Informatica®

Informatica® Cloud Data Integration

SuccessFactors LMS Connector

Informatica Cloud Data Integration SuccessFactors LMS Connector
October 2022

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Table of Contents

Preface 4

Informatica Resources 4

- Informatica Documentation 4
- Informatica Intelligent Cloud Services web site 4
- Informatica Intelligent Cloud Services Communities 4
- Informatica Intelligent Cloud Services Marketplace 4
- Data Integration connector documentation 5
- Informatica Knowledge Base 5
- Informatica Intelligent Cloud Services Trust Center 5
- Informatica Global Customer Support 5

Chapter 1: Introduction to SuccessFactors LMS Connector 6

SuccessFactors LMS Connector assets 6

SuccessFactors LMS Connector administration tasks 6

SuccessFactors LMS Connector example 7

Introduction to SuccessFactors LMS 7

Chapter 2: Connections for SuccessFactors LMS 8

SuccessFactors LMS connection properties 8

Chapter 3: Synchronization tasks with SuccessFactors LMS Connector 10

SuccessFactors LMS sources in Synchronization tasks 10

Data filters 11

Advanced properties for SuccessFactors LMS sources 11

Rules and guidelines for SuccessFactors LMS sources 12

Chapter 4: Mappings and Mapping tasks with SuccessFactors LMS Connector 13

SuccessFactors LMS sources in mappings 13

Advanced properties for SuccessFactors LMS sources 14

Appendix A: Data type reference 16

SuccessFactors LMS data types and transformation data types 16

Index 18

Preface

Use *Data Integration SuccessFactors LMS Connector* to learn how to set up and use SuccessFactors LMS Connector. Learn how organization administrators and business users can use SuccessFactors LMS Connector to read data from SuccessFactors LMS Connector.

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CHAPTER 1

Introduction to SuccessFactors LMS Connector

You can use SuccessFactors LMS Connector to integrate data from various SuccessFactors LMS modules with on-premise or cloud applications.

You can use SuccessFactors LMS Connector to connect to SuccessFactors LMS from Data Integration. Use SuccessFactors LMS Connector to read data from SuccessFactors LMS. You can use a SuccessFactors LMS object as a source in synchronization tasks, mapping tasks, and mappings.

When you run a task or mapping, the Secure Agent uses the OData APIs to integrate with SuccessFactors LMS.

You can switch the mapping to advanced mode to include transformations and functions that enable advanced functionality.

SuccessFactors LMS Connector assets

Create assets in Data Integration to integrate data using SuccessFactors LMS Connector.

When you use SuccessFactors LMS Connector, you can include the following Data Integration assets:

- Mapping
- Mapping task

For more information about configuring assets and transformations, see *Mappings*, *Transformations*, and *Tasks* in the Data Integration documentation.

SuccessFactors LMS Connector administration tasks

SuccessFactors LMS Connector uses the OData API to integrate with SuccessFactors LMS and read data from SuccessFactors LMS sources. Data Integration acts as a Web Services client application that connects to SuccessFactors LMS.

You must complete certain administration tasks to enable trusted communication between Data Integration and SuccessFactors LMS.

Before you use SuccessFactors LMS Connector, you must complete the following prerequisite tasks:

1. Generate a client secret from the SAP SuccessFactors Learning administration environment.
2. Note down the client secret, client ID, user ID, company ID, and user type. You will need to enter these details when you create a SuccessFactors LMS connection in Data Integration. Data Integration uses the client secret to request for OAuth tokens from the SAP SuccessFactors Learning server.
3. In Data Integration, verify that the SuccessFactors LMS Connector package and licence are enabled for your organization.

For more information about generating the client secret, see the *SuccessFactors Learning Web Services OData API Reference Guide*.

SuccessFactors LMS Connector example

Your organization uses SuccessFactors LMS for its learning and development needs. Your organization has mandated that all employees complete a mandatory Ethics Compliance learning course. As the Head of the Learning and Development division, you want to track if all your employees have completed the course.

You can use SuccessFactors LMS Connector to connect to the **Get Curriculum Status** Web Service. You can then check the status of the curriculum and verify that all your employees have completed the Ethics Compliance learning course that you have assigned them.

Use SuccessFactors LMS Connector to create a SuccessFactors LMS connection and connect to the **Get Curriculum Status** Web Service. Create a task or mapping to read data from the **CurriculumItemStatuses** object and determine the curriculum status. You can then write the data to a flat file for analysis.

