

STUDENT TRAINING GUIDE

ACE 2019

INNOVATE
TRANSCEND
REALIZE

Using Batch Loader



Copyright © 2019 by Aras Corporation. This material may be distributed only subject to the terms and conditions set forth in the Open Publication License, V1.0 or later (the latest version is presently available at <http://www.opencontent.org/openpub/>).

Distribution of substantively modified versions of this document is prohibited without the explicit permission of the copyright holder.

Distribution of the work or derivative of the work in any standard (paper) book form for a commercial purpose is prohibited unless prior permission is obtained from the copyright holder.

Aras Innovator, Aras, and the Aras Corp "A" logo are registered trademarks of Aras Corporation in the United States and other countries.

All other trademarks referenced herein are the property of their respective owners.

Microsoft, Office, SQL Server, IIS and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Notice of Liability

The information contained in this document is distributed on an "As Is" basis, without warranty of any kind, express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose or a warranty of non-infringement. Aras shall have no liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information contained in this document or by the software or hardware products described herein.



Using Batch Loader

Overview: In this training session, you will learn how to use the Batch Loader utility to migrate data from an outside resource into the Innovator database.

The Batch Loader is a subscriber only feature, available on the Aras Innovator CD.

- Objectives:**
- ✓ Understand Our Examples
 - ✓ Reviewing Batch Loader Features
 - ✓ Using the BatchLoader Windows Application
 - ✓ Working with AML Templates
 - ✓ Importing Relationships
 - ✓ Using Command Line BatchLoader

Example #1: Input Data from CSV

- Character Separated File (CSV)
 - Column Names
 - Header Row

	A	B	C	D	E	F	G	H	I
1	First Name	Last Name	Company Name	Email	Telephone	Employee#	LoginName	Password(innovator)	Logon Enabled
2	James	Hazen	Aras Corporation	JHazen@aras.com	(710) 030-6400	1693	JHazen	607920B64FE136F9AB	1
3	Benjamin	Fernandes	Aras Corporation	BFernandes@aras.com	(615) 498-6418	1664	BFernandes	607920B64FE136F9AB	1
4	Jacob	Callas	Aras Corporation	JCallas@aras.com	(226) 056-4933	1342	JCallas	607920B64FE136F9AB	1
5	Michael	Galison	Aras Corporation	MGalison@aras.com	(665) 895-8135	1604	MGalison	607920B64FE136F9AB	1
6	Elijah	Roof	Aras Corporation	ERoof@aras.com	(812) 553-6487	1446	ERoof	607920B64FE136F9AB	1
7	Ethan	Winther	Aras Corporation	EWinther@aras.com	(138) 605-3362	1470	EWinther	607920B64FE136F9AB	1
8	Emma	Wechsler	Aras Corporation	EWechsler@aras.com	(140) 341-3667	1629	EWechsler	607920B64FE136F9AB	1
9	Olivia	Rotnitzky	Aras Corporation	ORotnitzky@aras.com	(989) 809-4012	1333	ORotnitzky	607920B64FE136F9AB	1
10	Ava	Duggan	Aras Corporation	ADuggan@aras.com	(669) 171-3553	1404	ADuggan	607920B64FE136F9AB	1
11	Sophia	Coxson	Aras Corporation	SCoxson@aras.com	(132) 354-5599	1745	SCoxson	607920B64FE136F9AB	1
12	Isabella	Streiff	Aras Corporation	IStreiff@aras.com	(751) 591-0482	1396	IStreiff	607920B64FE136F9AB	1
13	Mia	Grubb	Aras Corporation	MGrubb@aras.com	(721) 772-4398	1039	MGrubb	607920B64FE136F9AB	1



Our First Example: Input Data from CSV

The Aras Batch Loader tool is a utility for loading data from a flat file into Aras Innovator. This tool transforms the flat file data into AML for loading directly into Aras Innovator, much like an alternative client would communicate with the Innovator Server. Adaptive Markup Language (AML) is an extension to XML that sends requests to the Aras Innovator Server to work with items.

In this example, we will batch load New User data into the Innovator “User” ItemType.



Try it... Examine the Input Data File

1. Locate the NewUsers.csv file provided for this exercise:
C:\TrainingFiles\BatchLoaderFiles\NewUsers.csv
2. Open the file and notice the columns. These columns will map to properties in the Innovator “User” ItemType.
3. Notice the first row is a Header Row, as this information will become a configuration setting.
4. Close the CSV file, do NOT Save Changes.

Example #1: Destination User ItemType

- User ItemType Properties



5 | © 2018 Aras

Our First Example: Destination User ItemType

In this example, we will batch load New User data into the Innovator “User” ItemType. So, let’s open the User ItemType Form, as an Administrator, to investigate the available properties.

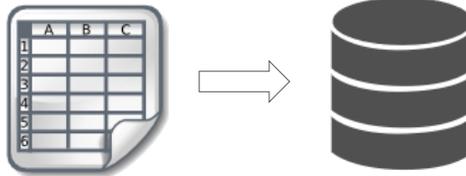


Try it... The User ItemType as the Data Destination

1. Login to Aras Innovator as User: admin, Password: innovator, Database: Solutions11.
2. In TOC > Administration > Users, open the user Helen Toomey.
3. Notice the properties available for User Items. Our input data will map to these User properties.
4. Close the user Helen Toomey.
5. Minimize the Innovator window, in preparation for running the BatchLoader application in MS-Windows.

Reviewing Batch Loader Features

- Separate Executables designed to import data from external flat files
- Transfers data into AML statements to load new Items
- Two modes available
 - MS-Windows Application
 - AML Template
 - Command Line
 - Configuration File



Reviewing Batch Loader Features

The Aras Batch Loader tool is a utility for loading data from a flat file into Aras Innovator. This tool transforms the flat file data into AML for loading directly into Aras Innovator, much like an alternative client.

