Oracle Financial Services Data Integration with Unity

User Guide

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Oracle Financial Services Data Integration with Unity

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1 About the Guide

This user guide provides instructions, details, and guidance to users of Oracle Financial Services Data Integration with Unity.

1.1 Scope of the Guide

This user guide explains the features and functions of Oracle Financial Services Data Integration with Unity. Setup and configuration of the system, pre-packaged business or functional content, technical integration aspects, and guidelines on the usage of the system are explained in detail.

Note that, this user guide refers to steps that must be performed in Unity. See <u>Unity Help Centre</u> for more details.

1.2 Intended Audience

This manual is intended for the following audience:

- **Technologists**: Technical specialists who deal with setup and configuration of the interface between Data Foundation and Accounting Hub Cloud Service, and those responsible for the care and maintenance of the OFSAA instance.
- **Business Users**: Functional specialists who deal with actuarial sciences, risk management, accounting, or a combination of these, seeking to understand details of the interface between Data Foundation and Accounting Hub Cloud Service.

1.3 Prerequisites

- See <u>Data Integration Installation Guide</u> for details on OFSAA components, Oracle applications, and the environment that constitute technical prerequisites to deploy and use FS Data Integration with Unity.
- User credentials set up by an authorized user are required before you can access the application through its user interface.

1.4 Related Information Sources

Along with this user guide, you can also see the following documents in <u>OHC Documentation Library</u>:

- Oracle Financial Services Data Integration User Guide
- Oracle Financial Services Data Integration Application Pack Installation Guide
- Oracle Financial Services Analytical Applications Infrastructure User Guide
- Oracle Financial Services Analytical Applications Infrastructure Pack Installation Guide

1.5 Abbreviations

The following table defines the abbreviations used in this guide.

Table 1: Abbreviations

Acronym	Description
Unity	Oracle Unity
DIH	Data Integration Hub
UI	User Interface
UCM	Universal Content Manager

1.6 Reference Documents

Additional reference material will be listed here, as necessary.

2 Introduction

2.1 About Financial Service Analytical Applications

OFSAA is a suite of applications covering risk, performance, financial crime, compliance, customer insight, and regulatory reporting functions. These applications are built on common technology infrastructure, works off a singular data model that has unified structures for non-redundant acquisition, hosting, and processing of data, and renders rich information output that can be analyzed across a conformed set of perspectives. Sophisticated processing engines underlying the suite facilitates modular deployment and are controlled by comprehensive, user-configurable metadata. See <u>Oracle Financial Services Analytical Applications</u> portal for additional details.

2.2 About Unity

Unity allows its subscribers to combine customer data from online, offline, and third-party sources to create a single, dynamic, real-time view of each customer. Oracle Unity Customer Data Platform also supports the application of machine learning to prescribe the best next action within any existing business process. It supports a host of functions including unified customer profile, profile enrichment, smart segmentation, customer analytics, and rendering of personalized customer experience.

It is part of the Oracle Advertising and Customer Experience suite of services and is in use at several institutions across the globe.

2.3 Application Objectives

Core objectives of Financial Services Data Integration with Unity are as follows:

- Leverage information from advertising, behavioral intelligence, marketing, and campaigns, collated through CDP for analytical processing and usage.
- Leverage quantified financial services information and metrics for front-office functions, as above.
- Leverage factory-integrated environment for customer engagement.
- Provide accurate, verifiable, actionable Next Best Action or Next Best Offer information.

These objectives are achieved with these core considerations:

- Integration through standard APIs.
- Seeded content for financial services.
- User-configurable extensions.
- Intelligent coverage for PII, non-nullable and mandatory.
- Broader integration with Oracle Customer Experience ecosystem.

The rest of this guide expands on how the stated objectives can be met.

2.4 About Oracle Financial Services Data Integration with Unity

Unity identifies and exchanges data assets for customers or parties, party accounts, products, relationships, and transactions between OFSAA and Unity, Oracle's enterprise customer data platform. This includes customer or party, behavioral intelligence, advertising, marketing, and campaign information, alongside quantified financial metrics and related information. Such financial metrics primarily include retail customer performance and related analytics. The information set provided by Oracle out of the box may also be extended in use by institutions to fit their individual needs.

2.5 FS Data Integration with Unity Architecture

The following schematic represents the architecture of integration between OFSAA and Unity. Such integration relies on Unity's REST Application Programming Interfaces (APIs), Comma Separated Value files (CSV), and Secure File Transfer Protocol (SFTP) for the transport of files between the two environments. This user guide provides the details of the steps involved and specific mechanisms in play at each step.



Figure 1: OFSAA – Unity Product Integration Architecture

The following is a summary of the flow of data between the two systems:

- 1. OFSAA collates and hosts data on customers, customer accounts, products, account balance, and related risk, performance, crime, compliance, and customer insight information. Note that, the nature and detail of data hosted by OFSAA depend on the OFSAA application(s) deployed in your instance.
- **2.** Unity collates and hosts detailed customer data covering advertising, marketing, campaigns, and behavioral intelligence. This data is processed or enriched to maintain Master Profiles and related information.
- **3.** OFSAA registers structures necessary for data exchange with Unity.
- 4. Unity shares the master profile and other data with OFSAA.

- **a.** This is handled through CSV files transported between the systems through SFTP.
- **5.** OFSAA enriches data so obtained with models specific to financial services, including Next Best Offer and Product Propensity.
- 6. OFSAA shares enriched data with Unity.
 - **a.** This is handled through CSV files transported between the systems through SFTP.

FS Data Integration with Unity provides the mechanism for the exchange of data structures and data along with tools for configuring or managing such flow, the details of which are available in the following sections.

2.6 Sequence of Integration Processes

The process sequence to establish data exchange between OFSAA and Unity through FS Data Integration with Unity is listed as follows:

- Setup OFSAA details in Unity and Unity details in OFSAA
- Choose entities and attributes for exchange with Unity in OFSAA
- Publish entities and attributes structure to Unity in OFSAA
- Execute batches in OFSAA to export requisite data to files
- Transport files from OFSAA to Unity via SFTP
- Setup file ingestion in Unity
- Execute file ingestion in Unity
- Setup data export in Unity
- Execute data export in Unity
- Transport files from OFSAA to Unity via SFTP
- Execute batches in OFSAA to ingest requisite files

Only the execute and transport steps in the list above are operational tasks that must be repeated periodically. Others are one-time setup tasks or executed on changes, as detailed in the tabulation as follows:

SI no.	Process / Task	Туре
1	Define 'Sources' in Unity	Setup Once
2	Define 'Unity – Setup' in OFSAA	Setup Once
3	'Refresh Data Interface' in OFSAA	Setup Once
		Repeat on data model refresh
4	'Choose Data Interface' in OFSAA – 'Inbound' and 'Outbound'	Setup Once Repeat on data model refresh or when changes are needed
5	'Review and Publish to Unity' in OFSAA	
6	'Generate Connectors' in OFSAA	
7	Execute automatically generated Batches in OFSAA	Operational – as needed, periodically
8	Move files via SFTP to Unity	Operational – as needed, periodically
9	Define 'Data Feeds' of 'Ingest Job' type in Unity corresponding to the files and 'Start'. Note: You may also set the Job to 'Recurring' and define a schedule for automated execution or notification.	Setup Once Repeat when additional files are required
10	Monitor Jobs of 'Job Type' 'Ingest' via 'Jobs' in Unity corresponding to the files.	Operational – as needed, periodically
11	Execute 'System – Data warehouse' job via 'Jobs' in Unity	Operational – as needed, periodically
12	Execute 'System – Identity Resolution Pipeline' job via Jobs in Unity	Operational – as needed, periodically
13	Define 'Data Feeds' of 'Export Job' type in Unity corresponding to the 'Inbound' 'Data Interfaces' in task 4, above, and 'Start'. Note: You may also set the Job to 'Recurring' and define a schedule for automated execution or notification.	Setup Once Repeat when additional files are required
14	Monitor Jobs of 'Job Type' 'Export' via 'Jobs' in Unity corresponding to the files	Operational – as needed, periodically
15	Move files via SFTP to OFSAA	Operational – as needed, periodically
16	Execute automatically generated Batches corresponding to 'Inbound' 'Data Interfaces' in OFSAA	Operational – as needed, periodically

Table 2: Integration Steps

3 Accessing your OFSAA Instance

Access your OFSAA instance through its URL. See <u>OFSAA Analytical Applications Infrastructure User</u> <u>Guide</u> for details on how OFSAA instances must be configured. The URL is available from your System Administrators. Authenticate yourself with your login credentials (User ID and Password) through the OFSAA user login window, as follows:



Figure 2: Unity - OFSAA Interface Login Window

After logging into the application, select **Oracle Financial Services Data Integration with Unity**.



Figure 3: Applications Window

NOTE

You must be mapped to any one of the Unities user groups.

4 Setting Up and Using FS Data Integration with Unity

This section helps to set up and use the FS Data Integration with Unity.

4.1 Setting up Unity for Integration with OFSAA

4.1.1 Setup Sources

You must create 'Sources' in Oracle Unity so that customers and other related data, including information exchanged with OFSAA, can be imported into the data model. These Sources provide all the details required so that Oracle Unity can run ingest jobs and import data.

For more information on how this is performed, see <u>Unity documentation</u>.

You must define Type as 'Secure FTP', selected from the drop-down list.

Ensure that name chosen against the 'Name' field is the same as that which is recorded in OFSAA under the 'Unity – Setup' screen, described later in this guide. The name chosen in Unity must be captured in this screen under 'Constants' - 'Data Source'.

See section Setting up Unity Tenancy details within OFSAA for details on Unity.

4.1.2 Setup Data Feeds

Data feeds are tasks to transfer data into and out of Oracle Unity. You can use the Data feeds page to manage such data transfers. See <u>Unity documentation</u> for details on setting up and managing data feeds. You must setup Ingest and Export job types corresponding to the set of data being exchanged with OFSAA. You can choose to have these configured for scheduled or on-demand execution, as is appropriate. See <u>Unity documentation</u> for details in this regard.

4.2 Setting up OFSAA for Integration with Unity

4.2.1 Capture Unity Tenancy Details

For OFSAA to connect to your Unity tenancy, a set of information must be captured, verified, and saved. This section details the steps involved in the process.

1. Log into OFSAA and select Oracle Financial Services Data Integration with Unity.

2. From the Navigation List, select Configuration.

The Unity settings window is displayed.

Figure 4: OFSAA – Unity Settings Window

ACLE [*] Financial Services Data Integration with	h Unity				no 🛓 US-English	Ŧ
Unity Integration	_			-	-	
Setup Refresh Da	2 ata Interface	(3) Choose Data Interface	Review	w and Publish to Unity	Generate Conner	ctors
API Details				[Test Connection	Save
Url https://CXfinsdevb2b.cxunity.ocs.oraclecloud.co	om			Version v1		
API Authentication Details						
API Access Token URL(IDCS) https://idcs-d15e4b702dd24301b15a462ec34a	849d.identity.oracle	ecloud.com/oauth2/v1/toke	en	Access Key ec67c3f1ea5e429	0b1017640dbdec817	
User Id	Password			Client Identification Nun 1b20e8e15c1242	^{aber} 5585df453495cc0b49	
			Required			
Client Secret 62fcd01c-e495-4fff-b3a2-9982b1185c8e	Tenant Identificat 100051	tion Number		Tenant Key ec67c3f1ea5e429	0b1017640dbdec817	
Constants						
Data Source	Date Format	v		Data Files Path /scratch/dihodi/CX	U_FILES	
OFSAA		.,				
OFSAA						

3. Enter the required information in the Setup window.

NOTE	•	The information captured here must be entered exactly as provided to you by administrators of your Unity tenancy.
	•	The information captured is case sensitive and must not include any spaces.
	•	Password must be captured every time you make changes in this screen, for additional safety with user credentials.

- b. API Details:
 - URL

Enter the URL assigned to you as part of your Oracle Cloud Unity subscription here. This information is specific to your tenancy on Oracle Cloud and subscription to Cloud Unity instance.

— Version

Enter the version number for your Unity tenancy.

- c. API Authentication Details:
 - API Access Token URL

Enter API Access Token URL details.

— Access Key

Enter the Access Key details.

— User ID

Enter User Identification assigned to you for Unity instance here.

— Password

Enter the password for your Unity instance here. In case you are editing any other field, ensure to enter the password and save the details. If not, an error message is displayed each time you make changes that the password is required.

Client Identification Number

Enter the client identification number details

— Client Secret

Enter the client's secret details.

— Tenant Identification Number

Enter the tenant identification number details

— Tenant Key

Enter the tenant key details.

d. Constants:

— Data Source

Enter the Data Source name. This is a one-time activity.

