

Import software installation data

Lab 2.2

15-20 minute

Lab objectives

You will achieve the following objectives:

- Software installation data is loaded
- Software installation data is transformed into ServiceNow tables

Lab Dependency: *Requires the completion of Lab 2.1*

Required Resources: *2.2-software_installations.xlsx and 2.2-transform_script.txt*

Scenario

Rick Lemm, Software Asset Manager at Cloud Dimensions, Ltd. (CloudD), previously downloaded a Microsoft Excel file containing software installation data and a script file to remove existing installation data (downloaded from the ServiceNow knowledge base). Now they would like this data imported into ServiceNow to replace existing obsolete data.

Installation data must be imported using system import sets, which Rick does not have the appropriate role for in ServiceNow. Rick has requested that Jet Blake, ServiceNow Administrator at CloudD, import the data from the 2.2-software_installations.xlsx spreadsheet.

Requirements Summary

User Stories

- STRY020201 – Import software installations

As a software asset manager, I need the 2.2-software_ installations file imported so that new data can be imported into ServiceNow to replace existing obsolete data, and the 2.2-transform_script.txt file executed so that the existing, obsolete data can be replaced with more current data.

STRY020201 – Import software installations

Section 1 View software installations before import

Jet Blake, ServiceNow Administrator at Cloud Dimensions (CloudD), wants to review software installations associated with one of the devices that are affected by the import, so they can compare before and after import results.



1. Impersonate **System Administrator**.
2. As System Administrator, navigate to **Configuration > Base Items > Computers**.
3. Open the record for **ALDWXP**.
4. Scroll down to view the **Software Installations** related list.

The screenshot shows the ServiceNow interface for the 'Computer ALDWXP' record. The 'Software Installations' tab is selected, showing a list of 14 installed software items. The table includes columns for Display name, Publisher, Version, Discovery model, and Assigned to.

Display name	Publisher	Version	Discovery model	Assigned to
Excel 2011	Microsoft Corporation	14.7.6	Excel 2011 14.7.6	David Loo
JProfiler 8.1.4	ej-technologies GmbH	8.1.4	JProfiler 8.1.4 8.1.4	David Loo
Adobe Photoshop CC 2017	Adobe Systems	18.1.1	Adobe Photoshop CC 2017 18.1.1	David Loo
Microsoft Publisher MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft Publisher MUI (English) 2013 1...	David Loo
Microsoft OneNote MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft OneNote MUI (English) 2013 15...	David Loo
Microsoft Office 365 ProPlus - en-us	Microsoft	16.0.7766.2092	Microsoft Office 365 ProPlus - en-us Ent...	David Loo
Adobe Systems Creative Cloud	Adobe		Adobe Systems Creative Cloud	David Loo
Microsoft Access MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft Access MUI (English) 2013 15.0...	David Loo
Adobe Dreamweaver CC 2017	Adobe Systems	17.1.0	Adobe Dreamweaver CC 2017 17.1.0	David Loo
Microsoft Excel MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft Excel MUI (English) 2013 15.0...	David Loo
WinZip 15.5	WinZip Computing, S.L.	15.5.9510	WinZip 15.5 15.5.9510	David Loo
Microsoft Word MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft Word MUI (English) 2013 15.0.4...	David Loo
Microsoft Outlook MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft Outlook MUI (English) 2013 15...	David Loo
Microsoft PowerPoint MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft PowerPoint MUI (English) 2013 ...	David Loo

Knowledge Check: Refer to the Answer Guide at lab's end.

1. How many Software Installations are associated with ALDWXP? Make a note.

Section 2 View and load installations data

Jet is ready to load the installations data from the spreadsheet into ServiceNow.

1. Open the **2.2-software_installations.xlsx** file downloaded in Lab 1.1.

Note: This spreadsheet contains the minimum required information to create Software Installation records. Your discovery source may provide additional information that can be mapped to the record.



Knowledge Check: Refer to the Answer Guide at lab's end.

2. What type of information is required to create a Software Installation record?
2. As **System Administrator**, navigate to **System Import Sets > Load Data**.
3. Under Import set table, select **Create table**.
4. Update the **Label** field for the import set table to **Software Installations**.
5. Under Source of the import, select **File**.
6. Click **Choose file** and select the **2.2-software_installations.xlsx** file downloaded in Lab 1.1.

7. Click **Submit**.

Section 3 Create a transform map

With the data now in ServiceNow, Jet needs to complete step 2 of the system import set to transform the data from its location in the import set table to the desired asset tables.



The data that has been loaded contains all current software installations on some computers in the environment. This means that any installations in ServiceNow that are not in the loaded data have been uninstalled and need to be removed from ServiceNow.

