contact your system administrator.

The imported action centers are now accessible in the Action Centers drop-down menu of the target environment. The KPIs and the visuals of the action center are now also available in the target environment.

Action Centers View

The **Action Centers** view is accessible from the Analytics menu that is available to users with the QAD Admin role. The view contains read-only information about action centers that have been created. The following sections describe the panels that display when you edit an action center from the browse in the Action Centers view.

Main Panel

Note Some ad-blocker plugins for browsers can prevent you from seeing data in action centers, the **KPIs** view, the **Action Centers** view, the **KPI Visuals Gallery** view, and the Insights panel. If you are having issues viewing content in these screens even though you have all of the required security and role access, check if there is an ad blocker running. If an ad blocker is running, disable it or add URLs containing "api/analytics" to the list of allowed URLs maintained in the ad blocker.

The contents of the Main panel depend on whether your environment uses Logi Composer or Logi Platform Services, and whether your action center is saved in an app or as part of Configuration Data.

The Main panel always contains the action center name, a setting to make the action center visible in the Action Centers drop-down menu, an Origin App URI field, and a Saved To field.

Action Center

The action center name.

Saved To

Indicates how the action center is stored. The Saved To field is set to Configuration Data by default.

Origin App URI

In an end-user production or test environment, this field is read-only. The origin app URI is always set to Configuration Data.

Show In Menu

Select the Show In Menu checkbox to make the action center visible in the Action Centers drop-down menu.

Visuals Panel

The Visuals panel shows all of the visuals that are on the action center in a grid. The visuals grid contains columns with the visual name, the KPI that the visual is based on, and the data source label. You can perform a number of actions in the Visuals Panel.

- To open a preview of a visual in the KPI Visuals Gallery, select a visual in the grid and click the Details button.
- To group the visuals by one or more column headers, click the More button and select Show Group By. Drag and drop a column header from the grid to group by that column.
 - To remove the grouping box, click More > Remove Group By.
 - To remove a grouping, click the x icon on an applied grouping.
 - To collapse any expanded groupings, click More > Collapse Groups.

- Click the Refresh Groups icon on the right of the box to refresh the groupings.
- To export the grid as an Excel spreadsheet, click More > Export to Excel.

Actions

In the **Action Centers** view, the Actions drop-down menu offers one bulk action that administrators can perform for a set of action center records. In **Action Centers**, the Actions menu only appears after a successful migration of action centers from the March 2022 release or earlier to the March 2023 release or later.

Delete Unmigrated Action Centers

Caution: You cannot revert this bulk action after it completes. Refer to the Complete the Migration Process section of the QAD Adaptive UX Implementation Guide before you proceed.

On most occasions, an action center migration completes successfully, but occasionally some action center records do not migrate due to technical issues. In these cases, administrators can use the new Delete Unmigrated Action Centers bulk action to delete any orphaned action center records that did not migrate into the new environment.

After clicking the bulk action, a confirmation dialog is displayed. Click Continue to confirm the bulk action. When the process completes, a success message is shown and the Action Centers browse automatically updates to remove the orphaned records.

Action Center Permissions

It is possible to control access to action center functionality. This section describes how administrators update the action center permissions.

Security settings control the ability that each user has to create, read, update (write), and delete KPIs and visuals. Security settings also control a user's ability to create, read, write, or delete an action center, and to save visuals to the Gallery. This section assumes that you are familiar with how to configure roles and control user access to roles. Security settings are explained in detail in the [Security](#) section. The option to grant user access to roles at the site level is particularly of use in the area of Asset Management.

Depending on the level of action center functionality that you want access to, there are a number of different settings:

- **Action Centers** view permissions
- KPI permissions
- Visual permissions
- Action center maintenance permissions

- Permissions for specific action centers
- Action center visibility permissions
- Browse permissions
- Record-level permissions for browses created with the platform business component builder

To change permissions for action centers, use the **Role Permissions** view.

From the **Action Centers** view, click More and then click Permissions.

In the Role Permissions pop-up window that opens, if you have access to the required `urn:be:com.qad.qra.role.IRolePermission` and `urn:view:hybridbrowse:com.qad.qracore.rolePermissions` resources, you see the list of roles that you can provide with access to the action center.

Note If you do not have access to the **Action Centers** view, you can access the **Role Permissions** view from the Security menu.

Important

To allow users to read, write (update), or delete particular action centers using **Role Permissions**, you must select the Read, Write, and Delete checkbox for **both** the resource (`urn:service:com.qad.analytics-core.IDashboardMaintenance`) and the action centers themselves.

Action Center User Categories

Before you assign permissions to an action center user, it is good practice to categorize the user based on the role or roles which the user performs. There are four categories of users for action centers.

- **KPI and visual authors:** KPI and visual authors may be administrators or trained business users. They are business experts, who know what data is needed for KPIs and which browses provide that data.
- **Action center authors:** Action center authors are end users who create their own action centers. They may also be KPI and visual authors.
- **Consumers:** Consumers are typically managers or other users with responsibility in their organizations. They can analyze KPIs and the underlying data, in which case they are both consumers and action center authors.
- **Administrators:** Administrators can access all functionality of action centers. However, because data security can be set independently of functional access permissions, administrators may not have access to all data in the system.

Note The user categories are conceptual. Do not confuse them with the named roles from the **Roles** view. Any role in your organization can be configured to fit into one or more of the categories if the permissions for a role are changed.

Action Center Permission Matrix

Refer to the following permission matrix to check what role permissions need to be set on the **Role Permissions** screen for each user category. It is good practice to create a similar matrix with your organization's user categories as roles. The matrix lists example roles.

You do not have to create new roles to set permissions for a user. You can add or remove permissions from existing users.

However, depending on the size and complexity of your organization, you may prefer to create separate roles for each category. For small organizations, it is easier to grant permissions to a smaller number of roles. For a large organization with many roles, it may be easier to create roles that only grant action center permissions.

User Category	Resources				
	KPIs Metadata	KPI Visuals Gallery	Action Centers Maintenance	Action Centers	Action Centers View
KPI and visual authors	<ul style="list-style-type: none"> • Create • Read • Write • Delete 	<ul style="list-style-type: none"> • Create • Read • Write • Delete 	-	-	-
Action centers authors	<ul style="list-style-type: none"> • Read • Write 	<ul style="list-style-type: none"> • Create • Read • Write 	<ul style="list-style-type: none"> • Create • Read • Write • Delete 	<ul style="list-style-type: none"> • Read • Write • Delete 	-
Consumer	Read	Read	Read	Read	-
Administrator	<ul style="list-style-type: none"> • Create • Read • Write • Delete 	<ul style="list-style-type: none"> • Create • Read • Write • Delete 	<ul style="list-style-type: none"> • Create • Read • Write • Delete 	<ul style="list-style-type: none"> • Create • Read • Write • Delete 	<ul style="list-style-type: none"> • Read • Write

Users can have a combination of permissions, such as the following examples:

- A typical user role may combine the permissions of the KPI and visual authors row and the action centers authors row.
- Consumers who have permissions to create and maintain action centers are also in the category of action centers authors. For these

consumers, you can combine the permissions of the action centers authors row and the consumer row.

Updating the Permissions for an Action Center

For existing action centers created by users, you can enable or disable permissions to delete, read, and update the action center using the checkboxes.

Note The creator of an action center automatically has full access permissions for the action centers that they create.

1. From the Security menu, open the **Role Permissions** view.
2. In the **Role Permissions** view, select the relevant role.
3. Double-click the role that you want to change permissions for, or click the Edit button.
4. Select or clear the checkboxes to allow or deny permissions.
5. To save your changes, click the Save button.

Each action center is a separate resource stored in an app in the **Role Permissions** view. All action centers are saved as Configuration Data and are in the All Resources > Menu > Action Centers branch of the resource tree, where they are listed by action center title.

When you create an action center, it is stored as Configuration Data. You can then control access to this action center using the permissions for that particular action center in the All Resources > Menu > Action Centers branch of the resource tree.

You can edit the visuals in an action center if you have write access for the KPI on which the visual is based.

Important When you create an action center, you automatically have user-specific permissions for it that are unrelated to any role. You cannot maintain these user-based permissions through the .NET UI or Web UI—you must use **Role Permissions** to share the action center with other users. To ensure that an action center remains for your private use, do not grant access to it for any non-administrator roles. Then, all action centers are automatically visible only to the creator and to users with the SuperUser role—because that role gives implied access to every resource in the system—until they are shared.

Action Centers Maintenance Permissions

The Action Centers Maintenance resource controls access to action centers from the drop-down menu. Users of action centers must, at minimum, have Read permission for this resource to view action centers and visuals. All users with the WEB_UI role automatically have Read permission for Action Centers Maintenance.

In the **Role Permissions** tree, the Action Centers Maintenance permission is located in All Resources > Menu > Action Centers > Action Centers Maintenance. The URI is urn:service:com.qad.analytics-core.IDashboardMaintenance.

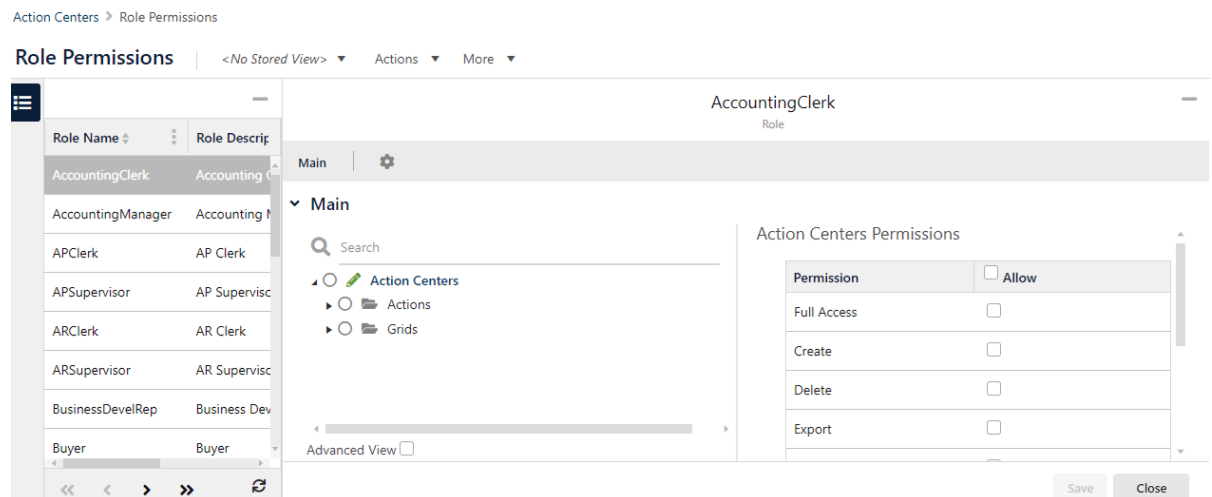
Important Authors of action centers must have create, delete, read, and write permissions for Action Centers Maintenance.

Action Centers View Permissions

The Action Centers resource, with the URI urn:view:hybridbrowse:com.qad.analytics.core.ActionCenter, controls access to the **Action Centers** view.

From the **Action Centers** view, click More and then click Permissions.

In the Role Permissions pop-up window that opens, if you have access to the required urn:be:com.qad.qra.role.IRolePermission and urn:view:hybridbrowse:com.qad.qracore.rolePermissions resources, you will see the list of roles that you can provide with access to the view.



Note If you do not have access to the **Action Centers** view, you can access the **Role Permissions** view from the Security menu. The **Action Centers** view permission is located in All Resources > Menu > System Administration > Analytics > Action Centers.

From the Actions and Grids drop-down menus, you can control the role's access to the Delete Unmigrated Action Centers action and the Visuals panel on the **Action Centers** view. For more information on the action and panels in **Action Centers**, see [Action Centers View on page 184](#).

KPI Permissions

KPI permissions control the data that users see in action centers. KPIs use browses as data sources, and browses are secured based on user roles in the domain, entity, or site. For example, if a user has an Accounting Manager role in the 10USA domain with read permission for the Customer Invoices browse, but the user does not have this role in

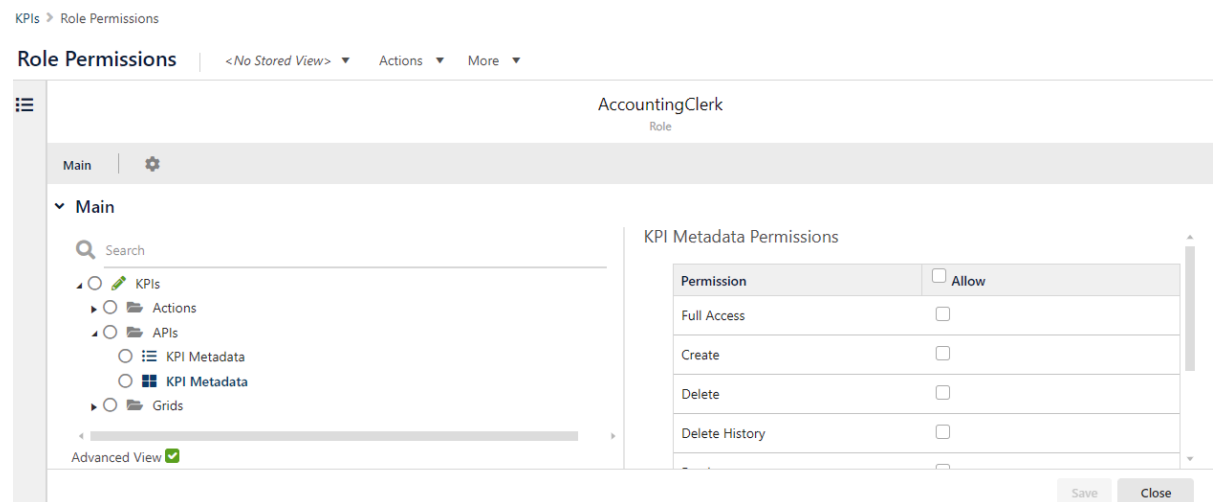
the 11CAN domain, the user only sees customer invoice KPIs from the 10USA domain. Without access to the underlying browse, the user sees a No Access message instead of a chart.

You can grant users permission to view, create, write (update), and delete KPIs and associated visuals in the **KPIs** view.

Controlling Permissions for the KPIs View

1. From the Security menu, open the **Role Permissions** view.
2. In the **Role Permissions** view, double-click the role that you want to give access to the functionality.
3. Select the Advanced View checkbox.
4. In the Main panel, open All Resources > Menu > System Administration > KPIs > APIs.
5. Click the KPI Metadata business component.

Note You can also access the KPI Metadata permissions in the **KPIs** view. To access KPI permissions, open the **KPIs** view, then click More > Permissions.



6. To allow access to the KPIs view, select the Read checkbox for the KPI Metadata business component. At minimum, anyone using action centers needs Read permission for KPI Metadata.
7. Optionally, grant any other permissions for the KPI Metadata business component.

Note The Delete permission is sufficient to delete current KPIs, but both the Delete and Delete History permissions are necessary to delete historical KPIs.

8. Grant Read access to the KPIs browse and Data Source browse.
 - For the KPIs browse, search for the URI urn:browse:mfg:an002. This browse lists all of the KPIs in the **KPIs** view.

- For the Data Source browse, search for the URI urn:browse:mfg:an003. This browse lists all of the browses from the ERP system that are available in the Web UI. You can choose one of these browses to create the KPI. If you do not have access to this browse, then you cannot choose a value for the Data Source field when you are creating a KPI.

The screenshot shows a web interface with a 'Main' section on the left and a 'Data Source Permissions' section on the right. In the 'Main' section, there is a search bar with the text 'urn:browse:mfg:an003' and a search icon. Below the search bar, there is a link labeled 'Data Source mfg:an003' with a right-pointing arrow. The 'Data Source Permissions' section on the right contains a table with the following structure:

Permission	Allow
Read	☐

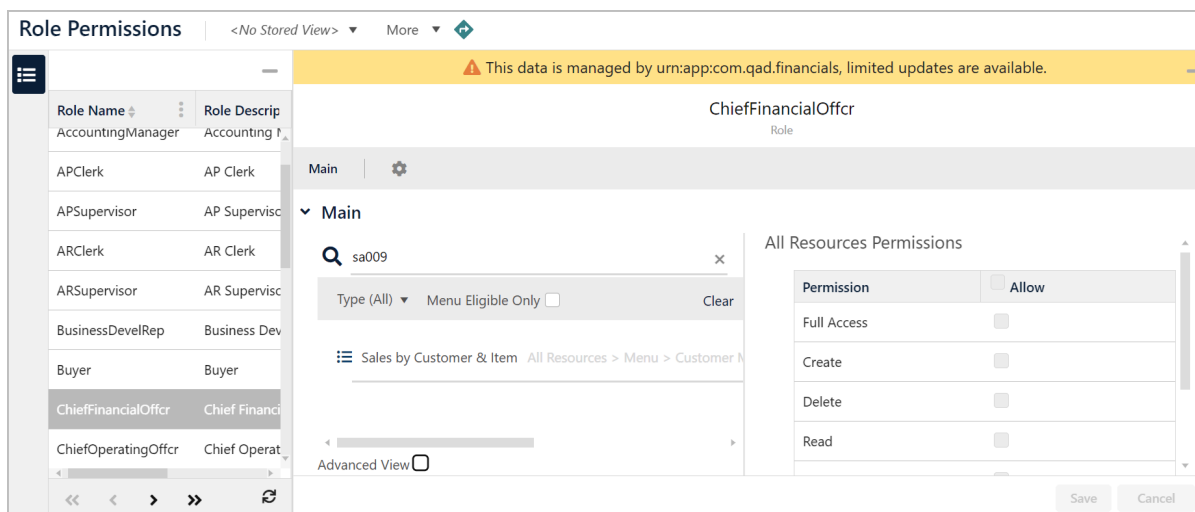
At the bottom of the 'Data Source Permissions' section, there is a 'URI' label followed by a text box containing the value 'urn:browse:mfg:an003'.

9. Click the Save button.

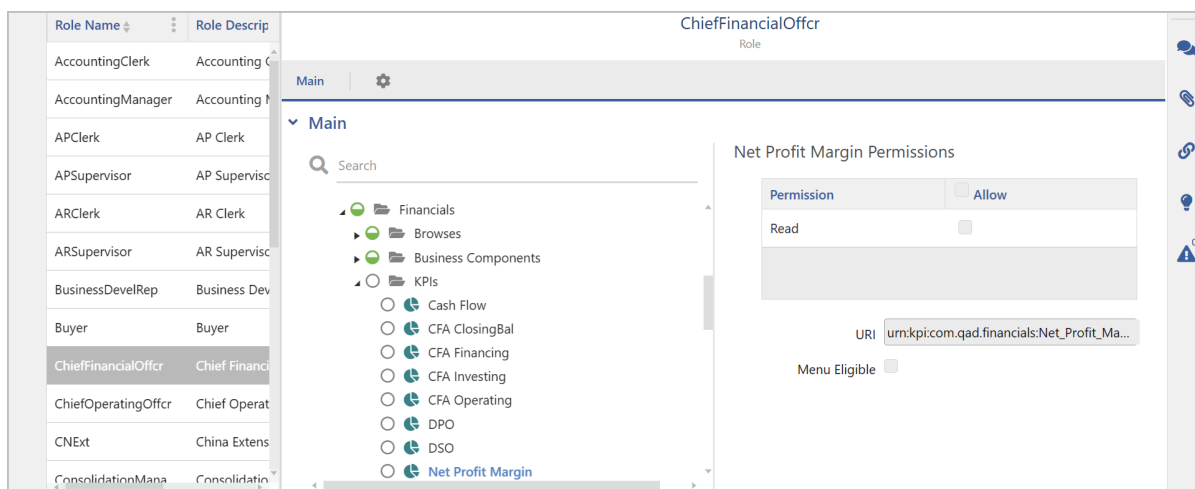
Browse Permissions

Whether you are viewing KPI information in the **KPIs** view or in an action center, you can only see data and visuals if you have access to the underlying browse that the KPI is based on. You can use the search facility in the **Role Permissions** view to search for a particular browse description. You can use the URI to identify the correct resource when there are multiple search results. The URI for a browse contains the browse code used in the .NET UI; for example, sa009 for the Sales by Customer and Item browse.

Note If you created a custom browse in the .NET UI, see the [Custom Browsers and Drill Downs](#) section for details of how to make this browse accessible in the Web UI.



One browse, Financial KPIs, allows you to use a Financial Report Writer (FRW) KPI as a source for a KPI. You must have access to this browse (urn:browse:fin:BKPI.SelectKPI) and the underlying FRW KPI. FRW KPIs can be found in the KPI container of the Financials app. The URI for each FRW KPI has the format urn:kpi:com.qad.financials:<Reference_Key>, where <Reference_Key> is the reference key, or readable name, identifying the particular FRW KPI in the Financials KPI table. This key is stored in the Reference Key field in the **Financial KPIs** view.



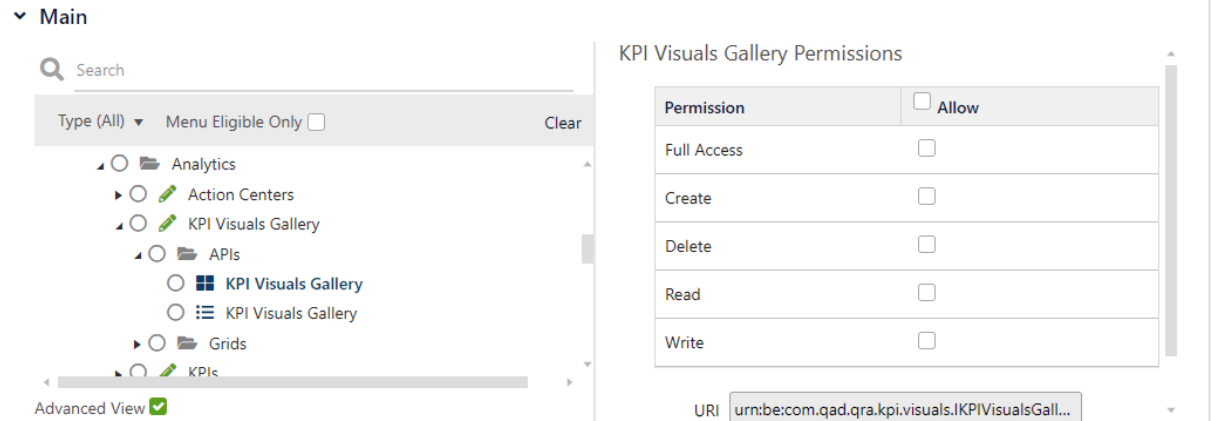
Record-Level Permissions

You can control access to browses created using the platform component builder at the individual record level. This level of security is switched off by default. Record-level permissions are managed by your administrator, and relate to data access in general—not specifically to action centers. For more information, see the section of the help.

Visual Permissions

You can grant users permission to work with visuals using the KPI Visuals Gallery resource (urn:be:com.qad.qra.kpi.visuals.IKPIVisualsGallery) in the QRA Core app.

To access the KPI Visuals Gallery resource, in the **Role Permissions** view, select the Advanced View checkbox. In the Role Permissions tree, open All Resources > Menu > System Administration > Analytics > KPI Visuals Gallery > APIs > KPI Visuals Gallery.



The KPI Visuals Gallery resource has a logical dependency on the Action Centers Maintenance service used to control access to action centers, because action centers and visuals are intended to be used together.

Important All action center users must have Read permission for the KPI Visuals Gallery resource.

KPI Visuals Gallery Permissions

Permission	Purpose
Full Access	Grant full permission for KPI Visuals Gallery .
Read	<ul style="list-style-type: none"> View visuals from the Visuals panel in KPIs. Place an existing visual in an action center. To place a visual, users also need: <ul style="list-style-type: none"> Create, read, write, and delete permissions for Action Centers. Read permissions for the KPI data source.

