



# Podium Reference Guide

Version 1.3

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# 1 INTRODUCTION

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Podium, a data management platform from Podium Data enables users to source, store and provision data in a secure and scalable environment. Podium was designed to provide features for managing, discovering and preparing data.

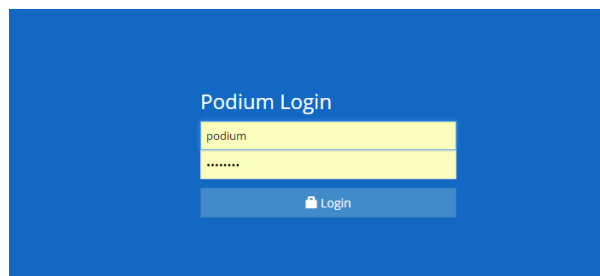
Through an intuitive web based user interface, users can source data into Podium, browse and tag metadata to find and associate the fields they are interested in, and then select these fields for creation of custom views of their own datasets.

## 2 PODIUM BASICS

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### 2.1 LOGGING IN

Users will gain access to data once they have entered the User ID and Password provided.



### 2.2 USER MANAGEMENT

Podium interacts with two distinct users, an Administrator and a Data User. While this can also be the same individual, the functions are different. For example, an *Administrator* can import metadata, load source data, create users and groups while the *Data User* can “discover” the data and metadata that has been loaded into Podium. Users are defined by the roles they are assigned and the groups they are members of (more details later). The Data User can be assigned as a “Master Analyst” or an “Analyst” while the Administrator is assigned an “Admin” role.

The table below summarizes Functions and Roles:

<b>Role Function</b>	<b>Analyst</b>	<b>Master Analyst</b>	<b>Administrator</b>
Load Data	N	Y	Y
Load / Modify Metadata	N	Y	Y
Browse / Search	Y	Y	Y
Shop For Data	Y	Y	Y
Data Preparation/Transformation	N	Y	Y
Data Export	N	Y	Y
Create Users	N	N	Y
Data Groups / Roles	N	N	Y

# 3 NAVIGATING PODIUM

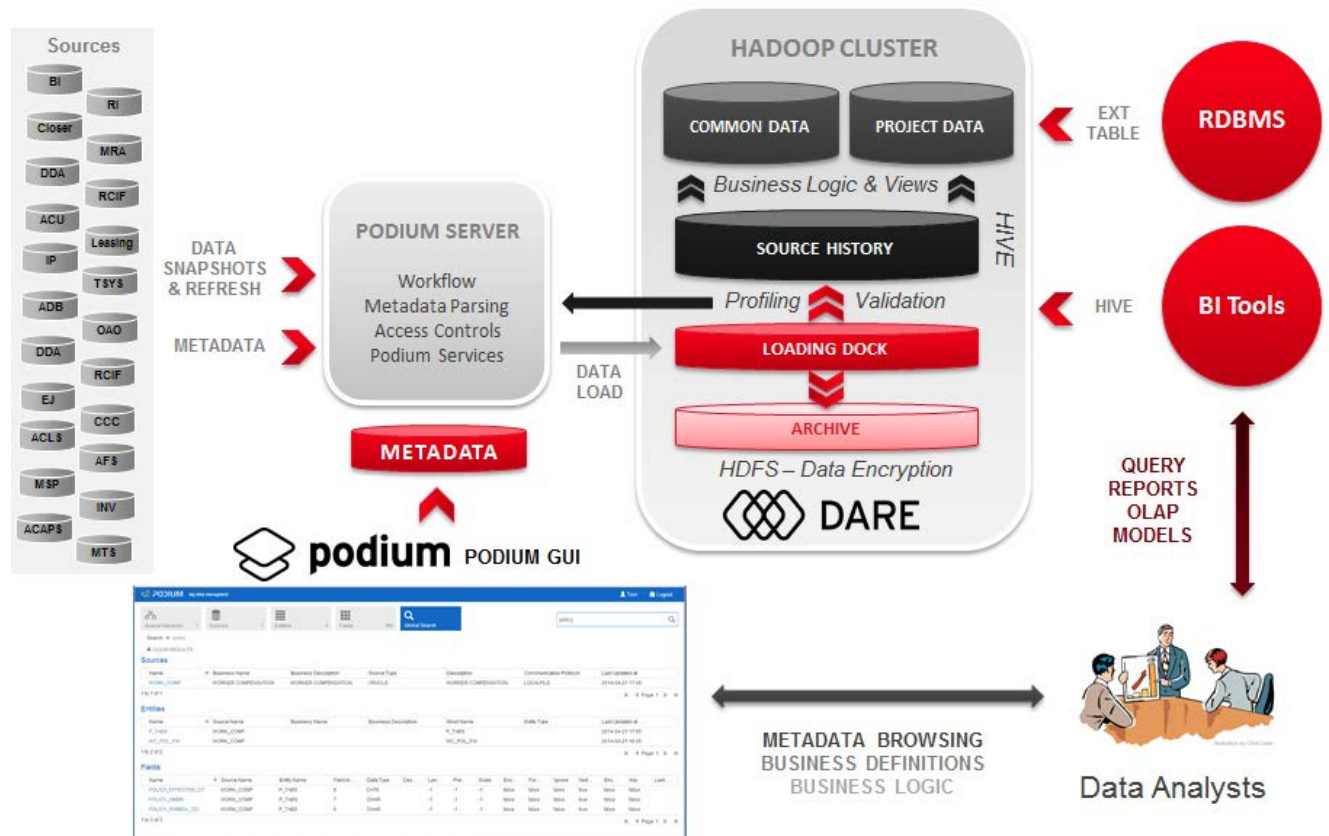
## 3.1 DATA FLOW IN PODIUM

Before diving deep into the user interface of Podium, below is a description of what happens under the covers that will give a better understanding of what's at their fingertips. The default behavior when ingesting data in Podium, is to:

- Archive and compress a copy in its original source format (for auditing, etc.)
- Validate the data
- Profile the data
- Partition the data
- Expose the data via HIVE, Oracle External table or Teradata SQL-H table
- Encrypt the data (optional)

The users of Podium can feel confident in the data because of the exhaustive validation and profiling. The overhead of these steps is minimized by Podiums smart memory management and the leveraging of HADOOP and map reduce.

A visual flow of the data in Podium is shown in the following diagram:



As the users are “discovering data” in Podium, users can review business and technical metadata, data validation issues, data profiling statistics, and sample data to ensure they fully understand the data they are working with.

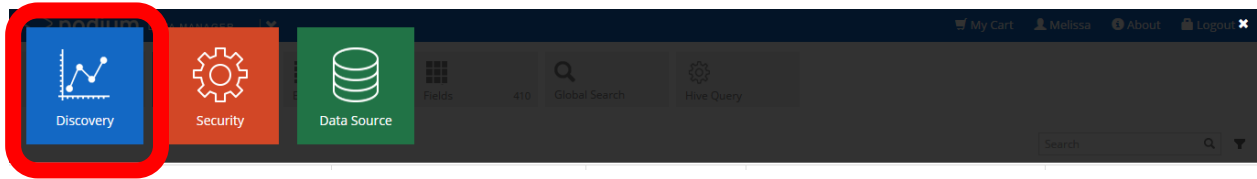
### **3.2 USE CASE (GUIDE BY EXAMPLE)**

This reference guide will provide Use Cases with examples. Podium has been designed to be extremely intuitive which enables data self-service. Specifically, over time, your Data Lake Platform managed by Podium will grow to include hundreds of sources, thousands of entities and hundreds of thousands of fields. Managed by Podium, this data is secured and accessible via the Podium interface. Users of the system will want to search, browse and discover fields of data that are required for particular business initiatives. These initiatives include, but are not limited to:

- Analytic Data Sets
  - Find and Prepare data for R, SAS or other analytics tools
- Business Intelligence Reporting
  - Find and Prepare data for direct access or export to mart like systems for use with BI tools
- Data Quality and Validation
  - Create data quality reports for data governance and source system repair
- Data Transformation / ELT Offload
  - Quantify and Transform data for downstream use
    - Data Warehouse
    - Data Mart
    - Operational use

This guide will provide the reader and user with the ability to load, browse, collaborate and prepare data sets.

## 4 DISCOVERY MODULE



### 4.1 SOURCES

Once a user is logged in, the system automatically directs them to the Sources view. This provides a view of all the Sources of data and metadata the user has access to search, browse and/or edit.

Name	Business Name	Business Description	Source Type	Communication Protocol	Last update time
Customer_Service	Customer Service Data	Internal and external data regarding customer s...	PODIUM_INTERNAL	JDBC	03-06-2015 14:55
GBU			PODIUM_INTERNAL	JDBC	02-24-2015 15:03
HR	Human Resources	Data about employees, jobs, and company offic...	PODIUM_INTERNAL	JDBC	02-20-2015 16:04
MainFrame	Mainframe Accounts	Account and Transactions processed by mainfr...	PODIUM_INTERNAL	JDBC	02-20-2015 16:05
OMNITURE	Online Marketing Data	Online campaign detail records	PODIUM_INTERNAL	JDBC	02-24-2015 14:23
USER_VIEWS	User created custom views		PODIUM_INTERNAL	JDBC	02-24-2015 14:24

In order to view or update (depending on access level) the row for the data source should be highlighted. User must highlight the row for the Source by clicking anywhere within the row, but not on the hyperlink.

Name	Business Name	Business Description	Source Type	Communication Protocol
Customer_Service	Customer Service Data	Internal and external data regarding customer s...	PODIUM_INTERNAL	JDBC
GBU			PODIUM_INTERNAL	JDBC
HR	Human Resources	Data about employees, jobs, and company offic...	PODIUM_INTERNAL	JDBC
MainFrame	Mainframe Accounts	Account and Transactions processed by mainfr...	PODIUM_INTERNAL	JDBC
OMNITURE	Online Marketing Data	Online campaign detail records	PODIUM_INTERNAL	JDBC
USER_VIEWS	User created custom views		PODIUM_INTERNAL	JDBC

Customer\_Service

- Data Source
- Source Tags
- Source Properties (Key/Values)

Once highlighted the metadata properties pane for the data source will show to the right. Under the data source view users can view or update the following:



Data Source Metadata		Searchable Field	Analyst Access	Admin Access
• Name –	<i>Podium name defined when Source is created in the Data Source module. Cannot contain spaces.</i>	Y	View	View
• Business Name –	<i>Standard name for the source. Can contain spaces.</i>	Y	View	Edit
• Business Description –	<i>Standard description of the source</i>	Y	View	Edit
• Source Type –	<i>Describes type of technical system data was originally sourced from. The various system types are:</i> <ul style="list-style-type: none"> <li>○ File</li> <li>○ SQL Server</li> <li>○ Oracle</li> <li>○ Mainframe</li> <li>○ Podium_Internal – the data stored in Podium’s “receiving” area on the data lake.</li> <li>○ Hive</li> <li>○ Teradata</li> <li>○ PostgreSQL</li> <li>○ DB2</li> <li>○ MySQL</li> </ul>	N	View	Edit
• Communication Protocol –	<i>Technology used to bring data source into Podium. Data transfer types:</i> <ul style="list-style-type: none"> <li>○ FTP</li> <li>○ S3</li> <li>○ HDFS</li> <li>○ LocalFile</li> <li>○ JDBC</li> <li>○ SFTP</li> </ul>	N	View	Edit
• Last Updated –	<i>The date and time metadata was last updated</i>	N	View	View

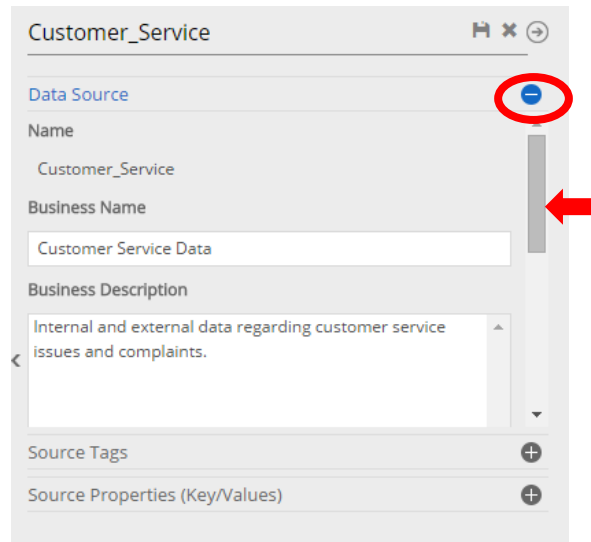
### 4.1.1 How to Edit Data Source Metadata

The screenshot shows the Podium Data Manager interface. At the top, there's a navigation bar with 'podium DATA MANAGER' and user information. Below it, a dashboard shows various metrics: Source Hierarchy (10), Sources (6), Entities (55), Fields (692), Global Search, and Hive Query. The main area displays a table of data sources:

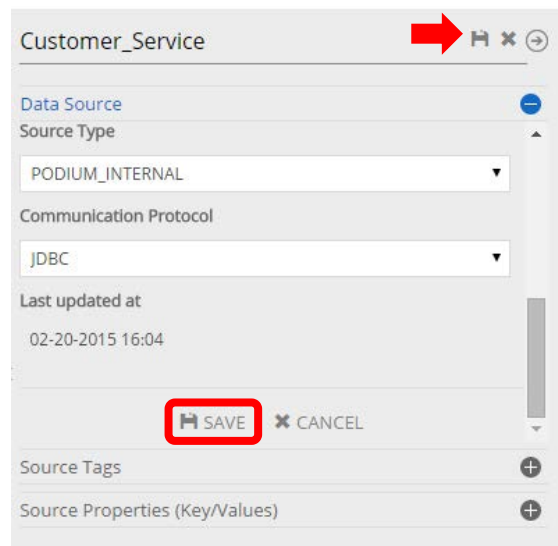
Name	Business Name	Business Description	Source Type	Communication Protocol
Customer_Service	Customer Service Data	Internal and external data regarding customer s...	PODIUM_INTERNAL	JDBC
GBU			PODIUM_INTERNAL	JDBC
HR	Human Resources	Data about employees, jobs, and company offic...	PODIUM_INTERNAL	JDBC
MainFrame	Mainframe Accounts	Account and Transactions processed by mainfr...	PODIUM_INTERNAL	JDBC
OMNITURE	Online Marketing Data	Online campaign detail records	PODIUM_INTERNAL	JDBC
USER_VIEWS	User created custom views		PODIUM_INTERNAL	JDBC

A red arrow points to the 'Customer\_Service' row. On the right, a sidebar for 'Customer\_Service' is open, showing options to edit the Data Source, Source Tags, and Source Properties (Key/Values).

Once highlighted the metadata pane for the data source will pop up to the right of the screen. Click on the “+” to see all Data Source metadata. Use the scrollbar to the right to navigate.



