



Infor Distribution Analytics for Birst Development Guide

Version 11.21.4

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Publication Information

Release: Infor Distribution SX.e 11.21.4

Publication Date: August 17, 2021

Document code: sxe_11.21.4_csdbadg_op_en-us

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About this guide

This reference guide provides technical information for programmers and system administrators who maintain and customize Infor Distribution Analytics for Birst content.

Intended audience

This guide is for IT professionals and system administrators who maintain and configure Infor Distribution Analytics for Birst.

Knowledge prerequisites

Review the concepts in this guide before customizing or extending Infor Distribution Analytics for Birst content.

Related documents

You can find these documents in the product documentation section of the Infor Support Portal:

- *Infor Distribution Analytics for Birst Administration Guide*
- *Infor Distribution Analytics for Birst User Guide*
- *Infor Distribution Analytics for Birst Configuration Guide*

Contacting Infor

If you have questions about Infor products, go to Infor Concierge at <https://concierge.infor.com/> and create a support incident.

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Chapter 1: Analytics overview

Infor Distribution Analytics refers to the content of the Infor Birst package available for Distribution SX.e. The application collects the data from Distribution SX.e tables to provide users with strategic and tactical business intelligence by generating measures for analytic data or reports.

This tailored package includes content for these functional business area domains:

- Accounts Payable
- Accounts Receivable
- General Ledger
- Inventory
- Purchasing
- Sales
- Total Warehouse Logistics

Each domain includes reports, dashboards, and KPIs which are described in this document.

Key Performance Indicators (KPIs) provide future-oriented measures, which direct you to critical areas of business performance that may require improvement.

Infor Distribution Analytics for Birst components

This topic describes the components of the Infor Distribution Analytics for Birst Content.

Dashboards

Dashboards enable a single view of several KPIs that are relevant to a specific business process. They present varied information such as summaries, key trends, comparisons, and exceptions through charts and tables with metrics.

The dashboards delivered in the Infor Distribution Analytics content are designed to cover a business process within a single data model in a company, as well as cover a specific topic within a model in the company.

Dashboards are built up by dashlets. A dashlet can be a KPI object, a KPI chart, or any other type of report. A KPI object is usually enhanced with a KPI chart, placed together on a dashboard, which gives the impression of a single object. Color is used to emphasize and group different KPIs together.

Each dashboard is delivered with a set of filters that enables the user to drill in to the data presented in the various reports on the dashboard. Filters based on conformed dimensions are shared across dashboards.

Infor Distribution Analytics also offers a guided ad hoc dashboard over a single model. This exemplifies a dynamic approach to reporting where a selection of measures and attributes are available in different filters.

These dashboards are available in the Consumer space:

- Home collection
 - Infor CloudSuite Distribution
 - Guided Navigation
- Infor Distribution Analytics
 - KPI
- Sales
 - Sales Analysis
 - Sales Analysis Summary
 - Sales Summary
 - Sales Detail
 - Fill Rate Analysis
 - Fill Rate Summary
 - Fill Rate Detail
 - Sales Manager Dashboard
 - Sales Interactive Table
 - Sales Interactive Detail
 - Sales by Sales Rep
 - Sales Interactive Cross-Tab
 - Sales Interactive Mix
 - Sales Interactive Ranking
 - Sales to Budget
 - Sales to Budget Detail
 - Customer Scorecard Analysis
 - Customer Scorecard
 - Download Budget File
- Purchase
 - Purchase Analysis
 - Purchase Analysis Summary
 - Purchase Order Summary
 - Purchase Order Detail
 - Vendor Fill Rate Analysis
 - Vendor Fill Rate Summary

- Vendor Fill Rate Detail
- Purchase Order Interactive Table
- Purchase Order Interactive Detail
- Purchase Interactive Cross-Tab
- Purchase Interactive Mix
- Purchase Order Interactive Ranking
- Inventory
 - Inventory Turnover Monthly
 - Inventory Analysis
 - Inventory Summary
 - Usage & Hits
 - Usage & Hits Summary
 - Usage & Hits Detail
 - Inventory Interactive Detail
 - Inventory Interactive Cross-Tab
 - Inventory Interactive Mix
 - Inventory Interactive Ranking
- Accounts Receivable
 - AR Analysis
 - AR Dashboard
 - Sales and Receivable Analysis
 - AR Transaction Summary
 - AR Transaction Detail
 - AR Aging Summary
 - AR Interactive Table
 - AR Interactive Cross-Tab
 - AR Aging Detail
 - AR Interactive Mix
 - AR Interactive Ranking
- Accounts Payable
 - AP Analysis
 - AP Dashboard
 - Purchasing and Payment Analysis
 - AP Transaction Summary
 - AP Transaction Detail
 - AP Aging Summary
 - AP Aging Detail
 - AP Interactive Table
 - AP Interactive Cross-Tab
 - AP Interactive Ranking
 - AP Interactive Mix
- General Ledger
 - General Ledger Analysis

