Informatica®

Informatica® Cloud Data Integration

Workday V2 Connector

Informatica Cloud Data Integration Workday V2 Connector
October 2023

© Copyright Informatica LLC 2015, 2023

This software and documentation are provided only under a separate license agreement containing restrictions on use and disclosure. No part of this document may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica LLC.

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation is subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License.

Informatica, the Informatica logo, Informatica Cloud, and PowerCenter are trademarks or registered trademarks of Informatica LLC in the United States and many jurisdictions throughout the world. A current list of Informatica trademarks is available on the web at https://www.informatica.com/trademarks.html. Other company and product names may be trade names or trademarks of their respective owners.

Portions of this software and/or documentation are subject to copyright held by third parties. Required third party notices are included with the product.

See patents at https://www.informatica.com/legal/patents.html.

DISCLAIMER: Informatica LLC provides this documentation "as is" without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of noninfringement, merchantability, or use for a particular purpose. Informatica LLC does not warrant that this software or documentation is error free. The information provided in this software or documentation may include technical inaccuracies or typographical errors. The information in this software and documentation is subject to change at any time without notice.

NOTICES

This Informatica product (the "Software") includes certain drivers (the "DataDirect Drivers") from DataDirect Technologies, an operating company of Progress Software Corporation ("DataDirect") which are subject to the following terms and conditions:

1. THE DATADIRECT DRIVERS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.
2. IN NO EVENT WILL DATADIRECT OR ITS THIRD PARTY SUPPLIERS BE LIABLE TO THE END-USER CUSTOMER FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES ARISING OUT OF THE USE OF THE ODBC DRIVERS, WHETHER OR NOT INFORMED OF THE POSSIBILITIES OF DAMAGES IN ADVANCE. THESE LIMITATIONS APPLY TO ALL CAUSES OF ACTION, INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS.

The information in this documentation is subject to change without notice. If you find any problems in this documentation, report them to us at infa_documentation@informatica.com.

Informatica products are warranted according to the terms and conditions of the agreements under which they are provided. INFORMATICA PROVIDES THE INFORMATION IN THIS DOCUMENT "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

Publication Date: 2023-11-07

Table of Contents

Preface 5

Informatica Resources 5

- Informatica Documentation 5
- Informatica Intelligent Cloud Services web site 5
- Informatica Intelligent Cloud Services Communities 5
- Informatica Intelligent Cloud Services Marketplace 6
- Data Integration connector documentation 6
- Informatica Knowledge Base 6
- Informatica Intelligent Cloud Services Trust Center 6
- Informatica Global Customer Support 6

Chapter 1: Introduction to Workday Connector 7

Workday Connector assets 7

Administration of Workday Connector 8

Chapter 2: Connections for Workday 9

Connect to Workday 9

- Connection details 9
- Advanced settings 10

Chapter 3: Workday operations 11

Generic Workday operations 11

Workday source operations 12

- Configuring a request using request message editor 12
- Parameterizing input values in a request message 13
- Field mapping in a Source transformation 15
- Creating packed fields in a field mapping 16

Workday target operations 17

- File preparation for a target transformation 18
- Field mapping in a target transformation 18
- Configuring a multiple request for the Workday target 18

Workday midstream operations 19

- Configuring a request and response in a Web Services transformation 19

Configuring custom operations 20

Chapter 4: Mappings and mapping tasks with Workday 21

Workday Source transformation in mappings 21

- Source transformation properties 21
- Workday advanced source properties in mappings 22
- Source transformation mapping example 22

Workday Target transformation in mappings . . . 27
Workday Target transformation properties . . . 28
Workday advanced target properties. . . . 28
Input settings properties. . . . 28
Target transformation mapping example. . . . 28
Workday Web Services transformation in mappings. . . . 31
Workday Web Services transformation properties. . . . 31
Workday advanced source properties in mappings. . . . 32
Web Services transformation mapping example. . . . 32
Parameterization. . . . 34
Rules and guidelines for Workday operations . . . 34
Reading and writing Unicode characters. . . . 35

Appendix A: Workday data type reference. . . . 36

Workday and transformation data types. . . . 36

Appendix B: General considerations when using Workday V2 Connector. . . . 39

Workday source properties. . . . 39
Workday relational output and joiner. . . . 40
Configuring Workday V2 Connector for memory intensive tasks. . . . 40

Appendix C: Workday target approaches. . . . 41

Approach 1: Migrate data from Salesforce to Workday using a Joiner transformation. . . . 41
Creating connections. . . . 42
Creating a mapping. . . . 43
Configuring a mapping task. . . . 48
Approach 2: Migrate data from Salesforce to Workday by defining relationship keys for source groups . . . 49
Creating connections. . . . 49
Create a mapping. . . . 49
Configuring a mapping task. . . . 56

Index. . . . 57

Preface

Use *Workday V2 Connector* to learn how to configure a Source transformation, Target transformation, or midstream in a Web Services transformation to connect to Workday from Data Integration and interact with the Workday service to perform operations on non-relational hierarchical data. Learn to create an Workday V2 connection, develop mappings, and run mapping tasks and dynamic mapping tasks in Cloud Data Integration.

Informatica Resources

Informatica provides you with a range of product resources through the Informatica Network and other online portals. Use the resources to get the most from your Informatica products and solutions and to learn from other Informatica users and subject matter experts.

Informatica Documentation

Use the Informatica Documentation Portal to explore an extensive library of documentation for current and recent product releases. To explore the Documentation Portal, visit https://docs.informatica.com.

If you have questions, comments, or ideas about the product documentation, contact the Informatica Documentation team at infa_documentation@informatica.com.

Informatica Intelligent Cloud Services web site

You can access the Informatica Intelligent Cloud Services web site at http://www.informatica.com/cloud. This site contains information about Informatica Cloud integration services.

Informatica Intelligent Cloud Services Communities

Use the Informatica Intelligent Cloud Services Community to discuss and resolve technical issues. You can also find technical tips, documentation updates, and answers to frequently asked questions.

Access the Informatica Intelligent Cloud Services Community at:

https://network.informatica.com/community/informatica-network/products/cloud-integration

Developers can learn more and share tips at the Cloud Developer community:

https://network.informatica.com/community/informatica-network/products/cloud-integration/cloud-developers

Informatica Intelligent Cloud Services Marketplace

Visit the Informatica Marketplace to try and buy Data Integration Connectors, templates, and mapplets:

https://marketplace.informatica.com/

Data Integration connector documentation

You can access documentation for Data Integration Connectors at the Documentation Portal. To explore the Documentation Portal, visit https://docs.informatica.com.

Informatica Knowledge Base

Use the Informatica Knowledge Base to find product resources such as how-to articles, best practices, video tutorials, and answers to frequently asked questions.

To search the Knowledge Base, visit https://search.informatica.com. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team at KB_Feedback@informatica.com.

Informatica Intelligent Cloud Services Trust Center

The Informatica Intelligent Cloud Services Trust Center provides information about Informatica security policies and real-time system availability.

You can access the trust center at https://www.informatica.com/trust-center.html.

Subscribe to the Informatica Intelligent Cloud Services Trust Center to receive upgrade, maintenance, and incident notifications. The Informatica Intelligent Cloud Services Status page displays the production status of all the Informatica cloud products. All maintenance updates are posted to this page, and during an outage, it will have the most current information. To ensure you are notified of updates and outages, you can subscribe to receive updates for a single component or all Informatica Intelligent Cloud Services components. Subscribing to all components is the best way to be certain you never miss an update.

To subscribe, on the Informatica Intelligent Cloud Services Status page, click **SUBSCRIBE TO UPDATES**. You can choose to receive notifications sent as emails, SMS text messages, webhooks, RSS feeds, or any combination of the four.

Informatica Global Customer Support

You can contact a Global Support Center through the Informatica Network or by telephone.

To find online support resources on the Informatica Network, click **Contact Support** in the Informatica Intelligent Cloud Services Help menu to go to the **Cloud Support** page. The **Cloud Support** page includes system status information and community discussions. Log in to Informatica Network and click **Need Help** to find additional resources and to contact Informatica Global Customer Support through email.

The telephone numbers for Informatica Global Customer Support are available from the Informatica web site at https://www.informatica.com/services-and-training/support-services/contact-us.html.

CHAPTER 1

Introduction to Workday Connector

You can use Workday Connector to connect to Workday from Data Integration. You can read data from or write data to Workday.

Workday is an on-demand Cloud-based Enterprise Resource Application that includes financial management and human capital management applications. Workday exposes the web service API, which the Secure Agent uses to perform integration tasks through the SOAP protocol.

You can use Workday Connector in a Source transformation, Target transformation, or midstream in a Web Services transformation to connect to Workday from Data Integration and interact with the Workday service to perform operations on non-relational hierarchical data.

You can switch mappings to advanced mode to include transformations and functions that enable advanced functionality. When you use Workday Connector midstream in a mapping, you first create a business service for the operation that you want to perform in Workday. You then associate the business service in a Web Services transformation midstream in a mapping to read from or write data to Workday.

With Workday V2 connection, you can access all the services and operations supported for the SOAP-based web service version in Workday. When you perform an operation from Data Integration, you can convert the hierarchical data structure for data retrieved from Workday to a relational format before you write to relational tables. You can also convert the relational format to hierarchical format before you write data from relational sources to Workday.

Example

You are a human resources administrator and you want to archive the details of employees who left the organization in the past month. You can find the employee in Workday based on the employee ID, retrieve worker data through the Get_Workers operation, and then write the details to an Oracle database target. With Workday Connector, you retrieve the worker data in an XML structure and then define a corresponding relational structure to write to the relational target.

Workday Connector assets

Create assets in Data Integration to integrate data using Workday Connector.

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

- Dynamic mapping task
- Mapping

- Mapping task

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

Administration of Workday Connector

As a user, you can use Workday Connector after the organization administrator performs the following tasks:

- Ensures that the machine hosting the Secure Agent has a minimum memory size of 2048 MB.
- Defines the security group in Workday that controls the required permissions for a user to perform an operation. For more information about defining security groups and permissions for a user in Workday, see the Workday documentation.

CHAPTER 2

Connections for Workday

Use the Workday connection to read data from or write data to Workday.

You can associate a domain, tenant, Workday module, and a WSDL version with a Workday connection.

The agent programmatically creates the URL that accesses the specified corresponding WSDL.

For example, `https://<Domain Name>/ccx/service/<tenant name>/<Module name>/<version>?wsdl`.

If you want to perform an operation for customized objects, choose Customized in the Workday connection properties. The Secure Agent creates the following URL that accesses custom data from the corresponding WSDL.

For example, `https://<Domain Name>/ccx/service/<tenant name>/ Custom/Data/<Module name>/<version>?wsdl`.

You can use the Workday connection when you create a mapping.

Connect to Workday

Let's configure the Workday V2 connection properties to connect to Workday.

Connection details

The following table describes the basic 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	Workday V2
Runtime Environment	The name of the runtime environment where you want to run tasks. Select a Secure agent, Hosted Agent, or serverless runtime environment.

Property	Description
Authentication	Authentication by Workday service to access Workday modules. Select Workday.
Username	User name of the Workday tenant to log in to the Workday service. You can enter the user name with the tenant name in the following format: <username>@<tenant name> For example, jjoe@informatica_pt1. If you do not specify the tenant name, the Secure Agent appends the tenant name to the specified user name.
Password	Password to log in to the Workday service.
Domain Name	Name of the Workday domain that contains the resources that you want to access.
Tenant Name	The Workday tenant ID that you want to access. For example, informatica_pt1
Module Name	The Workday service that you want to access. For example, Human_Resources, Financial_Management, and Staffing. For more information about the available modules for the web services, see the following link: Modules for the web services.
Version	The Web Service Description Language (WSDL) version for a service that you want to fetch from Workday. The list of operations supported for a service depends on the WSDL version that you select. For more information about the supported versions, see the following link: Supported WSDL versions.

Advanced settings

The following table describes the advanced connection properties:

Property	Description
Customized	The standard or custom WSDL to fetch Workday object fields. Select to fetch Workday custom object fields. Deselect to fetch the Workdaystandard object fields. Default is disabled.

CHAPTER 3

Workday operations

Workday exposes the web service API that the Secure Agent uses to perform integration tasks through the SOAP protocol.

When you create a mapping, you can associate a Workday connection and an operation. Based on the Workday WSDL version and module you specify in the connection, the Secure Agent connects to the corresponding web service in Workday to access, transform, or deliver data. The request and response are SOAP messages. The SOAP request and response messages contain hierarchical data, where the data follows an XML schema. If you want to write data to a relational target, the Secure Agent converts the hierarchical data fetched from Workday to relational data.

Generic Workday operations

The following table describes some of the generic operations that you can perform with Workday services:

Operation Name	Description
Find_*	Responds with a set of references to objects that match the criteria specified in the request element. For example, Find_Organization.
Add_Update* Submit_* Import_*	Adds an object if it does not exist or updates an object that matches the criteria specified in the request element. For example, Add_Update_Organization.
Add_* Put_*	Adds a record in the Workday object that matches the criteria specified in the request element. For example, Add_Workday_Account and Put_Holiday_Calendar.
Get_*	Gets the list of objects that matches the criteria specified in the request element. For example, Get_Workers
Update_* Change_*	Modifies the objects that match the criteria specified in the request element. For example, Update_Academic_Appointment.
Cancel_*	Cancels the operations that match the criteria specified in the request element. For example, Cancel_Cash_Sale.

Workday source operations

Create a Source transformation in the Mapping Designer to read data from Workday.

When you select a Workday connection for a Source transformation in a mapping to read data from Workday, you can select an operation based on the imported WSDL.

For a complete list of supported versions, see the following link to the Workday Web Services (WWS) Version Directory:
https://community.workday.com/sites/default/files/file-hosting/productionapi/versions/index.html. You can click the version you want to view for the services and the corresponding operations that you can perform with Workday.

After you specify the configured connection, specify **All Operations** on the **Source** tab of the Source transformation. The Secure Agent displays all the supported operations for the specified version and module. You can select the operation that you want to perform. When you select **Read Operations**, a subset of the available read operations for the WSDL appears.

Select the operation you require, configure the request message in XML from the sample template provided, and configure the advanced properties for the operation. If you want to write to a relational target, define a relational structure for the worker data by mapping the incoming fields that is in hierarchical format to the output fields in relational format. When you run the mapping, the Secure Agent retrieves data for the specified operation from Workday.

Configuring a request using request message editor

When you create a Source transformation, configure an XML request message for the operation that you want to perform in Workday.

Use the Request Message Editor to create a request message. The request message is in XML format. You can use the default request message for the operation and then customize the request message to specify the data that you want to enter into the data flow.

To customize your request, copy the request message from the sample template to the Request Message Editor pane where you can edit the XML message and add the attributes for the request.