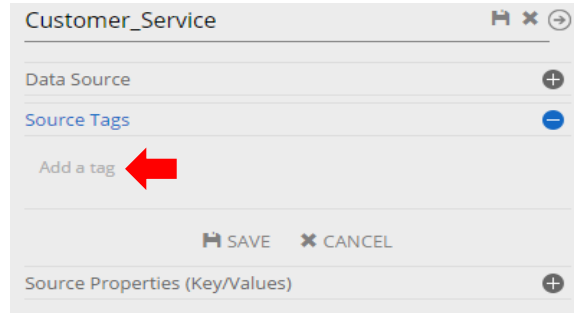
Type in edit. Hit “Save” at bottom of pane or icon on upper right corner of pane. *Note: must click “Save” for changes to be captured.*



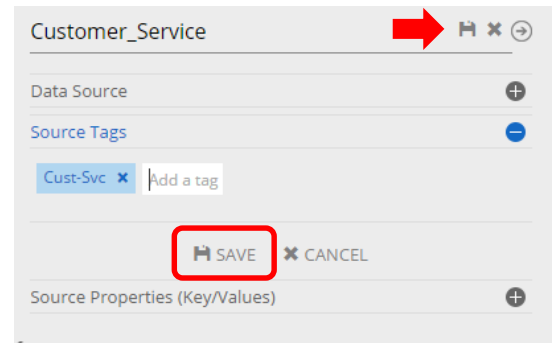
Source Tags Metadata	Searchable Field	Analyst Access	Admin Access
<i>Under the data source view the user can view and/or add tags to the data source. Tags associated with the source will be shown.</i>	Y	View	Edit

### 4.1.2 How to Create Metadata Tags

Once highlighted the metadata pane for the data source will pop up to the right of the screen. Click on the “+” to see all Source Tag metadata. Click on “Add a tag”.

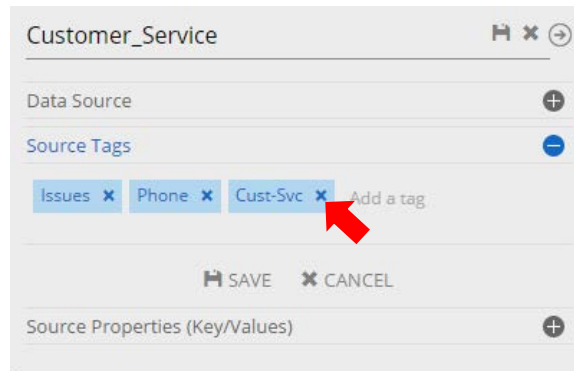


Type in new Tag. Hit Enter or Return to register the new tag. The newly entered Tag will be highlighted in blue. Hit Save or icon in order for newly created Tag to take effect.



### 4.1.3 How to Delete Metadata Tags

Click on the “+” to view Source Tags. Click on the “x” next to the tag to be deleted. Hit Save or icon in order for changes to take effect.



### Source Properties (Keys/Values) Metadata

User can view and/or input a Key/Value pair that consists of a name and value code that will allow access different types of properties within the data.

Searchable Field	Analyst Access	Admin Access
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N	View	Edit
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#### 4.1.4 How to Create Metadata Properties


Once highlighted the metadata pane for the data source will pop up to the right of the screen. Click on the “+” to see all Source Properties metadata.

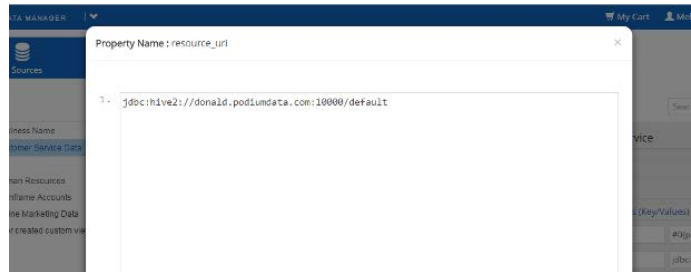
Click on the “+” under the last listed Key/Value.

The screenshot shows a metadata pane for 'Customer\_Service'. It has sections for 'Data Source', 'Source Tags', and 'Source Properties (Key/Values)'. Under 'Source Properties', there are three rows: 'pwd' with value '#0{poirSryuYZZfbLCCpaewjw=}', 'resource\_uri' with value 'jdbc:hive2://donald.podiumdata.c', and 'username' with an empty field. A red arrow points to a plus sign (+) at the bottom of the list. At the bottom of the pane are 'SAVE' and 'CANCEL' buttons.

A new row with blank fields will pop up. Input Key and Value information. Once completed hit “Save” or icon in order for changes to take effect.

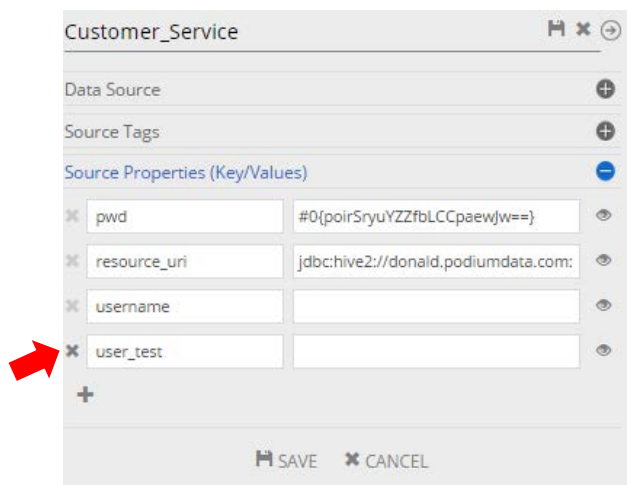
This screenshot is similar to the previous one, but it shows a fourth row in the 'Source Properties' section with blank fields for 'Key' and 'Value'. A red arrow points to the 'SAVE' button at the bottom of the pane, which is also circled in red.

In the event that more space is needed to input Value information, click on the  icon. A window will pop up. Once data is inputted, close window.



#### 4.1.5 How to Delete Metadata Properties

Click on the “+” to view Source Properties. Click on the “x” next to the key/value to be deleted. Hit Save or icon in order for changes to take effect.



**NOTE:** *The process for completing tags will be the same for editing the metadata for Entities and Fields.*

## 4.2 ENTITIES

Entities view provides a list of the collection of tables loaded from the data sources. As with the Sources view, each Entity has its own metadata properties that can be viewed and/or edited.

User can navigate to Entities section by clicking on the hyperlink on the source to see the entities associated with that source or by selecting Entities from the top navigation row.

The following are viewable and/or editable metadata properties within Entities:

Entity Metadata		Searchable Field	Analyst Access	Admin Access
• Name –	<i>Created when data is uploaded</i>	N	View	View
• Business Name –	<i>Standard name in definition of the source</i>	Y	View	Edit
• Business Description –	<i>Standard description of the source</i>	Y	View	Edit
• Short Name –	<i>Optional alternate name for the entity</i>	N	View	Edit
• Entity Type –			View	Edit
• Last Updated –	<i>Provides date and time metadata was last updated</i>	N	View	View

Entity Tags Metadata		Searchable Field	Analyst Access	Admin Access
<i>User can view and/or add tags to the data source, which will be searchable throughout system.</i>		Y	Edit	Edit

## Entity Properties (Keys/Values) Metadata

User can view and/or input a Key/Value pair that consists of a name and value code that will allow access different types of properties within the data.

Searchable Field	Analyst Access	Admin Access
N	View	Edit

*NOTE: Please refer to previous section on how to create and delete metadata properties.*

## 4.3 FIELDS

Fields view provides a list of attributes that comprise the individual Entity. Each Field listed has its own metadata that can be viewed and/or edited. The fields also have statistical information about the content of the data loaded (data profile).

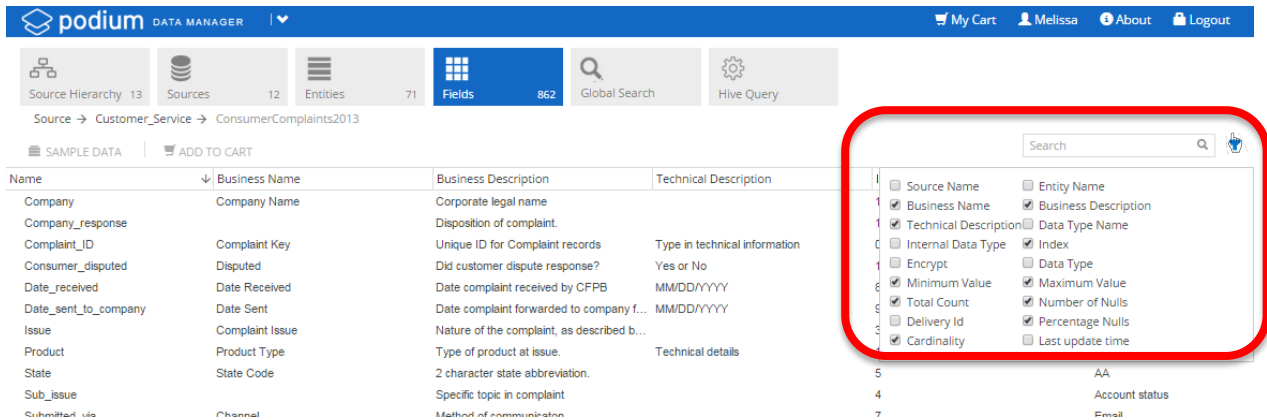
User can navigate to Fields section by clicking on the hyperlink on the entity to see the fields associated with that source or by selecting Fields from the top navigation row.

Name	Source Name	Business Name	Business Description	Last update time
✓ ConsumerComplaints2013	Customer_Service	US Consumer Complaints	Consumer complaints for 2013 collected by CFPB.	02-11-2015 13:39
Census_zips_MHV	Customer_Service	Zip Codes with MHV	Census data with Mean Home Value by zip code	01-21-2015 10:10
CC_Encrypted	Customer_Service			01-23-2015 09:41
cc	Customer_Service			02-12-2015 14:21

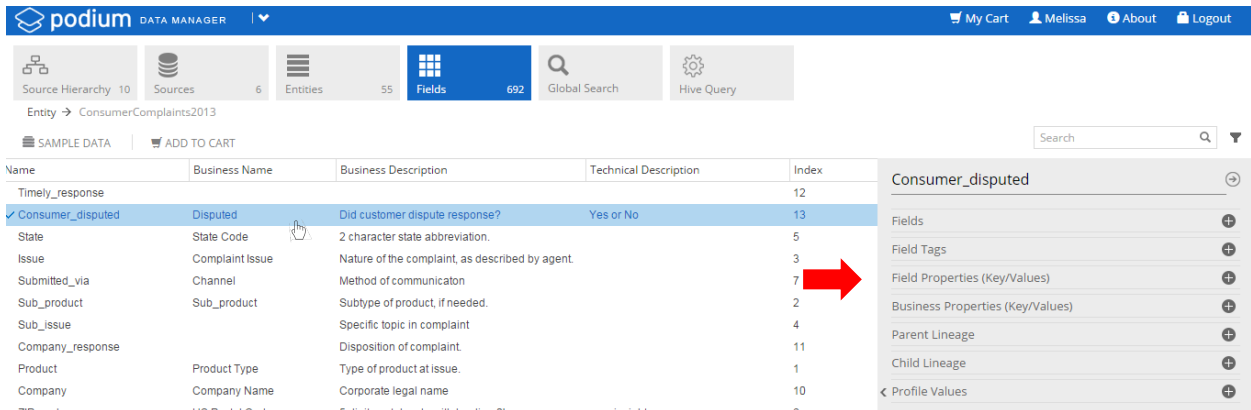
Fields have a wide variety of associated metadata, including business names and definitions, technical descriptions and format information, and profiling statistics that are calculated when the data is loaded, as show on the screen below:

Name	Business Name	Business Description	Technical Description	Index	Minimum Value	Maximum Value
Company	Company Name	Corporate legal name		10	(Former)Shapiro, Swertfeger & Hasty, ...	iServe Trust
Company_response		Disposition of complaint.		11	Closed	Untimely response
Complain_ID	Complaint Key	Unique ID for Complaint records	Type in technical information	0	1	1085758
Consumer_disputed	Disputed	Did customer dispute response?	Yes or No	13	No	Yes
Date_received	Date Received	Date complaint received by CFPB	MM/DD/YYYY	8	01/01/2012	12/31/2013
Date_sent_to_company	Date Sent	Date complaint forwarded to company f...	MM/DD/YYYY	9	01/01/2013	12/31/2013
Issue	Complaint Issue	Nature of the complaint, as described b...		3	APR or interest rate	Wrong amount charged or rec
Product	Product Type	Type of product at issue.	Technical details	1	Bank account or service	Student loan
State	State Code	2 character state abbreviation.		5	AA	WY
Sub_issue		Specific topic in complaint		4	Account status	Used obscene/profane/abusive
Submitted_via	Channel	Method of communication		7	Email	Web
Sub_product	Sub_product	Subtype of product, if needed.		2	(CD) Certificate of deposit	Vehicle loan
Timely_response				12	No	Yes
ZIP_code	US Postal Code	5 digit postal code with leading 0's	your insights	6	00001	99999

As described earlier, the metadata attributes to display can be customized by selecting the “filter” icon on the upper right of the display grid.



As with other Podium objects, selecting a specific field opens the detailed metadata pane (shown below).



The following are viewable and/or editable metadata within Fields:

Fields Metadata		Searchable Field	Analyst Access	Admin Access
• Name –	<i>Created when data is uploaded</i>	N	View	View
• Business Name –	<i>Standard name in definition of the source</i>	Y	View	Edit
• Business Description –	<i>Standard description of the source</i>	Y	View	Edit
• Technical Description –	<i>Freeform field to describe technical characteristics of the data</i>	Y	View	Edit
• Data Type –	<i>The data type of the field in its source system. Types are described in the Appendix.</i>	N	View	Edit



<ul style="list-style-type: none"> <li>Internal Data Type – <ul style="list-style-type: none"> <li>Integer</li> <li>Decimal</li> <li>Date</li> <li>String</li> <li>CLOB</li> <li>Boolean</li> </ul> </li> </ul>	The data type of the field as stored in Podium receiving	N	View	Edit
<ul style="list-style-type: none"> <li>Index –</li> </ul>	Column position of field in table	N	View	Edit
<ul style="list-style-type: none"> <li>Encrypt –</li> </ul>	Indicates whether or not field was encrypted when loaded	N	View	Edit
<ul style="list-style-type: none"> <li>Sensitive –</li> </ul>	Indicates whether the field contains sensitive data. Used by data export to control obfuscation and masking.	N	View	
<ul style="list-style-type: none"> <li>Last Updated –</li> </ul>	Provides date and time metadata was last updated	N	View	View

Field Tags Metadata	Searchable Field	Analyst Access	Admin Access
User can view and/or add tags to the field, which will be searchable throughout system.	Y	Edit	Edit

Field Properties (Key/Values) Metadata	Searchable Field	Analyst Access	Admin Access
User can view and/or add tags to the field, which will be searchable throughout system.	Y	View	Edit

Business Properties (Key/Values) Metadata	Searchable Field	Analyst Access	Admin Access
User can view and/or add tags to the field, which will be searchable throughout system.	Y	View	Edit

Parent Lineage Metadata	Searchable Field	Analyst Access	Admin Access
Shows the source of the field data through a dropdown hierarchy.	N	View	View

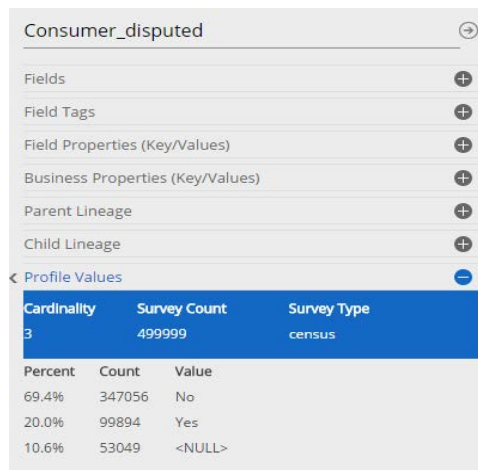


<b>Child Lineage Metadata</b>	Searchable Field	Analyst Access	Admin Access
<i>Shows the source of the field data through a dropdown hierarchy; identifies any other Podium data lake objects using this field.</i>		View	View



<b>Profile Values</b>	Searchable Field	Analyst Access	Admin Access
<i>Provides a snapshot view of how many distinct data values are found within the field (cardinality), survey count and survey type.</i>	Y	View	View

User is able to view the breakdown of each cardinality by Percent, Count and Value. Values that are presented are based on the latest data loaded (by date last calendar load).