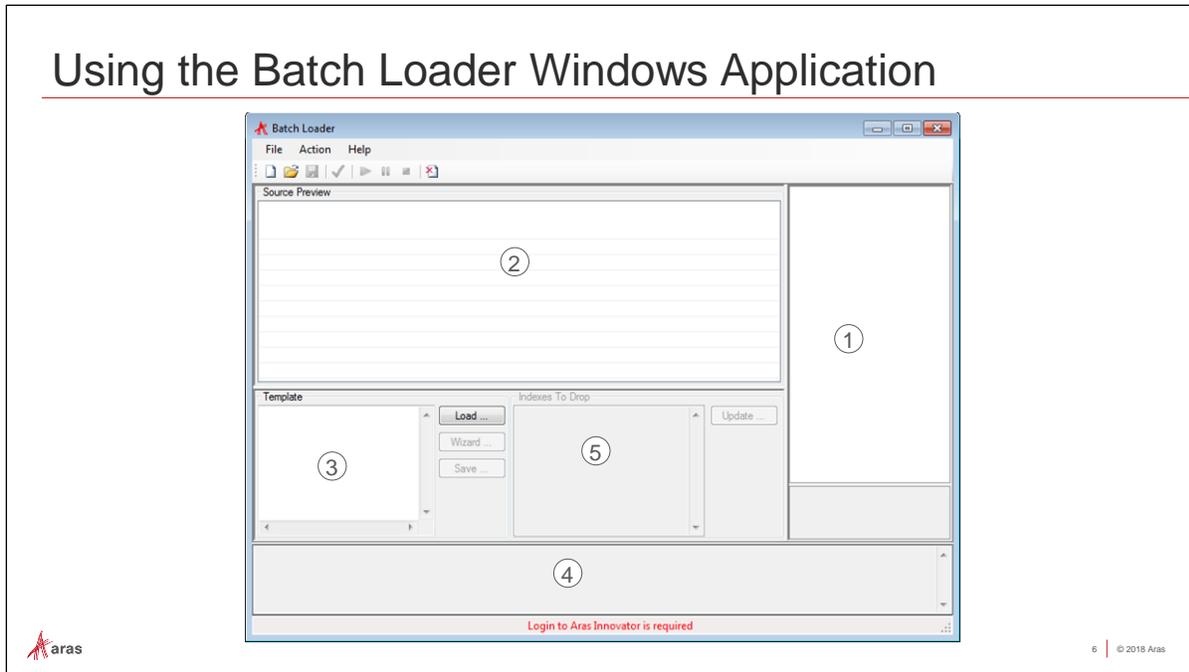
The Batch Loader has two distinct modes for loading data. The first mode, the Batch Loader GUI, allows the user to set the required parameters interactively prior to loading the data. This GUI is designed to help users who are new to AML load data into Aras Innovator, by providing an interface that provides feedback on how the AML will be written before applying it to the database.

The second, more direct method is through executing the Batch Loader utility at the command line. This allows for rapid data loading into an Aras Innovator instance based upon a configuration pre-defined in an xml file. The use of the command line executable makes it suitable for single use, or to run repeatedly using a batch job with a Scheduler.

Note

The Batch Loader is a subscriber only tool. You will need to have a Subscriber Innovator License in order to operate the tool, in either mode.

Using the Batch Loader Windows Application



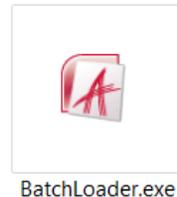
Using the Batch Loader Windows Application

The Batch Loader GUI allows the user to set the required parameters interactively prior to loading the data. This GUI is designed to help users who are new to AML load data into Aras Innovator by providing an interface that provides feedback on how the AML will be written before applying it to the database.



Try it... Start the Batch Loader Windows Application

1. Locate and run the provided application
C:\Program Files (x86)\BatchLoader\BatchLoader.exe
2. Select the menu File > New to start a new configuration.
This configuration can be saved for reuse into a file containing the settings from the Configuration Pane.
3. We will begin in the Configuration Pane.



The Batch Loader GUI window is divided into 5 areas:

- ① **Configuration Pane** - You define the file to be processed as well as appropriate parameters in this pane.
- ② **Source Preview Pane** - Shows a preview of the flat file data that will be loaded into the Innovator database.
- ③ **Template Pane** - The AML Template is displayed in this pane. AML templates are used to build AML instructions for the server to process the flat file data.
- ④ **Status Pane** - Status messages are presented in the status pane as the tool processes a file.
- ⑤ **Indexes to Drop** - To improve performance on very large imports, Database Administrators can disable database indexes using an alter index statement in SQL Server. Using this setting is beyond the scope of this session.

The Configuration Pane

①

Database Options	
Server	http://localhost/innovator11
Database	Solutions11
User	root
Load Options	
DataFilePath	C:\TrainingFiles\BatchLoaderFiles\NewUsers.csv
Delimiter	,
WorkerProcesses	1
Threads	1
LinesPerProcess	100
Encoding	Unicode (UTF-8)
FirstRow	1
LastRow	-1
Log Options	
LogFilePath	C:\TrainingFiles\BatchLoaderFiles\DataLoad.log
LogLevel	3
Preview Options	
PreviewRows	10
MaxColumns	10
FirstRowsColumnNames	True

Comma delimiter

- Save As .ibl file for Reuse



The Configuration Pane

In the BatchLoader Configuration Pane, you configure options such as the data file to be processed, the data delimiter character and other batch import settings.