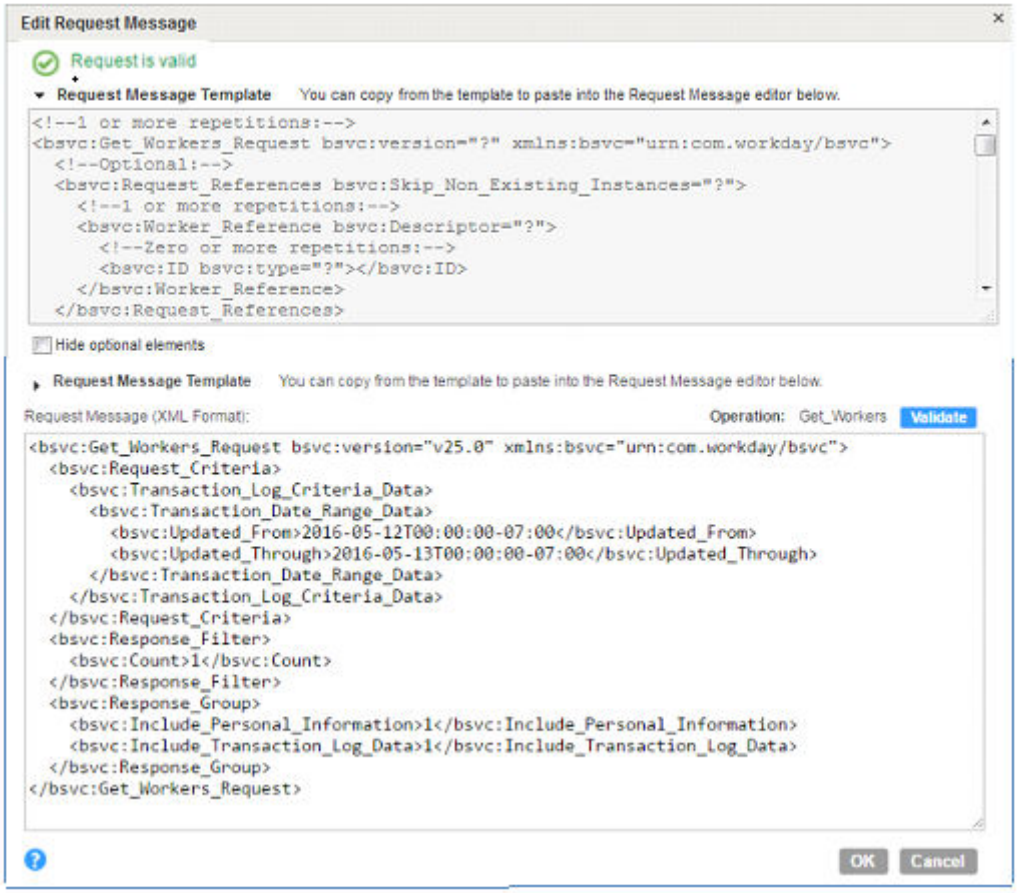
For example, you want to perform an operation Get_Workers using Workday Connector to retrieve data for a worker that was updated through a specified period. Specify the attributes Updated_From and Updated_Through values in the request message to fetch worker transactions that occurred between May 12, 2016 and May 13, 2016.

The following XML sample shows the request input elements that you want in the response:

```
<bsvc:Get_Workers_Request xmlns:bsvc="urn:com.workday/bsvc" bsvc:version="v25.0">
   <bsvc:Request_Criteria>
      <bsvc:Transaction_Log_Criteria_Data>
         <bsvc:Transaction_Date_Range_Data>
            <bsvc:Updated_From>2016-05-12T00:00:00-07:00</bsvc:Updated_From>
            <bsvc:Updated_Through>2016-05-13T00:00:00-07:00</bsvc:Updated_Through>
         </bsvc:Transaction_Date_Range_Data>
      </bsvc:Transaction_Log_Criteria_Data>
   </bsvc:Request_Criteria>
   <bsvc:Response_Filter>
      <bsvc:Count>1</bsvc:Count>
   </bsvc:Response_Filter>
   <bsvc:Response_Group>
      <bsvc:Include_Personal_Information>1</bsvc:Include_Personal_Information>
      <bsvc:Include_Transaction_Log_Data>1</bsvc:Include_Transaction_Log_Data>
   </bsvc:Response_Group>
</bsvc:Get_Workers_Request>
```

Note: Use only the following date time format: `yyyy-mm-ddThh:mm:ss`.

The following image shows the validated request message in a Get_Workers operation in the Mapping Designer:



For information about the type, value, cardinality, and description of each of the parameters that you can use in the request XML message for the Get_Workers operation, go to version 25 of the WSDL in the Workday Web Services (WWS) Directory, and then select the Get_Workers operation listed under the Human_Resources service. See the following link for the Get_Workers operation listed for v25.0 in the WWS directory:
https://community.workday.com/sites/default/files/file-hosting/productionapi/Human_Resources/v40.1/Get_Workers.html

The request message format in Workday Connector follows the service request definition in Workday. You can view the Get_Workers_Request and Get_Workers_Response to understand the request and response elements that you can use.

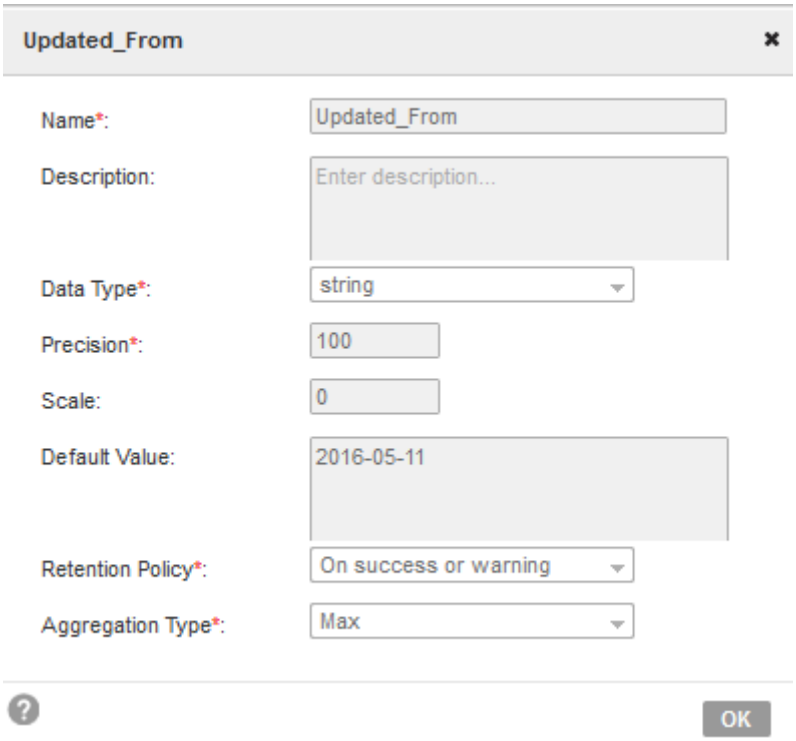
Ensure that you use well-formed XML formatting in the request message. You can verify if the XML request is valid to ensure that the XML matches the structure expected by the operation.

Parameterizing input values in a request message

You can use in-out parameters to represent input values in a request XML.

Configure the in-out parameters in the Mapping Designer. From the **Mapping Design** page, you open the parameters panel and configure an in-out parameter.

The following image shows a configured Updated_From in-out parameter value:



After you configure a parameter, use the parameter name in the following format, $$Name, in a request message. The XML uses the fields from the parameterized object.

For example, you want to use parameterized Updated_From and Updated_To values in an XML request for a Get_Operation.

The following sample request shows the parameterized values that you can specify in an XML request:

```
<bsvc:Get_Workers_Request xmlns:bsvc="urn:com.workday/bsvc" bsvc:version="v25.0">
   <bsvc:Request_Criteria>
      <bsvc:Transaction_Log_Criteria_Data>
         <bsvc:Transaction_Date_Range_Data>
            <bsvc:Updated_From>$$Updated_From</bsvc:Updated_From>
            <bsvc:Updated_Through>$$Updated_Through</bsvc:Updated_Through>
         </bsvc:Transaction_Date_Range_Data>
      </bsvc:Transaction_Log_Criteria_Data>
   </bsvc:Request_Criteria>
   <bsvc:Response_Filter>
      <bsvc:Count>1</bsvc:Count>
   </bsvc:Response_Filter>
   <bsvc:Response_Group>
      <bsvc:Include_Personal_Information>1</bsvc:Include_Personal_Information>
      <bsvc:Include_Transaction_Log_Data>1</bsvc:Include_Transaction_Log_Data>
   </bsvc:Response_Group>
</bsvc:Get_Workers_Request>
```

Configuring In-Out Parameters in a Mapping

You can use an in-out parameter that holds a variable value that can change each time a task runs to manage incremental data loading.

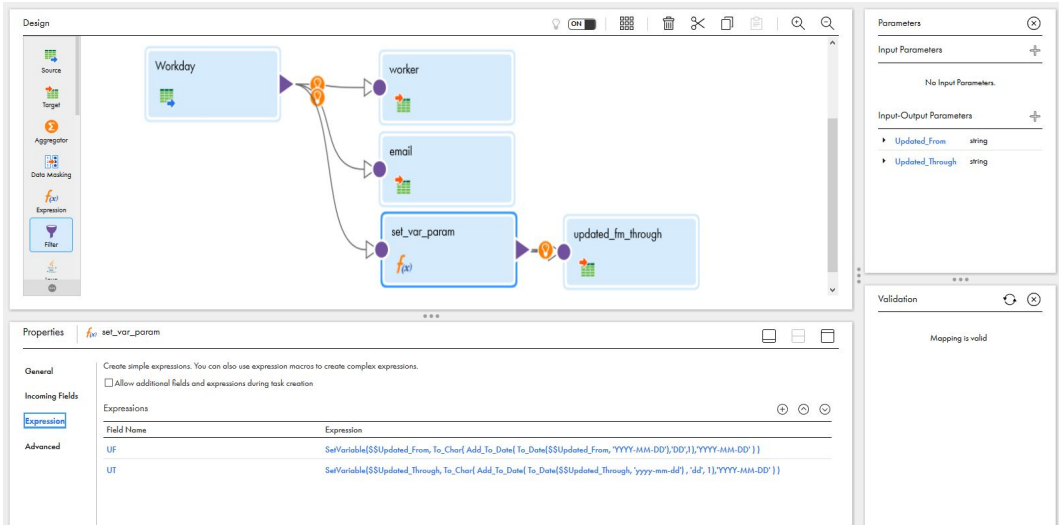
Add the in-out parameterized values in complex expressions in a mapping update the parameters when each task runs. The in-out parameter acts like a placeholder for a value that stores a task stage. Data Integration evaluates the parameter at run time based on the specified configuration.

For example, you can use the following parameterized values in an Expression transformation:

```
SetVariable($$Updated_From,  TO_CHAR(ADD_TO_DATE(TO_DATE($$Updated_From,'YYYY-MM-DD'),'DD',1),'YYYY-MM-DD'))
```

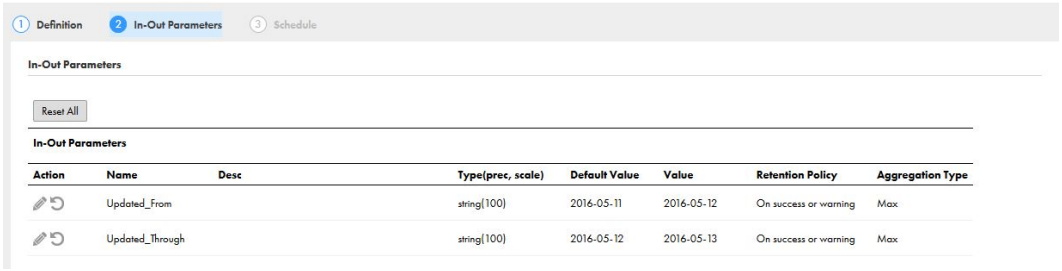
In the example, SetVariable function sets the parameter value each time the session runs. The default value set for the $$Updated_From parameter is 2016-05-11. You want to update the value by one every time the task runs.

The following image shows the parameterized values used in an Expression transformation in the Mapping Designer:



When you deploy the mapping in a mapping task, you can configure the mapping to run according to a schedule. When the task runs, the Secure Agent updates the in-out parameters based on the specified parameters in the expression.

The following image shows a configured parameter used in a mapping task:



In the example, the task reads rows dated through the default value 2016-05-11 the first time it runs. The task sets $$Updated_From to 2016-05-12 when the session is complete. The next time the session runs, the task considers the updated value and reads rows with the date 2016-04-12.

Field mapping in a Source transformation

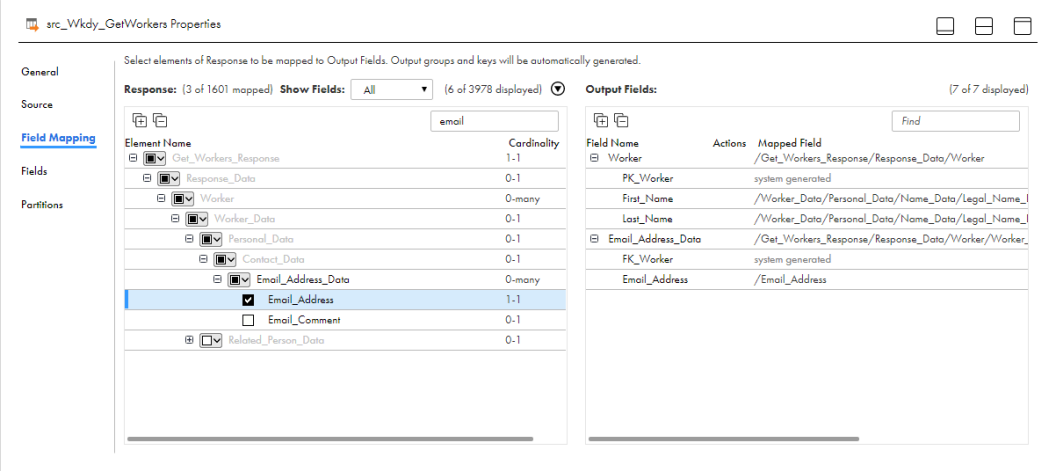
The response message format follows the service response definition in Workday. You can map response fields from a hierarchical to a relational structure of output groups and fields.

After you configure an operation for a source and specify the request message, create the relational format from the hierarchical data to include groups and fields that you want in the output.

To do this, select the elements in the response structure that you want to include as output fields. The Secure Agent converts the XML response in the hierarchical structure to relational groups at run time.

The output groups along with the primary and foreign keys are automatically generated. You can hover the mouse over an output field to view the XPath expression, which indicates which field the output field is mapped to in the response structure of the hierarchy tree.

The following image shows an example hierarchical response structure generated from the request XML for the Get_Workers operation in the Human Resources Workday module and the corresponding relational output fields for the response:



For example, in the Response Structure pane, you select First_Name and Last_Name, and then you select Email_Address, which is located under a different parent in the hierarchy. In the Output Fields area, the structure is relational with system-generated primary and foreign keys.

You can map fields from only one output group to a particular branch of the response structure hierarchy. For example, if Birth_Date is a sibling of nodes that are mapped to the Personal_Data group, you must map Birth_Date to the Personal_Data group.

You can edit the data type, precision, and scale for the groups and fields after mapping the fields.

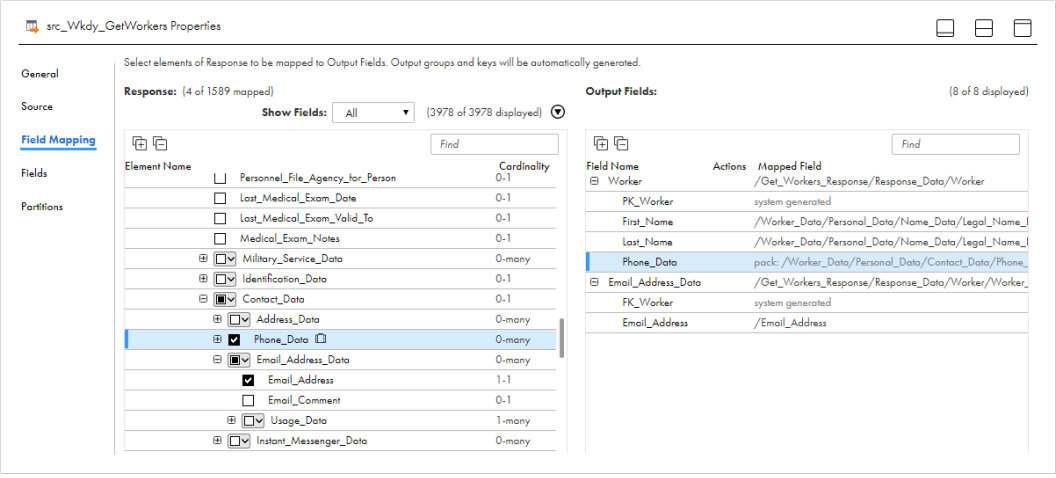
Creating packed fields in a field mapping

You can reduce the number of output groups for a complex request message by marking fields that you want to pack when you configure the field mapping.