- General Ledger Balance Sheet Analysis
- General Ledger Balance Sheet KPI Analysis
- General Ledger Balance Ratio KPI Analysis
- General Ledger Balance Sheet Summary Analysis
- General Ledger Balance Sheet
- General Ledger Balance Sheet Details
- General Ledger Income Statement Analysis
- General Ledger Income Statement KPI Analysis
- General Ledger Income Statement KPI Ratio Analysis
- General Ledger Income Statement Summary Analysis
- General Ledger Income Statement
- General Ledger Income Statement Details
- General Ledger Trial Balance Report
- General Ledger Account Mapping File Downloads
- General Ledger Default Hierarchy Display
- General Ledger Current Hierarchy Display
- Guided Adhoc
 - Sales
 - Purchasing
 - Inventory Control
 - General Ledger
 - Accounts Receivable
 - Accounts Payable
- Total Warehouse Logistics
 - Productivity Analysis
 - Productivity Summary Analysis
 - Productivity Summary
 - Productivity Detail
 - Employee Activity Summary
 - Employee Activity Detail
 - Picking Analysis
 - Put Away Analysis
 - Receiving Analysis
 - Cycle Count Analysis
 - Pick to Pack-Pick to Tote Summary
 - TWL CSD Detail

Reports

Infor Distribution Analytics content provides reports that display a trend for a single KPI, and reports that allow the user to analyze one or several metrics in a chart or a table. Reports showing a trend for

a single KPI are referred to as KPI charts and are designed to be used with a dark background. Reports are named according to the displayed KPI and display trend over a month or period.

Distribution Analytics leverages Birst column selectors for attributes and measures to add flexibility and additional options for analysis.

The reports included in Distribution Analytics may cover these topic areas:

- Accounts Payable
Open balances, late payments, purchases over selected periods, top vendors
- Accounts Receivable
Open customer balances, payments over selected periods, late payments, top customers
- General Ledger
Balance sheet and income statement KPI analysis and details
- Inventory
Total hits, 12-month turns, inventory summary, usage and hits analysis
- Purchasing
Purchasing analysis, purchase order summary, vendor fill rate
- Sales
Total revenues, profit, and margins, top customers by sales, sales trends, fill rates, sales manager and salesrep reports
- Total Warehouse Logistics
Productivity, picking, receiving, put away, and cycle count analysis, and warehouse productivity and employee productivity summary and detail

Prerequisites and related software components

CloudSuite Distribution Analytics and Infor Birst are deployed for you in the cloud by the Infor Cloud team.

Administrative tasks

After you configure Distribution SX.e and Birst and complete the initial data load, there are administration tasks that must be completed to utilize the full features of the integration. These administration tasks are covered in the *Infor Distribution Analytics for Birst Administration Guide*.

Understanding content space classes

These are space classes for Infor-delivered content for Birst. Each tenant is provisioned with at least two spaces. These are the content application space classes that are available for each tenant:

- Raw Data Source space
- Conformed space
- Model spaces for AR, AP, Sales, Inventory, Purchasing, and GL
- Consumer space

Consumer space

The Consumer space contains reporting content, for example, reports, visualizations, dashboards, and custom subject areas. Consumer spaces do not contain any data but use the data from one or more model spaces.

When new versions of content are delivered by Infor, the Consumer space is updated by replacing the Infor-created content.

These are the dashboards included in the Consumer Space delivered with the Infor Distribution Analytics content:

- Home
- Infor Distribution Analytics
- Sales
- Purchasing
- Inventory Control
- Accounts Receivable
- Accounts Payable
- General Ledger
- Total Warehouse Logistics
- Guided Adhoc

Source spaces

Source spaces contain the raw data sources typically coming from the ERP. As new versions of the content are released by Infor, these spaces are updated.