Introduction to SuccessFactors LMS

SuccessFactors LMS is a virtual learning system that organizations use for their learning and development needs. SuccessFactors LMS uses a simple Web browser to deliver training content quickly and cost effectively to employees, customers, and partners.

SuccessFactors LMS helps in increasing workforce productivity and performance by providing pre-packaged integration for virtual classroom tools.

CHAPTER 2

Connections for SuccessFactors LMS

Create a SuccessFactors LMS connection to connect to a SuccessFactors LMS source and read data from it.

Each SuccessFactors LMS Web Service exposes data of a set of objects. You must create a connection for each Web Service that you want to connect to. You can use the connection to read data from all the objects that the Web Service exposes.

Use SuccessFactors LMS connections in synchronization tasks, mapping tasks, and mappings.

SuccessFactors LMS connection properties

When you set up a SuccessFactors LMS connection, configure the connection properties.

The following table describes the SuccessFactors LMS connection properties:

Property	Description
Connection Name	Name of the connection. Each connection name must be unique within the organization. Connection names can contain alphanumeric characters, spaces, and the following special characters: _ . + -, Maximum length is 255 characters.
Description	Description of the connection. Maximum length is 4000 characters.
Type	The SuccessFactors LMS connection type.
Runtime Environment	Name of the runtime environment where you want to run the tasks. Select a Secure Agent, Hosted Agent, or serverless runtime environment.

Property	Description

Service URL	OData service root URL that exposes the data that you want to read.
	Enter the URL in the following format:
	`https://<rooturl>/learning/odatav4/<webservicename>/v1/`
	For example, if the root URL is `partner0370.scdemo.successfactors.com:443` and the Web Service name is `curriculum`, enter the URL as follows:
	`https://partner0370.scdemo.successfactors.com:443/learning/odatav4/curriculum/v1/`
	For information about the Web Service names, see the *SuccessFactors Learning Web Services OData API Reference Guide*.

Client ID	The unique ID of the Web Service client that authenticates against the SAP SuccessFactors Learning server.
Client Secret	The secret code that an administrator generates to get OAuth tokens from the SAP SuccessFactors Learning server. The Web Service client then uses the client secret to request for OAuth tokens.
User ID	The unique ID of the user that authenticates against the SAP SuccessFactors Learning server.
Company ID	The tenant ID of the company that authenticates against the SAP SuccessFactors Learning server. The tenant ID is available in the page from where you generate the client ID and client secret.
User Type	The type of user account that runs the Web Service. Select one of the following values: - admin. Select **admin** if you run the Web Service with an administrator user account. - user. Select **user** if you run the Web Service with an end-user account.

CHAPTER 3

Synchronization tasks with SuccessFactors LMS Connector

You can create a synchronization task to read data from a SuccessFactors LMS source.

To read data, you must configure a data filter for the SuccessFactors LMS source object. You can configure simple and advanced filters.

SuccessFactors LMS sources in Synchronization tasks

You can use a single SuccessFactors LMS source object in a synchronization task.

You can configure the SuccessFactors LMS source properties on the **Source** page of the Synchronization task wizard.

The following table describes the SuccessFactors LMS source properties:

Property	Description
Connection	Name of the active SuccessFactors LMS source connection.
Source Type	Type of the SuccessFactors LMS source objects available. You can read data from a single SuccessFactors LMS source object. You cannot read data from multiple objects or parameterize the object.
Source Object	Name of the SuccessFactors LMS source object.
Display technical names instead of labels	Displays technical names instead of business names.
Display source fields in alphabetical order	Displays source fields in alphabetical order. By default, fields appear in the order returned by the source system.

Data filters

You can create simple or advanced data filters. You can also create a set of data filters for each object included in a synchronization task. Each set of data filters act independently of the other sets.

Simple data filters

You can create one or more simple data filters. When you create multiple simple data filters, the associated task creates an AND operator between the filters and loads rows that apply to all simple data filters.

Advanced data filters

You can create an advanced data filter to create complex expressions that use AND, OR, or nested conditions. The expression that you enter becomes the WHERE clause in the query used to retrieve records from the source.

Advanced properties for SuccessFactors LMS sources

You can configure advanced source properties when you schedule the synchronization task. Advanced source properties appear on the **Schedule** page of the Synchronization wizard.

You can configure the following advanced properties for a SuccessFactors LMS source:

Row Limit

The maximum number of rows that the Secure Agent reads from the SuccessFactors LMS source.

Default is 0, which indicates that there is no row limit and the Secure Agent reads all the records from the source.