You can pack multiple instances of a single element or a hierarchy of elements into one field. A packed icon displays next to elements marked to be packed, indicating that you can pack the entire element into one output field when you check that element.

Fields can come from the source that are already marked for packing. You can unpack fields by clicking the pack icon. You cannot select fields that are descendants of packed fields.

The following image shows the packed Phone_Data element:



When you run the mapping, the agent packs the element and its descendants into a single XML string.

The following sample table shows the Worker output in the target file after you run the task:

PK_Worker	Phone_Data	First_Name	Last_Name
1	<infa_packed><wd:Phone_Data wd:Formatted_Phone="+1 (650) 882-6532"><wd:Country_ISO_Code>USA</wd:Country_ISO_Code><wd:International_Phone_Code>1</wd:International_Phone_Code><wd:Area_Code>650</wd:Area_Code><wd:Phone_Number>882-6532</wd:Phone_Number><wd:Phone_Device_Type_Reference wd:Descriptor="Mobile"><wd:ID wd:type="WID">d691375437c848aea9d5b0874353bfd7</wd:ID><wd:ID wd:type="Phone_Device_Type_ID">1063.1</wd:ID></wd:Phone_Device_Type_Reference><wd:Usage_Data wd:Public="0"><wd:Type_Data wd:Primary="1"><wd:Type_Reference wd:Descriptor="Home"><wd:ID wd:type="WID">836cf00ef5974ac08b786079866c946f</wd:ID><wd:ID wd:type="Communication_Usage_Type_ID">HOME</wd:ID></wd:Type_Reference></wd:Type_Data></wd:Usage_Data></wd:Phone_Data></infa_packed>	Ernest	Egg

You can view the packed Phone_Data in the target file.

Workday target operations

Create a Target transformation in the Mapping Designer to write data to Workday. When you select a Workday connection for a Target transformation in a mapping, you can select an operation based on the

imported WSDL. When you want to write data that is in relational format to Workday, the Secure Agent converts the relational data to a hierarchical format before writing to Workday.

The connection properties include the Workday module and version of the SOAP-based web services that you want to access and write in Workday.

When you configure a Workday target, you can select **Write Operations** on the **Target** tab to display the subset of write operations supported by the WSDL version you specified in the Workday connection properties. If you select **All Operations**, all the supported operations for the WSDL display. You can search using keywords such as Put, Update, Change, or Write to display only the write operations from the list. The Secure Agent creates target fields based on the request message structure of the operation you select on the **Target** tab.

When you write data to Workday, the Secure Agent includes all the incoming fields from the source, by default. You can exclude the incoming fields, if required. You can add multiple input groups into the Workday target and define the primary and foreign key relationships between the multiple input groups before you run the mapping.

File preparation for a target transformation

To write data to Workday, the source file must include the container with the processing options and the wrapper referential elements to perform the specified operation in Workday.

For information about the required business process parameters and the wrapper elements, see the request elements for the specified operation in the Workday web service directory. You need to prepare a file to include the wrapper elements along with the data that you want to update in Workday. You can add the processing options in an Expression transformation later when you write the data to Workday.

For example, to change the legal name for a worker in Workday, you need the following wrapper element data from Workday:

- worker
- country reference
- worker reference

As the elements fall in three different groups, create three separate files to include the information from each of these groups. Add the files in a source transformation, and use the Joiner transformations to join data from multiple files to create one target file. Use the data from the target file to create the final source file. Include the legal name data that you want to update in Workday.

Field mapping in a target transformation

You can map fields that are in a relational structure to the hierarchical structure used by a Workday target.

On the **Field Mapping** tab for the Target transformation, the fields in the **Target Fields** appear in hierarchical format. The target fields are determined by the request message structure of the operation you select for the Target transformation.

Each source object displays as a group in the **Input Fields** area. You can select fields in the **Input Fields** area to map the fields to the request. If the input fields include multiple input groups, map the groups to the corresponding nodes in the request. Be sure to map all of the fields that you require in the request.

Configuring a multiple request for the Workday target

To construct multiple requests, define a primary key and foreign key for source groups.

If the request contains an element, for example, ID element, that occurs multiple times, the input fields must come from different source groups. Link the source group in the input fields to its parent source group by using the foreign key.

To decide the parent source group for multioccurring elements, you must perform the following steps:

- The parent group must be the immediate multioccurring parent element.
- In the absence of a multioccurring parent element, map the multioccurring element to the source group that is mapped to the root element.

When you do not have multioccurring elements, you can define the primary key for the source fields and then map the fields.

Workday midstream operations

You can use Workday Connector midstream in mapping tasks through a Web Services transformation to perform read or write operations in Workday.

When you use Workday Connector midstream, you create a business service, associate a Workday V2 connection, and the required Workday read or write operation for the business service. Configure the Web Services transformation in the Mapping Designer and associate the business service to it.

The Web Services transformation connects to the web service application as a web service client to access, transform, or deliver data. The Web Services transformation constructs a Workday request based on the source data you pass, sends the request to Workday, and gets a corresponding response from Workday before you write to the target. In the Web Services transformation, you select the elements that you want from the response structure to write to the configured target.

The web service client request and the web service response are SOAP messages. In Workday Connector, the SOAP request messages and response messages contain hierarchical data, such as data that follows an XML schema.

To create a request to Workday by using the Web Services transformation, perform the following steps:

1. Define a business service to add operations to the Web Services transformation in the Mapping Designer.
2. Configure a Web Services transformation midstream in a mapping to read or write data from Workday.

Configuring a request and response in a Web Services transformation

When you configure a mapping, you pass the input fields from the source to a Web Services transformation and the generated output fields to a target.

On the **Request Mapping** tab of the Web Service transformation, the request mapping shows the incoming fields from the source that you want to pass to Workday. Based on the operation specified in the business service, a SOAP request structure displays. You must map the incoming fields of the source to the elements of the request structure.

Configuring custom operations

You can perform operations for custom objects that the Workday Web Services support.

You must specify the tenant specific for a WSDL in a connection to access the schema for a custom object in Workday. When you configure a web service operation for custom objects, the operations display as Additional Data.

You can perform the following web service operations that support custom objects:

- Get Job Application Additional Data
- Put Job Application Additional Data
- Edit Worker Additional Data
- Edit Job Requisition Additional Data
- Edit Position Restrictions Additional Data

CHAPTER 4

Mappings and mapping tasks with Workday

Use the Data Integration Mapping Designer to create a mapping. In advanced mode, the Mapping Designer updates the mapping canvas to include transformations and functions that enable advanced functionality.

Workday Source transformation in mappings

When you configure a Source transformation, select the Workday connection and choose an operation to represent a Workday source. You can parameterize a Workday connection.

You can select an operation for the source based on the WSDL imported through the connection. Configure the request message using the request message template. You can parameterize the input values in the request XML. Configure the advanced properties to set the tracing level and the cache size for the web service response.

You can view the response structure in the field mapping. When you map the elements from the response structure to the output fields, the Secure Agent creates the output groups, along with the primary and foreign keys for the field names. When you deploy the mapping in a mapping task and run the task, the Secure Agent reads the data from Workday.

Source transformation properties

You can use one or more Source transformations in a mapping. Use a Joiner transformation to join data from two Source transformations.

When you select a source transformation, the **Properties** panel displays the following areas and information:

- **General**. Use to configure the name and a description for the source.
- **Source**. Use to select the connection and the operation, and to configure the request options, and advanced source properties.
- **Field Mapping**. Use to map elements of the response structure with the output fields.
- **Fields**. Use to edit the metadata source field metadata that you want to use in the mapping.

Workday advanced source properties in mappings

In a mapping, you can configure a Source transformation to represent a Workday source. For Workday source connections used in mapping tasks, you can configure advanced properties in the Source page of the Mapping Task wizard.

The following table describes the advanced properties that you can configure in a Source transformation:

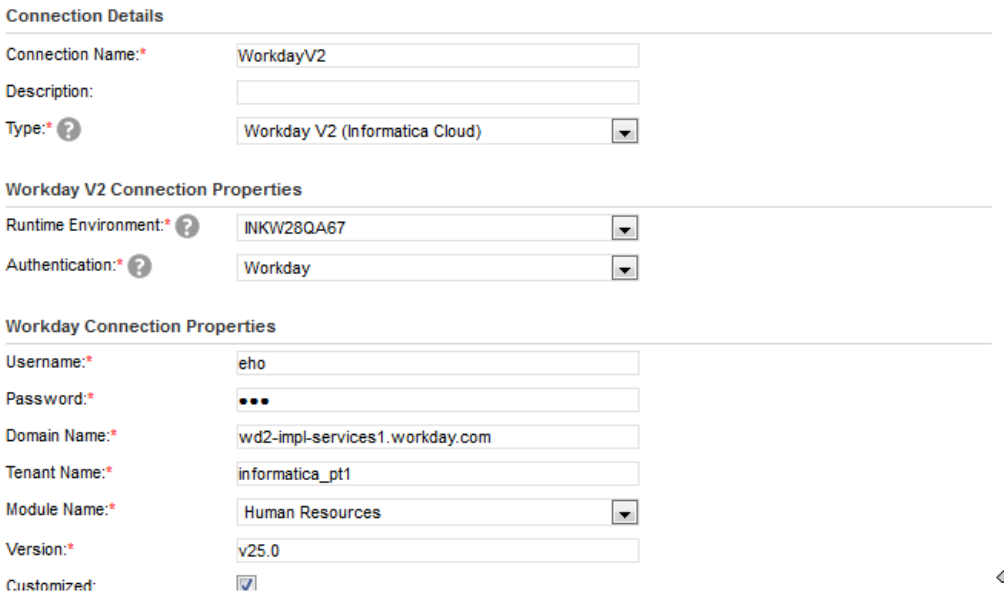
Property	Description
Batch Size	Determines the number of threads and how many SOAP requests run in parallel when a session runs. The batch size corresponds to the parallel SOAP requests made by the Secure Agent. Specify a batch size value that is close to the number of available CPU cores in the Secure Agent. You can specify a maximum batch size of 20. Default is 1.
Include descriptors in response	Determines whether the response must include the Workday descriptors. Workday descriptors are additional information used to describe an instance of a Workday object. Specify a value of 1 in the request message so that the response returns values in the descriptor fields for the Workday object. Specify 0 so that the response does not include descriptors for the Workday object. Default is 0.
Tracing Level	Amount of detail that appears in the log for the Source transformation. Use the following tracing levels: - Terse - Normal - Verbose Initialization - Verbose Default is normal.
Cache Size for Web Service Response (KB)	Memory available for the web service response. The cache size depends on the Workday module and response count size. If the web service response contains many rows or columns, you might want to increase the cache size. You can specify a maximum size of 99999 KB. Default is 1024 KB.

Source transformation mapping example

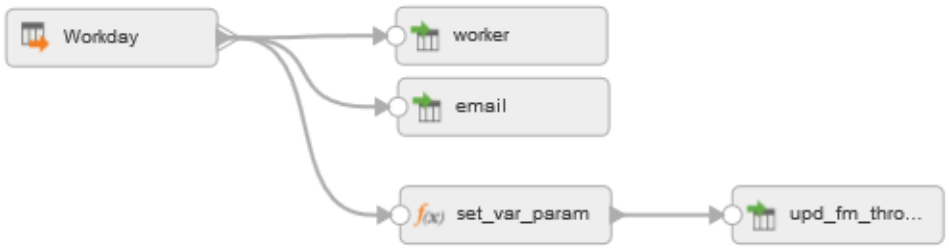
You are a human resources administrator and you want to extract contact information, such as first name, last name, email, and phone number of employees from Workday to a flat file. You want to extract records updated through a specified period from Workday.

To read data from Workday and write to a flat file, perform the following tasks:

1. Create a Workday connection. Verify that you select Human Resources as the Module name and specify the WSDL version in the connection properties.
   The following image shows the configured Workday connection:

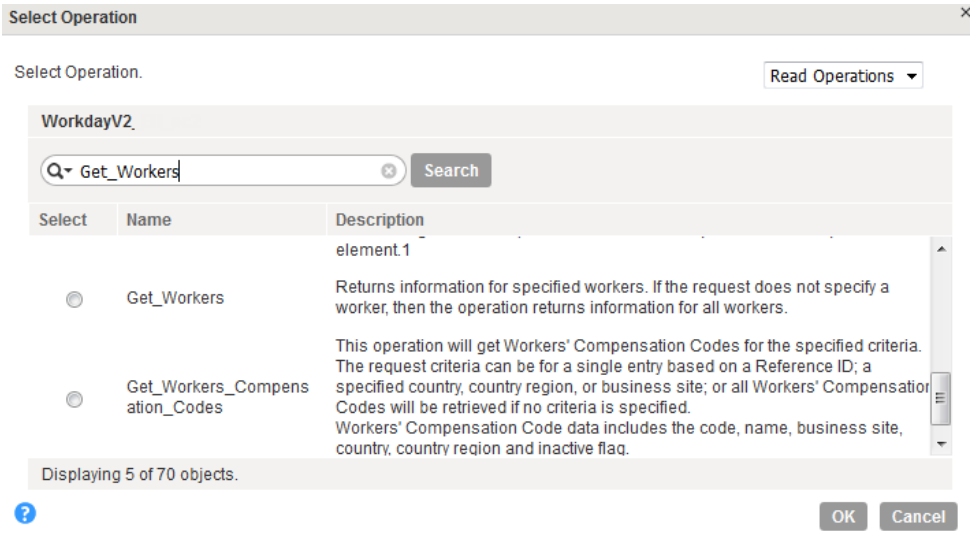


2. Create a flat file connection to write data to the flat file.
3. Create a Workday mapping.
   The following image shows the Workday mapping:



4. Add a Source transformation, specify a name and description in the general properties.
5. On the **Source** tab, perform the following steps:
   a. In the **Connection** field, select the configured Workday connection to connect to Workday.
   b. In the **Operation** field, select Get_Workers as the operation.

The following image shows the Get_Workers operation and the description from the list of Read Operations:



c. In the **Request Options** section, configure the request message in the following XML format, specify the attributes in the message, and validate the message:

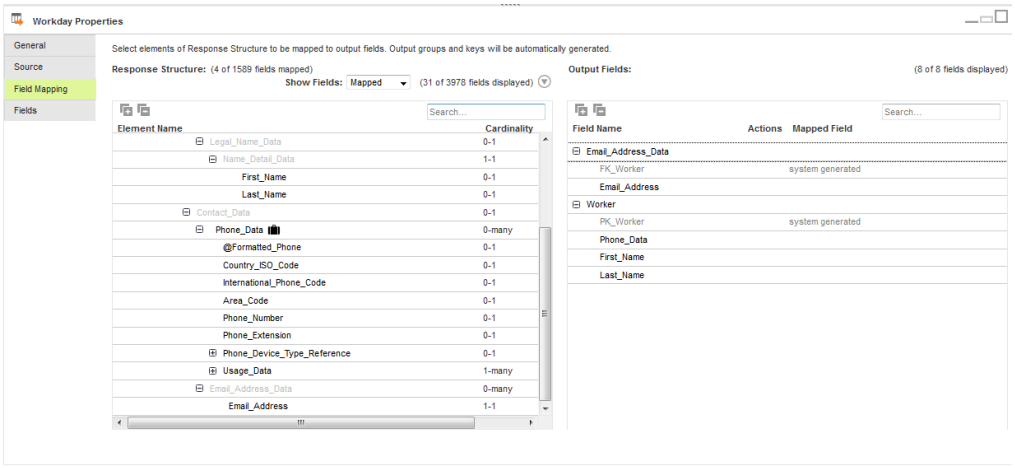
```
<bsvc:Get_Workers_Request xmlns:bsvc="urn:com.workday/bsvc" bsvc:version="v25.0">
   <bsvc:Request_Criteria>
      <bsvc:Transaction_Log_Criteria_Data>
         <bsvc:Transaction_Date_Range_Data>
            <bsvc:Updated_From>$$Updated_From</bsvc:Updated_From>
            <bsvc:Updated_Through>$$Updated_Through</bsvc:Updated_Through>
         </bsvc:Transaction_Date_Range_Data>
      </bsvc:Transaction_Log_Criteria_Data>
   </bsvc:Request_Criteria>
   <bsvc:Response_Filter>
      <bsvc:Count>1</bsvc:Count>
   </bsvc:Response_Filter>
   <bsvc:Response_Group>
      <bsvc:Include_Personal_Information>1</bsvc:Include_Personal_Information>
      <bsvc:Include_Transaction_Log_Data>1</bsvc:Include_Transaction_Log_Data>
   </bsvc:Response_Group>
</bsvc:Get_Workers_Request>
```

The request message specifies the criteria to include personal information of workers that was updated between a specified period from Workday. To specify the period, the request message includes parameterized values for $$Updated_From and $$Updated_Through.

d. In the **Advanced Properties** section, set the tracing level to Normal, and use the default cache size of 1024.