These spaces contain only data that has changed since the last load. This data is not directly accessible by reports and dashboards. Additionally, the data is typically transformed when loaded into a model space and combined with data that has been previously loaded.

Only analytic solutions have source spaces. Operational reporting solutions connect directly to their data source from the model spaces.

Conformed Dimension space

The Conformed Dimension space contains the data modeling of only common dimensions used across all model spaces. The data models relate to almost every fact table. The Conformed space is processed after the source spaces and before other model spaces. The content of the Conformed Dimension space is accessed by all model spaces and the Consumer space.

Model spaces

Model spaces contain transformed data, including facts and dimensions.

If you load data into Birst from the Infor Data Lake or other sources, the model spaces contain all the data loaded over time. The data is in a structure suitable for analytics. As new versions of the content are released by Infor, the model spaces are updated.

These are the model spaces include in the Infor Distribution Analytics content:

- CSD-Model-AP
- CSD-Model-AR
- CSD-Model-GL
- CSD-Model-IC
- CSD-Model-Purchase
- CSD-Model-Sales

Each model space contains a data model of facts and dimension tables specific to that domain.

The connections for an operational reporting solution that accesses a database directly are defined in the model spaces.

The data in the model spaces can be used in other spaces with Birst Network BI functionality. For example, conformed dimensions are linked to facts from other spaces. Then both are used in consumer spaces on reports.

Extension spaces

An extension space is a source space that contains a generic source for extending Infor-provided dimensions. Scripts can be added to this space that populate this source which are then added to the Infor dimensions.

See [Extending content](#) on page 18.

Customer spaces

With Birst Enterprise, you can load your own data that can be integrated into the Infor-provided content with some limitations. If additional fact tables are needed, then you can create your own source and/or model spaces.

See [Extending content](#) on page 18 for information on customizing content.

Chapter 2: Infor Distribution Analytics for Birst topology and data flows

This section includes information on Infor Distribution Analytics topology and data flows.

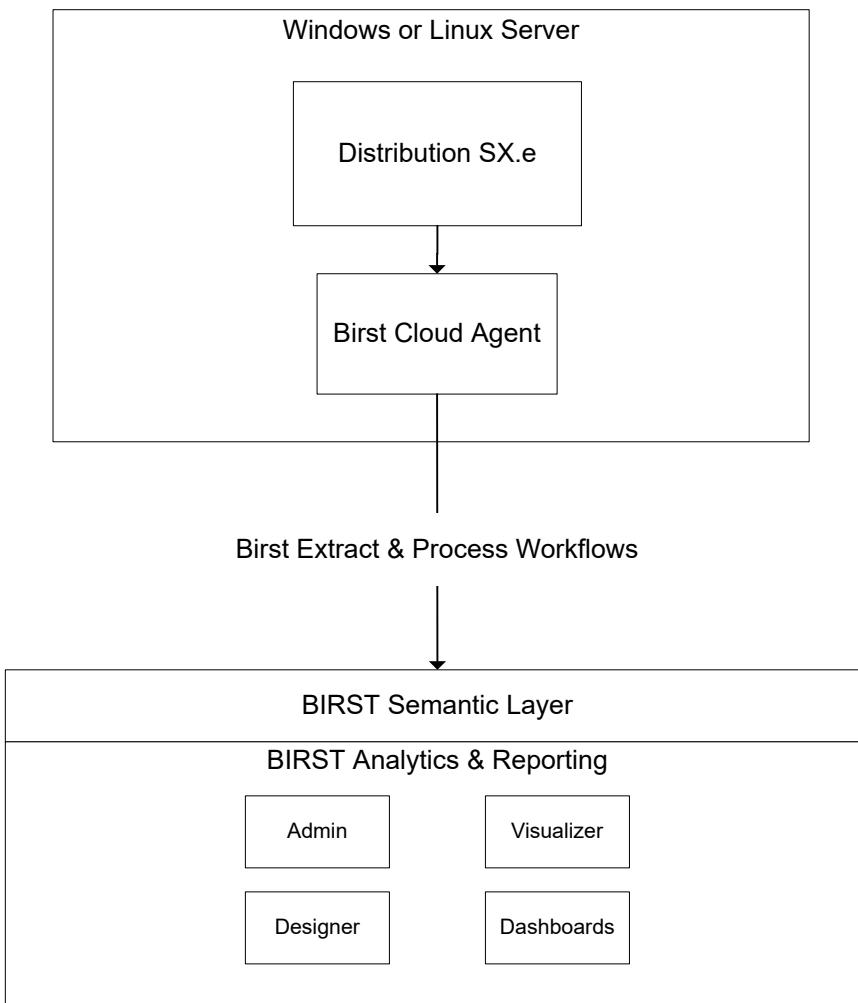
Infor Distribution Analytics for Birst topology