This distribution of values will provides the following information:

**Cardinality –** Uniqueness of values for that field. If the cardinality is an estimate based on a sample survey, there will be a wavy equal sign ( $\approx$ ) in front of the number.

**Survey Type** – Describes the method for creating the distribution. “Census” means that every value in the field was counted for an exact distribution. “Sample” means that there were too many unique values in the field to be efficiently counted, and a sample of values were used to estimate the cardinality and distribution. “Log10Bucketing” is used for high-cardinality numeric values and counts the number of values in the range specified in the Survey Count.

**Survey Count** – Provides the total number used to create the distribution.

**Profile Values** – This provides the actual values, count and percentage.

Field Name	Minimum Value	Maximum Value	Number of Nulls	Percentage Nulls	Total Count
silver			0	0.0%	3
athlete	Aleksy Nemov	Ryan Lochte	0	0.0%	3
yearof			0	0.0%	3
bronze			0	0.0%	3
closedate	10/1/2003	3/29/2004	0	0.0%	3
event	Gymnastics	Swimming	0	0.0%	3
gold			0	0.0%	3
country	Australia	United States	0	0.0%	3
totalmedals			0	0.0%	3
age			0	0.0%	3

Percent	Count	Value
37.5%	3	Michael Phelps
12.5%	1	Aleksy Nemov
12.5%	1	Alicia Coutts
12.5%	1	Missy Franklin
12.5%	1	Natalie Coughlin
12.5%	1	Ryan Lochte

Users can limit the amount of information that is seen at a point in time by filtering the attributes being displayed. If the user wishes to permanently change the view, they must make changes to settings under User Preferences.

To make changes to current view, click on filter icon. A window will pop up displaying the attributes being viewed. User must unclick the attributes they do not wish to view. Once selections are made, click the filter icon again.

Name	Source Name	Entity Name	Business Name	Business Description	Technical Description	Data Type Name	Internal Data Type
Company	Customer_Service	ConsumerComplain...	Company Name	Corporate legal name		STRING	STRING
Company_respo...	Customer_Service	ConsumerComplain...		Disposition of compl...		STRING	STRING
Complaint_ID	Customer_Service	ConsumerComplain...	Complaint Key	Unique ID for Compl...	Type in technical inf...	INTEGER	STRING
Consumer_dispu...	Customer_Service	ConsumerComplain...	Disputed	Did customer disput...	Yes or No	STRING	STRING
Date_received	Customer_Service	ConsumerComplain...	Date Received	Date complaint rece...		STRING	STRING
Date_sent_to_co...	Customer_Service	ConsumerComplain...	Date Sent	Date complaint forw...		STRING	STRING
Issue	Customer_Service	ConsumerComplain...	Complaint Issue	Nature of the compl...		STRING	STRING
Product	Customer_Service	ConsumerComplain...	Product Type	Type of product at is...		STRING	STRING
State	Customer_Service	ConsumerComplain...	State Code	?	Character etals sh	STRING	STRING

Source Name	Entity Name	Business Name	Business Description	Technical Description	Data Type Name	Internal Data Type
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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Source Hierarchy 11 | Sources 6 | Entities 55 | Fields 692 | Global Search | Hive Query

Source → Customer\_Service → ConsumerComplaints2013

SAMPLE DATA | ADD TO CART

Name	Source Name	Entity Name	Business Name	Business Descri...	Technical Descr...	Data Type Name	Internal Data Ty...	Index	Encrypt	Data Type
Company	Customer_Service	ConsumerComplain...	Company Name	Corporate legal name		STRING	STRING	10	false	STRING
Company_respo...	Customer_Service	ConsumerComplain...		Disposition of compl...		STRING	STRING	11	false	STRING
Complaint_ID	Customer_Service	ConsumerComplain...	Complaint Key	Unique ID for Compl...	Type in technical inf...	INTEGER	STRING	0	false	INTEGER
Consumer_dispu...	Customer_Service	ConsumerComplain...	Disputed	Did customer disput...	Yes or No	STRING	STRING	13	false	STRING
Date_received	Customer_Service	ConsumerComplain...	Date Received	Date complaint rece...	MM/DD/YYYY	STRING	STRING	8	false	STRING
Date_sent_to_co...	Customer_Service	ConsumerComplain...	Date Sent	Date complaint forw...	MM/DD/YYYY	STRING	STRING	9	false	STRING
Issue	Customer_Service	ConsumerComplain...	Complaint Issue	Nature of the compl...		STRING	STRING	3	false	STRING
Product	Customer_Service	ConsumerComplain...	Product Type	Type of product at is...		STRING	STRING	1	false	STRING
State	Customer_Service	ConsumerComplain...	State Code	2 character state ab...		STRING	STRING	5	false	STRING
Sub_issue	Customer_Service	ConsumerComplain...		Specific topic in com...		STRING	STRING	4	false	STRING

1 to 10 of 14 | Page 1

### 4.3.1 Real Time Response: Sample Data

It is often useful to see sample records when selecting data for analysis or preparation. The field view allows sample records to be reviewed interactively with the sample data function.

To view sample data, multi-select the fields (standard multi-select via shift-click or control-click) and click on the Sample Data link.

Multi-Selected Fields:

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Source Hierarchy 13 | Sources 11 | Entities 70 | Fields 834 | Global Search | Hive Query

Entity → cc

SAMPLE DATA | ADD TO CART

Name	Source Name	Entity Name	Business Name	Business Descri...	Technical Descr...	Data Type Name	Internal Data Ty...	Ir
cc_company	Customer_Service	cc				STRING	STRING	11
cc_company_res...	Customer_Service	cc				STRING	STRING	11
cc_complaint_id	Customer_Service	cc				STRING	STRING	0
cc_consumer_dis...	Customer_Service	cc				STRING	STRING	11
cc_date_received	Customer_Service	cc				STRING	STRING	8
cc_date_sent_to...	Customer_Service	cc				STRING	STRING	9
cc_issue	Customer_Service	cc				STRING	STRING	3
cc_product	Customer_Service	cc				STRING	STRING	1
cc_state	Customer_Service	cc				STRING	STRING	5
cc_sub_issue	Customer_Service	cc				STRING	STRING	4

cc\_state

- Fields
- Field Tags
- Field Properties (Key/Values)
- Business Properties (Key/Values)
- Parent Lineage
- Child Lineage
- Profile Values

Clicking on the Sample Data button displays sample records for the highlighted fields, as illustrated below:

Sample Data:

Entity → cc → 6 fields selected

SAMPLE DATA: 1000

cc_company	cc_company_response	cc_complaint_id	cc_consumer_disputed
Account Control Technol	Closed with non-monetary relief	1076043	
ACS Education Services	Closed with explanation	1073302	Yes
Adler Wallach & Associates, Inc.	Closed with explanation	1075311	
Admin Recovery, LLC	Closed with explanation	1083135	
Admin Recovery, LLC	Closed	1082550	
Advance America, Cash Advance Centers, Inc.	Closed with explanation	1069335	
AES/PHEAA	Closed with explanation	1079511	

By default 1000 records are displayed. The number of sample records can be varied through the drop-down menu above the sample data grid.

## 4.4 SOURCE HIERARCHY

Source Hierarchy is set up as a folder system that allows for easy navigation of all data sources. Provides an organized view of Data Sources viewable and accessible to the user based on the role/function assigned.

Source Hierarchy 10

Source Hierarchy

+ ADD HIERARCHY   RENAME   UPDATE PARENT

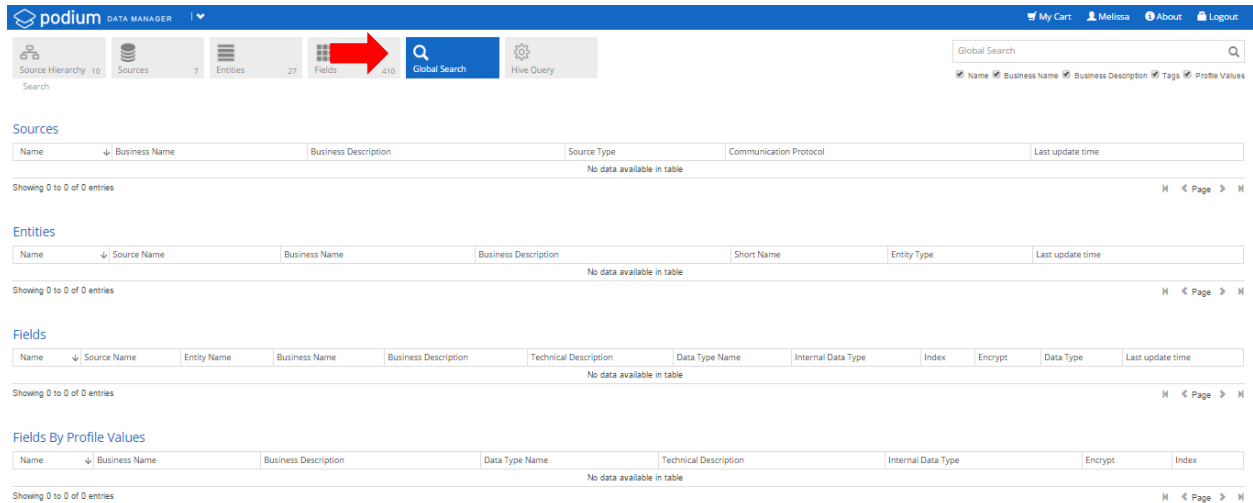
- amajidWT (2)
- astellas (1)
- CUSTOM (3)
  - PB\_Test (0)
  - DEFAULT (34)
- gov (0)
  - faa (1)
- MAINT (1)
- SECURE (1)
- sha (1)
- TD (1)
- TEST\_QA (1)

Within this view the user will be able to:

- Add Hierarchy - User creates a new hierarchy, once created it a new parent level will be displayed with the name assigned
- Rename – User renames the parent or child level data source
- Update Parent – User can update the parent or child level hierarchy of data sources

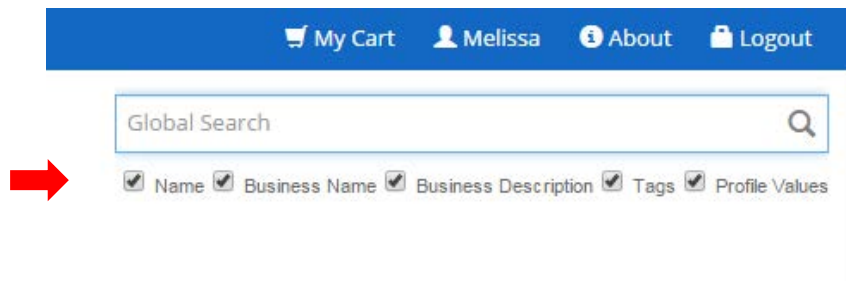
## 4.5 GLOBAL SEARCH

Users can conduct a “Global Search” for objects within Podium.



The screenshot shows the Podium Data Manager interface. At the top, there is a navigation bar with the Podium logo and "DATA MANAGER". On the right, there are links for "My Cart", "Melissa", "About", and "Logout". Below the navigation bar, there are several menu items: "Source Hierarchy" (10), "Sources" (7), "Entities" (27), "Fields" (410), "Global Search" (highlighted with a red arrow), and "Hive Query". To the right of these menu items is a "Global Search" input field with a search icon. Below the input field, there are checkboxes for "Name", "Business Name", "Business Description", "Tags", and "Profile Values". The main content area shows four sections: "Sources", "Entities", "Fields", and "Fields By Profile Values". Each section has a table with columns and a message "No data available in table".

The search capability does a “fuzzy” search by default. Users have the ability to search the following: (selectable below the search bar)



This close-up screenshot shows the "Global Search" input field and the search criteria checkboxes. A red arrow points to the checkboxes for "Name", "Business Name", "Business Description", "Tags", and "Profile Values".

**Name:** Searches the Object Name (Source Hierarchy, Source, Entity and Field)

**Business Name:** Searches the Business Name field within each object.

**Business Description:** Searches the Business Description field within each object.

**Tags:** Searches all tags within each object.

**Profile Values:** Podium stores actual field data values as a part of profiling activities and these values are available for searching. NOTE: If an expected value does NOT return it does not mean it doesn't exist in the data, as a sample of values may be taken for a particular field dependent upon the cardinality.

A user simply types in a value for searching and all objects meeting that criteria will return to the results window. For example, the search below is for the string “ENGINE” in all searchable attributes except for Profile Values.

The screenshot shows the POJUM search interface. The search bar contains the text 'engine'. Below the search bar, there are three sections: Sources, Entities, and Fields. The Sources section shows 'No data available in table'. The Entities section shows three results: 'engine', 'mf\_engine', and 'mf\_engine'. The Fields section shows a table of fields with columns: Name, Source Name, Entity Name, Business Name, Business Description, Technical Description, Data Type Name, Internal Data Type, Length, Precision, Scale, Index, Validation Reges, Null Proxy Reges, Required, Encrypted at Source, Encrypt, Hidden, Key, Foreign ke. The search results are filtered to show only fields related to 'engine'.

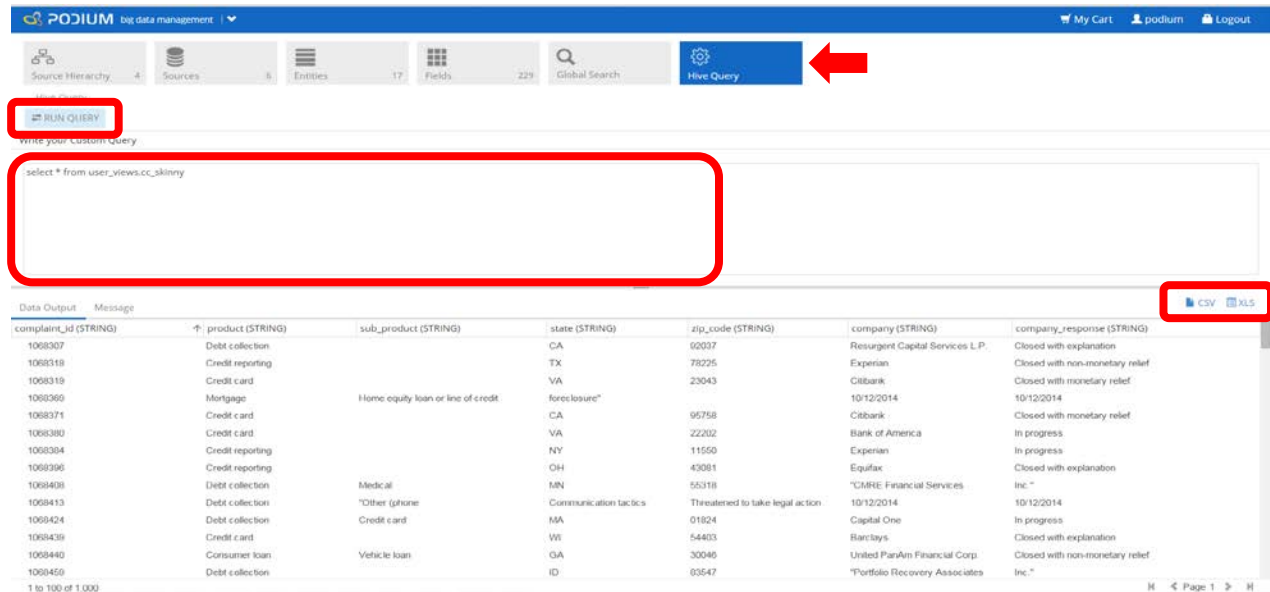
The same search with Profile Values selected:

The screenshot shows the POJUM search interface with the search bar containing 'engine'. The search results are filtered to show only fields related to 'engine'. The Fields section shows a table of fields with columns: Name, Business Name, Business Description, Data Type Name, Technical Description, Internal Data Type, Length, Precision, Required, Encrypted at Source, Encrypt, Key, Foreign key, Hidden, No Trim, Validation Reges, Null Proxy Reges, Scale, Index. The search results are filtered to show only fields related to 'engine'.

