



Informatica® Cloud Data Integration

Coupa V2 Connector

Informatica Cloud Data Integration Coupa V2 Connector
April 2024

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Publication Date: 2024-04-17

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Preface

Use *Coupa V2 Connector* to learn how to read from or write to Coupa by using Cloud Data Integration. Learn to create a Coupa V2 connection, develop and run mappings and mapping tasks in Cloud Data Integration.

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CHAPTER 1

Introduction to Coupa V2 Connector

You can use Coupa V2 Connector to connect to Coupa from Data Integration. Use Coupa V2 Connector to read data from or write data to Coupa. You can use Coupa objects as sources and targets in mappings and mappings tasks.

When you run a task or mapping, the Secure Agent uses the Coupa API to perform the specified operation and reads data from or writes data to Coupa.

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

Coupa V2 Connector assets

When you use Coupa V2 Connector, you can include the following Data Integration assets:

- Mapping
- Mapping task

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

CHAPTER 2

Coupa V2 Connections

Create a Coupa V2 connection to connect to Coupa and read data from or write data to Coupa. You can use Coupa V2 connections in mappings and mappings tasks.

Connect to Coupa V2

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

Before you begin

Before you get started, configure OAuth authentication for your Coupa account based on the client secret authentication to register to the Coupa success portal to get the client details.

Log in to Coupa Cloud and get the following details:

- Identifier
- Secret
- Scope

Specify the identifier as client ID, secret as client secret, and the scopes in the connection properties.

Note: The scope values have to be space separated.

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	Coupa V2

Property	Description
Runtime Environment	The name of the runtime environment where you want to run tasks. Select a Secure Agent, Hosted Agent, or serverless runtime environment. Hosted Agent doesn't apply to mappings in advanced mode.
Authentication	Select Coupa V2.
Base Url	Base URL to connect to Coupa API. Specify the base URL in the following format: <code>https://{instance_name}.coupahost.com/</code> For example, <code>https://companyname.coupahost.com/</code>
Client ID	The Coupa client ID required to generate a valid access token. Specify the Coupa identifier as the client ID.
Client Secret	The Coupa client secret required to generate a valid access token. Specify the Coupa secret as the client secret.
Scope	The scope used to authorize access to Coupa. Enter the scope defined for the user in Coupa. To enter multiple scopes, separate each scope with a space.

Advanced settings

The following table describes the advanced connection properties:

Property	Description
Custom Field Config	<p>Specify custom fields for Coupa objects.</p> <p>Specify the custom fields in Coupa using the following format, where <code>FieldName</code> is value of the custom field name in Coupa, <code>FieldType</code> is the type of custom field, and <code>IsAPIGlobalNamespace</code> determines whether a custom field appears under root tag or custom-field tag in the Field Mapping tab:</p> <pre>Object1=FieldName1,FieldType,DataType, IsAPIGlobalNamespace;\ FieldName2,FieldType,DataType, IsAPIGlobalNamespace;\ FieldName3,FieldType,DataType,IsAPIGlobalNamespace Object2=FieldName1,FieldType,DataType, IsAPIGlobalNamespace;\ FieldName2,FieldType,DataType, IsAPIGlobalNamespace Object3=FieldName1,FieldType,DataType,IsAPIGlobalNamespace;\ FieldName2,FieldType,DataType,IsAPIGlobalNamespace;\ FieldName3,FieldType,DataType,IsAPIGlobalNamespace</pre> <p>Coupa V2 Connector supports only simple custom fields.</p> <p>For example:</p> <pre>user-summary=custom_field1,Simple,String,true;\ custom_field2,Simple,String, false requisition-header=requisition_cf1,Simple,String,true;\ requisition_cf2,Simple,Integer,false;\ requisition_cf3,Simple,Integer user=user_customfield1,Simple,String,false;\ user_customfield_2,Simple,String,true</pre> <p>For more information about the objects and rules and guidelines for custom fields in Coupa V2, see “Coupa V2 Custom Fields” on page 10 and “Rules and guidelines for Coupa custom fields” on page 13.</p> <p>Note: The Secure agent replaces underscore in the custom field name with hyphen and displays the custom field name in the Field Mapping tab.</p>

Coupa V2 Custom Fields

Use Coupa to create custom fields. You can use Coupa V2 Connector to read data from the custom fields that are present in the following Coupa resources:

- User
- Expense Reports
- Expense Categories
- Advance Ship Notices
- Punchout Sites
- Forms
- Warehouse
- Asset Tag
- Lookup Values

- Address
- Contracts
- Suppliers
- Items
- Department
- Commodities
- Invoices
- Receipts
- Purchase Orders
- Requisitions

To read data from or insert data to custom fields in Coupa, you must configure the **Custom Field Config** property when you create a Coupa V2 connection.

When you specify a custom field for a Coupa resource in the **Custom Field Config** connection property, you must specify the object name based on the Coupa metadata file.

The following table lists the object names based on the Coupa metadata file:

Coupa Resource Name	Coupa Sub Resources	Object Name
Expense Reports	Items	expense-report
		item
Advance Ship Notices	Headers	asn-header-summary
	Lines	asn-line-summary
Suppliers	Supplier Sites	supplier
		supplier-site
Items	Supplier Items	item
		supplier-item
Invoices	Lines	invoice-header
		invoice-line-summary
Purchase Orders	Lines	order-header
		order-line-summary
Requisitions	Items	requisition-header
		item
Receipts	NA	inventory-transaction
Commodities	NA	commodity-summary

Coupa Resource Name	Coupa Sub Resources	Object Name
Department	NA	department
Contracts	NA	contract
Address	NA	address
Lookup Values	NA	lookup-value
Asset Tag	NA	asset-tag-summary
Warehouse	NA	warehouse-summary
Forms	NA	form-summary
Punchout Sites	NA	punchout-site-summary
User	NA	user

When you want to read data from or insert data to a custom field in Coupa, you must always specify the **Field Name** that is generated by Coupa.

The following table displays the various custom fields and data types that Coupa V2 Connector supports:

Coupa Field Type	Data Type
Check Box	Boolean
Date	Date/Time
Drop Down (Single Select)	String
Number	Integer
Radio Group	String
Text Field	String

Proxy server settings

If your organization uses an outgoing proxy server to connect to the Internet, the Secure Agent connects to Informatica Intelligent Cloud Services through the proxy server.

You can configure the Secure Agent to use the proxy server on Windows and Linux. You can use only an unauthenticated proxy server. The proxy settings applies to connections used in mappings and in mappings in advanced mode.

To configure the proxy settings for the Secure Agent, use one of the following methods:

- Configure the Secure Agent through the Secure Agent Manager on Windows or shell command on Linux. For instructions, see "Configure the proxy settings on Windows" or "Configure the proxy settings on Linux" in *Getting Started* in the Data Integration help .
- Configure the JVM options for the DTM in the Secure Agent properties. For instructions, see the [Proxy server settings](#) Knowledge Base article.

To configure proxy settings for the serverless runtime environment, see "Using a proxy server" in *Runtime Environments* in the Administrator help.

