

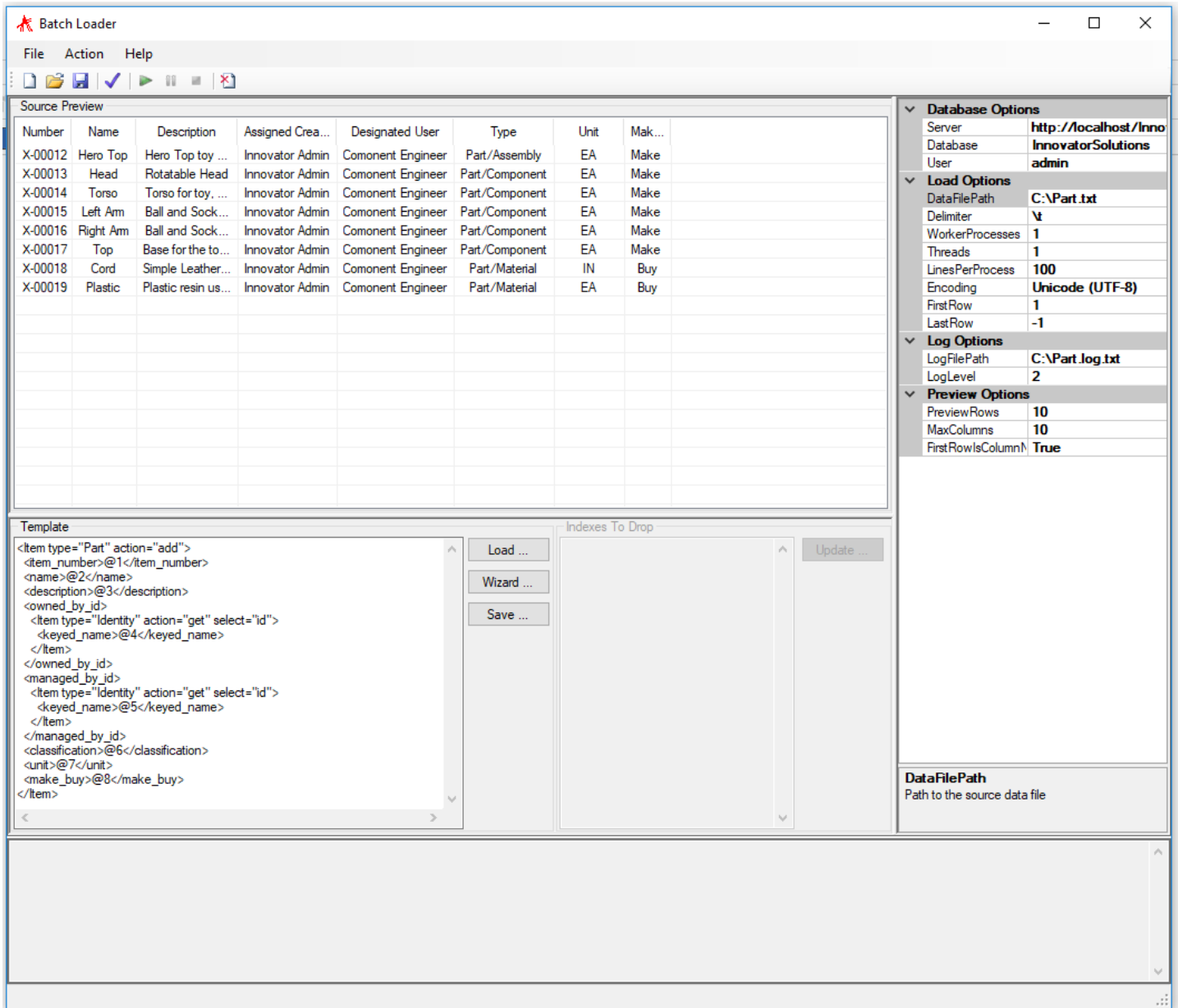
Batch Loader Graphical User Interface

The Batch Loader GUI allows the user to set the required parameters interactively prior to loading the data. This GUI is designed to help user 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. For advanced use of AML with this tool, it is recommended you take that Aras Innovator API class, to familiarize yourself with the Adaptive Markup Language (AML).