At this point, users can select each object in the search results to get more detailed information such as profile data, sample data etc. This will help validate that fields are in fact the required fields the users are interested in.

## 4.6 HIVE QUERY

The Podium Hive window allows users to run most HIVE commands from directly in Podium. The results are displayed in the Podium grid format. Here is an example of a simple select:



The screenshot shows the Podium interface for running a Hive query. The top navigation bar includes 'PODIUM big data management', 'My Cart', 'podium', and 'Logout'. Below the navigation bar, there are tabs for 'Source Hierarchy', 'Sources', 'Entities', 'Fields', 'Global Search', and 'Hive Query'. A red arrow points to the 'Hive Query' tab. Below the tabs, there is a 'RUN QUERY' button and a text input field containing the query: 'select \* from user\_views.cc\_skinny'. Below the query input, there is a 'Data Output' section with a table of results. The table has columns: 'complaint\_id (STRING)', 'product (STRING)', 'sub\_product (STRING)', 'state (STRING)', 'zip\_code (STRING)', 'company (STRING)', and 'company\_response (STRING)'. The results are limited to 1000 rows. On the right side of the table, there are buttons for 'CSV' and 'XLS' to download the data.

complaint_id (STRING)	product (STRING)	sub_product (STRING)	state (STRING)	zip_code (STRING)	company (STRING)	company_response (STRING)
1068307	Debt collection		CA	92037	Resurgent Capital Services L.P.	Closed with explanation
1068318	Credit reporting		TX	78226	Experian	Closed with non-monetary relief
1068319	Credit card		VA	23043	Citibank	Closed with monetary relief
1068369	Mortgage	Home equity loan or line of credit			10/12/2014	10/12/2014
1068371	Credit card		CA	95758	Citibank	Closed with monetary relief
1068380	Credit card		VA	22202	Bank of America	In progress
1068384	Credit reporting		NY	11550	Experian	In progress
1068396	Credit reporting		OH	43081	Equifax	Closed with explanation
1068408	Debt collection	Medical	MN	55318	"CMRE Financial Services Inc."	Inc."
1068413	Debt collection	"Other (phone			10/12/2014	10/12/2014
1068424	Debt collection	Credit card	MA	01924	Capital One	In progress
1068439	Credit card		WI	54403	Barclays	Closed with explanation
1068440	Consumer loan	Vehicle loan	GA	30046	United PanAm Financial Corp.	Closed with non-monetary relief
1068450	Debt collection		ID	83647	"Portfolio Recovery Associates Inc."	Inc."

Podium uses the same object names for HIVE objects. Sources correspond to a HIVE schema, entities to HIVE tables, and fields to HIVE columns. This allows familiar HQL syntax (which is based on SQL) to be used to write HIVE queries.

Queries results are limited to 1000 rows. These results can be downloaded to your local computer as a CSV (comma separated values) or XLS (spreadsheet) file by clicking on the appropriate button above the result window on the right. The query will be re-executed before the data is downloaded.



## 5 SHOP FOR DATA

Ultimately, the goal of Podium is to provide the user with a self-service interface to create the datasets they require to accomplish their jobs. This may include Data Governance, Business Intelligence, Data Provisioning (for data marts, warehouses etc.) and Analytics.

Podium's Shop for Data (SFD) feature enables to users to create custom views using a shopping cart metaphor. As users browse data fields, they can add them to their "shopping cart." When ready, users "check out" the data which creates a custom HIVE view of this data for further processing in Podium. The HIVE view is also available in HCATALOG for any tool that can connect to it (such as BI tools or RDBMS). Alternatively, SFD allows the data to be exported to an external file.

For example, suppose the user is interested in several fields in the "Consumer\_Complaints" entity shown below. They want to create a simple view of this entity containing the 7 columns they have "discovered."

The user selects (multi-selects) the fields:

Name	Source Name	Entity Name	Business Name	Business Description	Technical Description	Data Type Name	Internal Data Type
✓ Complaint_ID	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
✓ Product	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
✓ Sub_product	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
Issue	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
Sub_issue	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
✓ State	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
✓ ZIP_code	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
Submitted_via	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
Date_received	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
Date_sent_to_company	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
✓ Company	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
✓ Company_response	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
Timely_response	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING
Consumer_disputed	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING

The user clicks *ADD TO CART* and these fields are placed in the cart. The user can continue discovering data and adding fields, but for this Use Case, we will the go to the cart to review and checkout by clicking *MY CART FIELDS*.

Name	Source Name	Entity Name	Business Name	Business Description	Technical Description	Data Type	Internal Data Type	Length	Precision	Scale	Index	Validation Regex	Null Proxy Regex	Required	Encrypt
Complaint_ID	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING	200	-1	0	0			false	false
Product	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING	200	-1	0	1			false	false
Sub_product	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING	200	-1	0	2			false	false
State	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING	200	-1	0	5			false	false
ZIP_code	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING	200	-1	0	6			false	false
Company	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING	200	-1	0	10			false	false
Company_response	EXTERNAL_DATA	CONSUMER_COMPLA...				STRING	STRING	200	-1	0	11			false	false

The user confirms that these are the fields they want, and click *CHECKOUT*. This opens a checkout window in which the user can do the following:

- Name the view (required)
- Add JOINS (optional)
- Add customized functions (optional)

The checkout process will validate the view definition by executing in HIVE. All HIVE syntax and functions are supported. For a more information, check out:

<https://cwiki.apache.org/confluence/display/Hive/LanguageManual>

Below is how NAME of VIEW appears, just before *VALIDATE QUERY* is clicked:

The screenshot shows the Podium interface with a 'CHECKOUT' modal window open. The modal contains a 'Validate your Query' section with a table name 'CC\_SKINNY' and a Hive query definition. The 'VALIDATE QUERY' button is highlighted with a red box. The background shows a table with columns: External Data Type, Length, Precision, Scale, Index, Validation Regex, Null Proxy Regex, Required, and Encryp.

External Data Type	Length	Precision	Scale	Index	Validation Regex	Null Proxy Regex	Required	Encryp
TRING	200	-1	0	0			false	false
TRING	200	-1	0	1			false	false
TRING	200	-1	0	2			false	false
TRING	200	-1	0	5			false	false
TRING	200	-1	0	6			false	false
TRING	200	-1	0	10			false	false
TRING	200	-1	0	11			false	false

Once *VALIDATE QUERY* is clicked, you will notice the name of the view is now in the definition in the cart, ready to be created:

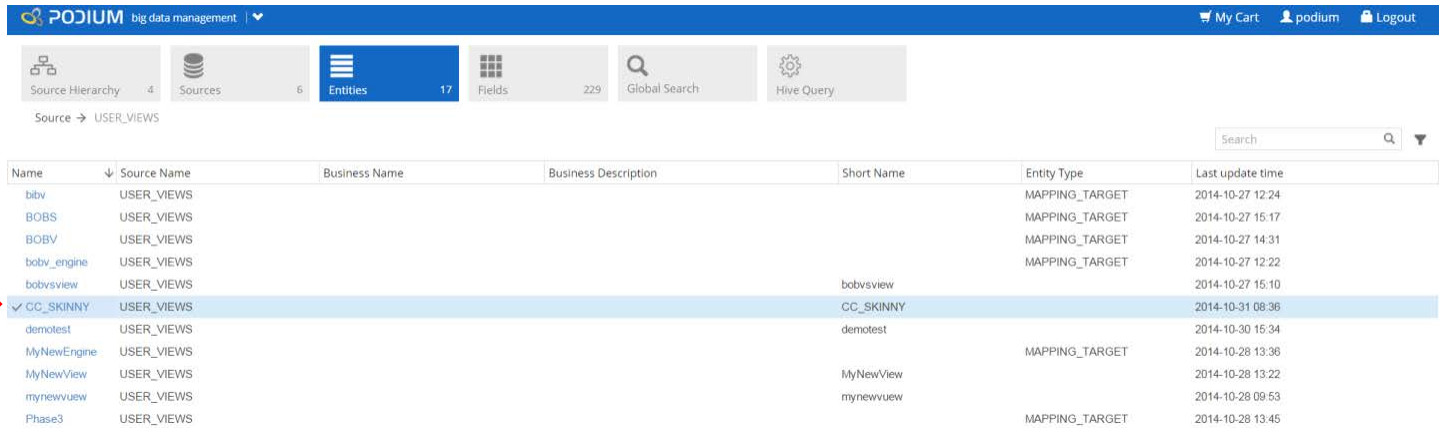
The screenshot shows the Podium interface with the 'CHECKOUT' modal window open. The modal contains a 'Validate your Query' section with a table name 'CC\_SKINNY' and a Hive query definition. The 'VALIDATE QUERY' button is highlighted with a red box. The background shows a table with columns: External Data Type, Length, Precision, Scale, Index, Validation Regex, Null Proxy Regex, Required, and Encryp.

Success! Query Validated Successfully.

```
"CREATE VIEW USER_VIEWS.CC_SKINNY AS SELECT CONSUMER_COMPLAINTS.Complaint_ID AS Complaint_ID ,CONSUMER_COMPLAINTS.Product AS Product ,CONSUMER_COMPLAINTS.Sub_product AS Sub_product ,CONSUMER_COMPLAINTS.State AS State ,CONSUMER_COMPLAINTS.ZIP_code AS ZIP_code ,CONSUMER_COMPLAINTS.Company AS Company ,CONSUMER_COMPLAINTS.Company_response AS Company_response FROM EXTERNAL_DATA.CONSUMER_COMPLAINTS CONSUMER_COMPLAINTS "
```

External Data Type	Length	Precision	Scale	Index	Validation Regex	Null Proxy Regex	Required	Encryp
TRING	200	-1	0	0			false	false
TRING	200	-1	0	1			false	false
TRING	200	-1	0	2			false	false
TRING	200	-1	0	5			false	false
TRING	200	-1	0	6			false	false
TRING	200	-1	0	10			false	false
TRING	200	-1	0	11			false	false

Once the validation is successful, the user will click *CONTINUE CHECKOUT* and the view will be created in source: USER\_VIEWS.



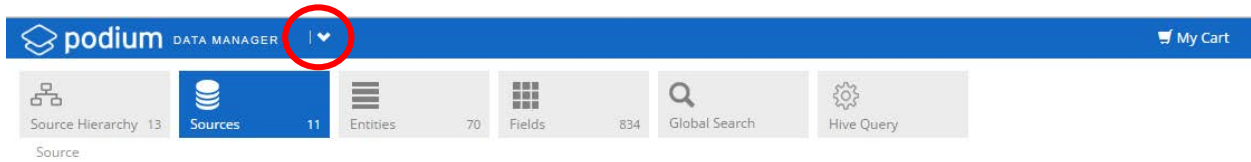
The screenshot shows the PODIUM big data management interface. The top navigation bar includes 'PODIUM big data management', 'My Cart', 'podium', and 'Logout'. Below the navigation bar are several menu items: 'Source Hierarchy 4', 'Sources 6', 'Entities 17', 'Fields 229', 'Global Search', and 'Hive Query'. The main content area shows a table of views under the source 'USER\_VIEWS'. The table has columns for Name, Source Name, Business Name, Business Description, Short Name, Entity Type, and Last update time. The view 'CC\_SKINNY' is highlighted in blue, and a red arrow points to it.

Name	Source Name	Business Name	Business Description	Short Name	Entity Type	Last update time
bobv	USER_VIEWS				MAPPING_TARGET	2014-10-27 12:24
BOBS	USER_VIEWS				MAPPING_TARGET	2014-10-27 15:17
BOBV	USER_VIEWS				MAPPING_TARGET	2014-10-27 14:31
bobv_engine	USER_VIEWS				MAPPING_TARGET	2014-10-27 12:22
bobsvview	USER_VIEWS			bobsvview		2014-10-27 15:10
✓ CC_SKINNY	USER_VIEWS			CC_SKINNY		2014-10-31 08:38
demotest	USER_VIEWS			demotest		2014-10-30 15:34
MyNewEngine	USER_VIEWS				MAPPING_TARGET	2014-10-28 13:36
MyNewView	USER_VIEWS			MyNewView		2014-10-28 13:22
mynewvuew	USER_VIEWS			mynewvuew		2014-10-28 09:53
Phase3	USER_VIEWS				MAPPING_TARGET	2014-10-28 13:45

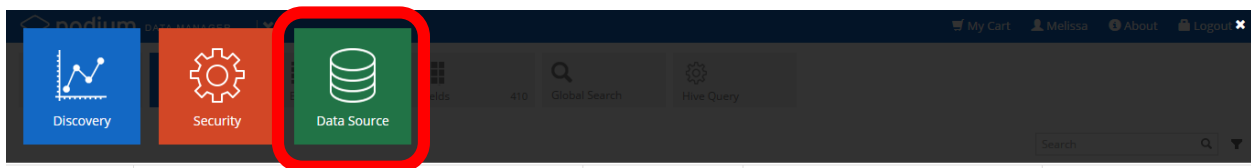
This VIEW can now be queried with standard HIVE QL, exported and used to connect directly on any BI or analytics tool.

## 6 DATA SOURCE MODULE

Once logged in, users can navigate to the Data Source Module by clicking on the arrow on the top of the screen.



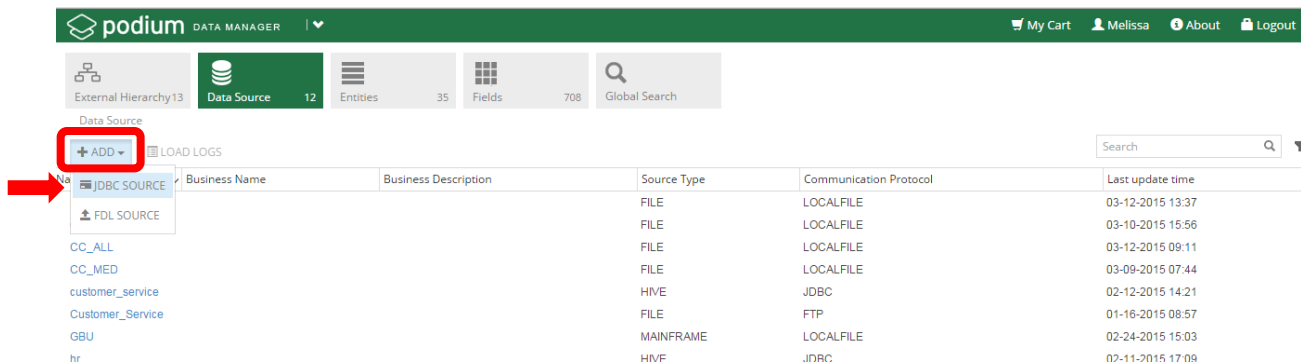
*Note: Data Source Module is only accessible by Admin level users*



The following will describe the various ways to load metadata from the PODIUM User Interface, including a variety of file formats and connecting to a relational database.