Rules and guidelines for Coupa custom fields

Consider the following rules and guidelines to read data from or insert data to custom fields in Coupa:

- When you specify the custom field in the **Custom Field Config** connection property, you must specify the custom fields for different objects separated by a line break.
- When you specify multiple custom fields for a particular object, you must separate the custom fields with an empty new line.
- When you specify the custom fields for an Coupa object, you must specify ; \ at the end of the line except for the last entry.
- Before you specify a value for the **IsAPIGlobalNamespace** field for a custom field, you must verify whether the **API global namespace** check box is available for the custom field in Coupa. If the custom field does not contain the **API global namespace** check box, you must specify the value of **IsAPIGlobalNamespace** field as false.
- If you do not specify a value for the **IsAPIGlobalNamespace** field, Coupa V2 Connector considers true as the default.
- When you specify the value of the **IsAPIGlobalNamespace** as true, the custom field appears under the **root** tag in the **Field Mapping** tab.
- When you specify the value of the **IsAPIGlobalNamespace** as false, the custom field appears under the **custom-field** tag in the **Field Mapping** tab.

CHAPTER 3

Coupa V2 Operations

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

When you create a mapping, you can associate a Coupa V2 connection and an operation. The Secure Agent connects to the web service to access, transform, or write data. The request and response are REST messages. The REST request and response messages contain hierarchical data, where the data follows a JSON schema. If you want to write data to a relational target, the Secure Agent converts the hierarchical data fetched from Coupa to relational data.

Coupa V2 Source Operations

Create a Source transformation in the Mapping Task wizard to read data from Coupa.

When you select a Coupa V2 connection for a Source transformation in a mapping to read data from Coupa, you can select an operation from the list of operations.

The following table lists the supported Coupa source operations and the corresponding API resource path:

Operation	API Resource Path
GET_Accounts_favorites	/api/accounts/favorites
GET_Accounts_index	/api/accounts
GET_Accounts_recent	/api/accounts/recent
GET_Accounts_show	/api/accounts/:id
GET_AccountTypes_action	/api/account_types(/:action(/:id))
GET_AccountTypes_index	/api/account_types
GET_AccountTypes_show	/api/account_types/:id
GET_AccountValidationRules_index	/api/account_validation_rules
GET_AccountValidationRules_show	/api/account_validation_rules/:id
GET_Addresses_index	/api/addresses

Operation	API Resource Path
GET_Addresses_show	/api/addresses/:id
GET_AdvanceShipNotices_index	/api/asn/headers
GET_AdvanceShipNotices_show	/api/asn/headers/:id
GET_Approvals_index	api/approvals
GET_Approvals_show	/api/approvals/:id
GET_BudgetLineAdjustment_index	/api/budget_lines/:budget_line_id/budget_line_adjustments
GET_BudgetLineAdjustment_show	/api/budget_lines/:budget_line_id/ budget_line_adjustments/:id
GET_BudgetLines_index	/api/budget_lines
GET_BudgetLines_show	/api/budget_lines/:id
GET_ContentGroups_index	/api/business_groups
GET_ContentGroups_show	/api/business_groups/:id
GET_Contracts_index	/api/contracts
GET_Contracts_retrieveLegalAgreement	/api/contracts/:id/retrieve_legal_agreement
GET_Contracts_show	/api/contracts/:id
GET_ContractTerms_index	/api/contracts/:contract_id/contract_terms
GET_ContractTerms_show	/api/contracts/:contract_id/contract_terms/:id
GET_Currencies_index	/api/currencies
GET_Currencies_show	/api/currencies/:id
GET_Departments_index	/api/departments
GET_Departments_show	/api/departments/:id
GET_ExchangeRates_index	/api/exchange_rates
GET_ExchangeRates_show	/api/exchange_rates/:id
GET_ExpenseArtifacts_ExpenseLines_index	/api/expense_lines/:expense_line_id/expense_artifacts
GET_ExpenseArtifacts_ExpenseLines_show	/api/expense_lines/:expense_line_id/expense_artifacts/:id
GET_ExpenseArtifacts_ExpenseReports_index	/api/expense_reports/:expense_report_id/ expense_lines/:expense_line_id/expense_artifacts
GET_ExpenseArtifacts_ExpenseReports_show	/api/expense_reports/:expense_report_id/ expense_lines/:expense_line_id/expense_artifacts/:id

Operation	API Resource Path
GET_ExpenseArtifacts_index	/api/expense_lines/expense_artifacts
GET_ExpenseArtifacts_show	/api/expense_lines/expense_artifacts/:id
GET_ExpenseLines_classify	/api/expense_lines/classify
GET_ExpenseLines_ExpenseReports_index	/api/expense_reports/:expense_report_id/expense_lines
GET_ExpenseLines_ExpenseReports_show	/api/expense_reports/:expense_report_id/expense_lines/:id
GET_ExpenseLines_index	/api/expense_lines
GET_ExpenseLines_mobileForm	/api/expense_lines/mobile_form
GET_ExpenseLines_show	/api/expense_lines/:id
GET_ExpenseReports_index	/api/expense_reports
GET_ExpenseReports_show	/api/expense_reports/:id
GET_IntegrationHistoryRecord_index	/api/integration_history_records
GET_IntegrationHistoryRecord_show	/api/integration_history_records/:id
GET_IntegrationRuns_index	/api/integration_runs
GET_IntegrationRuns_show	/api/integration_runs/:id
GET_Integrations_action	/api/integrations(/:action(/:id))
GET_Integrations_index	/api/integrations
GET_Integrations_show	/api/integrations/:id
GET_InventoryTransactions_index	/api/inventory_transactions
GET_InventoryTransactions_show	/api/inventory_transactions/:id
GET_Invoices_index	/api/invoices
GET_Invoices_show	/api/invoices/:id
GET_Invoices_submitForApproval	/api/invoices/new/submit_for_approval
GET_Items_index	/api/items
GET_Items_show	/api/items/:id
GET_LookupValues_index	/api/lookup_values
GET_LookupValues_show	/api/lookup_values/:id
GET_OrderPad_index	/api/order_pads

Operation	API Resource Path
GET_OrderPAd_show	/api/order_pads/:id
GET_OrderPadLines_index	/api/order_pads/:order_pad_id/order_pad_lines
GET_OrderPadLines_show	/api/order_pads/:order_pad_id/order_pad_lines/:id
GET_PaymentTerms_action	/api/payment_terms(/:action(/:id))
GET_PaymentTerms_index	/api/payment_terms
GET_PaymentTerms_show	/api/payment_terms/:id
GET_PurchaseOrderLines_index	/api/purchase_order_lines
GET_PurchaseOrderLines_show	/api/purchase_order_lines/:id
GET_PurchaseOrders_index	/api/purchase_orders
GET_PurchaseOrders_show	/api/purchase_orders/:id
GET_RemitToAddresses_Invoices_index	/api/invoices/:invoice_id/remit_to_addresses
GET_RemitToAddresses_Invoices_show	/api/invoices/:invoice_id/remit_to_addresses/:id
GET_RemitToAddresses_Suppliers_index	/api/suppliers/:supplier_id/addresses
GET_RemitToAddresses_Suppliers_show	/api/suppliers/:supplier_id/addresses/:id
GET_Requisitions_createAsCart	/api/requisitions/new/create_as_cart
GET_Requisitions_index	/api/requisitions
GET_Requisitions_show	/api/requisitions/:id
GET_Requisitions_submitForApproval	/api/requisitions/new/submit_for_approval //not sure
GET_ShippingTerms_action	/api/shipping_terms(/:action(/:id))
GET_ShippingTerms_index	/api/shipping_terms
GET_ShippingTerms_show	/api/shipping_terms/:id
GET_SupplierInformation_index	/api/supplier_information
GET_SupplierInformation_show	/api/supplier_information/:id
GET_SupplierItems_index	/api/supplier_items
GET_SupplierItems_Items_index	/api/items/:item_id/supplier_items
GET_SupplierItems_Items_show	/api/items/:item_id/supplier_items/:id
GET_SupplierItems_search	/api/supplier_items/search