Note that, the data source name must match Name as captured while defining Sources in Unity corresponding to OFSAA. See section <u>Capture Unity Tenancy Details</u>.

— Date Format

This is the format in which OFSAA exports and ingest all attributes of type 'date'. The date format captured here must be as is expected by Unity for all date-attributes.

Data Files Path

Enter the Data File Path location where the file that is generated at the end of an outbound cycle is placed.

- e. Click **Test Connection**, to check if the connection is established with the Unity application.
- f. Click Save to save all the setup details.

4.2.2 Refresh Data Interface

Before Data Integration with Unity can be used, it needs to refresh its metadata on the data model available or deployed with your OFSAA instance. This step allows the system to do that and must be done under the following situations:

- You are using the system for the very first time after installation and data model upload or application installation.
- You have made changes to the data model and uploaded it to OFSAA.

NOTE On first use, further functions of the application are only available for use once this step is completed. On changes to the data model, this step must be completed before they are reflected in the application for use.

To refresh the Data Interface, follow these steps:

- 1. Log into the application and select **Oracle Financial Services Data Integration with Unity.**
- 2. From the Navigation List, select **Configuration**.

The Unity window is displayed.

3. Select Refresh Data Interface.

Figure 5: Refresh Data Interface

\equiv	OR,	ACLE.	Financial Ser	vices Data Integration with Unity		(III) i	US-English	OFSAD 🔻 🖧 🔯
		Unity l	ntegration 1 _{Setup}	Refresh Data Interface	(3)	(4) Review and Publish to Unity	Generate Connecto	rs
			Athle Cashida			Reload	Validate Datamodel	Start
		0	Run ID: 103	Version ld: 1 Start time: 2021-02-20 00:04:33.796	Infodom: DIHINFO	End time: 2021-02-20 00:09:45.535	Status: Successful 📩	
		Ø	Run ID: 102	Version Id: 0 Start time: 2021-02-18 01:36:42.864	Infodom: DIHINFO	End time: 2021-02-18 01:39:49.634	Status: Successful 📩	
		0	Run ID: 101	Version Id: -1 Start time: 2021-02-18 01:06:55.648	Infodom: DIHINFO	End time: 2021-02-18 01:10:16.661	Status: Failed 📩	
		0	Run ID: 100	Version Id: -1 Start time: 2021-02-18 00:48:33.15	Infodom: DIHINFO	End time: 2021-02-18 00:52:20.936	Status: Failed 📩	
		0	Run ID: 0	Version Id: -1 Start time: 2021-02-17 21:41:53.198	Infodom: DIHINFO	End time: 2021-02-17 21:41:53.714	Status: Failed 📩	
								NIM 200

4. Click Validate Datamodel before you start the refresh.

The Validate Datamodel window is displayed.

Figure 6: Validate Datamodel

Validate Datamodel

Search	Q
Object Name	Message
FSI_DISCRETIONARY_CF_WEIGHTS	Invalid Table Classification
FSI_ENTITY_REG_REPORT_RUN_MAP	Invalid Table Classification
FSI_PROCESS_CF_REG_AGG_CF_MAP	Invalid Table Classification
FSI_PROCESS_SCEN_CF_SCEN_MAP	Invalid Table Classification
	Export Ok

- **5.** Search for the required Object Name and click **Export**, if you wish to download the Datamodel validation details.
- 6. Click **Ok** to proceed.
- 7. Click **Start** to start the refresh of the Data Interface.

A confirmation dialog box is displayed.

?	Confirm	nation	
Have valid	you compl ation?	leted Data	amodel
		Yes	No

8. Click Yes. The ongoing Data Interface is displayed.

On successful invocation of TDS refresh, a message is displayed.

	Confirmation	×
	Refresh ADI invo	oked successfully
9.	lf you need a deta	ailed running log, click
10.	A zip file is downl	oaded containing the
11.	To view the log d	etails, extract the log f
	NOTE	At any given time, complete or still ir
	NOTE	This is not a day-t

4.2.3 Choose Data Interface

OFSAA Data Interfaces are logical abstractions of its underlying data model, designed to facilitate data exchange via commonly understood business terms, avoiding the need for end-users to directly handle physical entities and attributes, or the complexities there. This step allows you to choose the Data Interfaces and in turn, attributes they contain, for ingestion from (Inbound) or export to (Outbound) your Unity tenancy.

4.2.3.1 Inbound

Inbound Data Interfaces represent data that you expect to receive from Unity and ingest into OFSAA. The following Inbound Data Interfaces are configured for use in the application as standard, available out of the box are as follows:

- Master Customer
- Party Address
- Party Address Map
- Party Asset Details
- Party Education Master
- Party Email Address
- Party Employment Details
- Party Expense Details
- Party Financials
- Party Identification Documents
- Party Income Details
- Party Liability Details
- Party Other Names
- Party Phone Map
- Party Rating Details
- Party Relationship Types
- Party Relationships
- Party Role Map
- Party Shareholding Percent
- Party Source Details
- Party Types
- Web Log Analytics Event Master

To modify this set of Inbound Data Interfaces, perform the following steps:

- 1. Log into the application and select **Oracle Financial Services Data Integration** with Unity.
- 2. From the Navigation List, select Configuration.

The Unity window is displayed

- 3. Select Choose Data Interface.
- 4. Click Inbound.

The user interface shows the list of Data Interfaces or entities that you expect to receive from Unity and ingest into OFSAA. If you are using the application for the first time, the list of entities displays those that Oracle configures for ingestion (or 'seeds') out of the box, as listed previously.

Figure 7: Data Interface

\equiv	ORACLE' Financial Services Data Integration with Unity	US-English 🔻 O	FSAD 🔻 🕺 🖸
	Unity Integration 1 2 3 4 Setup Refresh Data Interface Choose Data Interface Review and Publish to Unity	Generate Connectors	
	Inbound Outbound		
	Add Seeded Q Search		
	Master Customer // Staging table for party. Here party refers to customer, issuer & guarantor etc	271 Attributes 21 Published	
	✓ Party Address Map ★ This staging table stores the party mapping information with stage address master.	9 Attributes 5 Published	
	Party Asset Details ✓ This tables stores the details of the Asset the Party owns either entirely or partially. Assets include but are not limited to; Deposit Accounts, Shares, Superannuation, Vehicles and Real Estate. A Party may have more than 1 asset and asset details are us	6 Attributes 6 Published	
	 Party Education Master / Dimension table that holds customers education master information. 	5 Attributes 1 Published	
	 Party Email Addresses This staging table captures the mapping between Party and Email. 	4 Attributes 3 Published	
	Party Employment Details ≠ This table stores the employment details of an individual Party. This data applies only to Parties who are individuals. A single Party may have muliple employment details Copyright © 1993, 7	25 Attributes 3 Published R 2021, Oracle and/or its affilia	tes. All rights reserved.

5. Click dit the Label assigned to any Data Interface.

NOTE Data Interfaces 'Master Customer' and 'Party Source Details' are specifically present for integration with Unity and must be maintained as is. Further, no attribute that is already indicated as selected out of the box for these Data Interfaces must be manually de-selected. You may read about the choice of attributes within Data Interfaces for inclusion or exclusion in the following section.

Figure 8: Edit Attribute Name

Unity Integration				
0	2	3		(5)
Setup	Refresh Data Interface	Choose Data Interface	Review and Publish to U	Inity Generate Connectors
Inbound Outbound				
Add			Seeded Q Search	
Master Customer / Staging table for party. F	Edit Attribute Name			271 Attributes 21 Published
Party Address Map This staging table stores the	party mapping information with stage address ma	aster.		9 Attributes 5 Published

- **6.** Click Seeded list of Data Interfaces.
- 7. You can also search for Data Interfaces in the Search field.
- 8. Click Add, if you wish to add more Inbound Data Interfaces. Only the Data Interfaces available from the underlying OFSAA Data Model, post-Refresh Data Interface, are displayed here.

Figure 9: Add Inbound Entities

	Add	Inbound Entities
		Q Search
		Account Mitigant Map Entity to capture account to mitigant mapping. It supports more than one mitigant to be mapped to an account. STG_ACCOUNT_MITIGANT_MAP
		Unit Of Measures Attributes Dimension This table stores the details of the attributes of the Dimension members of Unit of Measures. These attributes are properties related to member nodes such as precedence etc. DIM_UOM_ATTR
		Unit Of Measures Dimension This table stores the details of the members of the Unit of Measures Dimension along with the details of node code, created by & created date, modified by & modified date. DIM_UOM_B
		Unit Of Measures Hierarchy Dimension This table stores the details of the members of the Hierarchy based on the Unit of Measures Dimension. Unit of Measures are risk categories defined by the User using AMHM. For example User can model at granularity of Standard Event Type and Standard Line of Business. DIM_UOM_HIER
9.	Click	to view the list of attributes available with any Data Interface.

10. This interface allows you to view the list of attributes available, chosen for data exchange with Unity and the data types associated with them, assigned by the underlying Data Model.

Ok

Figure 10: Attributes

Ma	ter Customer - Attributes			
	Select All D Seeded Mandatory PII Attributes	Q Search		
	Initial First Name / This column stores entity name for Organization or first name for individual.			String
	Party Identifier / This attribute stores the unique identifier for the party. Party is defined as an entity or a person who takes part or is involved in an agreement, laws	uit, or transaction.		String
	Account Branch Code The code of the branch to which the account is attached. Branch is engaging in banking activities such as accepting deposits or making loans at fa</td <td>cilities away from a bank's home office.</td> <td></td> <td>String</td>	cilities away from a bank's home office.		String
	Acquired As Part Of Debt Restructuring Flag / This column captures if the corresponding party got acquired as a part of debt restructuring transaction. A $\oplus \oplus$ troubled debt restructuring is a pro- terms of a loan agreement to minimize the eventual loss by accommodating a borrower who for some economic or legal reasons related is in fina of meeting the obligation. This is applicable for the parties, when the party files for bankruptcy, and a remedial action is undertaken by the concer liabilities of the garry. The assets of the party are called as strested or dittrassed assets for restructured assets due to dittrass conditions. List of var- that the party is being acquired as part of a debt restructuring initiative. A value of N or Null indicates that this party is not acquired as part of debt	cess where the bank modifies or relaxes t icial difficulties and is financially incapab ned regulator to streamline the assets an ues are Y, N or NULL A value of Y indica t restructuring transaction.	the ole Bo id tes	polean
	Address Line 2 // The address line 2 for the Location.			String
	Address Line 3 / The address line 3 for the Location.			String
	Age / Analis a particul of human life measured hu years from hirth, this is releaser for individuals		D	ecimal
		CI	ose	Ok

Here, it is possible to view or sort the list with only the Seeded, Mandatory, or the PII Attributes. Personally Identifiable Information (PII) attributes are marked as such by the underlying OFSAA data model and are treated by OFSAA under the auspices of General Data Protection Regulation (GDPR). For more details in this regard, see <u>Oracle Financial Services Data Foundation</u> or <u>Insurance Data Foundation</u> documentation.



You can also search for the required attribute in the Search field.

GRACL	erch	ata Integration with Unity			, ≜ US-English ▼	OFSAD 👻 💡
Uni	ty Integration					
	1 Satur	2 Refrech Date Interface	3 Chaosa Data Interfees	(4) Review and Rublish to Unity	(5)	
Inboun	d Outbound	in in the second			Contrate Connectors	
Add	_		Se	eded Q quality		
	Credit Quality Details / This staging table stores the ac of pre-disbursement conditions	count credit quality details provided by c keeping documents legally enforceable	credit monitoring system. Credit mo e, end use of funds as per the lo	nitoring aims at ensuring compliance	of terms 14 Attributes 0 Published	
						NITT.
				Copyright ©	1993, 2021, Oracle and/or its aff	iliates. All rights re

- 11. Click **Close** if you do not wish to make any modifications.
- **12.** Click **Ok** after the attributes are selected.
- **13.** To review and publish the list of attributes, see the section <u>Review and Publish to</u> <u>Unity</u>.

4.2.3.2 Outbound

Outbound Data Interfaces provide data from OFSAA to Unity. The following Outbound Data Interfaces are configured as standard, out of the box.

- Financial Account Summary
- Party Financial Metrics
- Transaction Summary

To manage Outbound Data Interfaces, follow these steps:

- 1. Log into the application and select **Oracle Financial Services Data Integration** with Unity.
- 2. From the Navigation List, select Configuration.

The Unity Integration user interface is displayed.

- 3. Select Choose Data Interface.
- 4. Click Outbound.

Data from these Data Interfaces (and their chosen attributes, detailed in the section below) is extracted into files and sent to your Unity tenancy for ingestion. The user interface shows information in line with what is available for Inbound Data Interfaces, above.