Permission	Purpose
	<ul style="list-style-type: none"> View visuals in KPI Visuals Gallery.
Create	<p>Create visuals and save them to the Gallery. To create visuals, users also need:</p> <ul style="list-style-type: none"> Read permission for KPI Visuals Gallery. Create, read, write, and delete permissions for action centers. Read permission for the KPI data source.
Write	Update a visual in an action center or when accessing the visual builder from KPIs or KPI Visuals Gallery .
Delete	Delete a visual using the Delete button in the Visuals panel in KPIs .

KPIs

KPIs are accessible through the **KPIs** view. KPIs are queries that allow you to extract data from an underlying browse. You can specify the KPI type, workspace, and other settings associated with the KPI. You can create visuals based on a KPI.

KPIs are based on operational or financial browses, and on browses built using the platform business component builder functionality in the Web UI.

You can configure selection criteria to return a subset of the browse data. This data is the basis of the visuals that you create using the [visual builder on page 220](#).

When you create a KPI, it is automatically saved as Configuration Data.

KPIs View

The **KPIs** view stores KPIs and allows you to access the visual builder in the **Visuals** screen to create visuals based on a KPI and its resulting data table. You can then add visuals to the Gallery and include them in action centers. The **KPIs** view is accessible from the Analytics menu, which is available to users with either the Developer or QAD Admin roles.

Summary Panel

Note Some ad-blocker plugins for browsers can prevent you from seeing data in action centers, the **KPIs** view, the **Action Centers** view, the **KPI**

Visuals Gallery view, and the Insights panel. If you are having issues viewing content in these screens even though you have all of the required security and role access, check if there is an ad blocker running. If an ad blocker is running, disable it or add URLs containing "api/analytics" to the list of allowed URLs maintained in the ad blocker.

The Summary panel includes the KPI name and the active flag related to the KPI.

Main Panel

KPI

A unique name for the KPI.

Important The name must not contain any of the following special characters: backslash (\), quote ("), or pipe (|).

You can rename the KPI later.

Note It is not possible to create or save two KPIs with the same name. When you import or load a KPI with the same name as an existing KPI into an environment, the imported KPI gets a number suffix. The import process uses the KPI ID field to distinguish between KPIs—it does not use the KPI field. You can view the KPI ID field by clicking the Browse Configuration or gear icon and selecting the field from the list of fields in the Configure Columns dialog. For more information on how to configure columns, see [Browses](#).

Data Source Type

To create a KPI based on an operational browse, a financial browse, or a browse built using the Component Builder functionality, select Browse. This field is set to Browse by default and no other options are currently available.

Data Source

The source browse on which the action center KPI is based. When selecting a browse data source, a list of all of the browses that exist in the ERP system and are available in the QAD Web UI is displayed. A default browse filter, Eligible for Menu = Yes, ensures that only the browses and hybrid views that you can access through the Web UI menu search are included in the results. It hides sources of system data that are not typically used in KPIs. You can remove this filter. You can search based on the browse description or URI; the URI contains the browse code used in the .NET UI. When you locate the browse, select it and click OK.

If you use Financial Report Writer, then you can use the Cube Trial Balance View browse as the data source for KPIs related to Financials. This browse shows GL balances and activity from report cubes. To use this browse as a KPI data source, filter the browse data using the cube code, report year, and a report period range. This browse includes a Reporting Group field. This field corresponds to the Reporting Group

field in GL Accounts, which you can use to categorize GL accounts into meaningful KPI data such as gross income and operating expenses. You can use these reporting groups to further refine the data in your visuals and to create derived fields and custom metrics. Also, when you use Cube Trial Balance View as a data source for KPIs and visuals:

- Use the Entity attribute, rather than the Entity Code attribute, to build visuals. Entity is retrieved by the Cube Trial Balance View browse.
- Use the Entity field to create links between data sources when you are defining action center interactions,

Note

- Before you select a report cube as a source for your KPI, ensure that you have a complete understanding of its associated report chart of accounts. Information related to the report cube, such as the reporting currency, applies to the KPI. For a detailed explanation of Financial Report Writer, see *QAD Financials User Guide* and the section of the online help.
- Browsers based on business components are recommended over browsers based on legacy information from the .NET UI. Business component browsers are optimized for the Adaptive UX and contain additional analytical information in the right-hand panel of the view, including [drill-down links](#), [insights](#), and [activity](#).

Data Source Label

This read-only field populates automatically based on the content of the Data Source field.

Active

This field is selected by default, indicating that the KPI is active.

You can achieve performance benefits by deactivating KPIs that are not currently in use. Inactive KPIs and related visuals are not refreshed from the underlying database and are hidden in the Gallery. Related visuals and list widgets that have already been included in action centers are no longer visible in those action centers. Instead, a message appears advising that the KPI is inactive. However, the delete option is available for these action center visuals.

When you deactivate a KPI, it is not possible to edit the other fields in the KPIs form or access the visual builder through the Visuals button. However, it is still possible to export these KPIs and import them into another environment.

To deactivate the KPI, clear this field. If related visuals are included in action centers, a message advising you that related visuals in action centers will also become inactive appears on the screen. Inactive KPIs

are identified by a message in a yellow banner at the top of the KPIs form.

To reactivate the KPI, select the Active field. In the case of a current KPI, if a refresh of the KPI was scheduled to occur during the inactive period, the KPI data is refreshed on reactivation. This refresh upon reactivation does not occur in the case of a historical KPI.

KPI Type

To create a KPI based on current data, select Current Data. To create a historical KPI, select Historical Data.

Historical KPIs allow you to track data trends by comparing summary-level metrics over time. You can take snapshots of your KPI for particular periods and compare these periods to analyze the data. By default, the option to create KPIs based on historical data is enabled.

If you create a historical KPI, it is not possible to change the KPI to a current KPI if fields that are specific to historical KPIs are used in a visual created from the KPI, and that visual is used in an action center or is saved in the Gallery.

Note There are several properties that your administrator can use to adjust the settings for historical KPIs. For more information, see the *QAD Adaptive UX Implementation Guide*.

KPI ID

The ID of the KPI. This field is read-only and hidden in the KPIs browse by default. To enable it, click the cogwheel icon above the KPIs browse and, from the Configure Panels window, select the KPI ID checkbox. Click the Apply button to update the browse.

Filter by Current Workspace

When this field is selected, the scope of the KPI is restricted to the current domain, entity, or site. All users of the KPI see data related to their current workspace only. When this field is not selected, the KPI can show the data of multiple domains, entities, or sites at the same time, depending on the domains or entities selection list in the Domains and Entities panel. The display of data is also constrained by a user's permissions to read data from the selected browse.

Saved To

This setting controls whether the KPI is saved as part of Configuration Data or within an app. When a KPI is stored as Configuration Data, you can maintain it and export and import it across environments more easily than when it is stored as app data. For a detailed explanation of Configuration Data, see the *QAD Enterprise Developer Guide*. This field is always set to Configuration Data.

Visual Type

This field is read only, and identifies the technology used to create any visuals based on this KPI. This field is always set to Composer.

Browse Panel

The Browse panel opens when the Type field in the Main panel is set to Browse. The panel contains information that is only relevant when the KPI is based on an operational browse, a financial browse, or a browse built using the platform component builder functionality. It allows you to control the browse results on which the KPI dataset is based.

The Configure button allows you to run the browse and refine the browse results using selection criteria in Configure Browse Data Source. After specifying the search criteria, click Search to verify that the browse returns the expected records. The number of lines returned appears at the bottom right of the window, unless the Count Records feature, described in *QAD Enterprise Platform Developer Guide*, is switched off. For performance reasons, the maximum number of browse lines returned when the browse is run is set to 50000. If the search result exceeds 50000, the number of results is displayed as ≥ 50000 . To confirm the selection criteria, click OK. You can change the selection criteria at any time. Existing visuals update to reflect your changes. If the search criteria includes a date, you can use a sliding date such as this year or this quarter. However, it is not possible to use Current User as a filter for any of the selection criteria. In the case of historical KPIs, changes to the browse configuration are not applied to existing snapshots.

KPIs > Configure Browse Data Source

DSS | <No Stored View> | + New | Edit | More

Country starts with Search

Country	City	Longitude	Latitude	Investment
Germany	Dortmund	7.468429	52.520008	500,000
Poland	Gdańsk	18.638306	54.372158	500,000
Poland	Warsaw	21.017532	52.668018	3,000,000
Ireland	Dublin	-6.266155	53.35014	300,000
Ireland	Limerick	-8.630498	52.668018	600,000
Ukraine	Rivne	26.251617	49.553516	2,000,000

<< < > >> 25 Records per Page 1 - 15 of 15

OK Cancel

Criteria

The filter criteria that you specified for the browse using the Configure option.

Note You can use the Criteria field to apply complex filtering to the KPI, as [Applying Complex Filters to a KPI on page 218](#) describes.

Domains and Entities Panel

The Domains and Entities panel allows you to select the domains or entities included in the KPI scope.

Depending on the KPI data source, you may be able to modify the selected domains or entities. Users of KPI visuals based on this KPI can only gather data from the selected domains or entities. Select all of the domains that all users of this KPI need. The smaller the selection, the faster the KPI reads the data. Ensure that you do not select domains that are not expected to be in the data analysis. You can change the selection of domains or entities at any time.

Note Ensure that the domains that you select are suitable for comparison. For example, the domains share the same base currency. When querying operational data, you must be careful not to create totals with mixed currency amounts or mixed units of measure.

Additionally, if you have site security configured for your browse, this security also applies. Entity-level filtering applies first. Site-level filtering applies at the level below the entity filter. This site-level security applies only to Asset Management browses. You cannot select sites on this screen—it automatically shows data from the allowed sites, only.

If the Filter by Current Workspace field in the Main panel is selected, then the KPI only includes data from the current domain or entity, regardless of the settings in the Domains and Entities panel. Similarly, if you or subsequent viewers of the KPI do not have access to a particular domain or entity in the .NET UI, then the KPI does not include data from that workspace, regardless of the settings in this panel. Access to read data from the selected browse is also constrained by user role permissions.

If the Filter by Current Workspace field in the Main panel is clear, then the browse reads the combined data from all domains or entities selected in the Domains or Entities subpanel.

The content of the Browse by Domain and Browse by Entity fields depends on the KPI data source. If the data source is a browse, then the field values default from the browse settings and are disabled. If the data source is a Financial Report Writer cube, then these fields are not visible in the UI.

Note

Batch users must have permission to access all browses, domains, and entities. The batch user identity is used to populate the data lake with browse results.

If a batch user is assigned to a KPI, but the batch user does not have access to a domain or entity, an error message is displayed, and the KPI cannot be saved. On the screen, system admins must grant the batch user access to the domain or entity that is named in the error message.

Browse By Domain

This is a read-only field based on the data source. When the field is selected, you can update the Domains subpanel.

Browse By Entity

This is a read-only field based on the data source. When the field is selected, you can update the Entities subpanel.

Domains Subpanel

The Domains subpanel opens when the source browse is defined at the domain level.

Select the domains that you want to include in the KPI scope; only data from the selected domains is made available for the KPI. These selections are only taken into account if the Filter by Current Workspace field in the Main panel is not selected.

Sync

Click the Sync option above the grid to synchronize the grid contents with the system's current list of domains. This action allows you to take into account any domains that have been added or removed.

Entities Subpanel

The Entities subpanel opens when the source browse is defined at the entity level. Most Financial browses are defined at the entity level.

Select the entities that you want to include in the KPI scope; only data from selected entities is made available for the KPI. These selections are only taken into account if the Filter by Current Workspace field in the Main panel is not selected.

Sync

Click the Sync option above the grid to synchronize the grid contents with the system's current list of entities. This action allows you to take into account any entities that have been added or removed.

Fields Panel

The Fields panel lists the available fields from the selected data source.

Select the Active field for each field in the grid that you want to include as an active field—or column—in the results dataset, which is accessible in the visual builder, for KPI analysis. The Active Fields field is read only, and displays the number of active fields in the result dataset for KPI analysis. The maximum number of active fields allowed is also shown next to the Active Fields field.

Each KPI dataset can have, by default, up to 20 active fields in the results dataset, which should be sufficient to create a meaningful KPI. Your administrator can modify the maximum number of active fields for current

and historical KPIs separately. If you need to use more fields than the maximum allowed to gather the information for the KPI, consider breaking the KPI into multiple KPIs that are more specific.

Important You can add a field to the list of active fields, or modify the Field Label or Field Format attributes of an active field, at any time. Related existing visuals are updated with any new active fields. In contrast, any changes to the Field Label and Field format attributes are not shown in existing visuals saved in action centers. You can remove a field from the list of active fields if that field is not currently used in a visual, derived field, or custom metric that is in the Gallery or included in an action center. If you try to remove a field from the list of active fields, and that field is used in a visual in the Gallery or used in an action center, you will see an error message when you try to save the KPI. The error message provides details of the Gallery and action center visuals that the field is used in. This behavior impacts your ability to change a historical KPI to a current KPI. In addition, removing an active field results in that field being removed from any saved historical snapshots. Adding an active field results in that data being saved in subsequent historical snapshots, while earlier snapshots display default values for these new fields—FALSE for Boolean fields, zero for number fields, and null for Date fields—for consistency.

The Group Data option allows you to group the browse records based on the active fields, and it is mandatory for historical KPIs. Grouping is performed for all active text and date fields. Active number fields are summed automatically. Grouping allows you to improve performance by reducing the granularity of browse query results. For example, a transaction history browse with unnecessary information about each item movement could be grouped to provide a daily or weekly total of item movements, if this level of detail is sufficient. After you select the Group Data option, you can specify how you want to group date fields—when applicable—using the Group Dates by option. The results of the grouping are visible in the visual builder. If you choose to group by week, Sunday is treated as the first day of each week.

The Group Data option is always selected for historical KPIs, while you can adjust the Group Dates By field from the default value of Day.

Each active field in the Fields panel must have a unique label. The Field Label values are displayed in the current user's language, and any visuals that the user creates include the field labels in that language. Currently, it is not possible for other users to view the same visual in another language. If you want to make a visual available in multiple languages, then you must create a separate KPI for each language and then create a visual based on each KPI.

The Data Type value indicates whether the field contains text, a number, or a date.

The Case value applies to text fields, only. It allows you to convert the contents of the field to uppercase or lowercase. Filtering and grouping of data in the browse source is case insensitive, but filtering and grouping of data in the visual builder is case sensitive. This ability to convert field values to the same case allows you to ensure that filtering and grouping of field data in the visual builder produces the same result as filtering and grouping of the data in the browse source. By default, the Case value is No Conversion and no case conversion occurs.

Note For changes to Case values to take effect, you must manually refresh current KPI data or create a new interim snapshot for historical KPI data. For more information, see [Refreshing KPIs and Creating Interim Snapshots on page 211](#). In the case of historical data, the case change will only apply to future snapshots.

The Field Format values determine the display formats for dates and numbers that are used in any visuals that you create using the KPI. For example, you can choose to display dates with months shown in words. Use the drop-down menu to see the available options. This display format setting is distinct from, and works in conjunction with, the language and locale settings in the Profile screen.

Important For most screens in the Web UI, the locale of dates is controlled by the Format Locale field in the [Profile](#) screen. But in action centers and the visual builder, the locale of dates shown is determined by the Language field in the Profile screen.

Note You can change the Field Label and Field Format values for each field. However, it may be useful to retain the original field label settings to maintain consistency with browse data.

Refresh Options Panel

The Refresh Options panel allows you to specify how often and by what method the KPI is refreshed with data.

Auto-Refresh

If you want the KPI to refresh automatically, then select this field. In the case of historical KPIs, this field is always selected because historical KPIs are always set to refresh automatically based on the Historical Snapshot Schedule settings. For performance reasons, your administrator determines the maximum number of KPIs for which you can enable the auto-refresh facility. The default maximum number is 30. After this number has been reached, you cannot set any additional current KPIs to auto-refresh, but you can continue to create historical KPIs.

Refresh Rate

This field applies to current KPIs. If you selected the Auto-Refresh option for a current KPI, then use this field to specify the frequency of

the automatic refresh—daily, weekly, or monthly. To configure the exact time of the refresh, contact QAD Cloud Operations.

Allow Manual Refresh

This field applies to current KPIs. If you want to enable manual refreshment of a current KPI from an action center, then select this field. Provided that users have the requisite permissions, they can click the refresh icon available for action center visuals based on the KPI.

If it only makes sense to refresh a KPI at specific, predefined intervals, then do not select this option. Because the refreshed data is visible for all users of the KPI, in some scenarios, you may not want users to perform a manual refresh. For example, you may want all users to see the same KPI values during the day and have the KPIs refreshed automatically overnight.

It also affects the Refresh icon available for an action center. That option skips any visuals of current KPIs that do not have Allow Manual Refresh enabled.

Note This setting relates to refreshing an action center and visuals within it. It does not impact the availability of the Refresh Data option in the Actions menu of the **KPIs** view. That setting is always available for active current KPIs.

Allow Interim Snapshots

This field applies to historical KPIs. If you want to enable manual refreshment of a historical KPI from an action center, then select this field. Provided that users have the requisite permissions, they can click the Refresh icon available for action center visuals based on the KPI. This action refreshes the KPI data by creating an interim snapshot. For details, see [Manually Refreshing Visuals on page 175](#).

Selecting this option also results in the creation of an interim snapshot when you click Save to create the KPI.

Interim snapshots give you flexibility when analyzing historical KPI data. For example, you create a KPI to take a snapshot at the end of each month, but it may be useful to see an interim snapshot immediately.

Note This setting relates to refreshing an action center and visuals within it. It does not impact the availability of the New Interim Snapshot option in the Actions menu of the **KPIs** view. That setting is always available for active historical KPIs.

Historical Snapshot Schedule Subpanel

The Historical Snapshot subpanel is only available for historical KPIs. It allows you to configure the snapshot schedule and how many snapshots you want to retain at any point in time. Note that any additions that you make to the KPI's active domain, entity, or field selection between snapshots is reflected in future snapshots only (default field values

are added to earlier snapshots). Removal of active fields results in this content being removed from earlier snapshots. The [Snapshot History panel on page 207](#) provides details on the snapshots taken for the KPI, including any failures.

Snapshot Rate

Use the drop-down menu to choose how often you want to save a snapshot.

Schedule

Depending on the value in the Snapshot Rate field, use the schedule fields to specify the day, or the exact time of day, on which to save the snapshot. Times are shown in the user time zone, based on browser settings. The time zone abbreviation is shown to the right of the fields.

If you are viewing schedule settings that were configured by a user in a different time zone, the time is converted to display in your time zone. If this converted time falls on the next day or the previous day, then this information is shown to the right of the time zone abbreviation. For example, a user in the Eastern European Summer Time time zone configures the snapshot to be taken at 1 am on the first day of each month. In this case, a user based in the Pacific Daylight time zone sees the time converted to 3 pm PDT Previous Day. That is the local time when the next snapshot will be taken and—from the perspective of that user—it will be taken on the last day of the current month rather than the first day of the following month.

Important To avoid issues when filtering KPI data based on snapshot dates, validation prevents the creation and storage of more than one snapshot within a 24-hour period. Consequently, schedule adjustments do not result in a second historical screenshot taken within 24 hours of an existing snapshot. In this scenario, the snapshot creation is skipped and noted as such in the Snapshot History grid.

Snapshot Retention

Specify the number of snapshots that can be saved for this KPI. When this number of snapshots is reached, the oldest snapshot is discarded when the next snapshot is saved. This snapshot limit excludes the interim snapshot.

Visuals Panel

The Visuals panel contains a grid listing all of the visuals that are based on the KPI. It is only accessible after you save the settings in the other panels by clicking Save. Use the New and Edit buttons above the grid to create and edit visuals in the [visual builder on page 220](#). The Details button allows you to view the visual details available in the **KPI Visuals Gallery** view. The visuals in the grid are sorted by date, with the most recently modified visual appearing in the first row. The More menu allows you to group the visuals in the grid according to particular criteria.

For more information on visuals, see [Visuals on page 220](#).

There are a number of columns in the Visuals grid:

Visual

The visual name.

Chart Type

An icon representing the type of chart used for the visual—for example, a table or KPI gauge.

Data Field

The field from the data source that you are measuring in the visual—the metric. If more than one field is used, for example when data is grouped, only the first field selected appears here.

Label Field

The field from the data source that you are using to categorize the data—the grouping dimension for the data.

Where Used Panel

The Where Used panel displays the action centers and Insights in which the selected KPI is used. The panel is available for current and historical KPIs.

The panel contains two subpanels with grids:

Action Center Usage

This panel contains a grid that shows which action centers use the selected KPI, including the name of the action center, the Origin App URI, the ID of the user who last modified the action center, and the action center's description.

To view an action center in the **Action Centers** view, select an action center in the grid and click Details.

If the KPI is not used in any action centers, the grid is empty.

Note If a KPI is migrated during a PEC Export, the action center's description is not migrated. Therefore, even if the action center had a description in the source environment, the Description column in the Action Center Usage grid will be empty.

Insight Usage

This panel contains a grid that shows which Insights use the selected KPI. For more information on Insights, see [Business Components - Insights on page 288](#) and [Visual Insights on page 227](#).

The grid's columns are described as follows:

Column Name	Description
Insight	The name of the Insight.
View	The screen where the Insight is located.
Defined From	Describes whether the Insight is based on a view of a business component or a layout of a business component.
Business Component	The name of the business component that is used in the Insight.

If the KPI is not used in any Insights, the grid is empty.

Note When you open the KPI for the first time, the Insight Usage grid may need a few seconds to load while data is retrieved. During data retrieval, the grid displays a spinner.

Snapshot History Panel

The Snapshot History panel is only available for historical KPIs. It displays information about the snapshots taken for this KPI. In the case of a failed snapshot, it includes information about the snapshot failure.

Snapshot creation fails when it does not conform to administrator-configured parameters or due to other issues such as a server being offline. In this situation, a notification is sent to the inbox and e-mail address of the last user who updated the KPI and to all users who have the Administrator Role, QAD Admin, configured in the Security Control screen. The Snapshot History panel is also updated accordingly. Notifications display server dates and times, while the Snapshot History field displays content in the user time zone.

Each time a snapshot is taken, the system checks if the previous snapshot failed. If it did, the system attempts to take the snapshot again. Similarly, if a snapshot fails because a server is down, the system attempts to take the snapshot again immediately after the server restart.

Note Due to the passage of time, this snapshot may not contain the exact data that would have been saved if the original snapshot was created successfully.

The grid contains a number of columns:

Snapshot

Displays the day, month, and year that the snapshot was taken.

Result

Shows whether the attempt to take a snapshot was a success or a failure, is still in progress, or was skipped because another snapshot was already created within the previous 24 hours.

Type

Identifies whether the snapshot is an interim snapshot or a historical snapshot.

Start Date

Displays the date and time that the snapshot execution started. The time displays in the current user's time zone.

End Date

Displays the date and time that the snapshot execution completed. The time displays in the current user's time zone.

Messages

Displays any messages related to the snapshot. For example, details of an error that caused a snapshot to fail.

By default, the grid contents are sorted by the values in the Snapshot field, with the most recently created snapshot in the first row. You can modify the sort settings and add filters based on any of the grid columns. You can also use the More menu to access grouping options for these columns.

Additional Details Panel

The Additional Details panel contains information about the last user who updated the KPI.

In the case of a KPI that was imported from another environment, the import details are recorded initially.

Last Modified By

The user who modified the KPI most recently.

Last Modified Date

The date and time of the last modification to the KPI.

Creating a KPI

This section describes how to create a KPI.

Ensure that:

- You have read the action center overview at [Action Centers on page 10](#).

- You have the necessary permissions to create and, later, to modify a KPI. For more information, see [Action Center Permissions on page 186](#).

You can create a KPI based on an underlying browse.

1. Use the [Browse](#) to locate and access **KPIs**.

The KPIs view opens, with existing KPIs visible in the browse grid.

2. In the toolbar, click New to open the KPIs form.
3. Complete the fields described in [KPIs View on page 195](#) and its child pages. Pay attention to the Configure button, which allows you to run the browse and refine the browse results using selection criteria. You can also apply complex filtering, as described in [Applying Complex Filters to a KPI on page 218](#).
4. Click Save.