Operation	API Resource Path
GET_SupplierItems_show	/api/supplier_items/:id
GET_Suppliers_index	/api/suppliers
GET_Suppliers_show	/api/suppliers/:id
GET_SupplierSites_index	/api/suppliers/:supplier_id/supplier_site
GET_SupplierSites_show	/api/suppliers/:supplier_id/supplier_sites/:id
GET_TaxRegistration_index	/api/tax_registrations
GET_TaxRegistration_show	/api/tax_registrations/:id
GET_User_index	/api/users
GET_User_show	/api/users/:id
GET_UserGroups_index	/api/user_groups
GET_UserGroups_show	/api/user_groups/:id

After you specify the connection, specify the operation on the **Source** tab of the Source transformation.

Select the operation you require, configure the request message in JSON 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 source data by mapping the input fields 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 Coupa.

Configuring a Request Using Request Message Editor

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

Use the Request Message Editor to create a request message. The request message is in JSON format and contains request parameters exposed by Coupa API for a specific operation. You can use the default request message for the operation and then customize the request message to specify the data that you want to include.

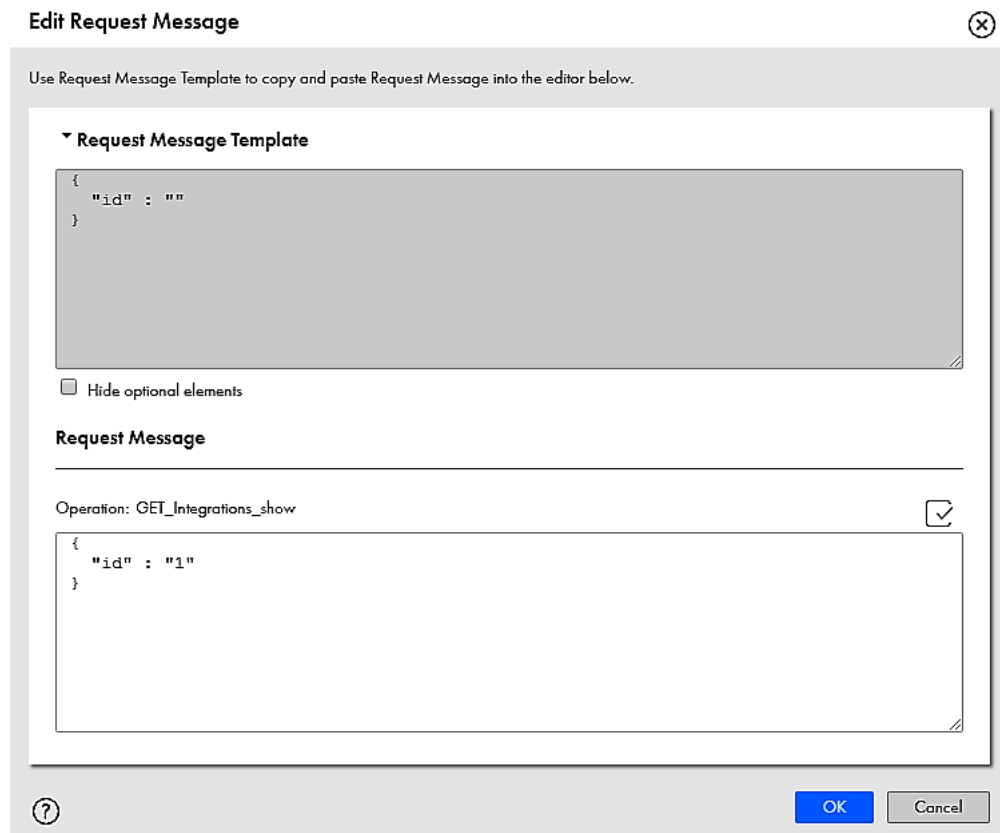
To customize your request, copy the request message from the sample template to the Request Message Editor pane where you can edit the JSON message and add the attributes for the request. Remove unnecessary and empty tags from the request message to avoid operation failure. You can hide the optional elements to see the mandatory elements required for the request message.

For example, you want to perform an operation GET_Integrations_show using Coupa V2 Connector to display integrations in Coupa.

The following JSON sample shows the filters used for the GET_Integrations_show operation:

```
{
  "id" : ""
}
```

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



The request message format in Coupa V2 Connector follows the service request definition in Coupa. Ensure that you use well-formed JSON formatting in the request message. You can verify if the JSON request is valid to ensure that the JSON matches the structure expected by the operation.

Field Mapping in a Source Transformation

The response message format follows the service response definition in Coupa. 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.

Select the elements in the response structure that you want to include as output fields. The Secure Agent converts the JSON response in the hierarchical structure to relational groups at run time.

The output groups along with the primary and foreign keys are generated. You can pause on the 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 of response structure generated from the request JSON for the GET_Integrations_show operation and the corresponding relational output fields for the response:

Select elements of Response to be mapped to Output Fields. Output groups and keys will be automatically generated.

Response Structure (11 of 11 mapped)

Show Fields: All

Element Name	Cardinality
<input checked="" type="checkbox"/> root	1-1
<input checked="" type="checkbox"/> standard	0-1
<input checked="" type="checkbox"/> code	0-1
<input checked="" type="checkbox"/> end-system-type	0-1
<input checked="" type="checkbox"/> updated-at	0-1
<input checked="" type="checkbox"/> name	0-1
<input checked="" type="checkbox"/> created-at	0-1
<input checked="" type="checkbox"/> end-system	0-1
<input checked="" type="checkbox"/> id	0-1
<input checked="" type="checkbox"/> integration-type	0-1
<input checked="" type="checkbox"/> business-object	0-1
<input checked="" type="checkbox"/> direction	0-1

Output Fields

Field Name	Actions	Mapped Field
root		/root
standard		/standard
code		/code
end_system_type		/end-system-type
updated_at		/updated-at
name		/name
created_at		/created-at
end_system		/end-system
id		/id
integration_type		/integration-type
business_object		/business-object
direction		/direction

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

Coupa V2 Target Operations

Create a Target transformation in the Mapping Task wizard to write data to Coupa. When you select a Coupa V2 connection for a Target transformation in a mapping, you can select an operation from the list of operations. When you want to write data that is in relational format to Coupa, the Secure Agent converts the relational data to a hierarchical format before writing to Coupa.