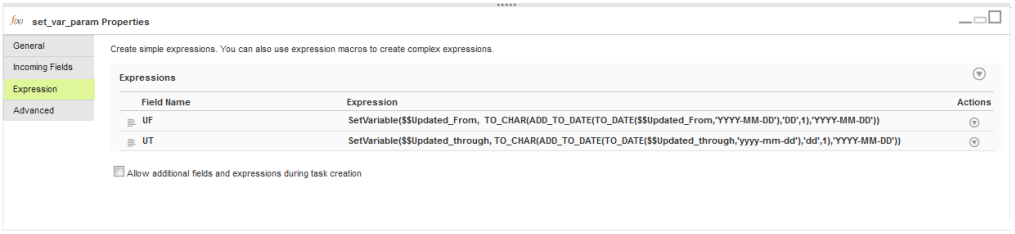
6. On the **Field Mapping** tab, select the first name, last name, phone data, and email address elements in the response structure that you want to map to the output fields.

The following image shows the response structure on the left pane in a hierarchical format and the output groups on the right pane in a relational format:



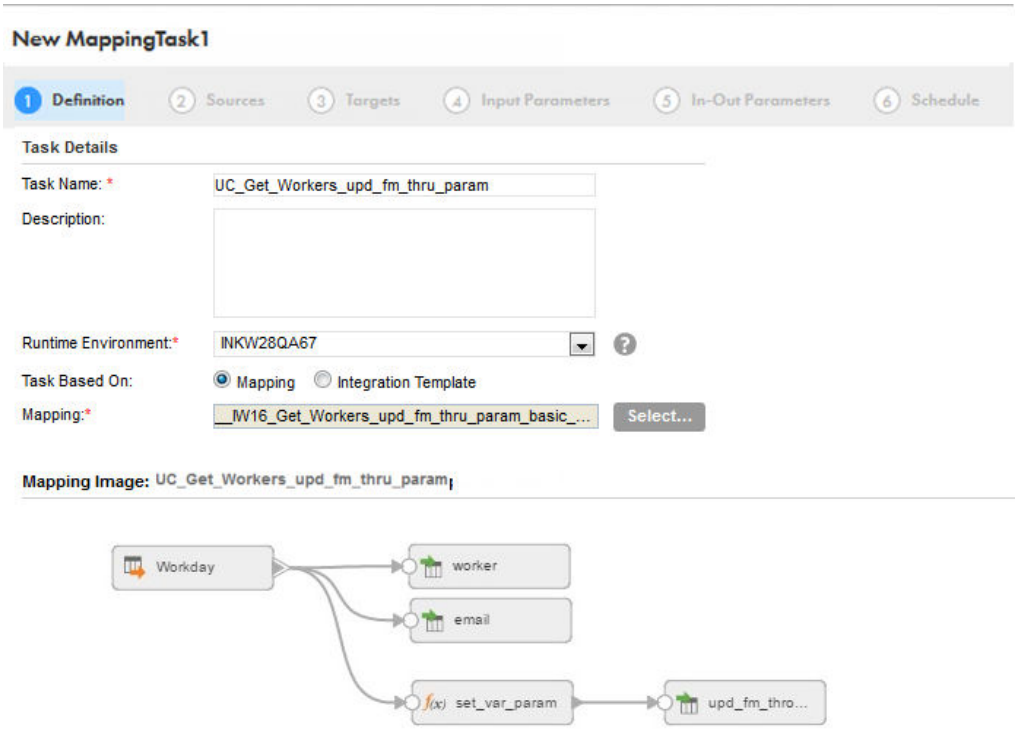
The Secure Agent creates two output groups, worker and email address, which results in two relational output files. Primary and foreign keys are auto-generated.

7. Add three Target transformations and specify the target objects for each of the transformations. Perform the following steps:
   a. Select a flat file connection for each of the target transformations to write data to the flat files.
   b. Create target objects `worker.csv`, `email.csv`, and `upd_fm_thro.csv` files to write data to the target.
   c. Select the output group from Workday that you want to link to the target objects.
8. Add an Expression transformation, and include a `SetVariable` function and the parameterized values `$$Updated_From` and `$$Updated_Through` in the expression so that the task updates the values by a day at the end of each run.
   The following image shows the configured expression that utilizes the in-out parameters:

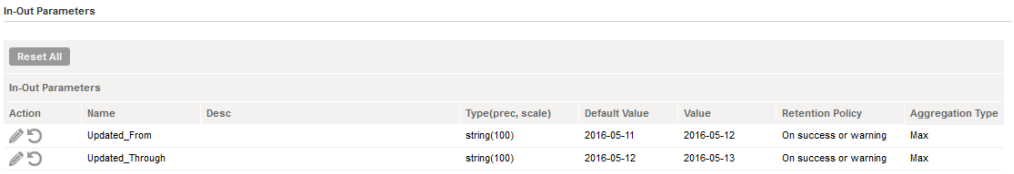


9. Click **New** > **Tasks** > **Mapping Task**, and select **Create**.

The following image shows the Mapping Task wizard with the applied mapping:



The following image shows the **In-Out Parameters** tab configured with the default and updated parameter values for the task:



10. When you save and run the mapping, the Secure Agent retrieves employee records from Workday and writes the data to the corresponding flat files.
The following table shows an example of data in the `email.csv` file after you run the task:

FK_Worker	Email_Address
1	ernestegg@companye1.com
4	abeabel@companya.com
4	abeabel@workday.net

The following table shows an example of data in the `worker.csv` file after you run the task:

PK_Worker	Phone_Data	First_Name	Last_Name
1	<infa_packed><wd:Phone_Data wd:Formatted_Phone="+1 (650) 882-6532"> <wd:Country_ISO_Code>USA</wd:Country_ISO_Code> <wd:International_Phone_Code>1</ wd:International_Phone_Code> <wd:Area_Code>650</wd:Area_Code> <wd:Phone_Number>882-6532</wd:Phone_Number> <wd:Phone_Device_Type_Reference wd:Descriptor="Mobile"> <wd:ID wd:type="WID">d691375437c848aea9d5b0874353bfd7</ wd:ID> <wd:ID wd:type="Phone_Device_Type_ID">1063.1</ wd:ID> </wd:Phone_Device_Type_Reference> <wd:Usage_Data wd:Public="0"> <wd:Type_Data wd:Primary="1"> <wd:Type_Reference wd:Descriptor="Home"> <wd:ID wd:type="WID">836cf00ef5974ac08b786079866c946f</ wd:ID> <wd:ID wd:type="Communication_Usage_Type_ID">HOME</wd:ID> </wd:Type_Reference> </wd:Type_Data> </wd:Usage_Data> </wd:Phone_Data> </infa_packed>	Ernest	Egg

The following table shows the parameterized values updated for $$Updated_From and $ $Updated_Through in the flat file after every task that you run:

PK_Get_Workers_Response	UF	UT
-	5/11/2016	5/12/2016
-	5/12/2016	5/13/2016

The default date increments by one day for each run. When you run the mapping again, the Secure Agent considers the updated date for the task and retrieves data from the updated date.

Workday Target transformation in mappings

When you select a Workday connection for a Target transformation, you can select an operation based on the imported WSDL.

You can add multiple input groups into the Workday target and define the primary and foreign key relationships between the multiple input groups before the mapping. View the request structure from the WSDL and map the input groups to the hierarchical structure before you write data to Workday.

Workday Target transformation properties

You can configure target properties, such as target details and advanced properties, based on the connection type you select. Configure target properties on the **Target** tab of the Properties panel.

When you select a Target transformation, the **Properties** panel displays the following areas and information:

- **General**. Defines the transformation name and a description.
- **Incoming Fields**. Includes the field rules that define the data written to the target. Allows a preview of target fields.
- **Target**. Defines the target connection, operation, and advanced options.
- **Target Fields**. Not applicable for Web Service targets.
- **Input Settings**. Defines whether the input data is presorted.
- **Field Mapping**. Defines the field mappings from the upstream transformation to the target.

Workday advanced target properties

In a mapping, you can configure a Target transformation to represent a Workday target. For Workday target connections used in mapping tasks, you can configure advanced properties in the Targets page of the Mapping Task wizard.
The following table describes the advanced properties that you can configure in a Target transformation:

Property	Description
Cache Size for Web Service Request (KB)	Memory available for the web service request. If the web service request contains many rows or columns, you might want to increase the cache size. Default is 100 KB.
Transaction Commit Control	Control to commit or roll back transactions based on the set of rows that pass through the transformation. Use the transaction commit control if you have a large amount of data and you want to control how it is processed.

Input settings properties

You can enable **Sorted Input** under **Input Settings**. Sorted Input indicates that input data is presorted. Default is disabled.

Enable sorted input for better performance.

Note: When **Sorted Input** is enabled and the input is not sorted, the Secure Agent does not process input and the mapping fails.

Target transformation mapping example

You are a human resources administrator and you want to update the legal name of an employee in Workday.

To update a legal entry for an employee in Workday from a flat file, perform the following tasks:

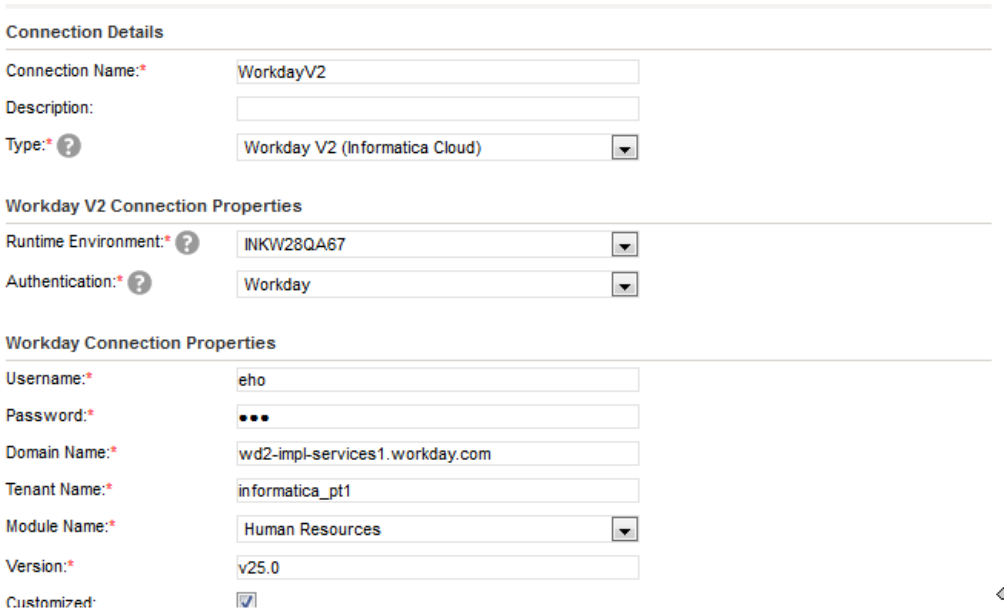
1. Create a flat file connection to read data from the flat file.

The following table shows the last name, Chu, in the flat file that you want to update in Workday:

Field	Value
wkrref_worker_descriptor	chu
wkrref_worker_id	cf9f717959444023b9bc9226a2556661
wkrref_worker_type	WID
wkrref_FK_worker	42
Country_descriptor	United States of America
country_id	bc33aa3152ec42d4995f4791a106ed09
country_type	WID
FK_worker	42
First_Name	Lillian
Last_Name	Chu
PK_Worker	42

You need to prepare the file to include the corresponding reference information required for updating legal data in Workday. For more information, see "File preparation for a target transformation" on page 18.

2. Create a Workday connection to write data to Workday. Verify that you select Human Resources as the Module name and specify the WSDL version in the connection properties.
The following image shows the configured Workday connection:



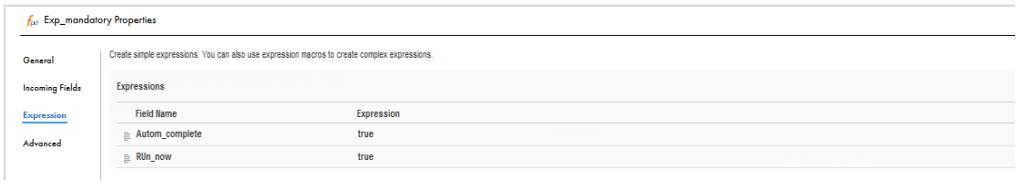
3. Create a Workday mapping.

The following image shows the Workday mapping:

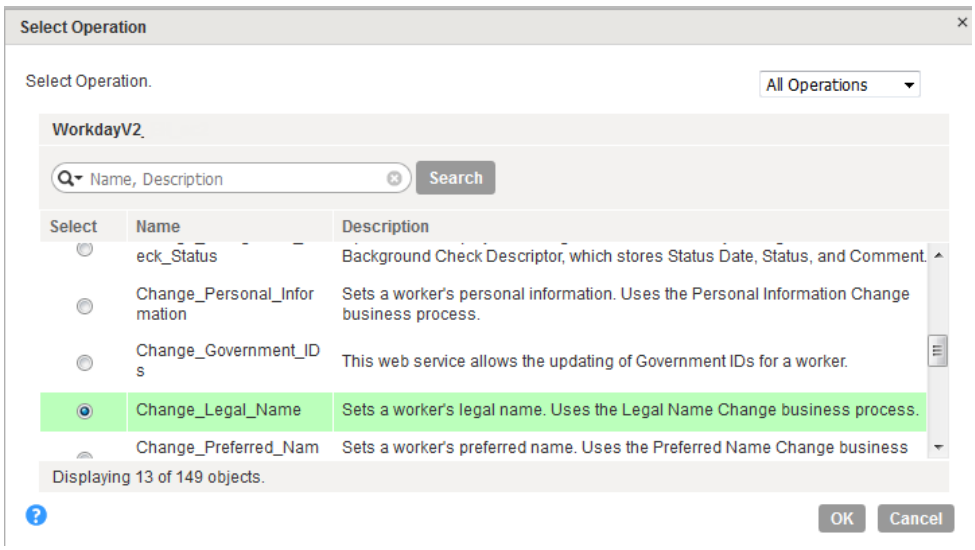


4. Add a Source transformation to include the flat file object that contains the legal information. Add the flat file connection.
5. Add an Expression transformation to add the required processing options for the business process and define the calculations that you want to perform:
   - Auto_complete = true. Indicates that the business process is automatically processed.
   - Run_now = true. Indicates that the transaction processes to completion before the response generates.