Description of Visual Batch Loader

To start the Batch Loader UI run the BatchLoader.exe file:





The following is a list of toolbar icons, their corresponding menu items, and a brief explanation of what their function is.

Toolbar Icons

Menu Description



File --> New	Starts a new configuration which can be later saved in an .ibl file. The configuration includes pointers to the Aras Innovator server and the data file to be parsed with specific parsing instructions.
File --> Open	Opens an existing configuration file (.ibl). These files contain a specification of data mappings templates, the actual data file to be used, as well as auxiliary information, such as the server pointer, the log file specification, and other settings.
File --> Save	Saves the current configuration file to a specified name and location. The configuration file contains a full specification of data mappings, the actual data file to be used, as well as auxiliary information, such as the server pointer, the log file specification, and other settings.
Actions -- > Verify	Verifies the AML template to be loaded.
Actions -- > Load	Loads the data into the specified data base, according to the data mappings and other instructions created by the user.
Pause button	Pauses the database load. Available only after the Load is activated and before it completes.
Stop button	Stops the database load. Available only after the Load is activated and before it completes.
Clear button	Clears the log window.

Loading Simple Item Types

Let's work through an example of a loading some Parts data into a database. As we go through this example, the Specifications Window parameters are explained.

Below is a sample data file that we use in this example. It is stored in Parts.txt. Although created in Excel, it was saved out as a tab delimited text file to be used with the Batch Loader.



Number	Name	Assigned Creator	Designated User	Unit	MakeBuy	Classification
M112-B000002	STEERING, HYDRAULIC	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M112-B000003	STEERING, HYDRAULIC, COUGAR	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M112-B000005FP	STEERING - HYDRAULIC	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M113-B000001	STEERING, COLUMN	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M113-B000003FP	STEERING COLUMN	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M115-B000005	WHEELS & TIRES 4X4	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M115-B000010	WHEELS & TIRES 6X6	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M115-B000014FP	WHEEL AND TIRES	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M120-B00LRIP	ENGINE - LRIP, MECHANICAL	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M120-B000002	ENGINE-MECHANICAL	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M120-B000007	ENGINE-MECHANICAL	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M120-B000010	ENGINE-MECHANICAL	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M120-B000011	ENGINE-MECHANICAL	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M120-B000016FP	ENGINE-MECH	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M120-CHEETAH	ENGINE-MECHANICAL	Innovator Admin	Innovator Admin	EA	MAKE	Assembly
M125-B00LRIP	TRANSMISSION, MECH	Innovator Admin	Innovator Admin	EA	MAKE	Assembly

To load the Parts.txt into a database:

1. Start the BatchLoader.exe
2. Select **New** from the main Tool Bar. Notice that the Configuration Pane appears differently, as shown below. All these properties and their values are saved in the configuration file for future use.