Birst has two layers to its system. The first is the Semantic Layer, also called the User Data Tier, where user data is pulled from data warehouses, applications like a core ERP, Big Data systems, or other existing data stores and then turned into useable data. Within the Semantic there are four core components: Live Access, Automatic Data Refinement, Virtualized BI, and the Semantic Layer wrapper.

The second layer is the Adaptive User Experience which presents the data from the Semantic Layer to the user for analysis and consumption. It is comprised of four components: Admin Module, Designer, Visualizer, and Dashboards.

Infor Distribution Analytics Content is developed using these tools. Extending your content based on the Birst tools depends upon your Infor Birst licensing.

Infor Distribution Analytics for Birst data flow



Changing and monitoring data flows

Distribution SX.e connects to Birst through the Birst Cloud Agent. The Birst Cloud Agent is used to connect to your local machine where the data extracts are stored.

These prebuilt workflows can be used to schedule your extractions for the Distribution Analytics content:

- **CSD [Version] Text Extracts and Process**
Use this workflow to extract text files and process data for Distribution SX.e on premises.
- **CSD GL Account Map Process**

Use this workflow to process the General Ledger hierarchies and account maps.

The workflows are included in the Infor Distribution Analytics content provisioned for your tenant by Infor cloud operations.

See the *Infor Distribution Analytics for Birst Configuration Guide* for instructions for running the initial data extraction and scheduling the daily and weekly incremental data extraction.

Chapter 3: Managing multiple tenants

Infor provides at least two tenants. You can use one tenant to test any customizations before applying them to your production environment. For each Infor tenant you should have a corresponding Birst account and set of spaces. In the default setup, users and spaces are separate with separate workflows to load and process the data.

If you want to use a non-production tenant to test Birst customizations and then move the customizations to production, then grant access to your test tenant spaces to a production Birst user. Go to the Birst Command Window and use the `addusertospace` command.

See Birst online help for details on using this command.

After a production user has access to your test tenant spaces, use the **Compare and Merge** screen or the `copyspace` command to copy the modified content from your test spaces to the production spaces.

See Birst online help for more information.

Chapter 4: Extending content

Caution: With the appropriate Birst license, you can copy and customize an Infor-provided space. However, we do not recommend this approach.

After a copy is made, subsequent updates that are published by Infor, will not be updated to your copied spaces. The original spaces are updated but the copies are not updated. You are responsible for manually migrating any changes into your copied spaces. Data loads for copied source and model spaces can break due to changes in the underlying data structures.

We recommend that you follow the guidelines specified in this section and do not make a copy of your spaces. This is a safer approach to making any needed customizations.

Report and dashboard development

These areas in the consumer spaces can be extended:

- Custom dashboards and reports can be created.
- Existing dashboard collections, dashboards, and reports can be copied.
- Copies of Infor-provided reports can be modified and used on custom dashboards.

You can add these items to your custom dashboards:

- Infor-provided filters
- Infor-provided reports
- New filters
- New KPIs
- New reports
- New buttons with links to internal and external sites

Catalog

Infor reports and dashboards are saved in Catalog folders. Do not create new reports and dashboards or copy new reports and dashboards into these folders. Infor-provided folders, and their associated sub-folders, may be overwritten in a future update.

See [Infor-provided items](#) on page 22 for a list of items that must not be modified.

Custom content should be saved in these catalog locations:

- \shared\Custom Reports
All custom client reports should be saved here.
- \shared
New collections and associated dashboards are automatically saved here.
 - Custom Collection Name
 - Custom Dashboard 1
 - Custom Dashboard 2
- \Private\YourID
This directory and its contents are only visible to the logged in user.
 - Your Custom Reports
 - Your Custom Dashboards
 - Your Custom Collections

Dashboard collections

Do not modify Infor-provided dashboard collections. Create new collections from copies of Infor-provided dashboards and newly created dashboards.