   The following image shows the configured Expression transformation:

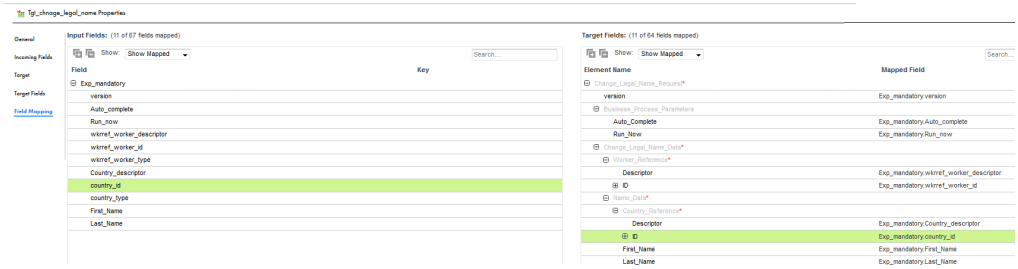


   For more information on the required business process parameters to perform an operation in Workday, see the request parameters under the listed operations in the Workday Web Services (WWS) Directory.
6. Add a Target transformation to write the legal data to Workday. Perform the following tasks on the **Target** tab:
   a. In the **Connection** field, select the Workday connection to connect to Workday.
   b. In the **Operation** field, select Change_Legal_Name as the operation.
   The following image shows the Change_Legal_Name in the list of write operations:

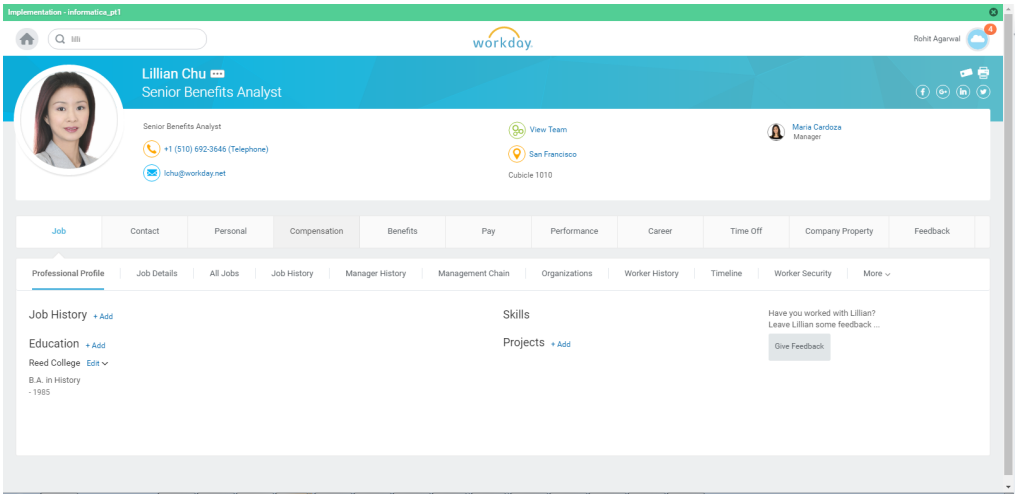


   c. In the **Advanced Properties** section, set the cache size and the transaction commit interval.
7. On the **Field Mapping** tab, select the input elements to map to the target fields.

The following image shows all the mapped fields between the input file and the Workday target:



8. When you save and run the mapping in a mapping task, the Secure Agent updates the legal name in Workday.
   The following image shows the updated legal name in Workday:



Workday Web Services transformation in mappings

When you select a business service for a Web Services transformation in a mapping, the operation appears based on the imported WSDL in the business service.

You can add the input groups to a Web Services transformation, view the request structure from the WSDL, and map the response structure with the required output groups before you write data to the target.

Workday Web Services transformation properties

You can configure the Web Services transformation properties, such as web service details and advanced properties, based on the business service you select.

When you select a Web Services transformation, the **Properties** panel displays the following areas and information:

- **General**. Defines the transformation name and a description.
- **Incoming Fields**. Includes the field rules that define the data that you read from the source. Allows a preview of the source fields.
- **Web Service**. Specifies the business service and the operation that you want to perform in Workday.

- **Request Mapping**. Maps the incoming source fields with the request structure for the specified WSDL.
- **Response Mapping**. Maps the selected elements from the response structure with the output fields.
- **Output Fields**. Displays the fields included in the mapping.
- **Advanced**. The properties required to configure a Web Services transformation.

Workday advanced source properties in mappings

In a mapping, you can configure a Web Services transformation to include a business service with the specified Workday read or write operation. In the Mapping Designer, you can configure advanced properties on the **Advanced** tab in the Web Services transformation.

To optimize performance, configure the cache size of the request and response groups and other advance properties in a Web Services transformation.

The following table describes the advanced properties that you can configure in a Web Service transformation:

Property	Description
Cache Size for Web Service Request (KB)	Memory available for the web service request. If the web service request contains many rows or columns, you might want to increase the cache size. Default is 100 KB.
Cache Size for Web Service Response (KB)	Memory available for the web service response. If the web service response contains many rows or columns, you might want to increase the cache size. Default is 100 KB.
Allow Input Flush	When enabled, the Web Service transformation creates the request or response when it has all the data for a group. Configure the mapping so that the transformation receives data that is sorted by group. When not enabled, the Web Service transformation stores the data in memory and creates the request or response after it receives data for all the groups.
Transaction Commit Control	Control to commit or roll back transactions based on the set of rows that pass through the transformation. Use the transaction commit control if you have a large amount of data and you want to control how it is processed.

Web Services transformation mapping example

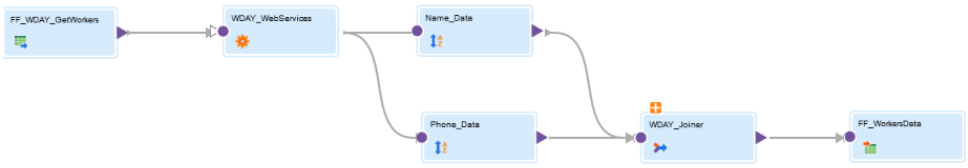
You are a human resources administrator and you want to archive the details of employees who left the organization in the past month. You can find the employee in Workday based on employee ID and archive their details in a flat file.

Configure a mapping task to archive the details from Workday to a flat file You must have a Workday V2 connection with Human Resources as the Module Name and version v25.0 configured in the connection properties. You must have a flat file connection to archive the employee data.

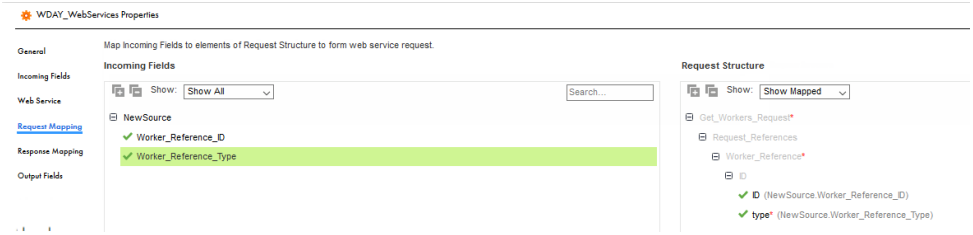
To create a mapping, perform the following tasks in the Mapping Designer:

1. Create a Workday connection. Verify that you select Human Resources as the Module Name in the connection properties.
2. Create a flat file connection to specify the input data.
3. Create a Workday business service *WDAY_GetWorkers_ec2*. Select the Workday connection associated with the Human Resources Workday module. Select *Get_Workers* as the operation for the Web Service

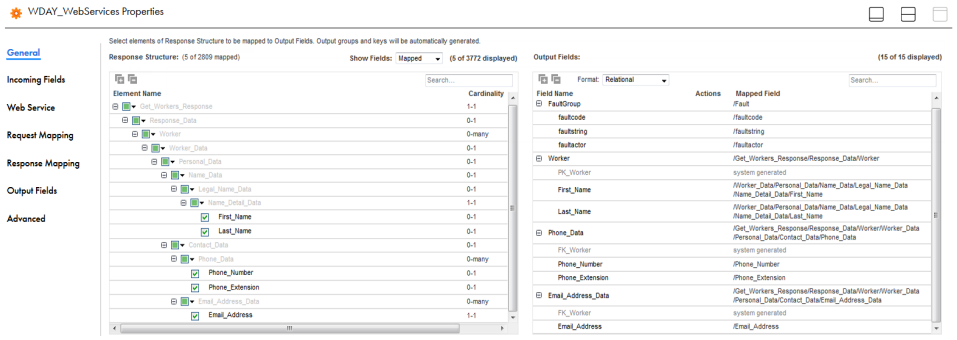
4. Create a mapping and specify the name *_m_WDAY_Webservice_GetWorkers* and description in the general properties.
   The following image shows the Workday Connector configured midstream in a Web Services transformation in a mapping:



5. Add the Source transformation *FF_WDAY_GetWorkers* and specify a flat file connection and source object *Get_Workers.csv* file to provide input to the web service operation.
   Verify that the flat file contains the employee information such as *Worker_Reference_ID* and *Worker_Reference_Type* fields that you want to pass to Workday to extract the details.
6. Add the Web Services transformation *WDAY_WebServices*. Perform the following steps:
   a. Click the **Web Service** tab and select the Workday business service *WDAY_GetWorkers_ec2* with the Get_Workers operation.
   b. Draw a link to connect the Source transformation to the Web Services transformation.
   c. Click the **Request Mapping** tab to map the incoming worker reference ID and type fields with the ID and type fields in the request structure.
      The following image shows the mapped incoming fields with the request structure:



   d. Click the **Response Mapping** tab and select the output fields that you want from the response structure form Workday for the GetWorkers operation.
      The following image shows the selected output fields from the response structure that you want to write to the target:



7. Add two Sorter transformations to sort the master and detail data obtained from the Web Services transformation. Specify the PK and FK fields as sort conditions and configure each sort field to sort in ascending order:
    a. The Sort transformation Name_Data sorts the master data, which contains First_name, Last_Name, PK_Worker, Worker_Reference_ID, and Worker_Reference_Type by the PK_Worker field.
    b. The Sort transformation Phone_Data sorte the phone data, such as FK_Worker, Phone_Extension, Phone_Number, Worker_Reference_ID, and Worker_Reference_Type by the FK_Worker field.
8. Add a Joiner transformation *WDAY_Joiner* to join the master and detail data.
    a. Specify the following Join condition for the Master, Operator, and Detail fields: *NameData_PK_Worker = Phdata_FK_Worker*.
    b. Select **Sorted Input** in the advanced properties of the Joiner transformation.
9. Add the Target transformation **FF_WorkersData** and specify the flat file connection and target object *WebService_WokerData.csv*.
    When you save and run the mapping, Workday Connector gets the employee details based on ID values in the source object and writes them to the flat file.

Parameterization

You can parameterize the Workday V2 source connection, target connection, and the request message in the Source transformation.

Rules and guidelines for Workday operations

Consider the following rules and guidelines for Workday Connector read and write operations:

- When you use a Workday V2 connection to configure a source or target operation and try to modify the object by manually typing a valid name in the **Operation** field, the task fails with the following validation error:
  `Error occurred validating object: Selected connection does not support this operation.`
  Workaround: Select the same operation from the **Select...** dialog box and run the task again.
- When you use in-out parameters of type DateTime, the task fails as Workday does not support the format used for DateTime.
- If a task fails when you write data to a Workday V2 target, the statistics generated for rejected and applied rows is incorrect.
- When you configure a Source transformation in a mapping to fetch instant updates from Workday, you must pass the Date Time attributes in Pacific Time. For example, when you specify the update to and from fields, use the `yyyy-mm-ddThh:mm:ss` format.
- When you read data from Workday that contains the Date Time attributes and then write to a flat file, the Secure Agent writes the Date Time in Eastern Standard Time (EST).
- When you use Workday Connector to read or write data, the Secure Agent maps binary data to string. To read documents or images from Workday, you must convert base64 string to binary and then load it to the target. To write images and documents to Workday, you must read the images and documents in binary

format from the source, convert it to base64 string, and then load it to the Workday target. If the source contains the base64 string value representing the file, you can directly map the field to the Workday target.

- When you configure a Workday connection, test connection validates only for the Human Resources module. When you specify a module other than Human Resources in the Workday connection, you can verify that the connection is valid only if the mapping task runs successfully.
- You do not need to set the WorkdayBatchSize property in the `pmrdtm.cfg` file. Instead, set the batch size in the advanced source property.
- When you configure a request to retrieve more than one page from Workday, specify the value for As_Of_Entry_DateTime parameter in the XML request to ensure that the data set that you retrieve does not change when you process the data. This parameter filters the data returned in the response property by the date and time when the data was entered into the system. If you do not specify a value, the property value defaults to the current date and time.
- When you configure a task to update data in Workday, and if Workday does not provide a response XML for that operation, you do not receive a response message for the number of rows or columns successfully updated in Workday.

JVM Options and Cache Size Configurations for Workday Connector

To read large number of records from Workday, you must perform the following steps:

- Set the JVM options for type **DTM** to increase the `-Xms` and `-Xmx` values in the system configuration details of the Secure Agent, and then restart the Secure Agent.
- You can perform one of the following tasks when you specify the cache size:
  - You can increase the cache size for the web service response in the advanced properties of the Workday source transformation to a size equal to or more than the memory required for a SOAP response. The value may differ for different Workday modules and count specified in request.xml.

Reading and writing Unicode characters

The Secure Agent reads and writes Unicode data using the UTF-8 code page. The Secure Agent requires that the code page environment variable be set to UTF-8.

Before you run a task to read or write unicode characters, you must set the environmental variable on the Secure Agent machine.

1. Perform the following tasks based on the operating system of the Secure Agent machine:
   - For Windows, create an environmental variable INFA_CODEPAGENAME under System Variables, and then set it to UTF-8.
   - For Linux 64, set the environmental variable LC_ALL to en_US.utf8. To set the environmental variable, run the following command from Linux 64: setenv LC_ALL en_US.utf8
2. Restart the Secure Agent after you set the environmental variable.

For information about reading or writing Unicode characters in Data Integration, see https://kb.informatica.com/solution/23/Pages/58/498064.aspx?myk=infa_codepagename%20utf-8

APPENDIX A

Workday data type reference

Data Integration uses the following data types in mappings and mapping tasks with Workday:

Workday native data types

Workday data types appear in the parameters in the Workday operations and you cannot changes these data types.

Transformation data types

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

When Data Integration reads or writes Workday data, it converts the native data types to the comparable transformation data types before transforming the data.

Workday and transformation data types

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

Workday Data Type	Transformation Data Type	Range
anyURI	String	1 to 104,857,600 characters
base64Binary	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	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
dateTime	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
decimal	Decimal	Precision 1 to 28; scale 0 to 28
double	Double	Precision 15, scale 0
duration	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.

Workday Data Type	Transformation Data Type	Range
ENTITIES	String	1 to 104,857,600 characters
ENTITY	String	1 to 104,857,600 characters
float	Double	Precision 15, scale 0
gDay	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
gMonth	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
gMonthDay	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
gYear	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
gYearMonth	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
hexBinary	Binary	1 to 104,857,600 bytes
ID	String	1 to 104,857,600 characters
IDREF	String	1 to 104,857,600 characters
IDREFS	String	1 to 104,857,600 characters
int	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
integer	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
language	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
long	Bigint	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19; scale 0
Name	String	1 to 104,857,600 characters
NCName	String	1 to 104,857,600 characters
negativeInteger	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
NMTOKEN	String	1 to 104,857,600 characters
NMTOKENS	String	1 to 104,857,600 characters
nonNegativeInteger	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
nonPositiveInteger	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0

Workday Data Type	Transformation Data Type	Range
normalizedString	String	1 to 104,857,600 characters
NOTATION	String	1 to 104,857,600 characters
positiveInteger	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
QName	String	1 to 104,857,600 characters
short	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
string	String	1 to 104,857,600 characters
time	Date	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
token	String	1 to 104,857,600 characters
unsignedByte	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
unsignedInt	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0
unsignedLong	Bigint	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19; scale 0
unsignedShort	Integer	-2,147,483,648 to 2,147,483,647 Precision 10; scale 0

APPENDIX B

General considerations when using Workday V2 Connector

This appendix includes the following topics:

- Workday source properties, 39
- Workday relational output and joiner, 40
- Configuring Workday V2 Connector for memory intensive tasks, 40

Workday source properties

When you use Workday Connector to read data from Workday, consider the following guidelines to configure the batch size, cache size, and count in mapping tasks:

Batch Size

Specify a batch size value close to the number of available cores in the Secure Agent. The number must be less than or equal to 20. You can consider a batch size of 8 and then refine as necessary. Default is 1.