In addition to mapping fields from the import set table to the asset tables, the transform map can remove existing installations, using a script, before transformation of the new data.

1. Once State shows as Complete, as **System Administrator** under Next steps..., click **Create transform map**.

Progress

Name	ImportProcessor
State	Complete
Completion code	Success
Message	Processed: 86, Inserts 86, updates 0, errors 0, empty and ignored 0, Ignored errors 0 (0:00:00.902)

Next steps...

- [Import sets](#) Go to the import sets for this data load
- [Loaded data](#) Go to the newly imported data inside the staging table: u_software_installations
- [Create transform map](#) Create a transform map for the newly staged data
- [Import log](#) View the import log

2. Complete the form as follows:

- Name: **Software Installations Map**
- Target table: **Software Installation [cmdb_sam_sw_install]**

Table Transform Map
New record

* Name: Software Installations Map

* Source table: Software Installations [u_software...]

Active: ☒

Run business rules: ☒

Enforce mandatory fields: No

Copy empty fields: ☐

Create new record on empty coalesce fields: ☐

Application: Global

Created:

* Target table: Software Installation [cmdb_sam_s...]

Order: 100

Run script: ☐

Submit

Related Links
[Auto Map Matching Fields](#)
[Mapping Assist](#)

3. Under Related Links, click **Auto Map Matching Fields**.

Note: When using this option, validate the fields map properly.

Section 3.1 Map fields

1. Under the Field Maps related list, double-click the **Coalesce** value for u_display_name and set the value to **true**.

Source field	Target field	Coalesce
u_publisher	publisher	
u_display_name	display_name	true
u_version	version	
u_installed_on	installed_on	false
u_assigned_to	assigned_to	false

2. Click the **green check mark** to save.

true

- Repeat this process to set Coalesce to **true** on all the remaining values.


Source field	Target field	Coalesce
u_publisher	publisher	true
u_display_name	display_name	true
u_version	version	true
u_installed_on	installed_on	true
u_assigned_to	assigned_to	true

Tip: Alternatively, click to the right of **false** in the **Coalesce** field of the next record and, while holding the shift key down, drag to the bottom of the list to highlight the field for all records.

Double-click to the right of **false** in any one of the **Coalesce** fields and set the value to **true**, then click the green check mark to save. The field in all records should be set to true.

Knowledge Check: Refer to the Answer Guide at lab's end.

3. Why set all these values to coalesce?

- Under the Field Maps related list, click the **gear icon**  to personalize the list.
- Add **Choice action** to Selected list.

Personalize List Columns

Available

- Application
- Class
- Coalesce case sensitive
- Coalesce empty fields
- Created
- Created by
- Date format
- Display name
- Map
- Package
- Protection policy
- Referenced value field name
- Source script
- Source table
- Tags
- Target table

Selected

- Source field
- Target field
- Coalesce
- Choice action

☒ Wrap column text ☐ Compact rows ☐ Active row highlighting

☒ Modern cell coloring

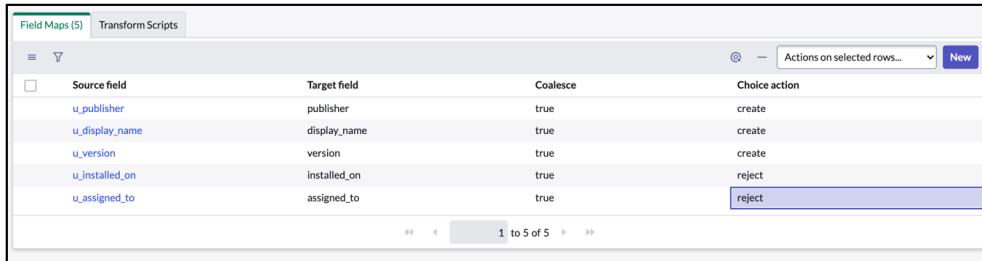
☒ Enable list edit ☒ Double click to edit

Cancel OK

- Click **OK**.

Note: If you get a message asking whether you want to leave the page/site, click Leave to refresh Fields Maps related list with the additional field.

- Set the Choice action for u_installed_on and u_assigned_to to **reject**.