To leverage Infor-provided dashboard collections, clone an existing collection. Collections are created in the \shared folder by default.

Note: Reports and filters are not copied when you clone a collection.

Custom reports can be added to any dashboard from a copied dashboard collection.

Note: The topmost collection of the Dashboard collection list appears on the Birst launch page. To display your custom dashboards/collection on the top, select it and drag it to the top.

Dashboards

Do not modify any dashboards in an Infor-provided collection. To make modifications to a dashboard, copy the dashboard and save it to custom created folder. Save the custom created folder into a custom created collection.

Note: When you copy a dashboard, the reports and filters used by the dashboard are not copied. If you must make changes to the underlying reports or filters, then copy the reports and filters separately. Configure the new dashboard to use the copied reports and filters.

This provides flexibility to copy what is needed. For example, to add an additional filter to a report on your dashboard, copy the dashboard into your own collection and add the additional filter. Your

dashboard can continue to use the Infor-provided report and the data driven filter will be applied to that report. Any future updates will be applied to the Infor-delivered report.

Dashboard filters

You can create your own dashboard filters and use them on your dashboards. Do not modify Infor-provided filters. Additionally, do not use your filters on an Infor-provided dashboard. You can use Infor filters on your dashboards if you leave them unchanged.

Designer reports

Do not modify Infor-provided Designer reports. Make a copy of the report into a new folder and edit the copy. Future updates to the Infor-provided reports must be manually merged into the copy of the report.

If you copy a report that contains sub-reports, the sub-reports are not copied. Copy the sub-reports also and save them to the new folder.

Note: Because you must not edit Infor-provided dashboards, copy the dashboard when you copy a report. Then change the link on your new dashboard to the new copy of the report.

Visualizer reports

Do not modify Infor-provided Visualizer reports. Make a copy of the report into a new folder and edit the copy. Future updates to the Infor-provided reports must be manually merged into the copy of the report.

Note: Because you must not edit Infor-provided dashboards, copy the dashboard when you copy a report. Then change the link on your new dashboard to the new copy of the report.

Creating a custom report version

Use these instructions to leverage existing reports to create a custom report.

- 1 Open the Infor-provided report in Birst Visualizer or Designer.
- 2 Select **Save As** and select the `\shared\Custom Reports` directory.
Subfolders can be created in this directory to better organize your custom reports. We recommend you assign a prefix to the name of the report. For example, `MYCO_[report name]`.
- 3 Make any changes and then save the custom report.
- 4 Change the report links on your custom dashboard to the new custom report in the `\shared\Custom Reports` directory.

Custom groups

Infor does not supply custom groups. You can create custom groups as needed. Custom groups are not overwritten during updates.

Custom sets

Infor does not supply custom sets. You can create custom sets as needed. Custom sets are not overwritten during updates.

Global filters

Infor does not supply global filters. You can create global filters as needed. Global filters are not overwritten during updates.

Beyond reports and dashboards

Review this section before extending content.

Saved expressions

You can create saved expressions and they are available in the Default Subject Area. We do not recommend modifying an Infor-provided Custom Subject Area. If you create saved expressions, save them to a Custom Subject Area that you have created.

Variables

You can create your own variables in the Consumer space only. Do not modify any Infor-created variables unless instructed by Infor.

Custom Subject Areas

Do not modify any Infor-provided Custom Subject Areas. Infor-provided Custom Subject Areas can be replaced by a new version in future releases. Create your own Custom Subject Area by exposing a

custom set of data and adding selected measures and attributes. Use your own familiar names for measures and attributes.

We also recommend that you apply security controls to your Custom Subject Areas.

Drill maps

Drill maps should not be created. Use report level drilling only.

Aggregates

Infor-provided aggregates are in a model space and brought into the consumer space with a package. Do not modify Infor-provided aggregates.

With the appropriate Birst license, you can create aggregates in the extension space or a customer created space. Import a package from a model space and create the aggregate. Create a package with your new aggregate and import that package into the consumer space.

Note: If Infor provides changes to the model spaces, the changes may break any customer created aggregates. Managing aggregates is an advanced task that requires considerable testing and ongoing monitoring to ensure that they are built properly.

Packages

No packages should be published from the consumer space. Customer created packages coming from an extension or customer managed space can be imported into the consumer space.