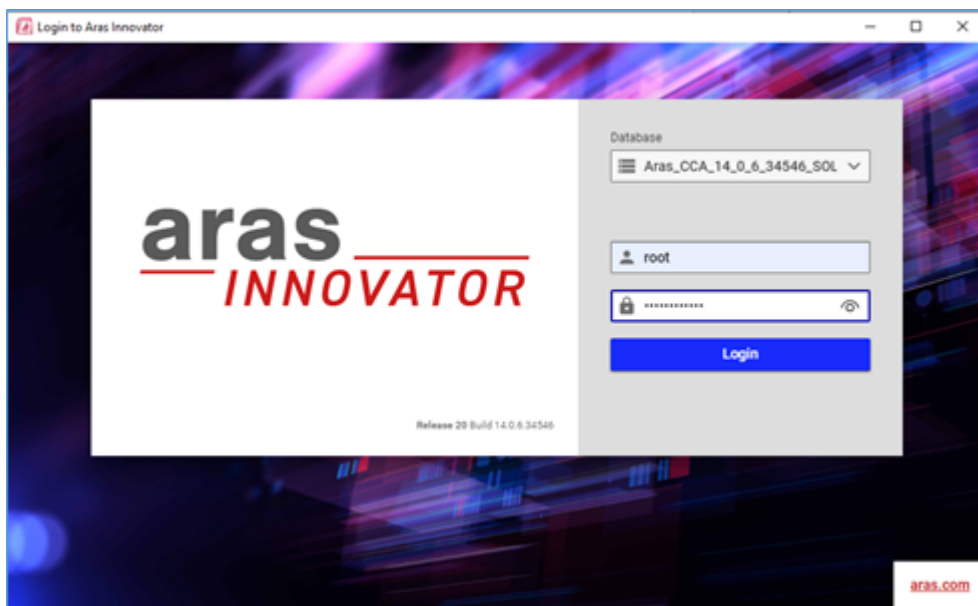


Database Options	
Server	http://localhost/InnovatorServer
Database	InnovatorSolutions
User	root
Load Options	
DataFilePath	C:\ArasTemp\Datafile.txt
Delimiter	\t
WorkerProcesses	1
Threads	1
LinesPerProcess	100
Encoding	Unicode (UTF-8)
FirstRow	1
LastRow	-1
Log Options	
LogFilePath	C:\ArasTemp\Logs\bllog.log
LogLevel	2
Preview Options	
PreviewRows	10
MaxColumns	20
FirstRowIsColumnNames	True

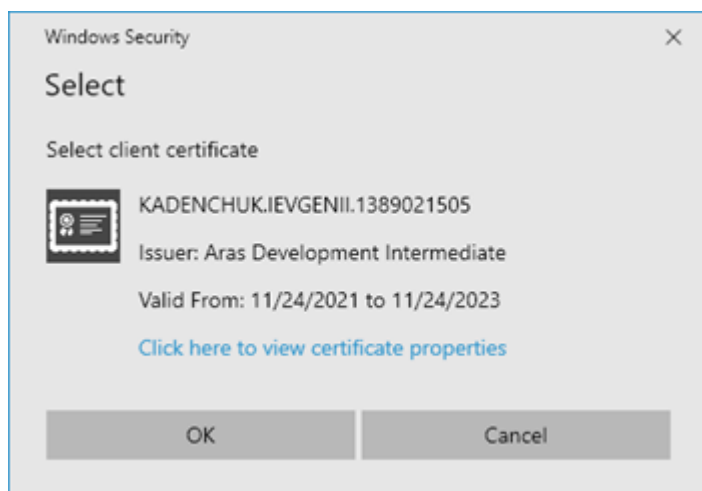
3. The following are explanations of the properties of this window:

- Server** – The connection URL for Aras Innovator. If all the defaults were taken during the Aras Innovator installation, the path should be something such as: http://localhost/InnovatorServer. If unsure, check in IIS to get the exact path. This URL should not include reference to the /Client folder
Please, note that there are no ‘user’ and ‘password’ fields available. Batch Loader uses embedded browser to process login to Aras Innovator server.





In case when Aras Innovator server is configured for Client Certificate Authentication, Batch Loader shows additional dialog for certificate selection. User can select appropriate certificate that will be used for further authentication flow.



- **DataFilePath** – The fully qualified path to data file that contains the data to be loaded into the database. In our case this is C:\Parts.txt
- **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 are 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 is 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 starts in the second row. (See FirstRowIsColumnNames 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** – The fully specify the name 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.
 - 1 – Low, recommended for automated jobs with low risk on failure. Details about start and stop, and how many items succeeded.
 - 2 – Medium, recommended for use while developing new Batch load job. Logs details about failure, as well as details logged in low mode.
 - 3 – 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.
- **FirstRowIsColumnNames** – When set to True, the Batch Loader starts parsing the data file from the second row after the FirstRow value.