The following table lists the supported Coupa target operations and the corresponding API resource path:

Operation	API Resource Path
PATCH_Accounts_update	/api/accounts/:id
PATCH_AccountTypes_action	/api/account_types(/:action(/:id))
PATCH_AccountTypes_update	/api/account_types/:id
PATCH_AccountValidationRules_update	/api/account_validation_rules/:id
PATCH_Addresses_update	/api/addresses/:id
PATCH_AdvanceShipNotices_update	/api/asn/headers/:id
PATCH_Approvals_approve	/api/approvals/:id/approve
PATCH_Approvals_hold	/api/approvals/:id/hold
PATCH_Approvals_reject	/api/approvals/:id/reject
PATCH_Approvals_update	/api/approvals/:id
PATCH_BudgetLineAdjustment_update	/api/budget_lines/:budget_line_id/ budget_line_adjustments/:id
PATCH_BudgetLines_update	/api/budget_lines/:id

Operation	API Resource Path
PATCH_ContentGroups_update	/api/business_groups/:id
PATCH_Contracts_update	/api/contracts/:id
PATCH_ContractTerms_update	/api/contracts/:contract_id/contract_terms/:id
PATCH_Currencies_update	/api/currencies/:id
PATCH_Departments_update	/api/departments/:id
PATCH_ExchangeRates_update	/api/exchange_rates/:id
PATCH_ExpenseArtifacts_ExpenseLines_update	/api/expense_lines/:expense_line_id/ expense_artifacts/:id
PATCH_ExpenseArtifacts_ExpenseReports_update	/api/expense_reports/:expense_report_id/ expense_lines/:expense_line_id/expense_artifacts/:id
PATCH_ExpenseArtifacts_update	/api/expense_lines/expense_artifacts/:id
PATCH_ExpenseLines_ExpenseReports_update	/api/expense_reports/:expense_report_id/ expense_lines/:id
PATCH_ExpenseLines_update	/api/expense_lines/:id
PATCH_ExpenseReports_update	/api/expense_reports/:id
PATCH_IntegrationHistoryRecord_update	/api/integration_history_records/:id
PATCH_IntegrationRuns_update	/api/integration_runs/:id
PATCH_Integrations_action	/api/integrations(/:action(/:id))
PATCH_Integrations_update	/api/integrations/:id
PATCH_InventoryTransactions_update	/api/inventory_transactions/:id
PATCH_Invoices_update	/api/invoices/:id
PATCH_Items_update	/api/items/:id
PATCH_LookupValues_update	/api/lookup_values/:id
PATCH_OrderPad_update	/api/order_pads/:id
PATCH_OrderPadLines_update	/api/order_pads/:order_pad_id/order_pad_lines/:id
PATCH_PaymentTerms_action	/api/payment_terms(/:action(/:id))
PATCH_PaymentTerms_update	/api/payment_terms/:id
PATCH_PurchaseOrderLines_update	/api/purchase_order_lines/:id
PATCH_PurchaseOrders_update	/api/purchase_orders/:id

Operation	API Resource Path
PATCH_RemitToAddresses_Invoices_update	/api/invoices/:invoice_id/remit_to_addresses/:id
PATCH_RemitToAddresses_Suppliers_update	/api/suppliers/:supplier_id/addresses/:id
PATCH_Requisitions_update	/api/requisitions/:id
PATCH_ShippingTerms_action	/api/shipping_terms(/:action(/:id))
PATCH_ShippingTerms_update	/api/shipping_terms/:id
PATCH_SupplierItems_Items_update	/api/items/:item_id/supplier_items/:id
PATCH_SupplierItems_update	/api/supplier_items/:id
PATCH_Suppliers_update	/api/suppliers/:id
PATCH_SupplierSites_update	/api/suppliers/:supplier_id/supplier_sites/:id
PATCH_TaxRegistration_update	/api/tax_registrations/:id
PATCH_User_update	/api/users/:id
PATCH_UserGroups_update	/api/user_groups/:id
POST_ExchangeRates_create	/api/exchange_rates
POST_ExpenseArtifacts_ExpenseLines_create	/api/expense_lines/:expense_line_id/ expense_artifacts
POST_ExpenseArtifacts_ExpenseReports_create	/api/expense_reports/:expense_report_id/ expense_lines/:expense_line_id/expense_artifacts
POST_LookupValues_create	/api/lookup_values
POST_Accounts_create	/api/accounts
POST_AccountTypes_action	/api/account_types(/:action(/:id))
POST_AccountTypes_copy	/api/account_types/:id/copy
POST_AccountTypes_create	/api/account_types
POST_AccountValidationRules_create	/api/account_validation_rules
POST_Addresses_create	/api/addresses
POST_AdvanceShipNotices_create	/api/asn/headers
POST_Approvals_create	/api/approvals
POST_BudgetLine_create	/api/budget_lines
POST_BudgetLineAdjustment_create	/api/budget_lines/:budget_line_id/ budget_line_adjustments

Operation	API Resource Path
POST_ContentGroups_create	/api/business_groups
POST_Contracts_create	/api/contracts
POST_Contracts_legalAgreement	/api/contracts/:id/legal_agreement
POST_ContractTerms_create	/api/contracts/:contract_id/contract_terms
POST_Currencies_create	/api/currencies
POST_Departments_create	/api/departments
POST_ExpenseLines_classify	/api/expense_lines/classify
POST_ExpenseLines_create	/api/expense_lines
POST_ExpenseLines_ExpenseReports_create	/api/expense_reports/:expense_report_id/ expense_lines
POST_ExpenseReports_create	/api/expense_reports
POST_IntegrationHistoryRecord_acknowledge	/api/integration_history_records/acknowledge
POST_IntegrationHistoryRecord_create	/api/integration_history_records
POST_IntegrationHistoryRecord_createAlert	/api/integration_history_records/create_alert
POST_IntegrationHistoryRecord_createAlertAndMarkExported	/api/integration_history_records/ create_alert_and_mark_exported
POST_IntegrationHistoryRecord_markExported	/api/integration_history_records/mark_exported
POST_IntegrationRuns_create	/api/integration_runs
POST_Integrations_action	/api/integrations(/:action(/:id))
POST_Integrations_create	/api/integrations
POST_InventoryTransactions_create	/api/inventory_transactions
POST_Invoices_submitForApproval	/api/invoices/new/submit_for_approval
POST_Items_create	/api/items
POST_OrderPad_create	/api/order_pads
POST_OrderPadLines_create	/api/order_pads/:order_pad_id/order_pad_lines
POST_PaymentTerms_action	/api/payment_terms(/:action(/:id))
POST_PaymentTerms_create	/api/payment_terms
POST_PurchaseOrderLines_create	/api/purchase_order_lines

Operation	API Resource Path
POST_PurchaseOrders_create	/api/purchase_orders
POST_RemitToAddresses_Invoices_create	/api/invoices/:invoice_id/remit_to_addresses
POST_RemitToAddresses_Suppliers_create	/api/suppliers/:supplier_id/addresses
POST_Requisitions_create	/api/requisitions
POST_Requisitions_createAsCart	/api/requisitions/new/create_as_cart
POST_Requisitions_newsubmitForApproval	/api/requisitions/new/submit_for_approval
POST_Requisitions_submitForApproval	/api/requisitions/submit_for_approval
POST_ShippingTerms_action	/api/shipping_terms(/:action(/:id))
POST_ShippingTerms_create	/api/shipping_terms
POST_SupplierInformation_create	/api/supplier_information
POST_SupplierItems_create	/api/supplier_items
POST_SupplierItems_Items_create	/api/items/:item_id/supplier_items
POST_Suppliers_create	/api/suppliers
POST_Suppliers_createSupplierUserPreferences	/api/suppliers/create_supplier_user_preferences
POST_Suppliers_syncSupplierUserLocale	/api/suppliers/sync_supplier_user_locale
POST_SupplierSites_create	/api/suppliers/:supplier_id/supplier_site
POST_TaxRegistration_create	/api/tax_registrations
POST_User_create	/api/users
POST_UserGroups_create	/api/user_groups
PUT_Accounts_update	/api/accounts/:id
PUT_AccountTypes_update	/api/account_types/:id
PUT_AccountValidationRules_update	/api/account_validation_rules/:id
PUT_Addresses_update	/api/addresses/:id
PUT_AdvanceShipNotices_receive	/api/asn/headers/receive
PUT_AdvanceShipNotices_receiveByID	/api/asn/headers/:id/receive
PUT_AdvanceShipNotices_update	/api/asn/headers/:id
PUT_AdvanceShipNotices_void	/api/asn/headers/void

