

STEP[❖] Trailblazer

Solution Enablement

AUTOMOTIVE REFERENCE GUIDE

STEP Automotive 9.0 MP2

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STEP Automotive Reference Guide Introduction

This guide describes specific reference material beyond what is provided in the **Automotive Quick Start Guide**. It is expected that readers are familiar with the material in that guide as it is not generally repeated within this guide.

Patch Recipe and Compatibility

The Automotive 9.0 MP2 add-on can be installed with the following recipe:

```
to:automotive/7.0/automotive-7.0.12.spr
```

Note: The above recipe is only compatible with the STEP 9.0 MP4 baseline (`to:step/trailblazer/step-9.0-mp4.spr`).

Important: Once an Automotive add-on is installed to a base STEP system, the base system should not be upgraded without upgrading the Automotive add-on at the same time. Additionally, when upgrading any base STEP system that has any Automotive add-on installed, both install recipes must be prepared at the same time.

For assistance in applying the patch to systems with extensions or additional add-on components, contact Stibo Systems Technical Services.

Supported Versions and Formats

The following are the supported import and export versions and/or formats for the various automotive standards.

Note: If there is only one format for the data type and the format itself is not versioned, 'Format is not versioned' is listed.

Generic

- **Asset Exporter:** Format is not versioned (generic exporter not specific to any standard).

AutoCare

- **ACES Exporter:** ACES 3.0 and 3.2
- **ACES Importer:** All ACES 3.X versions are supported for import, though all are validated against the 3.2 schema.

Note: Changes between the various 3.X versions are minimal so in most cases this will result in a successful import. However, the schema for the 'ApprovedFor' element in the header changed with 3.2 so attempting to load a file for an earlier version that includes the 'ApprovedFor' tag will fail schema validation. This can be corrected by removing the 'ApprovedFor' element from the header, or manually updating the version to be 3.2.

- **Brand Table Importer:** All three flat file formats are supported (original, with revision date, and with sub-brands and revision date)
- **PAdb Importer:** ASCII
- **PCdb Importer:** ASCII
- **PIES Exporter:** PIES 6.5
- **PIES Importer:** PIES 6.5
- **Qdb Importer:** ASCII
- **VCdb Importer:** ASCII

NAPA

- **Application Exporter:** Format is not versioned
- **Application Importer:** Format is not versioned
- **Asset Reference Exporter:** Format is not versioned
- **MPCC / Attribute Exporter:** Format is not versioned
- **MPCC / Attribute Importer:** Format is not versioned
- **Interchange Exporter:** Format is not versioned

- **Interchange Importer:** Format is not versioned
- **Translation Importer:** Format is not versioned
- **Valid Vehicles Importer:** Format is not versioned

TecDoc

- **Reference Data Importer:** TAF 2.4 using either the ZIP or 7z formats
- **Supplier Data Exporter:** TAF 2.4
- **Supplier Data Importer:** TAF 2.4 using either the ZIP or 7z formats

Importing Automotive Data

The Automotive solution provides extensive import capabilities. Information within this section applies to all of the automotive standards.

Before importing automotive data, it is recommended that you have an understanding of the following:

- Import Framework
- Default Workflow States and Functions
- Modifying Import Framework
- Displaying Import Modifications in Web UI
- ID Structures in Importers
- Adding Reporting Extensions to Imports
- Validation Error Handling

Information on each of the available automotive standard specific importers is addressed in the following sections:

- AutoCare Importers
- TecDoc Reference Data Importer

For information on supported versions, see the **Supported Versions and Formats** topic.

For general information on the way a user initiates and manages automotive imports, see the **Using Automotive Importers** section of the **Automotive Quick Start Guide**.

Import Framework

The intention of the import aspect of the Automotive core solution is to provide out-of-the-box importers for the various automotive standards, for which each customer can then apply their own validations, business processes, and data management procedures. To do this successfully, it is crucial to understand the import framework, which includes the integration endpoints and workflows created by Easy Setup (as described in the **Quick Start Setup for Admins** section of the **Automotive Quick Start Guide**).

This section details specifics of the Import Framework, which is applicable to all Automotive importers across all standards. For more information on the available automotive importers, see the **Supported Versions and Formats** topic.

Import Process Overview

Once a valid automotive data file is uploaded to a hotfolder on the application server (optionally using a File Loading Widget), the file is picked up from the hotfolder by an IIEP, and the IIEP creates an Entity in STEP that represents the file. This Entity object is called the 'controller' and contains basic data about the file and the file's status in the workflow. Web UI users are able to monitor the import status using a Status Selector Widget and an Import Controller Screen. Once an import file reaches the 'Ready for Import' state, then users can start the import by clicking on the 'Start import' button within the Control Panel screen. At that time, the BGP service (that runs as part of the Import state) allows for the configured business rules to act on the objects being imported.

For example:

The screenshot displays a software interface with a tree view on the left and a detailed view of an 'Import Flow Controller Type' entity on the right. The tree view includes folders like 'Assets', 'Configurations', and 'Import Flow Root'. The detailed view shows attributes such as 'ID', 'Name', 'Object Type', 'Revision', 'Path', 'Automotive Import Flow State BGP', 'Import Flow File Type', 'Import Flow Overall Status', 'Import Flow State Status', and 'Import Flow Workflow ID'.

Description	
Name	Value
ID	Controller-100347
Name	AAIA VCdb2009 ASCII Complete VCDB 20170127.zip
Object Type	Import Flow Controller Type
Revision	0.1 Last edited by VCDBIMPORT on Mon Apr 24 14:12:15 EDT 2017
Path	Entity hierarchy root/Import Flow Root/VCdb Data/AAIA VCdb2009 A
Automotive Import Flow State BGP	<pre><?xml version="1.0" encoding="UTF-8"?> <StringMap> <Entry Key="Validation" Value="BGP_100348"/> <Entry Key="Import" Value="BGP_100351"/> <Entry Key="Conversion" Value="BGP_100349"/> <Entry Key="DeltaCalculate" Value="BGP_100350"/> </StringMap></pre>
Import Flow File Type	VCDBData
Import Flow Overall Status	Completed with errors: 12
Import Flow State Status	<pre><?xml version="1.0" encoding="UTF-8"?> <StringMap> <Entry Key="Validation" Value="Validation completed"/> <Entry Key="Import" Value="Completed with errors: 12"/> <Entry Key="Conversion" Value="Conversion completed"/> <Entry Key="DeltaCalculate" Value="Delta calculation completed"/> </StringMap></pre>
Import Flow Workflow ID	AutoCareVCdbImport

As the Entity moves through the import workflow, a series of background processes handle the various processing and import activities.

- The original file name is recorded as the STEP Name of the controller entity.
- The IDs of the background processes are stored in the Automotive Import Flow State BGP attribute.
- The Import Flow State Status attribute is also noteworthy as it stores the status of each process, as opposed to the Import Flow Overall Status attribute which displays a global status of the file (rather than a per-process status).

Note: All of the information displayed on the controller Entity is also displayed within the Web UI Import Controller Screen, which are discussed in the **Quick Start for Users** section of the **Automotive Quick Start Guide**.

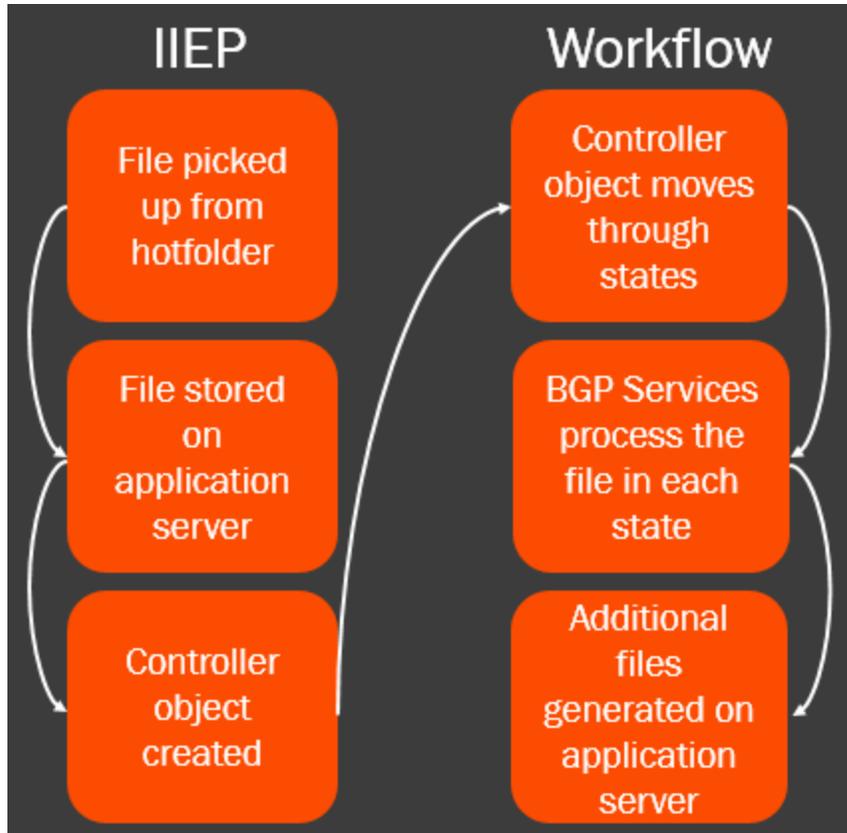
Once created, the controller is initiated into the workflow associated with the importer, and the work of the endpoint stops. From there, the workflow takes over processing of the file via a series of states using business rules and background processes to carry out the processing of the file.

Important: It is critical to understand that it is only the controller Entity that is in the workflow - the objects being acted on (created / updated / deleted) via information supplied in the import file are not in the workflow. Therefore,

running standard business actions acting on current object will impact the controller Entity only, not the objects in the input file.

Important: In order for the business action to apply to the object(s) that are getting imported from the input file, the business action needs to be added to the 'Import action' parameter in the Background Process Service Action that runs on the 'Import' state.

At a high-level, the interaction between the endpoint and the workflow is as follows:

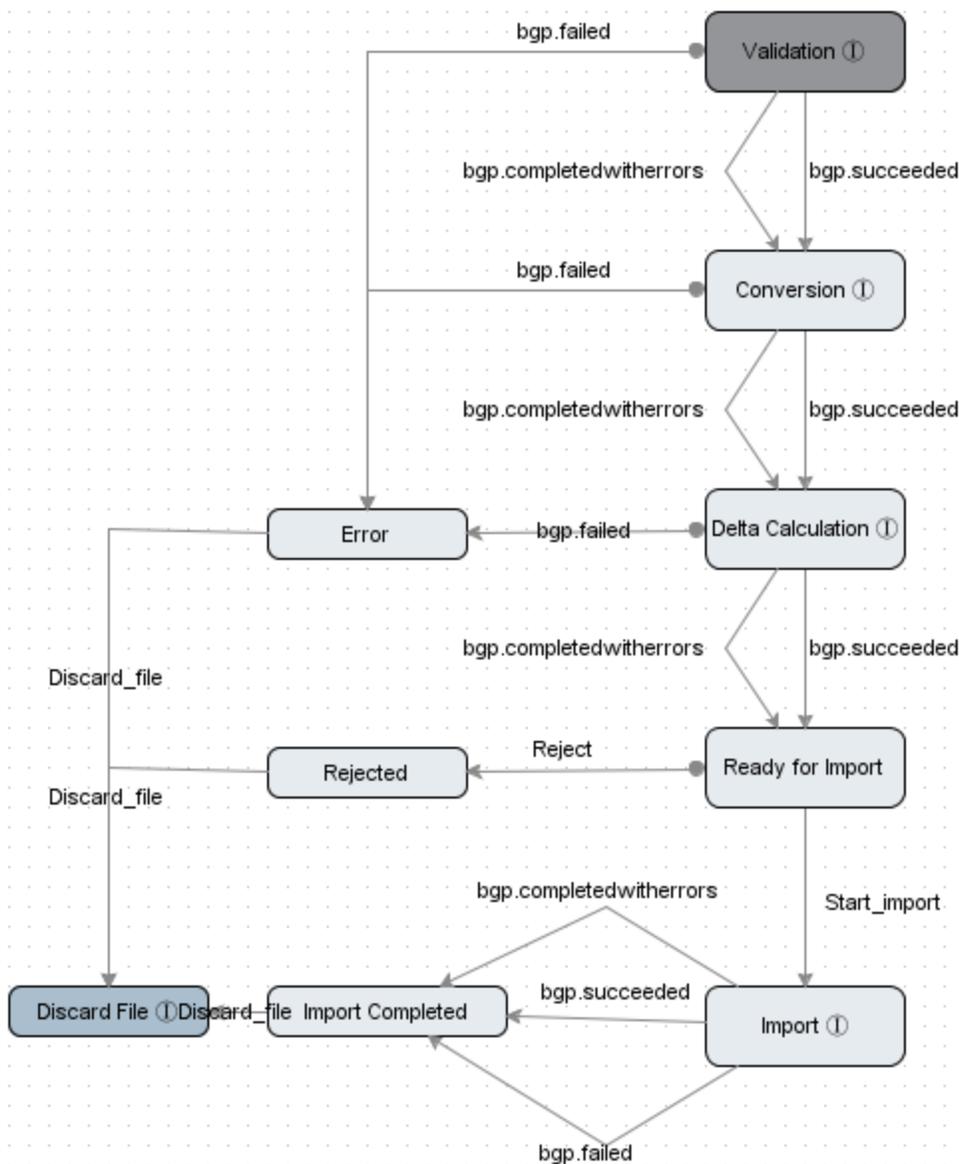


Each import has an associated workflow and all proceed through the same states by default. However, it is intended that customers will expand on the existing states and actions to add their own validations, reporting, and additional processing as needed.

Important: A new state can be inserted at any point in the workflow, and additional rules can be added to any of the existing states. Additionally, the ImportFlowExtension interface in the Extension API can be used to create new background processes to handle what the state should do.

Default Workflow States and Functions

The default workflow and processing that occurs in each state is displayed within the image below.



More details about each default workflow state can be found in the following sections:

- Validation State
- Conversion State
- Delta Calculation State
- Error State
- Ready for Import State

- Rejected State
- Import State
- Import Completed State
- Discard File State

Validation State

The validation state does some basic schema validation of the file. If the automotive standard (i.e., AutoCare, TecDoc, NAPA) supplies an XSD, the file format is validated against the XSD. If an XSD is not provided by the standard, the file is loosely validated to ensure the format conforms to what is expected for the file type.

Information on each of the available automotive standard specific importers is addressed in the following sections:

- AutoCare Importers
- TecDoc Reference Data Importer

The validation state includes one business action (**Run background process action**) by default, which runs the validation service as a background process. Each standard has its own validation service.

Important: The validation services are coded specifically for the file types provided for that standard and cannot be repurposed for other formats, even within the standard. For example, the AutoCare validation service accepts PCdb files as zipped files containing pipe delimited subfiles and ACES files in XML format. If you wanted to validate a PCdb file in Access format or a flat file supplying ACES data, a new validation service would need to be created using the Extension API.

Validation State Common Parameters

Despite having different services for each standard, each validation service contains several common parameters.

The AutoCare validation service (AutoCareValidationService) is shown as an example below.

The screenshot shows a dialog box titled "Edit Operation" with a close button (X) in the top right corner. At the top, there is a dropdown menu showing "Run background process action". Below this, there are three main sections:

- QueueID:** A text input field containing "queue_Validation". A red circle with the number "1" is next to this field.
- Background Process Service:** A dropdown menu showing "[AutoCareValidationService]".
- Service parameters:** A section containing two items:
 - AutoCare file attachment ID:** A text input field containing "original". A red circle with the number "2" is next to this field.
 - Continue on Error:** A checkbox that is currently unchecked. A red circle with the number "3" is next to this checkbox.

At the bottom of the dialog, there are two buttons: "Save" and "Cancel".

1. **QueueID:** For all three validation services, this required parameter value defaults to 'queue_Validation' for all background process actions that specify the queue in which the background process should run.

Note: This parameter is specified for the action itself, not the particular service within the action, though the outcome is the same as each action runs only a single service.

Additionally, this parameter value can be used to define the configuration property within the sharedconfig.properties for when a process needs to run in parallel.

For example, by default, files go through the following states one at a time; validation, conversion, delta calculation, and import. If it is necessary for ACES files to be imported four at a time, then the following would need to be added to the sharedconfig.properties:

```
BackgroundProcess.Queue.queue_Import.Size=4
```

Typically, reference files do not need to have parallel processes because they are only updated once a month, and it is important to have certain reference files imported before others. Therefore, running them in parallel is not ideal.

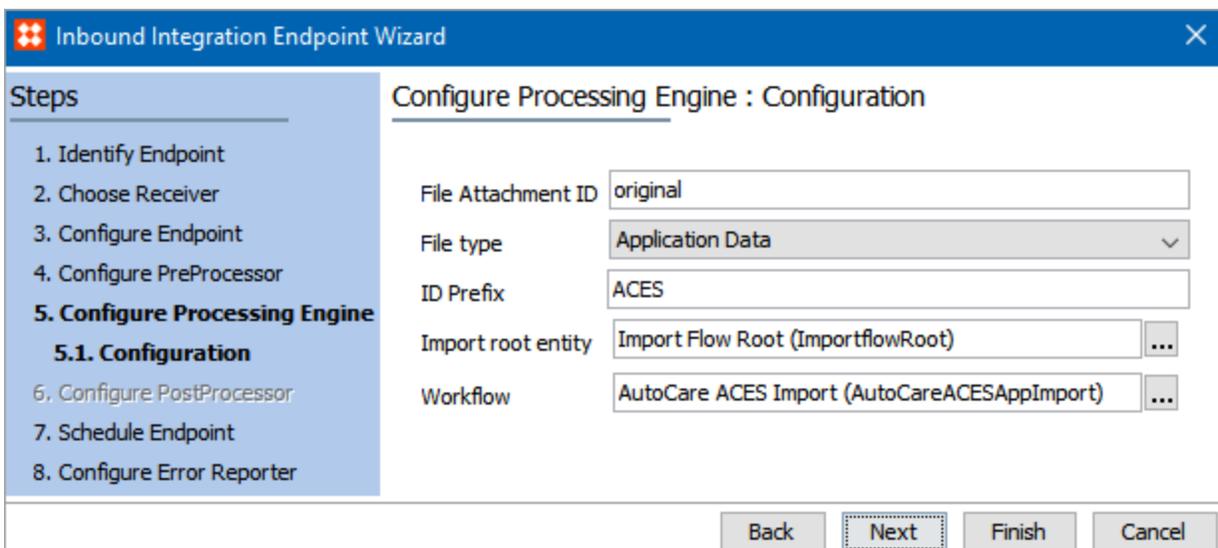
However, it is likely that multiple supplier files would need to be imported at once, because they are updated more frequently. Therefore, running them in parallel is ideal.