If you specify a batch size value that is greater than 20, the value defaults to 20.

Cache Size

The cache size value depends on the Workday module and the response count size. Specify a value between 1024 and 99999. However, you might require to determine the optimum cache size by trial and error basis.

Count

The count parameter in the request message sets the number of objects to return with each response. You can specify a minimum value of 1, while the maximum value is 999. Default is 100.

You might consider a count value of 200 and then refine as required. A count value of 500 might also work.

The count and batch size values work together for the number of concurrent calls or batches to Workday and the number of records or count returned. You might need to determine the optimum settings by trial and error.

Workday relational output and joiner

When you want to extract Workday sources as a relational output, you might require to configure a Join transformation in the mapping. You might need to sort the input before the Joiner transformation so that the mapping runs successfully. Specify the sorted join option to join the data output from Workday V2 sources.

You might encounter the following error when you do not sort input to the Join transformation: `Invalid mapping import and no import log generated.`

Configuring Workday V2 Connector for memory intensive tasks

When you run Workday V2 tasks that are memory intensive, you might encounter the following error: **ERROR: "INFO [com.informatica.saas.infaagentv3.agentcore.TomcatManager] - java.lang.OutOfMemoryError: PermGen space"**

To resolve this issue, see the following KB link:
https://kb.informatica.com/solution/23/Pages/55/424160.aspx

APPENDIX C

Workday target approaches

You want to migrate the opportunity data with closed won status from Salesforce to Workday. This use case is an example of the different approaches you can take with Data Integration to write data from Salesforce to Workday.

The opportunity object manages information about the sale of products. The opportunity object might have associated opportunity lines required to create an invoice. The opportunity line, also called the product line, is the encapsulating element that contains the opportunity line data and identifies products associated with an opportunity.

When inserting data into Workday, some of the data requires an associated ID and value linked to it.

To write the opportunity data of closed won status to Workday, you must add the following IDs to map with the Workday target:

- opportunity
- opportunity line
- currency
- status
- company
- prospect

Use the Put_Opportunity operation to add the opportunity data to the Revenue Management module in Workday.

When you configure Workday as the target, you have two general approaches to write the opportunity data to Workday:

- Join the opportunity and opportunity line data retrieved from Salesforce into a single group and write to Workday.
- Create multiple groups for the opportunity source object retrieved from Salesforce and define relationship keys for the multiple inputs fields before you write to Workday.

Approach 1: Migrate data from Salesforce to Workday using a Joiner transformation

When you write opportunity data to Workday, you can add the opportunity line element as a Salesforce object along with the opportunity object in the transformation.

Use a Joiner transformation to join the data from the Salesforce opportunity and opportunity line objects before you write that data to Workday. Add the IDs as processing options from the opportunity and opportunity line objects in an Expression transformation.

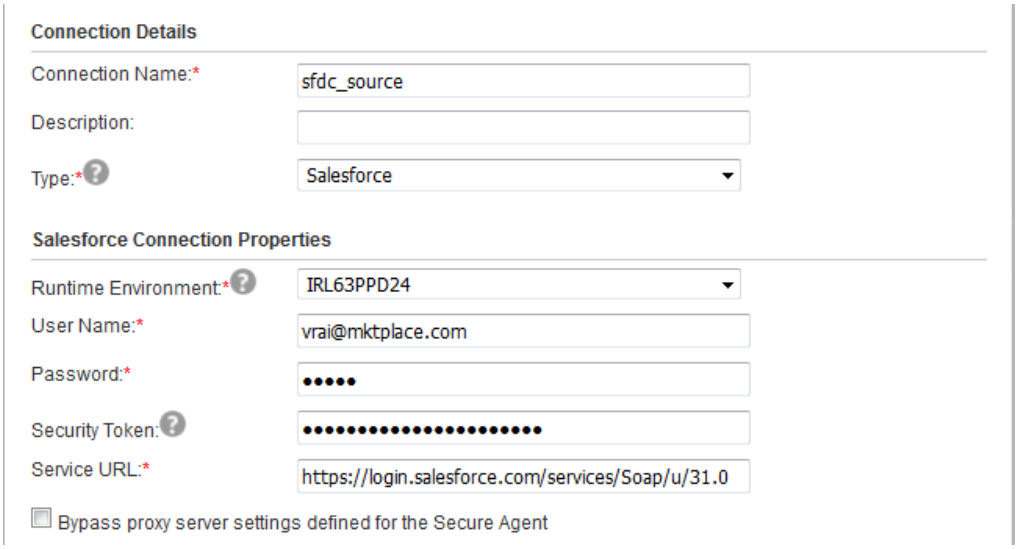
Creating connections

Create the source and target connections before you create a mapping.

Create a Salesforce Connection

You want to create a Salesforce connection to read data from Salesforce.

1. Configure a Salesforce connection on the Connections page.
2. Select type Salesforce.
3. Configure the advanced properties to connect to Salesforce and save the connection.
   The following image shows the configured Salesforce connection properties:

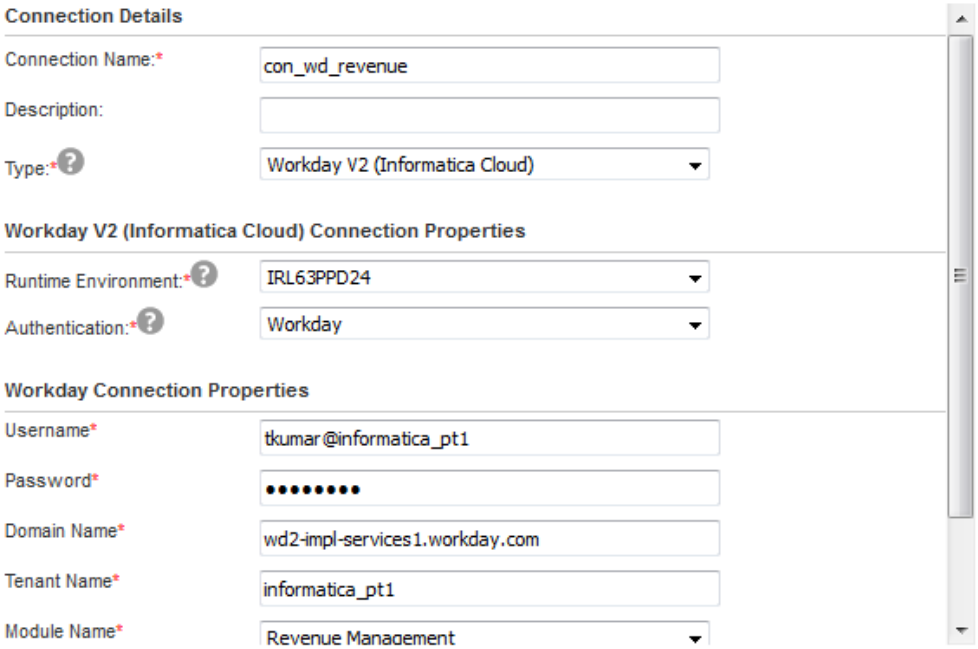


Create a Workday Connection

Create a Workday connection to write data to the Revenue Management module in Workday.

1. Configure a Workday connection on the Connections page or in a wizard as you configure a task.
2. Select type Workday.

3. Configure the connection properties to connect to Workday and save the connection.
   The following image shows the configured Workday connection properties:



Creating a mapping

Create a mapping to read data from the Opportunity object from Salesforce to Workday.

Use the Mapping Designer to configure the mapping. Add the opportunity and opportunity line elements as Salesforce objects in the transformation. When you create a mapping, configure the data flow of the opportunity and opportunity line objects from the Salesforce source to the Workday target.

When you configure the Source transformation, select Multiple Objects as the Source Type. Relate the `OpportunityLineItem` and `Opportunity` source objects, which joins both the objects. Add the IDs as processing options in an Expression transformation.

For other use cases that does not involve Salesforce as the source, you can use the Joiner transformation to relate different objects.

The following image shows the mapping `m_SFDC-WDAY_Oppty_ClosedWon_D2H_MO` with the Salesforce source that contains the joined objects, along with the Expression transformation required to write data to the Workday target:



Step 1. Add a Source transformation

Configure the opportunity and opportunity line Salesforce source objects.

1. To create a mapping, click **New**.
2. In the **New Asset** dialog box, click **Mapping**, and then click **Create**.
3. In the **Properties** panel, enter the mapping name `m_SFDC-WDAY_Oppty_ClosedWon_D2H`.

The following image shows the configured mapping:



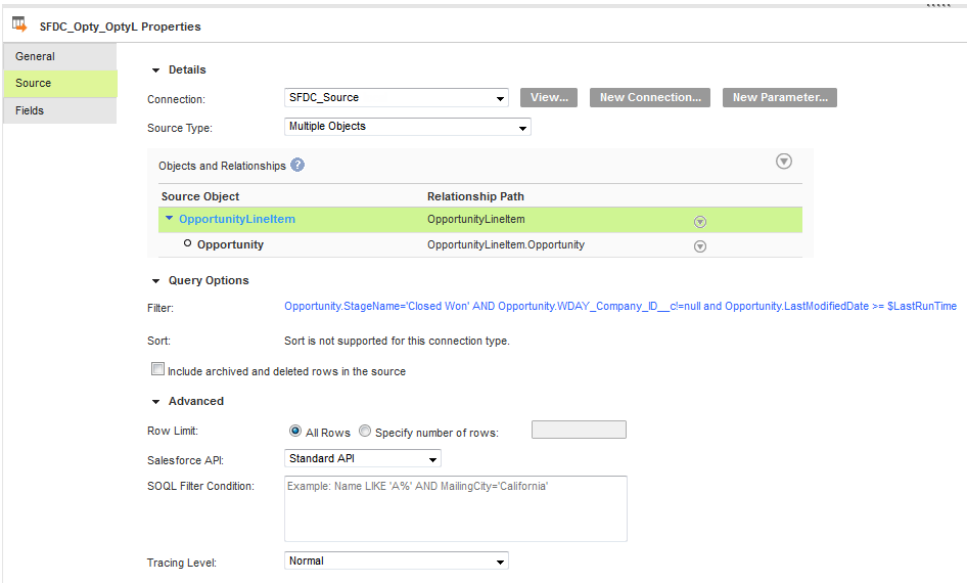
4. To add an opportunity Source transformation, on the **Transformation** palette, click **Source**.
   a. In the **Properties** panel, on the **General** tab, enter a name and description.
   b. Click the **Source** tab, and configure the source details.
   c. Select the configured Salesforce connection.
   d. Select **Multiple Objects** as the **Source Type** to add related objects. Select a primary object and add related objects from the menu.

e. In the **Query Options** section, specify the following filter to extract only the latest valid records of closed won status from Salesforce:

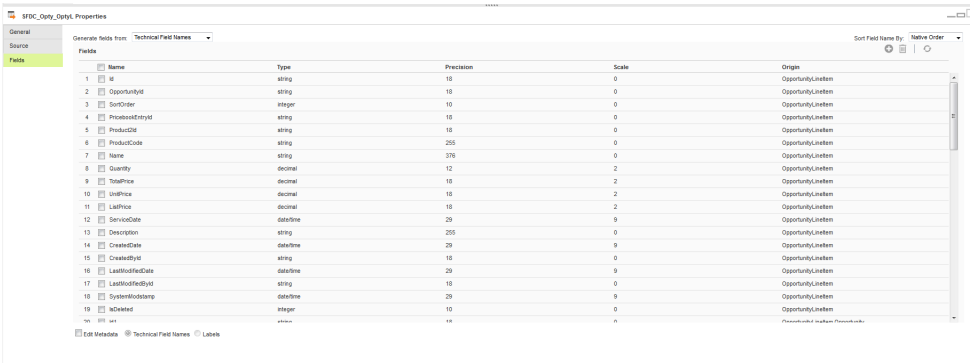
```
Opportunity.StageName='Closed Won' AND Opportunity.WDAY_Company_ID__c!=null and
Opportunity.LastModifiedDate >= $LastRunTime
```

Note: In this example, WDAY_Company_ID is a custom field in Salesforce opportunity that references an existing Workday company. Use WDAY_Company_ID to select only the closed won opportunities with the requisite data references for successful Workday upsert.

The following image shows the configured source details:



The following image shows some of the fields of the opportunity object:



5. Click **Save**.

Step 2. Add an Expression transformation

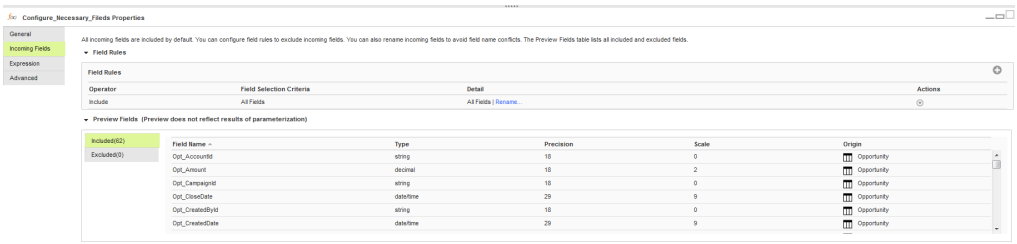
To write data to Workday, you must include reference fields that are originally not available in Salesforce. You must create custom fields to include the reference values. Add an Expression transformation to define the relationship of the incoming fields with the target fields. When you configure an expression field, you define the field name, data type, precision, and scale.

The field must contain an ID and type. The ID is the unique identifier for an instance of the object in Workday. Type refers to the type of ID value passed for the object in the expression that references the Workday data.

1. In the **Transformation** palette, drag the Expression transformation onto the mapping canvas.

2. On the **General** tab, you can enter a name and description.
3. Draw a link to connect the previous transformation.
4. On the **Incoming Fields** tab, you can configure the field rules that define the data that enters the transformation.

   The following image shows the properties for each of the incoming fields:



5. On the **Expression** tab, add the custom fields, and configure the expressions for each of the required fields.
6. Add a new field, provide a name for the field, and select the Output field type and precision.