Operation	API Resource Path
PUT_AdvanceShipNotices_voidByID	/api/asn/headers/:id/void
PUT_Approvals_approve	/api/approvals/:id/approve
PUT_Approvals_hold	/api/approvals/:id/hold
PUT_Approvals_reject	/api/approvals/:id/reject
PUT_Approvals_update	/api/approvals/:id
PUT_ASNLines_receive	/api/asn/lines/receive
PUT_ASNLines_receiveByID	/api/asn/lines/:id/receive
PUT_ASNLines_void	/api/asn/lines/void
PUT_ASNLines_voidByID	/api/asn/lines/:id/void
PUT_BudgetLineAdjustment_update	/api/budget_lines/:budget_line_id/ budget_line_adjustments/:id
PUT_BudgetLines_adjust	/api/budget_lines/:id/adjust
PUT_BudgetLines_update	/api/budget_lines/:id
PUT_ContentGroups_update	/api/business_groups/:id
PUT_Contracts_addApprover	/api/contracts/:id/add_approver
PUT_Contracts_legalAgreement	/api/contracts/:id/legal_agreement
PUT_Contracts_removeApproval	/api/contracts/:id/remove_approval
PUT_Contracts_update	/api/contracts/:id
PUT_ContractTerms_update	/api/contracts/:contract_id/contract_terms/:id
PUT_Currencies_update	/api/currencies/:id
PUT_Departments_update	/api/departments/:id
PUT_ExchangeRates_update	/api/exchange_rates/:id
PUT_ExpenseArtifacts_updateWithoutocrResponse	/api/expense_lines/expense_artifacts/:id/ update_with_ocr_response
PUT_ExpenseArtifacts_ExpenseLines_update	/api/expense_lines/:expense_line_id/ expense_artifacts/:id
PUT_ExpenseArtifacts_ExpenseReports_update	/api/expense_reports/:expense_report_id/ expense_lines/:expense_line_id/expense_artifacts/:id
PUT_ExpenseArtifacts_update	/api/expense_lines/expense_artifacts/:id

Operation	API Resource Path
PUT_ExpenseLines_ExpenseReports_update	/api/expense_reports/:expense_report_id/expense_lines/:id
PUT_ExpenseLines_update	/api/expense_lines/:id
PUT_ExpenseReports_addApprover	/api/expense_reports/:id/add_approver
PUT_ExpenseReports_removeApproval	/api/expense_reports/:id/remove_approval
PUT_ExpenseReports_submit	/api/expense_reports/:id/submit
PUT_ExpenseReports_update	/api/expense_reports/:id
PUT_IntegrationHistoryRecord_update	/api/integration_history_records/:id
PUT_IntegrationRuns_fail	/api/integration_runs/:id/fail
PUT_IntegrationRuns_pause	/api/integration_runs/:id/pause
PUT_IntegrationRuns_pending	/api/integration_runs/:id/pending
PUT_IntegrationRuns_run	/api/integration_runs/:id/run
PUT_IntegrationRuns_success	/api/integration_runs/:id/success
PUT_IntegrationRuns_update	/api/integration_runs/:id
PUT_Integrations_update	/api/integrations/:id
PUT_InventoryTransactions_update	/api/inventory_transactions/:id
PUT_InventoryTransactions_void	/api/inventory_transactions/:id/void
PUT_Invoices_addApprover	/api/invoices/:id/add_approver
PUT_Invoices_bypassApprovals	/api/invoices/:id/bypass_approvals
PUT_Invoices_bypassCurrentApproval	/api/invoices/:id/bypass_current_approval
PUT_Invoices_dispute	/api/invoices/:id/dispute
PUT_Invoices_flipToAdvanceShipnotice	/api/invoices/:id/flip_to_advance_ship_notice
PUT_Invoices_removeApproval	/api/invoices/:id/remove_approval
PUT_Invoices_restartApproval	/api/invoices/:id/restart_approvals
PUT_Invoices_revalidateTolerances	/api/invoices/:id/revalidate_tolerances
PUT_Invoices_submit	/api/invoices/:id/submit
PUT_Invoices_update	/api/invoices/:id
PUT_Invoices_updatelineAccounts	/api/invoices/:id/update_line_accounts

Operation	API Resource Path
PUT_Invoices_void	/api/invoices/:id/void
PUT_Invoices_withdrawDispute	/api/invoices/:id/withdraw_dispute
PUT_Items_update	/api/items/:id
PUT_LookupValues_update	/api/lookup_values/:id
PUT_OrderPad_update	/api/order_pads/:id
PUT_OrderPadLines_update	/api/order_pads/:order_pad_id/order_pad_lines/:id
PUT_PaymentTerms_update	/api/payment_terms/:id
PUT_PurchaseOrderLines_update	/api/purchase_order_lines/:id
PUT_PurchaseOrders_cancel	/api/purchase_orders/:id/cancel
PUT_PurchaseOrders_close	/api/purchase_orders/:id/close
PUT_PurchaseOrders_ignoreWindowAndIssue	/api/purchase_orders/:id/ignore_window_and_issue
PUT_PurchaseOrders_issue	/api/purchase_orders/:id/issue
PUT_PurchaseOrders_issueWithoutSend	/api/purchase_orders/:id/issue_without_send
PUT_PurchaseOrders_releaseFromBuyerHold	/api/purchase_orders/:id/release_from_buyer_hold
PUT_PurchaseOrders_update	/api/purchase_orders/:id
PUT_RemitToAddresses_Invoices_update	/api/invoices/:invoice_id/remit_to_addresses/:id
PUT_RemitToAddresses_Suppliers_update	/api/suppliers/:supplier_id/addresses/:id
PUT_Requisitions_addApprover	/api/requisitions/:id/add_approver
PUT_Requisitions_removeApproval	/api/requisitions/:id/remove_approval
PUT_Requisitions_update	/api/requisitions/:id
PUT_ShippingTerms_update	/api/shipping_terms/:id
PUT_SupplierItems_Items_update	/api/items/:item_id/supplier_items/:id
PUT_SupplierItems_update	/api/supplier_items/:id
PUT_Suppliers_update	/api/suppliers/:id
PUT_SupplierSites_update	/api/suppliers/:supplier_id/supplier_sites/:id
PUT_TaxRegistration_update	/api/tax_registrations/:id
PUT_User_avatar	/api/users/:id/avatar

Operation	API Resource Path
PUT_User_update	/api/users/:id
PUT_UserGroups_update	/api/user_groups/:id

When you configure a Coupa target, you can select **Operations** on the **Target** tab to display the list of operations. The Secure Agent creates target fields based on the request message structure of the operation you select on the **Target** tab.