ORACLE [®] Financial Services Data	Integration with Unity		(III) 📩	LS-English	ØFSAD
Unity Integration	2 Refresh Data Interface	3 Choose Data Interface	Review and Publish to Unity	Generate Connect	ors
Inbound Outbound			THE HER		
Add		Ser	eded Q Search		
Financial Account Summar This entity stores information about	y / It the account held by the customer	at the organization.		2077 Attributes 20 Published	x
Party Financial Metrics This entity stores financial metrics	about a customer.			296 Attributes 2 Published	R
Transaction Summary / This entity stores information spec	ific to transactions with respect to th	he financial account/product made by	a customer using various channels.	146 Attributes 6 Published	R
□ Account Averages ✓ Result table to store various type i	of averages computed at account le	vel.		13 Attributes 0 Published	R
Account Cash Flows This Table Stores the Cash Flow	alues at Account and Time Bucket I	Level		23 Attributes 0 Published	x
Account Provision Details A This entity is used in LLFP to store	the intermediate and final account	level calculation used to arrive at Cre	edit Loss value.	314 Attributes 0 Published	R
			Copyright © 19	93, 2021, Oracle and/or	ts affiliates. A

Figure 12: Data Interface

5. Click **/** to edit the Attribute Name.

Figure 13: Edit Attribute Name

ORACLE' Financial Services Data Inte	gration with Unity			US-English V OF	FSAD 🔻
Unity Integration					
0	2			(5)	
Setup	Refresh Data Interface	Choose Data Interface	Review and Publish to Unity	Generate Connectors	
Add			Seeded Q Search		
Financial Account Summary / This entity stores information about the	Edit Attribute Name Financial Account Summar	ation.		2077 Attributes 20 Published	
 Party Financial Metrics / This entity stores financial metrics abo 	ut a customer.			296 Attributes 2 Published	

6. Click **Click** to view or sort the list with only the Seeded data.

- 7. You can also search for the required Outbound Data Interfaces in the Search field.
- 8. Click Add, if you wish to add more Outbound Data Interfaces. Only those Data Interfaces available in the underlying OFSAA data model are displayed for use.

Figure 14: Add Outbound Entities

SETTING UP AND USING FS DATA INTEGRATION WITH UNITY

SETTING UP OFSAA FOR INTEGRATION WITH UNITY

Add (Outbound Entities	
		Q Search
	Account Address Map This result table captures the mapping between account and addresses. FCT_ACCOUNT_ADDRESS_MAP	
	Account Email Map This result table captures the mapping between account and Email. FCT_ACCOUNT_EMAIL_MAP	
	Account Fair Value This table stores the current Par Balance and market value at account level FCT_ACCOUNT_FAIR_VALUE	
	Account Feature Map This entity stores the mapping between the Account & the Product Feature. FCT_ACCOUNT_FEATURE_MAP	
Click	to view the attribute details available in the ent	ity.

10. This interface allows you to view the list of attributes available, chosen for data exchange with Unity and the data types associated with them, assigned by the underlying Data Model.

Figure 15: Attributes

Party Financial Metrics - Attributes

	Select All Seeded Mandatory PII Attributes		
2	Allocated Total Fees / This column stores the total fees levied by the bank on all the accounts held by a customer.	1	Decimal
2	Attrition Score // This stores customer attrition score.	1	Decimal
2	Average Credit Balance // This stores the Average Credit Balance	1	Decimal
	ATM Usage Score / This stores the ATM usage score.	I	Decimal
	Amount Written Off LCY / This stores the total write-off amount for the customer in local currency.	1	Decimal
	Asset Size Band 🖉 This stores the Asset Size Band Code Key	1	Decimal
	Atm Usage Band // This stores the ATM Usage Band Code Key	1	Decimal
	Attrition Reason // This column stores the attrition reason surrogate key.		String
		Close	Ok

Here, it is possible to view or sort the list with only the Seeded, Mandatory, or the Personally Identifiable Information (PII) Attributes. The PII attributes are marked as such by the underlying OFSAA Data Model and are treated by OFSAA under the auspices of General Data Protection Regulation (GDPR). For more information in this regard, see <u>Oracle Financial Services Data Foundation</u> or <u>Insurance Data</u> <u>Foundation</u> documentation.

11. You can also search for the required attributes in the Search field.

Figure 16: Search

			-						
				SETTING UP	OFSAA FOR INTEG	RATION W	/ITH UNIT	Y	
=	ORACLE	inancial Services D	Data Integration with Unity			US-	English 🔻	OFSAD 🔻	X 🖸
	Unity In	tegration							
		1	2	3			5		
		Setup	Refresh Data Interface	Choose Data Interface	Review and Publish to Unity	Generate	Connectors		
	Inbound	Outbound							
				Se Se	reded				
	Add				Q quality				
	Cradit	Quality Dataila							
	This sta	ging table stores the a isbursement conditions	ccount credit quality details provided by s, keeping documents legally enforceable	credit monitoring system. Credit mo e, end use of funds as per the lo	nitoring aims at ensuring compliance	e of terms 0 Pt	ublished		
								- 1100	

- 12. Click **Close** if you do not wish to make any modifications.
- 13. Click **Ok** after the attributes are selected.
- 14. To review and publish the attributes, see the section <u>Review and Publish to Unity</u>.

4.2.4 Review and Publish to Unity

You must review and publish the Data Interfaces and Attributes thereof you have chosen or which are configured out of the box in the following situations: (a) On using the application for the first time, and (b) When you have made changes to the list of Inbound or Outbound Data Interfaces or their Attributes. This step also sends the definition of data structures so chosen (or changes thereof) to your Unity tenancy. To manage review and publishing to Unity, perform the following steps:

- 1. Log into the application and select **Oracle Financial Services Data Integration** with Unity.
- 2. From the Navigation List, select Configuration.

The Unity Integration user interface is displayed.

NOTE Ensure that the checkboxes against the Data Interfaces you require for Inbound or Outbound purposes are checked or selected, as displayed in the user interface. Unless selected, the application does not include the Data Interface or its attributes to this step from Choose Data Interface step detailed in the previous section.

3. Select Review and Publish to Unity.

The Inbound or Outbound Data Interfaces chosen or modified in Choose Data Interface step are listed here. The user interface shows the publishing status for Data Interfaces and their attributes. For example in following figure, Party Financial Metrics is an Outbound Data Interface which is currently in Published status, with two of its Attributes marked for addition (indicated by the To be Published status

against them) and another two attributes marked for exclusion (indicated by the To be Unpublished status against them).

Figure 17: Review and Publish to Unity

=		Services Data Integration with	ı Unity	 &	US-English 🔻 🛙	DIHTEST 🔻 🖧 🙋
	Unity Integration					
	0	2	3		(5)	
	Setup	Refresh Data Interface	Choose Data Interface	Review and Publish to Unity	Generate Connectors	
	Save to post Entity/Attributes	to Unity			Save	
	✓ Party Financial I	Metrics			Published Outbound	
	Attrition Score				To be Published	
	Average Credit Balance				To be Published	
	Frequence Of Revolve				To be Unpublished	
	Total Charge				To be Unpublished	

4. Click **Save**. This sends the definition of data structures chosen (or changes thereof) to your Unity tenancy.

A confirmation message is displayed with the status of the publishing attempt. In case there is an issue connecting to your Unity tenancy or completing the process, an error message is displayed. Ensure to verify connectivity from the Setup screen or the application's error logs for details on underlying issue(s) and resolution steps.



NOTE On first use or if there are the addition of Attributes to Data Interfaces 'Master Customer' or 'Party Source Details,' the application also publishes corresponding Promotion Rules. 'Promotion' is a task in Unity to merge attribute values of source records and promote optimal value to the master record attribute. This task is a part of ID resolution. For details on Promotion Rules, <u>see Unity Documentation.</u>

5. After the Review and Publish to Unity step is completed, you can view the selected Data Interfaces and their attributes in your Unity tenancy under Data Model as Data Objects. Ensure that 'Publish Changes' is performed in Unity after Data Objects are verified. Some changes that are published cannot be reversed, updated, or deleted in Unity. Make sure you review and confirm all changes before publishing. For more information in this regard, see <u>Unity Documentation</u>. Generate Connectors.

After Data Interfaces and their Attributes are published, you may generate Connectors in the 'Data Integration with Unity' application. Connectors are structures built and managed by the application to facilitate mapping of Inbound and Outbound OFSAA Data Interfaces and their Attributes with the files used for data exchange with Unity. This step also automatically defines and registers a Batch and associated Task in OFSAA Batch Management for each Data Interface, for on-demand or scheduled execution. Perform the following steps to generate Connectors:

- 1. Log into the application and select **Oracle Financial Services Data Integration** with Unity.
- 2. From the Navigation List, select **Configuration**.

Unity Integration user interface is displayed.

3. Select Generate Connectors.

Figure 18: Generate Connectors

0	RACLE [®] Financial Services Data Integrati	on with Unity		(💼 👗 🗈 US-English 🔻 DIHTEST 🔻 🐰
	0 Setup	2 Refresh Data Interface	3 Choose Data Interface	(4) Review and Publish to Unity	3 Generate Connectors
	Click on Generate creates dataflow connectors			Q Search	Generate
	Master Customer Batch Name : UNITY_MASTER_CUSTO Connector : Unity Master Customer Last Published : 2021-02-24 113523 . Last Publish	MER ed By : DIHTEST , File Name : unity_master_customer.ctv			ledward
	Party Financial Metrics Batch Name : UNITY_PARTY_FINANCI. Connector : Unity Party Financial Metr Last Puellehed : 2021-02-24 113622 . Last Puelleh	N_METRICS ics ed By : DIHTEST , File Name : unity_party_financial_metrics.c	59		Outbrand
	Transaction Summary Batch Name : UNITY_TRANSACTION_1 Connector : Unity Transaction Summa Larr Puelined : 2021-03-02 083055 . Larr Puelin	UMMARY 19 ed By : DIHTEST, File Name : unity_stransaction_summary.cr	Υ.		Outboard

The user interface shows the list of Data Interfaces chosen, the pattern of the Batch name it creates in OFSAA Batch Management, the name of the Connector that is prepared, audit information for each Data Interface, and designation of whether each Data Interface is Inbound or Outbound.

4. Click the Connector name to view its definition and associated mapping. For more information on Connectors and how mapping information may be accessed, see <u>Data Integration User Guide</u>. Changes to data flow, mapping, and properties for Connectors automatically defined by the application, are not permitted.

?



Figure 19: Connector Data Flow

- 5. Select the required Data Interfaces and click Generate. This creates required Connectors for use in mapping files used for data exchange with Data Interfaces and their Attributes. For each Data Interface chosen, the application creates a Batch with a Task for execution purposes through OFSAA Batch Management.
- 6. Note that, the Batches and Connectors automatically defined by the application expects names of files for ingestion in a pattern that follows lower (Connector name) +date. Here, the date is set or expected in the format as defined in Unity Integration – Setup user interface, detailed previously.

For example, for Master Customer, Inbound Data Interface as in the following figure the file name expected for MIS Date 30th of March 2021 is "unity_master_customer_2021-03-30.csv".

The application follows the same pattern for Outbound Data Interfaces.

For example, for Transaction Summary, Outbound Data Interface as in the following figure the file name expected for MIS Date 30th of March 2021 is "unity_transaction_summary_2021-03-30.csv".



4.3 Executing Data Exchange with Unity

After completing the steps in the previous sections, execute the following steps to export and ingest data from OFSAA:

NOTE	Files that are generated from your Unity tenancy may have a naming pattern with the date and time stamp appended. For example, 'cxu_master_customer_2021-03-30-12-06-39-568_0'.
	In such a case, the files must be renamed removing the timestamp portion, to match OFSAA's expected naming pattern, as detailed in the previous sections, before executing data exchange tasks detailed below. For example, the file in the previous example must be renamed to 'cxu_master_customer_2021-03-30'.