Try it... Fill in Options in the Configuration Pane

1. Fill in the following options in the Configuration Pane:

Database Options	Server:	http://localhost/Innovator11
	Database:	Solutions11
	User:	root
Load Options	DataFilePath (browse...):	C:\TrainingFiles\BatchLoaderFiles\NewUsers.csv
	Delimiter (type in):	, [comma]
Log Options	LogFilePath (browse...):	C:\TrainingFiles\BatchLoaderFiles\DataLoad.log
	LogLevel:	3
Preview Options	FirstRowsColumnNames:	True

2. Notice the data from the CSV file displays as columns in the Preview Pane.
3. Save the configuration for future reuse by selecting the menu File > Save. The configuration file will have an .ibl file extension.

Note

This configuration has already been saved in C:\TrainingFiles\BatchLoaderFiles\ImportNewUsersConfiguration.ibl.

Option Details

Server – The connection URL for Aras Innovator. If all the defaults were taken during the Innovator installation, the path should be something like: `http://localhost/InnovatorServer`. If unsure, please check in IIS to get the exact path. This URL should not include reference to the `/Client` folder

Database – The database to which the data will be loaded. Selecting this field after defining the connection URL will make this a pick list of available databases.

User – The user login to be used for connecting to and loading data into the database.

DataFilePath – The fully qualified path to data file that contains the data to be loaded into the database. In our example, this is the `AtomicElements.csv` file.

Delimiter – The delimiter used to separate data, usually a tab (`\t`), or a space (), or a comma (`,`).

WorkerProcesses – The number of worker processes to be used by the Batch Loader while loading data. Recommend using the default of 1.

Threads – The number of threads per worker process. Recommend using the default of 1.

LinesPerProcess – The number of lines in the data file that will be loaded by a single worker process. If the worker process finishes processing all its lines and the data file has more lines to be processed, then a new worker process will be started.

Encoding – Encoding (or codepage number) of data file

FirstRow – The number of the row where the actual data starts. Sometimes the first row is used for row headings. In that case, the data will start in the second row. (See `FirstRowsColumnNames` property below.)

LastRow – The number of the row where the actual data stops. Default of -1 indicates that the file should be read until the end of the file

LogFilePath – Specify the full pathname of the log file where all information and errors are to be written by the Batch Loader.

LogLevel – The Level of detail included in the logging.

Low, recommended for automated jobs with low risk on failure. Details about start and stop, and how many items succeeded.

Medium, recommended for use while developing new Batch load job. Logs details about failure, as well as details logged in low mode.

High, recommended for debugging. Provides detail and AML about every line loaded.

PreviewRows – The number of rows visible in the Preview Pane

MaxColumns – The number of columns in the Preview Pane.

FirstRowsColumnNames – When set to True, the Batch Loader starts parsing the data file from the second row after the `FirstRow` value.

The Preview Pane

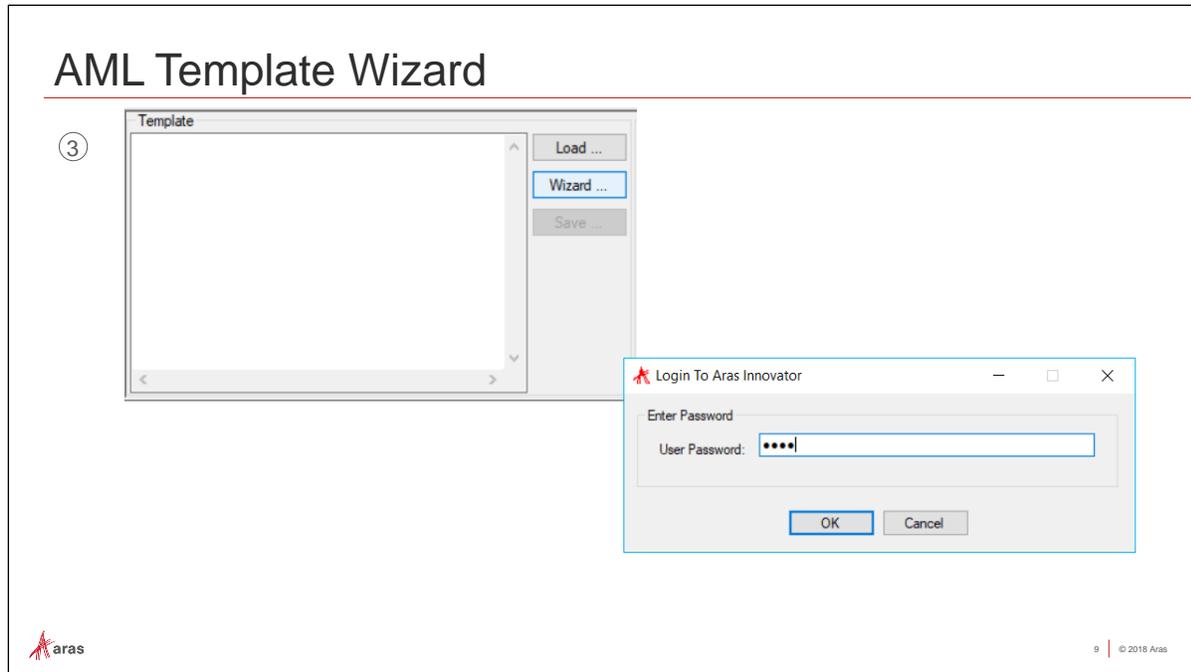
②

Source Preview						
First Name	Last Name	Company Name	Email	Telephone	Employee#	LoginName
James	Hazen	Aras Corporation	JHazen@aras.c...	(710) 030-6400	1693	JHazen
Benjamin	Femandes	Aras Corporation	BFemandes@ar...	(615) 498-6418	1664	BFemandes
Jacob	Callas	Aras Corporation	JCallas@aras.com	(226) 056-4933	1342	JCallas
Michael	Galison	Aras Corporation	MGalison@aras....	(665) 895-8135	1604	MGalison
Elijah	Roof	Aras Corporation	ERoof@aras.com	(812) 553-6487	1446	ERoof
Ethan	Winther	Aras Corporation	EWinther@aras....	(138) 605-3362	1470	EWinther
Emma	Wechsler	Aras Corporation	EWechsler@ara...	(140) 341-3667	1629	EWechsler
Olivia	Rotnitzky	Aras Corporation	ORotnitzky@ara...	(989) 809-4012	1333	ORotnitzky
Ava	Duggan	Aras Corporation	ADuggan@aras....	(669) 171-3553	1404	ADuggan
Sophia	Coxson	Aras Corporation	SCoxson@aras....	(132) 354-5599	1745	SCoxson



The Preview Pane

When the options are filled into the Configuration Pane, your batch data will display as columns in the Preview Pane. This shows a preview of the flat file data arranged in columns, which will be loaded into the Innovator database.