After you write data to Coupa, 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 sources to write data to Coupa target object and define the primary and foreign key relationships between the input sources before you run the mapping. Each input source appears as separate group in the **Field Mapping** tab in the target transformation. You can define key relationships on the **Field Mapping** tab.

File Preparation for Target Transformation

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

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

When you run the mapping, the Secure Agent writes data to a configured target .csv file. Later, use this file as a source from which you write data to Coupa.

Field Mapping in a Target Transformation

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

The following image shows an example of mapped input fields from the source file with the Coupa target to update data using PUT_UserGroups_update operation:

The screenshot displays the Field Mapping interface with two panels: **Input Fields: [3 of 42 mapped]** and **Target Fields: [3 of 39 mapped]**. Both panels include a 'Show: Show All' dropdown and a 'Find' search box.

Input Fields:

Field	Key
Source	
updated_at	
name	
active	
description	
created_at	
id	
exported	
firstname	
employee_number	
avatar_thumb_url	
id1	
login	

Target Fields:

Element Name	Mapped Field
root*	Source
updated-at	
name	Source.name
active	
description	
created-at	
id	Source.id
updated-by	
can-approve	
open	
mention-name	
usersArray	
created-by	

CHAPTER 4

Coupa V2 Mappings and Mapping Configuration Tasks

Use the Data Integration Mapping Designer to create a mapping. When you create a mapping, you configure a source or target to represent the object.

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

Coupa V2 Source Transformation in Mappings

When you configure a Source transformation, select the Coupa V2 connection and choose an operation to represent a Coupa source. You can parameterize a Coupa V2 connection.

When you select a Coupa V2 connection for a source, you can select an operation from the list of operations. You can use the request message template to configure the request message in a JSON format. You can parameterize the input values in the request message. 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 Coupa.

Source Transformation Properties

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

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

General

Configure the name and a description for the source.

Source

Select the connection and the operation, and configure the request options and advanced source properties.

Field Mapping

Map elements of the response structure with the output fields.

Fields

Edit the metadata source field metadata that you want to use in the mapping.

Advanced Source Properties

In a mapping, you can configure a source to represent a Coupa source. For Coupa V2 connections used in Mapping Configuration tasks, you can configure advanced properties on the **Source** page of the Mapping Configuration Task wizard.

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

Property	Description
Tracing Level	Amount of detail that appears in the log. Use the following tracing levels: <ul style="list-style-type: none">- Terse- Normal- Verbose Initialization- Verbose Default is normal.
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.

Source Transformation Mapping Example

You are an inventory data administrator and you want to extract details for all the inventory transactions from Coupa to a flat file using Coupa V2 connection.

To read data from Coupa and write to a flat file using Coupa V2 connection, perform the following tasks:

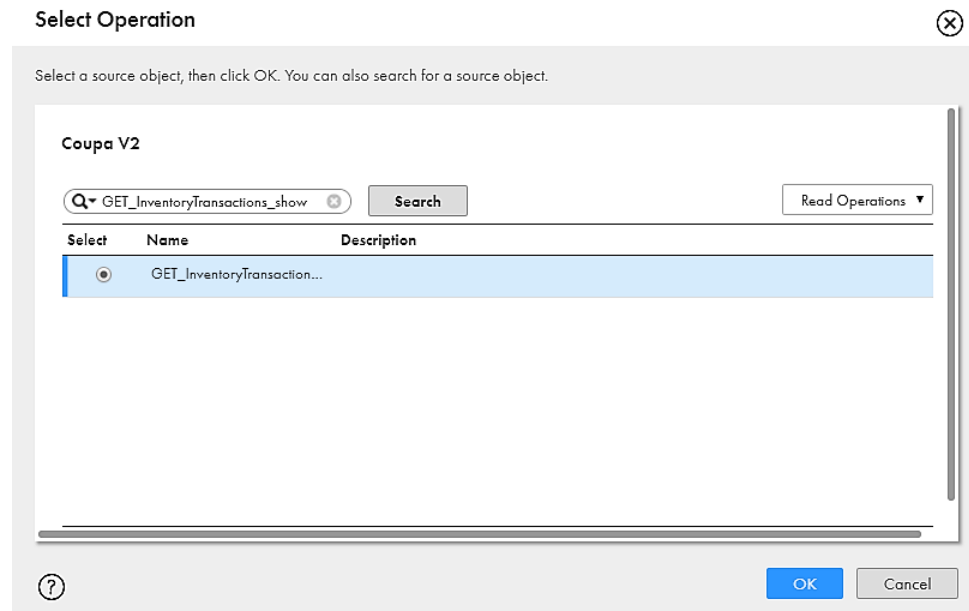
1. Create a Coupa V2 connection.

The following image shows the configured Coupa V2 connection:

The screenshot displays the configuration interface for a Coupa V2 connection. It is organized into three main sections:

- Connection Details:** Includes fields for 'Connection Name' (set to 'Coupa_V2'), 'Description', and 'Type' (set to 'Coupa V2 (Informatica Cloud)').
- Coupa V2 Connection Properties:** Includes 'Runtime Environment' (set to 'INW00006324') and 'Authentication' (set to 'CoupaV2').
- CoupaV2 Connection Properties:** Includes 'Base Url' (set to 'https://informatica-demo.coupacloud.com'), 'Coupa API KEY' (masked with '*****'), and 'Custom Field Config' (containing field mappings like 'user = infa_customfield1,Simple,String;\n custom_field_2,Simple,String' and 'requisition-header = requisCF,Simple,String;\n requisition_cf1,Simple,Integer').

2. Create a flat file connection to write data to the flat file.
3. Create a Coupa V2 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 Coupa V2 connection to connect to the Coupa instance.
 - b. In the **Operation** field, select GET_InventoryTransactions_show as the operation.
The following image shows the GET_InventoryTransactions_show operation:

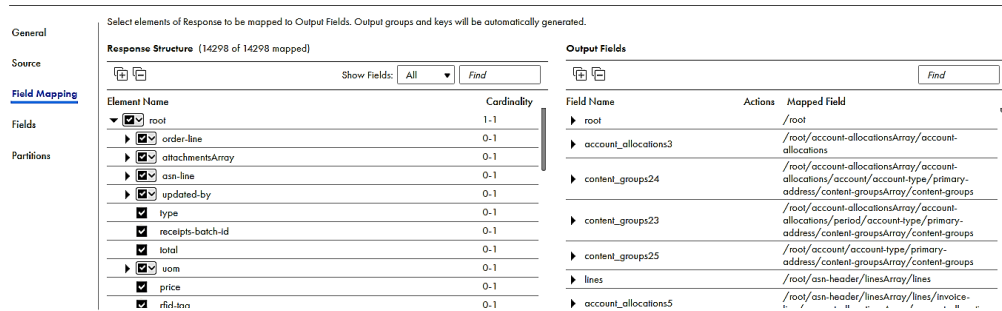


- d. In the **Request Options** section, configure the request message in the following JSON format, specify the attributes in the message, and validate the message:

```
{
  "Id" : "",
}
```