Note: After adding the property, the application server must be restarted for it to take effect.

2. **AutoCare file attachment ID / NAPA file attachment ID / Attachment ID for TAF file:** For all three validation services, this required parameter value:

- Defaults to 'original.'
- Forms the relationship between the file supplied to the endpoint and the file that the workflow is going to process.
- Prefixes the file name for the workflow attachment.

Important: The 'AutoCare file attachment ID' / 'NAPA file attachment ID' and/or 'Attachment ID for TAF file' parameter entry in the validation service must match the File Attachment ID value in the corresponding endpoint configuration. For example, the 'AutoCare file attachment ID:' value is 'original,' and can be viewed in both the Edit Operation dialog (shown above) and the Inbound Integration Endpoint Wizard (shown below).



3. **Continue on Error:** Specifies whether or not the file can continue to process after encountering some 'allowable' data errors. For additional information and considerations relevant for this setting, see the 7. **Determine Validation Error Handling for Each Import** topic within the **Automotive Quick Start Guide**.

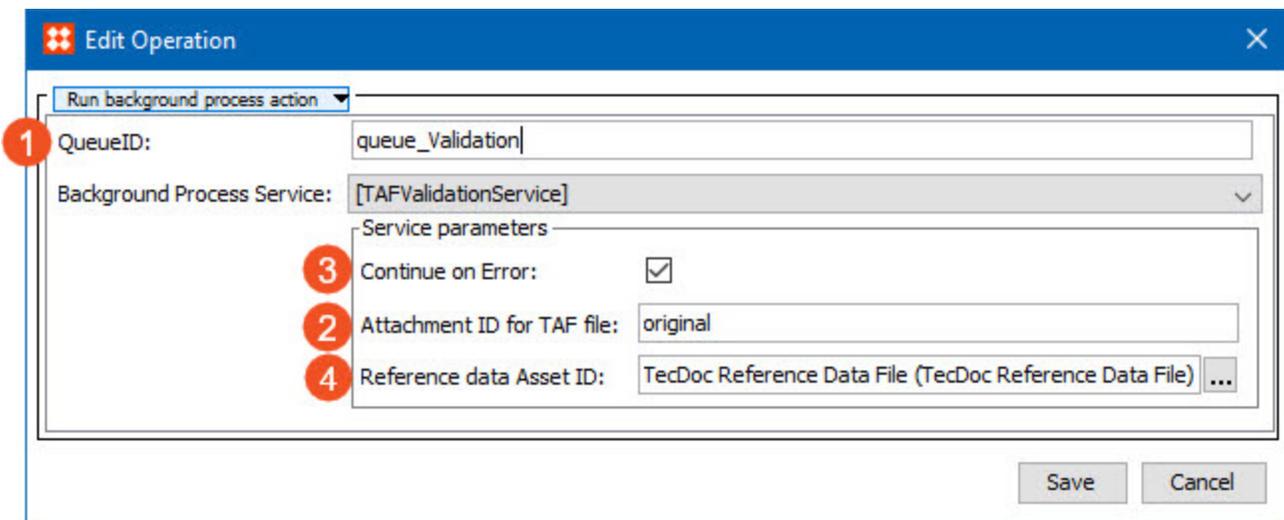
Validation State TecDoc Specific Parameter

Along with the common parameters (described above) the TecDoc validation service (TAFValidationService) offers the following additional parameter:

4. **Reference data Asset ID:** Required parameter available only for the TecDoc validation service. When importing a Reference Data file, the file itself is stored in the selected asset.

Important: When importing a Supplier Data file, the Supplier Data file is validated against the Reference Data file stored in the selected 'Reference data Asset ID.'

The TecDoc validation service (TAFValidationService) is shown as an example below.



To view the import file within Workbench, go to Tree > Configurations > TecDocConfigurations.

In the example below, the TecDoc Reference Data File is displayed below the TecDocConfigurations classification folder.

TecDoc Reference Data File rev.9.0 - Images & Documents

Images & Documents		References	Referenced By	Status	State Log	Tasks	
Description							
Name	>	>	Value				>
ID	>	TecDoc Reference Data File					>
Name	>	TecDoc Reference Data File					>
Object Type	>	ZIP					>
Revision	>	9.0 Last edited by TECDOCREFERENCEDATAIMPORT on Tue Jul 31 12:44:18 EDT 2018					>
Approved	>	✘ Never Been Approved					>
Translation	>	Not Translated					>
Path	>	Classification 1 root/Configurations/TecDocConfigurations/TecDoc Reference Data File					>
System Properties:							
Name	>	>	Value				>
Extension	>	abc	zip				>
Filename	>	abc	REFERENCE_DATA_0618.zip				>
Format	>	abc	Zip (Zip archive)				>
MIME Type	>	abc	application/zip				>
Size	>	abc	50,862,472				>
Upload Time	>	abc	2018-07-31 12:44:18				>

Validation Service Function Details

As the validation service runs a background process (BGP), a corresponding BGP folder is created on the application server at /workarea/background-processarea/[Standard]ValidationService. The BGP folder contains a sub-folder whose name matches the STEP ID of the controller entity that is moving through the workflow. The original file that was loaded can be found inside the controller sub-folder, as shown below.

```
work.area/background-processarea/AutoCareValidationService/BGP_103896/Controller-103895
```

Name
↑ ..
📄 Acme_MMY.xml

Further, the file is prefixed with the value from the file attachment ID parameter in the BGP service ('original' in our example) and deposited on the application server at /workarea/stepworkflow-area/[Standard][Format]Import/entity-[ControllerID]/attachments/ImportFlowAttachment, as shown below.

```
work.area/stepworkflow-area/AutoCareACESAplImport/entity-Controller-103895/attachments/ImportFlowAttachment
```

Name
↑ ..
📄 original-Acme_MMY.xml

Note: If modifications need to be made to the original file as part of validation and/or following validation, it is the workflow attachment file (e.g., original-Acme_MMY.xml in the above example) that must be manipulated as this is the file that is actually carried through the workflow.

Validation State Results

The following are possible validation state results:

Failed: If the import file fails validation (e.g., does not meet the schema requirements or the system encounters an error and is unable to complete the validation process), the controller object in the workflow is sent to the Error state via the `bgp.failed` transition. This transition includes one default business rule which is used to populate the overall status of the controller entity (the overall status is displayed to end users in the Web UI Import Controller Screen). The controller will remain in the Error state until acted on by a user.

Important: Though an import can have a status of 'Validation failed,' the controller object in the workflow can still be sent to the next step of the workflow if the 'Continue on Error' parameter is enabled for the workflow. When this occurs, the validation issues are written to the execution report, but all valid data is converted and made available for the import process. For more information, see the **7. Determine Validation Error Handling for Each Import** topic within the **Automotive Quick Start Guide** and/or the **Validation Error Handling** topic within this guide.

Succeeded: If validation completes successfully without any errors, the controller automatically moves to the Conversion state via the `bgp.succeeded` transition. This transition does not include any default business rules as the controller is moved automatically so there is no need to display an overall status to the end user at this time.

Completed with errors: It is possible for a file to pass validation with errors. In this case the controller is moved to the next state via the `bgp.completedwitherrors` transition that, like the `bgp.succeeded` transition, does not contain any default business rules. This occurs when the basic schema validation is met, but some additional data-level validations are in place for which the file does not pass, and the 'Continue on Error' parameter is checked, as described in the **7. Determine Validation Error Handling for Each Import** topic of the **Automotive Quick Start Guide**. If the 'Continue on Error' parameter is unchecked, the data-level validations would result in a validation failure and the file would be moved to the Error state via the `bgp.failed` transition.

In the example below a TecDoc Reference Import Controller Screen is shown, and because the 'Continue on Error' parameter is enabled when the import processes, the import file associated with Controller-102344 is able to be Completed with errors.

TecDoc Reference Imports

Process	File Name	Overall Status
Controller-100349	REF_DATA_0318_minus_Table_026_044.zip	Completed with errors: 27243
Controller-102344	REF_DATA_0318_minus_Table_026_044.zip	1 Completed with errors: 255

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Import Details

Process	Started Time	Duration	Started By	Status	Background Process Link
Validation	2018-07-31 10:03:40	25 secs	STEPSYS	2 Validation completed	3 completedwitherrors
Conversion	2018-07-31 10:04:05	1 min 30 secs	STEPSYS	Conversion completed	succeeded
Delta Calculation	2018-07-31 10:05:35	2 mins 39 secs	STEPSYS	Delta calculation completed	succeeded
Import	2018-08-01 14:25:54	10 mins 50 secs	STEPSYS	Completed with errors: 255	completedwitherrors

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This is displayed within the Import Controller Screen, in the following manner:

1. The Overall Status column for controller is displayed as 'Completed with errors: 255.'
2. The Status column within the Import Details table displays the Status as 'Validation completed.'
3. The Background Process Link displays 'completedwitherrors.'

Conversion State

The conversion state converts the original file into a series of STEPXML files. This provides two benefits:

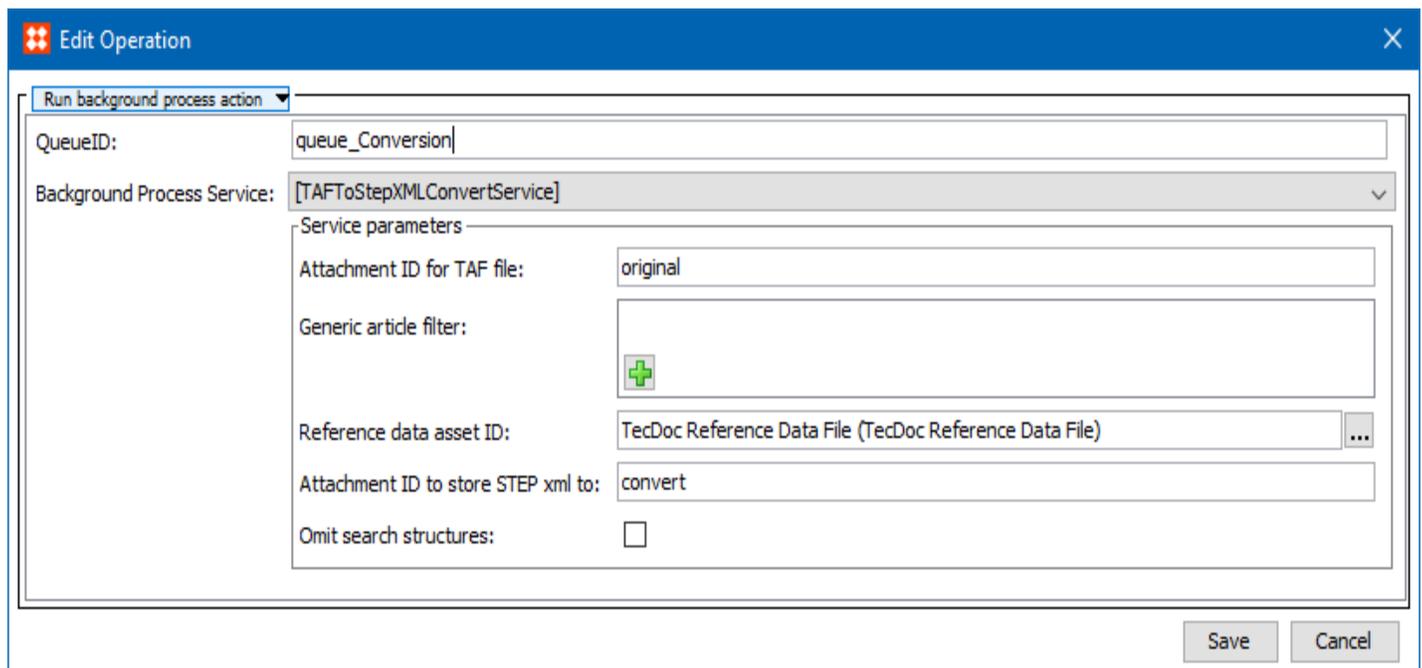
1. By converting to STEPXML, the import can be carried out using standard STEP import functionality.
2. By converting to multiple standalone files rather than a single large file, there is a performance gain in that some files can be imported in parallel.

Conversion State Common Parameters

The conversion state includes one business action (**Run background process action**) by default, which runs the conversion service as a background process. Each standard has its own conversion service and the parameters included in each are described below, beginning with those that are common to all services.

Note: Within AutoCare, there are two conversion services; one general, and one specific to ACES files.

For example, the TecDoc conversion service is shown in the screenshot below.



The screenshot shows the 'Edit Operation' dialog box with the following configuration:

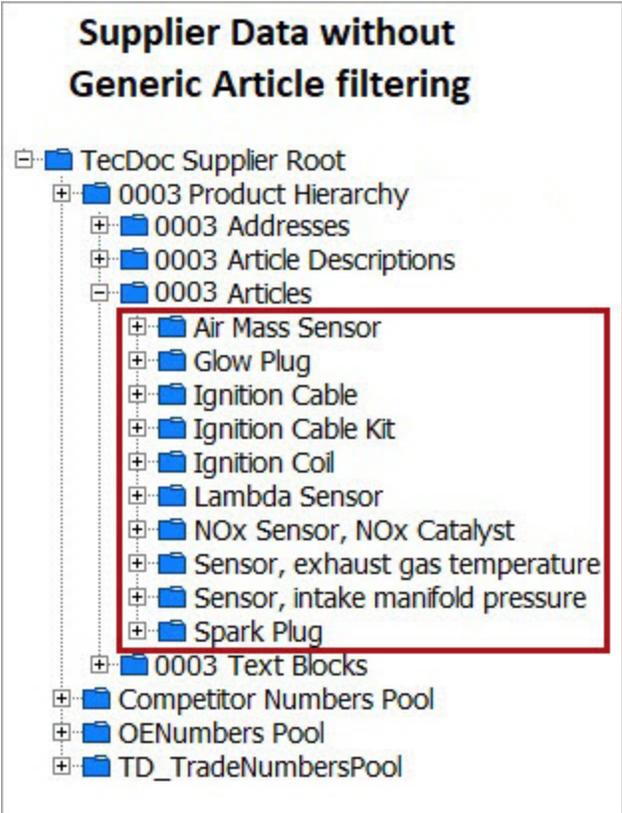
- Action:** Run background process action
- QueueID:** queue_Conversion
- Background Process Service:** [TAFToStepXMLConvertService]
- Service parameters:**
 - Attachment ID for TAF file:** original
 - Generic article filter:** (empty field with a green plus icon for adding filters)
 - Reference data asset ID:** TecDoc Reference Data File (TecDoc Reference Data File)
 - Attachment ID to store STEP xml to:** convert
 - Omit search structures:**

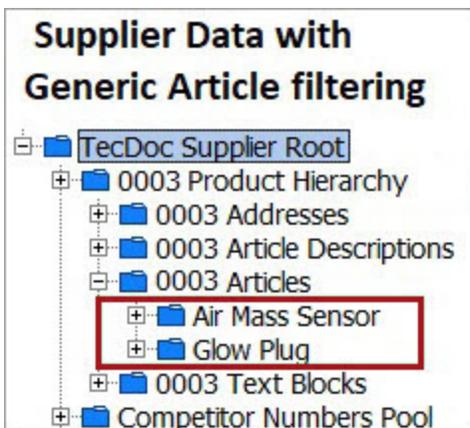
Buttons for 'Save' and 'Cancel' are visible at the bottom right.

- **QueueID:** Required parameter for all background process actions that specifies the queue in which the background process should run, which defaults to 'queue_Conversion.' Note that this parameter is specified for the action itself, not the particular service within the action, though the outcome is the same as each action runs only a single service.
- **Attachment ID for TAF file / AutoCare file attachment ID / NAPA file attachment ID:** Required parameter used in all conversion services and functions the same as described in the Validation process (forming the relationship between the file originally supplied to the endpoint and the file that the workflow processes will act on).

- **Generic article filter:** Optional parameter specific to the TecDoc standard. This filter option allows for the reduction of unnecessary Generic Articles (Classifications) being imported into STEP. Only those Generic Articles selected within the filter are imported.

In the example below, the 0003 Product Hierarchy is shown including many Articles, the editing of the 'TecDoc Reference Import Conversion' Business Rule is displaying the 'Generic article filter' parameter with the 'Air Mass Sensor' and 'Glow Plug' generic articles selected for import, and the results are the 0003 Product Hierarchy is shown with only the 'Air Mass Sensor' and 'Glow Plug' articles.





To select a Generic Article, click the green icon () within the parameter, and a blank Classification field will display. Click the ellipsis button () and a Select Classification dialog will display. Select the desired classification, and click the Select button to close the dialog. Repeat these steps to add more Generic Articles.

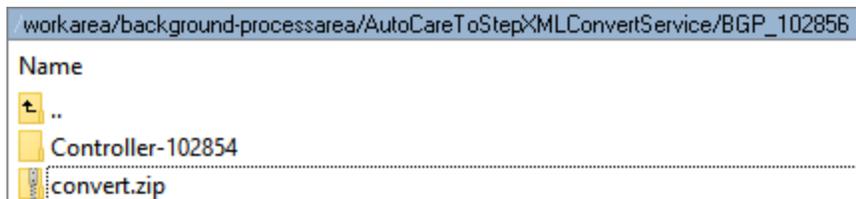
- **Reference data asset ID:** Required parameter used in all TecDoc conversion services that functions the same as described for the validation service (providing a link between the file being imported and the reference data asset it should be stored in or validated against).