The **Row Limit** property is applicable only if the SuccessFactors LMS source object supports pagination. For example, for a SuccessFactors LMS source object that supports pagination and contains 7 rows, if you set the row limit as 3, the Secure Agent reads 3 rows. If you set the row limit as 0, the Secure Agent reads all the 7 rows.

If the SuccessFactors LMS source object does not support pagination, the Secure Agent ignores the row limit value that you set. You might also encounter unexpected results such as duplicate rows and a higher number of rows being returned compared to the actual number of rows in the source.

Informatica recommends that you configure the **Row Limit** property only if you are certain that the source object supports pagination.

Page Size

The maximum number of records that the Secure Agent reads from the SuccessFactors LMS source in a page.

The default value that SuccessFactors LMS Connector supports is 0, which indicates that pagination will not be activated. The Secure Agent will fetch only 10 rows because 10 is the default value that the OData API supports. To use pagination, configure a page size value that is greater than 0.

The **Page Size** property is applicable only when the SuccessFactors LMS source object supports pagination. For example, for a SuccessFactors LMS source object that supports pagination and contains 10 rows, if you set the page size as 5 and row limit as 0, the Secure Agent reads all the 10 rows in 2 pages consisting of 5 rows each.

If the SuccessFactors LMS source object does not support pagination and you configure a page size, you might encounter unexpected results such as duplicate rows and a higher number of rows being returned compared to the actual number of rows in the source.

Informatica recommends that you configure the **Page Size** property only if you are certain that the source object supports pagination.

Rules and guidelines for SuccessFactors LMS sources

Consider the following rules and guidelines when you configure a synchronization task with a SuccessFactors LMS source:

- You cannot preview data from a SuccessFactors LMS source.
- You cannot sort data from a SuccessFactors LMS source.
- You can use only the equals and not equals filter operators. If you use any other operator, the task fails.
- While configuring an advanced filter, if you select fields from the **Fields** list to form the filter condition, Data Integration displays the field names with an underscore character (_) instead of a slash character (/). For instance, if you select a field named `criteria/targetUserID` from the **Fields** list, the field name appears as `criteria_targetUserID` on the expression editor. You must manually replace the underscore character (_) with the slash character (/).
- You cannot edit the data types for a SuccessFactors LMS source.

CHAPTER 4

Mappings and Mapping tasks with SuccessFactors LMS Connector

Use the Mapping Designer to create a mapping. When you create a mapping, you configure a source to represent a single SuccessFactors LMS object. Describe the flow of data from the source to the target along with the required transformations.

You can also use the Mapping Task wizard to create a mapping task and select the mapping that you want to use. The mapping task processes data based on the data flow logic you define in the mapping.

In advanced mode, the Mapping Designer updates the mapping canvas to include transformations and functions that enable advanced functionality.

SuccessFactors LMS sources in mappings

To read data from SuccessFactors LMS, configure a SuccessFactors LMS object as the Source transformation in a mapping.

Specify the name and description of the SuccessFactors LMS source. Configure the properties for the source object.

The following table describes the source properties that you can configure for a SuccessFactors LMS source:

Property	Description
Connection	Name of the active SuccessFactors LMS source connection.
Source Type	Type of the SuccessFactors LMS source objects available. You can read data from a single SuccessFactors LMS source object. You cannot read data from multiple objects or parameterize the object.
Object	Name of the SuccessFactors LMS source object based on the source type selected.
Filter	Configure a simple filter or an advanced filter to remove rows at the source. You can improve efficiency by filtering early in the data flow. A simple filter includes a field name, operator, and value. Use an advanced filter to define a more complex filter condition, which can include multiple conditions using the AND or OR logical operators.

Advanced properties for SuccessFactors LMS sources

You can configure advanced source properties in the Source transformation of a mapping.

You can configure the following advanced properties for a SuccessFactors LMS source:

Row Limit

The maximum number of rows that the Secure Agent reads from the SuccessFactors LMS source.

Default is 0, which indicates that there is no row limit and the Secure Agent reads all the records from the source.

The **Row Limit** property is applicable only if the SuccessFactors LMS source object supports pagination. For example, for a SuccessFactors LMS source object that supports pagination and contains 7 rows, if you set the row limit as 3, the Secure Agent reads 3 rows. If you set the row limit as 0, the Secure Agent reads all the 7 rows.

If the SuccessFactors LMS source object does not support pagination, the Secure Agent ignores the row limit value that you set. You might also encounter unexpected results such as duplicate rows and a higher number of rows being returned compared to the actual number of rows in the source.

Informatica recommends that you configure the **Row Limit** property only if you are certain that the source object supports pagination.