- To review batches created automatically for ingestion and extract, from the Oracle Financial Services Data Integration with Unity navigation list window, select Orchestration, and then select Batch Maintenance.
- Navigate to Batch Orchestration and search for auto-generated batches with Batch ID following the pattern <<INFODOM>>_UNITY, where <<INFODOM>> is the Information Domain used with Data Integration with Unity application. For more details on Information Domain, see <u>OFSAA Analytical Applications Infrastructure</u> <u>User Guide.</u>

atch Maintenance								
							Q Search "D	Re
Batch ID Like DI	HINFO_UNITY			Batch Description Like				
Module		~		Last Modification Date	Between	🗂 And	m	
Batch Name 🔸 Add 🖺 View 🕾 Edit	Delete							
Batch ID 🔺		Batch Desc	ription		Batch Edit/Non Edit			
DIHINFO_AH_CONNECTORS_70121		To Execute	INTF_AH_FSDF Connectors		E			
DIHINFO_AH_GL_SR_EXTRACT_DOWNL	OAD	To Extract 0	GL SR Balances		E			
DIHINFO_DIH_AH_CORE_BANKING_PT		To Execute	Core Banking PT Connectors		E			
DIHINFO_UNITY_ACCOUNT_AVERAGES		To Execute	OFS_DICXU Unity Account Averages	Connectors	E			
DIHINFO_UNITY_FINANCIAL_ACCOUNT,	_SUMMARY	To Execute	OFS_DICXU Unity Financial Account	Summar Connectors	E			
DIHINFO_UNITY_MASTER_CUSTOMER		To Execute	OFS_DICXU Unity Master Customer	Connectors	E			
DIHINFO_UNITY_PARTY_FINANCIAL_ME	TRICS	To Execute	OFS_DICXU Unity Party Financial Me	trics Connectors	E			
DIHINFO_UNITY_PARTY_SOURCE_DETA	LS	To Execute	OFS_DICXU Unity Party Source Detail	Is Connectors	E			
DIHINFO_UNITY_TRANSACTION_SUMM	ARY	To Execute	OFS_DICXU Unity Transaction Summ	ary Connectors	E			
DIHINFO_UNITY_WEB_LOG_ANALYTICS	EVENT_MASTER	To Execute	OFS_DICXU Unity Web Log Analytics	Event Connectors	E			
age 1 of 1 (1-10 of 10 items) K < > Task Details + Add View ∞ Edit	Э t 🖲 Delete					Records	Per Page 15	
Task ID ≜	Task Description		Metadata Value	Component ID		Precedence		

Figure 20: Batch Maintenance Window

- **NOTE** It has been observed that when OFSAA is deployed with WebLogic, not all batches are automatically created unless Connection Pool is configured with a specific Statement Cache Size. This is a Known Issue. Perform the following steps to avoid the issue:
 - 1. Log in to the WebLogic server admin console.
 - **2.** Navigate to Console and select Services and then select Data Sources.
 - **3.** Select Atomic Schema.DS and then select Connection Pool.
 - **4.** Update Statement-Cache-Size value to 0.
 - **5.** Restart the WebLogic server and redeploy connectors from the AHC Refresh Interface window.
- 3. Select Batch corresponding to Data Interface you wish to ingest or extract.

The automatically defined Task is listed in the **Task Details** section, under the Batch list.

- **4.** To execute batches, navigate to **Batch Execution**, search for Batch IDs following the pattern in step (2) in this list, specify **MIS Date**, and select **Execute**.
- **5.** For more information on executing Connectors, see the <u>Data Integration User</u> <u>Guide</u>. You can also see the <u>OFSAA Analytical Applications Infrastructure User</u> <u>Guide</u> for details on batch execution, runtime parameters, and monitoring.

5 Creating Custom Data Flow

Custom Data Flow can be created by defining External Data Descriptor and Connectors.

5.1 External Data Descriptor

You can view the summary of External Data Descriptor generated through integration setup process

Figure 21: External Data Descriptor Window

\equiv	ORACLE [®] Financial Services Data Integration with Unity				🕕 👗 🔳 US-	English 🔻 DIHTEST 🔻 🖧 🔯
	List of external data descriptors External Data Descriptor					
	Search	Q	Sort by:	Name: A->Z	•	Export
	Unity Master Customer Description: null Status: Saved	External Data Store: CXU_FILE_SRC Type: FILE		Last Modified By: DIHTEST Last Modified Date: 2021-02-24 22:05:00.0	0	
	Unity Party Address Map Description: null Status: Saved	External Data Store: CXU_FILE_SRC Type: FILE		Last Modified By: DIHTEST Last Modified Date: 2021-03-02 16:49:00.0	0	+
	Unity Party Financial Metrics Description: null Status: Saved	External Data Store: CXU_FILE_SRC Type: FILE		Last Modified By: DIHTEST Last Modified Date: 2021-02-24 22:06:00.0	0	
	Unity Party Other Names Description: null Status: Saved	External Data Store: CXU_FILE_SRC Type: FILE		Last Modified By: DIHTEST Last Modified Date: 2021-02-24 22:09:00.0	0	
	Unity Party Source Details Description: null Status: Saved	External Data Store: CXU_FILE_SRC Type: FILE		Last Modified By: DIHTEST Last Modified Date: 2021-02-24 22:05:00.0	•	
	Unity Transaction Summary Description: null Status: Saved	External Data Store: CXU_FILE_SRC Type: FILE		Last Modified By: DIHTEST Last Modified Date: 2021-03-02 19:00:00.0	0	
	Unity Web Log Analytics Event Description: null Status: Sawd	External Data Store: CXU_FILE_SRC Type: FILE		Last Modified By: DIHTEST Last Modified Date: 2021-02-24 22:05:00.0	0	1122

5.1.1 Defining an External Data Descriptor

To define a new External Data Descriptor, follow these steps:

- 1. From the **Oracle Financial Services Data Integration with Unity** navigation list window, select Data Mapping, and then select External Data Descriptor.
- 2. Click Add La The External Data Descriptor new window is displayed.
- **3.** In the External Data Store Name section, select **Data Source** from the drop-down list. The Data Source is the Source you had created. In this example, it is, DRM_SRC_FILES. The values in **Error! Reference source not found.** example are used. The description comes up automatically.

NOTE	The fields in the External Data Descriptor Specification Details section change as per the Source Code selected.
	For HDFS data, the working date format is YYYY-MM-DD.
	For the Hive table, the working date format is YYYY-MM-DD.
	For the Sybase source database, the date data type is not supported. It must be a timestamp.

Figure 22: External Data Descriptor Data Tab

CREATING CUSTOM DATA FLOW

EXTERNAL DATA DESCRIPTOR

xternal Data Descriptor Details			Save As Draft
External Data Store Name	CXU_FILE_SRC	External Data Store Description	Source/Target for CX Unity
External Data Descriptor Name		Estaval Data Descriptor Description	
	Require		
Data File Name	Data Control	Transformation	+
Data File Name File Format	Data Control	Transformation Record Delimiter	+ MS-DOS
Data File Name File Format Column Delimiter	Data Control	Transformation Record Delimiter Text Qualifier	+ MS-DOS
Data File Name File Format Column Delimiter Skip Number Of Records	Data Control	Transformation Record Delimiter Text Qualifier Decimal Separator	+ MS-DOS

- **4.** Click **Reload/Refresh t** to reload/refresh the data elements.
- 5. Enter the values in the fields as described in the <u>Fields and their Description</u> section.

Figure 23: Read From Template

Read From Template	Select Template (*xis,*xisx,*.csv Files Only)	Browse	
Data Flements			•
Drop tem	plate here or click to select		

6. If data needs to be reconciled post-loading, then click the **Control** tab. In this version, only the Number of Records controls is possible.

Figure 24: External Data Descriptor Controls Tab

CREATING CUSTOM DATA FLOW

EXTERNAL DATA DESCRIPTOR

			Data	Control	Transform	ation					
	Separate File										
	File Name						File Format	Delimited		•	
	Column Delimiter	Comma 💌			Record Type Code						
	Record Delimiter	Unix 🔻]	Skip Number Of Records						
	Text Qualifier				Decimal Separator						
Controls											î
✓ 1	Name		Aggregation Method	•	srcCol2	•	Absolute	•	Threshold Value		
Page 1 of 1 (1 of 1 items)	Page 1 of 1 (1 of 1 items) K < 1 > >										
Audit Info											
Created By: OFSAD				C	reated Date	; 2020-01-14 05:18:	42.0				

- 7. To transform the EDD, click the Transformation tab.
- 8. You can add derivation to data elements of the EDD.
 - **a.** Click **Add** to create derived data elements.
 - **b.** To edit the derived data element, click **Edit (**). The **Expression** window is displayed.
 - **c.** The expression can be specified using the data elements defined in the Data tab and functions.

Entities	্	Functions	Operators
H OFSAA SR Balance STRIVG Parameters CEAETO BY STRIVG STRIVG STRIVG STRIVG COALSCALAD STRIVG STRIVG COALSCALAD STRIVG STRIVG STRIVG STRIVG STRIVG STRIVG STRIVG STRIVG STRIVG	ĺ	 Aggregation Date and Time Mathematical 	 Operators Arithmetic Concatenation Comparison
ression			
ression			

Figure 25: Derived Data Elements Window

- **d.** To delete the derived data element, click **Delete** \blacksquare .
- 9. Click the Transformation tab and select the Transformation Type.
 - e. Select Aggregation and click Edit by to view Expression Window.
 - f. Specify the Group by clause and Having expression, if applicable.
 - **g.** Define Derived Data Elements for the field to be aggregated under the previous tab.

NOTE

It is applicable only in the case of DB2, Oracle, Sybase, My SQL, and Hive.

10. Click Save.

5.1.2 External Data Descriptor Fields

The following sections describe the fields in the External Data Descriptor window.

5.1.2.1 Data Tab

The following table describes the fields in the Data tab.

Table 3: Fields in Data Tab

Fields	Description Fields marked in red asterisk (*) are mandatory
Data File Name	You can add multiple data files to an EDD. For example, you need to add the Term Deposits Contracts data file. There are Term Deposits Contracts data files for Retail as well as Corporate accounts. Therefore, to get both these details, you first add the Term Deposits Contracts data file for Retail accounts, such as td_contracts%#MISDATE%_1.csv, and as the next record, add Term Deposits Contracts data file for Corporate accounts. Example : td_contracts%#MISDATE%_1.csv
Record Delimiter	The records are stored differently in different operating systems. The options available are: MS-DOS Unix No Record Delimiter Other For example, select Unix.
File Format	 There are two options: Fixed Length: The file has records and columns with a fixed length. Each column has a predetermined and unchanging size, set when the record layout is designed, and the sum of the column sizes add up to the record size. Delimited: There is a separation of the records and columns using a delimiter character like a comma, semicolon, hyphen, and so on. For example, select Delimited.
Text Qualifier	A character that identifies a text. This is used when some characters exist within a text. Generally, double quotes are used, prefixed, and suffixed with text. This is optional.
Skip Number Of Records	Provide the number of records to be skipped. The records are skipped from the top. Generally, this is used to skip Headers.
Decimal Separator	This mentions up to which decimal digit you want to view the result.

Fields	Description
rielus	Fields marked in red asterisk (*) are mandatory
Read from template	A template contains all the values and is in Excel file format. If the
	template is not available, you must create it manually by clicking Add +, under the Source Data Elements tab. If the template is available, you can browse for the template. See the File EDD Template. You can also drop the template in the area "Drop template here or click to select ".
Select Template (*.xls,*.xlsx,*.CSV Files Only	Click Browse and select the required template.
Data Elements	
Name	Name of the field in EDD. Example : Field name in a file or column name in a table. NOTE : The Field name of XML type must not be more than 25 characters and for others must not be more than 30 characters.
Туре	This shows the Data type of the field. Example : String, Number, EBCDIC, and so on.
Length	This is applicable only for the EBCDIC format. This is the length of the EBCDIC data type. In the case of a file, it is length only.
Precision	This is used to specify the decimal point. Example : 10.3.
Format	 Specify the format for columns of type date here. If left blank, a default format of DD/MM/YYYY is assumed and used. NOTE: The default format is fixed and does not change with database or system language settings. For data ingestion, enter the format in which date fields are provided. For data extraction, enter the format in which extracted date fields must be recorded. For example, in the file extract, to represent the date, 31st January 2020, as "31/01/2020", specify the format as DD/MM/YYYY for the date columns.
Record Type Code	This identifies the Record type in a file where Header, Trailer, and Data are of different record length and type. The values can be any string available in the text file. This value is only possible for the first field in a file. Example : The values can be DATA; CTRL to specify it is a control record.

5.1.2.2 Control Tab

In the Control tab, DIH enables you to:

1. Reconcile between source data received and data loaded into OFSAA, using the control information available from the source system. This feature is used to implement record count validation or amount reconciliation from a source file. It also allows specifying a threshold for validation. The specified threshold is
compared with the difference (record count or amount) to perform the validation. Only in case, the difference is more than the threshold value the execution fails. A detailed report on control information from both source and the final data loaded along with threshold breach is available in <u>Execution History</u>.

- **2.** The threshold can be absolute or percentage value. The connector execution process considers the threshold type while performing reconciliation.
- **3.** Generate control information for File extracts from OFSAA. Specifying control for extract EDDs generates control details, based on the configuration in the EDD. Both record count and amount value (sum, average, max, and so on) for specific columns are recorded into the control file.



The following fields must be configured to achieve this functionality.