### 6.1 LOAD DATA: NEW SOURCE FROM JDBC

From the Data Source Module (Green) section of the Podium UI select “ADD” and then select the option “JDBC SOURCE”.



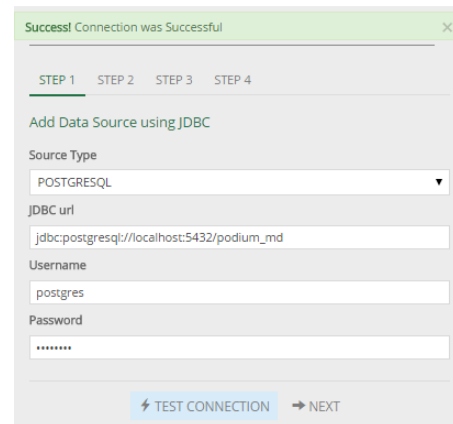
When adding a JDBC data source with the Podium UI, it will be done via a JDBC connection to any JDBC source database.

The wizard will guide the user through the following steps to establish connection and the selection of entity for import into Podium:

**NOTE: refer to the Appendix for a full listing of Podium Source Type properties, definitions and values**

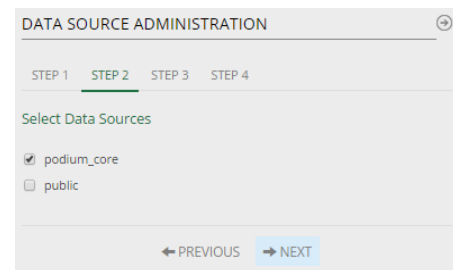
### **STEP 1**

- Enter the following connection information:
  - Source Type
    - Choose from: SQLServer, Oracle, Hive, Teradata, PostgreSQL
  - JDBC url – input connection string
  - Username
  - Password
- Once information is entered select “TEST CONNECTION”. System will provide a message verifying that connection was successful.
- “NEXT” should be highlighted and selected



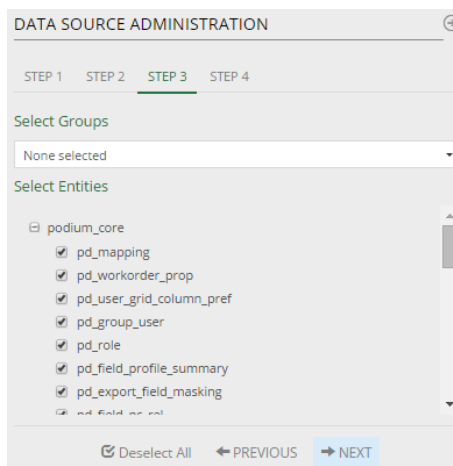
### **STEP 2**

- Select the Data Source (database/schema) to be used
- Click “NEXT”



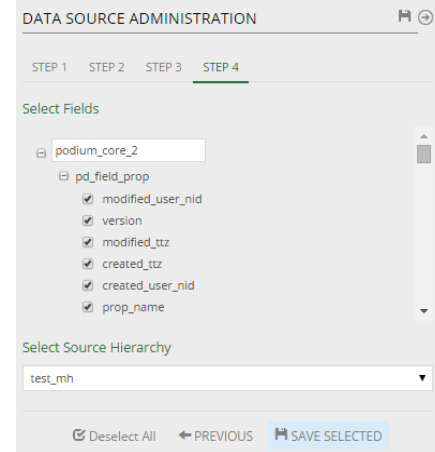
### **STEP 3**

- Select Groups, if applicable, from the dropdown options. To see and use the data source, it must be added to a group the user belongs to.
- Select Entities
  - Ensure that all entities are visible expanding the view by clicking the “+”
  - Use scroll bar to the right in order to view full list of entities
- Once tables to load are selected, click on “NEXT”



## STEP 4

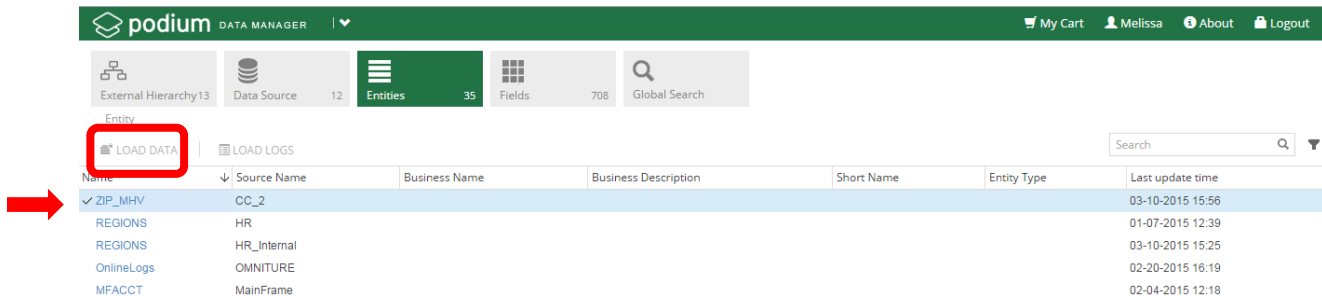
- Select Field(s)
  - Ensure that all entities are visible by expanding the view, by clicking the “+”
  - Use scroll bar to the right in order to view full list of fields
- Select Source Hierarchy for data
- Click “SAVE SELECTED” at the bottom or the save icon on upper right corner



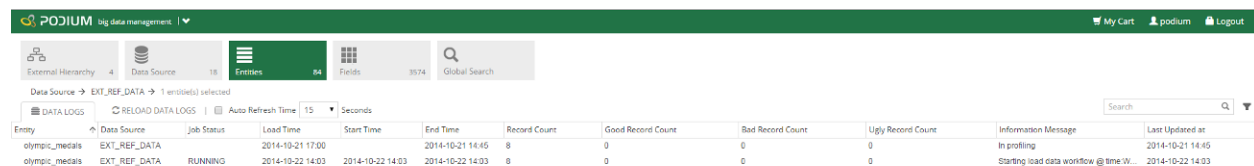
The metadata of the new source will now be visible in the DATA SOURCE and DISCOVERY screens. However, no sample or profiling information is visible until the data is loaded for the entity.

### 6.1.1 Loading Data

To do load data into an entity, highlight the entity and click “Load Data” on the upper left of the data source screen.



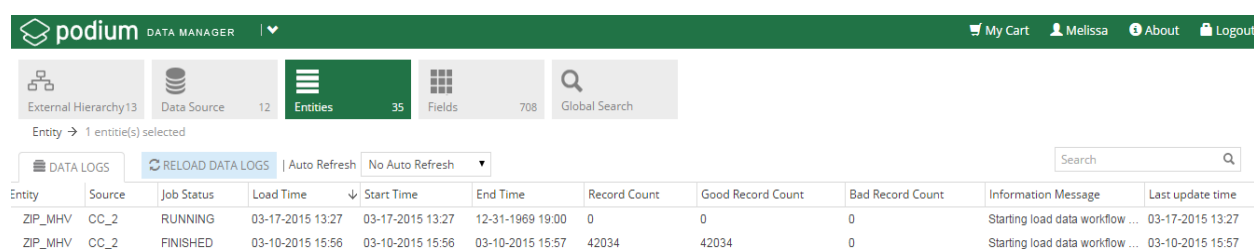
This will begin the data load. Depending on the amount of data and the speed of the connection to the source system, this may take minutes or hours. The status of the load is shown in the third column. To monitor the status, click the “Reload Data Logs” button above the Status column.



Data loading commences in two steps. The first step moves the data from the source to a staging area on HDFS called “Loading Dock.” This is completed when the “Record Count” displays a number other than “0.”

The second step reformats the data to the HDFS standard format, performs many data validation tests, calculates profile statistics for every field, and registers the data loaded in HCATALOG for querying. This step uses MapReduce to execute all these tasks in parallel, but takes at least 30 seconds to complete due to the overhead of launching MapReduce.

Upon completion, status will show as “FINISHED” or “FAILED” and the log will show the results of the action:



Entity	Source	Job Status	Load Time	Start Time	End Time	Record Count	Good Record Count	Bad Record Count	Information Message	Last update time
ZIP_MHV	CC_2	RUNNING	03-17-2015 13:27	03-17-2015 13:27	12-31-1969 19:00	0	0	0	Starting load data workflow ...	03-17-2015 13:27
ZIP_MHV	CC_2	FINISHED	03-10-2015 15:56	03-10-2015 15:56	03-10-2015 15:57	42034	42034	0	Starting load data workflow ...	03-10-2015 15:57

**Good** records have been validated as having correct record structures and no issues with data type violations or problems with the contents of the data.

**Bad** records do not match the specified record layout, such as having the correct number of columns, delimiters, headers and trailers. The most common reasons for bad records are:

- Incorrect layout information (wrong fixed length bytes or delimiter)
- Embedded delimiters within fields – such as a common in the middle of a description or address field.
- Non-ascii or control characters causing record breaks

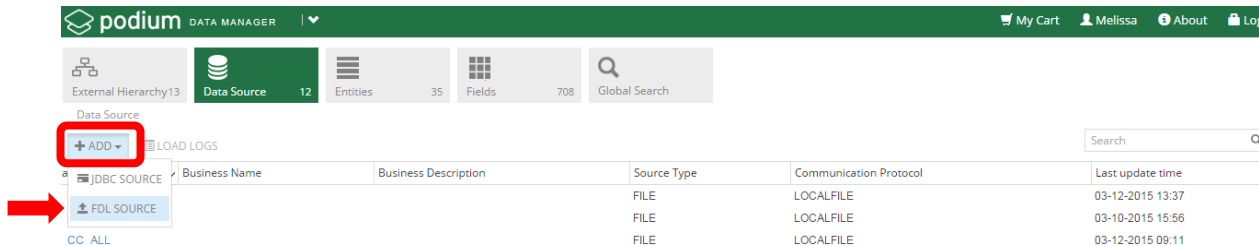
**Ugly** records match the record format but some of the field data is problematic. Most common reasons for ugly records are:

- Data type inconsistencies (e.g., non-numeric data in a field defined as numeric)
- Control characters in a field (these cause issues within the Hadoop code stack)

## 6.2 LOAD DATA: NEW FLAT FILE SOURCE USING FDL

Select DATA SOURCE Tab in PODIUM to navigate to the Data Source Administration screens.

Select ADD> FDL SOURCE

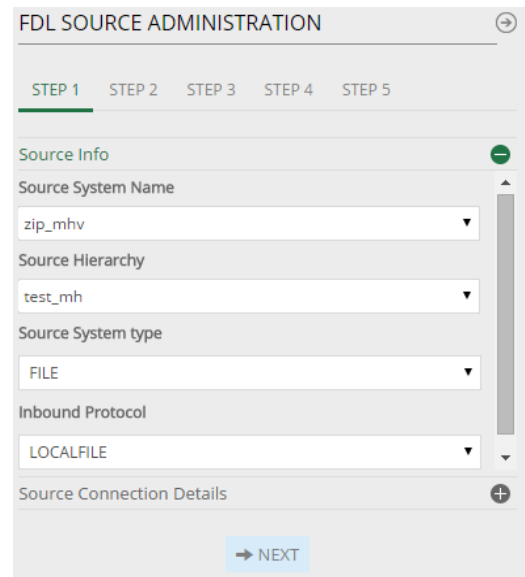


The screenshot shows the Podium Data Manager interface. The top navigation bar includes 'podium DATA MANAGER', 'My Cart', 'Melissa', 'About', and 'Log'. Below the navigation bar, there are tabs for 'External Hierarchy 13', 'Data Source 12', 'Entities 35', 'Fields 708', and 'Global Search'. The 'Data Source' tab is active. A dropdown menu is open, showing 'ADD' and 'FDL SOURCE' (highlighted with a red arrow). Below the dropdown, a table lists existing data sources:

ID	Business Name	Business Description	Source Type	Communication Protocol	Last update time
a	JDBC SOURCE		FILE	LOCALFILE	03-12-2015 13:37
			FILE	LOCALFILE	03-10-2015 15:56
			FILE	LOCALFILE	03-12-2015 09:11

### STEP 1

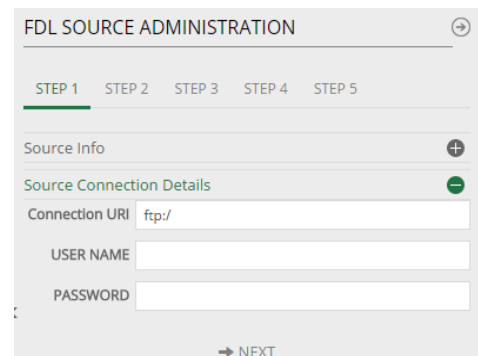
- Type in Source System Name
- Select Source Hierarchy
- Select "FILE" for Source System Type
  - *Optional Source System types include: SQLServer, Oracle, MainFrame, Hive, Teradata, PostgreSQL, DB2, MySQL*
- Select "LOCALFILE" for Inbound Protocol
  - *Optional Inbound Protocol: FTP, S3, HDFS, SFTP*
  - *These Protocols require User Name and Password for authentication*
- Click NEXT



The screenshot shows the 'FDL SOURCE ADMINISTRATION' form, Step 1. The form has five steps: STEP 1, STEP 2, STEP 3, STEP 4, and STEP 5. The 'Source Info' section is expanded, showing the following fields:

- Source System Name: zip\_mhv
- Source Hierarchy: test\_mh
- Source System type: FILE
- Inbound Protocol: LOCALFILE

A 'NEXT' button is visible at the bottom of the form.



The screenshot shows the 'FDL SOURCE ADMINISTRATION' form, Step 1. The 'Source Connection Details' section is expanded, showing the following fields:

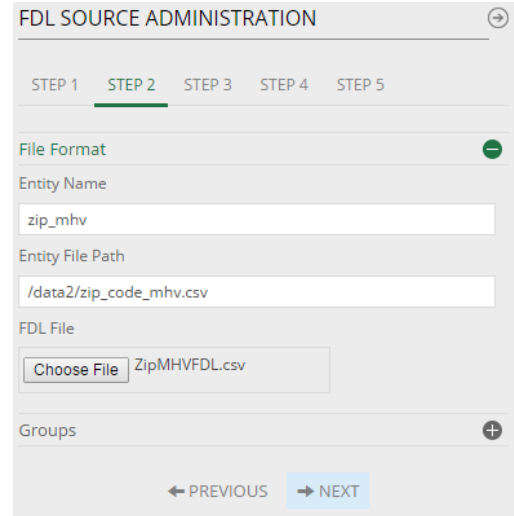
- Connection URI: ftp/
- USER NAME: [Empty field]
- PASSWORD: [Empty field]

A 'NEXT' button is visible at the bottom of the form.