Page Size

The maximum number of records that the Secure Agent reads from the SuccessFactors LMS source in a page.

The default value that SuccessFactors LMS Connector supports is 0, which indicates that pagination will not be activated. The Secure Agent will fetch only 10 rows because 10 is the default value that the OData API supports. To use pagination, configure a page size value that is greater than 0.

The **Page Size** property is applicable only when the SuccessFactors LMS source object supports pagination. For example, for a SuccessFactors LMS source object that supports pagination and contains 10 rows, if you set the page size as 5 and row limit as 0, the Secure Agent reads all the 10 rows in 2 pages consisting of 5 rows each.

If the SuccessFactors LMS source object does not support pagination and you configure a page size, you might encounter unexpected results such as duplicate rows and a higher number of rows being returned compared to the actual number of rows in the source.

Informatica recommends that you configure the **Page Size** property only if you are certain that the source object supports pagination.

Tracing Level

You can set the tracing level in the advanced source properties to determine the amount of details that logs contain.

The following table describes the tracing levels that you can configure:

Property	Description
Terse	The Secure Agent logs initialization information, error messages, and notification of rejected data.
Normal	The Secure Agent logs initialization and status information, errors encountered, and skipped rows due to transformation row errors. Summarizes session results, but not at the level of individual rows. Default is normal.
Verbose Initialization	In addition to normal tracing, the Secure Agent logs additional initialization details, names of index and data files used, and detailed transformation statistics.
Verbose Data	In addition to verbose initialization tracing, the Secure Agent logs each row that passes into the mapping. Also notes where the Secure Agent truncates string data to fit the precision of a column and provides detailed transformation statistics. When you configure the tracing level to verbose data, the Secure Agent writes row data for all rows in a block when it processes a transformation.

APPENDIX A

Data type reference

Data Integration uses the following data types in synchronization tasks, mapping tasks, and mappings with SuccessFactors LMS:

SuccessFactors LMS Data Types

SuccessFactors LMS native data types appear in the **Fields** tab of the Source and Target transformations when you choose to edit metadata for the fields.

Transformation Data Types

Set of data types that appear in the transformations. They are internal data types based on ANSI SQL-92 generic data types, which the Secure Agent uses to move data across platforms. Transformation data types appear in all transformations in a mapping.

When Data Integration reads source data, it converts the native data types to the comparable transformation data types before transforming the data. When Data Integration writes data to a target, it converts the transformation data types to the comparable native data types.

SuccessFactors LMS data types and transformation data types

The following table lists the SuccessFactors LMS data types that Data Integration supports and the corresponding transformation data types:

SuccessFactors LMS Data Type	Transformation Data Type	Description
Binary	Binary	1 to 104,857,600 bytes
Boolean	String	1 to 104,857,600 characters
Byte	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Date	Date/Time	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19, scale 0
DateTimeOffset	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. (precision to the nanosecond)

SuccessFactors LMS Data Type	Transformation Data Type	Description
Decimal	Decimal	Precision 1 to 28, scale 0 to 28
Double	Double	Precision 15
Float	Double	Precision 15
Guid	String	1 to 104,857,600 characters
Int16	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Int32	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Int64	Bigint	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19, scale 0
SByte	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Single	Double	Precision 15
String	String	1 to 104,857,600 characters
TimeOfDay	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. (precision to the nanosecond)

INDEX

C

Cloud Application Integration community
  URL 4
Cloud Developer community
  URL 4

D

Data filters
  rules and guidelines for SuccessFactors LMS sources 12
Data Integration community
  URL 4

I

Informatica Global Customer Support
  contact information 5
Informatica Intelligent Cloud Services
  web site 4

M

maintenance outages 5

S

source properties
  SuccessFactors LMS mappings 13
status
  Informatica Intelligent Cloud Services 5
SuccessFactors LMS
  introduction 7
SuccessFactors LMS connections
  overview 8
SuccessFactors LMS connections *(continued)*
  properties 8
SuccessFactors LMS Connector
  administration tasks 6
  example 7
  overview 6
SuccessFactors LMS Connector mapping tasks
  overview 13
SuccessFactors LMS Connector mappings
  overview 13
SuccessFactors LMS data types
  mapping with transformation data types 16
  overview 16
SuccessFactors LMS Synchronization tasks
  overview 10
SuccessLMS Connector
  assets 6
Synchronization tasks
  SuccessFactors LMS data filters 11
  SuccessFactors LMS sources 10
system status 5

T

trust site
  description 5

U

upgrade notifications 5

W

web site 4