   The following table is a sample of configured field names and the expressions for each of the field names:

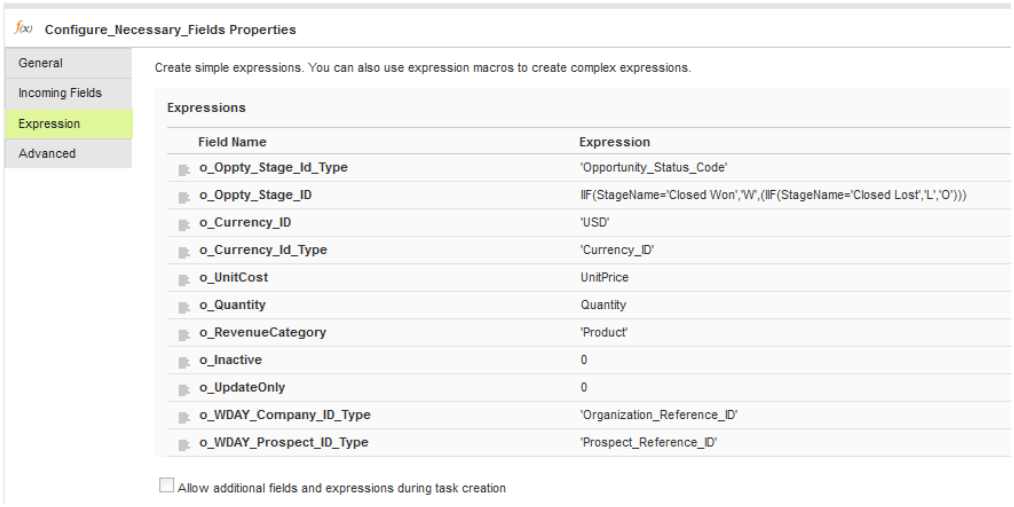
Field Name	Expression	Description
o_Opty_Stage_Id_Type	'Opportunity_Status_Code'	Specifies the reference ID type used in Workday for opportunity status code.
o_Opty_Stage_ID	IIF(Opt_StageName='Closed Won','W', (IIF(Opt_StageName='Closed Lost','L','O')))	The ID that corresponds to the reference ID type for Opportunity_Status_Code. For the stage name of Closed Won status in Salesforce, W is the corresponding value for the reference ID in Workday. For the stage name Closed Lost in Salesforce, L is the corresponding value for the reference ID in Workday. If the status is not Closed Won or Closed Lost, the value is O.
o_Currency_ID	'USD'	The ID that corresponds to the reference ID type for currency.
o_Currency_Id_Type	'Currency_ID'	Specifies the reference ID type used in Workday for currency.
o_UnitCost	To_char(OptL_UnitPrice)	Required field for the opportunity line data in Workday. Optionally converts number to string.
o_Quantity	To_char(OptL_Quantity)	Required field for the opportunity line data in Workday. Optionally converts number to string.
o_RevenueCategory	'Product'	For the opportunity line group, revenue category is the opportunity line type. Revenue category is a required field in Workday.

Field Name	Expression	Description
o_Inactive	0	Inactive = false indicates that the activity opportunity is active.
o_UpdateOnly	0	The Update_only field corresponds to the Update_Opportunity_Only target field, and determines whether you want to update only the opportunity data, or both the opportunity data and the opportunity line item data. You can decide the value based on what you require.
o_WDAY_Company_ID_Type	'Organization_Reference_ID'	Specifies the reference ID type used in Workday for company.
o_WDAY_Prospect_ID_Type	'Prospect_Reference_ID'	Specifies the reference ID type used in Workday for prospect.

Note: The custom fields, for example, addition of Revenue_Category field to include opportunity lines, is a sample implementation for this use case only. The requirements might vary and will not be consistent across implementations.

For more information about the fields when you write data to Workday using the Put_Opportunity operation, see the Workday website at: https://community.workday.com/custom/developer/API/Revenue_Management/v26.1/Put_Opportunity.html

The following image shows the configured expressions for each of the fields:

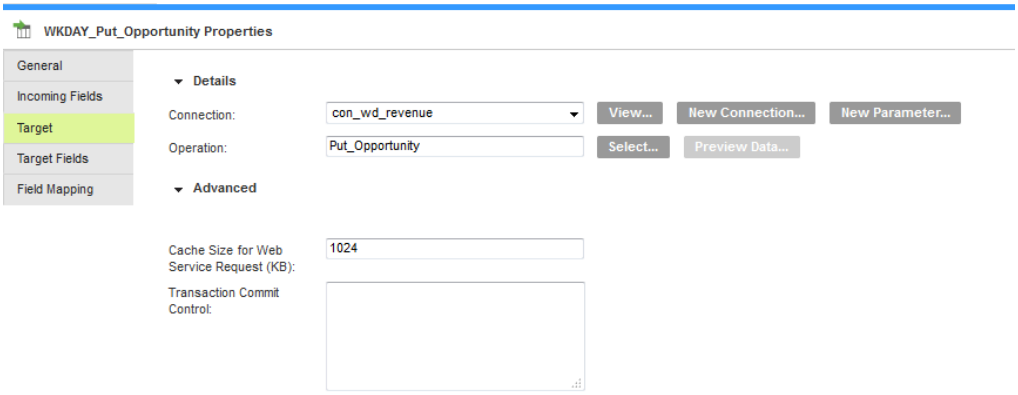


Step 3. Add a Target transformation

Use the Target transformation to define the target Workday connection and Workday target operation for the mapping.

1. To add a Target transformation, on the **Transformation** palette, click **Target**.
2. On the **General** tab, you can enter a name and description.
3. Draw a link to connect the Expression transformation to the Target transformation.
4. Click the **Target** tab and configure the target details.

The following image shows the target properties for the Workday target:



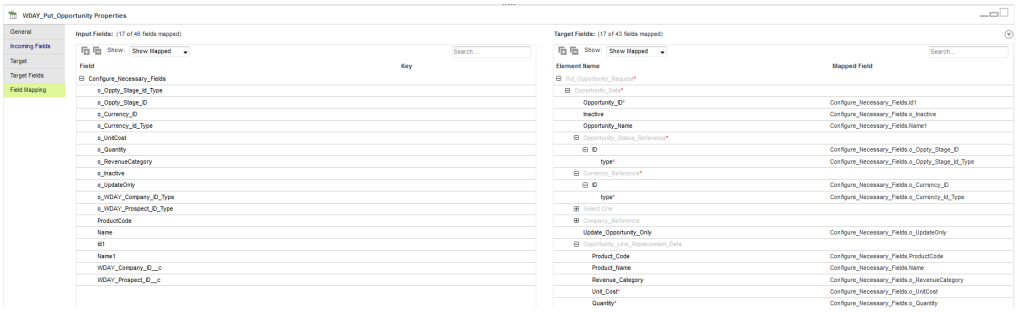
5. To preview fields, configure the field rules, or rename fields, click **Incoming Fields**.

   The following image shows the incoming fields:



6. Click **Field Mapping** and map the fields that you want to write to the target.

   The following image shows the mapped fields:



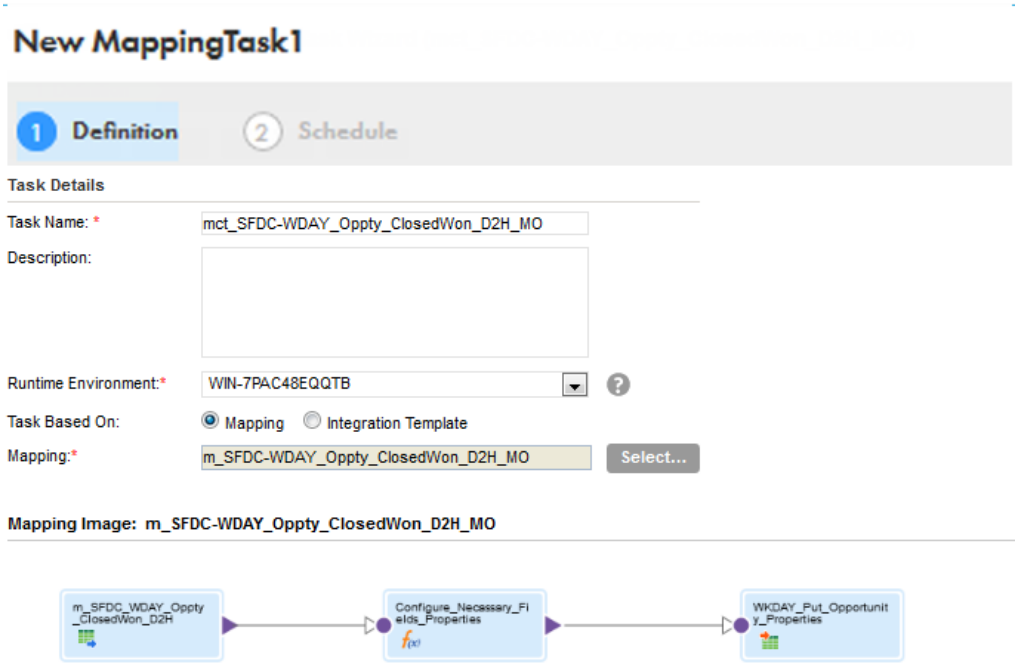
7. Click **Save** > **Save and Close**.

Configuring a mapping task

Configure a mapping task, add the configured mapping, and run the mapping to process data based on the data flow logic defined in the mapping.

1. To create a mapping task, click **New** > **Tasks** > **Mapping Task**, and then click **Create**.
2. In the New Mapping Task Details area, provide a task name, and provide the configuration details.
3. Select the configured mapping, and click **Next**.

The following image shows the configured mapping task properties:



4. Configure a schedule and advanced options, if required.
5. Click **Finish**.

   You can run the mapping manually or on a schedule.

Approach 2: Migrate data from Salesforce to Workday by defining relationship keys for source groups

When you add the closed won opportunity data from Salesforce to Workday, the input groups include opportunity and opportunity line groups on the source side to match the groups in the Workday hierarchical target.

Use the Sorter transformation to sort the input for processing. Define the relationship between the parent and child objects using primary and foreign keys before you map the Salesforce source fields to the Workday target fields.

Creating connections

Before you create a mapping, create a Salesforce connection to read data from Salesforce. Create a Workday connection to write data to the Revenue Management module in Workday.

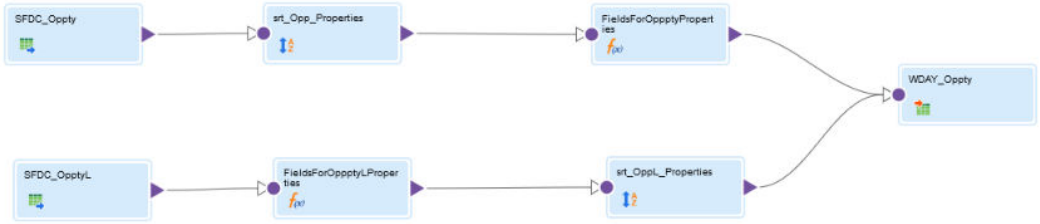
Create a mapping

Create a mapping to read data from the opportunity object from Salesforce to Workday.

Use the Mapping Designer to configure the mapping. When you create a mapping, configure the data flow of the opportunity object from Salesforce to the Workday target. To write the opportunity data of closed won status from Salesforce to Workday, add the opportunity and opportunity line as source objects from Salesforce.

Because there are multiple groups in the mapping, use a Sorter transformation for data to result as sorted inputs to the Workday target. The sorter helps rows to identify themselves with the right group, and keeps the groupings of each opportunity together.

The following image shows the mapping `m_SFDC-WDAY_Oppty_ClosedWon_R2H_Document`, with the Source, Expression, and Sorter transformations required before you write data to the Workday target:



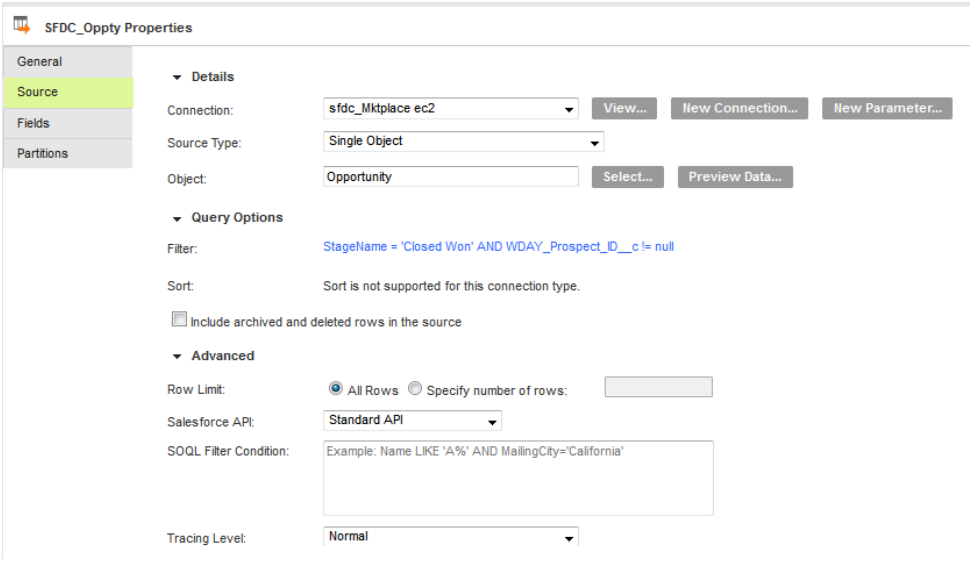
Step 1. Add a Source transformation

Configure the opportunity and opportunity line Salesforce source objects. Add a filter to extract data of closed won status.

1. To create a mapping, click **New**.
2. In the **New Asset** dialog box, click **Mapping**, and then click **Create**.
3. In the **Properties** panel, enter the mapping name `m_SFDC-WDAY_Oppty_ClosedWon_R2H_Document`.
4. To add a opportunity Source transformation, on the **Transformation** palette, click **Source**.
   a. In the **Properties** panel, on the **General** tab, enter a name and description.

b. Click the **Source** tab, and configure the source details.

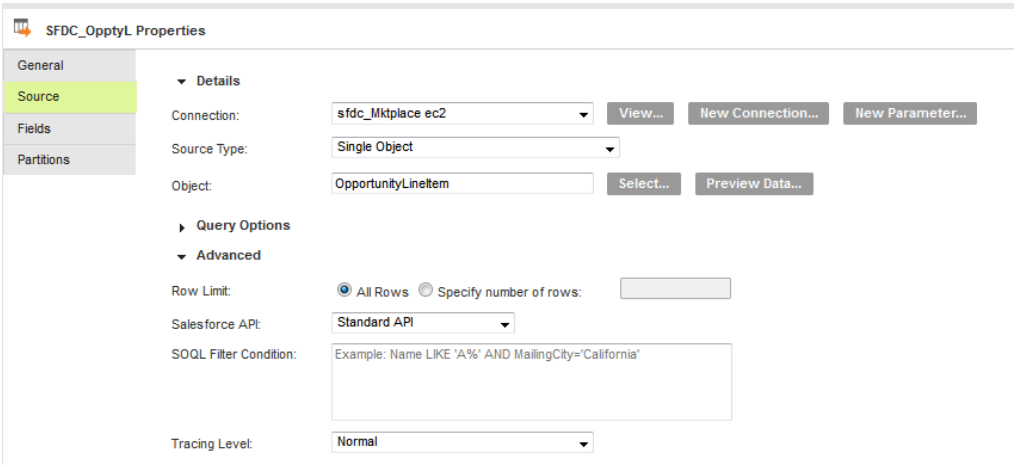
The following image shows the configured source details for the opportunity object:



In the **SOQL Filter Condition** field, specify a filter `StageName = 'Closed Won' AND WDAY_Prospect_ID__c != null` to extract only the valid closed won status information from Salesforce.

5. To add the opportunity line Source transformation, repeat the steps.

The following image shows the configured source details:



Step 2. Add an Expression transformation

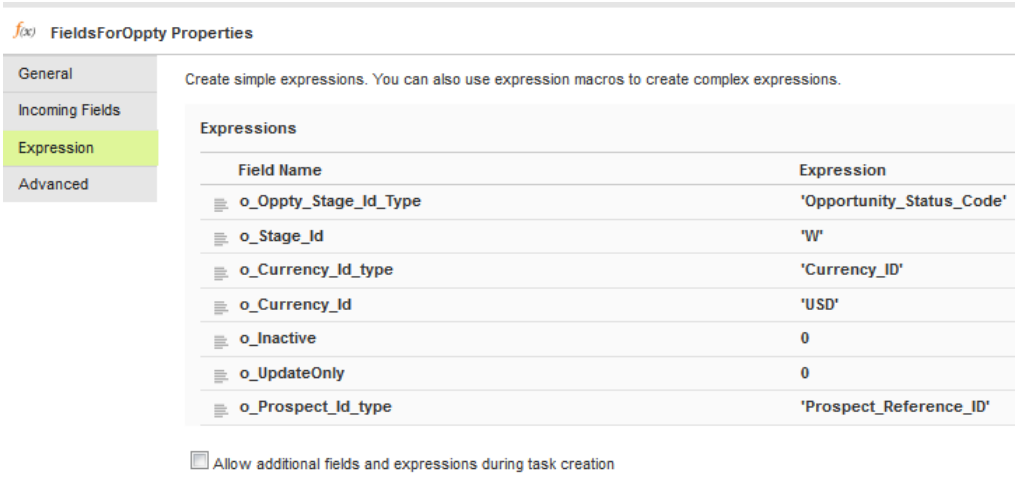
You must add any missing fields for each of the object groups in the transformation before you write to Workday. The Expression transformation must define the relationship of the incoming fields with the target fields.