The KPI is now available in the browse grid. You can now create visuals based on the KPI.

Copying KPIs

This section describes how to copy a KPI.

You may want to copy an existing KPI to use it as a starting point for creating your own, modified, version of the KPI.

Note The copy action does not copy snapshots of historical KPIs. Furthermore, copied KPIs do not copy the visuals from the original KPI.

1. In the **KPIs** view, select the KPI that you want to copy.
2. From the Actions menu, choose Copy.
3. Update the KPI field to give the KPI a new name.
4. Proceed as you would when creating a KPI, updating the other [KPI settings on page 195](#) as needed.
5. Click Save.

The copy of the KPI is now available for you to edit.

Assigning Domains and Entities to KPIs

This section describes how to update multiple KPIs at once using a bulk action. This action allows you to activate a list of KPIs and assign a list of domains or a list of entities to each KPI in the list.

When KPIs are installed or imported into an environment, the Active setting and list of selected domains or entities for each KPI can depend on the particular installation or importation process. These KPI settings affect the data in the KPI visuals. You can review the settings and, if necessary, update them in the **KPIs** screen. You can use a bulk action to specify a selection of domains and entities to assign to KPIs—where

applicable. As part of this assignment, you can also choose to remove preexisting domain and entity selections from the KPIs. You can also use the bulk action to activate the list of KPIs.

Note As explained in [Domains and Entities Panel on page 200](#), some KPI data sources are defined at the domain level and some are defined at the entity level. Your assignment of entities and domains updates a selected KPI's assigned domains or entities—whichever is appropriate based on the KPI data source.

1. In the **KPIs** view, ensure that the form is closed. From the Actions menu, select Assign Domains & Entities.
2. In the Assign Domains & Entities window, populate the grid in the KPIs panel with the list of KPIs that you want to update. To populate the grid, use the Select or Select from Action Centers options in the KPIs panel to select a list of KPIs or action centers and click OK. When you select an action center, all of the KPIs used in the action center are added to the grid.
3. In the KPIs grid, select the KPIs that you want to update using the checkboxes in the first column.
4. Use the Options panel to specify the actions that you want to perform on the selected KPIs.
 - a. If you want to activate the selected KPIs, select Activate KPIs. If you do not select this field, then the current value of the Active field in each of the selected KPIs is not changed.
 - b. In the Domains field, use the lookup icon to select the domains that you want to use with the selected KPIs.
 - c. In the Entities grid, use the lookup icon to select the entities that you want to use with the selected KPIs.
 - d. In the drop-down menu below the Entities field, if you want to remove any domains or entities that were previously assigned to the KPIs, choose Remove previously assigned domains & entities from the list of options. The default value for this menu is Keep previously assigned domains & entities, which means that existing domains and entities are maintained in addition to any new assignments that you make.
5. Click Submit.

If the action completed successfully, a pop-up Success message appears on the screen. If the assigned domains or entities of a particular KPI are updated by the action, the pop-up message displays the text <N> KPIs assigned with Domains/Entities, where <N> is the number of KPIs that were updated with the specified list of domains or entities.

If the action did not complete successfully, error messages appear in an Errors grid at the bottom of the window.

6. Click OK in the pop-up message.

The pop-up message closes. The Assign Domains & Entities window automatically closes.

7. On the **KPIs** screen, click the refresh icon on the bottom right of the browse or refresh the browser window.

The Action column in the KPIs browse now reflects any changes you made during this bulk action. You can sort the browse by the Last Modified field to identify the updated KPIs. To view the updated domain and entity selections for each KPI, double-click the KPIs in the browse to open them in a form.

Refreshing KPIs and Creating Interim Snapshots

This section describes how to refresh a current KPI and how to create an interim snapshot for a historical KPI.

The Refresh Data and Create Interim Snapshot actions are available for current and historical KPIs, respectively. These actions allow you to refresh an active KPI and its associated visuals in the Gallery and action centers. This refresh allows you to immediately see the results of any changes that you made to the settings in the KPI. If you do not use this refresh option after changing the KPI settings, the changes are not visible until the automatic refresh or snapshot creation completes, or you complete one of the following actions:

- Reload the page in your browser (F5), or navigate away from the page and then reopen it.
- For an associated visual or list widget, refresh a KPI or create an interim snapshot from a panel in an action center.

Important To avoid issues when filtering KPI data based on snapshot dates, validation prevents the creation and storage of more than one snapshot within a 24 hour period. For this reason, if you try to create an interim snapshot within 24 hours of the last historical snapshot created for that KPI, you will see a warning message and the interim snapshot creation is skipped. If a historical snapshot was not created for the KPI within the last 24 hours, you can create multiple interim snapshots. Each interim snapshot overwrites the last one, so there is no snapshot date conflict.

1. In the **KPIs** view, select the KPI that you want to refresh.
2. From the Actions menu, choose Refresh Data or New Interim Snapshot.

The KPI is updated. In the case of a historical KPI, review the contents of the Snapshot History panel in the KPIs view to check if the action was successful.

If the action was unsuccessful—for example, due to a database availability issue—you will see a message flash on the screen in red. The message informs you that the current KPI was not refreshed or the

interim snapshot of the historical KPI was not created. It also advises you to contact your system administrator. In the case of a historical KPI, the Snapshot History panel may also display the error information.

Deleting a KPI and its Visuals

This section describes how to delete a KPI. When you delete a KPI, you also delete its Gallery visuals. These visuals are listed in the Visuals panel in the **KPIs** view.

You can delete a KPI if:

- You have the appropriate permissions.
- None of the KPI's visuals are used in an action center, a business component's Insights panel, or a design layout.

To delete a KPI:

1. In the **KPIs** view, select the KPI that you want to delete.
2. Click the Delete button above the grid.
3. In the pop-up window, click Delete to confirm the deletion. If any of the KPI's visuals exist in an action center, a business component's Insights panel, or a design layout, an error message informs you that you cannot delete the KPI. If you remove these visuals from the action center, business component Insights panel, or design layout, you can then delete the KPI. In the case of historical KPIs, a second warning indicates that associated interim and historical snapshots are removed as part of the KPI deletion. Before deleting any content that may be used by other users, it is important to be aware of the impact on these users.

When you successfully delete a KPI, it no longer appears in the **KPIs** view, and its visuals are removed from the Gallery. In the case of historical KPIs, all associated interim and historical snapshots are removed.

Deleting a Visual from a KPI and the Gallery

This section describes how to delete a visual from the **KPIs** view. This action removes the visual from the KPI and from the Visual Gallery.

You can delete a visual from a KPI if:

- You have the appropriate permissions.
- The visual is saved to an active KPI.
- The visual is not used in an action center or in a business component's Insights panel or in a design layout.

To delete a visual:

1. In the **KPIs** view, from the browse, select the KPI that contains the visual that you want to delete and click Edit to open the KPI form.

2. Scroll to the Visuals panel and, in the Visuals grid, select the visual that you want to delete.
3. Click the Delete button above the grid.
4. In the pop-up window, click Delete to confirm the deletion. If the visual is included in an action center, a business component's Insights panel or in a design layout, an error message informs you that you cannot delete the visual. If you remove the visual from the corresponding action center, or business component or design layout configuration, you can then delete the visual. Before deleting any content that may be used by other users, it is important to be aware of the impact on these users.

When you successfully delete a visual from a KPI, it no longer appears in the Visual Gallery and is not listed in the **KPI Visuals Gallery** view.

Export and Import KPIs

This section outlines prerequisites for the export and import of a KPI and its visuals from one environment to another as Configuration Data. Visuals that are based on the KPI appear in the Gallery of the target environment.

The Configuration Data screen allows you to export artifacts, including KPIs, from your environment. The export process extracts the KPI and visual content as a ZIP file. You can then import this content to another environment using the same Configuration Data screen in the target environment.

The Configuration Data functionality is described in detail from a user perspective in the [Configuration Data on page 290](#) section of the online help. Read this section before exporting or importing Configuration Data.

Before you begin, check the following prerequisites.

- Check the Logi version (Composer or Logi Platform Services) used in your source and target environments. For the export and import of KPIs as Configuration Data to work, both environments must have the same Logi version. In the March 2023 QAD Adaptive UX release and later, all environments use Composer and Configuration Data objects by default. Earlier versions of the software up to September 2022 used Logi Platform Services and app data objects. If Logi Platform Services is still being used, it is not possible to export action centers, visuals, and KPIs as part of an app. In this case, they must be exported as Configuration Data.

Note This March 2023 version of the online help describes the user experience for action centers, KPIs, and visuals based on the new QAD Analytics for AUX user experience. [The March 2022 version of the online help](#) describes the user experience for KPIs based on Logi Platform Services.

- Ensure that the KPIs that you want to export and import are saved as Configuration Data rather than app data. If your source system

uses Composer, indicated by the value Composer in the Visual Type field of the **KPIs** view, all KPIs are saved as Configuration Data. If your source system uses Logi Platform Services, indicated by the value Thinkspace in the Visual Type field, then KPIs are usually saved as Configuration Data but they can be saved as app data in certain circumstances. The App field in the **KPIs** view shows you whether the KPI is saved as Configuration Data or in an app.

See [Exporting and Importing KPIs as Configuration Data on page 214](#) for steps on how to import or export a KPI.

Exporting and Importing KPIs as Configuration Data

This section outlines how to export and import a KPI and its visuals from one environment to another as Configuration Data. Visuals that are based on the KPI appear in the Gallery of the target environment.

Important

- If you try to import a KPI that is built on a domain or entity that is not in the target environment, the KPI is imported, but the import process skips non-existent domains and entities.
- When you migrate a KPI from one environment (source) to another environment (target), the migration does not include the browse that is used as a data source. So, you must make sure that the browse used as a data source already exists in the target environment and that it has the same fields in its definition. You can migrate browse definitions that were built in the .NET UI with the import and export tools in the Browse Maintenance program (.NET UI). You can migrate platform browses as part of the app that they belong to using the app package and load procedure documented in the *QAD Enterprise Platform Developer Guide*.
- If you import a KPI into an environment that already contains a KPI with the same KPI ID, the import overwrites the existing KPI and visuals. The KPI ID field is hidden by default in the **KPIs** screen. To make the field visible, use the Configure Columns icon to select it and apply your change to the screen.
- If the imported KPI does not exist in the target environment then, in the case of historical KPIs, snapshots are not copied from the source environment to the target environment. An interim snapshot is taken when the KPI is imported.
- During an application import, there are cases where an action center in the target environment is removed—for example, if you import a set of action centers from a source with the same Namespace as the target, and these action centers were imported into the target previously, but some of the action centers were deleted from the source between the two import operations. In this case, any action center removed from the source is also removed from the target during the second import. Usually, if an action center is removed

during an application import, the KPIs that were used in the removed action center are also removed. However, if any KPIs are used in another place, such as an Insight or another action center, the KPIs are not removed.

Exporting a KPI

1. Sign in to the environment that you want to export the KPIs and associated visuals from.
2. In **Configuration Data**, use search criteria to populate the browse with the list of KPIs that you want to export. KPIs based on business components created in the Web UI have the name of the business component listed in the Business Component column of the browse.
3. From the Actions menu, choose Export Configuration Data.
4. In the Export Configuration Data window, ensure that you select the KPIs that you want to export in the Export Artifacts grid. Note the value of the Export File Name field.
5. Click Submit.
6. When a message appears on the screen to advise you that the export request was submitted, click OK.
7. When the export completes successfully, your Inbox displays a notification that the export is available. Click the Download link in the notification to download the ZIP file. The ZIP file is saved in the default folder for your browser downloads. You can also access **Background Processing** to check the status of your export process. If the Status field shows a green tick or Success icon and the Completed field is set to 100%, Submission Details provides details of the KPIs and visuals that were exported successfully.

Possible reasons for a failure of the export:

- You do not have the appropriate permissions to export the artifacts. To resolve this issue, contact your system administrator.
 - The Logi service is not available. To resolve this issue, contact your system administrator.
 - An error occurred when reading the KPI content for export. To resolve this issue, contact your system administrator.
8. Sign out of the environment.

Importing a KPI

9. Sign in to the environment that you want to import the KPIs and associated visuals to.
10. In **Configuration Data**, choose Import Configuration Data from the Actions menu.
11. In the Import Configuration Data window, specify the file that you want to import and review the content in the Import Artifacts panel, selecting the KPIs that you want to import.

If the panel is empty, it means that there was an error reading or loading the file. Click the Messages icon on the left to open the Messages panel and read the errors. Possible errors include:

- The source and target environments are running different versions of Logi. To resolve this issues, contact your system administrator.
- You do not have the appropriate Web UI permissions to view the artifacts in the file. To resolve this issue, contact your system administrator.
- The service is not available. To resolve this issue, contact your system administrator.
- Some expected KPI content, identified by the related KPI ID, does not exist or cannot be found in the file. To resolve this issue, contact your system administrator.
- Some visual content, identified as a Logi artifact, does not exist or cannot be found in the file. To resolve this issue, contact your system administrator.

12. Click Submit.

13. When a message appears on the screen to advise you that the import request was submitted, click OK.

14. When the import completes successfully, your Inbox displays a notification with this information. You can also access **Background Processing** to check the status of your import process. If the Status field shows a green tick or Success icon and the Completed field is set to 100%, the import is complete. If the Status field shows an orange Warning icon and the Completed field is set to 100%, the import is complete but there are some important warnings to be aware of. Similar to the export process, **Submission Details** allows you to view details of the import, including warning and failure messages.

Possible warnings related to the import:

- The target environment does not contain the browse—identified by a URI—that is used as the KPI data source. This warning shows a Conflicts were found message in Submission Details.
- The target environment contains the browse—identified by a URI—that is used as the KPI data source. However, the list of browse fields in the target environment does not match the list of browse fields that exist for the browse in the source environment. Examples of inconsistencies include browses in the target environment with missing or additional fields, or fields with different data types, when compared to the same browse in the source environment. This warning shows a Conflicts were found message in Submission Details.

If you see one of the warnings listed above, you can access **Artifact Conflicts** to learn more about the particular conflict and how to address it. **Artifact Conflicts** contains a grid listing all of the artifact conflicts related to the import. In the grid, you can locate the KPI based on its name, select it, and click the Resolve Conflicts button to open the Resolve Conflicts window. This window shows more details of the missing browse that is causing the conflict, including its URI. To address the conflict, you have three options:

- Ignore the conflict. If you take this approach, you will not be able to:
 - Configure data in the KPI. The Configure button is disabled and a yellow banner message appears at the top of the KPI stating that the KPI data source is missing from the environment.
 - Add visuals to the KPI. The New and Edit buttons are not available in the Visuals panel.
 - View any data in the KPI's visuals that are used in action centers or Insights panels. Similarly, data is not visible in the Visual Preview panel of the KPI Visuals Gallery view. Instead, a message appears stating that the KPI data source is missing from the environment.
- Delete the imported KPI and its visuals by clicking the Delete Artifact button in the Resolve Conflicts window.

Note You cannot delete the KPI if one of its visuals is used in an action center in the environment, as an insight in the Business Component view, or as an insight in a business component Design Layout.

- Import the missing browse so that the KPI and its visuals can display data. You can migrate browse definitions that were built in the .NET UI with the import/export tools in the Browse Maintenance program (.NET UI). You can migrate platform browses as part of the app that they belong to using the app export and import procedure documented in the *QAD Enterprise Platform Developer Guide*.

Possible reasons for the failure of the import:

- You do not have the appropriate permissions to import the artifacts. To resolve this issue, contact your system administrator.
- The service is not available. To resolve this issue, contact your system administrator.

15. To view the imported KPIs, access **KPIs**.

The imported KPIs and related visuals are now accessible in the **KPIs** view. The visuals that relate to the KPIs are now available in the Gallery, also. If necessary, you can use the [Assign Domains and Entities on page 209](#) action to activate multiple KPIs at once or to update the selection of domains and entities that the KPI collects data on.

Note The order of visuals may not be the same in the Gallery as it was in the source environment. The timestamp may be different.

Applying Complex Filters to a KPI

This section describes how to apply complex filters to a KPI in the **KPIs** view.

When you configure a browse data source for a KPI in the **KPIs** view, you can use complex filtering with AND and OR operators. If you add a visual that is based on a KPI with complex filters to an action center or Insight, you can open the browse that the visual or Insight is based on and view the complex filter.

Manufacturing (mfg) and Financials (fin) browses do not support complex filtering.

1. In the **KPIs** view, create a new KPI as described in Steps 1 to 3 of [Creating a KPI on page 208](#), or open an existing KPI.
2. In the Browse panel, click Configure.
3. In the Configure Browse Data Source window, in the search bar, click the downward-facing arrow to open the search panel.
4. In the My Searches panel, configure the search criteria in two or more search fields. When you enter a value for a search criterion, such as the values A, B, and C in the following screenshot, the dashes on the left of the My Searches change to numbers. To add additional search fields, click the plus (+) icons.

KPIs > Configure Browse Data Source

DSS

<No Stored View> ▼

+ New

✎ Edit

More ▼

Country starts with ▼ Search

My Searches ▼ Clear all

1.	Country ▼	starts with ▼	A	✕	-		+	✕
2.	City ▼	contains ▼	B	✕	-		+	✕
3.	FK ▼	starts with ▼	C	✕	-		+	✕

▼ Advanced

Edit Logic ☐ 1 AND 2 AND 3

Preview Refresh

country starts with "A" AND city contains "B" AND FK starts with "C"

Search Cancel

5. To view the search logic, click the Advanced drop-down panel. By default, the search logic displays in a grayed-out field with the numbers of each search criterion.
6. To edit the search logic field, select the Edit Logic checkbox.
7. In the field, enter a new filter using AND and OR operators, such as 1 OR 2 OR 3.
8. To update the Preview section, click Refresh.
9. To run the search with the complex filter applied, click Search.

In the Configure Browse Data Source window, the complex filter is added to the search bar in double quotes. You can click the filter to edit it or click X to remove it.

10. To apply the filter to the KPI, click OK.

In the **KPIs** view, the Criteria field is updated with the complex filter.

11. To save the KPI, click Save.

When the KPI with complex filtering is used as the basis for a visual on an action center or an Insight, you can view the filter by clicking the Show More (...) icon on the visual or visual Insight. From the Show More menu, select Open Browse to view the complex filter in the search bar of the browse. The data in the browse is filtered accordingly.

Visuals

Visuals are graphical representations of the KPI data. After you create a visual from the **KPIs** view or from an action center, it is automatically added to the Gallery. Within an action center, you can create new visuals from existing KPIs or place existing visuals from the Gallery in the action center. You can create personal action centers, and administrators can create shared action centers for distribution to users based on a user role.

You can create visuals using the visual builder functionality. You can access the visual builder through the Visuals panel for a KPI in the **KPIs** view, and from the Edit Visual button in the **KPI Visuals Gallery** view. You can also access the visual builder directly from a visual in an action center. In each case, you must have the appropriate permission.

Visual Settings and the Visual Builder

A visual is a chart based on a KPI. You can create a visual from the **KPIs** screen or directly in an action center. This section details how to use the visual builder in the **Visuals** screen to create a visual from a KPI.

Visuals are graphical representations of KPI data in chart or in table form, and are created using the visual builder in the **Visuals** screen. You can choose the chart type, define the dimensions used for the chart, define aggregation types, make calculations with formulas, and apply additional filtering. You can also create cross-table links.

You can create many different visuals from a single KPI, saving each visual to the public Gallery. After you add a visual to the Gallery, you can include it in action centers. You can also create visuals directly from an action center, selecting a KPI to use as a data source.

The **Visuals** screen allows you to review the data generated by a KPI. Based on the KPI, you can create additional data and visuals. You can access the **Visuals** screen from:

- The **KPIs** view, by clicking New or Edit in the Visuals panel of the KPIs form for a saved KPI. To create a new visual, click New above the Visuals grid and select the visual type. To edit an existing visual, select the visual in the Visuals grid and click Edit above the grid.
- The **KPI Visuals Gallery** view. To edit an existing visual, open the form from the browse and click the Edit Visual button in the Visual panel.
- An action center, by clicking the Add Visual icon on the top right and selecting Add Visual, then choosing a KPI source and visual type to create a visual directly in the action center. To edit an existing visual in the action center, click the Maximize icon at the top right of the visual.
- The Insights panel of a business component. If the business component includes a visual in the Insights panel, you can expand the visual to access the visual builder. Note that, while you can use the

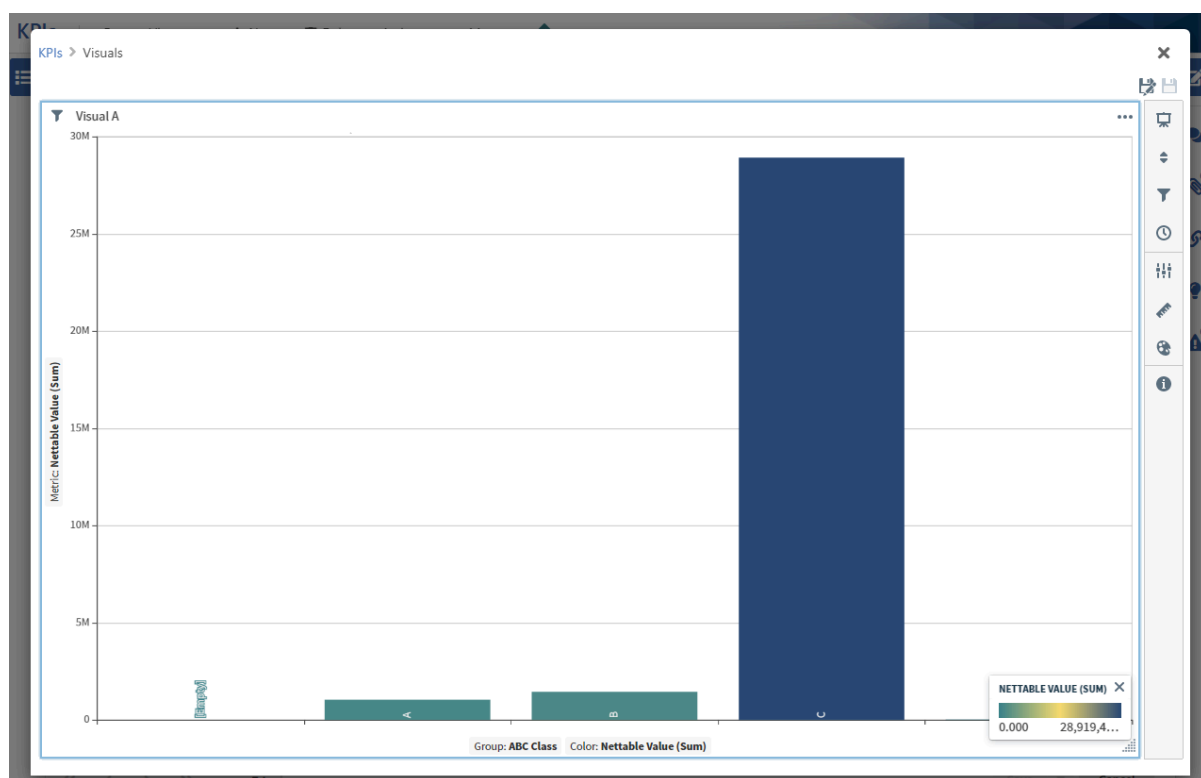
visual builder in this expanded mode to analyze the visual and to try different options, you cannot save these changes.

This section provides an introduction to the visual builder. For detailed explanations of how to use the visual builder to create visuals, refer to the [QAD Adaptive UX Analytics Visual Builder User Guide](#).

Note If visuals do not display or do not work as expected, delete your browser's cache and refresh the page.