The AML Template Wizard

Using the BatchLoader Template Wizard is a quick and easy way to configure and map the input data to the destination properties. Begin in the Template Pane to start the Wizard.



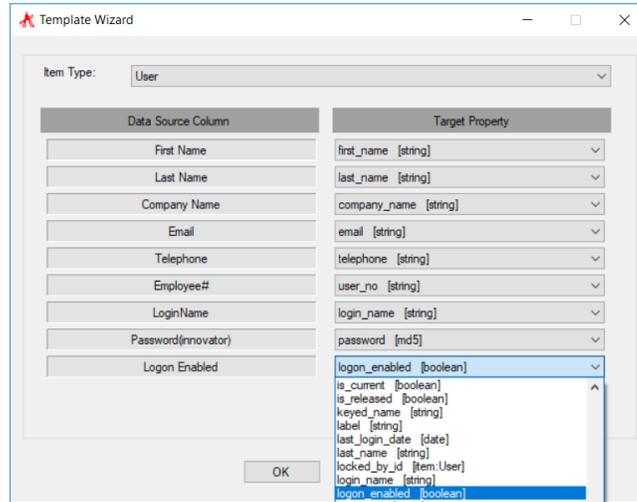
Try it... Starting the Template Wizard

1. In the Template Pane, press the Wizard button to start the data mapping wizard.
2. You will be prompted to enter a password for the user specified in the Configuration Panel, before you can begin using the Wizard.

Enter the Password: innovator for the User: root.

Mapping Properties with the Wizard

- Select Item Type: User
- Map Data Source Columns to Target Properties
- Data Types
 - [string]
 - [date]
 - [boolean]
 - [Item:]
 - [md5]



Mapping Properties with the Wizard

The next step is to set up the data mappings from the values in the input data file to the Item properties in the Innovator database. We will map the columns from the NewUsers.csv data input file to the User ItemType properties.



Try it... Using the Template Wizard to Map Properties

1. When the Template Wizard opens, select the ItemType to indicate the type of Items to be created from the imported data. Choose the ItemType: User.
2. Use the Target Property dropdown list to choose a target property for each Column in the delimited flat file.

First Name	maps to	first_name [string]
Last Name	maps to	last_name [string]
Company Name	maps to	company_name [string]
Email	maps to	email [string]
Telephone	maps to	telephone [string]
Employee#	maps to	user_no [string]
LoginName	maps to	login_name [string]
Password(innovator)	maps to	password [md5]
Logon Enabled	maps to	logon_enabled [boolean]

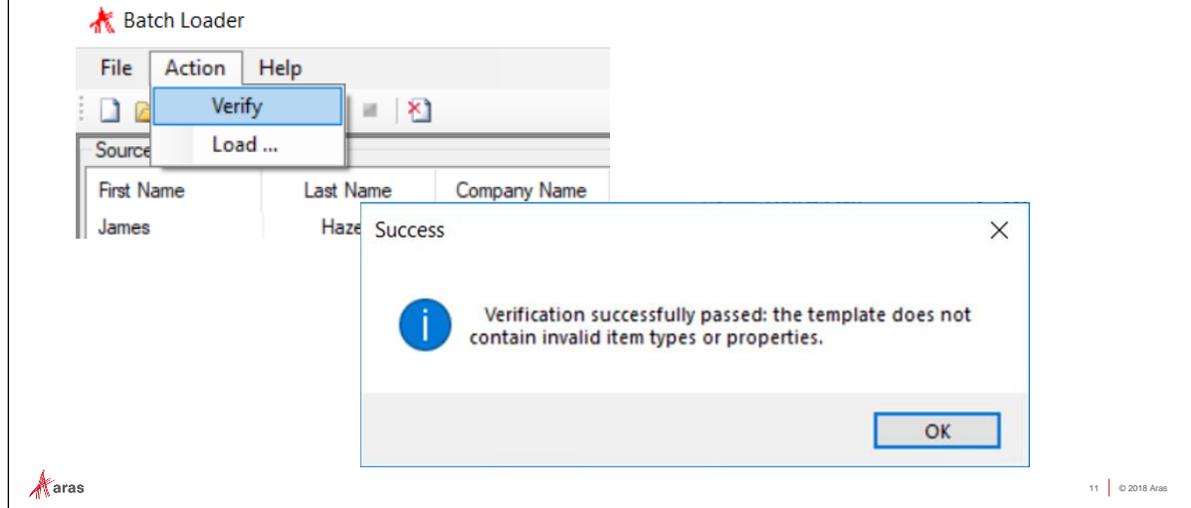
3. Press OK when mapping is complete.

Note

The type of data in each column of the input data file must be compatible with the data type of the selected Target Property within Innovator.