Table 4: Fields in Control Tab

Fields	Description				
rielus	Fields marked in red asterisk(*) are mandatory				
When Separate File is selected as Yes .					
File Name	Specify the name of the file.				
File Format	 There are two options: Fixed Length: The file has records and columns with a fixed length. Each column has a predetermined and unchanging size, set when the record layout is designed, and the sum of the column sizes add up to the record size. Delimited: There is a separation of the records and columns using a delimiter character like a comma, semicolon, hyphen, and so on. In the previous example, select Delimited. 				
Column Delimiter	 If the File Format is selected as Fixed Length, the Column Delimiter would by default be Other. If the File format is selected as Delimited, the following options are available in the drop-down list. Other Space Semicolon Comma Tab In the previous example, select Comma. 				
Record Type Code	Used to uniquely identify a record within a file. A Financial Institution sometimes provides files that have data and control records within the same file. In that case, to distinguish between data record and control record, the first field is Record Type. It has a specific value to identify that. Here, specify the value that identifies the Data. Values can be 'DATA' and so on. For the Control record, the value is specified under the Control tab. Only the first field of a file is used for Record Type.				

EXTERNAL DATA DESCRIPTOR

Fields	Description Fields marked in red asterisk(*) are mandatory
Record Delimiter	 The records are stored differently in different operating systems. The following options are available: MS-DOS Unix No Record Delimiter Other For example, select Unix.
Skip number of records	Provide the number of records to be skipped. The records are skipped from the top. Generally, this is used to skip Headers.
Text Qualifier	A character that identifies a text. This is used when some characters exist within a text. Generally, double quotes are used, prefixed, and suffixed with text. This is optional.
Decimal separator	Specify up to which decimal digit you want to view the result.
Record Type Length	The length of the record type value to pick up the correct record. For example, if the control record is "DATATotal Records400" and DATA is the Record type, the length is '4'. This is applicable only for Control records that are of Fixed length.
Control Name Length	Based on the previous example, the Control name is "Total Records". Hence, the Control Name Length is '13'.
Control Value Length	Based on the previous example, the Control value is 400. Hence, the length of the control value is '3'.
When Separate File is selected as No .	
Record Type Code	Used to uniquely identify a record within a file. A Financial Institution sometimes provides files that have data and control records within the same file. In that case, to distinguish between data record and control record, the first field is Record Type. It has a specific value to identify that. Here, specify the value that identifies the Data. Values can be 'DATA' and so on. For the Control record, the value is specified under the Control tab. Only the first field of a file is used for Record Type.
Control Value Length	Based on the previous example, the Control value is 400. Hence, the length of the control value is '3'
Control Name Length	Based on the previous example, the Control name is "Total Records". Hence, the Control Name Length is '13'.
Controls	
Control Name	Specify the name of the control.
Aggregation Method	 Select either Aggregation Method or Count. The supported aggregation methods are as follows: Min Max Average Sum

Fields	Description Fields marked in red asterisk(*) are mandatory
Aggregation Column Name	Select the column on which the aggregation method is applied. NOTE: For count, no column needs to be selected.
Threshold Type	This field is optional. There are two selections of threshold, percentage, or absolute.
	If the percentage is selected, the reconciliation difference in percent is matched against this threshold value.
	If absolute is selected, the absolute percent difference is matched against this threshold value.
Threshold Value	Specify the difference value in percent or absolute.

5.1.2.3 Transformation Tab

The following table describes the fields in the Transformation tab.

Table 5: Fields in Transformation Tab

Fields	Description				
	Fields marked in red asterisk(*) are mandatory				
Transformation Type	A drop-down listing different types of transformation supported. Currently, the only Aggregation is supported.				
If the T ransformation Type is selected as None :					
Derived Data Elements					
Name	Name of the derived field in EDD.				
	NOTE : Field names must not be more than 30 characters.				
Туре	Shows the Data type of the field.				
	Example : Varchar2, Number, Date, and so on.				
Expression	When you select the 'Add option', the Specify Expression window is displayed. Here, you can select the required Entities, Functions, and Operators. That is, you can write your expression. Enter the field name and click OK. Now the newly created field name is listed.				
If the Transformation Type is selected as Aggregation :					
Derived Data Elements					
Name	Name of the derived field in EDD.				
	Note: Field names must not be more than 30 characters.				

CREATING CUSTOM DATA FLOW

Fields	Description Fields marked in red asterisk(*) are mandatory
Туре	This shows the Data type of the field. Example: Varchar2, Number, Date, and so on.
Expression	When you select the 'Add option', the Specify Expression window is displayed. Here, you can select the required Entities, Functions, and Operators. That is, you can write your expression. Enter the field name and click OK. Now the newly created field name is listed.
Aggregation Properties	
Group By	This is available when Aggregation is selected.
Having	This is available when Aggregation is selected.

5.1.3 Modifying and Viewing an External Data Descriptor

You can edit or view an existing EDD, other than EDDs in Published status.

NOTE You cannot edit EDDs in Published status.

To edit or view an EDD, follow these steps:

- 1. Select the required EDD from the EDD Summary.
- 2. The details of the selected EDD are displayed. You can modify or view the details.
- **3.** Update the required details.
- 4. Click **Save** to save the changes made.
- 5. Click **Save as Draft** to save and update later. The status shows as Draft.

5.1.4 Deleting an External Data Descriptor

This option only checks the higher-order object. That is, if the order has a dependency, you cannot delete it unless the dependency is removed.

For example, assume EDD is used in Connector. Then, unless the Connector is deleted, the used EDD cannot be deleted.

To delete an existing EDD, follow these steps:

- **1.** On the **EDD Summary**, click **Delete .** A confirmation dialog box is displayed.
- 2. Click Yes. The EDD details are deleted.

NOTE Delete is enabled only in the following cases: If the EDD is not in Published status. If the EDD is not used by any object.

You can unpublish an EDD only when all the following conditions are met:

• The EDD is in Published status.

• All the connectors using the EDD are unpublished.

To unpublish an EDD, follow these steps:

- 1. Select the required EDD from the **EDD Summary**. The details of the selected EDD are displayed.
- 2. Click Unpublish.

NOTE The EDD gets published automatically by the system whenever the higher objects (Connector) using it are published.

5.1.5 Dependency

Clicking **Dependency** lists where the entire parent EDD has a dependency.

5.1.6 Search and Filter

The Search and Filter option in the UI helps you to find the required information. You can enter the nearest matching keywords to search and filter the results by entering information on the search box. You can search for an EDD using either the name, description, status, or type.

For example, enter the EDD keyword as 'AATB_ACCT' in the search box. The entire EDD name with AATB_ACCT is listed.

5.1.7 Parameters in EDD Definition

While defining an EDD, the parameter can be used as a placeholder in a data filename.

For example:

Consider a table with two columns, such as Account number and Balance.

Table 6: Example showing Account Number and Balance

Account Number	Balance
A1	1000
A2	1000
A3	1000
A1	1000
A2	1500
A3	1500

In this example, a customer has three accounts (A1, A2, and A3).

The customer has deposited different amounts on January 1st and 2nd 2014. The CSV data files can be created for those two dates as follows:

• The account transaction for January 1st, 2014 is saved as td_contracts_/01012014/.csv

• The account transaction for January 2nd, 2014 is saved as td_contracts_/01022014/.csv

If a parameter, MISDATE, is defined as a runtime, this can be used as a placeholder that substitutes date in mmddyyyy format. That is, the data filename can be mentioned as td_contracts_%#MISDATE%.csv. When this file is called, it substitutes the date in the file name, dynamically, in the runtime.

Parameters Data Types need not always be runtime. They can be Constants or values like Current Date, which can also be used to substitute a value in a data filename.

5.2 Connectors

You can view the summary of Connectors generated through integration setup process and also extend to create connectors and properties for custom data flow.



Figure 26: Connectors Window

5.2.1 Creating Connectors

The connector allows mapping one or more External Data Descriptor with Application Data Interface. It allows mapping of one or more ADI with EDD as well, in the case of extract type connector.

There are pre-built Connectors for Oracle applications such as FLEXCUBE, Oracle Banking Platform, and so on. For other applications, you need to define Connectors for your EDDs.

5.2.1.1 Loading Data into OFSAA

To create a Connector for loading data into OFSAA, follow these steps:

- 1. From the Oracle Financial Services Data Integration with Unity navigation list window, select Data Mapping, and then select Connectors.
- 2. On the **Connector Summary** window, click
- 3. The New Connectors Definition window is displayed.

- 4. To define a connector, you must have a source with EDD and a target, which is ADI.
- **5.** Click **Source** to select the required EDDs. Here, you can filter your selection based on the EDS selected. The EDD node's color depends on the source system type.

Figure 27: Connectors - Source

Select	EDS	
OBF	P_STAGE_SRC	
Exter	nal Data Descriptor	٩
0	FLX_ACCOUNTING_ENTRIES OBP Stage table for Accounting Entries	^
0	FLX_ACCT_MITIGANT_MAP OBP Stage table for Account Mitigant	
0	FLX_ACCT_RATE_TIERS OBP Stage table for Account Rate Tiers	
0	FLX_ATTRITION_MASTER OBP Stage table for Attrition Reason M	
0	FLX_BANK_CODES OBP Stage table for Legal Entity Master	

For example:

- File types are in blue.
- Oracle types are in red.
- HDFS types are in orange.
- **6.** If you select 'OBP_STAGE_SRC' as the EDS, it displays the EDDs for that particular EDS selected.



- earch to search for a particular EDD. You can select multiple EDS.
- 8. Select the required EDD and drag it to the canvas.
- **9.** Click **Target**. Here you can filter ADIs based on the application selected.

Figure 28: Connectors - Target



- **10.** Click **Search** to search for a particular ADI.
- **11.** Select the required ADI. Drag it to the canvas and then link the input and output nodes.
- **12.** Click the input white circle. The anchor symbol is displayed. Drag and drop the line to link it to the required component.

Figure 29: New Connector Window



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testingConnectorTruncate A					
Connector Details			🕞 Publish 🔗 Save 📀 Save As Draft		
Name * testing	ngConnectorTruncate	Description			
Pre Load Options					
Account Address					
Truncate Sele	ected Rows 💌	Filtered Expression	[Account Address];[Account Or Contract Number] = 'F		
Properties					
Default Properties					
Parallel True Avoid Partition Exchange No	e v	Degree Of Parallel	5		
Table Properties					
Do you want to use DBLink ? No	×				
		Audit Trail			
Created By: OFSAD		Created Date: 2018-11-21 22:39:12.0			
Modified By: OFSAD		Last Modified Date: 2018-11-26 20:14:46.0			

- **16.** In **Pre Load Options,** select the truncate option to be defined in the target. To remove data from the table as per the truncate option specified, select **Truncate**.
 - Select **No**, if you do not wish to truncate the table before loading.
 - If you select **Partial Truncate**, provide the Partition Name. The parameter name can be provided here. If you want to truncate a partition, the Partial Truncate option must be selected. Specify the partition to be truncated before load.

NOTE

For multi-target loads, the truncate type must be the same for all targets. However, truncate expression may vary.

- Select Full Truncate to fully truncate. Here no expression is required. If you
 want to truncate the entire table, the Full Truncate option must be selected.
- Select Selected Rows to truncate on the selected expressions. If you remove specific rows, the selected rows option must be selected. Specify the filter condition for the rows to be deleted. Specific rows are removed from the table before load.

NOTE If OFSAA is hosted on a Big Data environment, then the Truncate with **Selected Rows** option is not supported.

Click Edit 🕑 to filter the selected rows.

- Select the required entity and click **Validate**. This validates the expression.
- Click **Ok** once the expressions are selected.

In the image, truncate details are selected for Account Address.

17. In **Properties**, select the Default Properties, File Properties, and Table Properties if you have selected a default type or file type or a table type respectively.

NOTE See the <u>Connector Properties</u> section for more information on the properties.

5.2.1.2 Extracting Data from OFSAA

To create a Connector for extracting data from OFSAA, follow these steps:

- 1. From the Oracle Financial Services Data Integration with Unity navigation list window, select Data Mapping, and then select Connectors.
- 2. On the Connector Summary window, click

The New Connectors Definition window is displayed.

- 3. To define a connector, you must have a source with EDD and a target, which is ADI.
- 4. Click **Source** to select the required ADIs.
- **5.** Here, you can filter your selection based on the ADI selected. The ADI node's color depends on the source system type.



7. Select the required ADI. Drag it to the canvas and then link the input and output nodes.

Figure 31: Connectors - Source



For example:

- The file types are in blue.
- Oracle types are in red.
- HIVE types are in brown.

8. Click **Target**. Here you can filter EDS based on the application selected.

Figure 32: Connectors - Target



- **9.** If you select 'OBP_STAGE_SRC' as the EDS, it displays the EDDs for that particular EDS selected.
- **10.** Click Search **C** to search for a particular EDD. You can select multiple EDS.
- **11.** Select the required EDD and drag it to the canvas.
- **12.** Click the input white circle. The anchor symbol is displayed. Drag and drop the line to link it to the required component.