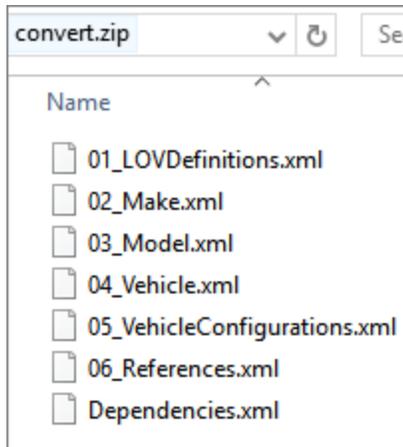
- **Attachment ID to store STEP xml to / STEP XML attachment ID:** Required parameter used in all conversion services and specifies the name of the file that is the product of the conversion process, which defaults to 'convert.' If multiple files are created by the conversion service, this will be a zipped file, e.g., convert.zip.
- **ACES Parameters:** The AutoCare ACES conversion service is unique and contains a number of additional parameters, specifically: **ACES Default FULL Import handling**, **ACES Default SUPPLIER Import handling**, **ACES Default UPDATE Import handling**, and **Regular Expression for parsing Supplier from file name**. The functionality of each of these parameters is described in the **Automotive Quick Start Guide**.
- **Omit search structures:** Optional parameter specific to the TecDoc standard. This filter option allows for the reduction of unnecessary TecDoc Reference data being imported. When disabled, all Search Trees and Reference Data classification folders are imported per the TecDoc Reference Data file. When enabled, Search Trees and Reference Data classification folders (except Generic Articles and Linking Targets) are omitted. To filter Generic Articles and/or Linking Targets, the 'Generic article filter' parameter must be used. For example, if the 'Omit search structures' parameter is enabled, and the 'Generic article filter' is blank, then only the Generic Articles and Linking Targets Reference Data will be imported.

Conversion State Function Details

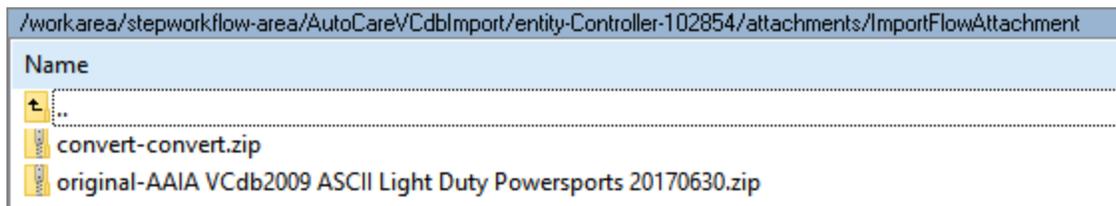
As the conversion service runs a background process (BGP), a corresponding BGP folder is created on the application server at /workarea/background-processarea/[Standard]toStepXMLConvertService. The BGP folder contains a sub-folder whose name matches the STEP ID of the controller entity that is moving through the workflow and contains the originally loaded file, the same as is seen in the validation service. The conversion service also writes an additional file, which is the output of the conversion process, (e.g., a zipped file with the name specified in the STEPXML attachment ID parameter). This zipped file contains sub-files in STEPXML format that are submitted to the delta calculation service for further processing. The sub-files contained in any convert file differ based on the file type.

For example, an AutoCare VCdb conversion result is shown below:





In addition, the converted file is prefixed with the value from the file attachment ID parameter in the BGP service ('convert' in our example) and deposited on the application server at /workarea/stepworkflow-area/[Standard][Format]Import/entity-[ControllerID]/attachments/ImportFlowAttachment. For example:



Note: If modifications need to be made to the converted file(s) before further processing is completed, it is the workflow attachment file (e.g., convert-convert.zip in the above example) that must be manipulated as this is the file that is actually carried through the workflow.

Conversion State Results

The following are possible conversion state results:

- Failed:** If the import file fails conversion for some reason, the controller object in the workflow is sent to the Error state via the `bgp.failed` transition. This transition includes one default business rule which is used to populate the overall status of the controller entity (the overall status is displayed to end users in the Web UI). The controller will remain in the Error state until acted on by a user.
- Succeeded:** If conversion completes successfully without any errors, the controller automatically moves to the Delta Calculation state via the `bgp.succeeded` transition. This transition does not include any default business rules as the controller is moved automatically so there is no need to display an overall status to the end user at this time.
- Completed with errors:** It is also possible for a file to complete conversion, but with errors. In this case the controller is moved to the next state via the `bgp.completedwitherrors` transition that, like the `bgp.succeeded` transition, does not contain any default business rules. As with successful completion of conversion, the controller is automatically moved to the Delta Calculation state.

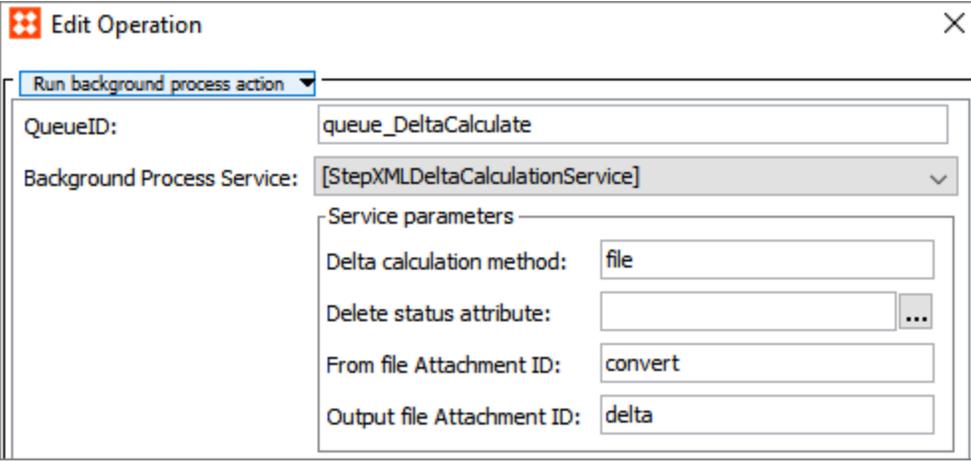
Delta Calculation State

The Delta Calculation state compares the converted file(s) to either the STEP database, or to the last loaded file of that type, and generates a set of STEPXML files containing only the changed data. This is done to increase performance of the actual imports so that unnecessary data is not processed.

The determination for the comparison method is set per importer using the **Delta calculation method** parameter described in the **5. Update Delete Status Attribute and Delta Calculation Method in Import Workflows** section of the **Quick Start Setup for Admins**.

Delta Calculation State Common Parameters

The Delta Calculation state includes one **Run background process action** business action by default, which runs the delta calculation service as a background process. All standards share a common delta calculation service and the parameters are described below.



The screenshot shows the 'Edit Operation' dialog box with the following configuration:

- Action:** Run background process action
- QueueID:** queue_DeltaCalculate
- Background Process Service:** [StepXMLDeltaCalculationService]
- Service parameters:**
 - Delta calculation method:** file
 - Delete status attribute:** (empty field with a browse button)
 - From file Attachment ID:** convert
 - Output file Attachment ID:** delta

- **QueueID:** Required parameter for all background process actions that specifies the queue in which the background process should run, which defaults to 'queue_DeltaCalculate.'

Note: This parameter is specified for the action itself, not the particular service within the action, though the outcome is the same as each action runs only a single service.

- **Delta calculation method:** Required parameter that determines how the delta file is generated (via file or context method).

For additional information and considerations for setting this parameter, see the **5. Update Delete Status Attribute and Delta Calculation Method in Import Workflows** section of the **Quick Start Setup for Admins**.

- **Delete status attribute:** Optional parameter to select an attribute to store the indication for deletion as a result of the import. If not set, deletions will not be processed by the importer.

Note: AutoCare ACES files using complete replacement concepts require a delete status attribute to be set.

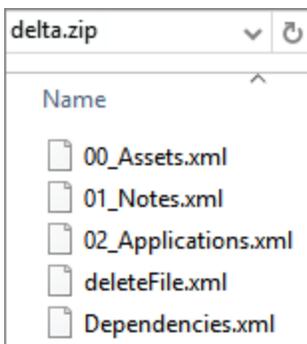
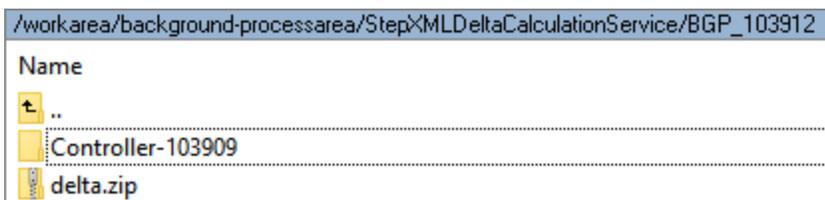
For additional information and considerations for setting this parameter, see the **5. Update Delete Status Attribute and Delta Calculation Method in Import Workflows** section of the **Quick Start Setup for Admins**.

- **From file Attachment ID:** Required parameter that must be populated with the file name that should be used for the delta calculation service to act on. This defaults to 'convert' as that would be the correct file name if no additional states and/or processing were added to the default workflow. If an additional workflow state or service had been added that generated some other output file that the delta calculation should act on, the parameter should be updated accordingly.

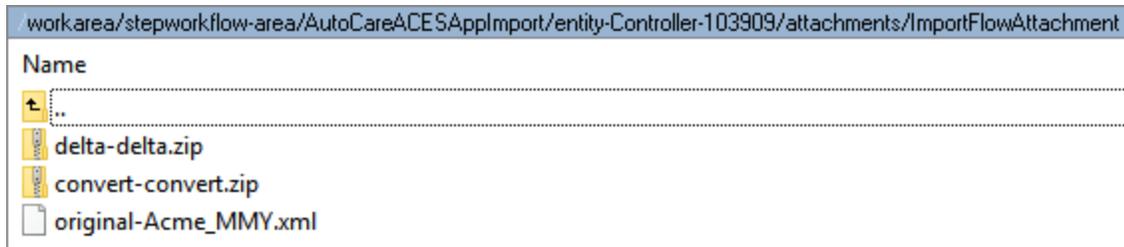
Delta Calculation State Function Details

As the delta calculation service runs a background process (BGP), a corresponding BGP folder is created on the application server at `/workarea/background-processarea/StepXMLDeltaCalculationService`. The BGP folder contains a sub-folder whose name matches the STEP ID of the controller entity that is moving through the workflow and contains the converted file that the delta calculation was performed on. The delta calculation service also writes an additional file, which is the output of the delta calculation process, e.g., a zipped file with the name specified in the 'Output file attachment ID' parameter. This zipped file contains sub-files in STEPXML format that are submitted to the import service for further processing. The sub-files contained in any delta file differ based on the file type.

For example, an AutoCare ACES delta calculation result is shown below:



In addition, the delta file is prefixed with the value from the 'Output file attachment ID' parameter in the BGP service ('delta' in our example) and deposited on the application server at `/workarea/stepworkflow-area/[Standard][Format]Import/entity-[ControllerID]/attachments/ImportFlowAttachment`. For example:



Note: If modifications need to be made to the delta file(s) before further processing is completed, it is the workflow attachment file (e.g., delta-delta.zip in the above example) that must be manipulated as this is the file that is actually carried through the workflow.

Setup Objects and Delta Calculations

The delta calculation service takes setup objects into account, where setup objects (LOVs, attributes, reference types, etc.) that have not changed will be filtered away and not be included in the delta calculation file. Only changed setup objects will be included in the delta calculation file. This is done by comparing what is in the import file to what's in the database whether 'context' or 'file' delta calculation method is used.

Note: Importers will not handle deleted setup objects, they will instead be reported as a warning in the delta calculation background process Execution Report. For example, if there are LOV values in the database but are no longer in the import file, then there will be a warning in the delta calculation background process Execution Report listing the LOV and values that are missing in the import file. In this case, the user will need to check the delta calculation report and manually carry out the deletion of the LOV values.

Delta Calculation State Results

- **Failed:** If the import file fails delta calculation for some reason, the controller object in the workflow is sent to the Error state via the `bgp.failed` transition. This transition includes one default business rule which is used to populate the overall status of the controller entity (the overall status is displayed to end users in the Web UI). The controller will remain in the Error state until acted on by a user.
- **Succeeded:** If delta calculation completes successfully without any errors, the controller automatically moves to the Ready for Import state via the `bgp.succeeded` transition. This transition does not include any default business rules as the controller is moved automatically so there is no need to display an overall status to the end user at this time.
- **Completed with errors:** It is possible for a file to complete delta calculation, but with errors. In this case the controller is moved to the next state via the `bgp.completedwitherrors` transition that, like the `bgp.succeeded` transition, does not contain any default business rules. As with successful completion of delta calculation, the controller is automatically moved to the Ready for Import state.

Error State

Files that have failed validation, conversion, or delta calculation will have the controller end up in the Error state, and it will remain there until acted on by a user. It is not possible to do further processing of the file after it has errored, though it can be subsequently reloaded if needed. As described in the **Automotive Quick Start Guide**, users are able to view the errors generated in validation, conversion, or delta calculation by clicking the appropriate background process links to view the corresponding execution reports. They can also choose to discard the file, which will simply transition the file to the Discard File state, which contains a business rule that automatically removes the controller from the workflow so that it is no longer displayed in the workflow tasks in the Web UI.

Ready for Import State

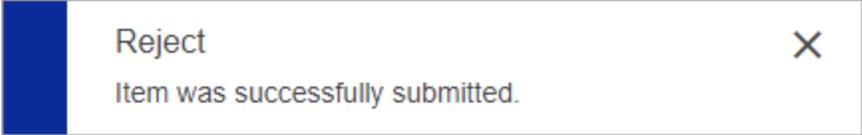
When a file has successfully completed validation, conversion, and delta calculation, the controller object is available in the Ready for Import state, which is the first state in which user interaction is required for successful files. If customer-specific reporting has been added to the implementation, it is likely that reports can be viewed in this state. Whether or not reporting has been added, the Ready for Import state is where the user must decide whether to import or reject the file. If the user rejects the file, it will be moved to the Rejected state via the Reject transition, which contains a single business rule to set the overall status of the controller entity. If the user chooses to import the file, it is moved to the Import state.

Only controller objects with files that have failed a previous process will end up in the Error state. It is also possible for files to have warnings and/or errors and still continue successfully through the process so it is important for users to view the data provided in the background processes in the Web UI to determine whether or not a file should be imported.

Rejected State

When a file has been rejected by a user, the controller is moved to the Rejected state. This indicates that the file has successfully completed all pre-import processing, but has been deemed unacceptable for import by a user, usually due to data issues. A rejected file cannot be imported unless it is reloaded, so the only option to act on a controller in this state is to discard it.

Clicking the **Reject** button will cause the Reject dialog (shown below) to display at the top of the screen. A user must click the 'X' in the top right of the dialog to close it.

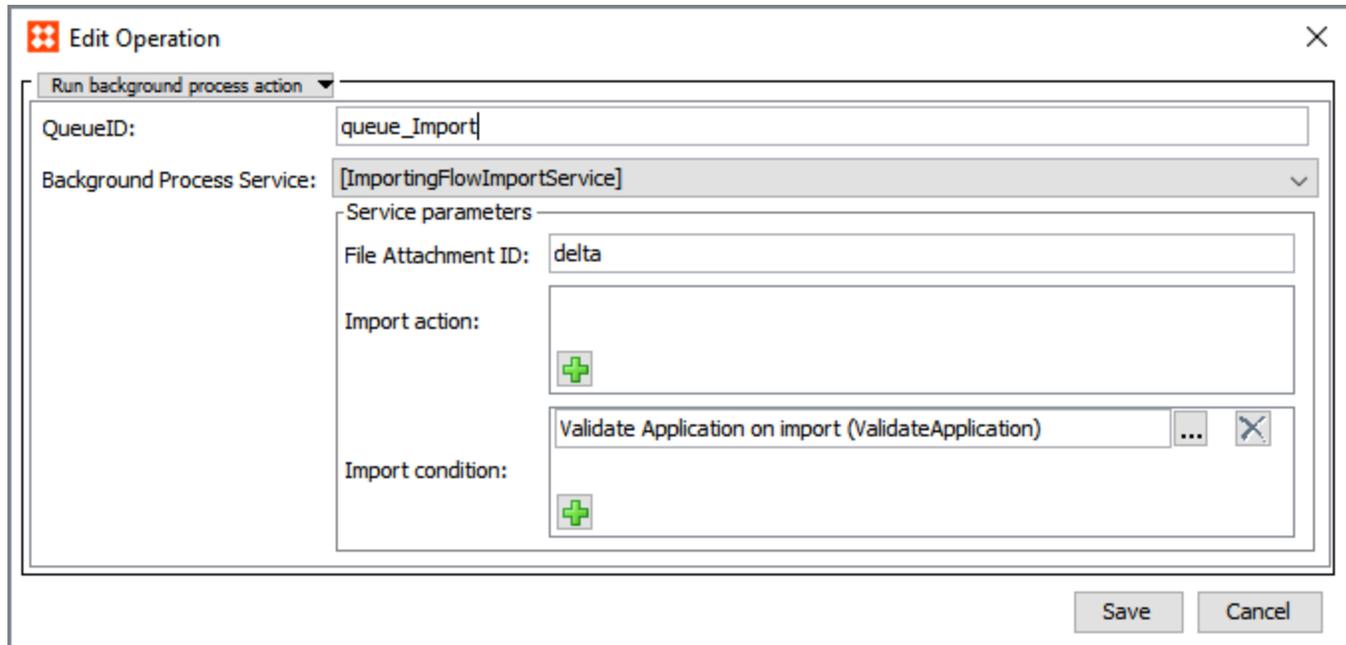


Import State

The Import state carries out the actual import of the files generated from the delta calculation service. As the generated files are in STEPXML format, the standard STEP Importer is the engine used behind the scenes to carry out the import.

Import State Common Parameters

The Import state includes one business action (**Run background process action**) by default, which runs the import service as a background process. All standards share a common import service (though default actions and conditions applied to the imports differ) and the parameters are described below.



- **QueueID:** Required parameter for all background process actions that specifies the queue in which the background process should run, which defaults to 'queue_Import.' Note that this parameter is specified for the action itself, not the particular service within the action, though the outcome is the same as each action runs only a single service.
- **File Attachment ID:** Required parameter that must be populated with the name of the file to be imported. This defaults to 'delta' as that would be the correct file name if no additional states and/or processing were added to the default workflow. If an additional workflow state or service had been added that generated some other output file that the import should act on, the parameter should be updated accordingly.

Note: This value must match the value provided for the 'Output file Attachment ID' parameter within the Delta Calculation state (if no other states are added to the default workflow). If it does not match, then the process will fail at the Import state.

- **Import action:** Optional parameter allowing administrators to select one or more business actions to be run as part of the import. By default, there are no actions included but customers may add any that they wish.

- **Import condition:** Optional parameter allowing administrators to select one of more business conditions to be run as part of the import. Importers that manage applications / linkages have one default condition applied (Validate application on import). This condition prevents applications from being imported if they do not contain a vehicle / assembly and part type in STEP. Additional information on the condition can be found in the **Automotive Business Rule Plugins** section.