Verifying the Template

- Use Verify Action to check template for problems



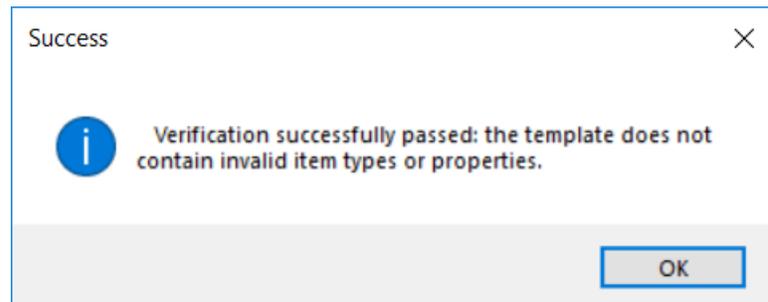
Verifying the Template

Before starting the batch load import, we will verify the template. This verification step checks for invalid Item Types, invalid Property names and performs a basic syntax check. Any error messages will display in a message box. If no errors are found, the Success message appears.



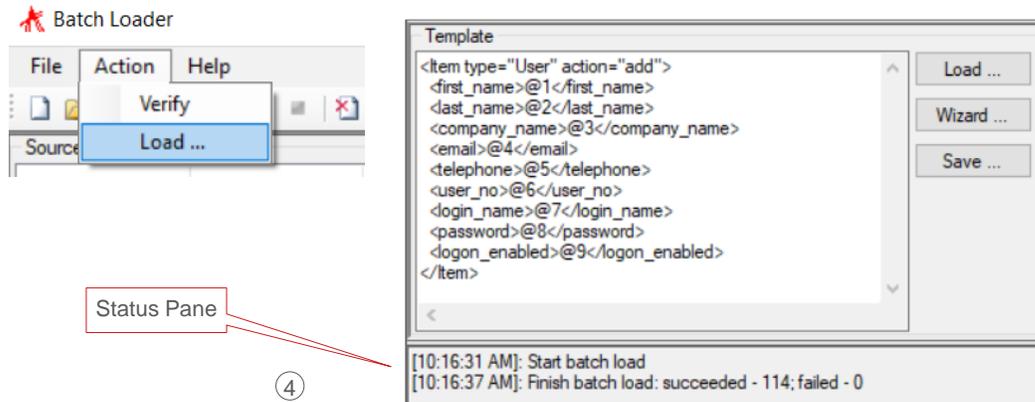
Try it... Verify the Template

- Select the menu Action > Verify to initiate verification.
- You will see a Success message after verification. If not, correct the template settings and verify again.
- Click OK to clear the Success message.



Loading Data and Viewing the Status Pane

- Load Action



Loading Data and Viewing the Status Pane

Use the Load Action to initiate the batch import process. The Status Pane displays the data, as it is imported and indicates success or failure.



Try it... View the Status Pane while the data processes

1. Select the menu Action > Load... to initiate the data load.
2. Observe the Status Pane as the data processes. You should see a success message with the number of rows successfully processed, when the batch load is complete.

Item Entries and Log File

- New entries in User

Properties

User

Created By: Super User
 Created On: 2/1/2019
 Modified By: Super User
 Modified On: 2/1/2019
 Locked By:
 Major Rev: A
 Generation: 1
 State:

Log Name	First Name	Last Name	Employee #	Email	Telephone
admin	Innovator	Admin		admin@aras.com	
ADuggan	Ava	Duggan	1404	ADuggan@aras.com	(669) 171-3553
BFernandes	Benjamin	Fernandes	1664	BFernandes@aras.com	(615) 498-6418
EFabricus	Eugen	Fabricus	1061	EFabricus@aras.com	(988) 667-4246
ERoof	Elijah	Roof	1446	ERoof@aras.com	(812) 553-6487
EWechsler	Emma	Wechsler	1629	EWechsler@aras.com	(140) 341-3667
EWindsch	Erdmute	Windsch	1090	EWindsch@aras.com	(883) 266-8190
EWinther	Ethan	Winther	1470	EWinther@aras.com	(138) 605-3362

- Check the batch import log file

C:\TrainingFiles\BatchLoaderFiles\DataLoad.log

```
[10:16:36 AM Worker process for lines up to 114 (Thread #1)]: <SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" />
[10:16:36 AM Worker process for lines up to 114 (Thread #1)]: Finished
processed successfully - 14
average processed request time - 14.5051071428571 ms
failed to process - 0
total time - 0.2030715 sec
[10:16:37 AM]: Finish batch load: succeeded - 114; failed - 0
```



13 | © 2018 Aras

Item Entries and Log File

When the batch import completes, you will see the new entries in the Innovator User Item. In addition, when the import is completed, a data log (configured in the Configuration Pane) is available for review.



Try it... View the newly populated data in Innovator; check the Log File

1. Return to the Aras Innovator client as User: admin, Password: innovator, Database: Solutions11.
2. In TOC > Administration > Users, open the Users ItemType.
3. In the Users Search Grid, click Run Search to confirm that the data from the CSV file has been imported.
4. In Windows Explorer, use the full pathname specified in the BatchLoader Configuration Panel to open the Batch Import log file C:\TrainingFiles\BatchLoaderFiles\DataLoad.log:

```
[10:16:36 AM]: Start batch load
```

...

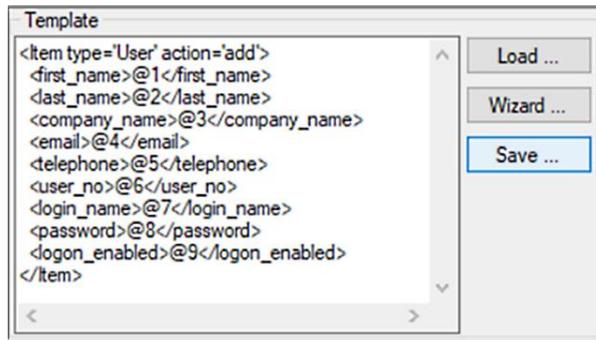
```
[10:16:36 AM Worker process for lines up to 114 (Thread #1)]: Finished
processed successfully - 14
average processed request time - 14.5051071428571 ms
failed to process - 0
total time - 0.2030715 sec
```

```
[10:16:37 AM]: Finish batch load: succeeded - 114; failed - 0
```

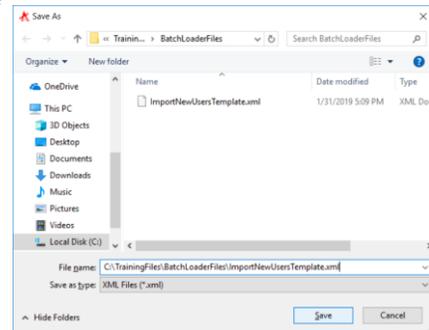
5. Close the log file.