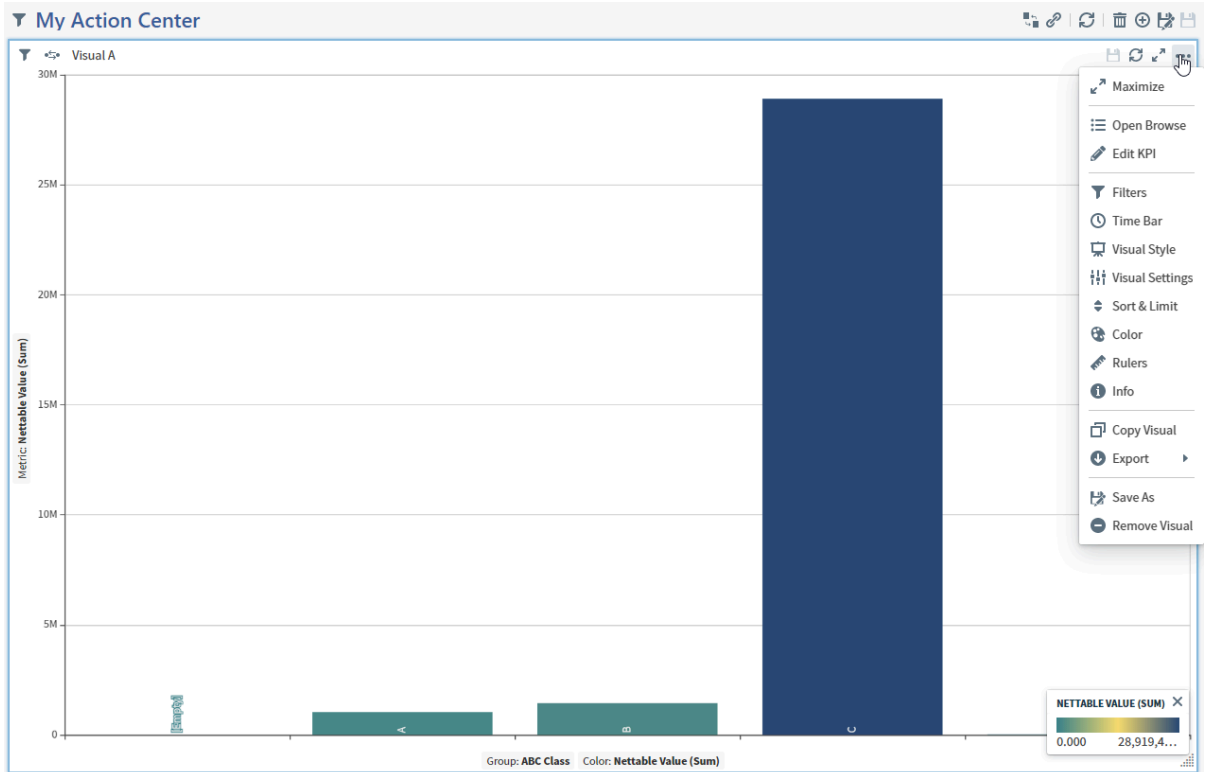
The **Visuals** screen (or visual builder) displays slightly differently when you open it from an action center compared to when you open it from the KPIs or KPI Visuals Gallery screens.

From the **KPIs** screen, the **KPI Visuals Gallery** screen, and the **Action Centers** screen, a breadcrumb trail appears above the visual, along with icons such as the Save and Save As icons. There is a visual sidebar menu to the right of the visual with icons. These icons allow you to adjust the visual.



From an action center, the action center name appears above the visual at the left, along with an action center icon bar at the right. These icons allow you to modify, refresh, or delete the action center. The visual title also displays, along with the Save, Refresh, Maximize/Minimize, and Show More (...) icon. The Show More icon allows you to open the visual drop-down menu, which you can use to adjust the visual. It offers you the same options as the visual sidebar menu, along with options to maximize or minimize the visual, open the underlying ERP data browse, edit the underlying KPI, copy the visual in the action center, save the visual with

a new name, export the visual data in a number of different formats, or remove the visual from the action center. For more information about the visual drop-down menu, see [Visual Analysis Options on page 158](#).



The **Visuals** screen displays the canvas, also known as the visual builder or visual interface, which allows you to analyze the KPI data and present it in visual or table form. The screen includes the following elements:

- Visual title, which appears at the top left of the visual. By default, the visual title is the name of the KPI data source used for the visual. You can use the Info option in the visual drop-down menu to edit the visual title and to view the visual name.

Note There is an important difference between the visual title and the visual name. The visual name is a name assigned to the visual that is used to track the visual throughout the system. If you change the visual name, that change is reflected throughout the system. The name is changed on every action center that uses the visual. The visual title is a specific name for an instance of a visual. If you change the visual title on an action center, the change is only reflected on that instance of the visual on the action center. If you change the visual title when editing the visual from **KPIs** or **KPI Visuals Gallery**, the new title is applied to all new uses of the visual in action centers. Other instances of the visual are not affected.

- Time bar and time controls. If a time bar is configured for the visual, you will see a time bar below the visual that allows you to:

- Filter your data by a time attribute
- Zoom into a specific period within the selected date range
- Explore the dynamics of your data using the Play/Pause button
- X- and y- axis labels and the color metric. These values may appear at the left, right, and bottom of the visual, depending on the visual style, or type, used for the visual. Where present, you can select an axis label to change an attribute or metric.
- Color legend. By default, a color legend is enabled for all visual styles, but you can switch it off.
- A visual filter icon. This icon appears to the left of the visual and allows you to filter the data in the visual.
- An action center filter icon. If all visuals in an action center are based on the same KPI data source, this icon appears to the left of the action center and allows you to filter the data in the visual.
-  An undo icon. When you make change to a visual, this icon appears on the bottom left of the visual. Click this icon to undo the latest change that you made to the visual.

Radial Menu

The radial menu allows you to explore and interact with specific data elements in a visual. For more information, see the Radial Menu section in [Visual Analysis Options on page 158](#).

Creating a Visual

This section describes how to create a visual using the **Visuals** screen.

Before you begin, ensure that:

- You have read the visuals overview at [Visuals on page 220](#), and reviewed the settings described in [Visual Settings and the Visual Builder on page 220](#).
- You have created, or have access to, an active KPI that you can use as the basis for your visual. For more information on KPIs, see [KPIs on page 195](#).
- You have the necessary permissions to create and, later, to modify a KPI and visual. For more information, see [Action Center Permissions on page 186](#).

You can create a visual based on an underlying KPI.

1. Use the to locate and access the **KPIs** view.

The KPIs view opens, with existing KPIs visible in the browse grid.

2. Select the KPI that you want to use as the basis of your visual.

3. Scroll to the Visuals panel and click the New button in the Visuals grid to open the **Visuals** screen.
4. From the Select Visual Type pop-up window, select the type of visual that you want to create.

The visual displays in the Visual Interface/Visual Builder.

5. Use the options described in [Visual Settings and the Visual Builder on page 220](#) to prepare the dataset for inclusion in the visual. Among the options available to you are the creation of derived fields and custom metrics, filtering, and sorting content.
6. When you are happy with the dataset, select the group attribute for the x-axis, the metric for the y-axis, and the color metric. Note that the availability of these settings varies, depending on the visual style.

The visual is now visible in the **Visuals** screen.

To save the visual, click the Save icon at the top left of the window, specify the default title and visual name, and click Save. The visual is now saved to the Gallery and associated with the KPI. When you close the **Visuals** screen, the visual that you created is listed in the grid in the Visuals panel of the **KPIs** view. You can edit or delete the visual using the buttons above the Visuals panel. The visual is also accessible from the **KPI Visuals Gallery** screen, where you can edit it.

Visual Gallery

The Visual Gallery stores all of the visuals that are available for inclusion in action centers.

When you create or copy a visual in the KPIs view or action center, the new visual is saved in the Visual Gallery. It is visible to all users, and available to place in action centers. The **KPI Visuals Gallery** view allows you to organize and search for visuals stored in the Gallery. When you copy a KPI that has visuals associated with it in the Gallery, then a copy of each visual is also added to the Gallery and associated with the copy of the KPI.

When you click the Add Visual icon and select the Place Existing Visual option in an action center, a list of visuals from the Gallery is displayed in the Select a Visual pop-up window. Each item in the list includes the visual name and an icon representing the type of chart used for the visual; for example, a table or a KPI gauge. The most recently published visual appears at the top of the list.

A case-insensitive search facility allows you to search for visuals in the Gallery, and you can use the data source drop-down menu to filter the visual list by KPI. You can then select a visual to add to the action center. For more information, see [Adding Visuals to an Action Center on page 166](#).

Note Search results only include visuals based on active KPIs; visuals based on inactive KPIs are excluded from the results.

KPI Visuals Gallery

The **KPI Visuals Gallery** view is accessible from the Analytics menu, which is available to users with either the Developer or QAD Admin roles. The view contains read-only information about [visuals on page 220](#) that have been created, based on [KPIs on page 195](#), and saved to the [Gallery on page 224](#). This screen allows you to organize and search for visuals in the Gallery.

Summary Panel

Note Some ad-blocker plugins for browsers can prevent you from seeing data in action centers, the **KPIs** view, the **Action Centers** view, the **KPI Visuals Gallery** view, and the Insights panel. If you are having issues viewing content in these screens even though you have all of the required security and role access, check if there is an ad blocker running. If an ad blocker is running, disable it or add URLs containing "api/analytics" to the list of allowed URLs maintained in the ad blocker.

The Summary panel includes the visual name, the type of chart used for the visual, and the app in which the visual is stored.

Main Panel

Visual

The visual name.

KPI

The KPI on which the visual is based. KPIs are accessible from the **KPIs** view. You can also quickly access a KPI from this screen by clicking the Edit Visual button in the Visuals panel and then clicking the KPI button in the [Visuals Toolbar on page 220](#) of the **Visuals** screen that opens.

Saved To

This field shows where the KPI is saved. This field is always set to Configuration Data. When a KPI is stored as Configuration Data, you can maintain it and export and import it across environments. For a detailed explanation of Configuration Data, see the *QAD Enterprise Developer Guide*.

Visual Panel

Edit Visual

A button that allows you to access the visual in the [Visual Builder on page 220](#) for review or edit.

Chart Type

The type of chart used for the visual; for example, a table or KPI gauge. In the KPI Visuals Gallery browse, this column contains an icon

representing the chart type. Hover over the icon to see a tooltip naming the chart type.

Data Field

The field from the data source that you are measuring in the visual—the metric. If more than one field is used, for example, when data is grouped, only the first field selected appears here.

Aggregation

The type of aggregation performed on the source data in the Data field.

Label Field

The field from the data source that you are using to categorize the data—the grouping dimension for the data.

Visual Preview

The panel includes a preview of the visual. In this preview, you can avail of many of the same [visual analysis options on page 158](#) that are available for visuals from within action centers.

Where Used Panel

The Where Used panel displays the action centers and Insights on which the selected visual is used.

The panel contains two subpanels with grids:

Action Center Usage

This panel contains a grid that shows which action centers use the selected visual, including the name of the action center, the Origin App URI, the ID of the user who last modified the action center, and the action center's description.

To view an action center in the **Action Centers** view, select an action center in the grid and click Details.

If the visual is not used on any action centers, the grid is empty.

Insight Usage

This panel contains a grid that shows which Insights use the selected visual. For more information on Insights, see [Business Components - Insights on page 288](#) and [Visual Insights on page 227](#).

The grid's columns are described as follows:

Column Name	Description
Insight	The name of the Insight.
View	The screen where the Insight is located.
Defined From	Describes whether the Insight is based on a view of a business

Column Name	Description
	component or a layout of a business component.
Business Component	The name of the business component that is used in the Insight.

If the visual is not used in any Insights, the grid is empty.

Note When you open the visual in **KPI Visuals Gallery** for the first time, the Insight Usage grid may need a few seconds to load while data is retrieved. During data retrieval, the grid displays a spinner.

KPI Properties Panel

KPI Type

The [KPI Type on page 198](#) setting of the related KPI.

Filter by Current Workspace

The [Filter by Current Workspace on page 198](#) setting of the related KPI.

Additional Details Panel

The Additional Details panel contains information about the user who updated the visual most recently.

Last Modified By

The username of the user who modified the visual most recently.

Last Modified Date

The date and time of the last modification to the visual.

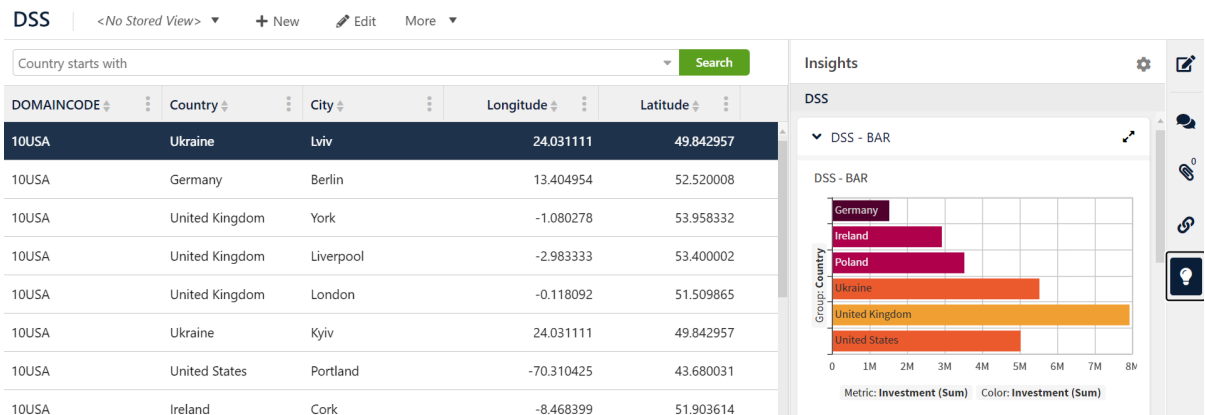
Visual Insights

In addition to displaying visuals in action centers, you can also include visuals in the Insights panel that appears to the right of many business component views. This approach allows you to see KPI visuals in context—on the same screen as the relevant browse data and dynamically filtered based on selected browse content—rather than on a separate action center screen.

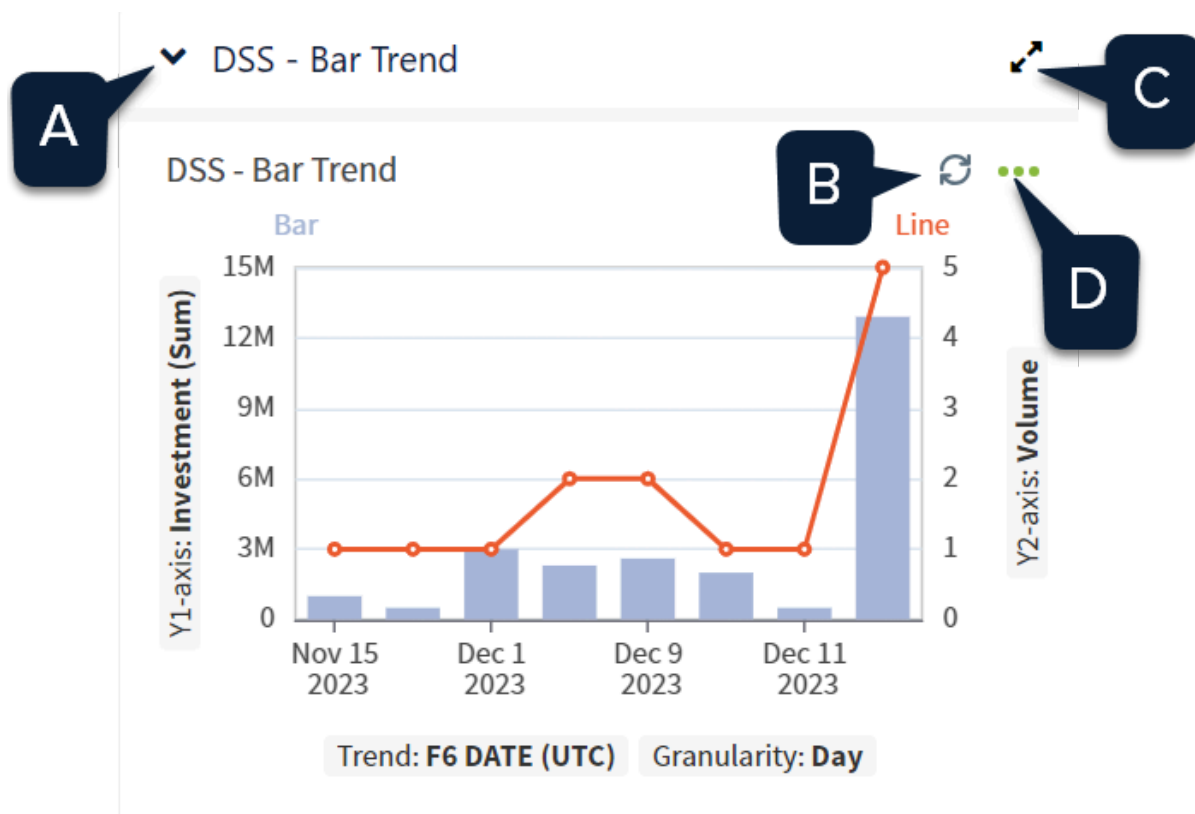
As an end user, you can add new Insights to a hybrid view using the feature; app developers can do the same in the Business Components - Views maintenance screen. The Insights panel and its configuration are described in more detail in the [Insights](#) and [Business Components - Insights on page 288](#) sections.

Provided you have the requisite permissions, you can add visuals to the Insights panel of a particular business component view or a particular grid within a view. QAD also pre-populates the panel for a number of views, including:

- **Customers**
- **Suppliers**
- **Items**
- **Sales Orders** and the Order Lines grid within the **Sales Orders** view
- **CRM Accounts**
- **Purchase Orders** and the Order Lines grid within the **Purchase Orders** view
- **Fixed Assets**
- **Indirect Inventory**



Options for visual interaction in the Insights panel are described in the following image and table. For more information on ways you can interact with visuals, see [Visual Analysis Options on page 158](#).



Label	Description
A	Shows or hides the Insight.
B	Refreshes the Insight.
C	Opens the Insight in expanded mode. In the expanded mode, you can edit the visual with the sidebar menu. This version of the visual builder has all options except for Save and Save As.
D	Opens the menu for the visual. From the menu, you can open the underlying browse or edit the KPI.

Note To view Insights, you need a PLA license.

Platform Development

The QAD Enterprise Platform enables you to extend the functionality and user interface of QAD Adaptive ERP.

With the QAD Enterprise Platform, you can create apps, data stores, and business components that extend the system. You can then build the hybrid views that provide a user interface screens for the business components.

For more detailed information, see the *QAD Enterprise Platform Developer Guide*.

Apps

With the Apps view, you can view, create, and edit apps and app dependencies.

An app brings together a group of related business components, providing the context for some related activities. For example, QAD provides an Sales app for sales-related activities. The Sales app includes business components for Sales Quotes, Sales Orders, and more. With the Apps view, you can create your own apps for your business needs. You can then create the business components for the app, and then the hybrid views that provide a user interface to the app's business components.

App Registration

Apps that will be shared with others and included in environments with other shared apps must be registered with QAD so that they have a unique app registration code.

This unique app registration code is important because it provides the prefix for any of the app's business component physical table names. Note that QAD-provided coded business components do not require registration.

Deciding to Register an App

Registering your app is highly recommended. Your app must be registered if you want to publish your app in the QAD store. Registering your app also ensures that your app will never conflict with other apps you install in the future. Apps built only for internal testing or training purposes do not necessarily need to be registered.

If after creating an app and its business components, you then decide the app needs to be registered, you will need to run a YAB command. If you are a cloud customer, you cannot directly access YAB, and so you will need to enter a ticket for QAD to run the YAB command.

Therefore, for cloud customers, it's best to decide in advance whether to register the app.

When to Register an App

QAD strongly recommends that you register your app before creating and deploying any business components in your app. Although it's possible to register your app later, doing so will require deleting any existing data in your database tables, and then running a YAB command. QAD cloud customers will then need to enter a ticket for QAD to run the YAB command.

Main

These settings cannot be changed in production or test environments. They can only be changed in development environments.

App

Enter the app name. This represents the logical name of the app.

App URI

The app URI is based on the environment namespace and the app name.

The format of the URI is: `urn.app.environment_namespace.app_name`.

For example, if the environment namespace is "extensions" and the app name is "myapp", the app URI will be: `urn.app.com.extensions.myapp`.

App Label

Enter the display label for the app.

Description

Enter a brief description of the app.

Released

Indicate whether an app is released. Releasing an app cannot be undone. Once you select and save this checkbox, both the Released checkbox and the App Registration Code field become disabled.

App Registration Code

Click Register App to register your app with QAD. Apps that will be shared with others and included in environments with other shared apps must be registered with QAD so that they have a unique app registration code. This unique app registration code is important because it provides the prefix for any of the app's business component physical table names. After registering your app, enter a 4-character code from the QAD App Registration page in the App Registration Code field here.

For more information about registering your apps, see [Registering an App on page 233](#).

System Default

Indicates whether this app is system default. The system can have only one active app for each user at a time. New system data is stored in your active app.

In the My Developer Settings view, you can view and change your active app.

App Dependencies

An app can have implicit or explicit dependencies on other apps. Any implicit dependencies are listed automatically.

If you know that the new app will be dependent on another app, you can add that app here as an explicit dependency. For example, if the new app extends the capabilities of an existing app, then you can identify that existing app as an explicit app dependency by clicking +New, adding the app, and setting Implicit to No.

Recalculate Formulas

After installing an app in an environment, all formulas are recalculated for that app. If, for some reason, you want to force formula recalculation, click the Recalculate button. This will recalculate formulas for all business components related to this app.

Package Apps

You can package an app under Apps > Actions > Package. For more information about packaging an app, see the *QAD Enterprise Platform Developer Guide*.

Major Version

The app major version. The default value is based on the last known version.

Minor Version

The app minor version. The default value is based on the last known version.

Patch Version

The patch version. The default value is based on the last known version.

Build

The build number. The default value is based on the last known version.

Version

Version is generated from the major, minor, patch version, and build.

Package

The package file name. The default format is [namespace]-[app]-[version].

When you click Submit, the system creates the app package in the background. The results are sent to your Inbox. Since the output includes a file, the Mini Inbox and Extended Inbox include the Download option to download the file directly from the Inbox.

Registering an App

Apps that will be shared with others and included in environments with other shared apps must be registered with QAD so that they have a unique app registration code. You can register an app in the QAD Store.

See [Registering an App Before Business Component Deployment on page 233](#)

See [Registering an App After Business Component Deployment on page 234](#)

Registering an App Before Business Component Deployment

To register an app before there are deployed business components in the app:

1. Open the **Apps** view from the menu search, and then open your app.
2. Click the Register App button next to the App Registration Code field.
3. On the [QAD Store > Platform App Registration](#) page, click the green + Register App button, located in the upper-right corner of the page.
4. Enter the App URI of your application (copy and paste it from the **Apps** view), a unique registration code of your choosing (four characters, case insensitive), an optional description, and then click Save.

The app registration code must start with a letter and can only contain letters and numbers. Try to use a short but meaningful name for your app registration code. For example, if your company's stock is traded on the market, consider starting with the ticker symbol representing your company.

Note Before an app is released, you can change the app registration code. However, when changing the app registration code, all business component physical tables in this app are renamed, and all data in those physical tables are deleted.

5. Go back to the **Apps** view in the application, and in the App Registration Code field, enter the registered app code, and then click Save.

Now, you can proceed with the app development. All business component physical tables are prepended with the app registration code.

Registering an App After Business Component Deployment

- Check if there are any app's business components in the Suspended status. Before saving the app registration code, suspended business components must be reverted to the Initial status by running the Obsolete Schema Start YAB command: `yab stop database-extension-obsolete-schema start`. Cloud customers need to enter a ticket to run the YAB command.
- The app registration process will delete any existing data in the business component tables. For any data that needs to be saved, export the data from those tables before continuing. Cloud customers need to enter a ticket for QAD to export the data.

To register an app after there are deployed business components in the app:

1. Open the **Apps** view from the menu search, and then open your app.
2. Click the Register App button next to the App Registration Code field.
3. On the [QAD Store > Platform App Registration](#) page, click the green + Register App button, located in the upper-right corner of the page.
4. Enter the App URI of your application (copy and paste it from the **Apps** view), a unique registration code of your choosing (four characters, case insensitive), an optional description, and then click Save.