Infor-provided items

This table lists the Infor provided items that should not be modified:

Item Type	Item
Catalog Folder	Shared\Infor\CSD
Dashboard Collection	Home
Dashboard Collection	Infor Distribution Analytics
Dashboard Collection	Sales
Dashboard Collection	Purchasing

Item Type	Item
Dashboard Collection	Inventory
Dashboard Collection	Accounts Receivable
Dashboard Collection	Accounts Payable
Dashboard Collection	General Ledger
Dashboard Filter	All filters on pre-delivered dashboards
Saved Expression	All saved expressions in pre-delivered content
Variable	All variables prefixed with 'Infor'

Extending the data model

This section provides instructions for extending one of the dimensions available for extension.

Before you extend a dimension, make sure the field and column is part of the Extended Dimension.

Dimension-Extension space

The extensibility implementation is a combination of functionality implemented in the Dimension-Extension space and other Distribution Analytics spaces. The Extension Space Package is provided with the Infor Distribution Analytics content and includes all extended sources' hierarchies. This package is consumed into all the Distribution Analytics model and conformed spaces where the corresponding sources are extended by joining to the respective hierarchy. This process is implemented in the respective scripts for the corresponding source.

Before implementation, take these rules into consideration:

- As the user, you are the owner of the Dimension-Extension space. The Dimension-Extension space is not updated during an update of the Distribution Analytics content.
- In the Dimension-Extension space, you are responsible for filling custom attributes for a specific dimension using Birst ETL. This also includes, for example, incrementally loading Custom Defined Fields (CDF) from Data Lake or your data source. To automatically load the custom attributes into the data warehouse, the custom attributes must be populated into the Extensibility dimension using the pre-defined format.
- The Dimension-Extension space contains the Extended dimensions, which are used by the extensibility logic. Extension Source scripts have their own separate Birst hierarchy based on multiple primary keys.

This table shows the fields contained within these hierarchies and the format of extension scripts.

Column	Data Type	Description
CDF Date 01 to CDF Date 05	Date (10)	The five date columns that you can fill for a dimension
CDF DateTime 01 to CDF DateTime 03	DateTime (29)	The three datetime columns that you can fill for a dimension
CDF Float 01 to CDF Float 15	Float (19)	The fifteen float columns that you can fill for a dimension
CDF Integer 01 to CDF Integer 10	Integer (20)	The ten integer columns that you can fill for a dimension
CDF Varchar 01 to CDF Varchar 30	Varchar (300)	The thirty string columns that you can fill for a dimension

Note: You are responsible for filling the Extensibility Dimension with the correct data, so the data is extracted by the extensibility related scripts in the other Distribution Analytics spaces.

Adding a data field to a Birst Query Object

These instructions describe how to add a new field to a Birst Query Object using the sales order line (oeel_extension) query object as an example.

- 1 In Birst, select the **[Tenant]-SX-Dimension-Extension** space.
- 2 Select **Modeler > Connect > CSD Infor Data Lake**.
- 3 Hover your mouse over the **oeel_extension** object, click on the down arrow and select **Edit**.
- 4 In the **Query** text box, add a comma after the last field in the query's SELECT statement.
Each new field must be added as the last field in the SELECT statement.
- 5 Press **Enter**.
- 6 Specify the new field name on the blank line.
Field names are case sensitive.

Example:

```
SELECT
/* Required Attributes */
"oeel"."DCTransDate",
"oeel"."Deleted",
"oeel"."VariationId",
"oeel"."cono",
"oeel"."orderno",
"oeel"."ordersuf",
"oeel"."lineno",
"oeel"."rowpointer",
"oeel"."lastModified",
/* User Attributes Below (Don't forget comma after
last attribute above) */
```

```

add_new_column_name
FROM "oeel"
WHERE "oeel"."lastModified" >=
'V{InforCSD_oeel_ExtractStartDate}'

```

- 7 Click **Save**.
- 8 A preview of the newly modified query is displayed. If the preview does not display, or the newly-added fields are not included, check your edits and save again.

Creating a workflow to extract the source for the SX-Dimension-Extension

Use these instructions to create a workflow to extract the source, using the `oeel_extension` object as an example.