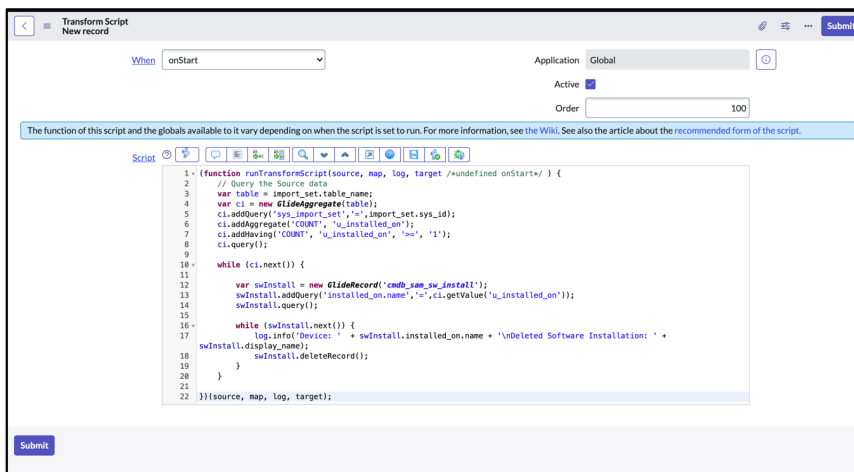


Source field	Target field	Coalesce	Choice action
u_publisher	publisher	true	create
u_display_name	display_name	true	create
u_version	version	true	create
u_installed_on	installed_on	true	reject
u_assigned_to	assigned_to	true	reject

Note: This rejects the installation record if the u_assigned_to value does not match an existing user or the u_installed_on value does not match an existing CI.

Section 3.2 Add script to remove existing installations

- Under the Transform Scripts related list, click **New**.
- Open the file **2.2-transform-script.txt** file that you saved previously and copy the contents (e.g., with WordPad).
- Replace all the text in the Script field on the Transform Script form by pasting the new content over it.



Transform Script
New record

When: onStart

Application: Global

Active: ☒

Order: 100

The function of this script and the globals available to it vary depending on when the script is set to run. For more information, see the [Wiki](#). See also the article about the [recommended form of the script](#).

Script

```
1- (function runTransformScript(source, map, log, target /undefined onStart/) {  
2  
3 // Query the Source data  
4 var table = import_set.table_name;  
5 var ci = new GlideAggregate(table);  
6 ci.addQuery('sys_import_set','i',import_set.sys_id);  
7 ci.addAggregate('COUNT','u_installed_on');  
8 ci.addHaving('COUNT','u_installed_on','>=','1');  
9 ci.query();  
10  
11 while (ci.next()) {  
12  
13 var swInstall = new GlideRecord('cmdb_sam_sw_install');  
14 swInstall.addQuery('installed_on_name','i',ci.getValue('u_installed_on'));  
15 swInstall.query();  
16  
17 while (swInstall.next()) {  
18 log.info('Device: ' + swInstall.installed_on_name + '\nDeleted Software Installation: ' +  
19 swInstall.display_name);  
20 swInstall.deleteRecord();  
21 }  
22 }  
23 } (source, map, log, target);
```

Note: This script finds all the distinct CIs in the import and runs a command to delete the Software Installation records associated with those CIs before the current installation data is imported. Deleted installations are logged in the Import Log for the transformation.

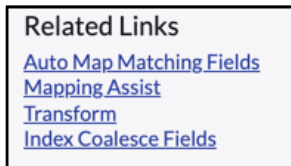
- Click **Submit**.

Section 4 Transform data

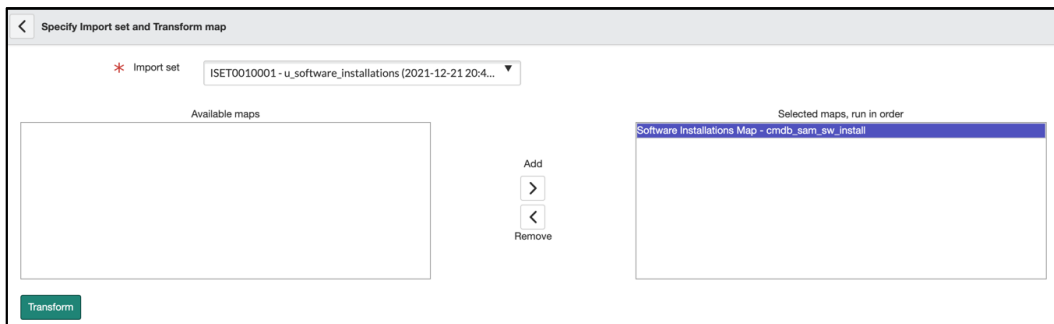


Jet is now ready to transform the data as the final step of the system import set.