BatchLoader Template

- AML Template



- Save As .xml file for Reuse



BatchLoader Template

The BatchLoader Template is used to indicate to the server how data should be added (or merged) into the Innovator database. This template uses standard AML statements, and can be saved for reuse.



Try it... Save the Template for Reuse

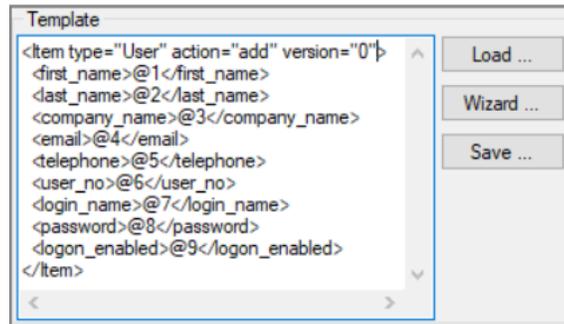
1. Click the Save... button in the Template pane to save your Template.
2. Save the Template as an .XML file.

Note

This template has already been saved in C:\TrainingFiles\BatchLoaderFiles\ImportNewUsersTemplate.xml

Working with AML Templates

- Templates indicate how data should be added or merged into the Innovator Server
 - Standard AML
 - @ followed by a number indicates column mapping
- Edit in the Template Pane
 - Type using AML
- Enhancements:
 - Importing List Items
 - Importing File Items
 - Server Methods called during Import
 - Versioning off



Working with AML Templates

Since the Import Template is written with standard AML, you can make many enhancements to your import template. For example:

- Import to an existing List


```
<Item action="add" type="Value">
<label>@1</label>
<value>@2</value>
  <source_id>
    <Item action="get" type="List">
      <name>Warehouse Locations List</name>
    </Item>
  </source_id>
</Item>
```
- Import File Items using the Batch Loader


```
<Item Type="File" action="add">
```
- Server Methods called during import


```
<Item type="Part" action="CalculatePartCost">
```
- Turning off versioning can improve performance during batch import. If the ItemType versioning attribute is 0, then do not version an Item on update. The default is 1, which is version the Item on update, if it's a versionable Item.


```
<Item type="Part" action="edit" version="0"
  where="[Part].item_number='C3801-00012'" >
```

Example #2: Importing Relationships

- Parent Parts:

- All Assembly Parts

Part Number	Name	Type	Child Part	Quantity
C3801-40128	Pad installed in the scanner	Assembly	LBL-ENV-555	1
C3801-60015	Pick roller assembly	Assembly	LBL-ENV-555	
C3801-60051	Pick roller assembly	Assembly	LBL-ENV-555	
C3801-60167	Plunger assembly	Assembly	LBL-ENV-555	
C3801-80020	Cable assembly	Assembly	LBL-ENV-555	
C3801-80069	Cable assembly	Assembly	LBL-ENV-555	
C3803-60013	Rear panel power socket/pt	Assembly	LBL-ENV-555	
C4704-60255	Front (Control) panel and ce	Assembly	LBL-ENV-555	
C4723-69096	Carriage assembly	Assembly	LBL-ENV-555	
C4723-69097	Carriage assembly	Assembly	LBL-ENV-555	
C5316-60000	PC Board Kit	Assembly	LBL-ENV-555	
C5316-60108	Scanner assembly	Assembly	LBL-ENV-555	

- New Child Part:

- Part Number: LBL-ENV-555
- Name: Label – Environmental
- Type: Component
- Long Description: Environmental Compliance Label
- Effective Date: 6/1/2019

Part

Part Number: LBL-ENV-555 Revision: A State: Preliminary Assigned Creator: []

Name: Label - Environmental Designated User: []

Type: [] Unit: EA Make / Buy: Make Cost: [] Effective Date: 6/1/2019 12:00:00 AM

Long Description: Environmental Label

Created By: []
 Created On: []
 Modified By: []
 Modified On: []
 Locked By: []
 Major Rev: []
 Release Date: []
 Effective Date: []
 Generation: []
 State: []

Second Example: Importing Related Items

The premise here is that there is a new regulation in our industry that requires an Environmental Compliance Label to be included in all Part Assemblies. In preparation for this example, we have already exported all Assembly Parts to a spreadsheet, and added the relationship data to a CSV file.

Now, we will use the Aras Innovator Client to create the new Label part. Then, BatchLoader will import relationships connecting all Assembly Parts (parent) to the new Label part (child).

Try it... Create the Related Item in Innovator

- Return to the Aras Innovator client as User: admin, Password: innovator, Database: Solutions11.
- Navigate to TOC > Design > Parts.
- Click the Create a New Item button on the Toolbar to create a new Part with the following properties:

Part Number:	LBL-ENV-555
Name:	Label – Environmental
Type:	Component
Long Description:	Environmental Compliance Label
Effective Date:	6/1/2019

- Click the green check tool to Save, Unlock and Close the new Part.