The app registration code must start with a letter and can only contain letters and numbers. Try to use a short but meaningful name for your app registration code. For example, if your company's stock is traded on the market, consider starting with the ticker symbol representing your company.

Note Before an app is released, you can change the app registration code. However, when changing the app registration code, all business component physical tables in this app are renamed, and all data in those physical tables are deleted.

5. Go back to the **Apps** view in the application, and in the App Registration Code field, enter the registered app code, and then click Save.
6. In the confirmation message, click Continue.

Adding an app registration code requires the physical tables to be renamed for all business components in the app. This process will:

- Suspend all deployed business components in the app until the necessary YAB command is run.
- Require the App Registration Code YAB command to be run to apply the new app registration code.

- Delete any existing data in the business component tables. For any data that needs to be saved, export the data from those tables before continuing.
7. Business components within the app are suspended, but the app registration code is not yet applied. Now, the YAB command is required. Run the App Registration Code YAB command: `yab stop database-extension-obsolete-schema start platform-systemcheck`.

As part of this YAB command, the app's business components are reverted to the Initial status, physical table names are updated, and the business components are re-deployed. Cloud customers need to enter a ticket to run the YAB command.
 8. Optionally, load the exported data. Cloud customers need to enter a ticket to load data.

Now, you can proceed with the app development. All business component physical tables are prepended with the app registration code.

My Developer Settings

Use My Developer Settings to set the active app or restore the active app to the default app for the current developer.

Active App

The active app contains all the business components and business component relationships that the developer creates using the Business Components view. This also applies to any other platform function that is used to store system data (such as the Form Builder, any stored views, or form layout changes using the Design Layout option).

These settings cannot be changed in production or test environments. They can only be changed in development environments.

Active App

The name of the currently active app for your development. From the drop-down, choose Use System Default or Use Custom. For Use Custom, select the available apps from the lookup. The lookup only shows the Apps that are defined within the environment namespace. Apps are defined using Apps view. New system data will be stored in your active app.

Save new artifacts to Configuration Data as default

Select to save all new artifacts to Configuration Data as default in a development environment. When you select this option, the Saved To drop-down menus in the Web UI default to Configuration Data rather than the App Data. You can still change it to App Data if required. See [Configuration Data Overview on page 290](#) for detailed information.

Environment Namespace

Displays the value of the environment namespace. This is always read-only, as it can only be specified using a YAB configuration.

App URI

Displays the App URI of the currently active app.

Data Store

Use the Data Store view to establish the data stores associated with your business components.

These settings cannot be changed in production or test environments. They can only be changed in development environments.

Main**Data Store**

The name of the data store.

Data Store URI

The Data Store URI, a unique identifier of the data store, will automatically be displayed based on the entry in the Data Store field.

Description

A description of the data store.

Data Store Type

Indicates whether the data is stored as a Database or a File.

Mode

The mode of the data store: DEVELOPMENT or PRODUCTION. Business components can be deployed only to data stores in DEVELOPMENT mode.

Database**Database Type**

The type of database (currently only Progress is supported).

Host

The database host name.

User Name

The database user name.

Database Name

The database name.

Port

The database port number.

Password

The password to access the database.

Business Components

With the Business Components view, you can view, create, edit, and delete business components.

A business component brings together the business logic and data necessary to represent a business activity within the application. Users interact with business components through the user interface's menu items. These menu items are hybrid views, which combine a browse grid with a form where you create and interact with data based on the business logic. Typically, a hybrid view is based on one business component, but can use more than one business component. For example, the Address Types hybrid view is based on one business component, but the Sales Orders hybrid view is based on several related business components.

Business components provided by QAD (in the "com.qad" environment namespace) cannot be modified. With the Business Components view, you can create new business components that you can then edit and use as part of your system.

Also, you cannot delete the standard, QAD-provided business components from the system. You can delete the business components that you have created. A business component can be deleted when it is in the Initial status. To delete a business component that is already deployed, its status must be moved to Suspended, and then to Initial. Before moving a business component to the Suspended status, you need to remove all relationships, lookup relationships, formula fields with related fields, and all KPIs, where the business component's browse is used as a data source for a KPI. For more information about business component statuses and deleting/editing a deployed business component, see the *QAD Enterprise Platform Developer Guide*.

Main

Business Component

Enter the identifier of the business component. This identifier is used to construct the Business Component URI. This field becomes read-only after you first save it. This value should be unique within the current, active app.

Business Component Type

Indicates the business component type: Standard or Action.

If you create a new platform business component, Business Component Type is automatically set to Standard and disabled.

Business Component Label

Enter the label name for this business component.

Physical Table

Enter the database table name where the records for this business component will be saved. The app registration code is included as a prefix for the business component physical table name. If there is no app registration code, the field is blank.

For more information about the app registration codes, see [Apps on page 230](#) and [Registering an App on page 233](#).

Description

Enter description of the business component for informational purposes.

Scope

Select the scope of the entity: Domain, Entity, Shared Set, Site, or System. By selecting the scope, the system will automatically validate the existence of the appropriate scope field (respectively "DomainCode", "EntityCode", "SharedSetCode", or "SiteCode") in the business component when it is saved.

When the Shared Set scope is selected, a drop-down list appears containing the types of shared sets. Make sure to select the shared set type correctly.

Status

The status of the business component. There are the following statuses: Initial, Suspended, Deployed, Re-deploy, Released. For more information about business component statuses and deleting/editing a deployed business component, see the *QAD Enterprise Platform Developer Guide*.

Business Component URI

The business component URI is generated automatically based on the App URI and Business Component identifier.

Secure URI

The unique identifier of the Secure Resource that can be found in the Role Permissions resource tree.

App

The name of the currently active app for your development.

App URI

The App URI is set to the default app in the system, or the active app if one is set for the current user, as specified in My Developer Settings.

Options

Embedded

Indicates whether a business component is either standalone or can only be used as an extension of some other business component, either as a One-to-one relationship or a Many-to-one relationship.

Business Document

Indicates whether a business document is enabled for this business component. A business document is a collection of related business components, mainly used for integration with the application. When this option is activated, the Business Document panel is displayed.

Not Extensible

Indicates whether a business component is extensible. In the text box, specify the reason why the business component is not extensible. You can mark business components as not extensible to support backwards compatibility management or keep the integrity of business components and their surrounding functionality.

When a business component is not extensible, you cannot create certain types of extensions, unless the environment is in the owning namespace of the business component. For such restrictions, you can see an error message—for example, “Relationships to not extensible business components are not allowed.” To resolve the error, you can select another business component or browse when applicable.

To view the list of all extension types disallowed for non-extensible business components when the environment is not in the owning namespace of the business component, see the *QAD Enterprise Platform Developer Guide*.

Approvals

Indicates whether this business component is enabled for approvals. When this option is activated, the Approvals panel appears on the Business Components page, and the business component can then be used in an approval process (using generic approvals). You can configure the business component approval settings by using the Configure button on the Approvals panel.

Fields

The Fields grid lists all the fields of the business component.

The **Import** option supports loading from a file or a database. You can import fields from an Excel (.xls or .xlsx) or comma-separated value (.csv) file. The maximum file size is 100 MB. The first row in the sheet specifies the field names, while the cells in the subsequent rows specify the data type and format.

The **Formula** option allows you to include a formula for the currently selected field. On the Formula panel, you can specify an Excel-style formula for calculating the value of the field based on other fields. Click **Include Field** to select fields, and click **Include Operator** to select the Excel-style mathematical operations to apply to the fields. The field's Formula column must be selected to indicate the field's value is calculated based on a formula. Fields with Formula set to Yes can be edited by clicking the Details button, which opens the Fields pop-up window. Scroll down to the Formula panel.

Primary Key

Primary key fields must be specified in the proper numerical order.

Field

Enter the field name.

Field Label

Enter a display label. This will be used in the browses and views for this new business component.

Lookup

Indicates whether a lookup based on the lookup relationship is set up for the field. You can set up a lookup relationship for this field in the Field Details screen. When set to Yes, the field will have the magnifying glass icon to open a pop-up window and select different options for the field value. (This field is read-only.)

You can define which browse of the related business component will be shown at runtime for the lookup by selecting the Lookup checkbox, and then selecting a specific browse in the Browse field.

To create a drop-down list based on a lookup, select the Visualize as Drop-Down List checkbox, and then select the value from the Field Used For Label lookup. The values of this field will be displayed in the drop-down list. If you leave the Field Used For Label lookup blank, it is set to the field from Field Mapping > Related.

You cannot remove the lookup relationship, which is used in one or more formula fields. First, you need to delete the field references from the formula, where these fields are used.

Data Type

Select the data type: Character, Currency Amount, Date, Datetime, Datetime-tz, Decimal, Drop Down, Integer, Integer (64-bit), Logical, Percent, URL.

Drop Down has four types: Character, Integer, Integer (64-bit), and Logical.

You can change the data type when the business component is in the Deployed/Re-deploy status. For more detailed information, see the *QAD Enterprise Platform Developer Guide*.

Length

For character fields, specify the maximum character length.

You can change the length of character fields when the business component is in the Deployed status. For more detailed information, see the *QAD Enterprise Platform Developer Guide*.

Format

Indicate the data format based on the data type.

Currency

You can configure rounding of decimal values based on the currency settings. A business component field can have a data type of "Currency Amount", and instead of defining a format, a currency field is selected. Click the lookup icon and select a currency field from the current business component. For this, you should add a field in the business component to represent the currency.

Drop-Down List

The drop-down list that you can assign to the field. Then, the field will have a drop-down list where you can select the possible values for the field values. This field is disabled for the Drop Down (Logical) data type because it has the Yes/No values.

Default Value

Enter the default value.

Formula

Indicate whether this field's value is calculated based on a formula during runtime.

Physical Field

The name of the column in the corresponding database table for business components created by importing from the database. (This field is read-only.)

Field Group

Displays the name of the field group to which this field is assigned. You can assign a field to a field group using the Field Groups grid.

Minimum Value

Specifies the minimum value allowed for the field. This setting can be applied to fields of all data types except the Character and Logical data types.

Maximum Value

Specifies the maximum value allowed for the field. This setting can be applied to fields of all data types except the Character and Logical data types.

Description Field

Identifies a field as a description field, meaning it has an Associated Code field. The Description Field enables the Associated Code field and is just a helper field for Associated Code. These fields are added to ensure all annotations in the business component dataset definition are supported by the Business Components screen.

Associated Code

Description Fields are linked to their Associated Code fields. Field security then will hide the Description Field in the resource tree, but its access permissions will be inherited from the Associated Code field. The Associated Code field is enabled only when the Description Field is selected. It contains a lookup to the Fields browse to select a field. The Associated Code field is added to ensure all annotations in the business component dataset definition are supported by the Business Components screen.

Required

Indicate whether this field is required.

Primary key fields are required, but you can make character primary key fields not required if needed.

Read Only

Specifies whether the field value is read-only or can be changed by the user.

Hidden from Activity Tracking

Indicates whether the field is enabled for activity tracking.

Hidden from UI

Indicates whether the field is hidden from the views, form, drill downs, alerts, lookup definitions, runtime, activity tracking, design layout, and so on.

User Defined

Indicates whether the field is user-defined.

This field is only used for the legacy implementations in which one or more fields in the physical table can be configured to hold data specifically for the customer's implementation. For these fields specific code is required on the back-end business logic implementation to fetch and update the fields properly. For platform data driven components this indication should always be "false", as the guideline is to use the embedded business components together with a 1-1 business component relationship to bind it to the business component it extends.

Deployed

Indicates whether this field is currently deployed. This is always read-only.

Discriminator

Indicates whether the field will be used as a discriminator field. A discriminator field is used only for embedded business components to allow for extending several parent base business components in 1-1 relationships. This field must be primary key and will not be visible on a form.

Dynamic Format

Indicates whether the field's format is dynamic. Dynamic formatting means that one field's format is dynamically updated based on the format setup for another field.

To set up dynamic formatting for a field, select the Dynamic Format checkbox, and then select the dynamic source field from the lookup.

Dynamic Source Field

Select the source field that drives the dynamic behavior. You can use one source field to format more than one target field. The dynamic formatting has the following limitations:

- Primary key fields cannot be dynamically formatted.
- The field cannot be formatted by itself.
- Dynamic formatting is not supported for fields with the following data types: Date, Datetime, Datetime-tz, Logical, Currency Amount, and Drop Down.
- The dynamic source field must be a field from the current business component.
- The dynamic source field must have a Character data type.
- The dynamic source field cannot have a dynamic format.

Overrides

Indicates whether overrides exist for the business component field. For more information about overrides, see [Field Overrides on page 252](#).

Recalculate Formulas

Adding a new formula field to already deployed business component will un-deploy this business component and you will need to deploy it manually again. If there are any existing records for this business component when a new formula field is added, they are recalculated. This is done automatically when you re-deploy that business component. If you add this newly introduced formula field to the browse, the values for this field may not appear there for some time (until the calculations are finished). If, for some reason, you want to force formula fields recalculation, click the **Recalculate** button.

Field Groups

Field Groups are a selection of fields that can be associated with access rights of a role or roles.

New

Create a new field group.

Delete

Delete a field group.

Assign Fields

Assign fields to the current field group.

Field Group Code

Enter the name for the field group.

Display Label

Enter a label for the field group.

Drop-Down Lists

You can define a business component field as a Drop Down and set up drill-down lists for the business component, which you can then assign to a field.

New

Enter a name for a new drop-down list. You can then assign this drop-down list to the field.

Add Child

Add a child to a drop-down list and enter a value (database value) and label (name that will be displayed in drop-down options) for it. To add additional value and label to a drop-down list, click +New.

Delete

Delete a drop-down list.

More

Show Group By — Select a column header and group by that column.

Show Group By — Select a column header and group by that column.

Drop-Down Lists

Shows a list of drop-down lists available, which you can sort ascending, descending, or filter as needed.

Indexes

You can set up extra indexes for platform business components (not coded business components). A secondary index enables rapid sorting and grouping by additional columns.

New

Define a new index.

Edit

Edit an existing index.

Delete

Delete a selected index.

Details

Enter further details about the index.

Index

Enter a name for the index. A primary index (called idx_PK) is automatically generated when a business component is saved. When a primary index is automatically generated, a description of "Primary Index" is included (but is still editable).

Before the business component is deployed, the index status is "Not Active - Deploy Required", and you can change the index Description, Unique, and Order. After the deployment, you cannot edit the primary key index.

Description

Add a description for the index.

Unique

Specify whether this index is unique.

Status

This field is generated automatically. You can create a new index before and after the deployment. After the deployment, you cannot edit the existing indexes. All existing indexes related to a particular

business component table are activated during the first deployment. If you create the index after the first deployment, it is created as inactive. To activate such indexes, you will receive a notification and will need to run the YAB command.

The following index statuses are available:

- Not Active - Deploy Required — The business component is not yet deployed. The index can be deleted in this status.
- Not Active - YAB Command Required — The business component is already deployed. After the business component deployment, the index is created on the UI and saved. This is the stage where you need to run the YAB command to activate the index in the database.
- Active — The index is active. The business component is deployed, and the index is created in the database and is activated (through the business component deployment or by running the YAB command).

Fields

Select fields for the index from the lookup.

Relationships

Use this grid to view and maintain the relationships of the business component. You can add new relationships only after the first save of the business component.

You cannot delete the relationship, which is used in one or more formula fields. First, you need to delete the field references from the formula, where these fields are used.

New

Define a new business component relationship.

Edit

Edit a business component relationship.

Delete

Delete a business component relationship.

Details

Enter further details about the relationship.

Relationship

The relationship of this business component to the other business component.

Relationship Label

The label for the business component relationship.

Source Business Component

Specifies the business component on which a relationship was created.

Related Business Component

The name of the business component to which the current business component is related.

Relationship Type

It is always set to Child and cannot be changed.

Cardinality

Specifies the cardinality of the relationship: 1-1 or N-1.

This field is automatically populated based on the selection from the Related Business Component lookup, which is based on comparing primary keys of the Source and Related Business Components, which take part in this relationship. For example, if the amount and datatypes of primary key fields coincide, a system will propose 1-1 cardinality and fill in the Field Mapping grid with corresponding primary keys. Still, the developer can then modify the cardinality. If the developer modifies the cardinality, the Field Mapping grid is filled in automatically only on the 1-side of relationships.

Composition Relation

Indicates whether this relationship is included in a business document. The business document structure is defined by its composition relations. When you clear the Composition Relation checkbox to exclude a relationship, the relationship disappears from the Business Document panel, not the Relationships panel. Be sure to carefully review the relationships before excluding them from a business document.

When you select the Cascade Delete checkbox, it means that if you delete a parent component, its child components will also be deleted.

Include Grid on Parent Form

Specifies whether a child business component grid (external) is added to a parent business component form. When you select the Include Grid on Parent Form checkbox under Relationships details, the grid is automatically generated on a parent form, and the Edit Grid button appears under Form, where you can edit this grid.

This functionality applies only to the Many-to-one (child-parent) relationships (not embedded) and is available for both platform and coded business components. If the grid is based on a coded business component, additionally, you need to provide the grid's Data URI. To enter the Data URI, close Relationships, navigate to the Form panel,

click Edit Grid, and then open the Grid Definition. Note that the parent screen will not work until you add the Data URI.

When you select the Cascade Delete checkbox, it means that if you delete a parent component, its child components will also be deleted.

Source App

Specifies the application to which the source business component belongs.

Source App URI

Specifies the unique identifier of the app where the source business component resides.

Related App

Specifies the app of the related business component.

Related App URI

Specifies the unique identifier of the related app.

Business Services

The Business Services panel lists all the business services associated with the business component. It lists all methods annotated as `@external`, and is for coded business components only.

The details are displayed for methods with REST API only.

Business Service Method

The name of the business service method.

REST API

Indicates whether the business service is exposed as a REST API.

REST URL Path

Indicates the REST API path to the business service.

HTTP Method Type

Indicates the HTTP method: GET or POST.

Parameter Type

Indicates the parameter type for the request: QUERY or BODY.

Open API Documentation

Click to open QAD Swagger in a new window with the API documentation for the related business service method.

Business Document

The Business Document panel appears only if it is activated on the Main > Options panel. The business document structure is automatically generated based on the existing relationships for the current business

component, and it can be viewed using a hierarchical grid. To have a clear business document structure, you can associate only the relevant relationships with your business document by using the Composition Relation checkbox.

To create a business document:

- Create a relationship under Relationships. Note that you need to create a business component relationship from a child if you want to have a business document with parent and child.
- Make sure that the Composition Relation checkbox under Relationships is selected.
- Enable a business document in Main > Options.

Excel integration (import and export) is available for most business components (including embedded business components) and business documents.

Business Document

Enter the name for this business document. By default, this field displays the value from the Business Component field. The field is enabled until the business document is released as part of an app package.

Business Document Label

Enter the label for this business document. By default, this field displays the value from the Business Component Label field.

Business Document Description

Enter a description of the business document.

Business Document URI

The URI of the business document associated with this business component. It reflects changes to the Business Document field when created.

Browse URI

The default browse URI that is used when executing the query. The default browse URI is initially set to the browse defined in the view for the business component.

API URL

An address that allows you to access an API and its various features.

To view the API documentation, click the link icon located on the right side of the view. Then, click the Business Document API Documentation drill-down link to open the API documentation for the related business document.

Form

Existing Form

Indicates whether a form already exists for this view.

Build Form (or Edit Form)

Click to start building a new form or to edit an existing form. Click Build Form or Edit Form to open the Build Form pop-up window.

The Build Form button is disabled until the business component is saved for the first time.

Existing Grid

Indicates whether a grid already exists for a parent form. This option is available when you select the Include Grid on Parent Form checkbox under Relationships details.

Edit Grid

Click to open the Build Grid pop-up window and configure the grid that will be added to the parent form.

Event Handlers

Edit event handlers for the form. You can specify whether the event handlers are active and the timing as Pre (run before any other application TS handlers) or Post (run after any other application TS handlers).

Views

The Views panel lists all the views created for the business component. Click New to define a new view or click Details to view and edit the details of an existing view. When you click New or Details, the Views pop-up window opens.

View Label

The display label for the view.

Description

A short description for the view.

Type

Indicates the view type: Hybrid Browse (includes a browse and a form) or Form Only (only includes a form).

Eligible for Menu

Indicates whether this view will be available on the menu (and menu search).

App

The name of the app associated with the view.

App URI

The URI of the app associated with the view.

View URI

The URI of the view.

Secure URI

The URI for security and menu linking.

Source File Generation

Click Download to generate business component source files and download them in a .zip file.

Deployment

Deployment of a business component is a process of verifying if everything is available and correctly defined for the business component, this includes having available view and view resources.

Data Store URI

The URI of the data store that stores the schema and the data of the business component.

After the business component is deployed for the first time, this field becomes read-only: the Data Store URI cannot be changed.

Import Data

Deprecated.

Deploy

Click Deploy to deploy the business component.

Generate Missing Records

In development environments only, after clicking the Deploy button for the 1-1 embedded business component, the system generates a maximum of 1000 records for the 1-1 embedded business component based on a parent table. If the number of records exceeds 1000, you need to generate the rest of the records by clicking the Generate Missing Records button. If you do not generate missing records, you can run into issues with formula fields and other functionality that include the extension fields. When you click the Generate Missing Records button, the missing extension records are generated in the background. After all missing extension records are generated, refresh the screen. You can see that the Generate Missing Records button disappears and the Deploy button is visible but disabled.

You might need to cancel the missing record generation if the record generation takes too long, is blocked, or if you decide to revert to initial and delete the embedded business component relationship. To cancel

the record generation, click the Cancel Missing Record Generation button.

For Test and Production environments, all extension records are generated automatically.

Business Components - Field Overrides

You can override the Business Component field properties and manage overrides under Business Component > Fields > Details > Overrides and in the Design Layout. Field overrides are always saved as configuration data.

There are system-wide and domain property overrides.

Field Override Logic:

- The original business component settings are applied.
- If business component system overrides exist, then system overrides are applied.
- If business component domain overrides exist, then domain overrides are applied.
- If TypeScript for the field default value or required setting logic exists, then the TypeScript logic is applied.

Overrides

Changes to these properties affect all layouts for this business component.

Parent Business Component

For embedded business components only, shows the parent business component to which the field overrides are applied.

Embedded business components can have multiple parent business components. You can create and manage field overrides for each parent business component related to the embedded business component. When there are multiple parent business components, select the required business component from the drop-down list.

For embedded business components, you can view the Overrides panel only after creating relationships.

System Property Overrides

Field property overrides are created individually. First, enable the override by selecting the related checkbox, and then you can set your override value.

Field Label Override

Select the checkbox to enable the override and specify the system-wide Field Label override.

Required Override

Select the checkbox to enable the override and select the system-wide Required setting override. When you mark a field as required as an override, you also need to provide the Default Value Override.

If a field is marked as required on the Business Component, the field will be required and cannot be overridden.

Default Value Override

Select the checkbox to enable the override and specify the system-wide Default Value setting override. When creating new records, the default value entered here will be used.

If the field type is Date/Datetime/Datetime-tz, the toggle icon appears. Click the toggle icon to switch between a literal value and a variable value (Today, Tomorrow, Yesterday).

Length Override

Select the checkbox to enable the override and specify the system-wide Length override. This override can only be created for UDFs of certain field types.

Format Override

Select the checkbox to enable the override and specify the system-wide Format override. This override can only be created for UDFs of certain field types.

Saved To

System overrides are always saved as configuration data.

Remarks

Provide the information about why the system overrides are created.

Last Modified By

The ID and name of the user who last edited the system overrides.

Last Modified Date

The date the system overrides were last edited.

Domain Property Overrides

Business components with the Domain scope provide domain field overrides for the Default Value and Required settings. This allows you to define different field property behaviors for specific domains. Like system overrides, domain override records are created individually for each domain property (Required/Default Value). Domain overrides take precedence over system overrides.

On the Domain Property Overrides panel, click New to add a new domain override.

Domain

The domain the overrides apply to.

Description

The selected domain description.