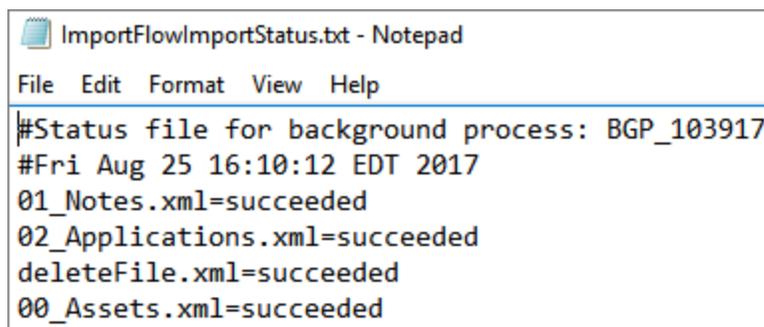
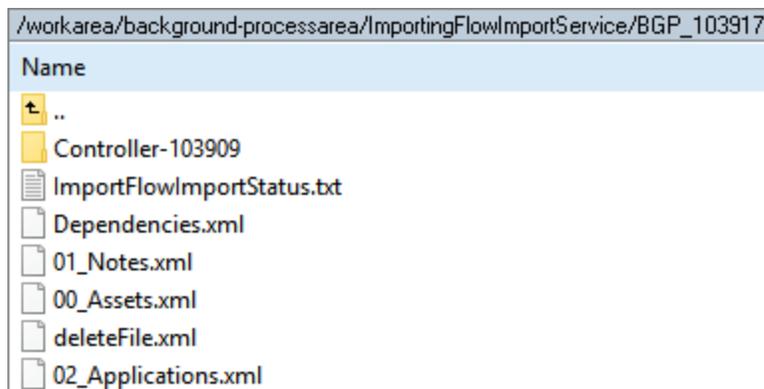
Note: Any business rules selected within the import service function the same as business rules applied in a standard STEP import, meaning that they act on the objects being imported (rather than the controller entity). If conditions are used, they must render true or the data will be excluded from the import.

Important: Automotive importers do not automatically approve objects that are created by importer. So if Objects need to be approved, then a Business Action using the following JavaScript function must be created: `'node.approve() ;'`. Additionally, that Business Action must be added to the 'Import action' parameter.

Import State Function Details

As the import service runs a background process (BGP), a corresponding BGP folder is created on the application server at `/workarea/background-processarea/ImportingFlowImportService`. The BGP folder contains a sub-folder whose name matches the STEP ID of the controller entity that is moving through the workflow and contains the delta calculation file that is being imported. The import service also writes a copy of each file for which import was attempted (the number of content of files will differ based on the import) and a status file which indicates success or completion of each individual import file.

For example, an AutoCare ACES import result is shown below:



Import State Results

The import can succeed, fail, or 'complete with errors' and the controller will automatically follow appropriate bgp. transitions as applicable. All transitions lead to the same Import Completed state and none contain business rules by default, though each customer can add additional handling as they see fit.

Note: Information on errors and/or failures will be visible in Web UI via the background process information provided for the import.

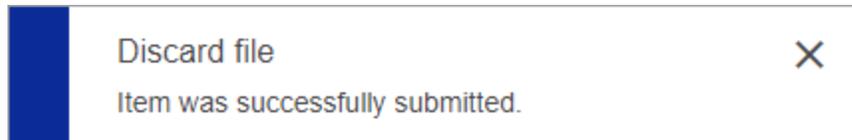
Import Completed State

When import has completed, the controller object is automatically passed to the Import Completed state where it will remain until a user takes action on it. The only option for action is to discard the file, which passes the controller object to the Discard File state, effectively removing it from the workflow.

Discard File State

When a controller enters the Discard File state, it is automatically removed from the workflow via a business rule running on entry to the state. This means that information about the file and processing of it is no longer visible in Web UI workflow screens, though the controller entity itself still exists in STEP. Customers should consider if they would like additional "clean up" actions to occur at this point, such as deleting the entity in STEP and/or deleting the generated files or background processes from the application server.

Clicking the **Discard file** button will cause the Discard file dialog (shown below) to display at the top of the screen. A user must click the 'X' in the top right of the dialog to close it.



Properties can be set in the sharedconfig.properties file on the application server to manage auto-deletion of the background processes. This is done using the format: **AutoDeleteBackgroundProcesses.AgeInHours.[Service] = [hours]**. Note that deletion of the background processes will remove the end user's ability to view warnings and errors for the processes in the Web UI. It is recommended to set up auto-deletion, but care should be taken to set the timing to an appropriate value for the end user processes.

For example, to set the AutoCare validation processes to delete after 48 hours, specify:

```
AutoDeleteBackgroundProcesses.AgeInHours.AutoCareValidationService = 48
```

Important: When using the 'file' delta calculation method, discarded files will not be used for delta calculations. The last loaded file must be retained for it to be used in delta calculation.

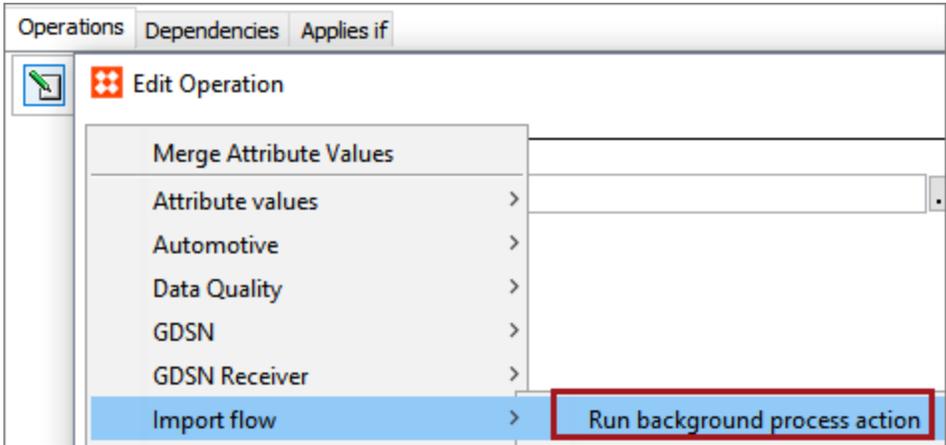
Modifying Import Framework

It is intended that the default workflows be modified to support customer-specific needs. Both the Extension API and the business rule plugins provided with the Automotive solution will assist in this.

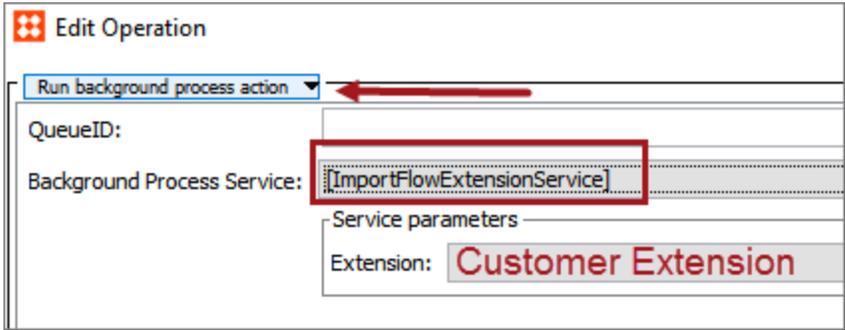
There are many out of the box business rules that can be added for advanced functionality in the importers. For more information, see the **Automotive Business Rule Plugins** section.

The Extension API provides access to all of the files generated as part of the import workflows (e.g., via conversion and delta calculation, as well as the original file submitted for import). Furthermore, it provides the ability to add new plugins to the existing framework that can then be run as part of any existing background process service, such as the Import Flow Extension Service created expressly for this purpose.

To clarify, customers may add new states to any workflow, or new rules to any existing state, where they access and manipulate the files generated by the import framework. In either case, if significant processing is needed, this should be done as a background process using the 'Run background process action.'



Within that action, the **ImportFlowExtensionService** should be selected. Any extensions that have been created by the customer via the Extension API will be available for selection in the Extension parameter dropdown.



Additional information can be found in the Extension API Javadoc. Systems with one or more Automotive licenses will have access to the **com.stibo.importflow.domain.extension** package which includes interfaces for extending the import framework.

Displaying Import Modifications in Web UI

If additional states are added to any workflow, it may be useful to also reflect them in the Web UI. If the file will spend more than a few minutes processing within the state, it may be useful to display the state to end users so the file does not appear to be missing.

Additionally, if user interaction is required for the file to move to the next state, it must be accessible to end users so that they can take action on it. On the other hand, new states that are automated only (e.g. the system will transition the task into the next state without any user intervention) do not necessarily need to be displayed to the end user.

To manage additional import workflow states in the Web UI, two actions need to be taken:

1. Add the state to the Homepage Status Selector for the workflow. An introduction to status selectors in the Automotive solution is provided in the **STEP Automotive Quick Start Guide** within the **Solution Enablement** section of **STEP Online Help**. Detailed information for configuring status selectors is available in the **Status Selector Homepage Widget** topic within **STEP Online Help**.
2. Update the associated workflow screen to display details about the state. Each importer has a corresponding workflow screen in Web UI called '[Standard][Format]WorkflowScreen,' (e.g., AutoCareACESApplicationWorkflowScreen). Select that screen in the Web UI designer and navigate to the Data Provider to add the states, e.g., select the **go to component** link for the Node Editor child component > double click on the **Refreshable Node List** child component > click the **Edit** button for the Data Provider > select the appropriate workflow in the Workflow parameter > add the additional states using the dropdown and **Add** button for the States parameter > **Save**).

ID Structures in Importers

Prior to importing part and/or application data, it is imperative to know the ID structure for the relevant standard. If part and/or application data is imported into STEP without using the proper ID structures, then errors will occur.

The part ID and application ID structures for each of the standards (i.e., AutoCare, NAPA, and TecDoc) are described below. In the examples below, the import file information is displayed (when applicable) above a screenshot of the workbench ID, Name, and Object Type fields.

Prerequisites

The ID structures described within this section are dependent upon the completion of the setup as described in the **2. Run Easy Setup of Import Flow Process** section of the **Automotive Quick Start Guide**.

AutoCare Part ID and Application ID Structures

- **PIES ID** = AC_PIESItem_[BrandAAIAID]_[PartNumber]

```
<PartNumber>034-VC21499</PartNumber>
<BrandAAIAID>GWWQ</BrandAAIAID>
```

ID	AC_PIESItem_GWWQ_034-VC21499
Name	034-VC21499
Object Type	PIES Item

- **ACES ID** = AC_ACESApp_[hash function]

```
<Part BrandAAIAID="GWWQ">034-VC21499</Part>
```

> ID	AC_ACESApp_36fe8bb39ddf3ae9b93cf09b4237c
> Name	034-VC21499
> Object Type	ACES Application

Note: Submitting the above application will search for the above part, with the ID as shown. If not found, an error will be reported and the application will not be created.

NAPA Part ID and Application ID Structures

- **Part ID** = NAPA_Product_[ProductLine][PartNumber]

Name	>	>	Value	>
> ID			NAPA_Product_AA4AA000001	
> Name			AA000001	
> Object Type			NAPA Product	

Note: A NAPA parts importer does not exist within STEP because the NAPA standard does not offer a standard parts import format, but parts must still be created with this ID structure.

- **Application ID = NAPA_App_[hash function]**

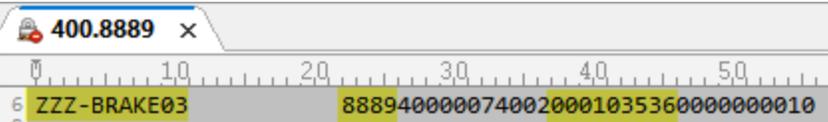
AA4 AA000001

> ID	NAPA_App_bc30f8333daa6f57dbbb658cc8b567
> Name	AA4AA000001
> Object Type	NAPA Application

Note: Submitting the above application will search for the above part, with the ID as shown. If not found, an error will be reported and the application will not be created.

TecDoc Part ID and Application ID Structures

- **Part ID = [Supplier ID]-[hash function]**



ID	8889-3684ee1ea8ea5d07c527ac1776a8fe73
Name	ZZZ-BRAKE03
Object Type	DS_Supplier Article

- **Application ID = TD_L_[hash function]**

ID	TD_L_a2f9742628a61dcf5537cbcba4efb547
Name	TD_L_000103536
Object Type	DS_Linkage

Note: The part and application data are in the same file, eliminating the 'product not found' error.

Adding Reporting Extensions to Imports

It is expected that customers may want to add some additional states to the default workflow, and some of these states may include a process to generate a report and/or other file type for end users to view.

For example, an Impact Report state could be added to generate a report listing new data that would be created as a result of the import, and existing data that would be marked for deletion. The state could be added to the workflow screen (as described in the **Displaying Import Modifications in Web UI** section), and a downloadable report could be made available to the user, as shown below:

Import Details						
Process	Started Time	Duration	Started By	Status	Background	Report
Validation	2017-08-29 09:28:15	6 secs	STEPSYS	Validation completed	succeeded	
Conversion	2017-08-29 09:28:21	7 secs	STEPSYS	Conversion completed	succeeded	
Delta Calculation	2017-08-29 09:28:28	3 secs	STEPSYS	Delta calculation completed	succeeded	
Impact Report	2017-08-29 09:28:31	11 secs	STEPSYS	Generation completed	succeeded	Download file
Import	2017-08-29 09:40:29	1 min 53 secs	STEPSYS	Import completed	succeeded	

Creation of the service to generate the report requires use of the Import Flow Extension Service (ImportFlowExtensionService), but there is some built-in functionality to be aware of to enable users to access the report file in the Web UI. For more information about the Import Flow Extension Service, see the **Modifying Import Framework** topic.

Files can be stored to the importflow using the **addFile** (String attachmentID, File file) method in **ImportFlowExtensionContext**. Later it can be accessed from another process with the **getFile** (String attachmentID) method, using the same attachmentID with which it was stored. For the file to display in the Report column in the Web UI, the attachmentID has to be equal to the ID of the workflow state in which the file should appear. See the **ImportFlowExtensionContext** interface in the Javadoc for additional information.

However, this requires the Importflow State Report header to be displayed in the associated workflow screen, as described in the **Displaying the Import Details Report Column** topic within the **STEP Automotive Quick Start Guide** found within the **Solution Enablement** section of **STEP Online Help**.

Validation Error Handling

Each import has some basic format validations applied, and each implementation must determine how these should be handled.

Information on each of the available automotive standard specific importers is addressed in the following sections:

- AutoCare Importers
- TecDoc Reference Data Importer

The handling of validation errors can be configured by enabling / disabling the 'Continue on Error' parameter on the Validation state of each import workflow. By default, the 'Continue on Error' parameter is disabled.

For example, when reference data includes multiple files and a data point included in one is not present in a corresponding related file (e.g., a PCdb Codemaster file includes a position that is omitted from the Position file in the same PCdb), an error will be written to the execution report of the validation process. However, as reference data is typically managed by an outside source (e.g. AutoCare, TecDoc, or NAPA), it may be desired to import the data regardless of these types of errors. If so, the 'Continue on Error' parameter should be checked on the validation service. In this case the validation issues will still be written to the execution report, but all valid data will be converted and made available for the import process. If unchecked, validation errors will cause the import process to stop and will need to be corrected before the file can complete validation and continue on in the import process.

The sections below detail how this setting changes user actions when importing data.

For the examples in the sections below, consider when an importer has a strict file name validation rule (e.g., NAPA Vehicle and NAPA Translation Importers), should a bad file name stop the data from being imported? If so, then the parameter should remain disabled. If not, then the parameter should be enabled.

Continue on Error Disabled

In the example below, the NAPA Vehicle Import Controller Screen displays the import file name, if you look closely you can see that spaces were used instead of underscores. Because the 'Continue on Error' parameter was disabled at the time this import file was processed, the Import Details table displays the status as 'Validation failed,' the Background Process Link displays as 'failed,' and the Overall Status of the import displays as 'Error: Validation failed.'

NAPA Vehicle Imports

Process	File Name	Overall Status
Controller-109469	ValidVehicles Rev2000 01_01.zip	Error: Validation failed

Import Details

Process	Started T	Duration	Started By	Status	Background Process Link
Validation	2017-10-26 11:03:41	5 secs	STEPSYS	Validation failed	failed

[Start import](#) [Reject](#) [Discard file](#)

The validation errors caused the import process to stop, and the errors must be corrected before the file can complete validation and continue on in the import process. Clicking the 'failed' Background Process Link will display the Background Process Details, where the detailed error message displays (as shown below).

ID	Type	Text
<input type="checkbox"/> 10	Error	The file name 'ValidVehicles Rev2000 01_01.zip' does not match required format 'ValidVehicles_RevYYYY_MM_DD.zip'.

Once the error is addressed the user will need to begin the file import process, as before.

Continue on Error Enabled

With the 'Continue on Error' parameter enabled, the import will continue through the workflow, but the Validation process status will display as 'Validation failed' within the Import Details section of a Web UI Import Controller Screen, and the Background Process Link will display as 'succeeded.'

In the example below, the NAPA Vehicle Import Controller Screen displays the import file name. Notice that spaces are used instead of underscores in the beginning of the file name. Because the 'Continue on Error' parameter was enabled at the time this import file was processed the Import Details table displays the status as 'Validation failed,' but the Background Process Link displays 'succeeded' and the import file was able to enter the next state of the workflow, despite the file name not meeting the validation criteria.

NAPA Vehicle Imports

Process	File Name	Overall Status
Controller-109568	ValidVehicles Rev2000 01_01.zip	Done creating delta file

Import Details

Process	Started T	Duration	Started By	Status	Background Process Link
Validation	2017-10-26 11:03:41	5 secs	STEPSYS	Validation failed	succeeded

[Start import](#) [Reject](#) [Discard file](#)

Clicking the 'succeeded' Background Process Link will display the Background Process Details, where the detailed error message is displayed (as shown below).

ID	Type	Text
<input type="checkbox"/> 10	Error	The file name 'ValidVehicles Rev2000 01_01.zip' does not match required format 'ValidVehicles_RevYYYY_MM_DD.zip'.
<input type="checkbox"/> 20	Info	Validation finished with errors: 1 (Thu Oct 26 11:03:46 EDT 2017)

AutoCare Importers

STEP Automotive offers an out-of-the-box solution for importing the file types necessary to the AutoCare standard. Each of the AutoCare file types has their own importer, and more information for each can be found within their respective sections below.