4. Let's fill out the information in the Configuration Pane as follows:

- FileName – C:\Parts.txt
- Server – http://localhost/InnovatorServer
- LogFilePath – C:\Parts.log
- FirstRowIsColumnNames – True

This takes care of all the auxiliary properties and settings. The next step is to set up the data mappings from the values in the data file to the items and properties in the database. Notice that the data file contains 8 columns – Number, Name, Description, Assigned Creator, Designated User, Type, Unit, and Make/Buy. So, we have to specify that we are importing instances of Part with 8 property values.

To set up the data mappings using the Batch Loader UI, there are two options. First, you can use the template wizard to build a basic template for loading. Or second, you can use a predefined template

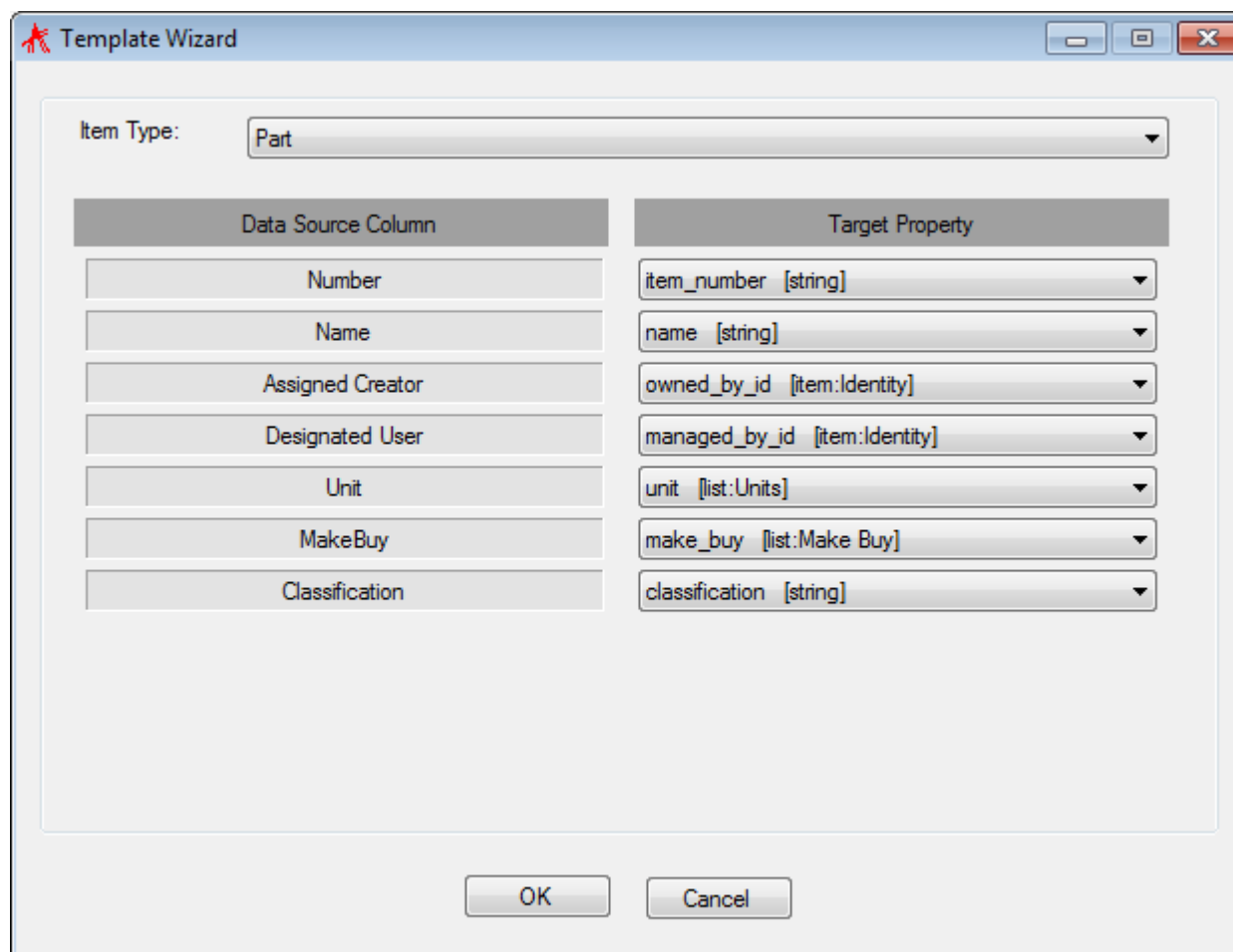


loaded from a file. For simplicity's sake, we walk through using the wizard. Creating templates is covered in the command line execution of the batch loader. Or finally, you may edit the AML template directly in the Template Pane.

Important

Changes made in the AML template during a session are saved only if you use the Save button next in the AML Template pane.

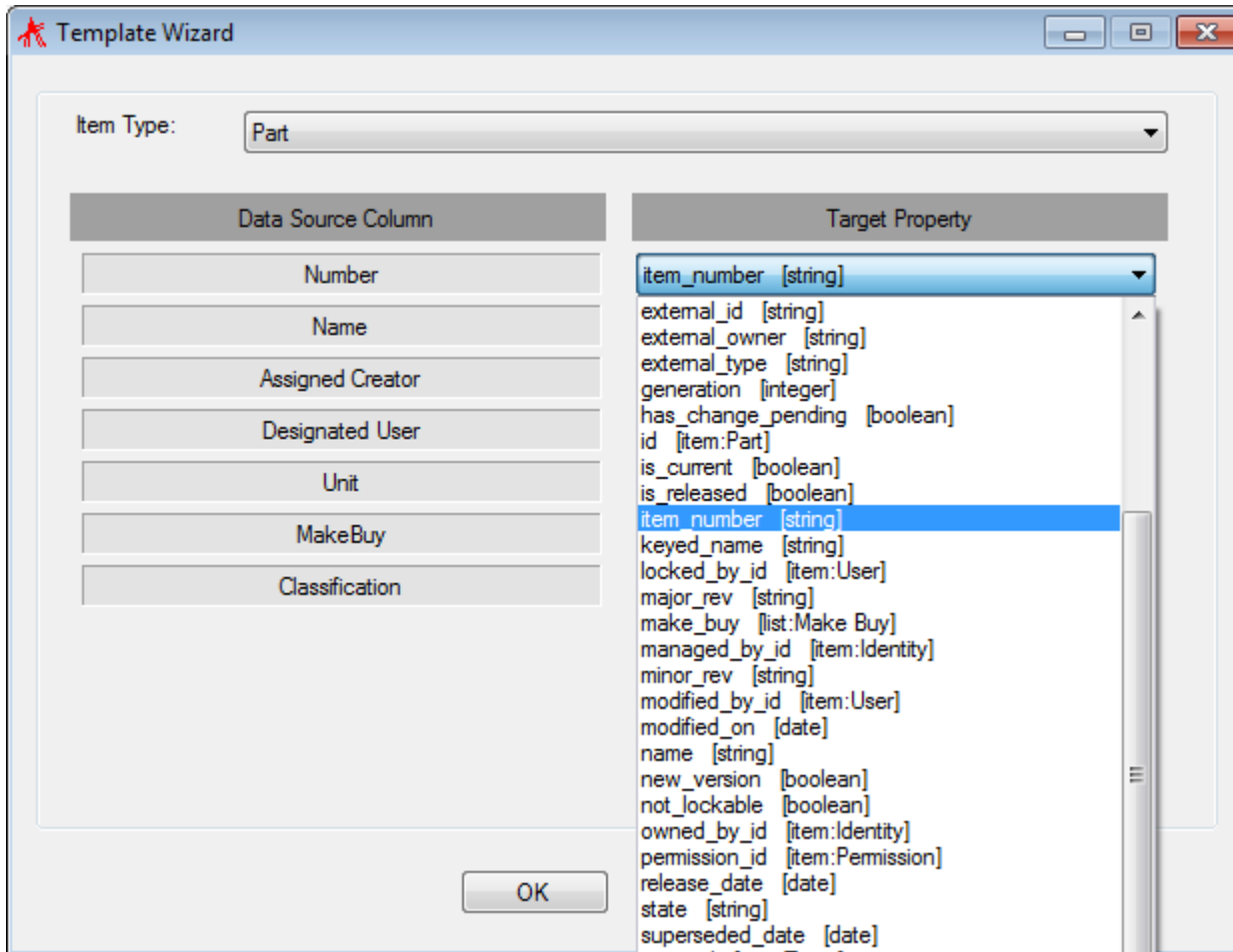
5. From the template pane, select **Wizard**. A new dialog is brought up for data mapping:



Data Source Column	Target Property
Number	item_number [string]
Name	name [string]
Assigned Creator	owned_by_id [item:Identity]
Designated User	managed_by_id [item:Identity]
Unit	unit [list:Units]
MakeBuy	make_buy [list:Make Buy]
Classification	classification [string]

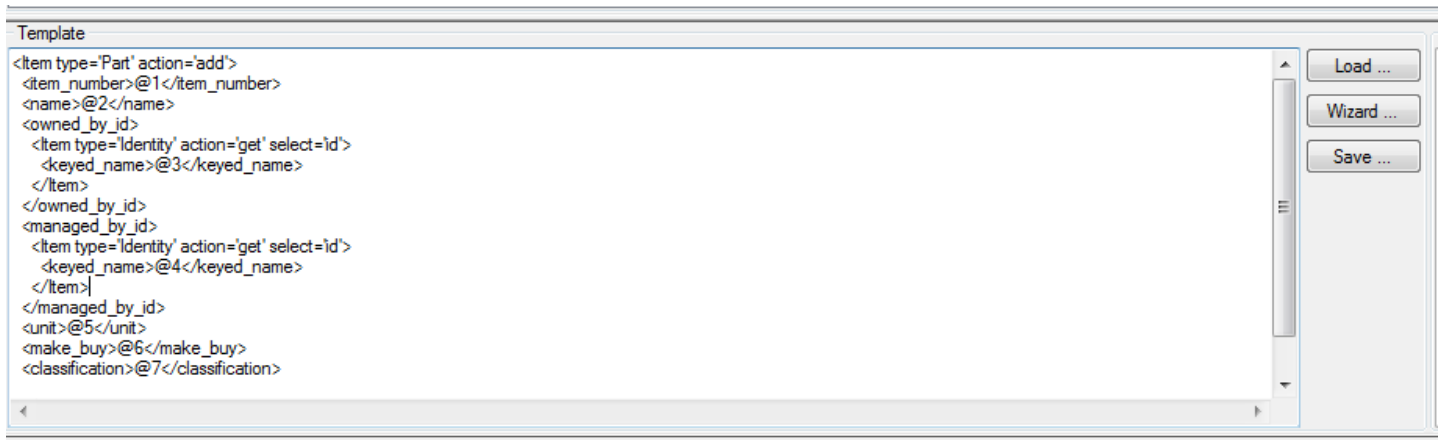
6. Select the name of the ItemType from the first dropdown, Part in our case.





7. Select **Part** from the Item Type scroll list.
8. Next, you need to map each column in the data file to each corresponding property of the ItemType. Click on the down arrow of the Target Property to select the property that receives the values in this column. Any properties of type Item are mapped by keyed name of the target Item.
9. Click **OK** once all mappings are finished. You should see the mappings displayed in the Batch Loader template pane.