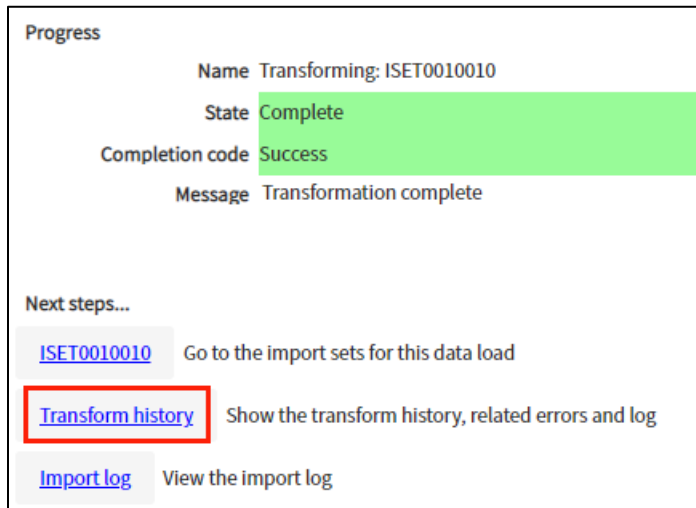
1. As **System Administrator**, under Related Links on the transform map, click **Transform**.



2. Click **Transform** when the **Specify Import set and Transform map** form is displayed.



3. Once State shows as Complete, under Next steps..., click **Transform history**.



Verify Actions: Validate that the Software Installations imported successfully.

4. As **System Administrator**, navigate to **Configuration > Base Items > Computers**.
5. Open the record for **ALDWXP**.

6. View the Software Installations related list.

The screenshot shows the ServiceNow interface for the 'Computer ALDWXP' entity. The 'Software Installations (12)' tab is selected. The table lists various installed applications with columns for Display name, Publisher, Version, Discovery model, and Assigned to. The 'Assigned to' column for all entries is 'David Loo'. The table is filtered for 'Installed on = ALDWXP'.

Display name	Publisher	Version	Discovery model	Assigned to
Adobe InDesign CC 2017	Adobe	12.0.0.81	Adobe InDesign CC 2017 12.0.0.81	David Loo
Excel 2011	Microsoft Corporation	14.7.6	Excel 2011 14.7.6	David Loo
Adobe Systems Acrobat DC Professional	Adobe Systems		Adobe Systems Acrobat DC Professional	David Loo
Snagit	TechSmith Corporation	12.0.2	Snagit 12.0.2	David Loo
Adobe Photoshop CC 2017	Adobe Systems	18.1.1	Adobe Photoshop CC 2017 18.1.1	David Loo
Microsoft Office 365 ProPlus - en-us	Microsoft	16.0.7766.2092	Microsoft Office 365 ProPlus - en-us 16...	David Loo
Microsoft Access MUI (English) 2013	Microsoft	15.1.2515.9876	Microsoft Access MUI (English) 2013 15.1...	David Loo
Adobe Dreamweaver CC 2017	Adobe Systems	17.1.0	Adobe Dreamweaver CC 2017 17.1.0	David Loo
Microsoft Excel MUI (English) 2013	Microsoft	15.1.2515.9876	Microsoft Excel MUI (English) 2013 15.1...	David Loo
WinZip 15.5	WinZip Computing, S.L.	15.5.9510	WinZip 15.5 15.5.9510	David Loo
Microsoft Word MUI (English) 2013	Microsoft	15.1.2515.9876	Microsoft Word MUI (English) 2013 15.1.2...	David Loo
Microsoft PowerPoint MUI (English) 2013	Microsoft	15.0.4569.1506	Microsoft PowerPoint MUI (English) 2013 ...	David Loo

7. Compare the installations with those in the spreadsheet where the Installed on field is set to **ALDWXP** to verify they match.



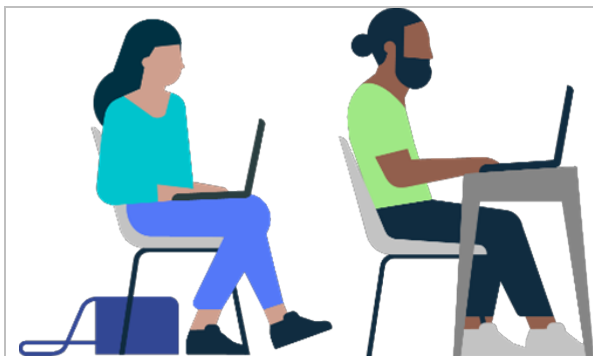
Congratulations! You have completed this lab!

You are now ready to begin learning about software discovery to support ServiceNow's Software Asset Management Professional product.

Knowledge Check Answer Guide

1. **How many Software Installations are associated with ALDWXP?**
 - 14
2. **What type of information is required to create a Software Installation record?**
 - The display name of the software installation
 - The software publisher
 - The software version
 - The device the software is installed on
 - The user of device the software is assigned to
3. **Why set all these values to coalesce?**
 - To ensure that if all fields do not match an existing record on import, that a new record is created. If all fields match, a new record will not be created. Avoids duplication of data.

Lab takeaways



- What data is required to create a software installation record?
- What is the purpose of loading and transforming data?
- Why did you coalesce the data for transformation?