Important: Imports should be executed in the given order for best results, as there are some dependencies between the imports.

1. Qdb (Qualifier Database)
2. Brand Table
3. PCdb (Product Classification Database)
4. PAdb (Product Attribute Database)
5. VCdb (Vehicle Configuration Database)
6. PIES (Product Information Exchange Standard)
7. ACES (Aftermarket Catalog Exchange Standard)

For information on the supported versions, see the **Supported Versions and Formats** topic.

Note: Details on each file type's data rules per the AutoCare Association can be found at www.autocare.org.

Qdb Import Validation Rules

When importing an AutoCare Qdb (Qualifier Database) file many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per the AutoCare Association. This information can be found at www.autocare.org.

For information on the supported versions, see the **Supported Versions and Formats** topic within this guide.

Accepted File Extension: .zip

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
All tables present	Validation state	BGP ends in an error triggering the import to enter the Error state.	The required table '[Required Table Name]' is missing in the ZIP archive or is empty.
Mandatory values present	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table '[Table Name]' contains a row that misses value for the required column '[Column Name]' at line 3.
Correct number of columns (If	Validation	BGP ends in an error	Table '[Table Name]' contains a row

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
last column is optional, then the last column can be missing without affecting validation.)	state	triggering the import to enter the Error state.	with wrong number of columns at line 2.
Loading of older version	Validation state	Warning is displayed.	Existing version '2015-09-25' is newer that provided '2014-11-28.'
Empty line	Validation state	Warning is displayed.	Table '[Table Name]' contains an empty row at line 3.

Brand Table Import Validation Rules

When importing an AutoCare Brand Table file, many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per the AutoCare Association. This information can be found at www.autocare.org.

For information on the supported versions, see the **Supported Versions and Formats** topic within this guide.

Important: For best results, AutoCare imports should be executed in the order specified within the **AutoCare Import Validation Rules** topic.

Accepted File Extension: .txt

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
All tables present	Validation state	BGP ends in an error triggering the import to enter the Error state.	The required table '[Required Table Name]' is missing in the archive or is empty.
Mandatory values present	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table '[Table Name]' contains a row that misses value for the required column '[Column Name]' at line 3.
Correct number of columns. (If last column is optional, then the last column can be missing without affecting validation.)	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table '[Table Name]' contains a row with wrong number of columns at line 2.
Loading of older version	Validation state	Warning is displayed.	Existing version '2015-09-25' is newer than provided '2014-11-28.'
Empty line	Validation state	Warning is displayed.	Table '[Table Name]' contains an empty row at line 3.

PCdb Import Validation Rules

When importing an AutoCare PCdb (Product Classification Database) file many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per the AutoCare Association. This information can be found at www.autocare.org.

For information on the supported versions, see the **Supported Versions and Formats** topic within this guide.

Important: For best results, AutoCare imports should be executed in the order specified within the **AutoCare Import Validation Rules** topic.

Accepted File Extension: .zip

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
All tables present	Validation state	BGP ends in an error, triggering the import to enter the Error state.	The required table '[Required Table Name]' is missing in the ZIP archive or is empty.
Mandatory values present	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table '[Table Name]' contains a row that misses value for the required column '[Column Name]' at line 3.
Correct number of columns (If last column is optional, then the last column can be missing without affecting validation.)	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table '[Table Name]' contains a row with wrong number of columns at line 2.
Loading of older version	Validation state	Warning is displayed.	Existing version '2015-09-25' is newer than provided '2014-11-28.'

PADB Import Validation Rules

When importing an AutoCare PAdb (Product Attribute Database) file many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per the AutoCare Association. This information can be found at www.autocare.org.

For information on the supported versions, see the **Supported Versions and Formats** topic within this guide.

Important: For best results, AutoCare imports should be executed in the order specified within the **AutoCare Import Validation Rules** topic.

Accepted File Extension: .zip

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
Cannot be unzipped or is not in a recognized format.	Validation state	BGP ends in an error, triggering the import to enter the Error state.	File is not in a recognized format or could not be unzipped.
Unit group existence.	Import state	Unit skipped.	The unit 'DK' could not be created as the unit group is unknown.
All tables / subfiles present. (PartAttributes.txt, MetaUoMCodes.txt, Version.txt, PartAttributeAssignment.txt, Metadata.txt)	Validation state	BGP ends in an error, triggering the import to enter the Error state.	The required table '[Required Table Name]' is missing in the [Name of zipped file] ZIP archive or is empty.
Mandatory values present	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table '[Table Name]' contains a row that misses value for the required column '[Column Name]' at line 3.
Correct number of columns / headers (If last column is optional, then the last column can be missing without affecting validation.)	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table '[Table Name]' contains a row with wrong number of columns at line 2. or [Name of subfile] does not include [missing Header].
Loading of older version	Validation state	Warning is displayed.	Existing version '2015-09-25' is newer than provided '2014-11-28.'
Empty line	Validation state	Warning is displayed.	Table 'VehicleToBedConfig' contains an empty row at line 3.
Part Type existence	Import state	All attribute links to PT skipped.	Line 10, Classification 2: No parent specified for new classification with ID 'AC_PartTerminology_99999' Line 10, Classification 2: The classification with ID 'AC_PartTerminology_99999' was skipped.

VCdb Import Validation Rules

When importing an AutoCare VCdb (Vehicle Configuration Database) file many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per the AutoCare Association. This information can be found at www.autocare.org.

For information on the supported versions, see the **Supported Versions and Formats** topic within this guide.

Important: For best results, AutoCare imports should be executed in the order specified within the **AutoCare Import Validation Rules** topic.

Accepted File Extension: .zip

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
All tables present	Validation state	BGP ends in an error triggering the import to enter the Error state.	The required table 'BaseVehicle' is missing in the ZIP archive or is empty.
Mandatory values present	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table 'BaseVehicle' contains a row that misses value for the required column 'YearID' at line 3.
Correct number of columns (If last column is optional, then the last column can be missing without affecting validation.)	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table 'BaseVehicle' contains a row with wrong number of columns at line 2.
References between tables	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table 'Vehicle' contains a row where the 'RegionID' column value '1000' does not exist in referenced 'Region' file at line 13.
Correct type of values: date / numbers / max length	Validation state	BGP ends in an error triggering the import to enter the Error state.	Table 'Vehicle' contains a row where the 'PublicationStageDate' column value '33-10-2013 14:38:00' is not a proper instance of type 'Date with time' at line 35.
Loading of older version	Validation state	Warning is displayed.	Existing version '2015-09-25' is newer than provided '2014-11-28.'
Empty line	Validation state	Warning is displayed.	Table 'VehicleToBedConfig' contains an empty row at line 3.

PIES Import Validation Rules

When importing an AutoCare PIES (Product Information Exchange Standard) file many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per the AutoCare Association. This information can be found at www.autocare.org.

For information on the supported versions, see the **Supported Versions and Formats** topic within this guide.

Important: For best results, AutoCare imports should be executed in the order specified within the **AutoCare Import Validation Rules** topic.

Accepted File Extension: .xml

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
PIES 6.5 XSD validation	Validation state	Validation fails	Error while validating file against XSD: cvc-complex-type.2.4.a: Invalid content was found starting with element 'Headeasdr.' One of '{"http://www.aftermarket.org":TestFile, "http://www.aftermarket.org":Header}' is expected.
Part terminology existence	Conversion state	Item will be skipped	Part terminology with id 99999 does not exist in AutoCare reference data. All items under it will be skipped.
Duplicated item	Conversion state	Warning is displayed.	Item with id MyPart already imported.
Duplicated package	Conversion state	Warning is displayed.	Package with PackageLevelGTIN 1234567 was already imported for item MyPart.
Missing GTIN on package	Conversion state	Package skipped	Package with UOM PK does not have a PackageLevelGTIN specified for item MyPart. Package import will be skipped.
PriceSheet existence	Import state	Standard step missing attribute errors.	Attribute 'AC_PIES_PRCS_BADPricesheet_CurrencyCode' not found.

Note: Brand existence is not verified within STEP.

ACES Import Validation Rules

When importing an AutoCare ACES (Aftermarket Catalog Exchange Standard) file, many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per the AutoCare Association. This information can be found at www.autocare.org.

For information on the supported versions, see the **Supported Versions and Formats** topic within this guide.

Important: For best results, AutoCare imports should be executed in the order specified within the **AutoCare Import Validation Rules** topic.

Accepted File Extension: .xml and .zip

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
ACES 3.2 XSD validation	Validation state	Import fails Validation state.	cvc-pattern-valid: Value 'somethingWrongBrand' is not facet-valid with respect to pattern '[B-Z-[EIOU]][B-Z-[EIO]][B-Z-[OU]][A-Z]' for type 'brandType.'
Base vehicle existence	Import state via Business Action	Record skipped.	An application (id=13) for part: VC36004 has no assembly target.
Engine and transmission base existence	Import state	Application is imported, but Condition is NOT imported.	Target 'AC_EngineBase_2127123321' of reference not found.
File name matches configuration	Conversion state	BGP ends in an error triggering the import to enter the Error state.	Conversion stopped due to an error: Current import handling configuration for brand DKGX requires Supplier information that failed to be obtained from the filename.
Import mode Full and action = D	Conversion state	Record is skipped and a warning will display in the BGP report.	Application 16 will be skipped as the import mode FULL only processes the applications with A (Add) action.
Part existence	Import state via Business Action	Record skipped.	AC_PIEItem_DKGX_BADNumber does not exist for application (id=15).
Part terminology existence	Import state via Business Action	Record skipped.	An application (id=14) for part: VC36004 has no parttype.
Qualifier existence	Import state	Record is imported but a standard STEP reference target not found error will display.	Target 'AC_Qualifier_12946111111111111111' of reference not found.
Text in number conditions	Conversion state	BGP ends in an error, triggering the import to enter the Error state, and an exception to display within the conversion report.	

Note: The ACES importer does not validate that the VCdb, PCdb, and/or Qdb versions within STEP are the same versions within the ACES file. Also, Brand existence is not verified within STEP.

TecDoc Reference Data Importer

The intention of the Automotive TecDoc Reference Data Importer is to provide an out-of-the-box solution for importing data included within a supported TecDoc Reference Data file. Because only supported versions will successfully upload, before attempting to upload a TecDoc Reference Data file, confirm the file version being uploaded is listed within the **Supported Versions and Formats** topic.

This section includes information on:

- Using TecDoc Reference Data Importer
- Configuring TecDoc Reference Data Importer

Prerequisites

It is expected that anyone using and/or configuring the TecDoc Reference Data Importer be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

For general information about the File Loading Widget and Status Selector Widget, including additional information about working with these widgets, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**, and the **Status Selector Homepage Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

Note: TecDoc is the world's largest automotive product and fitment data aggregator and is owned by the parts suppliers themselves. It was formed in 1998 to create a uniform vehicle and product description standard to allow over 500 suppliers to broadcast and share their product data with their customers.

Using TecDoc Reference Data Importer

A TecDoc Reference Data file can be imported into STEP by uploading it to either a configured hotfolder on an application server, or through a File Loading Widget on a Web UI Homepage.

The following topics provide information on using the TecDoc Reference Data Importer.

- Importing Reference Data Files via Web UI
- Reference Data Import Validation Rules
- Error Handling for Reference Data Imports

Prerequisites

It is expected that anyone using and/or configuring the TecDoc Reference Data Importer be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

For more information about uploading files to an application server, see the **File Loading** section of the **STEP Automotive Quick Start Guide** found within the **Solution Enablement** section of **STEP Online Help**.

For more information about using Workbench to monitor and process imports, see the **Workflows** section of **STEP Online Help**.

For general information about the File Loading Widget and Status Selector Widget, including additional information about working with these widgets, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**, and the **Status Selector Homepage Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

Importing Reference Data Files via Web UI

The intention of the Automotive TecDoc Reference Data Importer Web UI setup included within this topic is to provide an out-of-the-box solution for importing data included within a supported TecDoc Reference file. Because only supported versions will successfully upload, before attempting to upload a TecDoc Reference Data file, confirm the file version being uploaded is listed within the **Supported Versions and Formats** topic.

A TecDoc Reference Data file includes information on vehicle data (i.e., cars, commercial vehicles, vans, motorcycles), vehicle engines, axles, drivers' cabs, generic articles (product classification), criteria (attributes), and key table suggestions regarding search structures.

Prerequisites

Within this section users will be directed to view details for an Entity controller within Web UI using a Node Details screen configured for Entities. Before this can be available to users, an Entity Details screen must be created.

To easily start and monitor a TecDoc Reference Data Import, best practice is to use a Web UI Import Controller screen specific to the TecDoc Reference Data Importer. When the Easy Setup actions for the TecDoc standard are completed, the TecDoc Import Controller screen is automatically created and configured for use. Additional information can be found in the **Configuring TecDoc Reference Importer** topic.

It is expected that anyone using and/or configuring the TecDoc Reference Data Importer be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

If the Easy Setup actions for the TecDoc Component model have been completed, then the functionality explained within this topic should be available. Otherwise, configuration is necessary. For more information, see the **TecDoc Reference Data Importer** topic.

Import Process Overview

Once a valid automotive data file is uploaded to a hotfolder on the application server (optionally using a File Loading Widget), the file is picked up from the hotfolder by an IIEP, and the IIEP creates an Entity in STEP that represents the file. This Entity object is called the 'controller' and contains basic data about the file and the file's status in the workflow. Web UI users are able to monitor the import status using a Status Selector Widget and an Import Controller Screen. Once an import file reaches the 'Ready for Import' state, then users can start the import by clicking on the 'Start import' button within the Control Panel screen. At that time, the BGP service (that runs as part of the Import state) allows for the configured business rules to act on the objects being imported.

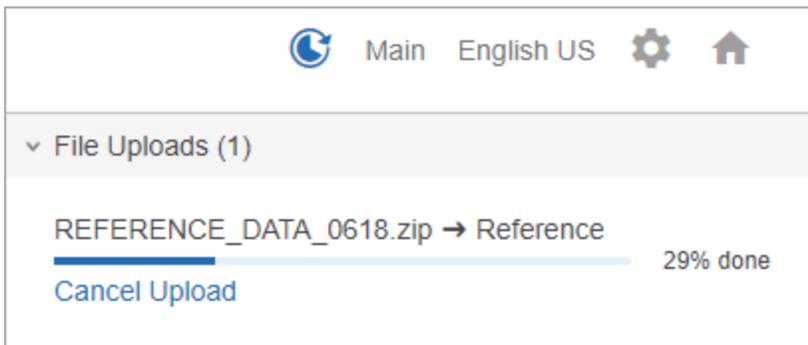
Using the TecDoc Reference Data Importer in Web UI

1. Access the TecDoc Web UI Homepage.
2. Upload a valid TecDoc Reference Data file to the application server hotfolder (root/upload/hotfolders/TecDocReferenceInputFolder), using the 'Reference' drop zone of the 'TECDOC IMPORTS' File Loading Widget.

For more information, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

3. Once the upload has started, users can view the progress of the upload using the Background Process Notification Component.

In the example below, the BGP Notification Panel is expanded and the file, 'REFERENCE_DATA_0618.zip' is 29% processed.



For more information on using the BGP Notification Component and side panel, see the **Background Process Notification Component** topic within the **Main Properties Overview** section of **STEP Online Help**.

Once created, the Controller is initiated into the workflow associated with the importer (TecDoc Reference Import). From there, the TecDoc Reference Import workflow takes over processing of the file via a series of states using business rules and background processes to carry out the processing of the file. Each import has an associated workflow and all proceed through the same states by default. However, it is intended that customers will expand on the existing states and actions to add their own validations, reporting, and additional processing as needed.

Important: It is critical to understand that it is only the Controller Entity that is in the workflow - the objects being acted on (created / updated / deleted) via information supplied in the import file are not in the workflow. Therefore, running standard business actions acting on current object will impact the Controller entity only, not the objects in the input file. In order for the Business Action to act on the objects being imported, the Business Action must be added to the 'Import action' parameter on the 'Import' state. For more information, see the **Import State** topic within the **Default Workflow States and Functions** section.

4. If an Entity Details screen has been configured, then when the IIEP creates the Controller Entity object, users can view the Controller and its important information by navigating within the Tree side panel to the Import Flow Root > TecDoc Reference. Otherwise, if a user clicks on an Entity in the Tree side panel, an error will display indicating the configuration is invalid.

Note: If an error message displays when selecting an Entity within a Web UI, then the Entity Details screen has not been configured.

In the example below, the Tree side panel is expanded, and the 'REFERENCE_DATA_0618.zip' Controller with ID 'Controller- 102441' is displayed below the 'TecDoc Reference' Entity. When the Controller is selected, many details can be viewed within the Node Details screen.

Note: In the screenshot below, the 'Enable Tag Conversion' parameter within the Attribute Value Group Component is enabled.

Tree

- TecDoc
- TecDoc Assets Root
- Import Flow Root
 - AutoCare ACES
 - AutoCare Brand
 - AutoCare PAdb
 - AutoCare PCdb
 - AutoCare PIES
 - AutoCare Qdb
 - AutoCare VCdb
 - NAPA Application
 - NAPA Attribute
 - NAPA Translation
 - NAPA Vehicle
 - TecDoc Reference
 - REF_DATA_0318_minus_Ta...
 - REFERENCE_DATA_0618.zip**
 - REFERENCE_DATA_0618.zip
 - TecDoc reference Data TAF 2...
 - TecDoc Supplier
- TecDoc Manufacturer Root
- TecDoc Resource Root
- TecDoc Supplier Price Lists
- Publications
- Primary Product Hierarchy
- Collections

Advanced search

Node Details

ID	Controller-102441
Name	REFERENCE_DATA_0618.zip
Object Type	Import Flow Controller Type
Revision	Date: 2018.08.08 Revision number: 0.1 Last Edited by: TECDOCREFERENCEDATAIMPORT Time: 16:26:12
Automotive Import Flow State BGP	<p><?xml version="1.0" encoding="UTF-8"?></p><p><StringMap<span class="step-
Import Flow Endpoint ID	TecDocReferenceInboundEndpoint
Import Flow File Type	TecDocReferenceData
Import Flow Overall Status	Done creating delta file
Import Flow State Status	<p><?xml version="1.0" encoding="UTF-8"?></p><p><StringMap<span class="step-
Import Flow Workflow ID	TecDocReferenceImport

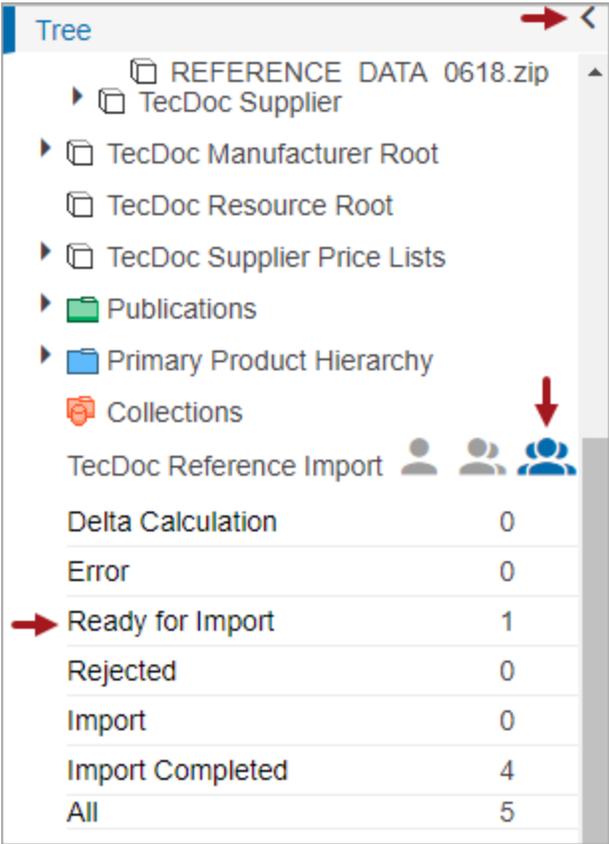
- **Name:** STEP Name of the Controller entity. This is generated from the uploaded file original name.
- **Automotive Import Flow State BGP:** Attribute used to store the IDs of the background processes.
- **Import Flow State Status:** Attribute used to store and display the status of each process (rather than the overall status).