Example #2: Importing Relationships

The screenshot shows the BatchLoader configuration window with the following settings:

- Database Options:** Server: http://localhost/Innovator11, Database: Solutions 11, User: root
- Load Options:** DataFilePath: C:\TrainingFiles\BatchLoaderFiles\NewChildPart.csv, Delimiter: ., WorkerProcesses: 1, Threads: 1, LinesPerProcess: 100, Encoding: Unicode (UTF-8), FirstRow: 1, LastRow: -1
- Log Options:** LogFilePath: C:\TrainingFiles\BatchLoaderFiles\Da..., LogLevel: 3
- Preview Options:** PreviewRows: 10, MaxColumns: 10, FirstRowColumnNames: True

The Template Wizard dialog is open, showing the following configuration:

Data Source Column	Target Property
Part Number	source_id [Item:Part]
Name	
Type	
Child Part	related_id [Item:Part]
Quantity	quantity [float]

The Item Type is set to Part BOM. The dialog has OK and Cancel buttons.

Second Example: Importing Relationships

In the BatchLoader Windows application, we will change the input Data File, and run the Template Wizard to the data columns.



Try it... Adjust the Configuration, then Batch Load Relationship data

1. Return to the BatchLoader Windows application.
2. In the Configuration pane, change the DataFilePath. Browse to select the file C:\TrainingFiles\BatchLoaderFiles\NewChildPart.csv.
This CSV file already contains the Parent and Child Relationship data.
3. In the Template Pane, select the Wizard button.
4. Select Part BOM from the Item Type dropdown.
5. Map the columns for the parent Part Number, the Child Part and the Quantity columns. Leave the Name and Type columns unmapped, as they were exported for information only.

Part Number	maps to	source_id [Item:Part]
Name	leave unmapped	
Type	leave unmapped	
Child Part	maps to	related_id [Item:Part]
Quantity	maps to	quantity [float]

6. Select the menu Action > Verify to verify the template settings.
7. Click OK on the Success message.
8. Select the menu Action > Load... to initiate the data load.
9. Return to Aras Innovator to view the newly imported relationship data, by opening any Assembly Part and looking on the Part BOM tab for the Environmental Label.

Example #2: Importing Related Items

- Template for Relationship Data

Part Number	Name	Type	Child Part	Quantity
C3801-40128	Pad installed in the scanner cover assembly	Assembly	LBL-ENV-555	1
C3801-60015	Pick roller assembly	Assembly	LBL-ENV-555	1
C3801-60051	Pick roller assembly	Assembly	LBL-ENV-555	1
C3801-60167	Plunger assembly	Assembly	LBL-ENV-555	1
C3801-80020	Cable assembly	Assembly	LBL-ENV-555	1

Template

```
<Item type='Part BOM' action='add'>
  <source_id>
    <Item type='Part' action='get' select='id'>
      <keyed_name>@1</keyed_name>
    </Item>
  </source_id>
  <related_id>
    <Item type='Part' action='get' select='id'>
      <keyed_name>@4</keyed_name>
    </Item>
  </related_id>
  <quantity>@5</quantity>
</Item>
```

Indexes To Drop

Update ...

[2:15:32 PM]: Start batch load
[2:15:34 PM]: Finish batch load: succeeded - 33; failed - 0

Second Example: Template for Importing Relationships

In the BatchLoader Windows application, the Template can be saved as an XML file for reuse.

Note

This template has already been saved in C:\TrainingFiles\BatchLoaderFiles\ImportRelatedPartsTemplate.xml

Using Command Line BatchLoader

- Use the BatchLoaderCMD.exe executable
- Allows for scheduled imports using previously saved configurations
- Server connection configured using an XML file
- Configuration Template File process import data
- Example BatchLoader Uses:
 - Populate/Update Lists
 - Nightly load of user data
 - For adding new Parts, and Part BOM relationships to existing Parts
 - For adding new Parts with a Part Goal and relationships to existing Parts
 - For adding new documents with attached file
 - For loading File Items in the context of the source item



Using Command Line Mode

The Batch Loader can run from the MS-Windows command line using the BatchLoaderCMD.exe executable. This executable file allows for a single batch import, or for regularly scheduled batch jobs in conjunction with the Innovator Scheduler Service (e.g. adding new Users to the database on a regularly scheduled basis).

BatchLoaderCMD Uses

Combined with the Scheduler Service, the command line Batch Loader can import data at scheduled time intervals.

Running BatchLoaderCMD on Command Line

- **Usage:** BatchLoaderCmd.exe -d {data file} [optional arguments]

where:

-d {data file} - path to a delimiter-separated data file

example:

```
BatchLoaderCMD -d c:\NewChildPart.csv
```

- **Notes:**

Most arguments can be contained in an XML configuration file

File delimiter character must be defined in the XML configuration file



20 | © 2018 Aras

Running BatchLoaderCMD on Command Line

The BatchLoaderCMD executable has no user interface but accepts a number of switch arguments which can provide connection and configuration information.

Usage: BatchLoaderCmd.exe -d {data file} [optional arguments]

where:

-d {data file} - path to a delimiter-separated data file

Optional arguments can either be specified in the command line or in a configuration file:

-c {config file} - path to configuration file; if none specified, default is 'config.xml' in same folder as the .exe

-t {template file} - path to template file; default 'template.xml'

-l {log file} - path to log file

-ll {log level} - verbosity of logging (1 - 3); default 1

-e {encoding} - name of data file encoding; e.g. 'us-ascii'

-s {url} - Innovator server URL

-db {db name} - Database name

-u {user name} - Innovator user login name

-p {user password} - Innovator user password

-th {threads} - Number of threads in a worker process; default 1

-pr {processes} - Number of worker processes; default 1

-lpp {lines} - Lines processed by each worker process; default 1000

-fr {row number} - First row to process in the data file; default 1

-lr {row number} - Last row to process in the data file; default -1

Note

Most of these parameters are optional and are generally included in the xml configuration file. However, the command line arguments will override any values in the configuration file, and the delimiter must be defined in the XML configuration file.