Figure 33: New Connector Window

New Connector	0
Ş 🍸 🕄 🚭 🊠 🕞 🖳 🐎	
	at at a start of the start of t
n Mapping	Targ

- **13.** At any given time, you can right-click the node to either delink or remove inlinks / outlink or delete a node.
- 14. To edit or view the properties, on the Connector window, click
- 15. In Connector Details, enter the name and description for the connector.

Figure 34: Connector Details Window

_	
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		Account A	ddress Extraction → → →				
Connector Details					G Publish	Save	Save As Draft
Name *	Account Address Extraction			Description	Connector to extract account addre OFSDF	ss from	
Pre Load Options							
Address master							
Truncate	Full Truncate	·					
Properties							
Default Properties							
Parallel	True	•		Degree Of Parallel	5		
Avoid Partition Exchange	No	•					
Table Properties							
Do you want to use DBLink ?	No	,					
			Audit Trail				
Created By: OFSAD			Created Date: 2018-12-05 22:00:23.0				
Modified By: OFSAD			Last Modified Date: 2018-12-05 22:01:54.0				

- **16.** In Pre Load Options, select the truncate option to be defined in the target. When you select Truncate it removes data from the table as per the truncate option specified.
 - Select **No**, if you do not wish to truncate the table before loading.
 - If you select **Partial Truncate**, provide the Partition Name. The parameter name can be provided here. If you want to truncate a partition, the Partial Truncate option must be selected. Specify the partition to be truncated before load.
 - Select Full Truncate to fully truncate. Here no expression is required. If you
 want to truncate the entire table, the Full Truncate option must be selected.
 - Select Selected Rows to truncate on the selected expressions. If you remove specific rows, the Selected Rows option must be selected. Specify the filter condition for the rows to be deleted. Specific rows are removed from the table before load.

NOTE If data is extracted into a Big Data environment, then the Truncate with Selected Rows option is not supported.

- Click **Edit** ^(b) to filter the selected rows.
- Select the required entity and click **Validate**. This validates the expression.
- Click **Ok** once the expressions are selected.

In this image, truncate details are selected for the Account Address.

17. In **Properties**, select the Default Properties, File Properties, and Table Properties in case you have selected a default type or file type or a table type respectively.

NOTE See the Connector Properties section for more information on the properties.

5.2.2 Managing Existing Connectors

To manage existing connectors, follow these steps:

- 1. The Connectors window lists all connectors that are defined in the setup. It displays the entire insert, process, and extract type connector details. It gives information about the number of parameters, EDS, EDDs, and ADI used in a specific connector.
- 2. Click Export. The Select Export Columns window is displayed.

Figure 35: Select Export Columns

Select Export Columns				×
Connector Id Connector Name Connector Type		> < }	No items to display.	
Description		•		
Status	-			
				🛓 Download

- **3.** Select the required ID and click Download. The list of connectors is exported to an Excel sheet with Connector IDs and Connector Name. This lists both insert and extract type connector details.
- **4.** Click to view the connectors in the card view. It gives information about the number of parameters, EDS, EDDs, and ADI used in a specific connector.



In case, the connector is published:



5. Click the Navigation icon _____. The **Connectors** are displayed in the list view.

CON_EXTRACT_TEST Description: Extraction test Type: Extract Status: Saved	1 Parameters	1 EDS	1 EDD	2 ADI	Last Modified By: OFSAD Last Modified Date: 2017-05-09 01:13:46.0	00
--	-----------------	----------	----------	----------	--	----

In case, the connector is published:

Con_Party_Master Last Executed On: 2018-05-22 203 Description: Durationised: 53 Type: Insert Total Records: 0 @ Published Execution Status: DONE	3138.0 Last Modified By: OFSAD Last Modified Date: 2018-05-30 09:3658.0	0
--	--	---

5.2.3 Understanding the Components

5.2.3.1 Using Filter

To use the filter component, follow these steps:

1. Drag and drop the **Filter** component on the canvas to define a filter on an entity. For example, EDD (insert connector) / ADI (Process and Extract Connector).

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

- 2. It accepts input only from an entity and it can have only one output.
- **3.** If you have multiple entities selected, and you want to have a filter for more than one entity, then you must select as many numbers of filters, connect to the respective entity, and then define their expressions.
- **4.** For example, to add a filter to three entities, drag three filters.

Figure 36: Filter New Connector Window

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- **5.** At any given time, right-click the filter component to either delink or remove inlinks / outlinks or delete the filter component.
- 6. Double-click filter component. The Filter Expression window is displayed.
- **7.** The selected entities and parameters are displayed in the **Filter Expression** window.
- 8. Specify the required filter expression using columns and parameters.
- 9. Click Validate to verify the correctness of the SQL expression.
- 10. Click OK.

11.

	N	DTE You	do not need to add the 'WHERE' clause for the filter.			
		6.	For File data loading, use the filter expression of the Number type along with single quotes. For example: N_DRAWN_AMOUNT ='40000'.			
		7.	For the Date field, see To_CHAR function for comparison.			
		8.	Parameters can also be used in the filter expression. The date format must be a valid SQL date format.			
	For Example :					
	[EDD_GL_DATA].[EXTRACTION_DATE] = TO_DATE(#DIHDEV.MIS_DATE,'dd-MM-yyyy')					
lf re	the Source type is Hive, the filter expressions must conform to the following estrictions:					
	— Must be valid HiveQL					
		Does not includ	e Oracle built-in or user-defined functions			
		Does not includ	e Subqueries			
		Includes Hive b	uilt-in functions only			

- Parameters can also be used in the filter expression. MISDATE can also be passed dynamically so that it is loaded from the Batch Execution window. The date format specified must be valid Hive Date format i.e. yyyy-MM-DD
- For **Example**:

```
    Filter Expression in Connector:-
[EDD_GL_DATA].[EXTRACTION_DATE] = #DIHDEV.MIS_DATE
    MISDATE Parameter in Batch:
    MISDATE=$MISDATE:yyyy-MM-dd
```

5.2.3.2 Using Join

To use the join component, follow these steps:

1. Drag and drop the **Join *** component on the connector window to link multiple entities. For example, EDDs (insert connector) / ADIs (Process and Extract Connector).

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

2. The Join component accepts input from two entities.

Figure 37: Join New Connector Window



3. To join more than two entities, drag another join component. Link the output of the first join to the input of the second join and then connect the other entities. You can repeat this for multiple entities. Select the Source Entity and click **Ok**.

Figure 38: Multiple Join Entities

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- **4.** At any given time, right-click the join component to either delink or remove inlinks / outlinks or delete a join component.
- **5.** Double-click the join component to define a join condition. The Join window is displayed:
- 6. Here you see the selected entities in the left and right tab.

Figure 39: Join Window

AATB_ACCT_ADDRESS	্	AATB_CASA_TXNS	୍
FIC_MIS_DATE DATE	*	D_CLEARING_DATE	^
N_SEQUENCE_NUMBER		D_CLEARING_TIME TIMESTAMP	
V_ACCOUNT_NUMBER VARCHAR2		D_DEPOSITING_DATE DATE	
/_ADDRESS_LINE1 VARCHAR2		D_DEPOSITING_TIME TIMESTAMP	
V_ADDRESS_LINE2 VARCHAR2		D_EXECUTION_TIME TIMESTAMP	
V_ADDRESS_LINE3 VARCHAR2		D_ISSUING_DATE DATE	

- **7.** You can drag and reorder the left and right tab to choose the right/left entity in a join condition.
- 8. To join entities, the select column from the left and right tab and click Add Join

 $^{
m J}$. This displays the joined entities. You can join multiple entities.

[AATB_ACCT_ADDRESS].[V_ACCOUNT_NUMBER]=[AATB_CASA].[D_ACCT_OPEN_DATE] AND [AATB_ACCT_ADDRESS].[V_ADDRESS_LINE2]=[AATB_CASA].[D_ACCT_CLOSED_DATE] AND [AATB_ACCT_ADDRESS].[V_ACCOUNT_NUMBER]=[AATB_CASA].[D_BILLING_CYCLE_DATE] 9. To remove two joined conditions, select two columns from the left and right tab,

and click **Remove Join**. The joined condition is removed from the list.

- **10.** Click **Reset** to reset all the joined conditions.
- 11. Click Ok.



5.2.3.3 Using Lookup

To use the lookup component, follow these steps:

1. Drag and drop the **Lookup** component on the canvas to define a filter on an entity. For example, EDD (insert connector) / ADI (Process and Extract Connector).

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

2. You can lookup values from an entity using this component.

The lookup component accepts input from two entities. One from Value Entity and the other one from the Lookup Entity.

Figure 40: Lookup New Connector Window

NOTE



- **3.** At any given time, right-click the lookup component to either delink or remove inlinks / outlinks or delete a lookup component.
- **4.** Double-click the lookup component to define a lookup condition. The Lookup window is displayed:
- 5. Here you see the connected entities in the left and right tab.

Figure 41: Lookup Window

AATB_ACCT_ADDRESS	্	AATB_CASA_TXNS	্
FIC_MIS_DATE DATE	^	D_CLEARING_DATE DATE	A
N_SEQUENCE_NUMBER		D_CLEARING_TIME TIMESTAMP	
V_ACCOUNT_NUMBER VARCHAR2		D_DEPOSITING_DATE DATE	
V_ADDRESS_LINE1 VARCHAR2		D_DEPOSITING_TIME TIMESTAMP	
V_ADDRESS_LINE2 VARCHAR2		D_EXECUTION_TIME TIMESTAMP	
V_ADDRESS_LINE3 VARCHAR2		D_ISSUING_DATE DATE	

- **6.** The entity that is on the right side of the window is the lookup entity. You can change the lookup entity by moving it to the right side. The "LookUp Entity" field displays the entity specified for lookup.
- 7. To specify lookup condition, select data elements from left and right entities and

click Add Join . Lookup condition is displayed as follows:

[AATB_ACCT_ADDRESS].[V_ACCOUNT_NUMBER]=[AATB_CASA_TXNS].[D_CLEARING_TIME]

8. To remove a lookup condition, select data elements from left and right entities and

click Remove Join . The lookup condition is removed from the list.

- 9. Click **Reset** to reset the lookup condition.
- 10. Click Ok.

This creates a left outer join between the connected entities.

5.2.3.4 Using Aggregation for an EDD

NOTE

To use the aggregation component, follow these steps:



component on the canvas to define an

1. Drag and drop the **Aggregation** aggregation on an EDD.

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

- 2. It accepts input only from an EDD and it can have only one output.
- **3.** If you have multiple EDDs to be aggregated then you must select as many numbers of aggregation components, connect to the respective EDD, and then define their group by and having clauses.

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4. For example, to add aggregation to three EDDs, drag three aggregation components.

Figure 42: Aggregation for an EDD New Connector Window



- **5.** At any given time, right-click the aggregation component to either delink or remove inlinks / outlinks or delete the aggregation component.
- **6.** Double-click the aggregation component to define an aggregation condition. The Aggregation window is displayed:
- 7. Here you see the selected EDD under the entity tab.

		Functions	Onumber
AATB_ACCT_ADDRESS Parameters	Search Columns by Name	 Database Functions Aggregation Date and Time Mathematical 	
Group By		Having	

Figure 43: Aggregation Window

- 8. Select the group by columns and specify an expression for the having clause.
- **9.** Click **Reset** to reset all the aggregation conditions.
- **10.** Click **Validate** to verify the correctness of the SQL expression.
- 11. Click Ok.

5.2.3.5 Using Aggregation for Entire Dataset

To use the aggregation component, follow these steps:



component on the canvas to define an

1. Drag and drop the **Aggregation** aggregation on the entire dataset.

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

2. It accepts input only from the mapping component or filter that is connected to the mapping component.

Figure 44: Aggregation for Entire Dataset New Connector Window



- **3.** At any given time, right-click the aggregation component to either delink or remove inlinks / outlinks or delete the aggregation component.
- **4.** Double-click the aggregation component to define an aggregation condition. The Aggregation window is displayed:
- 5. Here you see the selected EDD under the entity tab.

Figure 45: Aggregation Window

Entities	Search Columns By Name	Functions	Operators
AATB_ACCT_ADDRESS Parameters	PIC,MIS,DATE DATE DATE VNSEQUENCE,NUMBER VJACCHAR2 VARCHAR2 VARCHAR	 Totabase Functions Totabase Function	Coperators Concatenation Comparison
Froup By		Having	

- 6. Select the group by columns and specify an expression for the having clause.
- 7. Click **Reset** to reset all the aggregation conditions.
- 8. Click **Validate** to verify the correctness of the SQL expression.
- 9. Click **Ok**.