- **Import Flow Overall Status:** Attribute used to store and display the global status of the file (rather than the process specific status).

5. As the file is uploaded, and the Entity Controller moves through the TecDoc Reference Import workflow, users can monitor the progress using the 'TECDOC REFERENCE IMPORT' Status Selector Widget on the Web UI homepage and/or the left side panel.

In the example below, the Tree panel is expanded, and the **Triple user button** is selected so that all items assigned to any user are displayed. Notice that one file is in the 'Ready for Import' state, and four files in the 'Import Completed' state, for a total of five files.

For more information, see the **Moving Tasks Trough a Workflow in Web UI** topic within **STEP Online Help**.



6. Clicking on the **Ready for Import** state within the Status Selector homepage and/or the left side panel widget will navigate the user to the TecDoc Reference Data Import Controller Screen with only those Controllers in the 'Ready for Import' state displayed.
7. Clicking the Controller icon displays the Import Details below the Controller list.

In the example below, Controller 'REFERENCE_DATA_0618.zip' (ID 'Controller-102441') with an overall status of 'Done creating delta file' is selected and the Import Details are displayed below the Controller list.

8. Optionally, before starting the import, clicking on the 'completedwitherrors' Background Process Link will display the Background Process Details screen where users can view or download the details of the validation process.
9. Click the **Reject** button to move the Controller to the Rejected state. For more information, see the **Rejected State** topic within the **Import Framework** section.
10. Click the **Start import** button, the Start import dialog (shown below) displays at the top of the screen, and the Controller is moved to the Import state of the workflow. For more information, see the **Import State** topic within the **Import Framework** section.

Start import
×

Item was successfully submitted.

Importing a TecDoc Reference Data file can take several hours, but the import progress can be monitored using the 'TECDOC REFERENCE IMPORT' Status Selector Widget on the Web UI homepage and/or the left side panel or the Import Controller Screen, Import process Status column.

In the example below, the TecDoc Reference Data Import Controller Screen displays the Overall Status and the Import process status as 'Importing files...'. Additionally, the Background Process Link column displays a link to the Background Process Details screen as 'running.'

TecDoc Reference Data Import Controller Screen

Process	File Name	Overall Status
Controller-102441	REFERENCE_DATA_0618.zip	Importing files...

Import Details

Process	Started Time	Duration	Started By	Status	Background Process Link
Validation	2018-08-08 16:26:12	28 secs	STEPSYS	Validation completed	completedwitherrors
Conversion	2018-08-08 16:26:40	2 mins 19 secs	STEPSYS	Conversion completed	succeeded
Delta Calculation	2018-08-08 16:28:59	3 mins 28 secs	STEPSYS	Delta calculation completed	succeeded
Import	2018-08-10 12:37:44	1 hr 6 mins 44 secs	STEPSYS	Importing files... 11 running	

⏪ < 1-4 of 4 > ⏩
➡ Start import
➡ Reject
➡ Discard file

11. Optionally, click the 'running' Background Process Link (shown above) to view the details of the import process within the Background Process Details screen.

Once the import has completed, the Controller is automatically moved to the Import Completed state. For more information, see the **Import Completed State** topic within the **Import Framework** section.

For more information about Reference Data import validation rules and example error messages, see the **Reference Data Import Validation Rules** topic.

For more information on automotive workflow states, see the **Default Workflow States and Functions** topic.

Reference Data Import Validation Rules

When importing a TecDoc Reference Data file many STEP validation rules are performed. The table below describes each of these validation rules, where the validation check occurs, what happens when a validation fails, and an example of a failed validation message (when applicable). However, it does not detail the file type's data rules per TecAlliance.

For information on the supported versions, see the **Supported Versions and Formats** topic.

Accepted File Extension: ZIP and/or 7z (A compressed archive file format by the 7-Zip achiever that supports several different data compression, encryption and pre-processing algorithms.)

Validation Rule	Occurs	When Validation Fails	Failed Validation Message Example
Attribute validity	Import state	If 'Continue on Error' is enabled, then the record is skipped and a warning displays in the BGP report. Otherwise, the import fails.	Error:The attribute 'TD_ATTR_BJvon' is not valid for 'classification 'TD_AXLE_CODE.'
Character length limits	Import state	If 'Continue on Error' is enabled, then the record is skipped and a warning displays in the BGP report. Otherwise, the import fails.	Error in this import 04_LOVDefinitions.xml setting completed with errors - Error: The value 'Value' isn't valid for LOV 'LOV ID': Length: 60 does not fit: 'Value.' The automotive importer adheres to the character length limits set by TecAlliance for each of the Delta Keys. These limits are listed within the TecAlliance TecDoc Data Format guide. When errors occur, the error message includes the necessary character length (as shown in the example above).
Missing Object Type when allocating Engine Number (MotNr)	Import state	If 'Continue on Error' is enabled, then the record is skipped and a warning displays in the BGP report. Otherwise, the import fails.	Error in this import 25_CVTypesAndEngineAllocation.xml setting completed with errors - Error: Missing object type for new object: TD_CV_TYPE_23420 of type: com.stibo.core.domain.Classification. For more information, see the Missing Object Type When Allocating Engine Number topic.
Object Type existence	Import state	If 'Continue on Error' is enabled, then the record is skipped and a warning displays in the BGP report. Otherwise, the import fails.	ObjectType 'TD_NoAssemblyGroupSynonym' not found.

Error Handling for Reference Data Imports

Errors may occur during the import of a TecDoc Data file. When errors occur, detailed error messages display within a BGP Execution Report. This section describes an error that can occur when importing a TecDoc Data file by listing an overview of the error, error message template, error message example, where the error messages can be viewed, and how best to address the error.

Important: The handling of validation errors can be configured by enabling / disabling the 'Continue on Error' parameter on the Validation state of each import workflow. By default, the 'Continue on Error' parameter is disabled. For more information see the **Validation Error Handling** topic within the **Importing Automotive Data** section.

The following are error types related to importing a TecDoc Reference Data file:

- Missing Object Type When Allocating Engine Number

For information on importing TecDoc Reference files, see the **Importing Reference Data Files via Web UI** topic.

Missing Object Type When Allocating Engine Number

Errors may occur during the import of a TecDoc Data file. When errors occur, detailed error messages display within a BGP Execution Report. This section describes an error that can occur when importing a TecDoc Data file by listing an overview of the error, error message template, error message example, where the error messages can be viewed, and how best to address the error.

Important: The handling of validation errors can be configured by enabling / disabling the 'Continue on Error' parameter on the Validation state of each import workflow. By default, the 'Continue on Error' parameter is disabled. For more information see the **Validation Error Handling** topic within the **Importing Automotive Data** section.

Overview

This type of error occurs when the import file attempts to allocate an Engine Number to a particular TecDoc Commercial Vehicle Type (TD_CV_TYPE), but the data within the table that imports the Commercial Vehicle object, known in STEP as [Vehicle Type (CV)], is missing.

When a user views the error message, this can be understood because the message template states: Missing object type for new object: <Object ID> of type: com.stibo.core.domain.Classification.

When viewing the example error message below, it is clear that the Object that is missing is the Commercial Vehicle object with the Object ID 'TD_CV_TYPE_23420.'

Error Message Template

Error in this import 25_CVTypesAndEngineAllocation.xml setting completed with errors - Error: Missing object type for new object: <Object ID> of type: com.stibo.core.domain.Classification

Error Message Example

Error in this import 25_CVTypesAndEngineAllocation.xml setting completed with errors - Error: Missing object type for new object: TD_CV_TYPE_23420 of type: com.stibo.core.domain.Classification

Viewing the Error Message

The screenshot below displays this error message example within a Background Process Details Web UI Screen.

Understanding Data Table 537

The following important Delta Keys are within this table:

NTypNr: Nine digit number representing a Commercial Vehicle Type.

In the example below, NTypNr 000023420 is displayed in Workbench as the 'Vehicle Type (CV)' Object Type, 'HICOM Closed - MTB - MTB 145 1994-01-01-2004-12-31, kW, HP, cmTech 2771' (TD_CV_Type_23420).

Description	
Name	Value
ID	TD_CV_TYPE_23420
Name	HICOM Closed - MTB - MTB 145 1994-01-01-2004-12-31, kW, HP, cmTech 2771
Object Type	Vehicle Type (CV)
Revision	0.1 Last edited by TECDOCREFERENCEDATAIMPORT on Fri Aug 10 13:36:50 EC
Approved	Never Been Approved
Translation	Not Translated
Path	Classification 1 root/TecDoc/Linking Targets/HICOM/Commercial Vehicle HICOM/
Visibility	
ATTR_Country Bit String	abc
ATTR_Delete	0
Axle Configuration	4x2
ccm Technical	123 2771
Construction Year To	2004-12-31
Construction Year From	1994-01-01
Country Dependent Model De	abc
Country Exclusion	
Country Inclusion	
CV Body Type	Platform / Chassis
CV Short Name	abc HICOM Closed - MTB - MTB 145
CV Type Number	123 23420
Engine Type	Diesel
HP From	123 80

MotNr: Five digit number representing an Engine Number.

In the example below, MotNr 01670 is displayed in Workbench as the 'Engine Code' Object Type, '4JB1' (TD_ENGINE_CODE_1670).

Tree		4JB1 rev.0.1 - Classification	
ISUZU		Classification	Sub Products
Axles ISUZU		References	Referenced By
Commercial Vehicle ISUZU		Images & Documents	Tables
Engine ISUZU		Description	
4JB1		Name	Value
4JB1-T		ID	TD_ENGINE_CODE_1670
4JB1-TC		Name	4JB1
4JG2		Object Type	Engine Code
4JG2 T		Revision	0.1 Last edited by STEPSYS on Thu Apr 26 02:54:43 EDT 2018
4JG2 TC		Approved	✘ Never Been Approved
4JH1-TC		Translation	Not Translated
4JH1-X		Path	Classification 1 root/TecDoc/Linking Targets/ISUZU/Engine ISUZU/4JB1
4JJ1-TC		Visibility	
4JJ1-TCS		ATTR_Country Bit String	abc
4JJ1-TCX		ATTR_Delete	123 0
4JJ1-X		Bore	123 093000
4JK1E5S-L			
4JK-1E5-TC			

In this example, because the Commercial Vehicle object with ID: 'TD_CV_TYPE_23420' is missing from the appropriate STEP classification hierarchy, and file 537 includes instruction to link the Engine Number to that object using the TD_Vehicle(CV)ToEngine link type, STEP displays a missing object error.

In short, object 'TD_CV_TYPE_23420' is missing from file 532 but the information associating it is present in file 537.

To resolve this, create the missing object and either import the Reference Data import file again, or manually link the object(s) to the engine code.

Configuring TecDoc Reference Data Importer

The following topics provide the configuration steps necessary to allow users to be able to drag and drop TecDoc Reference Data files onto a configured File Loading Widget and monitor the progress of the import file using a configured Status Selector Homepage Widget and an Import Controller Screen.

- Configuring an IIEP for Reference Data Imports
- Configuring a File Loading Widget for Reference Data Imports

Prerequisites

It is expected that anyone configuring the TecDoc Reference Data Import solution within a Web UI be familiar with the Web UI Designer, as basic concepts for working with the designer are not covered in this section. In addition, the user must have appropriate privileges to access the designer. For more information, See the **Designer Access** topic within the **Web UI Getting Started** section of **STEP Online Help**.

Within this section users will be directed to view details for an Entity controller within Web UI using a Node Details screen configured for Entities. Before this can be available to users, an Entity Details screen must be created.

Anyone configuring the TecDoc Reference Data Importer is expected to be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

For general information about the File Loading Widget and Status Selector Widget, including additional information about working with these widgets, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**, and the **Status Selector Homepage Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

Configuring an IIEP for TecDoc Reference Data Imports

If the Easy Setup actions for the TecDoc Component model have been completed, then the configurations explained within this topic have been set up automatically. The purpose of this topic is to detail those settings as to assist admins in adjusting their solution where necessary.

An Inbound Integration Endpoint (IIEP) can be configured in workbench to help automate the process of importing TecDoc Reference data into STEP. Once an IIEP is configured for TecDoc Reference data imports, reference data files can be imported after they are uploaded either to a configured hotfolder on an application server, or to a File Loading Widget on a Web UI Homepage. For more information, see the **TecDoc Reference Data Importer** topic.

This section describes how to configure an IIEP that can allow for the automated processing of TecDoc Reference data files. Each screenshot example within this section provides recommended values for the TecDoc Reference Data Importer and the parameters displayed.

Prerequisites

It is expected that anyone configuring an IIEP for use with a TecDoc Reference Data Import is familiar with the configuration and other processing of standard inbound integration endpoints. For more information, see the **Inbound Integration Endpoints** topic within the **Data Exchange** section of **STEP Online Help**.

Configuration Steps

1. Go to System Setup, select and then right-click the **Inbound Integrations Endpoints** setup group, and click **Create Inbound Integration Endpoint**.
2. Once the Inbound Integration Endpoint Wizard displays, populate each parameter with values that best identify the IIEP. By default, all parameters display blank, and the following fields are mandatory: Endpoint ID, Endpoint Name, and User.

In the example below, a 'TecDoc Reference Data Import' user was created prior to configuring this IIEP. This is recommended to more easily track when this IIEP is responsible for changes to data.

The screenshot shows the 'Inbound Integration Endpoint Wizard' window. The 'Identify Endpoint' step is active, showing a list of steps on the left and input fields on the right. The input fields are filled with the following values:

Field	Value
Endpoint ID	TecDocReferenceInboundEndpoint
Endpoint Name	TecDoc Reference Inbound Endpoint
Description	
User	TecDoc Reference Data Import (TECDOCREFERENCEDATAIMPORT)

At the bottom of the wizard, there are four buttons: Back, Next, Finish, and Cancel.

For more information about the parameters, see the **IIEP - Identify Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

- Click the **Next** button, and the Choose Receiver parameters will display. By default, the parameters are populated as recommended and shown below, except the Hotfolder parameter. This mandatory parameter must be populated with a hotfolder name before the Next button will enable. The value within this parameter will be used to create the new hotfolder on the application server, once the Finish button is clicked.

The screenshot shows the 'Inbound Integration Endpoint Wizard' window. On the left, a 'Steps' sidebar lists eight steps: 1. Identify Endpoint, 2. Choose Receiver (highlighted), 3. Configure Endpoint, 4. Configure PreProcessor, 5. Configure Processing Engine, 6. Configure PostProcessor, 7. Schedule Endpoint, and 8. Configure Error Reporter. The main window is titled 'Choose Receiver' and contains the following fields:

- Receiver: Hotfolder Receiver (dropdown menu)
- Hotfolder: TecDocReferenceInputFolder (text input)
- Keep file after load: Yes (dropdown menu)
- Ignore sub folders: No (dropdown menu)
- In folder: (empty text input)

At the bottom right, there are four buttons: Back, Next (highlighted with a dashed border), Finish, and Cancel.

For more information about the parameters, see the **IIEP - Choose Receiver** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

- Click the **Next** button, and the Configure Endpoint parameters will display. By default, the parameters are populated as recommended and shown below, except the following:
 - Processing Engine
 - Maximum number of old processes
 - Maximum age of old processes

Inbound Integration Endpoint Wizard

Steps

1. Identify Endpoint
2. Choose Receiver
- 3. Configure Endpoint**
4. Configure PreProcessor
5. Configure Processing Engine
6. Configure PostProcessor
7. Schedule Endpoint
8. Configure Error Reporter

Configure Endpoint

Processing

Processing Engine: Import Flow Processor

Transactional settings: None

Context

Workspace: Main

Context: English US

Queue Settings

Queue for endpoint: InboundQueue

Queue for endpoint processes: In

Maximum number of waiting processes: 1000

Maximum number of old processes: 1000

Maximum age of old processes: 1y

Number of messages per background process: 1

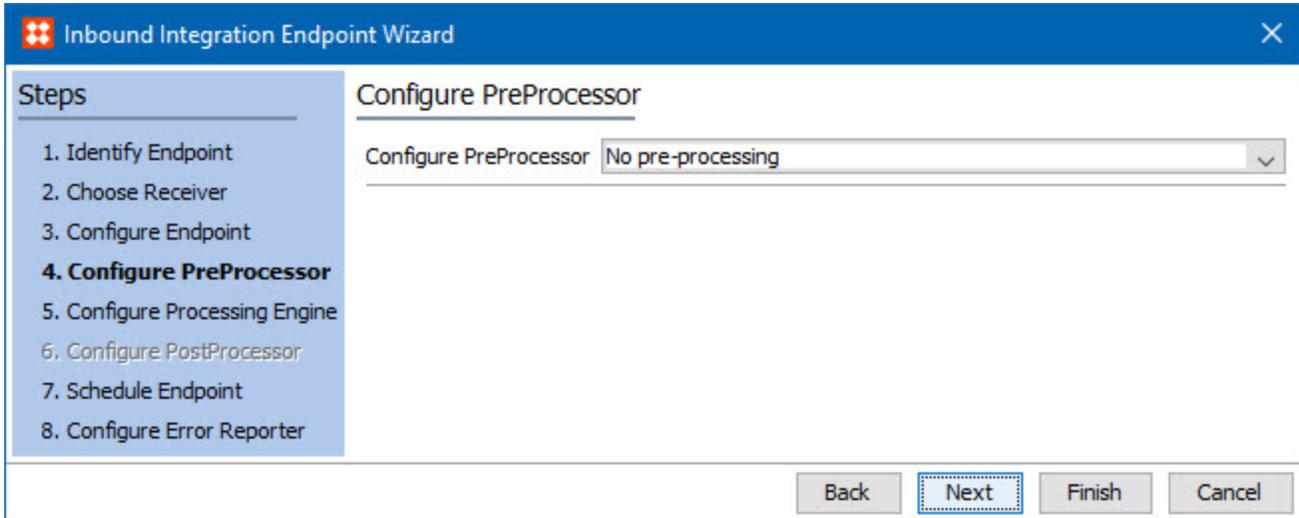
Buttons: Back, Next, Finish, Cancel

Important: The Import Flow Processor is only responsible for picking up files from the configured hotfolder, creating an Entity controller object, and updating the Entity with the Import Flow State BGP's and Status. The Import Flow Processor works with the Background Process Service for each workflow state to handle the import of a file. The IIEP / Import Flow Processor is NOT responsible for actually importing the content of the file, the BGP in each state does that processing. If a new Processing Engine is created through the Extension API, then it **cannot** be used with the automotive import framework.