BatchLoaderCMD Configuration File

- ConfigForPartsCMD.XML

```
<BatchLoader>
  <server>http://localhost/Innovator11</server>
  <db>Solutions11</db>
  <user>root</user>
  <password>innovator</password>
  <max_processes>1</max_processes>
  <threads>1</threads>
  <lines_per_process>100</lines_per_process>
  <delimiter>,</delimiter>
  <encoding>utf-8</encoding>
  <first_row>2</first_row>
  <last_row>-1</last_row>
  <log_file>C:\TrainingFiles\BatchLoaderFiles\DataLoad.log</log_file>
  <log_level>3</log_level>
</BatchLoader>
```



21 | © 2018 Aras

BatchLoaderCMD Configuration File

The configuration file that is referenced by the batch load application is a straightforward xml file that defines the parameters for the batch load activity. The configuration file is used to configure the Aras Innovator server and data source, as well as the process parameters.



Try it... Locate and Review the Input Data File and the Configuration File

1. Using Notepad, open the C:\TrainingFiles\BatchLoaderFiles\ConfigForPartsCMD.XML file.
2. Notice the log_file name and location, then close the XML file.
3. Locate the C:\TrainingFiles\BatchLoaderFiles\PartsImportCMD.csv file and open to view the import data. These rows will become new parts that include Atomic Element data.

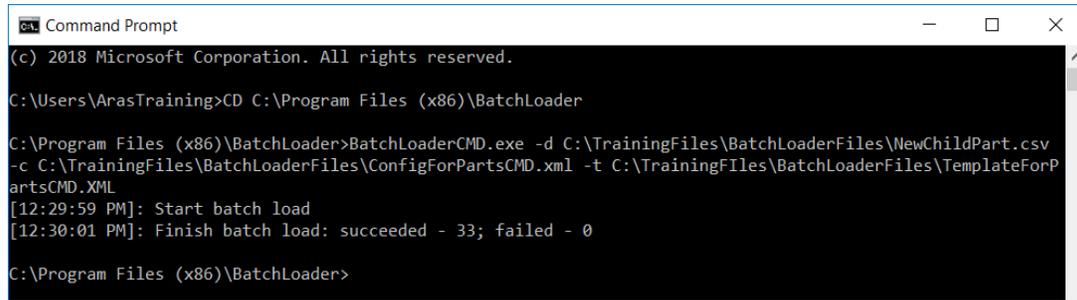
Note

If a template will be used with the command line version of the Batchloader then the <BatchLoader> tags shown above are required. If the template will be used in the windows version, these tags could be removed.

Additional examples are available in the *Aras Innovator Batch Loader* documentation.

Example #3: BatchLoaderCMD on Command Line

```
CMD>CD C:\Program Files (x86)\BatchLoader
CMD>BatchLoaderCMD.exe -d NewChildPart.csv
                        -c ConfigForPartsCMD.xml
                        -t TemplateForPartsCMD.XML
```



```
Command Prompt
(c) 2018 Microsoft Corporation. All rights reserved.
C:\Users\ArasTraining>CD C:\Program Files (x86)\BatchLoader
C:\Program Files (x86)\BatchLoader>BatchLoaderCMD.exe -d C:\TrainingFiles\BatchLoaderFiles\NewChildPart.csv
-c C:\TrainingFiles\BatchLoaderFiles\ConfigForPartsCMD.xml -t C:\TrainingFiles\BatchLoaderFiles\TemplateForPartsCMD.XML
[12:29:59 PM]: Start batch load
[12:30:01 PM]: Finish batch load: succeeded - 33; failed - 0
C:\Program Files (x86)\BatchLoader>
```

Third Example: Import Related Items using BatchLoaderCMD on Command Line

In this example, we will re-use our Template to import Relationship data using Command Line mode.

This example will call the BatchLoaderCMD.exe program, providing New Child Data, which references the newly created Label Part. The Batch Template will locate some Part using the Keyed Name, and create a relationship to the existing Label Part.



Try it... Run the BatchLoaderCMD from the Command Prompt

1. Open a CMD Prompt from MS-Windows.
2. Navigate to the C:\Program Files (x86)\BatchLoader folder.
3. Run the BatchLoaderCMD executable:

```
BatchLoaderCMD.exe
-d C:\TrainingFiles\BatchLoaderFiles\NewChildPart.CSV
-c C:\TrainingFiles\BatchLoaderFiles\ConfigForPartsCMD.XML
-t C:\TrainingFiles\BatchLoaderFiles\TemplateForPartsCMD.XML
```

Note

A text file containing the DOS commands is provided, named: Type in BatchLoadCMD.txt

Copy and paste the two commands into a DOS window.

Example #3: New Relationship Items and Log File

- New Related Items to Assembly Parts BOM

- Check the Log File

C:\TrainingFiles\BatchLoaderFiles\DataLoad.log

```
[12:30:01 PM Worker process for lines up to 33 (Thread #1)]: Finished
processed successfully - 33
average processed request time - 17.9924424242424 ms
failed to process - 0
total time - 0.5937506 sec
[12:30:01 PM]: Finish batch load: succeeded - 33; failed - 0
```



23 | © 2018 Aras

Third Example: New Related Items and Log File

New Child Parts are now stored within Innovator. Since we reused the same input data, you will see a second relationship to the same child Part.



Try it... Locate the Assembly Parts data and review the CMD Batch Log File

1. Return to the Innovator Client as User: admin, Password: innovator, Database: Solutions11.
2. In TOC > Design > Parts use the Search Grid to locate all Assembly Parts.
3. Notice the newly added row in the BOM tab.
4. Using Notepad, open the C:\TrainingFiles\BatchLoaderFiles\DataLoad.log file to review import results of the Command Line import into Part BOM.



Summary

In this unit, you learned how to use the Batch Loader utility to add new data to an Innovator database from a data file.

You should now be able to:

- ✓ Use the BatchLoader Windows Application to import Items and Relationship data
- ✓ Work with AML Templates
- ✓ Run the Command Line BatchLoader using a Template