Before you write to Workday, ensure that each of the groups contains an ID and type. The ID is the unique identifier for an instance of the object in Workday. Type refers to the type of ID value passed for the object in the expression that references the Workday data.

1. In the **Transformation** palette, drag the Expression transformation to the mapping canvas.

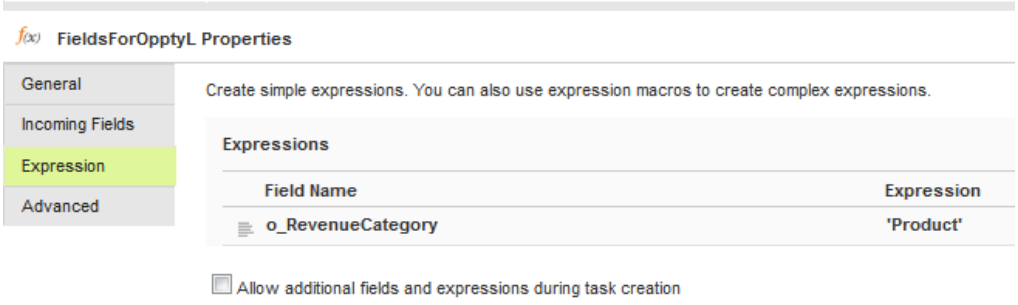
2. On the **General** tab, enter a name and description.
3. Draw a link to connect the opportunity Source transformation.
4. On the **Incoming Fields** tab, you can configure the field rules that define the data that enters the transformation.
5. On the **Expression** tab, add the fields, configure the required properties and expressions required for each of fields.

   The following image shows the configured expressions for the fields in the opportunity object:



6. Repeat the steps to add an Expression transformation for the opportunity line source object.

   The following image shows the configured expressions for the fields in the opportunity line object:



The following table provides information about the sample configured field names and their expressions:

Field Name	Expression	Description
o_Opty_Stage_Id_Type	'Opportunity_Status_Code'	Specifies the reference ID type used in Workday for opportunity status code.
o_Stage_ID	'W'	The ID that corresponds to the reference ID type for Opportunity_Status_Code. For the stage name of Closed Won status in Salesforce, W is the corresponding value for the reference ID in Workday.
o_Currency_ID	'USD'	The ID that corresponds to the reference ID type for currency.

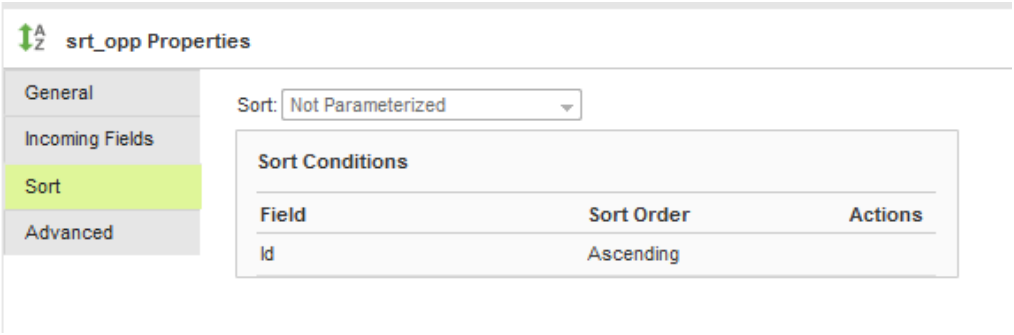
Field Name	Expression	Description
o_Currency_Id_Type	'Currency_ID'	Specifies the reference ID type used in Workday for currency.
o_RevenueCategory	'Product'	For the opportunity line group, revenue category is the opportunity line type. Revenue category is a required field in Workday.
o_Inactive	0	Inactive = false indicates that the activity opportunity is active.
o_UpdateOnly	0	The Update_only field corresponds to the Update_Opportunity_Only target field, and determines whether you want to update only the opportunity data, or both the opportunity data and the opportunity line item data. You can decide the value based on what you require.
o_WDAY_Prospect_ID_Type	'Prospect_Reference_ID'	Specifies the reference ID type used in Workday for prospect.

Step 3. Add a Sorter transformation

Add a Sorter transformation to each of the sources to sort data in ascending order within each of the objects from Salesforce by ID.

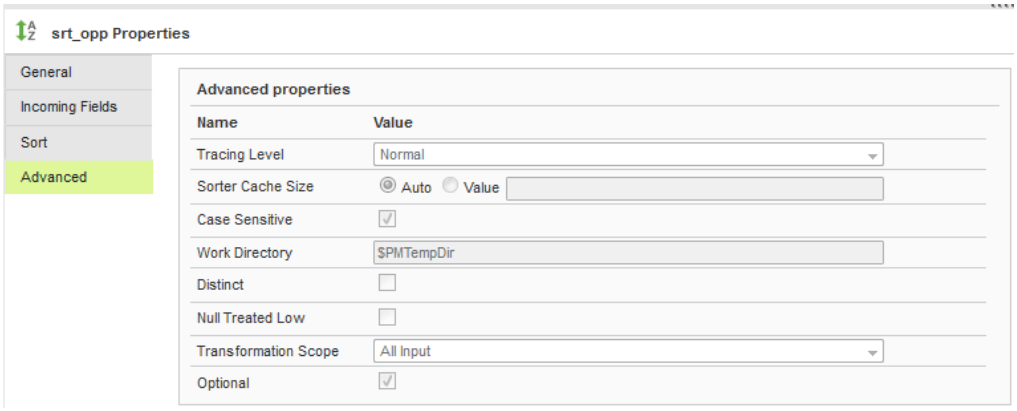
1. In the **Transformation** palette, drag a Sorter transformation to the mapping canvas.
2. Connect the sorter to the data flow of the `opportunity` expression to the Workday target.
3. On the **General** tab, enter a name and optional description for the transformation.
4. On the **Incoming Fields** tab, you can configure the field rules that define the data that enters the transformation.
5. On the **Sort** tab, add a field, and select the **Field** as ID and the **Sort order** as Ascending.

   The following image shows the configured sort condition for the opportunity object:



6. On the **Advanced** tab, configure the advanced properties:

The following image shows the configured advanced properties for the opportunity object:



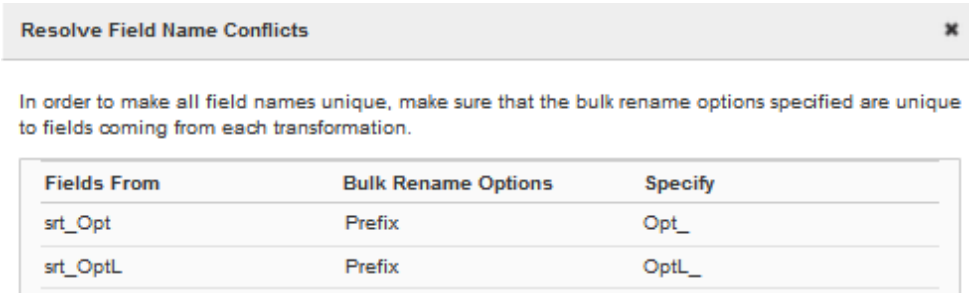
7. Repeat the steps to add a sorter transformation each to the configured Salesforce objects.

Step 4. Add a Target transformation

Use the Target transformation to define the target Workday connection to connect to Workday and the Put_Opportunity Workday target operation for the mapping.

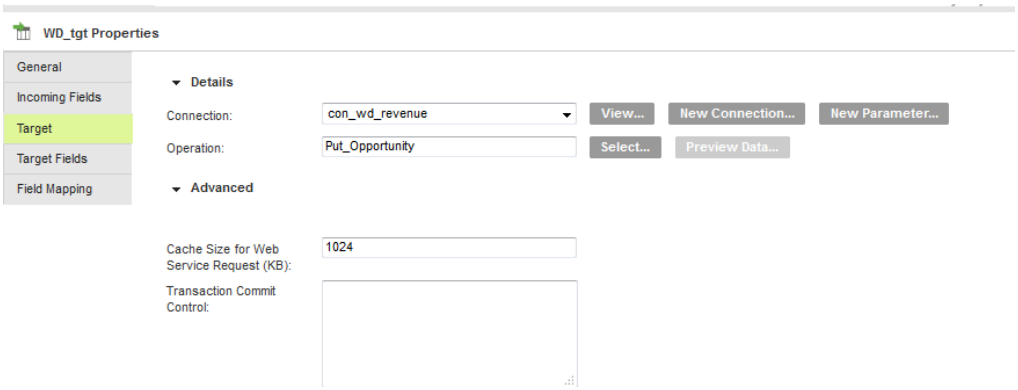
1. To add a Target transformation, on the **Transformation** palette, click **Target**.
2. On the **General** tab, you can enter a name and description.
3. Draw a link to connect each of the Sorter transformations to the Target transformation.
4. On the **Incoming Field** tab, resolve the field name conflicts and ensure that each incoming field has a unique name to distinguish the fields that come from the source objects. Perform the following tasks:
   a. In the **Bulk Rename Options** column, select **Prefix** to rename the field from Salesforce by adding a prefix.
   b. Specify the prefix name.

      The following image shows the incoming field names renamed to form unique field names:



5. Click the **Target** tab, and configure the target details.

The following image shows the target properties for the Workday target:



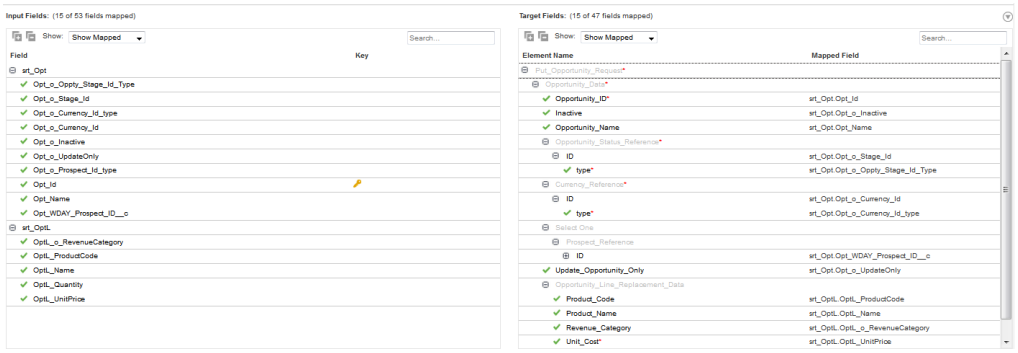
6. To preview fields, configure the field rules, or rename fields, click **Incoming Fields**.
7. Click **Field Mapping**, and relate all the child elements to the parent element by using primary and foreign keys. Perform the following steps:
   a. Under **Incoming Fields**, navigate to the fields under the source objects to designate the relationship.
   b. For example, click the **Key** icon for the `Opt_Id` field under the `str_Opt` parent element.
   c. In the **Mark as Key** dialog box, select `Opt_Id` as the **Primary Key**.
   d. Navigate to the fields under the `srt_OptL` object.
   e. Designate `OptL_Id` as the primary key.
   f. Designate `OptL_OpportunityId` as the foreign key and select `srt_Opt` as the related parent object.

      The following image shows the designated primary and foreign keys for the opportunity line child object:



8. Map the incoming fields that you want to write to the target.

   The following image shows the mapped fields:



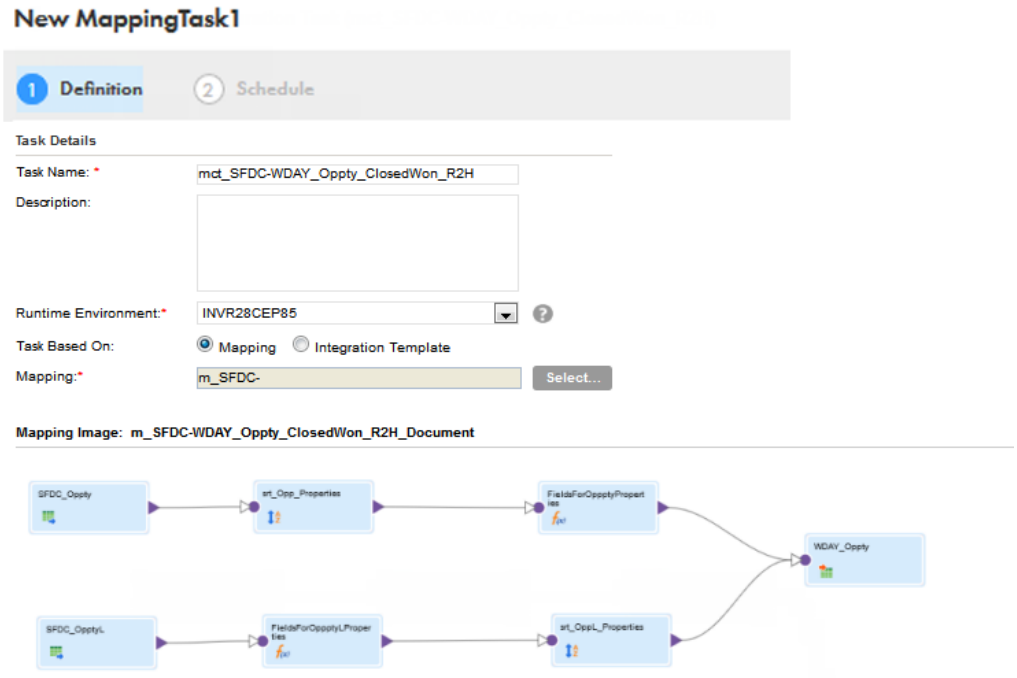
9. Click **Save**.

Configuring a mapping task

Configure a mapping task, add the configured mapping, and run the mapping to process data based on the data flow logic defined in the mapping.

1. To create a mapping task, click **New** > **Tasks** > **Mapping Task**, and then click **Create**.
2. In the Mapping Task Details area, provide a task name, and provide the configuration details:
3. Select the configured mapping, and click **OK**.

   The following image shows the configured mapping task properties:



4. Configure a schedule and advanced options, if required.
5. Click **Save**.

   You can run the mapping manually or on a schedule.

INDEX

C

Cloud Application Integration community
  URL 5
Cloud Developer community
  URL 5

D

Data Integration community
  URL 5
data types
  Workday 36

F

field mapping
  cardinality 15
  foreign key 15
  packed fields 16
  primary key 15
  Target transformation 18
  XPath expression 15

I

Informatica Global Customer Support
  contact information 6
Informatica Intelligent Cloud Services
  web site 5
Input Settings Properties 28

M

maintenance outages 6
mapping
  Workday properties 32
mapping example
  Source transformation 22
  Target transformation 28

P

packed fields
  field mapping 16

R

request XML attributes
  parameterizing 13

S

source
  field mapping 15
  read operations 12
  request message 12
Source transformation
  advanced properties 22
  mappings 21
  properties 21
status
  Informatica Intelligent Cloud Services 6
system status 6

T

target
  operations 18
Target transformation
  mappings 27
trust site
  description 6

U

upgrade notifications 6

W

Web Services transformation
  mappings 31
web site 5
Workday
  supported transformations 7
  connector assets 7
  data types 36
  mapping properties 32
  Operations Overview 11
Workday connections
  overview 9
Workday Connector
  administration 8
  overview 7