- Click the dropdown option for the 'Processing Engine' parameter and select the **Import Flow Processor** option.
- Optionally, update the values for the 'Maximum number of old processes' and 'Maximum age of old processes' parameters to those shown above.

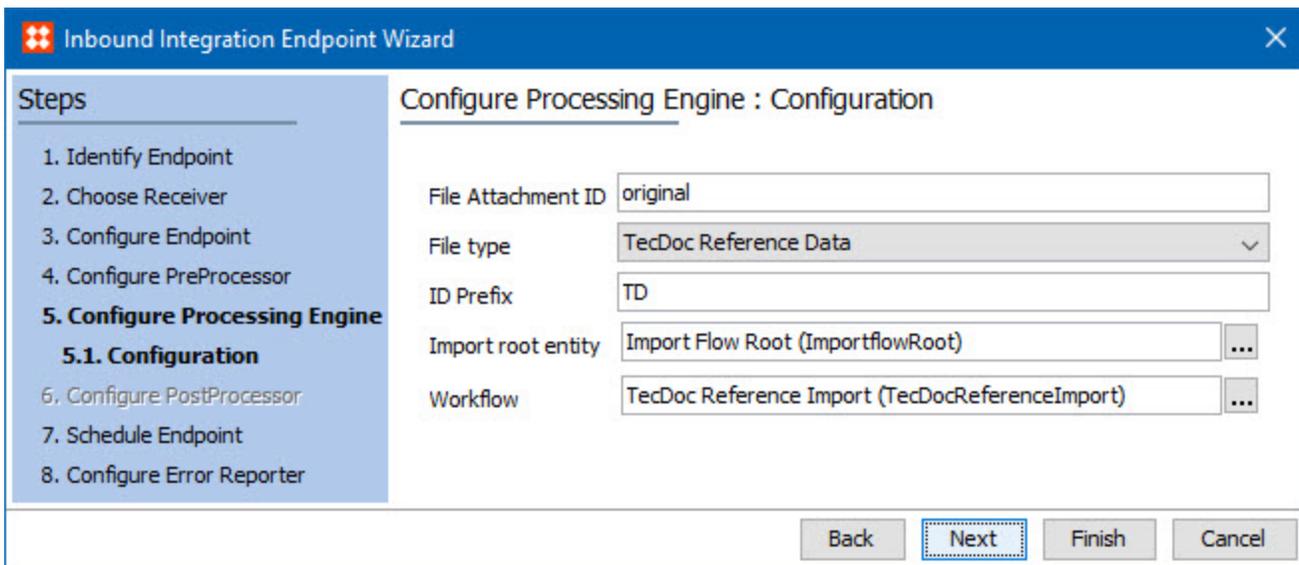
For more information about the parameters, see the **IIEP - Configure Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

5. Click the **Next** button, and the Configure PreProcessor parameter will display. By default, the parameter is populated as recommended and shown below.



For more information about the parameter, see the **IIEP - Configure PreProcessor** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

- Click the **Next** button, and the **Configure Processing Engine : Configuration** parameters for the Import Flow Processor will display. By default, only the File Attachment ID parameter is populated as shown below.



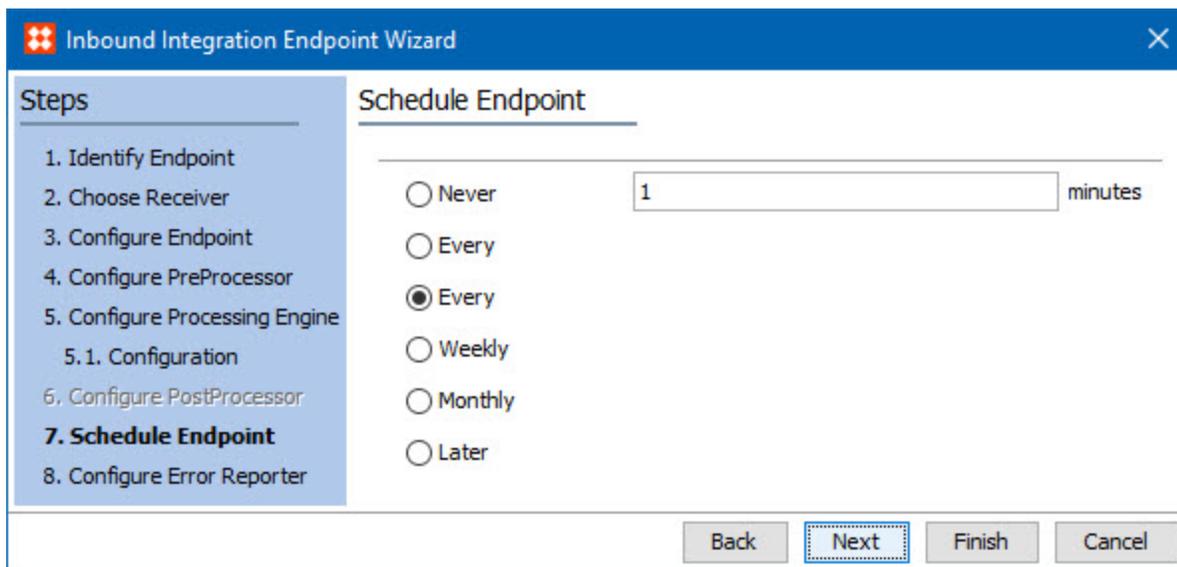
The prior **Configure Endpoint** step determines the options available for the **Configure Processing Engine** step.

- Click the 'File type' parameter, dropdown and select the **TecDoc Reference Data** option.
- Within the 'ID Prefix' parameter, enter a prefix value to easily identify import entities created by this IIEP.
- Click the ellipsis button (...) for the 'Import root entity' parameter, and select the 'Import Flow Root' node (or a desired root entity) This is the location where the import entities created by this IIEP will be stored.

- Click the ellipsis button (...) for the 'Workflow' parameter, and select the **TecDoc Reference Import** workflow or a desired workflow.

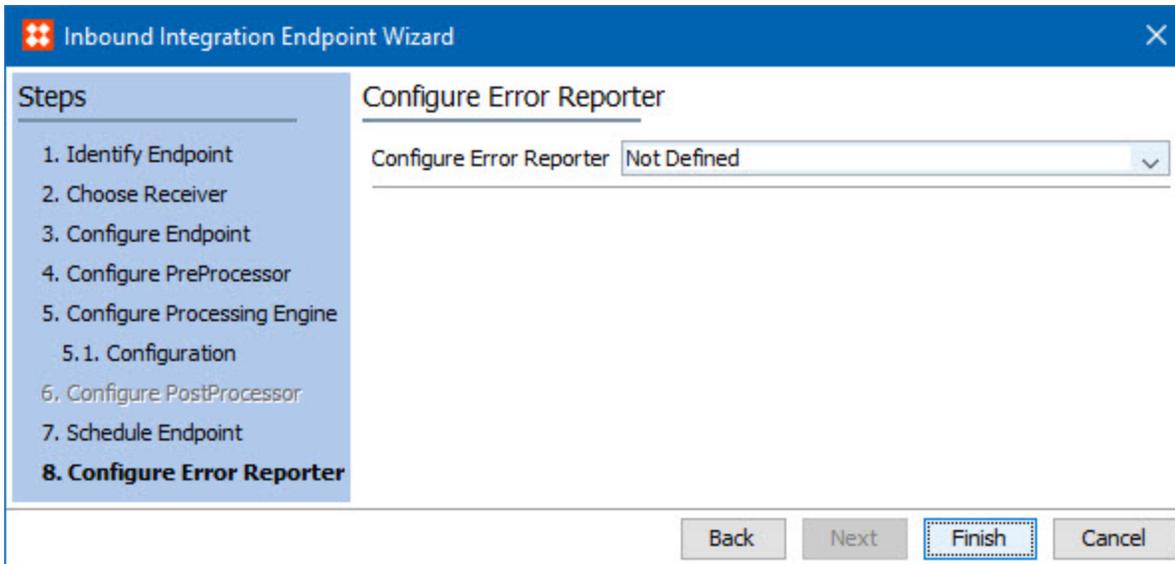
Note: It is possible to use a workflow that is not created by Easy Setup actions to handle an import file in a way that better fits an organizations needs. However, along with creating the workflow and selecting it within the Workflow parameter shown above, all the states for that workflow must be created along the processing steps of the file (i.e., Validation, Conversion, Import). Use of the Extension API is required to write the processing steps.

7. Click the **Next** button, and the Schedule Endpoint parameters will display. By default, 'Never' is selected. Optionally, update the values to those shown below.



For more information about the parameters, see the **IIEP - Schedule Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

8. Click the **Next** button, and the Configure Error Reporter parameter will display. By default, the parameter is populated as recommended and shown below.



For more information about the parameter, see the **IIEP - Configure Error Reporter** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

9. Click the **Finish** button, the Inbound Integration Endpoint Wizard will close, and the newly created endpoint will display within workbench.

Important: An endpoint must be enabled before it can start processing data. For more information, see the **Running an Inbound Integration Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

If users need to access the IIEP via a Web UI, then the IIEP must be configured within a File Loading Widget. For more information, see the **Configuring a File Loading Widget for Reference Data Imports** topic.

Configuring a File Loading Widget for Reference Data Imports

When configured, Web UI users can import TecDoc Reference Data files into STEP using a File Loading Widget. Users can also monitor the progress of Reference Data imports using a Status Selector Homepage Widget and a Node Details component.

Prerequisites

Before starting to configure the Web UI portion of this solution, an IIEP for a TecDoc Reference Importer must be configured within workbench. For more information, see the **Configuring an IIEP for Reference Data Imports** topic.

Additionally, it is helpful to know how to add a widget to a Web UI Homepage. Details on how to do this can be found in the **Adding Widgets to a Homepage** topic in the **Getting Started** documentation.

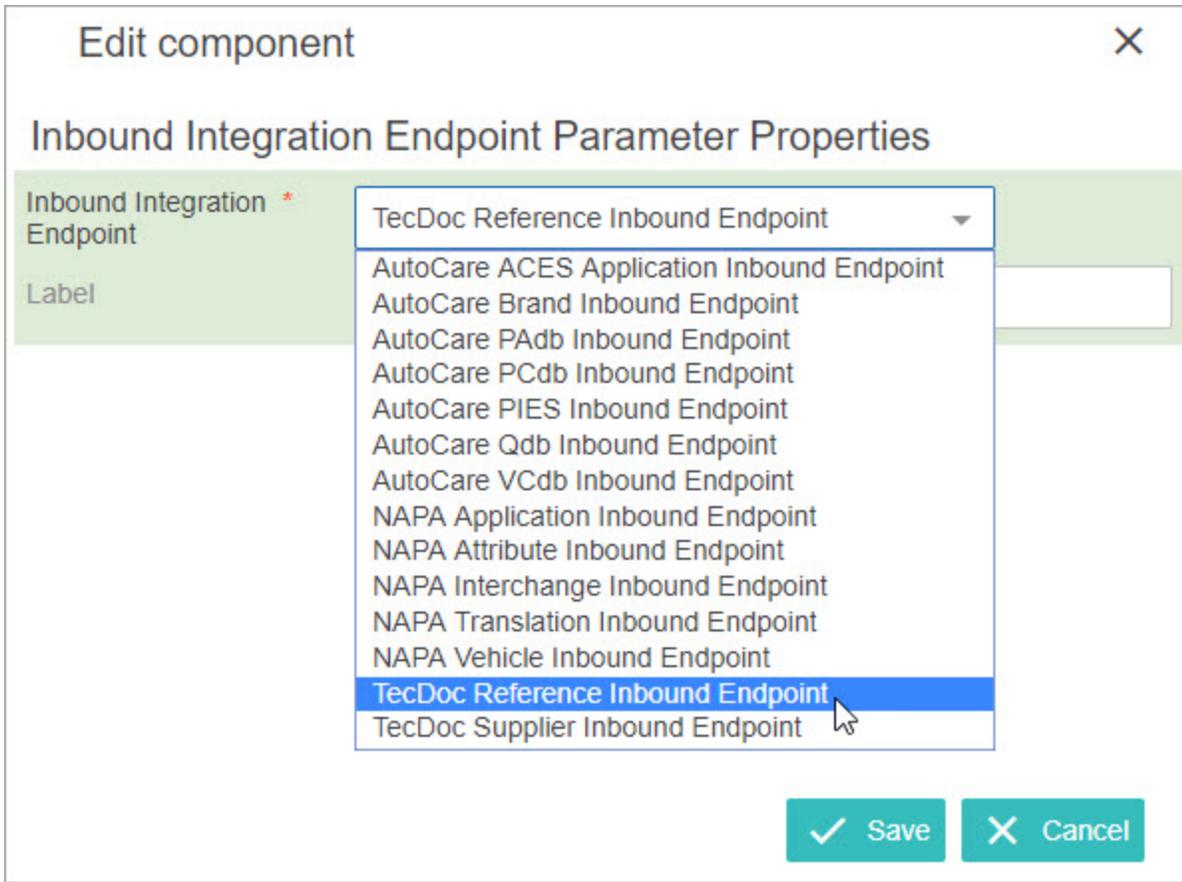
Configuration

Each screenshot example within this section provides recommended values for the TecDoc Reference Data Importer and the parameters displayed.

This topic describes how to configure a File Loading Widget so that users can drag and drop TecDoc Reference Data files onto a File Loading Widget on a Web UI Homepage.

Note: If Easy Setup actions for the TecDoc solution have been completed as described in the **3. Run Easy Setup of Standards** topic of **STEP Automotive Quick Start Guide**, then the 'TECDOC IMPORTS' File Loading Widget will automatically be added to the TecDoc Web UI Homepage as shown in the examples below. Otherwise, the steps below can be used to complete configuration.

1. Go to the Web UI Homepage where a File Loading Widget configured with the 'TECDOC IMPORTS' title is configured with a 'Reference' drop area available for users to drag and drop supplier import files.
2. Using Web UI design mode, select an existing File Loading Widget to be used or add a new File Loading Widget to the Homepage Widget Grid component. For more information, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.
3. Go to the Inbound Integration Endpoint Parameters field, click the **Add** button, and the Inbound Integration Endpoint Parameter Properties dialog will display.
4. Click the dropdown for the Inbound Integration Endpoint parameter, and select **TecDoc Reference Inbound Endpoint** (the IIEP created for TecDoc Reference imports).



Note: If the desired IIEP does not display in the dropdown, then it can be created using the steps described in the **Configuring an IIEP for TecDoc Supplier Data Imports** topic.

5. Optionally, provide a label to be displayed within the drop zone of the widget.

In the example below:

- A File Loading Widget labeled as 'TECDOC IMPORTS' is displayed above its configurations.
- The File Loading Widget and its configurations are shown with the default configurations provided automatically when Easy Setup actions for the TecDoc component are completed.
- An IIEP for TecDoc Reference data imports is added within the same File Loading Widget as the IIEP for the TecDoc Supplier data imports.



File Loading Widget Properties

Inbound Integration Endpoint Parameters

- Inbound Integration Endpoint Parameter (Reference / TecDocReferenceInboundEndpoint)
- Inbound Integration Endpoint Parameter (Supplier / TecDocSupplierInboundEndpoint)

Add... Edit... Remove Up Down

Label: TECDOC IMPORTS

Child Components

Edit component

Inbound Integration Endpoint Parameter Properties

Inbound Integration Endpoint * TecDoc Reference Inbound Endpoint

Label Reference

Save Cancel

6. Click the **Save** and **Close** buttons to save the changes and close the designer.

TecDoc Supplier Data Importer

The intention of the Automotive TecDoc Supplier Data Importer is to provide an out-of-the-box solution for importing data included within a supported TecDoc Supplier Data file. Because only supported versions will successfully upload, before attempting to upload a TecDoc Supplier Data file, confirm the file version being uploaded is listed within the **Supported Versions and Formats** topic.

Only after a TecDoc Reference Data file has been successfully imported into STEP, can TecDoc Supplier Data files *of the same version* be imported into STEP. For more information, see the **TecDoc Reference Data Importer** topic.

A Supplier Data file can be imported into STEP by uploading it to either a configured hotfolder on an application server, or through a File Loading Widget on a Web UI Homepage.

This section includes information on:

- Using TecDoc Supplier Data Importer
- Configuring TecDoc Supplier Data Importer

Prerequisites

It is expected that anyone using and/or configuring the TecDoc Supplier Data Importer be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

For general information about the File Loading Widget and Status Selector Widget, including additional information about working with these widgets, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**, and the **Status Selector Homepage Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

Important: To successfully import a TecDoc Supplier data import file, the file version must match the version of the last successfully imported Reference Data file.

Using TecDoc Supplier Data Importer

A TecDoc Supplier Data file can be imported into STEP by uploading it to either a configured hotfolder on an application server, or through a File Loading Widget on a Web UI Homepage.