5.2.3.6 Using Transpose (Rows to Columns) for an EDD

To use the Transpose (Rows to Columns) component, follow these steps:

1. Drag and drop the **Transpose** (Rows to Columns) **Component** on the canvas to define a Transpose (Rows to Columns) component on an EDD.

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

- 2. It accepts input only from an EDD and it can have only one output.
- **3.** If you have multiple EDDs selected, and you want to have a Transpose (Rows to Columns) component for more than one EDD, then you must select as many numbers of Transpose (Rows to Columns) components, connect to the respective EDD, and then define their expressions.



Figure 46: Transpose (Rows to Columns) for an EDD New Connector Window



- **4.** At any given time, right-click the Transpose (Rows to Columns) component to either delink or remove inlinks / outlinks or delete a Transpose (Rows to Columns) component.
- **5.** Double-click the component to transpose the entity rows into columns. The Transpose Row to Column window is displayed.

6. Here you see the selected EDD and parameters.

Figure 47: Transpose (Rows to Columns) Window

Transpose Row To Column - GL Intra Com	npany Code					×
Data Elements	N_ATTR_2_VALUE ×					Review
Pivot Data Element	FIC_MIS_DATE	¥	Entities	Search Columns By Nam	e	
Column Name Matching Row Value	Expression	+				
	[GL Intra Company Code].[N_ATTR_3_VALUE]	×	GL Intra Company Code	DATE	Â	
	IGL Intra Company CodeLIN_ATTR_3_VALUE	×	Parameters	N_ATTR_2_VALUE	- 14	
				N_ATTR_3_VALUE		
				N_LEAF_ORDER		
				NUMBER		
				NUMBER	•	
			Expression			
			Expression			
					0	
					G	
					Kese	rt Apply
						Ok

- 7. Specify the pivot data element to transpose rows into columns.
- **8.** Specify the Row Value Transposed Column Expression combination. You must have a minimum of two combinations.
- **9.** Click Review to review the transformation. The Review Transformation window displays the sample of the transformation data.

Figure 48: Review Transformation V	Window
------------------------------------	--------

Review Tran	Review Transformation ×									
GL Intra Com	pany Code - wit	h sample data								
FIC_MIS_DATE	N_ATTR_2_VALUE	N_ATTR_3_VALUE	N_LEAF_ORDER	N_LEVEL_2_ORDER	N_LEVEL_3_ORDER	N_LEVEL_4_ORDER	N_LEVEL_5_ORDER	N_LEVEL_6_ORDER	N_LEVEL_7_ORDER	N_LEVEL_8_ORDER
	X2	Y31	Y41	Y51	Y61	Y71	Y81	Y91	¥101	Y111
	X2	Y32	Y42	Y52	Y62	Y72	Y82	Y92	Y102	Y112
N_ATTR_2_VALU	E Intra Compai	ny code - rows t	o columns with	above sample d	ata					
N ATTR 2 VAU	c	,								
Х2							Y32		Y32	
										Ok

10. Click Ok.

5.2.3.7 Using Transpose (Columns to Rows) for an EDD

To use the Transpose (Columns to Rows) component, follow these steps:

1. Drag and drop the **Transpose** (Columns to Rows) component on the connector window to define a Transpose (Columns to Rows) component on an EDD.

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

- 2. It accepts input only from an EDD and it can have only one output.
- **3.** If you have multiple EDDs selected, and you want to have Transpose (Columns to Rows) component for more than one EDD, then you must select as many numbers of Transpose (Columns to Rows) components, connect to the respective EDD, and then define their expressions.

NOTE The output can be connected to Join, Lookup, and Mapping.

4. For example, to add the Transpose (Columns to Rows) component to three EDDs, drag three Transpose (Columns to Rows) components.

Figure 49: Transpose (Columns to Rows) for an EDD New Connector Window



- **5.** At any given time, right-click the Transpose (Columns to Rows) component to either delink or remove inlinks / outlinks or delete a Transpose (Columns to Rows) component.
- **6.** Double-click the component to transpose the entity columns into rows. The Transpose Column to Row window is displayed.
- 7. Here you see the selected EDD and its parameters.

Figure 50: Transpose (Columns to Rows) Window

Transpose Column to Row - GL Intra Compar	ny Code			×
Unpivot Data Elements			Auto Transpose	Review
Header Column Name	Header Column	Entities	Search Columns By Name	
Value Column Name	Value Column	GL Intra Company Code	FIC_MIS_DATE	
No data to display.	Value Column	Parameters	N_ATTR_2_VALUE	1.1
			NUMBER	
			N_LEAF_ORDER NUMBER	
			N_LEVEL_2_ORDER	-
		Expression		
			Reset	Apply
				Ok

8. Specify the Unpivot Data Element to transpose columns into rows.

- **9.** Specify the Header Column Name and Value Column Name.
- **10.** Specify the Column Value (Header column) and Expression Pair (Value column) for each transposed row. You must have a minimum of two pairs.
- **11.** After specifying the Unpivot Data Elements, click **Auto Transpose**. This will transpose columns into rows based on the unpivot data elements selected.

Figure 51: Transpose (Columns to Rows) Window

npivot Data Elements	pivot Data Elements N_ATTR_3_VALUE ×			Auto Trans		
ader Column Name Header Column			Entition	_		
lue Column Name		Value Column		Enuties	Search Columns By Name	
leader Column Value Column			+	GL Intra Company Code	VARCHAR2	
FIC MIS DATE	[GL Intra Company Code],[FIC_MIS_DATE]		×	Parameters	V_INTRA_GROUP_CODE_LEVEL04 VARCHAR2	
	TTR 2 VALUE [GL Intra Company CodeLIN_ATTR 2 VALUE]		X		V_INTRA_GROUP_CODE_LEVEL05 VARCHAR2	
ALLEAS OPDER		ra Company Codel IN LEAE ORDERI	~ ~		V_INTRA_GROUP_CODE_LEVEL06	
LEVEL 2 ORDER [GL Intra Company Code],[N_LEVEL 2, ORDER]		ra Company Code].[N_LEVEL_2_ORDER]	~ ×		V_INTRA_GROUP_CODE_LEVEL07 VARCHAR2	
LEVEL_3_ORDER	[GL Intr	ra Company Code].[N_LEVEL_3_ORDER]	×			
LEVEL_4_ORDER	[GL Intr	ra Company Code].[N_LEVEL_4_ORDER]	×	Expression		
LEVEL_5_ORDER	[GL Intr	a Company Code].[N_LEVEL_5_ORDER]	×	[GL Intra Company Code].[N	_LEAF_ORDER]	
LEVEL_6_ORDER	[GL Intr	ra Company Code].[N_LEVEL_6_ORDER]	×			
N_LEVEL_7_ORDER	[GL Intr	ra Company Code].[N_LEVEL_7_ORDER]	×			
					Reset	

- **12.** You can also click + drag and drop the columns.
- **13.** Click **Review** to review the transformation. The Review Transformation window displays the sample of the transformation data.

Figure 52: Review Transformation Window

Review Tran	sformation										×
GL Intra Com	pany Code - wit	h a sample row									^
FIC_MIS_DATE	N_ATTR_2_VALUE	N_ATTR_3_VALUE	N_LEAF_ORDER	N_LEVEL_2_ORDER	N_LEVEL_3_ORDER	N_LEVEL_4_ORDER	N_LEVEL_5_ORDER	N_LEVEL_6_ORDER	N_LEVEL_7_ORDER	N_LEVEL_8_ORE	DEF
X1	Х2	ХЗ	X4	X5	X6	Х7	X8	Х9	X10	X11	
4											•
Transformed	GL Intra Compa	ny Code - single	row to multipl	le rows							
N_ATTR_3_VALU	JE		Header Colu	nmı				Value Colum	in		
Х3			FIC_MIS_DA	TE		X1					*
Х3			N_ATTR_2_V	N_ATTR_2_VALUE X2							
Х3			N_LEAF_ORI	N_LEAF_ORDER				X4			ш
Х3			N_LEVEL_2_	ORDER				X5			ш
Х3			N_LEVEL_3_0	L_3_ORDER				X6	Хб		U
Х3			N_LEVEL_4_ORDER				X7			ы	
Х3			N_LEVEL_5_0	ORDER				X8			
											Ok

14. Click Ok.

5.2.3.8 Using Derived Column

To use the Derived Column component, follow these steps:

1. Drag and drop **Derived Column**

component on the canvas.

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

2. Connect the Derived Column to the mapping.







- **3.** At any given time, right-click the expression component to either delink or remove outlinks or delete an expression component.
- 4. Double-click the Derived Column component.

The Derived Expression window for Derived Column is displayed.

Figure 54: Derived Column Window

CONNECTORS Derived Columns (0) Q Search 1 Items Add Delete Entities Search Name Expression Balance Cards 0 Days Past Due Balance Derived Column 0 'IN' || [Cards].[Account Branch Code] × Parameters 90 Days Past Due Balance NAccount Attrition Score Account Branch Code *** Derived Column 0 Name 'IN' || [Cards].[Account Branch Code] Expression Reset Validate Apply

- **5.** Click **Add** to define a new Derived Column.
- 6. Click **Edit** to specify the name and expression of the Derived Column. You see the selected EDDs in the right tab.
- 7. Click Validate in case you wish to verify the correctness of the SQL expression.
- 8. Click Apply.
- 9. Repeat the steps for as many Derived Columns.
- 10. Click Ok.

5.2.3.9 Using Mapping

1. Double-click **Mapping**. The Mapping window is displayed.

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys on the keyboard to reorder.

NOTE

The input and output for the Mapping component must be connected before specifying the mappings.

2. The mapping window displays the EDDs and ADIs and their respective data / derived data elements.

Figure 55: Mapping Window

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ATD/ACCOUNTING_DATALS +	Accounting Entries *		Search			
urce †1 °	Target	łt⊧ ≏	•	Source Column: D_VALUE_DATE Source Entities AATE ACCOUNTING ENTERS	Target Column: Value Date Target Estime Annuaries Entise	
ADS	Account / Contract Code			Remarks: Validation Successful		
	VARCHAR2	- 11	0	Source Column: V_USER_REPERENCE_CODE Source Entities AATS ACCOUNTING ENTRES	Tarpet Column: User Reference Code Tarpet Estitus Accounting Entries	
DATE	VARCHAR2			Remarks: Validation Successful		
D_PROCESS_DATE	Account Currency		0	Source Column: N_TIN_SUB_SEQ_NUM	Tarpet Column: Transaction Sub Sequence Number	
DATE DATE	VARCHAR2	- 11		Remarks: Validation Successful	Target Lating: Accounting Literes	
DATE	NUMBER			Source Column: V_TINLREF_ND	Target Column: Transaction Reference	
D_VALUE_DATE	Account Ledger Tag Code			Source Entity: AATE_ACCOUNTING_ENTRIES Remarks: Validation Successful	Target Entity: Accounting Entites	
DATE ELCONTE	VARCHAR2	- 11		Source Column: D,POSTING,DATE	Tarpet Column: Transaction Posting Date	
DATE	NUMBER			Source Entity: AATE_ACCOUNTING_ENTRES	Target Entity: Accounting Entries	
F_CANCELING_INDICATOR	Account Module Type			Seurce Column: V_TINUMNEMONIC_CODE	Target Column: Transaction Mnemonic Code	
F DRCR INDICATOR	Arcount Product Code		S	Source Entity: AATE_ACCOUNTING_ENTRIES	Target Entity: Accounting Entities	
CHAR	VARCHAR2			Remarks: Validation Successful	Vacual Columns: Transition loant Code	
F_INTER_BRANCH_FLAG	Account Transaction Type		•	Source Entity: AATE_ACCOUNTING_ENTRES	Target Entity: Accounting Entities	
F LEDGER FLAG	Accounting Entry Identifier			Remarks: Validation Successful		
VARCHAR2	VARCHAR2		0	Source Columny V_TITLDESC Source Entity: AATE_ACCOUNTING_ENTITIES	Target Column: Transaction Description Target Entity: Accounting Entries	
N_ACCT_CCY_AMIT	Amount Tag Code			Remarks: Validation Successful		
remark.	1000-000		0	Source Columny DUTINUDATE	Target Column: Transaction Date	
			Page 1	of 7 (1-10 of 61 items) K 5 1 2 3 4	5 _ 7 > X	

- **4.** The following validations are done for the mapping:
 - a. Data Type Validation

3.

- b. Data Length Validation
- c. Data Precision Validation
- **5.** If validation is successful, it displays Successful next to the mapping.
- 6. If any of the validations fail, it displays Warning next to the mapping.
- 7. At any given time, you can select **Unmap** to unmap the source and target.
- **8.** Click **Auto-Map** to auto map a source and target.