Override

Select the checkbox to enable the domain Required setting override.

Required

The Required setting override for the domain. When you mark a field as required as an override, you also need to provide the Default Value override.

Override

Select the checkbox to enable the domain Default Value setting override.

Default Value

The Default Value setting override for the domain. When creating new records in the specified domain, the default value entered here will be used. The entered default value is treated as a literal value.

Toggle

Date fields (Date, Datetime, Datetime-tz) support both literal default values and variable default values. If the field type is Date/Datetime/Datetime-tz, you can click the toggle icon to switch between a literal value and a variable value (Today, Tomorrow, Yesterday).

Saved To

Domain overrides are always saved as configuration data.

Remarks

Provide the information about why the domain overrides are created.

Last Modified By

The ID of the user who last edited the domain overrides.

Name

The name of the user who last edited the domain overrides.

Last Modified Date

The date the domain overrides were last edited.

Creating Overrides from Business Component

You can create system and domain field overrides from a business component.

See [Creating System Field Overrides from Business Component on page 255](#)

See [Creating Domain Field Overrides from Business Component on page 255](#)

Creating System Field Overrides from Business Component

To create system field overrides from a business component:

1. Open **Business Components** from the menu search.
2. Find the business component for which you want to create overrides.
3. Open the **Fields** panel, and then select the field for which you want to create overrides.
4. Click Details and navigate to the **Overrides** panel > **System Property Overrides**.
5. Select the Field Label Override checkbox and set a new label.
6. Select the Required Override checkbox and make the field required.
7. Select the Default Value Override checkbox and put any default value.
8. Select the Length Override checkbox and set the number of characters this field can contain.
9. Select the Format Override checkbox and set the required value. This property defines the length of the UI element. A field with format x(3) will be shorter, and a field with format x(20) will be longer on the UI.
10. Add remarks.
11. Click OK to save your data.
12. Check your system field overrides at runtime: at runtime, open your business component with created overrides, add a new record, and see the field with created overrides.

Creating Domain Field Overrides from Business Component

You can create domain overrides if your business component has the Domain scope.

To create domain field overrides from a business component:

1. Open **Business Components** from the menu search.
2. Find the business component for which you want to create overrides.
3. Open the **Fields** panel, and then select the field for which you want to create overrides.
4. Click Details and navigate to the **Overrides** panel > **Domain Property Overrides**.
5. Click +New.
6. Select the 11CAN domain, for example.
7. Select the first Override checkbox to make the field required.
8. Select the second Override checkbox and set a default value.
9. Add remarks.

10. Click OK to save all changes.
11. Check your domain field overrides at runtime: change the domain to 11CAN, at runtime, open your business component with created overrides, add a new record, and see the field with created overrides. In our case, it should be required and contain the appropriate default value.

Creating Overrides from Design Layout

You can create system and domain field overrides from a design layout.

See [Creating System Field Overrides from Design Layout on page 256](#)

See [Creating Domain Field Overrides from Design Layout on page 256](#)

Creating System Field Overrides from Design Layout

Create a custom design layout with the System Wide layout context. Ensure the design layout is active.

To create system field overrides from a design layout:

1. Open the design layout.
2. Select the UDF for which you want to create overrides, and then click **Manage Overrides** on the right.
3. Navigate to the **Overrides** panel > **System Property Overrides**.
4. Select the Field Label Override checkbox and set a new label.
5. Select the Required Override checkbox and make the field required.
6. Select the Default Value Override checkbox and put any default value.
7. Select the Length Override checkbox and set the number of characters this field can contain.
8. Select the Format Override checkbox and set the required value. This property defines the length of the UI element. A field with format x(3) will be shorter, and a field with format x(20) will be longer on the UI.
9. Add remarks.
10. Click Save. Pay attention that a UDF is displayed with overridden properties in the Design Layout form and in the Business Component Properties section to the right.
11. Close the design layout.
12. Check your system field overrides at runtime: open your view from the menu search, add a new record, and see the field with created overrides.

Creating Domain Field Overrides from Design Layout

Create a custom design layout with the Domain layout context. Ensure the design layout is active.

To create domain field overrides from a design layout:

1. Open the design layout.

2. Select the field for which you want to create overrides, and then click **Manage Overrides** on the right.
3. Navigate to the **Overrides** panel > **Domain Property Overrides**.
4. Click +New.
5. Select the 11CAN domain, for example.
6. Select the first Override checkbox to make the field required.
7. Select the second Override checkbox and set a default value.
8. Add remarks.
9. Click Save.
10. Close the design layout.
11. Check your domain field overrides at runtime: change the domain to 11CAN, open your view from the menu search, add a new record, and see the field with created overrides. In our case, it should be required and contain the appropriate default value. You will not see the domain overrides if the domain workspace differs from the domain for which overrides are created.

Business Components - Build Form

Use Build Form to build the views associated with your business components.

Set Layout Properties

App

Specifies the app for this view.

Business Component

Specifies the business component for this view.

Linked View

Click **Select Linked View** to open the Business Component Views dialog and select the view to which to link the form. The selected linked view will provide Drill Downs, Activity, and Attachments for the form.

Allow Drill Downs on Form

Indicates whether contextual drill downs are enabled for the form (Hybrids, Standalone Forms, and Individual Actions). When enabled, linked view drill downs appear on the Drill-Down Links panel on the right when you click in the form.

Allow Activity on Form

Indicates whether contextual activity is enabled for the form (Hybrids, Standalone Forms, and Individual Actions). When enabled, linked view activity appears on the Activity panel on the right when you click in the form. This option is activated only when you select the Activity Panel checkbox on the Main panel under Views.

Allow Attachments on Form

Indicates whether contextual attachments are enabled for the form (Hybrids, Standalone Forms, and Individual Actions). When enabled, linked view attachments appear on the Attachments panel on the right when you click in the form. This option is activated only when you select the Attachments Panel checkbox on the Main panel under Views.

Include Summary Panel

Specifies whether to include the Summary Panel in the layout.

Select drop-down

From the drop-down (initially named <select>), you can select an element currently on the form and view its details, which are displayed in a box below the drop-down option.

Panels**Element Name**

Specifies the identifier for the panel.

Panel Label

Specifies the label for the panel's name. Use the lookup to open the Labels pop-up window and select an existing label.

Columns

Indicates the number of field columns in the panel (set to 2).

Buttons**Element Name**

Specifies the identifier for the button.

Button Label

Specifies the display label for the button. Use the lookup to select an existing label from the Labels pop-up window.

Width

Specifies the width of the button in pixels; currently, the width adjusts automatically and the setting is "auto".

Alignment

Specifies the alignment for a button within a cell. The following options are available:

- Left — Left aligns a button in a cell.
- Right — Right aligns a button in a cell.
- Center — Center aligns a button in a cell.

Margin Left

Specifies the margin area on the left side of a button. The default value is "auto".

Margin Right

Specifies the margin area on the right side of a button. The default value is "auto".

State

Specifies whether the button is enabled or disabled.

Column Span

Specifies the number of columns that contain the button (set to 1).

Row Span

Specifies the number of rows that contain the button (set to 1).

Labels**Element Name**

Specifies the identifier for the label.

Label

Specifies the display label. Use the lookup to select an existing label from the Labels pop-up window.

Width

Specifies the width of the label in pixels; currently, the width adjusts automatically and the setting is "auto".

Alignment

Specifies the alignment for a label within a cell. The following options are available:

- Left — Left aligns a label in a cell.
- Right — Right aligns a label in a cell.
- Center — Center aligns a label in a cell.

Margin Left

Specifies the margin area on the left side of a label. The default value is "auto".

Margin Right

Specifies the margin area on the right side of a label. The default value is "auto".

Column Span

Specifies the number of columns that contain the label (set to 1).

Row Span

Specifies the number of rows that contain the label. Select from 1 to 50.

Grids**Detail Table**

Specifies the detail (data) table for the grid.

Element Name

Specifies the identifier for the grid.

Width

Indicates the width of the grid. This is set to auto: the grid automatically uses the area provided by the panel in which the grid is located.

Max Display Lines

Specifies the maximum number of grid lines to display.

Allow New

Specifies whether the New button is displayed for the grid, which allows users to add new lines.

Allow Select (Internal grids only)

Specifies whether the user can select lines in the grid.

Allow Edit

Specifies whether the Edit button is displayed for the grid, which allows users to edit lines.

Allow Delete

Specifies whether the Delete button is displayed for the grid, which allows users to delete lines.

Add Child Grid

Click to open the Grid Definition pop-up window, where you can specify a child grid.

Grid Columns

In Build Form, when you click a grid column header, the column's properties are listed on the right-hand panel.

Similar to the properties for fields, the column properties are organized into the Business Component Properties and the Form Layout Properties. The Business Component Properties for a given column are the same as the properties for fields because the columns consist of business component fields, but displayed in columns. The Form Layout Properties are also similar to the properties for fields, but include settings for behavior such as column sort order and a way to configure column styling for the use of color and icons.

Business Component Properties

Business component properties apply everywhere the field is used.

Field

Indicates the identifier for the field.

Display Label

Specifies the display label. Use the lookup to select an existing label from the Labels pop-up window.

Business Component

Indicates the field's business component.

Detail Table

Indicates the detail table for the field.

Physical Field

Indicates the physical field identifier, based on the detail table and identifier for the field. This is useful for distinguishing between fields that might have similar identifiers and labels.

Max Characters

Indicates the maximum number of characters allowed for the field's data.

Format

Indicates the data format for the field. For example, a checkbox has the Yes/No format, while a field of up to 80 characters has the x(80) format.

Default Value

Specifies the default value for the field.

Required

Specifies whether the field is required.

Form Layout Properties

Element Name

Indicates the element identifier for the field.

Control Type

Specifies the control the field uses for accepting and displaying data. For example, a checkbox field has the CheckBox control type, and a text string field has the TextEditor control type.

Field Label

Specifies the display label for the column field. The field label override logic is as follows:

- The original Business Component Label is applied.
- If Form Builder Display Property overrides exist for the label, then Form Builder Display Property overrides are applied.
- If Business Component Field Overrides exist for the label, then Business Component Field Overrides are applied.
- If Design Layout Display Property overrides exist for the label, then Design Layout Display Property overrides are applied.

Width

Indicates the width available for the column's data.

State

Specifies whether the field is Enabled, Disabled, or Read Only.

Sort

Specifies the default sorting for the column as None, Ascending, Descending, or Disabled.

Sort Order

Specifies the column's order for sorting, relative to other columns. Select 1, 2, 3, or 4.

Conditional Styling

Specifies whether conditional styling is applied to the column's display of data. Click the gear icon to open Grid Conditional Styling and configure the conditional styling.

Column Highlighting

Provides the ability to highlight grid columns. You can select from the following highlight options: None, Yellow, Teal, Purple, or Gray.

Treelist Grids

A treelist grid allows you to display form grid data as a tree, a grid, or a combination of both and update the tree.

Detail Table

Specifies the detail (data) table for the treelist grid.

Element Name

Specifies the identifier for the treelist grid.

Width

Indicates the width of the treelist grid. This is set to auto: the treelist grid automatically uses the area provided by the panel in which the treelist grid is located.

Max Display Lines

Specifies the maximum number of treelist grid lines to display.

Allow New

Specifies whether the New button is displayed for the treelist grid, which allows users to add new lines.

Allow Select (Internal grids only)

Specifies whether the user can select lines in the treelist grid.

Allow Edit

Specifies whether the Edit button is displayed for the treelist grid, which allows users to edit lines.

Allow Delete

Specifies whether the Delete button is displayed for the treelist grid, which allows users to delete lines.

Allow Drag & Drop

Specifies whether the Drag & Drop button is displayed for the treelist grid, which allows users to change the node order and hierarchy. It always reflects the setting from the Grid Definition pop-up window and is disabled here.

Allow Excel Export

Specifies whether the Export option is included in the treelist grid's More button, which allows users to export the treelist grid content to Excel. The export adheres to any user filters on the treelist grid and will export across pages.

+Child

Allows users to add a child row to the row, where +Child is clicked.

Groups

Note that these settings pertain to a group of fields organized in a grid-like display within a panel. The term "grid" can sometimes be used in this context, but here it refers to the grid-like layout of the group of fields, rather than form data grids, which offer a browse-like display of data.

Element Name

Specifies the identifier for the field grid.

Columns

Specifies the number of columns in the group. From the drop-down, choose from 1 to 9.

Click the gear icon to configure the columns. In the Configure Columns pop-up window, specify the number of columns from the Columns drop-down (from 1 to 9), and then the Column Width Type and Value for

each column. The Column Width Type can be one of the following: Auto size, Percentage, or Pixel; the Value is then set accordingly for the selected type.

Note Pixel column widths can be overridden by fields that require more width to display content.

Rows

Specifies the number of rows in the group.

Column Span

Specifies the number of columns spanned by the group. (Set to 1.)

Row Span

Specifies the number of rows spanned by the field grid (group). Select from 1 to 50.

Custom

Element Name

Specifies the identifier for the custom element.

Display Label

Specifies the display label. Use the lookup to select an existing label from the Labels pop-up window.

Column Span

Specifies the number of columns spanned by the custom element. (Set to 1.)

Row Span

Specifies the number of rows spanned by the custom element. Select from 1 to 50.

Fields

Business Component Properties

Business component properties apply everywhere the field is used.

Field

Indicates the identifier for the field

Display Label

Specifies the display label. Use the lookup to select an existing label from the Labels pop-up window.

Business Component

Indicates the field's business component.

Detail Table

Indicates the detail table for the field.

Physical Field

Indicates the physical field identifier, based on the detail table and identifier for the field. This is useful for distinguishing between fields that might have similar identifiers and labels.

Max Characters

Indicates the maximum number of characters allowed for the field's data.

Format

Indicates the data format for the field. For example, a checkbox has the Yes/No format, while a field of up to 80 characters has the x(80) format.

Default Value

Specifies the default value for the field.

Required

Specifies whether the field is required. On the form, required fields include the gold bar along the left side of the field value box.

Form Layout Properties

Element Name

Indicates the element identifier for the field.

Control Type

Specifies the control the field uses for accepting and displaying data. For example, a checkbox field has the CheckBox control type.

Field Label

Specifies the display label for the field. This label will be used on the user interface, such as on form fields and browse columns. The field label override logic is as follows:

- The original Business Component Label is applied.
- If Form Builder Display Property overrides exist for the label, then Form Builder Display Property overrides are applied.
- If Business Component Field Overrides exist for the label, then Business Component Field Overrides are applied.
- If Design Layout Display Property overrides exist for the label, then Design Layout Display Property overrides are applied.

Input Width

Indicates the width available for the field's data input.

Input Height

Indicates the height available for the field's data input.

Label Visibility

Indicates whether the label is Visible, Hidden, or None.

- Visible — When selected, the label displays as usual (default).
- Hidden — When selected, the label is hidden but the label width is still accounted for.
- None — When selected, the label is removed and the label width is no longer accounted for. The Label Width field is hidden when this option is selected.

Label Width

Indicates the width available for the field's display label. This field is hidden when the None option under Label Visibility is selected.

State

Specifies whether the field is Enabled, Disabled, or Read Only.

Lookup Visibility

Specifies whether the field lookup is Visible or Hidden. This property does not impact the browse search. For the new key fields, the lookup visibility is set to Hidden.

Column Span

Specifies how many columns the field occupies (1 or 2).

Row Span

Specifies the number of rows the field occupies (from 1 to 50).

Add to Layout

From the Add to Layout panel, you can choose user interface elements to add to the form you are building.

Select Show Unused Only to have the Add to Layout panel only show elements that are not currently used on the form. While you are building a form, this option can help to make the panel easier to navigate and can prevent you from inadvertently adding the same element (such as a field) more than once on the same form.

Select from UI Elements or Fields to add elements to the form.

UI Elements include:

- Panel
- Button
- Label
- Grid
- Group

- Custom

Under UI Elements, you can click an element, and then drag it to the form area, placing it where you would like the element on the form.

Fields include:

- Default — These fields are business component fields or field groups and you cannot edit or delete them after deployment. These fields are located on the Business Component page.

Suggestions — You can add fields from related business components to a form. These fields are disabled by default. If fields from the business component are used in any view metadata, they display under the Suggestions section.

+More — The button displays to add additional fields from the business component that do not display in the Suggestions section.

- UI-Only Field — You can drag and drop this field when building a form if you need a new field or when you cannot edit some of the Default fields.

The listed fields are organized by field groups, including User Defined Fields, which are listed last.

Field Properties

Field properties include Business Component Properties and Form Layout Properties.

Business Components - Edit Grid

Use Build Grid to configure the child business component grids (external) by editing properties and rearranging columns as desired.

Set Layout Properties

App

Specifies the app for this grid.

Business Component

Specifies the business component for this grid.

Select drop-down

From the drop-down (initially named <select>), you can select an element and view its details, which are displayed in a box below the drop-down option.

Panels

Element Name

Specifies the identifier for the panel.

Panel Label

Specifies the label for the panel's name. Use the lookup to open the Labels pop-up window and select an existing label.

Columns

Indicates the number of field columns in the panel (set to 1).

Grids**Detail Table**

Specifies the detail (data) table for the grid.

Element Name

Specifies the identifier for the grid.

Width

Indicates the width of the grid. This is set to auto: the grid automatically uses the area provided by the panel in which the grid is located.

Max Display Lines

Specifies the maximum number of grid lines to display.

Allow New

Specifies whether the New button is displayed for the grid, which allows users to add new lines.

Allow Edit

Specifies whether the Edit button is displayed for the grid, which allows users to edit lines.

Allow Delete

Specifies whether the Delete button is displayed for the grid, which allows users to delete lines.

Grid Columns

In Build Grid, when you click a grid column header, the column properties are listed on the right-hand panel. The column properties are organized into the Business Component Properties and the Form Layout Properties.

Business Component Properties

Business component properties apply everywhere the field is used.

Field

Indicates the identifier for the field.

Display Label

Specifies the display label.

Business Component

Indicates the field's business component.

Detail Table

Indicates the detail table for the field.

Physical Field

Indicates the physical field identifier, based on the detail table and identifier for the field. This is useful for distinguishing between fields that might have similar identifiers and labels.

Max Characters

Indicates the maximum number of characters allowed for the field's data.

Format

Indicates the data format for the field. For example, a checkbox has the Yes/No format, while a field of up to 80 characters has the x(80) format.

Default Value

Specifies the default value for the field.

Required

Specifies whether the field is required.

Form Layout Properties**Element Name**

Indicates the element identifier for the field.

Control Type

Specifies the control the field uses for accepting and displaying data. For example, a checkbox field has the CheckBox control type, and a text string field has the TextEditor control type.

Width

Indicates the width available for the column's data.

State

Specifies whether the field is Enabled, Disabled, or Read-only.

Sort

Specifies the default sorting for the column as None, Ascending, Descending, or Disabled.

Sort Order

Specifies the column's order for sorting, relative to other columns.

Conditional Styling

Specifies whether conditional styling is applied to the column's display of data. Click the gear icon to open Grid Conditional Styling and configure the conditional styling.

Column Highlighting

Provides the ability to highlight grid columns. You can select from the following highlight options: None, Yellow, Teal, Purple, or Gray.

Labels**Element Name**

Specifies the identifier for the label.

Label

Specifies the display label. Use the lookup to select an existing label from the Labels pop-up window.

Width

Specifies the width of the label in pixels; currently, the width adjusts automatically and the setting is "auto".

Alignment

Specifies the alignment for a label within a cell. The following options are available:

- Left — Left aligns a label in a cell.
- Right — Right aligns a label in a cell.
- Center — Center aligns a label in a cell.

Margin Left

Specifies the margin area on the left side of a label. The default value is "auto".

Margin Right

Specifies the margin area on the right side of a label. The default value is "auto".

Column Span

Specifies the number of columns that contain the label (set to 1).

Row Span

Specifies the number of rows that contain the label. Select from 1 to 50.

Add to Layout

From the Add to Layout panel, you can add labels to the grid you are editing.

Under UI Elements, you can click an element, and then drag it to the grid area, placing it where you would like the element on the grid.

Business Components - Grid Definition

With the Grid Definition pop-up window, you specify a grid that you are adding to a form. If you access this window from Business Components - Edit Grid, you can edit your grid here, including adding and removing columns. Grids can be either internal or external. An internal grid displays data from the same business component upon which the form itself is based. In contrast, an external grid displays data from some business component other than the one upon which the form is based.

Main

Detail Table

Indicates the business component data table for the grid. Click Select to open the Detail Grids pop-up window for selecting a data table. Note that the Select button is not available when you access this window from Business Components - Edit Grid.

JSON Path

For an internal grid, the JSON path to the top level of the data to bind to the grid. Note: If you are converting a Java View Controller, this value can be taken directly from `setRecordListFieldName()`. In the view resource metadata, this is the value of `<RecordListFieldName>`.

For an external grid, specifies parameters for grids that display data that is external to the form's business component (single-row edit grids). In the view resource metadata, this is the value of `<ExternalGridParameters>`.

Data URI

Indicates the URI for data based on the business component detail table.

Linked View

For an internal grid, select the view that will provide Drill Downs, Insights, Activity, and Attachments for the grid.

For an external grid, select the view that will open from the Details button and provide Drill Downs, Insights, Activity, and Attachments for the grid.

Unique ID (Only for a Treelist Grid)

Indicates the name of the field, which is a singular unique ID per row. Treelist Grid requires a singular unique ID to link a child row to a parent.

Parent ID (Only for a Treelist Grid)

Indicates the name of the field, which data value is a unique ID of its parent. To link parents to children, one singular unique ID and parent ID are used.

Options**Data Selection**

Provides the ability to select a single cell or a row in a grid.

For an internal grid, creating and deleting records is not supported with cell selection.

For an external grid, editing, creating, and deleting records is not supported with cell selection.

Allow Activity on Grid

Indicates whether contextual activity is enabled for the grid. When enabled, linked view activity appears on the Activity panel on the right when you click in the grid. This option is activated only when you select the Activity Panel checkbox on the Vertical Menu panel under Views.

Allow Drill Downs on Grid

Indicates whether contextual drill downs are enabled for the grid. When enabled, linked view drill downs appear on the Drill-Down Links panel on the right when you click in the grid.

Allow Attachments on Grid

Indicates whether contextual attachments are enabled for the grid. When enabled, linked view attachments appear on the Attachments panel on the right when you click in the grid. This option is activated only when you select the Attachments Panel checkbox on the Vertical Menu panel under Views.

Allow Insights on Grid

Indicates whether contextual insights are enabled for the grid. When enabled, linked view insights appear on the Insights panel on the right when you click in the grid.

Allow Drag & Drop (Only for a Treelist Grid)

Indicates whether the Drag & Drop button is displayed for the treelist grid, which allows users to change the node order and hierarchy. When enabled, you can select from the following options:

- Hierarchy Only — Drag & Drop allows you to change the level hierarchy. You cannot reorder rows within the same level. Changes will be saved automatically for users.
- Hierarchy & Sibling Order (Internal grids only) — Drag & Drop allows you to change the level hierarchy and reorder rows within the same level. Users will need to click the Save button to save

the changes. When this option is selected, a Sequence ID Field is required.

Sequence ID Field (Internal grids only)

If Hierarchy & Sibling Order is selected, a Sequence ID Field is required. This is the name of the field in the dataset that holds an integer to store the sequence of sibling rows.

Field Mapping

Child Key Field

Indicates the child key field for a given column.

Parent Key Field

Indicates the parent key field for a given column.

Columns

+Select

Brings up a lookup with all related business component fields. This allows you to select fields from up to two levels of relationships.

Select

Indicates whether the column is displayed in the grid.

Field

The field identifier.

Label

The field display label for the field, displayed in the grid column header.

Required

Indicates whether data is required.

Business Components - Conditional Styling

With the Conditional Styling pop-up window, you can configure conditional styling for a grid column. You can specify conditions for the background color or the use of an icon.

Styles

Style Type

Choose the type of styling as Background Color or Icon.

The grid displays any currently specified styles. Click New to add a new style, Edit to modify an existing style, or Delete to remove a style.