10. Click **Save** in the main tool bar and save this configuration file. The configuration file (with an .ibl extension) saves all the Configuration Pane settings, such as the server path, and the data file name, as well as all the data mappings.
11. Click **Verify** in the main tool bar to make sure that there are no errors in the AML template.
12. Click **Load**.
13. Log into Aras Innovator, using the same database that you specified for the data load.
14. Select **Design>Partsand** click the Search icon. The parts we loaded should appear.



Parts

Search Clear Simple | Current Today

Part Number	Revi...	Name	Type	State	Cost	Chang...
0460-2536	A	Edge wire saddle for Y-axis bra...	Component	Preliminary	2.5000	☐
0515-4700	A	Screw (Plastic) - M3x12.30	Component	Preliminary	0.5000	☐
0957-2229	A	Power module (wall mount)-	Component	Preliminary	4.0000	☐
1818-6171	A	4MB EDO (Extended Data Outp...	Component	Preliminary	3.5000	☐
1818-6172	A	8MB EDO (Extended Data Outp...	Component	Preliminary	3.5000	☐
1990-1972	A	Optical sensor	Component	Preliminary	6.7500	☐
5063-1256	A	IEEE 1284 Bi-Tronics parallel c...	Component	Preliminary	2.2500	☐
5063-1257	A	IEEE 1284 Bi-Tronics parallel c...	Component	Preliminary	2.2500	☐
8120-1378	A	Power cord (Jade Gray)	Component	Released	2.5000	☐
8120-8341	A	Power cord (Quartz Gray) -	Component	Preliminary	2.5000	☐
8120-8384	A	Power cord (Flint Gray)	Component	Preliminary	2.5000	☐
8120-8900	A	Power cord (Flint Gray) -	Component	Preliminary	2.5000	☐
8121-0811	A	Telephone cable (2-wire)	Component	Preliminary	1.2500	☐
8121-0868	A	Universal Serial Bus (USB) inter...	Component	Preliminary	2.1000	☐
8121-1036	A	Universal Serial Bus (USB) inter...	Component	Preliminary	2.1000	☐
9170-1687	A	Ferrite core	Component	Preliminary	3.9800	☐

Loading Relationships

Loading relationships into the database using the Batch Loader is identical to loading the Item instances. The Configurations Pane parameters, such as the data file name and the Server fully specified path, must be completed. Alternatively, you can use an .ibl configuration file that may have these parameters previously set. The difference is of course in the data mappings. Let's look at the following data file:



Parent Part	Child Part	Quantity
0105-XX1-001	0003-MM6-001	3
0105-XX1-001	0005-MM6-001	5
0105-XX1-001	0006-MM6-001	8
0105-XX1-001	0001-MM6-001	4
0105-XX1-001	0007-MM6-001	2
0105-XX1-001	0014-GG6-SP006	1
0105-XX1-001	0014-GG6-SP1307	3
0105-XX1-001	0014-GG6-SP1308	6
0108-XX1-001	0005-MM6-001	3
0108-XX1-001	0001-MM6-001	4

To set the data mappings:

1. Start the **BatchLoader.exe**
2. Select **New** from the main Tool Bar.
3. Fill out the information in the Configuration Pane as follows:
 1. FileName – C:\BOM.txt
 2. Server – http://localhost/InnovatorServer
 3. Database – InnovatorSolutions
 4. User - admin
 5. LogFilePath – C:\BOM.log
 6. FirstRowIsColumnNames – True
4. From the template pane, select **Wizard**. A new dialog is brought up for data mapping:



Template Wizard

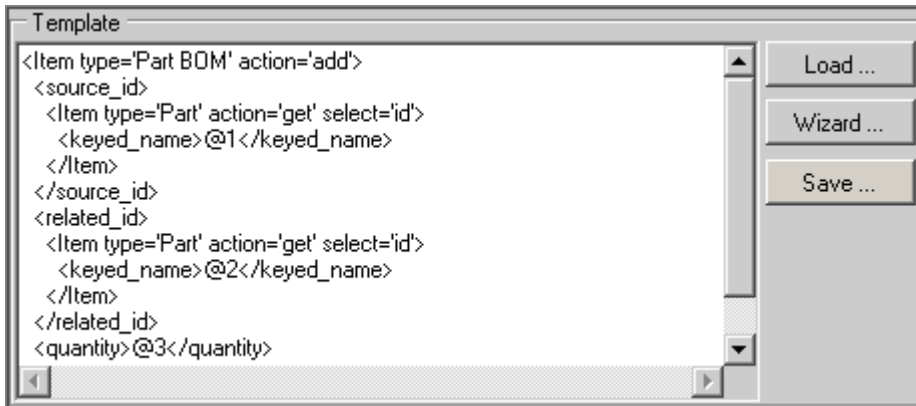
Item Type: Part BOM

Data Source Column	Target Property
Source Part	source_id [item:Part]
Related Part	related_id [item:Part]
Quantity	quantity [float]

OK Cancel

5. Select Part BOM from the Item Type dropdown.
 1. The Source Part maps to the keyed_name of the source_id Item
 2. The Related Part maps to the keyed_name of the related_id Item
6. Click **OK** once all mappings are finished. You should see the mappings displayed in the Batch Loader template.





7. Click **Save** in the main tool bar and save this configuration file. The configuration file (with an .ibl extension) saves all the Configuration Pane settings, such as the server path, and the data file name, as well as all the data mappings.
8. Click **Verify** in the main tool bar to make sure that there are no errors in the AML template.
9. Click **Load**.
10. Log into Aras Innovator, using the same database that you specified for the data load.
11. Go to Part X-00012, and look at the added BOM relationships:

BOM										
BOM Structure Alternates AML Documents CAD Documents Goals Changes Part Submission Warrants										
Parts										
Sequenc...	Part Number	Revisi...	Name	Type	Quantity	State	Unit	Reference Designator	Changes	
128	0003-MM5-001	A	FTG KIT-DBL CHK VLV FIREWALL	Component	3	Preliminary	EA		☐	
256	0005-MM6-001	A	FTG KIT-ABS VLV FWD 6X6	Component	5	Preliminary	EA		☐	
384	0006-MM6-001	A	FTG KIT-SR7 PRK BRK VLV	Component	8	Preliminary	EA		☐	
512	0001-MM6-001	A	FTG KIT-QR1 VALVE	Component	4	Preliminary	EA		☐	
640	0007-MM6-001	A	FTG KIT-JUNIOR PRESS SW	Component	2	Preliminary	EA		☐	
768	0014-GG6-SP006	A	WIR-BLK-14 AWG-SP006 COMMON...	Component	6	Preliminary	EA		☐	
896	0014-GG6-SP1307	A	WIR-PK-14 AWG-SP1307 KNEELIN...	Component	3	Preliminary	EA		☐	
1024	0014-GG6-SP1308	A	WIR-PK-14 AWG-SP1306 KNEELIN...	Component	6	Preliminary	EA		☐	

Advanced AML Templates

The Batch Loader templates are simply AML templates. Because of this, the Batch Loader has all the features of AML when loading data. The previous sections have only walked through some basic Items created using the Template Wizard. The template wizard limits the load to a top-level action of 'add', loads only one level of an Item structure at a time, and can only reference item properties



through the keyed name. While these limitations are often enough for simple data loads, but often are not enough for regular batch jobs.

To take advantage of the advanced capabilities of the Batch Loader, you should do the following:

1. Attend the Aras Innovator API class. While this is not required, it is often easier to understand the AML structure when you have finished the lessons of AML in this class.
2. Review the command line section of this document. The command line section of this document contains further examples of templates, as well as an explanation of the parameterized query in AML.
3. Review the samples listed in the appendix of this document. To aid users with loading some common ItemTypes into Aras Innovator, an appendix of sample AML templates has been provided.