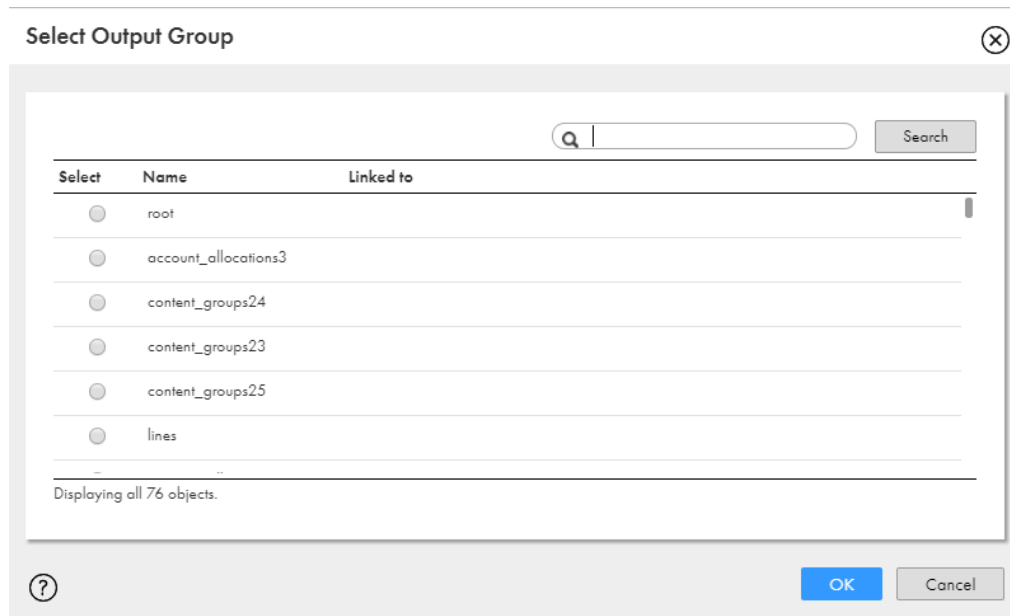
The request message specifies the criteria to include inventory transactions of all the commodities. You can hide the optional elements to see the mandatory elements required for the request message. You must have the Web Services Admin (Professional) or Can Administer (Standard) user role to use the user parameter.

- 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 elements, such as commodity, supplier-order-number, receiving-warehouse, item, quantity, and order-header-number 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:



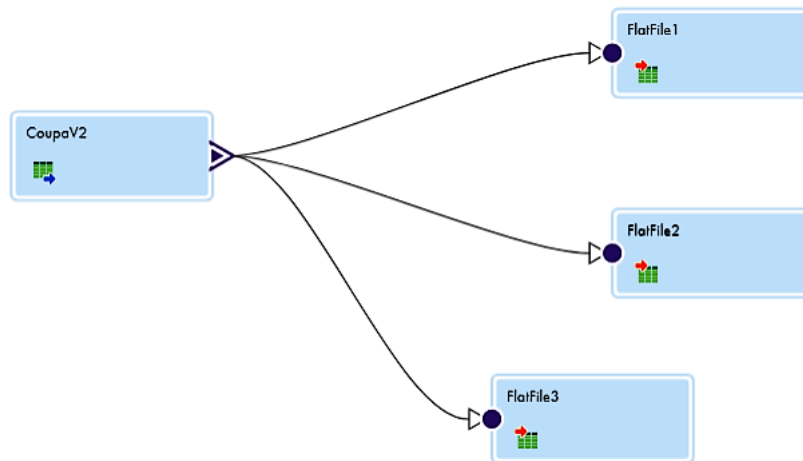
The Secure Agent creates multiple output groups which results in multiple relational output files. Primary and foreign keys are auto-generated.

7. Add multiple Target transformations. Specify name and description in the general properties.
8. Select a flat file connection for the target transformations.
9. Draw links to connect the multiple output groups to a corresponding target transformation. The following image shows the **Select Output Group** dialog box where you select the output group to write to each target:



10. On the **Field Mapping** tab, select the automatic field map option.

11. Save and run the mapping.
The following image shows the Coupa V2 mapping:



Coupa V2 Target Transformation in Mappings

When you select a Coupa V2 connection for a target, you can select an operation from the list of operations.

You can add multiple input groups into the Coupa V2 target and define the primary and foreign key relationships between the multiple input groups before the mapping.

Target Transformation Properties

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

When you select a target, 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.
- **Field Mapping.** Defines the field mappings from the upstream transformation to the target.

Advanced Target Properties

In a mapping, you can configure a target to represent a Coupa V2 target. For Coupa V2 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 an operation administrator and you want to create a user group in Coupa using Coupa V2 connection.

To create a user group in Coupa from a flat file using Coupa V2 connection, perform the following tasks:

1. Create a flat file connection to read data from the flat file.
2. Create a Coupa V2 connection to write data to Coupa.

The following image shows the configured Coupa V2 connection:

Connection Details

Connection Name:*

Description:

Type:* ?

Coupa V2 Connection Properties

Runtime Environment:* ?

Authentication:* ?

CoupaV2 Connection Properties

Base Url:*

Coupa API KEY:*

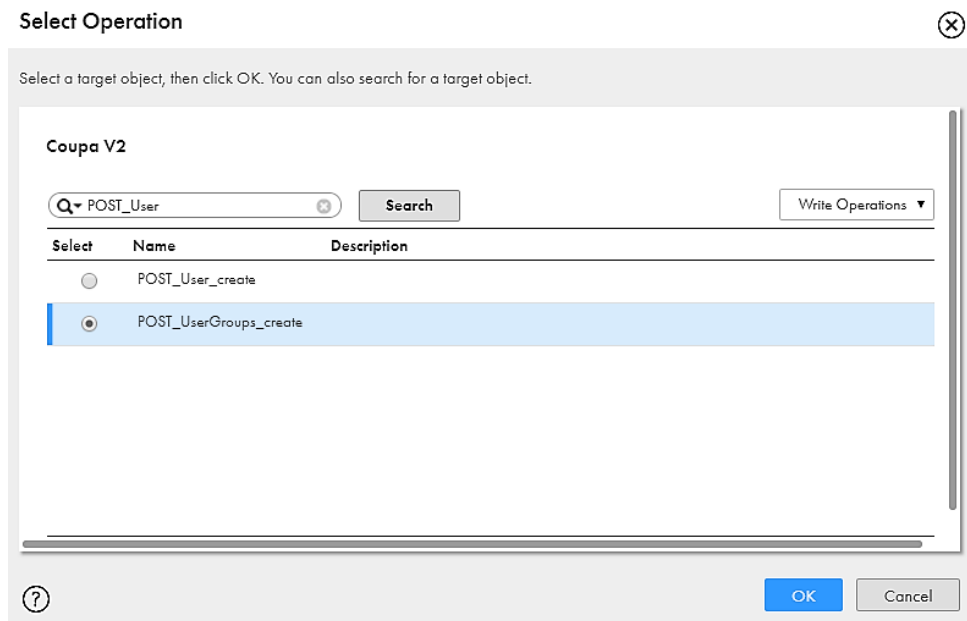
Custom Field Config:

```
user = infa_customefield1,Simple,String,\
custom_field_2,Simple,String

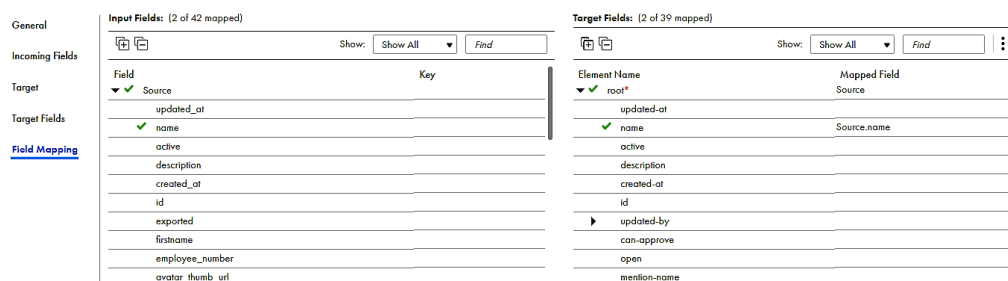
requisition-header = requisCF,Simple,String,\
requisition_cf1,Simple,Integer
```