Condition

The condition being applied.

Preview

Shows a preview of the applied condition.

Background Color Styles

When you click New with Background Color selected (or Edit an existing style for background color), the Conditional Styles - Styles pop-up window opens, where you can specify conditions for styling the background color for the field's column.

Conditions

In Conditions, for the current field's column, you can specify conditions using any of the fields on the grid. You can specify multiple conditions for the current field's column by clicking the + icon (and remove a condition by clicking the x icon), in the same way that you specify browse search conditions.

Field

From the drop-down listing the available fields for the grid, select a field that you want to use to create a condition.

Operator

From the drop-down, choose:

- equals
- greater than
- greater or equal to
- is not null, is null
- less than
- less or equal to
- contains
- starts with
- ends with
- does not equal
- range

In the adjacent two fields, enter the value(s) for the conditions.

Use the + and x icons to add or remove conditions.

Style**Style Type**

Set to Background Color.

Color

Select from the following colors: Blue, Green, Magenta, Orange, Purple, Red, Turquoise, or Yellow.

Icon Styles

When you click New with Icon selected (or Edit an existing style for an icon), the Conditional Styles - Styles pop-up window opens, where you can specify conditions for styling the icon for the field's column.

Conditions

In Conditions, for the current field's column, you can specify conditions using any of the fields on the grid. You can specify multiple conditions for the current field's column by clicking the **+** icon (and remove a condition by clicking the **x** icon), in the same way that you specify browse search conditions.

Field

From the drop-down listing the available fields for the grid, select a field that you want to use to create a condition.

Operator

From the drop-down, choose:

- equals
- greater than
- greater or equal to
- is not null, is null
- less than
- less or equal to
- contains
- starts with
- ends with
- does not equal
- range

In the adjacent two fields, enter the value(s) for the conditions.

Use the **+** and **x** icons to add or remove conditions.

Style

Style Type

Set to Icon.

Icon

Click Select to open the Select Icon pop-up window that offers many icons to use.

Icon Color

Select from the following colors: Blue, Green, Grey, Magenta, Orange, Purple, Red, Turquoise, or Yellow.

Business Components - Event Handlers**Main****Active**

Indicates whether the event handler is active and will be executed at runtime.

Timing

Select the event handler type. There are three types of event handlers:

- Primary — primary event handler for the corresponding business component. DB value: PRIMARY.
- Pre — runs before the existing application code (TS handler). DB value: BEFORE.
- Post — runs after the existing application code (TS handler). DB value: AFTER.

Applies To

Indicates whether the TS code applies to Web or Mobile App. The default value is Web.

App

Indicates the app name and URI in which the event handler will be created (that is, the current, active app) or is already created.

TypeScript

The code that will be compiled into JavaScript and executed at runtime.

Business Components - Views

For embedded business components with Many-to-one relationships, the Views screen is limited to configuring drill downs only.

Main**View Label**

The label to display for the view.

Type

Select the view type: Hybrid Browse (includes a browse and a form) or Form Only (only includes a form).

The business component's Hybrid Browse view includes the following panels:

- Main
- Browse
- Form
- Drill Downs

The business component's Form Only view includes the following panels:

- Main
- Form

Eligible for Menu

Specifies whether this view is available on the menu (and menu search).

Description

A short description for the view. This field is optional.

App

Indicates the app to which this view belongs.

App URI

Indicates the Uniform Resource Identifier (URI) for the app to which this view belongs.

View URI

Indicates the URI of the view.

Secure URI

Indicates the URI for security and menu linking.

Options**Allow New**

When selected, the New button is displayed at runtime with drill downs and the + icon.

Allow Edit

When selected, the Save and Cancel buttons are displayed at runtime and you can edit the records. If you clear the checkbox, the Save and Cancel buttons are removed, and the Edit button changes to Open.

Allow Delete

When selected, the Delete button is displayed at runtime, which allows users to delete records.

Mobile App Compatibility

Specifies whether mobile support is enabled for this business component. This functionality is available for the Hybrid Browse views only and includes the following options:

- None — Completely turns off a business component view on a mobile device. This option is only recommended if the business component view is completely unusable on mobile devices. For example, Kanban Loop Status Display in QAD Demand and Delivery has one column with many icons (cards) displayed side-by-side; it is unreadable on mobile devices because the card icons are not supported and display as text.
- Browse Only — Displays only the browse on a mobile device. Use it for Customer/Supplier Activity Dashboards, for example.
- Browse & Read-only Form — Displays both the browse and form of a hybrid browse on a mobile device. Note that the form is in View mode (no Create, Edit, or Delete options).
- Full — Allows full access on a mobile device, including all CRUD functionality and actions. (Only actions, for which the TS is mobile-enabled, will display.) This option is only recommended for hybrid views, where the TS is fully supported on a mobile device or there is no TS required.

Note that Form Only Views, Reports, and Action Centers are not accessible on mobile devices.

Browse

Include settings for the hybrid browse view.

Business Component Browse

Specifies whether the hybrid browse is based on a business component or is a standard browse.

Browse

Specifies the standard browse for this hybrid browse. Click Select to choose a standard browse. This field is displayed only if Business Component Browse is not selected.

Browse URI

The URI of the browse.

View Customizer

Specifies a Java resource that applies view metadata changes before the browse is rendered (example: `com.qad.acme.mvc.CustomerBrowseViewCustomizer`).

View Browse Query

Provides visibility into the SQL query used to execute the business component browse so that you can better understand how the browse is defined and work with end users to explain the browse data displayed and clarify the end users' data expectations. This field is displayed only if the Business Component Browse checkbox is selected. When you click the View Browse Query button, the Browse Query pop-up window opens with the SQL statement. Only the fields that are selected in the browse's Columns grid are included in the query statement. JOIN appears if you create a business component browse with related fields.

- Inner Join — Only includes records where the joined fields from tables are equal.
- Left Outer Join — Includes all records from the left table and only those records from the right table where the fields are equal.

Browse query is in read-only mode. It is provided only for the visualization of the SQL and is not intended for entering the SQL manually.

You can copy the SQL query and run it from other applications to see the result table.

Field Mapping

This panel is displayed if you are working with a standard browse.

Mapping grid for mapping form key fields with browse key fields, with following columns:

Form Key Field

Specifies the key field of the form.

Browse Column

Specifies the corresponding key field on the browse.

Fields

This panel is displayed if you are working with a business component browse.

The grid lists the browse columns, initially including all the business component fields, which are added to the Form. For optimal performance, select 50 or fewer columns. When the browse is run, only the first 20 columns appear by default. Additional columns will be hidden.

You can remove columns by clearing the checkbox for each corresponding field. New additional fields can be added by using the +Select button.

+Select

Add browse columns from the current or related business components. When you click the +Select button, the Select Relationship pop-up window opens. When you expand the relationship, it shows the relationships up to four levels. You can select the relationship you need, click Continue, and then in the Select Fields pop-up window, add columns/fields from this relationship.

You can add the [Exists] column to a business component browse indicating whether or not one or more records from a related table exist. For example, while on the customer browse, indicate whether sales orders exist for that customer. The field name is "Exists for (relationship name)", but you can edit it. It is a logical field.

New Conditional Field

Add a new conditional column to the BC browse. Conditional columns display data based on conditions. Click New Conditional Field, and then set the values on the Main panel if needed. Leave the fields blank to default from the first condition.

On the Conditions panel, click New to open the Select Relationship pop-up window to first select a relationship, and then select a field from that relationship. After you add the first field to the Conditions grid, the Fields lookup to select additional fields is filtered by the data type of the first field. All conditions must use the same data type. Also, you cannot use the same relationship for multiple conditions.

In the Order column, the number increments automatically as you add conditions. The condition order must be sequential starting from 1. You can also edit the condition order manually.

Edit Conditional Field

Opens the Edit Conditional Field pop-up window where you can modify an existing conditional field of the BC browse.

Configure Joins

When adding fields to a BC browse from a related business component, you can change the join type: Left Outer or Inner. The default value is Left Outer. Clicking the Configure Joins button opens a pop-up window with a Browse Relationships grid to configure the join types for each unique relationship path from the browse. The joins are based on the BC relationships (relationships between two business components).

- An inner join only shows rows if there is a matching record on the other (right) side of the join.

- A left outer join shows rows for each record on the left-hand side, even if there are no matching rows on the other (right) side of the join. If there is no matching row, the columns for the other (right) side show NULLs.

You can view the configured joins in the Views > Browse > View Browse Query pop-up window.

The Configure Joins button is disabled if there are no fields from relationships included in the browse.

Select

If the checkbox is clear, the field is completely removed from the browse—from the columns and from the search, and it is not returned in JSON result.

Field Label

The label name for this field. The label defaults from the business component field label, but you can edit it to create a browse-specific field label. It is useful when there are fields with the same label (from different relationships). To revert a field's label back to its business component field label, blank out the label. If the label is edited in the design layout, you cannot change it here. The label provided in the design layout takes precedence over the browse-specific property or business component properties.

Display Label

The display label for this field.

Sortable

Specifies whether the browse column is sortable. Each field marked as sortable in a business component browse definition has a sort indicator. For a high-volume browse (based on a high-volume table), all fields are not sortable, except for the primary key fields. Otherwise, all fields are sortable. The Sortable column is always disabled and is visible for informational purposes only.

Some tables have lots of records, and performance on these browses can be slow. For such high-volume tables, the following search and sort restrictions are applied to the business component browse to avoid potentially bad sort performance:

- Sorting is restricted to a single column at a time. Multi-column sorting is not available.
- Fields are only sortable if the field is the first or second field in a DB index.
- The quick search is only allowed on sortable fields, except when the quick search is set by a stored view. The quick search normally applies to the first searchable column in the browse. If the first column is not sortable, then the quick search is switched

to the first sortable column. If there are no sortable fields in the browse, then the quick search will remain with the first column.

Conditional

Specifies whether the browse column is conditional.

Hidden from Columns

If the checkbox is selected, the field is available on the search panel and hidden from the UI (browse columns and configure columns gear). The field is still available in JSON, which is important when the field is required from technical reasons.

Hidden from Search

If the checkbox is selected, the field is removed from the search criteria, but it is available in the browse columns. The field is still available in JSON, which is important when the field is required from technical reasons.

Note If Hidden from UI is selected under Business Component > Fields, the Hidden from Columns and Hidden from Search checkboxes are selected and disabled.

Initial Sort

This panel is displayed if you are working with a business component browse.

It provides the ability to set the initial (default) sorting for a business component browse as well as the order and direction of that sorting.

Note The Hidden from Columns fields are not available for default sorting.

If a stored view is applied, the sorting of the stored view takes precedence over the default sorting.

Field

Opens a lookup to a Sortable Fields browse with all sortable BC browse fields and their index information, if any. In the Sortable Fields browse, fields are grouped by indexes. Only index fields from active indexes are available here.

Display Label

Specifies the business component field's display label. (This field is read-only.)

Order

Specifies the field sorting order in the browse. The field sorting order is unique and must be consecutive.

Direction

Specifies whether the field sorting is ascending or descending.

Warning

Provides a warning when you select a field that may cause performance degradation. For example, fields that are not indexed can lead to performance degradation.

Business Component

Specifies the business component the field belongs to. (This field is read-only.)

Physical Table

Specifies the physical table the field belongs to. (This field is read-only.)

Relationship Path

Specifies the relationship path for a field. (This field is read-only.)

Column Order

This panel is displayed if you are working with a business component browse.

By default, the browse column order is based on the order of appearance of the fields on the form. However, depending on your requirements, the first field that displays on the form might not be the best choice for the first column in the browse (and so on).

Click Configure to preview and configure the browse column order. In the Configure Column Order pop-up window, you can drag and drop columns to configure the column order.

Predefined Search Criteria

This panel is displayed if you are working with a business component browse.

It provides the ability to define complex filter logic for views by using AND and OR operators, as well as hide browse filters so that they are not exposed to the users.

When creating or editing the view, you must first save the view before you can update the predefined search criteria. The predefined search criteria are disabled until you save the view. Note that you cannot remove the browse columns that are used in the predefined search criteria.

For example, you can add the following predefined search criteria: "Opportunity.Owner equals Current User". Click Include Field to select fields, click Include Operator to select an operator to apply to the field, and click Include Variable to select a date variable, and so on. Note that Fiscal Date Variables are available if Fiscal Calendar is installed in the system. Click Check Syntax to validate the syntax of your search criteria. The added search filter is visible in the advanced search under the Predefined Criteria menu if enabled.

Show in Advanced Search

Specifies whether the predefined search criteria are visible to the users in the advanced search.

TS Handlers

Specifies TypeScript (TS) handlers located on the server.

This panel is for adding coded Browse TS handlers. These TS handlers should exist on the server in .js files.

Actions

Specifies bulk or individual actions that can be included as part of this Hybrid Browse view. The actions then become available from the Hybrid Browse view's Actions drop-down.

The action itself can currently only be written in standard code.

To add a new action, click New and complete the new row in the grid.

Type

The type of action: Bulk or Individual.

ID

The unique identifier for the action.

Action Label

The display label for the action. This value for this label is displayed in the Actions drop-down.

Secure URI

The URI for the action's resource, typically starting with the format `urn:view:maint:com.qad.com.*`.

Required Permission

The access permission required for the action (example: Read).

Form**View Customizer**

Specifies a Java resource that applies view metadata changes before the form is rendered (example: `com.qad.erp.base.mvc.ViewCustomizer`). This applies only to coded business components.

Uses Domain

Specifies whether to use the current domain.

Resource URL Prefix

Specifies resource URL prefix, such as "erp".

Data Resource

Specifies data resource. Typically this is in camel-case format (example: salesOrders).

Table

Specifies a database table.

TS Handlers

Specifies coded form TypeScript (TS) handlers located on the server.

These TS handlers should exist on the server in .js files.

Vertical Menu

When an insight or a drill down is dependent on a resource (KPI visual or browse) that does not exist in the current environment and cannot be found, it is removed from the Insights/Drill Downs grid.

Activity Panel

Specifies whether this view includes an Activity panel. With the Activity panel, you can see a history of transactions and follow the things you care about most.

Attachments Panel

Specifies whether this view includes an Attachments panel. With the Attachments panel, you can attach files to views to keep relevant documents together for a particular transaction.

Drill Downs

Specifies the drill downs for this Hybrid Browse view.

Note Currently, the Views screen only supports Hybrid Browse and Form Only views. It does not yet support Browse Only views. Because configuring Browse Only views are not yet supported by the Views screen, note that it is not yet possible to specify drill downs for Browse Only views using this Drill Downs panel on the Views screen.

The grid displays a list of the drill downs. You can add, modify, or delete drill downs using the Drill Downs panel.

When a drill down is dependent on a resource that does not exist in the current environment and cannot be found, you can see a warning icon in the Drill Downs grid. To resolve this warning, delete the drill down or import a missing resource. Not found drill downs are hidden at runtime.

Insights

Specifies the insights for this Hybrid Browse view.

Note Currently, the Views screen only supports Hybrid Browse and Form Only views. It does not yet support Browse Only views. Because configuring Browse Only views are not yet supported by the Views

screen, note that it is not yet possible to specify insights for Browse Only views using this Insights panel on the Views screen.

The grid displays a list of the insights. You can add, modify, delete, or move insights using the Insights panel.

When an insight is dependent on a resource that does not exist in the current environment and cannot be found, you can see a warning icon in the Insights grid. To resolve this warning, delete the insight or import a missing KPI visual. Not found insights are hidden at runtime.

Business Components - Drill Downs

From the Drill Downs pop-up window, you can add, modify, or delete drill downs. The following drill down types are available:

- **Business Component Relationship** — The drill downs that are generated automatically when Business Component relationships are defined, including lookups. This applies to both coded and platform business components.
- **.NET UI - Browse Based** — The legacy .NET UI drill downs that exist in the .NET UI today and will only be present for coded business components.
- **User Added - Business Component Based** — The drill downs that are added using the entity metadata for the drill down definition, mapping, and conditions. These are the drill downs that are manually added starting with the March 2020 release.
- **User Added - Browse Based** — The drill downs that are added using the browse metadata for the drill down definition, mapping, and conditions. These are the drill downs that are manually added prior to the March 2020 release.

You can view the drill down type in the Views > Drill Downs panel > Generated From column and in the Drill Downs detail pop-up window.

Main

Drill Down From

Select whether to drill down from the browse & form, the form, or the grid of the business component. When you select a different Drill Down From element, the existing field mappings and additional conditions are deleted.

Some grids have a Linked View defined as part of the grid definition (external grids—always, internal grids—sometimes). For these grids, open the Linked View to configure drill downs.

Drill Down To

You can have the drill down go to a Hybrid Browse, Browse Only, Report, or External Link.

The Report type drill downs do not require field mappings.

Note If you choose the External Link type, you will need to enter a link template to the external site on the URL panel. If you select the Modal Window option from the Open In drop-down menu, then the same-origin mechanism will be applied. In case the external resource does not allow to be opened in iframe, at runtime you will see an empty modal window.

Drill Down Browse

(Displayed if Drill Down To is set to Hybrid Browse or Browse Only.)

- Hybrid Browse — Specifies the hybrid browse for the drill down. Click Select to open the Resource pop-up window, from which you can select a hybrid browse. Note that the URI for hybrid browses uses the format `urn:view:hybridbrowse:*`.
- Browse Only — Specifies the browse only for the drill down. Click Select to open the Resource pop-up window, from which you can select a browse. Note that the URI for browses only uses the format `urn:browse:*`.

Drill Down Report

(Displayed if Drill Down To is set to Report.) Specifies the report for the drill down. Click Select to open the Resource pop-up window, from which you can select a report. Note that the URI for report uses the format `urn:report:*`.

Use Existing Label

Select whether to use the existing display label for the hybrid browse, browse only, or report. Clear the checkbox to choose a different label.

Drill Down Label

(Displayed if Use Existing Label is not selected.) Use the lookup to open the Labels pop-up window and select a different label.

Visible

Select this checkbox to make the drill down visible at runtime.

Field Mapping

This panel includes the grid to map drill down browse fields with source business component fields.

Drill Down Field

Specifies the field to which you want to map the drill down.

Operator

Shows a drop-down menu with available operators based on the selected Drill Down Field.

Source Field

Specifies the field from which you want to map the drill down.

Source Field 2

Specifies the second source field for range operators when the first Source Field is a range type. This source field is disabled for all other operator selections.

Primary

The primary field drives the drill down order. Select one field as the primary field for the drill down.

Additional Conditions

This panel is optional and includes the additional conditions for the hardcoded values and search variables of drill down fields.

Drill Down Field

Specifies the field to which you want to map the drill down.

Operator

Shows a drop-down menu with available operators based on the selected Drill Down Field.

Value

Specifies the hardcoded value or the search variable.

Search variables are the values such as Today or Current User.

Toggle

Click the toggle icon to switch between a hardcoded value and a search variable.

Search variables are available for the Integer/Integer (64-bit), Character, and Date (date, datetime, datetime-tz) fields.

Value 2

Specifies the second value for range operators when the first Value is a range type. This value is disabled for all other operator selections.

Business Components - Insights

From Views > Insights, you can set up the Insights panel, including KPI links. Here, you can add, modify, delete insights, as well as move them up or down.

Insights provide key visuals about a record (for example, a sales order or a customer) to make quick and informed decisions. The Insights panel, you configure here, contains visuals created through the action center/ analytics functionality. Instead of going to a particular action center, users will be able to access visuals directly from the Insights panel.

Main**KPI Visual**

Open a lookup to the existing KPI visuals in the KPI Visual Gallery, where you can search for the required visual. The visual URN is displayed to the right of the Select button.

Use Existing Label

Select whether to use the existing display label for the visual. Clear the checkbox to choose a different label.

Label

(Displayed if Use Existing Label is not selected.) Use the lookup to open the Labels pop-up window and select a different label.

Field Mapping

This panel includes the grid to map KPI browse fields with source business component fields.

KPI Field

Specifies the field from the KPI visual definition.

Operator

Shows a drop-down menu with available operators based on the selected KPI Field.

Source Field

Specifies the field from the source business component.

Source Field 2

Specifies the second source field for range operators when the first Source Field is a range type. This source field is disabled for all other operator selections.

Logging Options

With Logging Options, you can set specific logging levels for Java and Progress code for the current user session.

Logging Options includes the ability to set up a Correlation ID marker, which will then be present in the Java and Progress logs so that we can correlate Java and Progress logs related to the current user session. When users sign off from the Web UI, those settings are then gone; if they log in again, they will get the default logging settings

Logging**Correlation ID**

A marker that you can set and then search for this marker in the logs to identify the logs from the current session.

Java Log Level

Specify the log level (info, warning, and so on) for Java logging.

QRA Application Log Level

Specify the log level for QRA application logging.

Progress Log Level

Specify the Progress log level. For more information, see [Progress OpenEdge Logging Level](#).

Progress Stack Trace

Turn the Progress stack trace on or off.

Progress Log Entry Types

Set additional log entry types of Progress logs, which can be switched on or off by selecting each checkbox. Typically, 4GLTrace is selected.

For more information, see [Progress OpenEdge Log Entry Types](#).

Configuration Data Overview

The Configuration Data functionality, also called Platform Environment Configuration (PEC), allows users to store environment-dependent artifacts and active settings into a format that can be easily maintained, exported, and imported across environments, without needing to go through the Cloud. Previously, all artifacts could only be saved to an app and were forced to go through the Software Development Life Cycle (SDLC) process. In the September 2021 release, you can also save artifacts as part of Configuration Data.

There are two types of Configuration Data: Artifacts and Active Settings.

The **Artifact** is the specification of a physical piece of information that is used or produced by a software development process, or by deployment and operation of a system. In the QAD Enterprise Platform, examples of artifacts include: Design Layout, Activity Tracking, Alert, Action Center, Stored View, Theme.

Active Settings determine which artifacts are active at runtime in the specific environment. Examples of active settings include: Active Design Layout, Active Stored View, Default Stored View, Active Theme, Theme Context.

The Configuration Data functionality applies to the following users:

- Administrators migrating Configuration Data from environment to environment.
- Platform developers creating Configuration Data in conjunction with apps they are developing.

- QAD partners and implementation consultants, configuring artifact templates that can be installed and used as part of Adaptive UX conversions and initial implementations.

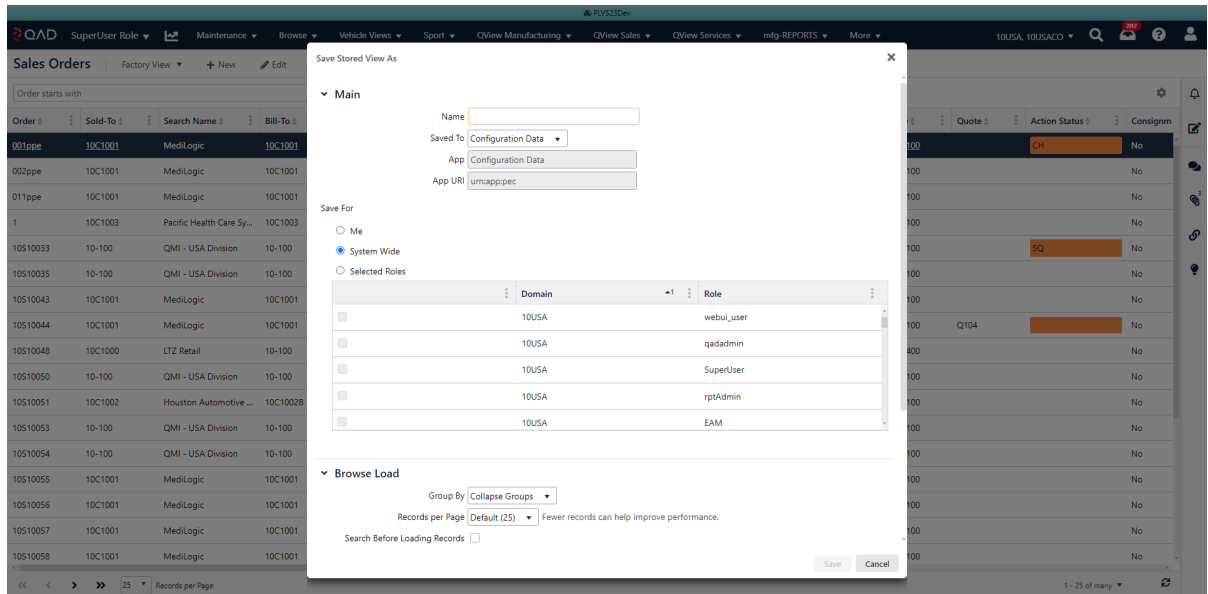
App Data vs. Configuration Data

The goal of Configuration Data is to allow customers, administrators, QAD, and partners to easily import and export their Adaptive UX artifacts and active settings from one environment to another. Configuration Data also makes a distinction between a development environment and a test or production environment. Many of the artifacts can be both app artifacts and Configuration Data. App artifacts can only be created and maintained in a development environment and are forced to go through the SDLC process. Configuration Data is more flexible and can be created and maintained in any type of environment. That way the SDLC process for development is followed and only Configuration Data is modified in Test and Prod.