- 1 Select **Modeler > Admin 2.0**.
- 2 Click **Orchestration**.
- 3 Click **Create Workflow**.
- 4 For **Step 1**, click **Add task to step**.
- 5 From the **Task Type** drop down, select **Extract**.
- 6 Next to the **Space** field, click the icon to view the list of spaces.
- 7 Select **[Tenant] -SX-Dimension-Extension**.
- 8 In the **Connection** field, select **Text_Files**.
- 9 Click **Select** and then click the extract group in the list. In our example, this is **OEEL_EXT**.
- 10 Assign a name to the workflow and click **Save**.
- 11 Hover your mouse over the new workflow and select **Actions > Run Workflow**.

You will receive an email indicating if the workflow ran successfully.

Updating extension source fields

After you run the extraction workflow, the newly-added fields are displayed in the extension sources. Use these instructions to modify the fields.

Note: Birst automatically assigns the field size and type based on the extracted data. Review the application's definition of the field width and data type and assign those exact values in Birst.

- 1 In Birst, select the **[Tenant] -SX-Dimension-Extension** space.
- 2 Select **Classic Admin > Define Sources > Manage Sources**.
- 3 Under Data Sources, select the source to modify.
- 4 Select the source object that was modified. For example, `oeel_extension`.
- 5 Verify the column type and width for the field(s).
- 6 Select the **Lock Type** to prevent changes to the attributes.

Note: Do not change the **Hierarchy** setting. Also, leave these fields blank: **Level**, **Measure**, **Analyze Measure**, **Analyze By Date**, **Format**, and **Options**. Remove any values in these fields.

- 7 To review your data, select the **Raw Data** tab.
- 8 Click **Save**.

Updating the extension script

After the raw source is configured, you must add the new extended attribute to the scripted source so it is pushed to the Extension space hierarchy.

- 1 In Birst, select the **[Tenant]-SX-Dimension-Extension** space.
- 2 Select **Classic Admin**.
- 3 On the **Define Sources** tab, select the **Manage Sources** sub-tab.
- 4 In the Data Sources pane, select the script to update. For example, **OEEL_Ext**.
- 5 On the Script tab, complete these steps:
 - a In the Select Statement section, press **Ctrl+A** to select all text, then **Ctrl+C** to copy the original query.
 - b Open a text editing application such as Notepad and press **Ctrl+P** to paste the original query text.
 - c Specify this information to replace the corresponding **Null** field with the name of the field you are adding:

Null

Specify the source field name in the format **[sourcename.newfieldname]**. For example, **oeel_extension.netamt**.

CDF

In the **//CDF** column, specify the field type. For example, **//CDF Float 01**.

Note: Field types include **CDF Float 01** to **CDF Float 15**, **CDF VarChar 01** to **CDF VarChar 03**, and **CDF Integer 01** to **CDF Integer 03**. These fields work as attributes as well as measures.

- 6 Copy the edited text from Notepad into the Data Sources pane from where it was copied.
- 7 Click **Validate**.
- Note:** Do not modify the text in the Script section except to add a custom calculation. For example, **Column A * Column B**.
- 8 Click **Save**.
- 9 Process the respective processing group in the Extension space. For example, **OEEL**.

Creating a workflow for a full extract and process of the table in source & model space

Use these instructions to do a full load of a table in the source space which will be extended in the SX-Dimension-Extension space. When you do a full load, the extended column are updated to all rows in the model space.

- 1 In Birst, select the **[Tenant]-CSD-Source** space.
- 2 Next to Modeler, click **Connect**.
- 3 Select the CSD Infor Data Lake.
- 4 Hover your mouse over the object, click the down arrow and then click **Edit**.
- 5 Scroll to the bottom of the **Query** text box.
- 6 Replace **Extract Start Date** variable in the WHERE lastModified statement with **2019-01-01T00:00:00.000Z**.

Example before the change:

```
WHERE lastModified >= 'V{InforCSD_oeel_ExtractStartDate}'
```

Example after the change:

```
WHERE lastModified >= '2019-01-01T00:00:00.000Z'
```

- 7 Click **Save**.
- 8 Repeat steps 1-7 for additional sources.
- 9 Select **Modeler > Admin 2.0**.
- 10 Click **Orchestration**.
- 11 Click **Create Workflow**.
- 12 For **Step 1**, click **Add task to step**.
- 13 From the **Task Type** drop down, select **Extract**.
- 14 Next to the **Space** field, click the icon to view the list of spaces.
- 15 Select **[Tenant]-SX-Source**.
- 16 In the **Connection** field, select **CSD Infor Data Lake**.
- 17 Click **Select** and then click the extract group in the list. For example, **OEEL_EXT**.
- 18 Click **Add new step**.
- 19 For **Step 2**, click **Add task to step**.
- 20 Select **Publish** from the **Task Type**.
- 21 Select the **[Tenant]-SX-Source** space and click **Select**.
- 22 Select the respective publishing group.
Press **Ctrl** to select multiple groups.