## STEP 2

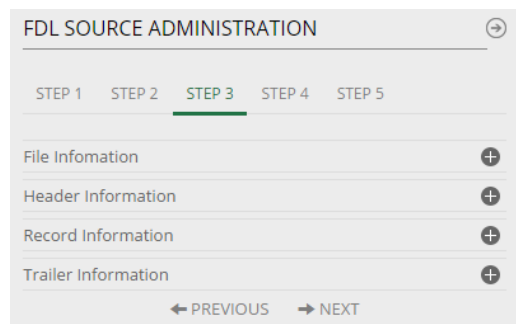
- Type in Entity Name
- Enter Entity File Path where the test file is located
- Choose Field FDL File by clicking on “Choose File” button and selecting file to open
- Select Groups, if applicable
- Click NEXT



The screenshot shows the 'FDL SOURCE ADMINISTRATION' interface at Step 2. The 'Entity Name' field contains 'zip\_mhv' and the 'Entity File Path' field contains '/data2/zip\_code\_mhv.csv'. The 'FDL File' section has a 'Choose File' button and the filename 'ZipMHVFDL.csv' is displayed. The 'Groups' section is collapsed. Navigation buttons for 'PREVIOUS' and 'NEXT' are at the bottom.

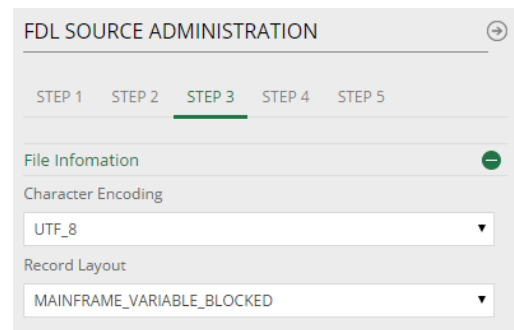
## STEP 3

Click on the “+” to expand the following sections to capture information:



The screenshot shows the 'FDL SOURCE ADMINISTRATION' interface at Step 3. The 'File Information', 'Header Information', 'Record Information', and 'Trailer Information' sections are all collapsed, each with a '+' icon to its right. Navigation buttons for 'PREVIOUS' and 'NEXT' are at the bottom.

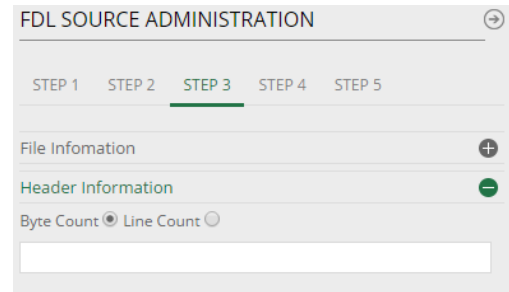
- File Information
  - Character Encoding –
    - select from: US\_ASCII, LATIN\_1, UTF\_8, UTF\_16LE, UTF\_16BE, UTF\_32LE, UTF\_32BE, US\_EBCDIC
  - Record Layout –
    - select from: FIXED\_LENGTH, FIXED\_LENGTH\_TERMINATED, VARIABLE\_LENGTH\_TERMINATED, MAINFRAME\_VARIABLE\_BLOCKED



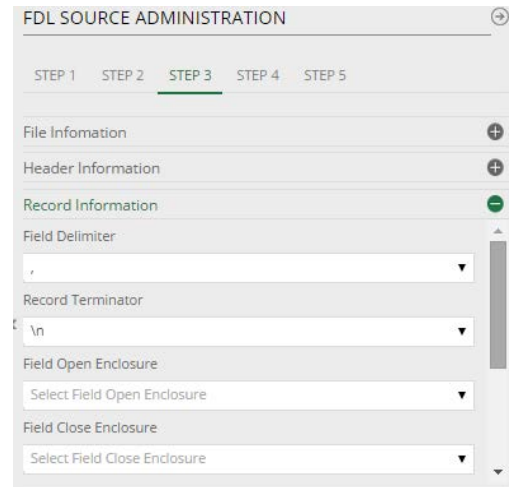
The screenshot shows the 'FDL SOURCE ADMINISTRATION' interface at Step 3 with 'File Information' expanded. The 'Character Encoding' dropdown is set to 'UTF\_8' and the 'Record Layout' dropdown is set to 'MAINFRAME\_VARIABLE\_BLOCKED'. Navigation buttons for 'PREVIOUS' and 'NEXT' are at the bottom.

**NOTE:** refer to the Appendix for a full listing of Podium Source Type properties, definitions and values

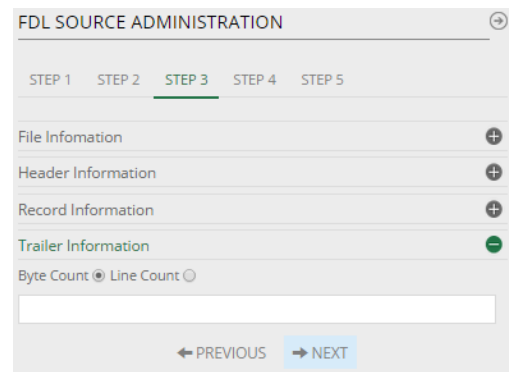
- Header Information
  - Byte Count and Validation Regex
  - Line Count



- Record Information
  - Field Delimiter –
    - select from “,” or “|” or “ ; ”
  - Record Terminator –
    - select from “\n” or “\r\n”
  - Field Open Enclosure –
    - select from ‘ or “ or <<
  - Field Close Enclosure –
    - select from ‘ or “ or >>
  - Record Validation Regex
  - Quote Scheme
  - Fixed Byte Count

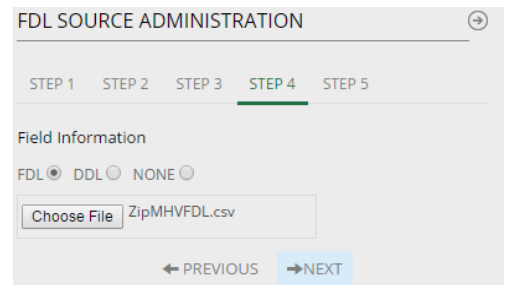


- Trailer Information
  - Byte Count and Validation Regex
  - Line Count
- Click NEXT



#### **STEP 4**

- Select “FDL” in Field Information
- Choose Field FDL File by clicking on “Choose File” button and selecting file to open
- Click NEXT



#### **STEP 5**

*Provides the user a view of the file layout. Fields can be manually added or edited prior to loading data.*

- Click “+ADD” to enter a new field or double click each field below to move into edit mode

- Enter field:
  - Name (required),
  - Business Description (optional)
  - Technical Description
  - Data Type (required)
  - Length
  - Precision
- Click FINISH

FDL SOURCE ADMINISTRATION

STEP 1 STEP 2 STEP 3 STEP 4 **STEP 5**

+ ADD REMOVE

Name	Index	Business Description	Technical Description	Data Type	Length	Precision
county	3	Click to edit	County name	STRING	500	-1
state	2	Click to edit	2 Digit State Abbreviation	STRING	2	-1
primary_city	1	Click to edit	City name	STRING	500	-1
zip	0	Click to edit	Zip Code	STRING	200	-1
medianhomevalue	6	Click to edit	Long	INTEGER	0	-1
longitude	5	Click to edit	Long	DECIMAL	0	-1

1 to 7 of 7

← PREVIOUS Finish

Once the previous step is successfully completed, navigate to ENTITIES screen to validate loaded data. Click LOAD DATA.

podium DATA MANAGER

My Cart Melissa About Logout

External Hierarchy13 Data Source 12 **Entities 35** Fields 708 Global Search

Entity

**LOAD DATA** LOAD LOGS

Name	Source Name	Business Name	Business Description	Short Name	Entity Type	Last update time
✓ ZIP_MHV	CC_2					03-10-2015 15:56
REGIONS	HR					01-07-2015 12:39
REGIONS	HR_Internal					03-10-2015 15:25
OnlineLogs	OMNITURE					02-20-2015 16:19
MFACCT	MainFrame					02-04-2015 12:18

Once loading, click “RELOAD DATA LOGS” to refresh logs to see status.

podium DATA MANAGER

My Cart Melissa About Logout

External Hierarchy13 Data Source 12 **Entities 35** Fields 708 Global Search

Entity → 1 entity(s) selected

**RELOAD DATA LOGS** DATA LOGS Auto Refresh No Auto Refresh

Entity	Source	Job Status	Load Time	Start Time	End Time	Record Count	Good Record Count	Bad Record Count	Information Message	Last update time
ZIP_MHV	CC_2	RUNNING	03-17-2015 13:27	03-17-2015 13:27	12-31-1969 19:00	0	0	0	Starting load data workflow ...	03-17-2015 13:27
ZIP_MHV	CC_2	FINISHED	03-10-2015 15:56	03-10-2015 15:56	03-10-2015 15:57	42034	42034	0	Starting load data workflow ...	03-10-2015 15:57

When Job Status indicates it is FINISHED, you can expand the “+” on the Records to view log record logs are bad and/or ugly.

The screenshot shows the Podium Data Manager interface. A table displays data load logs for a job with status 'FINISHED'. The 'Data Load Information' panel is expanded, showing the following record counts:

Record Type	Count
Record Count	42034
Good Record Count	42034
Bad Record Count	0
Ugly Record Count	0

### 6.3 LOAD DATA: NEW MAINFRAME DATA

Select DATA SOURCE Tab in PODIUM to navigate to the Data Source Administration screens.

Select ADD> FDL SOURCE

The screenshot shows the Podium Data Manager interface with the 'Data Source' tab selected. The '+ ADD' button is highlighted with a red box, and the 'FDL SOURCE' option is highlighted with a red arrow.

Business Name	Business Description	Source Type	Communication Protocol	Last update time
JDBC SOURCE		FILE	LOCALFILE	03-12-2015 13:37
FDL SOURCE		FILE	LOCALFILE	03-10-2015 15:56
CC ALL		FILE	LOCALFILE	03-12-2015 09:11

#### STEP 1

- Type in Source System Name
- Select Source Hierarchy
- Select “MAINFRAME” for Source System Type
  - *Optional Source System types include: SQLServer, Oracle, File, Hive, Teradata, PostgreSQL, DB2, MySQL*
- Select “LOCALFILE” for Inbound Protocol
  - *Optional Inbound Protocol: FTP, S3, HDFS, SFTP*
- Click NEXT

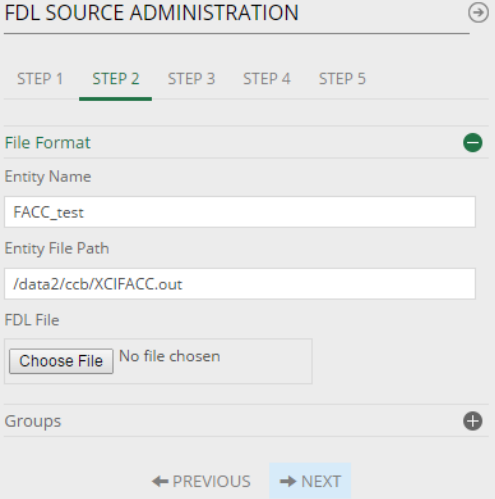
The screenshot shows the 'FDL SOURCE ADMINISTRATION' screen with the following configuration:

- Source System Name: FACC\_test
- Source Hierarchy: test\_mh
- Source System type: MAINFRAME
- Inbound Protocol: LOCALFILE

A 'NEXT' button is visible at the bottom of the screen.

## STEP 2

- Type in Entity Name
- Enter Entity File Path where the test file is located
- Select Groups, if applicable
- Click NEXT

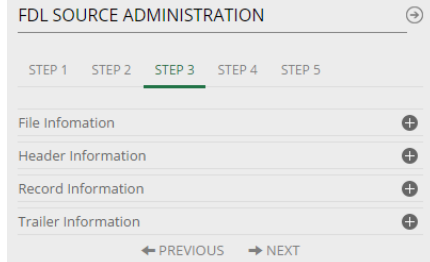


The screenshot shows the 'FDL SOURCE ADMINISTRATION' interface at Step 2. The 'Entity Name' field contains 'FACC\_test' and the 'Entity File Path' field contains '/data2/ccb/XCIFACC.out'. The 'FDL File' section has a 'Choose File' button and the text 'No file chosen'. The 'Groups' section is collapsed with a '+' icon. Navigation buttons for 'PREVIOUS' and 'NEXT' are at the bottom.

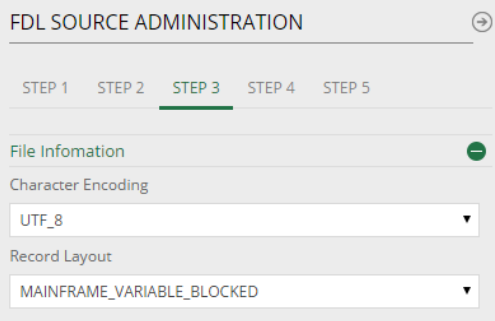
## STEP 3

Click on the “+” to expand the following sections to capture information:

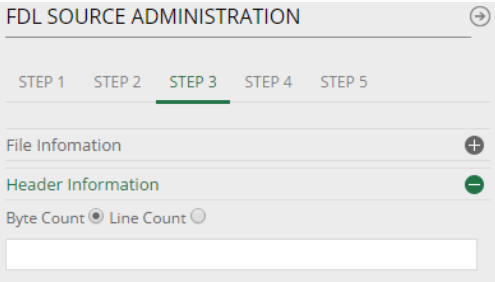
- File Information
  - Character Encoding – Select US\_EBCDIC
  - Record Layout –
    - select from: FIXED\_LENGTH, FIXED\_LENGTH\_TERMINATED, VARIABLE\_LENGTH\_TERMINATED, MAINFRAME\_VARIABLE\_BLOCKED
- Header Information
  - Byte Count and Validation Regex
  - Line Count



The screenshot shows the 'FDL SOURCE ADMINISTRATION' interface at Step 3. The 'File Information', 'Header Information', 'Record Information', and 'Trailer Information' sections are all expanded, each with a '+' icon. Navigation buttons for 'PREVIOUS' and 'NEXT' are at the bottom.



The screenshot shows the 'FDL SOURCE ADMINISTRATION' interface at Step 3. The 'File Information' section is expanded, showing 'Character Encoding' set to 'UTF\_8' and 'Record Layout' set to 'MAINFRAME\_VARIABLE\_BLOCKED'. Navigation buttons for 'PREVIOUS' and 'NEXT' are at the bottom.



The screenshot shows the 'FDL SOURCE ADMINISTRATION' interface at Step 3. The 'Header Information' section is expanded, showing 'Byte Count' and 'Line Count' radio buttons. The 'Line Count' radio button is selected. A text input field is visible below the radio buttons. Navigation buttons for 'PREVIOUS' and 'NEXT' are at the bottom.

- Record Information
  - Field Delimiter –
    - select from “,” or “|” or “;”
  - Record Terminator –
    - select from “\n” or “\r\n”
  - Field Open Enclosure –
    - select from ‘ or “ or <<
  - Field Close Enclosure –
    - select from ‘ or “ or >>
  - Record Validation Regex
  - Quote Scheme
  - Fixed Byte Count

- Trailer Information
  - Byte Count and Validation Regex
  - Line Count

#### **STEP 4**

- Select “Copybook” in Field Information
- Choose file by clicking on “Choose File” button and selecting file to open
- Click NEXT

#### **STEP 5**

- Click “+ADD” to enter a new field or double click each field below to move into edit mode
- Enter field:
  - Name (required),
  - Business Description (optional)
  - Technical Description
  - Data Type (required)
  - Length
  - Precision
- Click FINISH.