3. Create a Coupa V2 mapping.

4. Add a Source transformation to include the flat file object that contains the user group information. Add the flat file connection.
5. Add a Target transformation to write the user group information to Coupa using POST_UserGroups_create operation. Perform the following tasks on the **Target** tab:
 - a. In the **Connection** field, select the Coupa V2 connection to connect to Coupa.
 - b. In the **Operation** field, select POST_UserGroups_create as the operation.
The following image shows the POST_UserGroups_create in the list of write operations:



- c. In the **Advanced Properties** section, set the cache size and the transaction commit interval.
6. 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 Coupa V2 target:



7. When you save and run the mapping in a mapping task, the Secure Agent creates the user group in Coupa.
The following image shows the Coupa V2 mapping:



Coupa V2 Midstream Transformation in Mappings

Before you configure a midstream transformation, you must create a business service from the **Configure** tab. You must select a Coupa V2 connection and an operation when you create a business service.

When you configure the midstream transformation, select the business service and the operation on the **Web Service** tab.

A Web Services transformation connects to the web service application as a web service client to access, transform, or deliver data. Use the Web Services transformation in the Mapping Designer to construct a web service request and to parse the web service response.

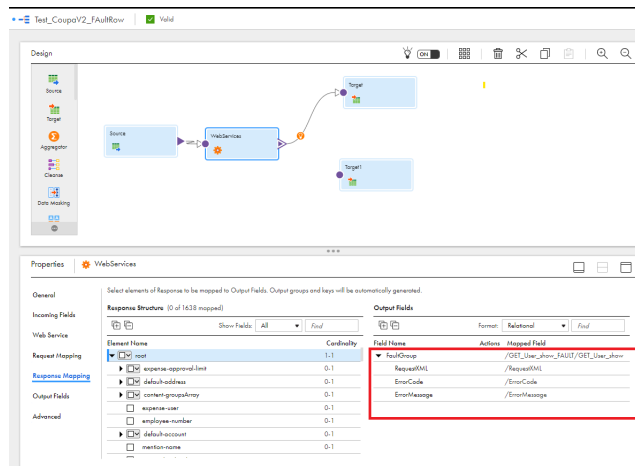
You can map the incoming fields from source file to elements in request structure on the **Request Mapping** tab.

You can view the response structure on the **Response Mapping** tab. 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.

Fault Group

The Fault group is used to capture the rows where an error occurs in a mapping for a particular web service.

The following image shows a Web Service with response structure and output fields on the Response Mapping tab. You will see the fault group displayed in the output fields.



The response structure displays the fault output group by default. The fault group contains the request XML, error code, and error message. The fault group is displayed for the new business services. To map the fault group for the business services created in the previous version of connector, create new business services and import them again.

Advanced Midstream Properties

The following table describes the advanced properties that you can configure for a midstream transformation:

Property	Description
Cache Size for Web Service Request (KB)	Memory available for the web service request. If the request is more than 100 KB, you can 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	Not applicable.
Transaction Commit Control	Not applicable.

Increasing Secure Agent Memory

If you use GET_User_index_MultiTarget, GET_Invoices _show, or GET_Suppliers_show operation to read data from Coupa, perform the following steps:

1. In Administrator, select **Runtime Environments**.
2. Select the Secure Agent for which you want to increase memory from the list of available Secure Agents.
3. In the upper-right corner, click **Edit**.
4. In the **System Configuration Details** section, select the **Type** as **DTM** for the Data Integration Service.
5. Edit **JVMOption1** as **'-Xmx1024m'**.

The following image shows the **Details** page:

The screenshot shows the configuration page for agent INV28IS05. Under 'System Configuration Details', the 'Service' is 'Data Integration Server' and the 'Type' is 'DTM'. A table lists several JVM options:

Type	Name	Value
DTM	JVMClassPath	'pmserversdk.jar'
DTM	JVMOption1	'-Xmx1024m'
DTM	JVMOption2	
DTM	JVMOption3	
DTM	JVMOption4	
DTM	JVMOption5	

6. In the **System Configuration Details** section, select the **Type** as **Tomcat JRE**
7. Edit **INFA_MEMORY** as **'-Xms256m -Xmx1024m -XX:MaxPermSize=128m'**.

The following image shows the **Agent Details** page:

Agent Name: INV28ISO5 Save

System Configuration Details Reset All

Service: Data Integration Server

Type: Tomcat JRE

Type	Name	Value	
Tomcat JRE	INFA_SSL		
Tomcat JRE	INFA_MEMORY	<input type="text" value="-Xms256m -Xmx1024m -XX:MaxPermSize=128m"/>	
Tomcat JRE	JRE_OPTS	<input type="text" value="-Xrs"/>	
Tomcat JRE	JAVA_LIBS		

Note: The minimum and maximum values for the Java heap size are given as an example. Specify the size according to your requirements.

8. Restart the Secure Agent.

Rules and guidelines for Coupa V2 mappings

Consider the following rules and guidelines for Coupa V2 mappings:

- If you perform PATCH operation on a Coupa resource, the mapping task fails.
- When you specify multiple custom fields for a particular object, you must separate the custom fields with a new line.
- If a mapping or mapping task fails, the error messages are logged in the session log file located at:
<Secure Agent installation directory>/apps/Data_Integration_Server/logs.

APPENDIX A

Coupa V2 Data Type Reference

This appendix includes the following topics:

- [Coupa V2 Data Type Reference Overview, 39](#)
- [Coupa V2 and Transformation Data Types, 39](#)

Coupa V2 Data Type Reference Overview

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

Coupa native data types

Coupa data types appear in the parameters in the Coupa V2 operations and you cannot change 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 Coupa data, it converts the native data types to the comparable transformation data types before transforming the data.

Coupa V2 and Transformation Data Types

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

Coupa Data Type	Transformation Data Type	Description
BOOLEAN	integer	Logical Boolean (true/false).
DATETIME	string	1 to 65536 characters. In Coupa, string data type handles date/time values.
DATE	string	1 to 65536 characters. In Coupa, string data type handles date/time values.

Coupa Data Type	Transformation Data Type	Description
DECIMAL	double	-2,147,483,648 to 2,147,483,647 Precision 12, scale 0
FLOAT	double	-2,147,483,648 to 2,147,483,647 Precision 12, scale 0
INTEGER	double	-2,147,483,648 to 2,147,483,647 Precision 12, scale 0
STRING	string	1 to 65536 characters.

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