Note: To determine the table processing and publishing group, in Birst Classic Admin, select **Define sources > Manage source**. Select the source and then click the Properties tab.

- 23 Click **Add new step**.

- 24 For **Step 3**, click **Add task to step**.
- 25 Select **Publish** from the **Task Type**.
- 26 Select the respective model space. For example, **[Tenant]-SX-Model-Sales**. Click **Select**.
- 27 Select the respective publishing group. For example, **300-SalesLine**.
- 28 Assign a name to the workflow and click **Save**.
- 29 Hover your mouse over the new workflow and select **Actions > Run Workflow**.
- 30 When you receive an email indicating the workflow ran successfully, repeat steps 1-7 to restore the **Extract Start Date** variable to its original value.
This ensures the incremental extract does not keep extracting full loads from Data Lake.
- 31 After the extract and processing is run successfully, open Birst Visualizer in the Consumer space and select the extended attribute or measure from the Default Subject Area to validate it.

Configuring the extension space to process with the daily incremental extract

- 1 In Birst Admin, select **Orchestration**.
- 2 In the list of workflows, hover your mouse over **CSD [Version] Analytics Daily Extract and Process** and select **Actions > Clone Workflow**.
- 3 Hover your mouse over **Copy of CSD [Version] Analytics Daily Extract and Process** and click **Edit Workflow**.
- 4 In **Step 1**, click **Add task to step**.
- 5 In the **Task Type** drop down, select **Extract**.
- 6 In the **Space**, select the **[Tenant]-SX-Dimension-Extension** space.
- 7 In **Connection**, select **CSD Infor Data Lake**.
- 8 In **Step 2**, select **Publish** in the **Task Type** field.
- 9 In the **Space**, select the **[Tenant]-SX-Dimension-Extension** space.
- 10 Under **Publishing Group**, click **Select** and select the publishing groups of your extended source groups. Click **Ctrl** and also select **zz Update Variables**.
For example, if you have extended OEEL-Ext, then select **OEEL** and **zz Update Variables**.
- 11 Click **Save**.
- 12 Repeat steps 2-11 to clone the **CSD [Version] Analytics Weekly Extract and Process** workflow.
- 13 Enable the same schedule on these two cloned workflows, and disable any unused workflows.

The weekly workflow runs on Sunday, and the daily workflows run daily, Monday through Saturday.

Managing extended dimensions

The **[Tenant]-SX-Consumer** space is provisioned with Custom Subject Areas. Delivered Custom Subject Areas (CSAs) are subject to overwrite during a content update. Because of this, we recommend that you create Client Custom Subject Areas. Best practice is to prefix the name of the Custom Subject Area with a company abbreviation or some other string prefix that quickly identifies this CSA as a Client CSA to any user that is granted access.

- 1 In Birst, select the **[Tenant]-SX-Consumer** space.
- 2 Select **Classic Admin**.
- 3 On the **Manage Access** tab, click the **Custom Subject Areas** sub-tab.
- 4 Click **New**.
- 5 Specify the subject area name, description and security group.
- 6 Click **Save**.
- 7 In the Work area pane, right-click on the *New custom subject area* folder and select **New subfolder**.
- 8 Specify **Attributes** as the subfolder name and click **Add**.
- 9 From the Subject areas(s) pane, drag and drop the desired attribute to the Attributes subfolder in the Work area.
- 10 Select the attribute, right-click and select **Edit Properties**.
- 11 Specify the **Tree Label**. This label is used in the Tree only.
- 12 Specify the **Column Label**. This label is displayed in reports.
- 13 Specify the **Description**. This is available when you edit the properties of the field.
- 14 Click **Save**.
- 15 Repeat steps 7-14 to create a Measures subfolder and custom measure in the Work area.
- 16 Click **Save**.