FDL SOURCE ADMINISTRATION

STEP 1 STEP 2 STEP 3 STEP 4 STEP 5

**+ ADD** REMOVE

Name	Index	Business Description	Technical Description	Data Type	Length	Precision
ACCOUNT-RELTNSHP- LAST-MAINT-D	16	Click to edit	Click to edit	PIC S9(9) COMPUTATIONAL-3	-1	9
ACCOUNT-MAIL-C	15	Click to edit	Click to edit	PIC X	1	-1
ADRES-SEGMNT-NUM	14	Click to edit	Click to edit	PIC S9(3) COMPUTATIONAL-3	-1	3
CUSTOMR-ACCOUNT- NAME-POSTN	13	Click to edit	Click to edit	PIC S9(3) COMPUTATIONAL-3	-1	3
ACCOUNT-OWNERSHP-	12	Click to edit	Click to edit	PIC S9(3) COMPUTATIONAL-3	-1	3

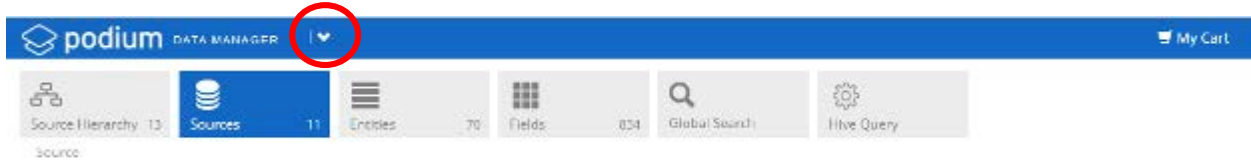
1 to 10 of 17

PREVIOUS Finish

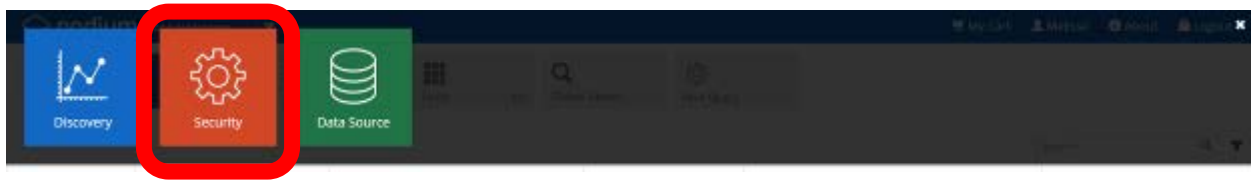
Once the previous step is successfully completed, navigate to ENTITIES screen to validate loaded data. Follow instructions as detailed in previous section.

# 7 SECURITY MODULE

Once logged in users can navigate to the Security Module by clicking on the arrow on the top of the screen.



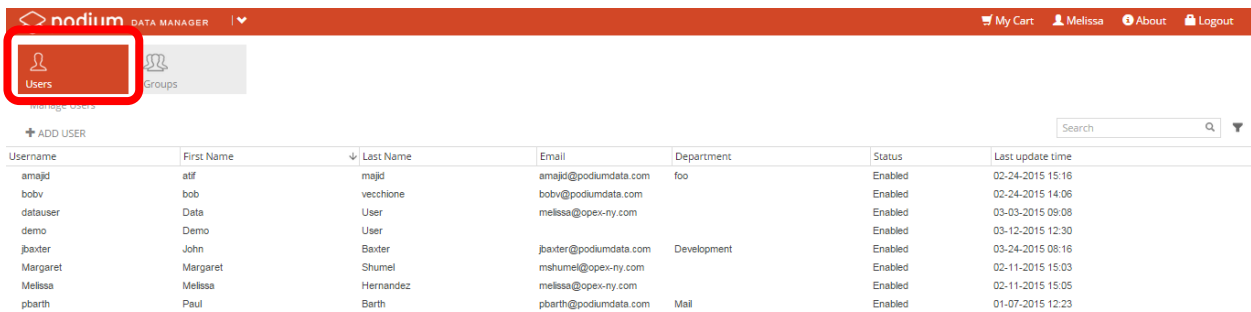
Note: Security Module is only accessible by Admin and Master\_Analyst level users



The Security Module allows for the management of Users and the creation and assignment of Users to Groups to user.

## 7.1 USERS

Once in the Security Module, the use will be directed to the Users tab



In order to view the metadata on the individual user, the row must be highlighted. Metadata fields for the individual are visible under the USER ADMINISTRATION pane. STEP 1 allows for edits to the User, STEP 2 allows for adding users to Groups.



Username	First Name	Last Name	Department	Status	Last update
amajid	atif	majid	foo	Enabled	02-24-2015
bobv	bob	vecchione		Enabled	02-24-2015
datauser	Data	User		Enabled	03-03-2015
demo	Demo	User		Enabled	03-12-2015
jbaxter	John	Baxter	Development	Enabled	03-24-2015
Margaret	Margaret	Shumel		Enabled	02-11-2015
Melissa	Melissa	Hernandez		Enabled	02-11-2015
pbarth	Paul	Barth	Mail	Enabled	01-07-2015

## 7.1.1 How to Add a User

To add a User to the Podium UI, under User tab click on “+ ADD USER”. The USER ADMINISTRATION pane will open up to the right hand side of the screen.

Username	First Name	Last Name	Email	Department	Status	Last update time
----------	------------	-----------	-------	------------	--------	------------------

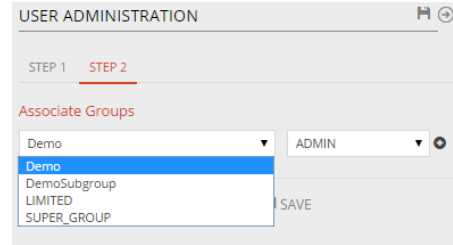
### STEP 1

- Input the following profile information for New User:
  - First Name
  - Last Name
  - Username
  - Password – *system will indicate if password selected is weak, medium or strong*
  - Confirm Password
  - Email
  - Department
- Ensure “Enable” box is checked off
- Click “NEXT”

## STEP 2

If New User is to be associated with any Group(s):

- Select Group from dropdown
- Select the access level the User will have as it pertains to the Group
- Click on the “+” to add
- If the New User needs to be added to multiple Groups, repeat the step above
- Hit SAVE, once all Groups for the New User have been assigned



USER ADMINISTRATION

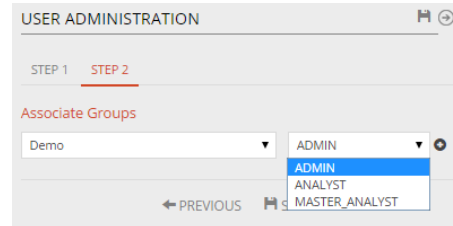
STEP 1 **STEP 2**

Associate Groups

Demo ADMIN

Demo  
DemoSubgroup  
LIMITED  
SUPER\_GROUP

SAVE



USER ADMINISTRATION

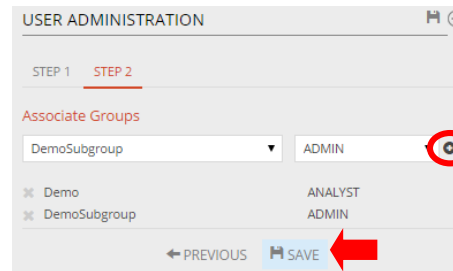
STEP 1 **STEP 2**

Associate Groups

Demo ADMIN

ADMIN  
ANALYST  
MASTER\_ANALYST

← PREVIOUS



USER ADMINISTRATION

STEP 1 **STEP 2**

Associate Groups

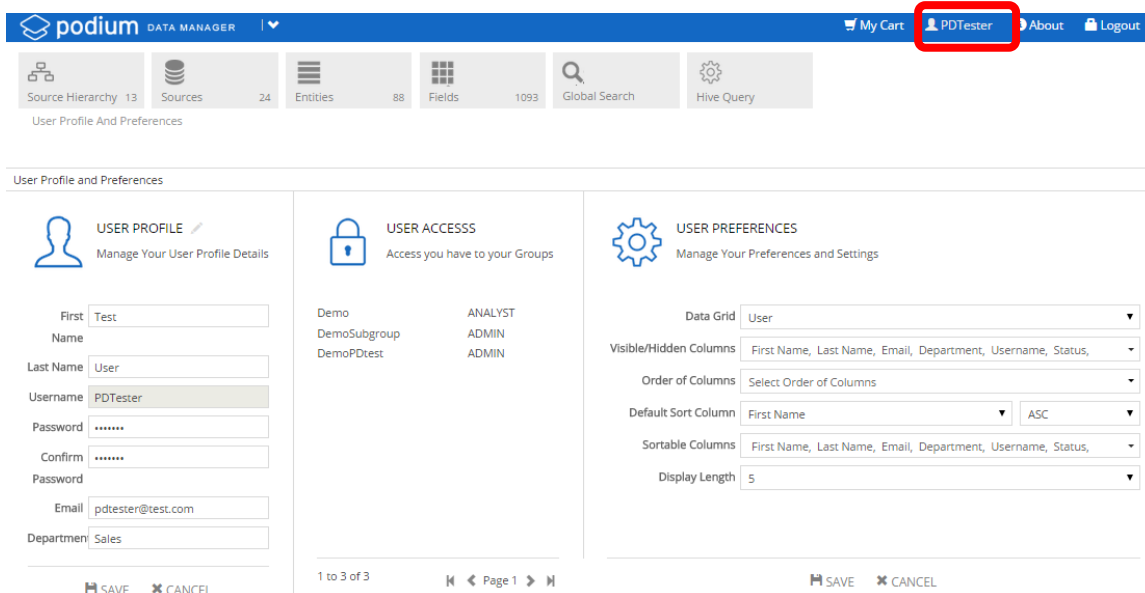
DemoSubgroup ADMIN

× Demo ANALYST  
× DemoSubgroup ADMIN

← PREVIOUS **SAVE**

## 7.1.2 User Preferences

Once a New User has been setup in the Podium UI system, they are able to view their own Profile, Group Access levels and system preferences by clicking on their Username when logged in.



podium DATA MANAGER | My Cart PDTTester About Logout

Source Hierarchy 13 Sources 24 Entities 88 Fields 1093 Global Search Hive Query

User Profile And Preferences

User Profile and Preferences

**USER PROFILE** Manage Your User Profile Details

First Name: Test  
Last Name: User  
Username: PDTTester  
Password: .....  
Confirm Password: .....  
Email: pdtester@test.com  
Department: Sales

**USER ACCESSS** Access you have to your Groups

Demo	ANALYST
DemoSubgroup	ADMIN
DemoPDTtest	ADMIN

**USER PREFERENCES** Manage Your Preferences and Settings

Data Grid: User

Visible/Hidden Columns: First Name, Last Name, Email, Department, Username, Status

Order of Columns: Select Order of Columns

Default Sort Column: First Name | ASC

Sortable Columns: First Name, Last Name, Email, Department, Username, Status

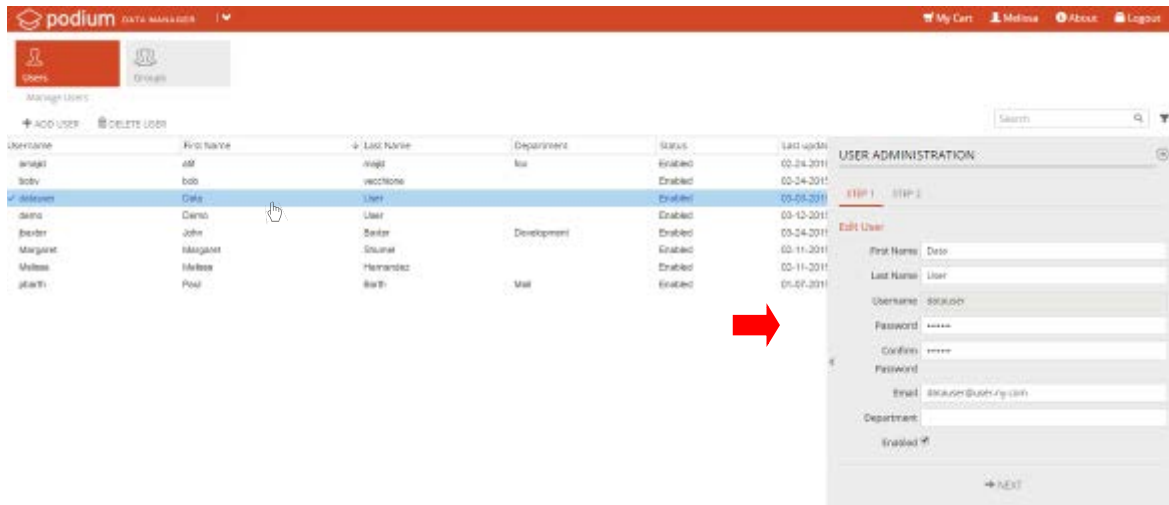
Display Length: 5

1 to 3 of 3 | Page 1 | SAVE CANCEL

### 7.1.3 How to Disable or Delete a User

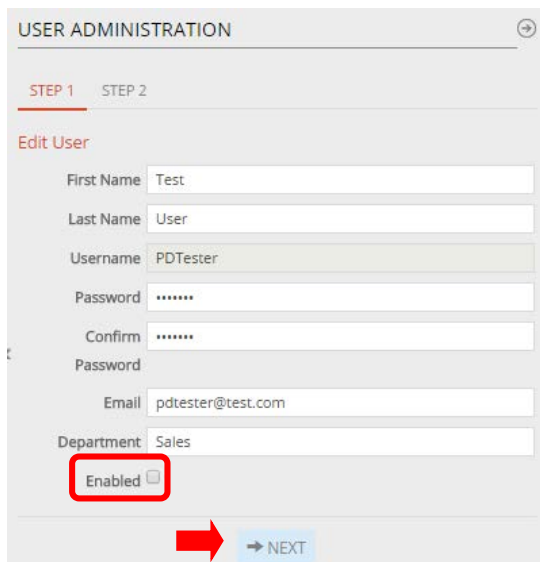
Access to the Podium UI can be either temporarily disabled for or User or they can be completely removed from the system.

In the event that access to Podium should be temporary disabled for a User, on the User tab, locate the User and highlight the row.