NOTE Auto-mapping is done by matching the logical/physical column name of both the source or target.

9. In the Source column, click **Filter** \ddagger . Enable it to view the unmapped items.

NOTE

The mapped columns are displayed in red.

10. In the Target column, click **Filter +I+** . Enable it to view the unmapped, mandatory, and valid for applications.



11. Under the Target column, you can hover over each item to see the details. It provides the description, length, and scale information.

- **12.** Click **Search** to search for a column name under the Source or Target column list.
- **13.** Click **Delete** to delete all the mappings. You can also delete individual mappings by selecting the cross symbol next to the column mapping.
- **14.** Click **Import Mapping** to import a mapping Excel. Choose mapping Excel from the file browser.
- **15.** Click **Export Mapping** to export the mapping information. This downloads an Excel file.
- **16.** Click **Search** to search for a column mapping. You can search for an item based on the source column name, target column name, source or target entity, or a remark.

5.2.3.10 Using the Flatten Table to PC Hierarchy Transformation for an EDD

To use the Flatten table to PC Hierarchy Transformation, follow these steps:

1. Drag and drop the **PC Hierarchy** component on the canvas.

Alternatively, you can navigate to the component using the Tab key and use key board shortcut Ctrl C (Copy) and Ctrl V (Paste) to copy and paste the component on the canvas. To position the component, select the component and use arrow keys

2. Connect the Derived Column to the mapping.

on the keyboard to reorder.

NOTE The output must be connected to the mapping.

Figure 56: PC Hierarchy New Connector Window



- **3.** At any given time, right-click the expression component to either delink or remove outlinks or delete an expression component.
- **4.** To define the expression, double-click the Flatten table to the PC hierarchy. The Flattened Table to Hierarchy window is displayed.

ent Node Column Name Child Node Column Name Child Node ZBements FIC_MIS_DATE • vel 0 Node N_LEVEL_3_ORDER • vel 2 Node V_LEVEL_4_NAME • vf Node V_INTRA_GROUP_CODE •	ierarchy Type	Balanced	Ragged	Skipped	0	Number of levels		4	
VEI Rements FIC_MIS_DATE ▼ Vel 1 Node N_LEVEL_3_ORDER ▼ vel 2 Node V_LEVEL_4_NAME ▼ vfl Node V_LINTRA_GROUP_CODE ▼	arent Node Column Name	Parent Node				Child Node Column Name		Child Node	
Vel 0 Node FLC_MIS_DATE vel 1 Node N_LEVEL3_ORDER vel 2 Node V_LEVEL4_NAME of Node V_ITRA_GROUP_CODE	ey Elements								
N_LEVEL_3_ORDER • vel 2 Node V_LEVEL_4_NAME • vf Node V_INTRA_GROUP_CODE •	evel 0 Node					FIC_MIS_DATE	Ŧ		
V_LEVEL_4_NAME * af Node V_INTRA_GROUP_CODE *	evel 1 Node					N_LEVEL_3_ORDER	Ŧ		
V_INTRA_GROUP_CODE	vel 2 Node					/_LEVEL_4_NAME	٣		
	af Node					/_INTRA_GROUP_CODE	Ŧ		

Figure 57: Flattened Table to Hierarchy Window

 Choose the Hierarchy Type. The types of hierarchy supported are Balanced, Ragged, and Skipped. Click 2 to view the details and understand how the hierarchies are defined.

Figure 58: Flattened Table to Hierarchy Window

Flattened Table To Hierarchy - GL Intra Group Cod	e		×
P Level Dataset Dataset Chinada	Number of levels Child Node Column Name	4 Child Node	
	FIC_MIS_DATE	•	
Balanced Hierarchy Lever 2 Node	V_LEVEL_4_NAME	v	
Leaf Node	V_INTRA_GROUP_CODE	v	
		(1	Review Ok

- 6. Specify the Number of levels in the hierarchy. This field accepts only numbers.
- **7.** Specify the Parent Node Column name and Child Node Column name which are used in the mapping.
- 8. Select the Key Elements from the drop-down list.
- **9.** Select all nodes. You can change the date and or other details from the drop-down list.
- **10.** Click **Review** to view the transformation changes.

11. Click Ok.

5.2.4 Specifying Alias in Connector

Alias refers to an assumed name or pseudonym assigned to an EDD or an ADI as you define Connectors, much like table aliases used in SQL statements. Aliases allow an EDD or an ADI to be referred in multiple joins, lookups, or both, within the same Connector definition, each in a distinct context.

Aliases are automatically initiated by DIH as and when required while defining Connectors. The following scenario explains the mechanism:

1. Drag and drop an ADI or EDD more than once, for use in separate joins or looks-up, on the New Connector canvas. DIH initiates the specification of an alias by displaying the **Specify Alias** dialog box.



Figure 59: Specify Alias

2. Enter a name of your choice under Alias Name and click Ok. Note that the Alias Names must be unique within a Connector.

Figure 60: New Connector Window



5.2.5 Connector Properties

The properties by default have some values. For every connector, it needs to be reviewed. Generally, no change is required.

The following table describes the fields in the connector properties.

Table 7: Connector Properties

Fields	Applicable Values	Description	Default
			Value
Loading mechanism	 External Table SOLLDR 	There are two options External Table and SQLLDR.	SQLLDR
		• External Table - If the loading mechanism is selected as an External table, then the file-landing zone must be located/mounted on the database server.	
		• SQLLDR - This option is only applicable when OFSAA is hosted in Oracle Database. The file-landing zone must be located or mounted on the server where the ODI agent is running. Oracle Database Client must be installed in the server where the ODI agent is running.	
		NOTE : If the loading mechanism is selected as External Table, the file must be located in the same place as the database server.	
		If the target database type is HDFS, only the External Table option is enabled.	
		If the target database type is Oracle, provide CREATE DIRECTORY role to the Atomic schema. Also, the path/folder used in the directory must have read and write permissions.	
DIRECT	TrueFalse	Direct path load of SQLLDR. Values can be True and False.	TRUE
Parallel	TrueFalse	Parallel option. True means the loading happens with parallel option and False means it happens sequentially.	TRUE
Degree of Parallel	Integer	Decides the degree of parallelism. The values specified here must be a number.	0
No: of Errors	Integer	Shows the number of errors allowed for the SQLLDR and External Table to proceed. That means a single record fails the job fails. The values specified here must be a number.	0

CONNECTORS

Fields	Applicable Values	Description	Default
			Value
Maximum Discard	Integer	Discarded records allowed for SQLLDR. This must be set to a very high number when using multiple subtypes under an ADI. That means it is multiple targets.	1
XML date Format	Valid XML Date format	In this field, you can define the format of the XML Date. Example : MMDDYYYY.	MMDDYYYY
Avoid Partition Exchange	• Yes • No	The property option decides whether the Partition Exchange method is used during the data load. NOTE: If the connector execution fails during partition exchange for some reason, then it can be avoided by choosing the option "Yes".	No
Do you want to use Data Pump?	• Yes • No	There are two values 'Yes' and 'No'. If the value is 'Yes', it indicates that the Oracle Database source is loaded into OFSAA using the Data Pump method. Alternatively, the standard way of using the DBLink method is followed. NOTE : The following access is required for the data pump option. Grant create any directory to Source schema Grant create any directory to the target schema Grant execute on DBMS_FILE_TRANSFER to the target schema Grant execute on utl_file to the source schema	No
Source and Target in the Same Environment?	• Yes • No	This parameter is used only if the Data Pump is used. If the value is, 'Yes' then the file transfer step is not performed during loading. Alternatively, it will transfer files from source to target folder using DBLink.	Yes
Source Dump Location	/src/tmp	Specify a folder/path that is accessible by the Source Oracle Database to create the dump file.	/src/tmp
Target Dump Location	/target/tmp	Specify a folder/path that is accessible by Target Oracle Database to read the dump file.	/target/tmp
Number of Splits for Dump File	Integer	Specify a number to transfer the files in parallel chunks. For example, 3 indicates that the dump file is split into three and transferred separately. This is to improve the performance of file transfer. The values specified here must be a number.	0

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Fields	Applicable Values	Description	Default
Effective Dated Key for Result Area?	Yes No	This parameter is used for loading data into the result area. It decides whether it will perform a lookup into a dimension for the latest record, or an effective dated record. To get the latest record, it appends f_latest_record_indicator ='Y' and for effective dated it appends mis_date between d_record_start_date and d_record_end_date. NOTE: For extraction data or any date attribute, effective dating does not work. If this parameter is selected as "Yes" and any date field needs to be loaded into an Extraction date or any other date field, then do not rely on surrogate key generation. Use the derived column and enter the value in the format	No
Do you want to use DBLink?	• Yes • No	This parameter is used to specify the source database connection method. There are two values 'Yes' and 'No'. If the value is 'Yes', it indicates a connection source database is created using the DBLink method. If the value is 'No', it indicates a connection to the source database is created using the JDBC URL.	No
Hive Date Format	yyyy-MM-dd	This parameter is used to specify the date format for date columns in Hive source.	yyyy-MM-dd

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Fields	Applicable Values	Description	Default Value
Do you want to use Big Data SQL?	YesNo	This parameter is used to specify the loading mechanism from the HIVE source.	No
		If you have selected Yes, Oracle Big Data SQL is used.	
		NOTE : The following are the pre- requisites for this method:	
		 The Oracle Big Data SQL is installed and configured on Oracle Big Data Appliance and Database (OFSAA) machines. 	
		 In the OFSAA database, a directory named DEFAULT_DIR is created. 	
		• The folder/system path specified for the above directory must be accessible to the database (OFSAA).	
		For more information see: https://docs.oracle.com/bigdata/bda45/ BDSUG/installing.htm#BDSUG-GUID- 5CDA332E-8CB8-42CC-8922- 09295E22B0E5	
		If you have selected No, Oracle Loader for Hadoop is used.	
		NOTE : The following are the pre- requisites for this method:	
		 Oracle Loader of Hadoop connectors is installed and configured in the source system. 	
		 The ODI agent is also configured for OLH. 	
		For more information see:	
		https://docs.oracle.com/cd/E72987_01/ odi/odi-big-data/setup.htm#ODIBD117	

5.2.6 Modifying and Viewing a Connector

To edit or view a connector, follow these steps:

1. To edit or view a connector, you can select the required connector from the connector summary.

NOTE	You can edit an existing connector, other than connectors in
	Published status. To edit a connector in Published status, you
	must first un-publish it and then open it.

- **2.** The connectors are created open in their respective view mode.
- **3.** The details of the selected connector are displayed. You can modify or view the details.

- **4.** The Connector Name cannot be edited. Update the other required details.
- 5. Click **Save** to save the changes made.
- **6.** To make changes to a published connector, click 'Unpublish'. The 'Unpublish' option clears the ODI metadata that has been created during publishing. Update the required changes and then click Publish. The updated changes are synced in ODI.

5.2.7 Copying a Connector

To copy an existing Connector, follow these steps:

1. Click **Copy U** for the required connector. A **Save As** dialog box is displayed.

Figure 61: Save Connector As

Save CC	NN_EXT_AGG_LOAD As
Name *	
Description	
	Save Save

Depending on the view in which the original connector is created, the copied connector will have the same view.

- 2. Enter the name and description.
- **3.** Click **Save**. The Connector details are saved with a new specified connector name. The existing connector remains unmodified.

5.2.8 Deleting a Connector

To delete an existing Connector, perform the following steps:

- **1.** Click **Delete U** for the required connector. A confirmation dialog box is displayed.
- 2. Click **Yes** to delete a connector. The Connector is deleted. If you do not wish to delete, click No.

5.2.9 Search and Filter

The Search and Filter option in the UI helps you to find the required information. You can enter the nearest matching keyword to search, and filter the results by entering information on the search box. You can search for a connector with either the name, description, or status of the connector.

For example, enter the keyword as 'CON_DRM_GL' in the search box. All the connector names with 'CON_DRM_GL' are listed.

You can sort the list by connector name or modified date (ascending or descending order).
5.2.10 Parameters in Connector

Parameters are used while defining the mapping, between EDD to ADI. While mapping the ADI to EDD, the fields or columns within the ADI needs to be mapped to the fields in EDD. If there are no corresponding extracts in EDD, parameters can be used to identify the default values for certain ADI elements. Also, parameters can be used while defining derived columns during mapping.

For example, if you want to use the Runtime MIS date as the parameter, then it must be converted to date first. The following is the expression:

To_char(to_date(#DIHDEV.MIS_DATE,'dd-MON-YYYY'),'MM')

NOTE Runtime batch MIS date is in string format. It must be converted to DATE. The date format used here must be a valid SQL date format.

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