App Data	Configuration Data
BUILD: building extensions and app store solutions	CONFIGURE: configuration for business needs
Needs to go through the SDLC	Does not need to go through the SDLC
Users: QAD and partners, some customer developers	Users: customers, BAs
Used to create and expand the Adaptive UX	Used to configure or personalize the Adaptive UX according to customer's unique business needs

In a development environment, artifacts contain the **Saved To** drop-down menu, where you can choose to save your data to App Data or Configuration Data. Some artifacts can only be saved to Configuration Data. See the table below.

- App Data. The data is saved to the user's Active App set in My Developer Settings and displays the active app name and the corresponding App URI.
- Configuration Data. The data is saved to Configuration Data and displays Configuration Data as the app and the corresponding Configuration Data URI.



A) Saved To App Data Only	B) Saved To Configuration Data Only	C) Saved To App Data or Configuration Data
Artifacts that can only be saved in an app. Examples: business components, lookup definitions.	Activity Tracking, Alert	Design Layout
	System/User Import Template	User, Role, and System Stored View
	System/Domain Field Property Overrides	Theme
	Role, Menu, & Permissions	Theme Workspace
	Action Center (*), KPI	Notification Template
	Translation Detail/Override	Notification Template Message
	Active Settings (Active Design Layout, Active Stored View, Default Stored View, Active Theme, Theme Context, Active Notification Template Message)	Translation String & Details

(*) In development environments, you can still associate an action center with an app so that it is part of the package and load procedure for moving App Data between environments. The Origin App URI field in the Action Centers view allows you to do this.

My Developer Settings

Under My Developer Settings, you can choose to save all new artifacts to Configuration Data as default in a development environment. When you select this option, the Saved To drop-down menus in the Web UI will default to Configuration Data rather than the App Data. You can still change it to App Data if required.

Many users who are creating business components will be simultaneously creating Configuration Data (for example, going back and forth between the new business component and a design layout for the created business component). By selecting the **Save new artifacts to Configuration Data as default** checkbox, you do not have to constantly set your active app settings. The Configuration Data will not be the active app, but new artifacts will be saved to Configuration Data rather than the App Data by default.

Changes to Dev/Test/Prod Environments

In a development environment, you can save artifacts as App Data or Configuration Data (if applicable). And in Test or Prod, you can only save artifacts as Configuration Data.

Artifacts saved as App Data can only be maintained in a development environment whereas artifacts saved as Configuration Data are more flexible and can be maintained in any type of environment. Design Layouts and other artifacts are editable in Test/Prod if they are in Configuration Data. There may be Design Layouts, Stored Views, Themes, KPIs, and Action Centers that come from an app in a Test/Prod environment (QAD-owned data or third-party apps, for example). Those will not be editable but most have the ability to Save As or Copy.

Note You can view the environment type in the environment.xml file.

Dev environment

Everything is enabled on the UI. You can save artifacts mentioned in Column C from the table above as App Data or Configuration Data.

Test and Prod environments

Everything from Column A and everything mentioned in Column C that is saved as App Data is disabled in Test and Prod. In addition, the following screens are meant for development only, and they are disabled in Test and Prod:

- Apps
- Data Stores

- My Developer Settings

You can edit everything from Column B and everything mentioned in Column C that is saved as Configuration Data.

Most of the non-editable artifacts have the ability to Save As or Copy. You can use these options to create a copy of the artifact and edit it in Configuration Data.

Configuration Data

With the Configuration Data view, you can import, export, and maintain artifacts and active settings.

When users have access to the Configuration Data screen and import/export actions, they implicitly have rights to view the list of all artifacts.

Main

All fields on this panel are disabled and are for viewing only.

Type

The type of configuration data: Artifact or Active Setting.

Artifact

The category of Artifact or Active Setting, such as Design Layout, KPI, Theme, Alert, Active Design Layout, and Default Stored View.

Label

The label that is defined for the configuration data.

Business Component

The label of the business component associated with the configuration data. For example, it is helpful when you have two design layouts with the same name. You can identify the design layout you need.

View

The view label associated with the configuration data. For example, it is helpful when you have two design layouts with the same name. You can identify the design layout you need.

Status

The status of configuration data: Active or Inactive.

Date Created

The date the configuration data is created.

Created By

The ID of the user who created the configuration data.

Last Modified

The date the configuration data was last edited.

Last Modified By

The ID of the user who last edited the configuration data.

Configuration Data Export and Import

With the Configuration Data view, you can import, export, and maintain artifacts and active settings. Artifacts and active settings that are stored in Configuration Data can be exported from a source environment and imported into a target environment.

Exporting Configuration Data

You can export configuration data under Configuration Data > Actions > Export Configuration Data.

Records can be pre-searched before export to limit the export to only certain records.

Main**Export File Name**

Specify the ZIP file name that will be downloaded in your web browser when you click Submit. The automatically generated name of the ZIP file is based on the date and time that the ZIP file is generated; for example, Export_Config_Data_2021_7_20.zip.

Criteria**Criteria**

Shows any browse search criteria that you have applied (disabled).

Artifacts Returned

Shows the number of records returned according to the search criteria (disabled).

Export Artifacts

The grid shows all records for export according to the search criteria. You can remove records by clearing the checkbox for each corresponding artifact.

When you click Submit, the system starts to export data to the file, running in the background. You will receive a notification in the Inbox when the export is completed, and you can then click the Download link in the notification to download the file. You can also check for any export issues under Background Processing. The export process may take some time when there is a large amount of data.

Importing Configuration Data

You can import configuration data under Configuration Data > Actions > Import Configuration Data.

Main

Choose File

Click Choose File to navigate to the ZIP file containing the configuration data that you previously exported. Alternatively, drag the ZIP file directly into the area that is surrounded by a broken line.

The ZIP file is validated for correct formatting and missing, corrupted, or incompatible artifacts. If the import file is incorrectly formatted or contains broken artifacts, you can see the Invalid Artifacts dialog. The Invalid Artifacts dialog shows the number of invalid artifacts and all error messages received after the validation process. You can copy all error messages by using the Copy button. Invalid artifacts cannot be imported, but you can still proceed with valid artifacts. Click OK to continue with the upload process without invalid artifacts. You can also view the error messages by clicking the messages icon on the right side of the view.

File

Shows the ZIP file name that is uploaded for import (disabled).

Import Artifacts

This panel is shown after choosing the import file. The file is now uploaded, but not yet imported into the database. The grid shows all records for import according to the selected file. You can preview the records here and remove them if needed by clearing the checkbox for each corresponding artifact.

When you click Submit, the system starts to import the data into the system, running in the background. You will receive a notification in the Inbox when the import is completed, and you can then click the link to check for any import issues under [Background Processing](#). You can also view conflicts and missing dependencies and resolve them by using [Artifact Conflicts on page 298](#). The import process may take some time when there is a large amount of data.

After import, the corresponding configuration data is updated. In case of importing Menus & Role Permissions, the system replaces the data rather than updates it so you do not have to worry about existing permissions or menus being merged in unexpected ways that will require cleanup or review.

Processing Options

Process in Background

Indicates that the import task is run as a background process, and the process is submitted after you click the Submit button.

Under [Background Processing](#), you can view a list of imported artifacts, their import status, and warning messages if any. It also includes the importing user, date, and time.

Export and Import Tips

- You can export and import an active setting if you want the same active setting configuration in the target environment. For example, create a new design layout and make it active in Test → export and import both a design layout artifact and active setting to Prod → after import, a new design layout is available and set as the active layout.
- Currently, import rollback is not yet supported. Any existing artifacts will be overwritten with the imported version of the artifact. Take your own backup before the import if you are concerned.
- Exporting action centers/KPIs from an environment with Logi Platform Services to import them into a Logi Composer environment does not work (nor the other way around).
- Exporting a design layout with Entity or Site scope to import it into the March 2023 environment or earlier does not work.

Exporting and Importing Configuration Data

To export configuration data from a source environment and import it into a target environment, do the following:

Before you import or export configuration data on the Configuration Data screen, disable segregation of duties. When the import or export is complete, you can re-enable SOD.

1. Sign in to the environment that you want to export configuration data from.
2. Open the Configuration Data screen from the menu search.
3. Apply the search criteria if you want to export only certain records.
4. From the Actions menu, click Export Configuration Data.
5. In the File field, change the export file name if needed. The Criteria panel shows any browse search criteria that you have applied, along with the number of records returned.
6. On the Export Artifacts panel, review the records you want to export. You can remove records by clearing the checkbox for each corresponding artifact.
7. Click Submit. Results will be sent to your Inbox.
8. Open the Inbox and look for the export notification.
9. In the notification, click the Download link to download the file. The ZIP file is saved in the default folder for your browser downloads.
10. Check for any export issues under [Background Processing](#).
11. Sign in to the environment that you want to import configuration data to.
12. Open the Configuration Data screen from the menu search.
13. From the Actions menu, click Import Configuration Data.

14. Click Choose File to navigate to the ZIP file containing the configuration data that you previously exported from another environment. Alternatively, drag the ZIP file directly into the area that is surrounded by a broken line.
15. Review the invalid artifacts if any, and then click OK to continue without invalid artifacts.
16. On the Import Artifacts panel, review the records you want to import. You can remove records by clearing the checkbox for each corresponding artifact.
17. Click Submit. Note that after import, any duplicate artifacts are replaced by their imported version.
18. Click Continue. Results will be sent to your Inbox.
19. Open the Inbox and look for the import notification.
20. In the notification, click the link to check for any import issues under [Background Processing](#).
21. Open [Artifact Conflicts on page 298](#) to view conflicts and missing dependencies if any and resolve them.

Artifact Conflicts

With the Artifact Conflicts screen, you can search for, review, and resolve artifact conflicts. This screen is available for the following artifacts:

- Design layouts
- Alerts
- KPIs
- System/Domain field property overrides
- Notification templates and notification template messages
- System/User import templates
- Translation String & Details
- Translation Detail/Override

Currently, conflicts include missing dependencies only.

Main

Search for Conflicts

Click to search for existing conflicts. The found conflicts appear in the Conflicts grid. Note that the Conflicts grid is only filled after you click the Search for Conflicts button.

Conflicts

After you click the Search for Conflicts button, the Conflicts grid is filled with a list of any current conflicts.

Artifact

The category of artifact, such as Design Layout or Alert.

Label

The label that is defined for the artifact.

Conflict

The type of conflict, which is currently a missing dependency only.

Resolve Conflicts

Click the Resolve Conflicts button above the Conflicts grid to resolve missing dependencies. The Resolve Conflicts pop-up window appears.

Missing dependency

When an artifact is missing its dependency, you can delete the artifact by using the Delete Artifact button or address the dependency by importing the missing item (for example, importing an app with a missing business component, installing the missing languages/locales in the environment, or creating a user record if a user does not exist).

After resolving the conflict, the orange warning icon is replaced with a green checkmark icon, and you can view the Resolved status in the Conflict column. If you click the Search for Conflicts button again, the resolved artifacts are removed from the Conflicts grid.

No OS Access Developer Model

The No OS Access Developer Model functionality allows creating scripts, creating and packaging developer projects, and packaging apps from the Adaptive UX to eliminate direct OS access, server downtime, and support non-platform supported activities, such as writing OOABL code and editing XML files. Previously, the platform developer model required access to the server OS in order to run yab commands to support typical developer activities that impact the ability of Cloud to support platform development on existing DEV/TEST/PROD environments.

OS Scripts

The OS Scripts view (Development folder > OS Scripts) allows for a script created by the developer to be uploaded to the server and made available to development projects. Initially, only QAD can create scripts, and only Python scripts are supported.

You can only update OS Scripts in development environments. In Test and Production environments, you can still use the Execute Script option. If the API Only checkbox is not selected, you can execute the selected script from the browse or the form. It is possible to execute Server OS scripts only, and you need to have Execute permissions for the script. Under Actions, select Execute Script. When clicked, complete the script arguments if there are any. After filling in arguments and continuing, the script is executed. This creates an execution request, which goes

into a queue to execute. After it is executed, you will receive an Inbox notification with the results of the script and a link to the script details on the OS Script Processing screen.

The following OS scripts are available:

OS Script	Description	Type
activity_feed_update	Update activity feed	Server
compile_app_source_code	Compile app source code	Server
compile_app_source_code	Compile app source code	Client
create_app_metadata_package	Create archive with app metadata	Server
create_app_package	Create yab package for platform app	Server
deploy_app_source_code	Compile and register app code	Server
deploy_app_source_code	Deploy app source code	Client
install_python_packages	Install python packages	Client
undeploy_app_source_code	Unregister app code	Server
undeploy_app_source_code	Undeploy app code	Client
update_app_all	Update app workspace	Client
update_app_metadata	Update app metadata in app workspace	Client
update_app_properties	Update app properties in development project	Client
update_development_project_workspace	Update development project workspace	Client

After running a server script (including the Package App action), the results are sent to your Inbox. If the script output includes a file, the Mini Inbox and Extended Inbox include the Download option to download the script output directly from the Inbox.

Main**OS Script**

Enter a unique name for the script. The name can only contain lowercase alphanumeric characters, underscores, and dashes.

OS Script Label

Enter a label for the script.

Description

Enter a description of the script.

Type

Indicate whether the script is Client or Server.

File

Select the Python file with a script. The file name can only contain lowercase alphanumeric characters, underscores, and dashes.

Category

Select a category of the script: Administration, Development, or Support.

API Only (Server Type Only)

If not selected, you can execute the selected script from the browse or the form by using Actions > Execute Script.

OS Script URI

The unique identifier for the script. By default, this field is based on the namespace, app, and OS Script name.

Secure URI

The unique secure identifier for the script. By default, this field is based on the OS Script URI.

App

The script's app name. By default, it is user's active app set in My Developer Settings.

App URI

The script's app URI. By default, this field is based on the namespace and app.

Namespace

The value of the environment namespace.

Arguments

This panel indicates any arguments to be passed into the script when it is executed.

Argument Name

Enter the name of the argument. The name can only contain lowercase alphanumeric characters, underscores, and dashes.

Argument Label

Enter a label for the argument.

Required

Indicates whether the argument must be entered to execute the script.

Visible

Indicates whether the argument displays when the script is executed.

Read Only

Indicates whether the argument is editable or read-only when the script is executed.

Default Value

Enter a default value for the argument when the script is executed.

OS Script Processing

With the OS Script Processing screen (Development folder > OS Script Processing), you can monitor OS script execution requests as well as use this screen for troubleshooting.

Execution logs are attached to a record. With each completed script request, you can view log files in the attachments panel. If the script output includes a file, it is also included in the attachments panel. For example, the package files for the Package App and Package Project actions are included in the attachments panel. If the OS script processing fails, you can also view the error log files in the attachments panel.

Main**OS Script**

The name of the OS script that was executed.

OS Script URI

The OS script URI that was executed.

Description

The script description.

Status

The status of the script execution. The status includes the following options:

-  Queued
-  Processing
-  Successful
-  Failed

Submitted By

The view label associated with the configuration data. For example, it is helpful when you have two design layouts with the same name. You can identify the design layout you need.

Submitted Date

The date and time when the script execution request was submitted.

Processing Start Date

The date and time when the script execution request started processing.

Processing End Date

The date and time when the script execution request finished processing.

Arguments

Argument Name

The argument name from the script definition.

Argument Label

The argument label from the script definition.

Value

The argument value submitted with the script execution request.

Development Projects

With the Development Projects screen (Development folder > Development Projects), you can define a development project and package it. A development project is a directory on the file system of a developer's PC that has a subdirectory with all the scripts that can be run on the client and with a subfolder for every app that is being developed in that project. The project is linked to one Adaptive UX environment, but an Adaptive UX environment can have multiple projects.

You can only update Development Projects and App Workspaces in development environments. They are not editable in Test and Production environments.

For more information about setting up a development project workspace, see the *QAD Enterprise Platform Developer Guide*.

Main**Development Project**

Enter a unique name for the development project.

Description

Enter a project description.

Adaptive UX URL

The development project URL. By default, it is a current Adaptive UX environment.

App Workspaces

Define the apps available for development in a project.

App

Select the app name from the lookup.

App URI

The app URI, which is based on the selected app.

Namespace

The app's namespace, which is based on the selected app.

Client Scripts

Define all the scripts that can be run on the client.

OS Script

Select the OS script from the lookup. For the required scripts this field is disabled.

OS Script URI

The URI of the OS script (from the OS Scripts screen).

Description

The description of the OS script (from the OS Scripts screen).

Required

Indicates whether the client script is required by the system. If required, it cannot be deleted.

Category

The script's category (from the OS Scripts screen).

App

The script's app (from the OS Scripts screen).

App URI

The script's app URI (from the OS Scripts screen).

Namespace

The script's namespace (from the OS Scripts screen).

App Workspaces Details

Click the Details button on the App Workspaces panel to view the app workspaces details.

Main

App

The app name.

App URI

The app URI, which is based on the selected app.

Namespace

The app's namespace, which is based on the selected app.

Ignore Files

.localmetadata

Enter .localmetadata files, separated by a return character. These are the files that should not be updated when updating the metadata from the server. This is to avoid overwriting the locally modified metadata files by metadata from the server.

Package Projects

You can package a development project under Development Projects > Actions > Package.

File Name

Edit the development project file name if needed. The automatically generated name of the file has the format [projectname_yearmonthdayhhmmss], for example, test_20220304050012.

When you click Submit, the system creates the developer package in the background, but it does not use OS Script Processing. The results are sent to your Inbox. Since the output includes a file, the Mini Inbox and Extended Inbox include the Download option to download the file directly from the Inbox.

Business Document API Documentation

With the Business Document API Documentation screen, you can view API documentation for business documents in the application.

Details about calling a business document can be found in the *QAD Enterprise Platform Developer Guide*.

The Business Document API Documentation screen is accessible from the Development menu. This menu is available to users with either the Developer or QAD Admin roles.

Main

Business Document

The label of the business document.

Business Document URI

The URI of the business document associated with the business component.

Browse URI

The default browse URI that is used when executing the query. The default browse URI is initially set to the browse defined in the view for the business component.

App

Indicates the app for the business document.

App URI

Indicates the uniform resource identifier (URI) for the app.

Open API Documentation

Click to open QAD Swagger in a new window with the API documentation for the related business document.

Testing the API

In Swagger, you can use the Try it out button to test the API. For this, enter parameters and click the Execute button to show your results.

Browse Query

Query REST APIs are available for business documents. The business document REST API supports querying multiple records with the capabilities of filtering, sorting, paging, and returning partial data.

To test the API, click the Try it out button, enter parameters, execute the query, and then view the results. You can view the available queries in the *QAD Enterprise Platform Developer Guide*.

Business Service API Documentation

With the Business Service API Documentation screen, you can view API documentation for business services in the application.

Business services are non-CRUD methods that are exposed as REST APIs for the purpose of integration.

The Business Service API Documentation screen is accessible from the Development menu. This menu is available to users with either the Developer or QAD Admin roles.

Main

Business Service Method

The name of the business service method.

Business Component

The business component the service is related to.

Service URI

The service URI for the business service method.

App

Indicates the app for the business service.

App URI

Indicates the uniform resource identifier (URI) for the app.

Open API Documentation

Click to open QAD Swagger in a new window with the API documentation for the related business service method.

Testing the API

In Swagger, you can use the Try it out button to test the API. For this, enter parameters and click the Execute button to show your results.

Role Permissions

Each business service is a separate resource in the **Role Permissions** view. The services are located in the All Resources > Not In Menu > Integration > External Business Services branch of the resource tree. The Execute permission is required to work with business services. You can specify the Execute permission on the business service component and the individual business service methods—so permissions can be set at two levels. Also, ensure that the necessary permissions are granted to the underlying business components.

Index

A

- Action Centers 10, 184, 227
- API Documentation 305, 306
- App Workspaces 303
- Apps 230
- Artifact Conflicts 298

B

- Business Components 237
- Business Document API Documentation 305
- Business Service API Documentation 306

C

- Configuration Data 181, 182, 213, 214, 220, 290, 294
- Configuration Data Export and Import 295
- CRM Business Development Action Center 16
- CRM Sales Management Action Center 17
- Customer Sales Action Center 22
- Customer Sales Profitability Action Center 23
- Customer Schedules Action Center 20
- Customer Service Action Center 25

D

- Data Store 236
- Development Projects 303

E

- Equipment Analysis Action Center 71
- Equipment Cost Action Center 74
- Export Configuration Data 295

F

- Failure Analysis Action Center 75
- Fixed Asset Management Action Center 40
- Foundation 9
- FSM Depot Repair Action Center 27
- FSM Field Service Action Center 28
- FSM Repair Activity Action Center 30
- FSM RMAs and RTSSs Action Center 32

I

- Import Configuration Data 295
- Indirect Inventory Analysis Action Center 82
- Inventory Contextual Insights Action Center 42
- Inventory Cycle Count Action Center 45
- Inventory Data Health Action Center 48

- Inventory Days on Hand Analysis by Buyer Planner Action Center 51
- Inventory Days on Hand by Product Family Action Center 54
- Inventory Excess and Obsolescence Action Center 58
- Inventory Expired and Expiring Action Center 61
- Inventory Shortages and Scrap Action Center 63
- Inventory Turns Action Center 66
- Inventory Value Action Center 69

K

- Key Performance Indicators 195, 195
- KPI Visuals Gallery 225
- KPIs 195, 195

L

- Logging Options 289
- Logi Composer 10, 181, 182, 213, 214, 220

M

- Maintenance Backlog Action Center 76
- My Developer Settings 235

N

- No OS Access Developer Model 299

O

- OS Scripts 299, 302

P

- Package Project 303
- Planning Stability 148
- Planning Stability Purchased Parts 150
- Platform 230
- PM Compliance Action Center 80
- Predefined QAD KPIs 156
- Production Andon Board Action Center 84
- Production Eff and Util by Prod Line 87
- Production Eff and Util by Work Ctr 91
- Production Material Shortages 94
- Production OEE at a Glance by Prod Line 96
- Production OEE at a Glance by WkCtr 100
- Production OEE by Date by Production Line Action Center 103
- Production OEE by Date by Wrk Ctr Action Center 106
- Production OTIF Action Centers 109
- Project Analysis Action Center 83
- Purchase Price Variance Action Center 127
- Purchasing Commitments and Spending Action Center 116
- Purchasing Data Integrity Action Center 122

- Purchasing Future Spending Action Center 124
- Purchasing Inventory Effectiveness Action Center 125
- Purchasing Receipts Action Center 140
- Purchasing Requisitions Action Center 142, 146
- Purchasing Returns Action Center 145
- Purchasing Supplier Performance Action Center 129
- Purchasing Supply Chain Risk Action Center 137

Q

- Quality Order Status Action Center 155

R

- Revenue and Margin Analysis Action Center 36

T

- TAM Contract Action Center 33
- TAM Promotion Action Center 34
- Treasury Analysis Action Center 38

V

- Visual Builder 220
- Visual Gallery 224
- Visuals 174, 220

W

- Warranty and Contracts Action Center 32