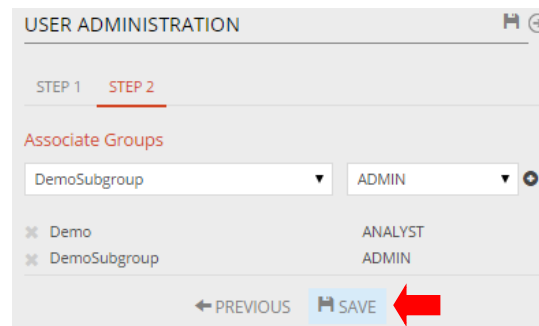
#### STEP 1

- Disable access by unchecking the “Enabled” box
- Click NEXT



#### STEP 2

- Click SAVE



To remove access and delete User from Podium system, on the User tab, locate the User and highlight the row. Click on “DELETE USER”.

podium DATA MANAGER | v My Cart podium About Logout

Users Groups

Manage Users

+ ADD USER DELETE USER Search

Username	First Name	Last Name	Email	Department	Status	Last update time
jbaxter	John	Baxter	jbaxter@podiumdata.com	Development	Enabled	03-24-2015 08:16
amajd	atf	majd	amajd@podiumdata.com	foo	Enabled	02-24-2015 15:16
mfuller	matt	f	matt@test.com	hello world	Disabled	11-21-2014 12:18
pbarth	Paul	Barth	pbarth@podiumdata.com	Mail	Enabled	01-07-2015 12:23
PDTTester	Test	User	pdttester@test.com	Sales	Enabled	03-25-2015 13:15
podium	podium	podium			Enabled	10-30-2014 15:48
bobv	bob	vecchione	bobv@podiumdata.com		Enabled	02-24-2015 14:06
Margaret	Margaret	Shumel	mshumel@opex-ny.com		Enabled	02-11-2015 15:03
Melissa	Melissa	Hernandez	melissa@opex-ny.com		Enabled	02-11-2015 15:05
testuser	testuser	testuser			Enabled	02-12-2015 14:20

## 7.2 GROUPS

### 7.2.1 How to Add a Group

In order to add a Group(s) to Podium, on the Groups tab, click on “+ADD GROUP”. The GROUP ADMINISTRATION pane will open on the right of the screen.

podium DATA MANAGER | v My Cart podium About Logout

Users Groups

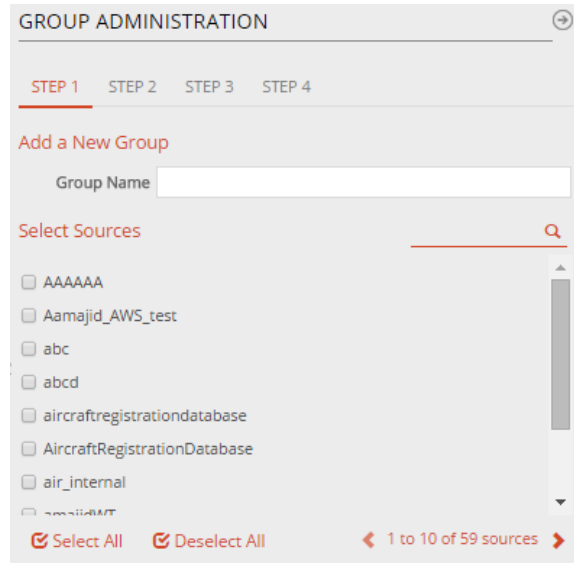
Manage Groups

+ ADD GROUP Search

Group Name	Last update time
Demo	03-25-2015 13:18
DemoSubgroup	03-24-2015 08:29
LIMITED	03-12-2015 09:11
SUPER_GROUP	03-12-2015 09:11

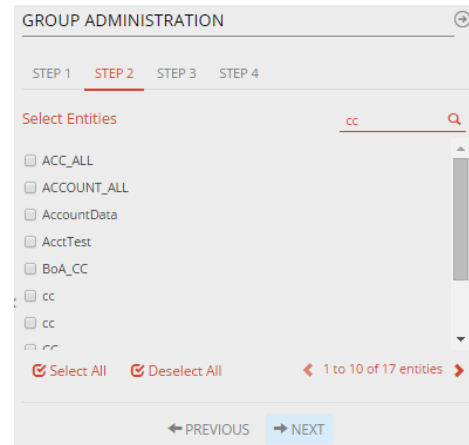
#### STEP 1

- Input the Group Name
- Select Sources - *Datasets that are available to New Group are listed*
  - Selection can be made by:
    - Clicking each one individually
    - Using the “Select All” option on the bottom left of the pane
    - Running a search using the Search bar  
*Note: bottom right indicates total number of datasets available*
- Click NEXT



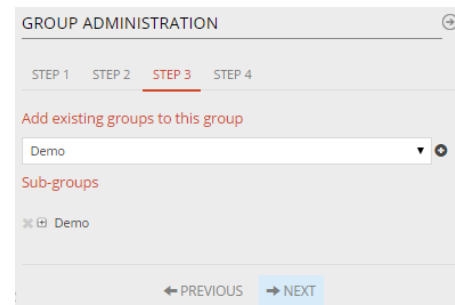
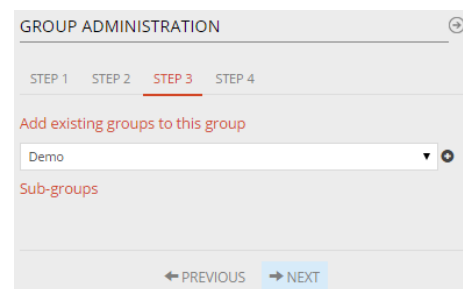
## STEP 2

- Select Entities – *all available entities for the datasets selected are visible*
- Selection can be made by:
  - Clicking each one individually
  - Using the “Select All” option on the bottom left of the pane
  - Running a search using the Search bar
- Click NEXT



## STEP 3

- Add existing groups to this group by selecting a group from the drop down, which provides a list of Groups currently in Podium Select Entities – *all available entities for the datasets selected are visible*
- Click on “+”
- Selection will be captured under Sub-groups
- Click NEXT



## STEP 4

Select User(s) is to be associated with the New Group

- Select User from dropdown list
- Select the access level the User will have as it pertains to the Group
- Click on the “+” to add
- If multiple Users need to be added the New Group, repeat the step above
- Hit SAVE, once all Users have been assigned

GROUP ADMINISTRATION

STEP 1 STEP 2 STEP 3 **STEP 4**

Associate Users

podium ADMIN

demo ANALYST  
PDTester ADMIN  
testuser MASTER\_ANALYST  
podium ADMIN

← PREVIOUS SAVE

### 7.2.2 How to Delete a Group

In order to delete a Group(s), on the Groups tab, highlight the row to be deleted. Click on “DELETE GROUP”.

podium DATA MANAGER

My Cart podium About Logout

Users Groups

Manage Groups

+ ADD GROUP DELETE GROUP Search

Group Name	Last update time
Demo	03-25-2015 13:18
✓ DemoPDtest	03-25-2015 13:51
DemoSubgroup	03-24-2015 08:29
...	...

## 8 APPENDIX

### 8.1 PODIUM SOURCE TYPE PROPERTIES

Podium Property	Description	Values
<b>src.comm.protocol</b>	communications protocol used to pull data from source	S3, LOCALFILE, HDFS, FTP
<b>src.sys.type</b>	source system type	FILE, SQLSERVER, ORACLE, MAINFRAME, PODIUM_INTERNAL, HIVE, TERADATA, POSTGRESQL, DB2, MYSQL
<b>src.entity.name</b>	name of entity/table	user specified
<b>src.file.glob</b>	wild-card glob of data files for this source (or select statement for jdbc source)	User defined (JDBC - system defined, user modifiable)
<b>unicode.byte.order.mark</b>	Unicode byte order mark	UTF_32LE_BOM, UTF_32BE_BOM, UTF_8_BOM, UTF_16LE_BOM, UTF_16BE_BOM
<b>unicode.byte.order.mark.incidence</b>	defines expected BOM incidence	NEVER, SOMETIMES, ALWAYS
<b>header.byte.count</b>	optional integer that specifies the fixed number of bytes in the file header	user specified
<b>header.line.count</b>	optional integer that specifies a fixed number of lines in the file header	user specified
<b>header.defines.field.names</b>	boolean which indicates whether or not the header specifies the field names	TRUE / FALSE
<b>header.record.count.regex</b>	optional regular expression with a capturing group for extracting the record count from the header	Regular Expression
<b>header.validation.pattern.is.regex</b>	boolean flag which controls whether or not header validation pattern is a regular expression	TRUE / FALSE
<b>header.validation.pattern</b>	pattern for validating header ... either exact string match or regular expression	user specified
<b>trailer.byte.count</b>	optional integer that specifies a fixed number of bytes in the file trailer	user specified
<b>trailer.line.count</b>	optional integer that specifies a fixed number of lines in the file header ... where line is terminated by \n or \r\n	user specified
<b>trailer.record.count.regex</b>	optional regular expression with a capturing group for extracting the record count from the trailer	Regular Expression
<b>trailer.validation.pattern.is.regex</b>	boolean flag which controls whether or not trailer validation pattern is a regular expression	TRUE / FALSE
<b>trailer.validation.pattern</b>	pattern for validating trailer ... either exact string match or regular expression	user specified
<b>trailer.control.z.at.eof.incidence</b>	incidence of ControlZ/0x1A MS-DOS end of text file indicator	NEVER, SOMETIMES, ALWAYS
<b>record.charset</b>	charset definition	US_ASCII, LATIN_1, UTF_8, UTF_16LE, UTF_16BE, UTF_32LE, UTF_32BE, US_EBCDIC
<b>record.charencoding.confidence</b>	confidence in the char encoding	decimal in the range 0.0-1.0
<b>record.layout</b>	defined how the record is laid out (fixed, delimited etc)	FIXED_LENGTH, FIXED_LENGTH_TERMINATED, VARIABLE_LENGTH_TERMINATED, MAINFRAME_VARIABLE_BLOCKED

Podium Property	Description	Values
<b>record.fixed.byte.count</b>	fixed record byte length for FIXED_LENGTH and FIXED_LENGTH_TERMINATED records	user defined (CCB - utility will determine)
<b>record.min.byte.count</b>	minimum valid record byte length	user defined
<b>record.max.byte.count</b>	maximum valid record byte length	user defined
<b>record.record.terminator</b>	record terminator char sequence for FIXED_LENGTH_TERMINATED and VARIABLE_LENGTH_TERMINATED	user defined
<b>record.field.delimiter</b>	char sequence for delimiting fields for delimited record types	user defined
<b>record.last.field.has.delimiter</b>	boolean indicating whether there is a final field delimiter in the record	TRUE / FALSE
<b>record.validation.regex</b>	optional regular expression used to validate a record	Regular Expression
<b>record.open.quote</b>	char sequence used for opening an enclosed/quoted field	user defined
<b>record.close.quote</b>	char sequence used for closing an enclosed/quoted field	user defined
<b>default.field.embedded.enclosure.scheme</b>	how to deal with an enclosure inside an enclosed/quoted field	NONE or DOUBLE_EMBEDDED_ENCLOSURE
<b>default.field.enclosure.incidence</b>	incidence of enclosed fields	NEVER, SOMETIMES, ALWAYS
<b>default.field.nullif.pattern.is.regex</b>	boolean flag which controls whether or not nullif pattern is a regular expression	TRUE / FALSE
<b>default.field.nullif.pattern</b>	char sequence which represents the NULL value ... exact match or regular expression	user defined
<b>default.field.trim.left</b>	boolean controlling whether or not whitespace should be trimmed from left of fields	TRUE / FALSE
<b>default.field.trim.right</b>	boolean controlling whether or not whitespace should be trimmed from right of fields	TRUE / FALSE
<b>default.field.allow.whitespace</b>	boolean controlling whether or not embedded whitespace is allowed in fields	TRUE / FALSE
<b>default.field.allow.control.chars</b>	boolean controlling whether or not ASCII/Unicode control chars 0x00-0x1F + 0x7F are allowed in fields	TRUE / FALSE
<b>default.field.allow.non.ascii.chars</b>	boolean controlling whether or not non 7-bit ASCII chars are allowed in fields	TRUE / FALSE
<b>default.field.min.legal.char.length</b>	minimum number of chars allowed in a field	user defined
<b>default.field.max.legal.char.length</b>	maximum number of chars allowed in a field	user defined
<b>default.date.format</b>	date format string in Java/JODA date format or vendor-specific date format	user defined
<b>default.min.legal.date</b>	minimum legal date as yyyy-MM-dd ISO 8601 date	user defined
<b>default.max.legal.date</b>	maximum legal date as yyyy-MM-dd ISO 8601 date	user defined
<b>field.trim.left</b>	boolean controlling whether or not whitespace should be trimmed from the left of this specific field	TRUE / FALSE
<b>field.trim.right</b>	boolean controlling whether or not whitespace should be trimmed from the right of this specific field	TRUE / FALSE
<b>field.allow.whitespace</b>	boolean controlling whether or not embedded whitespace is allowed in this specific field	TRUE / FALSE



Podium Property	Description	Values
<b>field.allow.control.chars</b>	boolean controlling whether or not ASCII/Unicode control chars 0x00-0x1F + 0x7F are allowed in this specific field	TRUE / FALSE
<b>field.allow.non.ascii.chars</b>	boolean controlling whether or not non 7-bit ASCII chars are allowed in this specific field	TRUE / FALSE
<b>field.enclosure.incidence</b>	incidence of enclosures for this specific field	NEVER, SOMETIMES, ALWAYS
<b>field.min.legal.char.length</b>	minimum number of chars allowed in this specific field	user defined
<b>field.max.legal.char.length</b>	maximum number of chars allowed in this specific field	user defined
<b>field.min.legal.value</b>	minimum legal value for this specific field ... interpretation depends upon field type	user defined
<b>field.max.legal.value</b>	minimum legal value for this specific field ... interpretation depends upon field type	user defined
<b>field.encryption.type.tag</b>	optional tag to identify the type of animal that is being encrypted	user defined
<b>field.date.format</b>	date format string in Java/JODA date format or vendor-specific date format for this specific field	user defined
<b>enable.profiling</b>	boolean controlling whether or not profiling should be performed on this source/entity/field	TRUE / FALSE
<b>enable.validation</b>	boolean controlling whether or not field validation should be performed	TRUE / FALSE
<b>enable.archiving</b>	whether or not inbound files should be archived	TRUE / FALSE
<b>use.single.receiving.mapper</b>	use a single receiving mapper instead of MapReduce in the cluster	TRUE / FALSE
<b>cobol.copybook</b>	the text of the copybook	System defined
<b>cobol.branch.wiring.instructions</b>	branch wiring instructions to provide guidance for decoding COBOL copybooks with REDEFINES	user defined
<b>cobol.trunc.bin.enabled</b>	COBOL compiler/environment option TRUNC(BIN) for truncation of BINARY/COMP-1 numeric items	TRUE / FALSE
<b>cobol.supports.single.byte.binary</b>	whether or not COBOL compiler supports single byte BINARY/COMP-1 numeric items ... non IBM mainframe	TRUE / FALSE
<b>cobol.sync.alignment.enabled</b>	COBOL compiler/environment option for SYNC word alignment	TRUE / FALSE
<b>cobol.unsigned.packed.decimal.uses.sign.nybble</b>	whether or not the sign nybble holds a digit for unsigned PACKED/COMP-3	TRUE / FALSE
<b>cobol.little.endian</b>	set to TRUE if the source COBOL machine architecture is little endian ... non IBM mainframe	TRUE / FALSE
<b>cobol.allow.overflow.redefines</b>	set to TRUE if you want to allow REDEFINES branches which are larger than the original storage allocation	TRUE / FALSE
<b>cobol.allow.underflow.redefines</b>	whether or not you want to allow REDEFINES branches which are smaller than the original storage allocation	TRUE / FALSE
<b>cobol.numproc.nopfd.enabled</b>	COBOL compiler/environment option NUMPROC(NOPFD) relating to valid/invalid sign nybbles in PACKED/COMP-3 numeric items	TRUE / FALSE
<b>field validation regular expression</b>	special class enabling regular expression checks at a field level	Regular Expression