The following information is available for the TecDoc Supplier Data Importer.

- Importing Supplier Data Files via Web UI

Prerequisites

It is expected that anyone using and/or configuring the TecDoc Supplier Data Importer be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

For more information about uploading files to an application server, see the **File Loading** section of the **STEP Automotive Quick Start Guide** found within the **Solution Enablement** section of **STEP Online Help**.

For more information about using Workbench to monitor and process imports, see the **Workflows** section of **STEP Online Help**.

For general information about the File Loading Widget and Status Selector Widget, including additional information about working with these widgets, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**, and the **Status Selector Homepage Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

Importing Supplier Data Files via Web UI

The intention of the Automotive TecDoc Supplier Data Importer Web UI setup included within this topic is to provide an out-of-the-box solution for importing data included within a supported TecDoc Supplier file. Because only supported versions will successfully upload, before attempting to upload a TecDoc Supplier Data file, confirm the file version being uploaded is listed within the **Supported Versions and Formats** topic.

A TecDoc Supplier Data file includes information on supplier part data.

Prerequisites

Within this section users will be directed to view details for an Entity controller within Web UI using a Node Details screen configured for Entities. Before this can be available to users, an Entity Details screen must be created.

To easily start and monitor a TecDoc Supplier Data Import, best practice is to configure a Web UI Import Controller screen specific to the TecDoc Supplier Data Importer. When the Easy Setup actions for the TecDoc standard are completed, the TecDoc Import Controller screen is automatically created and configured for use.

It is expected that anyone using and/or configuring the TecDoc Supplier Data Importer be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

If the Easy Setup actions for the TecDoc Component model have been completed, then the functionality explained within this topic should be available. Otherwise, configuration is necessary. For more information, see the **TecDoc Supplier Data Importer** topic.

Import Process Overview

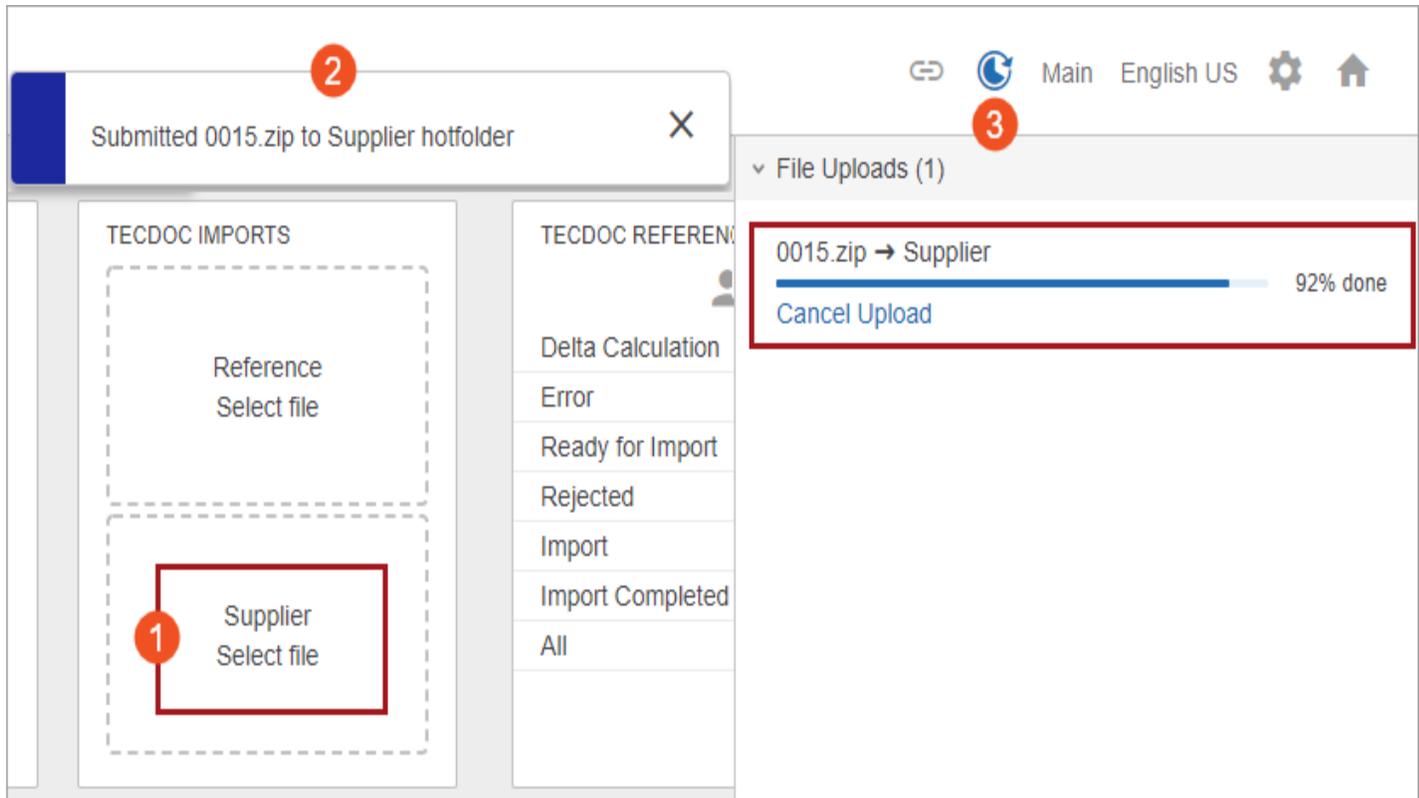
Once a valid automotive data file is uploaded to a hotfolder on the application server (optionally using a File Loading Widget), the file is picked up from the hotfolder by an IIEP, and the IIEP creates an Entity in STEP that represents the file. This Entity object is called the 'controller' and contains basic data about the file and the file's status in the workflow. Web UI users are able to monitor the import status using a Status Selector Widget and an Import Controller Screen. Once an import file reaches the 'Ready for Import' state, then users can start the import by clicking on the 'Start import' button within the Control Panel screen. At that time, the BGP service (that runs as part of the Import state) allows for the configured business rules to act on the objects being imported.

Using the TecDoc Supplier Data Importer in Web UI

1. Access the TecDoc Web UI Homepage and upload a valid TecDoc Supplier Data file to the application server hotfolder (root/upload/hotfolders/TecDocSupplierInputFolder), using the 'Supplier' drop zone of the 'TECDOC IMPORTS' File Loading Widget.

For more information, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

2. Once the upload has successfully started, a notification dialog will display at the top of the screen referencing the name of the uploaded file. In the example below, the dialog displays 'Submitted 0015.zip to Supplier hotfolder' (the name of the file being uploaded is '0015').
3. Optionally, users can view the progress of the upload using the Background Process Notification Component. In the example below, the BGP Notification Panel is expanded and the file, '0015.zip' is 92% processed.



For more information on using the BGP Notification Component and side panel, see the **Background Process Notification Component** topic within the **Main Properties Overview** section of **STEP Online Help**.

Once created, the Controller is initiated into the workflow associated with the importer (TecDoc Supplier Import). From there, the TecDoc Supplier Import workflow takes over processing of the file via a series of states using business rules and background processes to carry out the processing of the file. Each import has an associated workflow and all proceed through the same states by default. However, it is intended that customers will expand on the existing states and actions to add their own validations, reporting, and additional processing as needed.

Important: It is critical to understand that it is only the Controller Entity that is in the workflow - the objects being acted on (created / updated / deleted) via information supplied in the import file are not in the workflow. Therefore, running standard business actions acting on current object will impact the Controller entity only, not the objects in the input file. In order for the Business Action to act on the objects being imported, the Business Action must be added to the 'Import action' parameter on the 'Import' state. For more information, see the **Import State** topic within the **Default Workflow States and Functions** section.

4. If an Entity Details screen has been configured, then when the IIEP creates the Controller Entity object, users can view the Controller and its important information by navigating within the Tree side panel to the Import Flow Root > TecDoc Supplier. Otherwise, if a user clicks on an Entity in the Tree side panel, an error will display indicating the configuration is invalid.

Note: If an error message displays when selecting an Entity within a Web UI, then the Entity Details screen has not been configured.

In the example below, the Tree side panel is expanded, and the '0015.zip' Controller is displayed below the 'TecDoc Supplier' Entity. When the Controller is selected, many details (like the Controller ID 'Controller-101762') can be viewed within the Node Details screen.

Note: In the screenshot below, the 'Enable Tag Conversion' parameter within the Attribute Value Group Component is disabled.

Tree

- ▶ TecDoc
- ▶ TecDoc Assets Root
- ▼ Import Flow Root
 - ▶ AutoCare ACES
 - ▶ AutoCare Brand
 - ▶ AutoCare PAdb
 - ▶ AutoCare PCdb
 - ▶ AutoCare PIES
 - ▶ AutoCare Qdb
 - ▶ AutoCare VCdb
 - ▶ NAPA Application
 - ▶ NAPA Attribute
 - ▶ NAPA Translation
 - ▶ NAPA Vehicle
 - ▶ TecDoc Reference
 - ▼ TecDoc Supplier
 - ▼ Acme
 - 0015.zip
- ▶ TecDoc Manufacturer Root
- ▶ TecDoc Resource Root
- ▶ TecDoc Supplier Price Lists
- ▶ Publications
- ▶ Primary Product Hierarchy
- ▶ Collections

TecDoc Reference Import ▼

Advanced search

Node Details

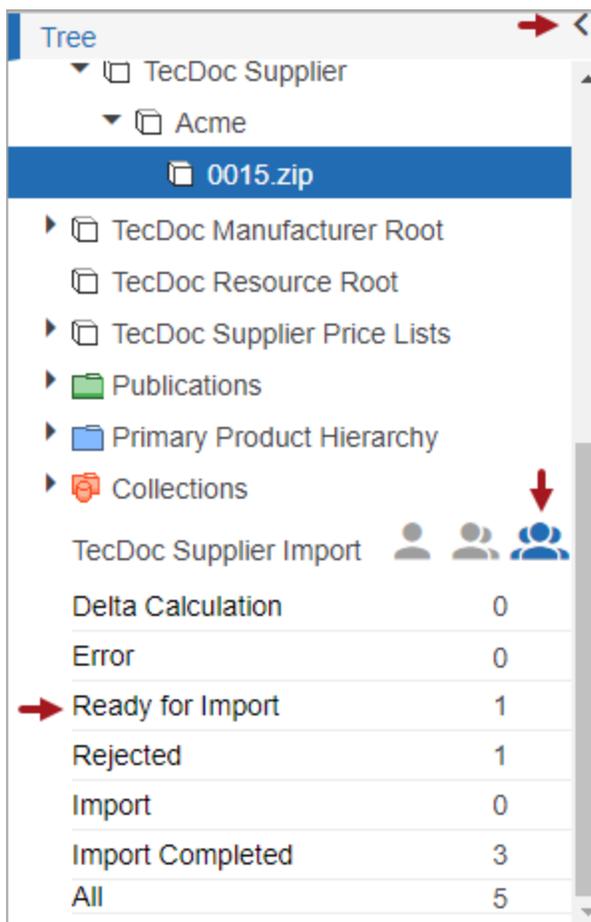
ID	Controller-101762
Name	<input type="text" value="0015.zip"/>
Object Type	Import Flow Controller Type
Revision	Date: 2018.07.03 Revision number: 0.1 Last Edited by: TECDOCSUPPLIERDATAIMPORT Time: 16:49:51
Automotive Import Flow State BGP	<pre><?xml version="1.0" encoding="UTF-8"?> <StringMap> <Entry Key="Validation" Value="BGP_101763"/> <Entry Key="Import" Value="BGP_101766"/> <Entry Key="Conversion" Value="BGP_101764"/> <Entry Key="DeltaCalculate" Value="BGP_101765"/> </StringMap></pre>
Import Flow Endpoint ID	<input type="text" value="TecDocSupplierInboundEndpoint"/>
Import Flow File Type	<input type="text" value="TecDocSupplierData"/>
Import Flow Overall Status	<input type="text" value="Completed with errors: 34"/>
Import Flow State Status	<pre><?xml version="1.0" encoding="UTF-8"?> <StringMap> <Entry Key="Validation" Value="Validation completed"/> <Entry Key="Import" Value="Completed with errors: 34"/> <Entry Key="Conversion" Value="Conversion completed"/> <Entry Key="DeltaCalculate" Value="Delta calculation comp </StringMap></pre>
Import Flow Workflow ID	<input type="text" value="TecDocSupplierImport"/>

- **Name:** STEP Name of the Controller entity. This is generated from the uploaded file original name.
- **Automotive Import Flow State BGP:** Attribute used to store the IDs of the background processes.
- **Import Flow State Status:** Attribute used to store and display the status of each process (rather than the overall status).

- **Import Flow Overall Status:** Attribute used to store and display the global status of the file (rather than the process specific status).
5. As the file is uploaded, and the Entity Controller moves through the TecDoc Supplier Import workflow, users can monitor the progress using the 'TECDOC SUPPLIER IMPORT' Status Selector Widget on the Web UI homepage and/or the left side panel.

In the example below, the Tree panel is expanded, and the **Triple user button** is selected so that all items assigned to any user are displayed. Notice that one file is in the 'Ready for Import' state, one file is in the Rejected state, and three files are in the 'Import Completed' state, for a total of five files.

For more information, see the **Moving Tasks Trough a Workflow in Web UI** topic within **STEP Online Help**.



6. Clicking on the **Ready for Import** state within the Status Selector homepage and/or the left side panel widget will navigate the user to the TecDoc Supplier Data Import Controller Screen with only those Controllers in the 'Ready for Import' state displayed.
7. Clicking the Controller icon displays the Import Details below the Controller list.

In the example below, Controller '0015.zip' (ID 'Controller-101762') with an overall status of 'Done creating delta file' is selected and the Import Details are displayed below the Controller list.

TecDoc Supplier Data Import Controller Screen

Process	File Name	Overall Status
Controller-101762	0015.zip	Done creating delta file

1-1 of 1

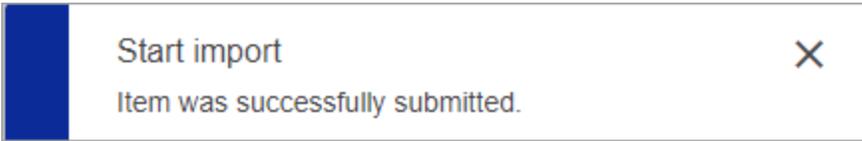
Import Details

Process	Started	Duration	Started I	Status	Background Process Link
Validation	2018-08-08 16:26:12	28 secs	STEPSYS	Validation completed	completedwitherrors
Conversion	2018-08-08 16:26:40	2 mins 19 secs	STEPSYS	Conversion completed	succeeded
Delta Calculator	2018-08-08 16:28:59	3 mins 28 secs	STEPSYS	Delta calculation completed	succeeded
Import					

1-4 of 4

Start import Reject Discard file

8. Optionally, before starting the import, clicking on the 'completedwitherrors' Background Process Link will display the Background Process Details screen where users can view or download the details of the validation process.
9. Click the **Reject** button to move the Controller to the Rejected state. For more information, see the **Rejected State** topic within the **Import Framework** section.
10. Click the **Start import** button, the Start import dialog (shown below) displays at the top of the screen, and the Controller is moved to the Import state of the workflow. For more information, see the **Import State** topic within the **Import Framework** section.



Importing a TecDoc Supplier Data file can take several minutes, but the import progress can be monitored using the 'TECDOC SUPPLIER IMPORT' Status Selector Widget on the Web UI homepage and/or the left side panel, or the Import Controller Screen's 'Status' column.

In the example below, the TecDoc Supplier Data Import Controller Screen displays the Overall Status and the Import process status as 'Importing files...'. Additionally, the Background Process Link column displays a link to the Background Process Details screen as 'running.'

TecDoc Supplier Data Import Controller Screen

Process	File Name	Overall Status
Controller-101762	0015.zip	Importing files...

Import Details

Process	Started Time	Duration	Started By	Status	Background Process Link
Validation	2018-08-08 16:26:12	28 secs	STEPSYS	Validation completed	completedwitherrors
Conversion	2018-08-08 16:26:40	2 mins 19 secs	STEPSYS	Conversion completed	succeeded
Delta Calculation	2018-08-08 16:28:59	3 mins 28 secs	STEPSYS	Delta calculation completed	succeeded
Import	2018-08-10 12:37:44	1 hr 6 mins 44 secs	STEPSYS	Importing files... 11 running	

⏪ < 1-4 of 4 > ⏩
➡ Start import
➡ Reject
➡ Discard file

- Optionally, click the 'running' Background Process Link (shown above) to view the details of the import process within the Background Process Details screen.

Once the import has completed, the Controller is automatically moved to the Import Completed state. For more information, see the **Import Completed State** topic within the **Import Framework** section.

For more information on automotive workflow states, see the **Default Workflow States and Functions** topic.

Configuring TecDoc Supplier Data Importer

The following topics provide the configuration steps necessary to allow users to be able to drag and drop TecDoc Supplier Data files onto a configured File Loading Widget and monitor the progress of the import file using a configured Status Selector Homepage Widget and an Import Controller Screen.

- Configuring an IIEP for Supplier Data Imports
- Configuring a File Loading Widget for Supplier Data Imports

Prerequisites

It is expected that anyone configuring the TecDoc Supplier Data Import solution within a Web UI be familiar with the Web UI Designer, as basic concepts for working with the designer are not covered in this section. In addition, the user must have appropriate privileges to access the designer. For more information, See the **Designer Access** topic within the **Web UI Getting Started** section of **STEP Online Help**.

Within this section users will be directed to view details for an Entity controller within Web UI using a Node Details screen configured for Entities. Before this can be available to users, an Entity Details screen must be created.

Anyone configuring the TecDoc Supplier Data Importer is expected to be familiar with the **Importing Automotive Data** section, as basic concepts for working with an automotive importer are not covered in this section.

For general information about the File Loading Widget and Status Selector Widget, including additional information about working with these widgets, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**, and the **Status Selector Homepage Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.

Configuring an IIEP for Supplier Data Imports

An Inbound Integration Endpoint (IIEP) can be configured in workbench to help automate the process of importing TecDoc Supplier data into STEP. Once an IIEP is configured for TecDoc Supplier data imports, supplier data files can be imported once they are uploaded either to a configured hotfolder on an application server, or to a File Loading Widget on a Web UI Homepage. For more information, see the **TecDoc Supplier Data Importer** topic.

This section describes how to configure an IIEP that can allow for the automated processing of TecDoc Supplier data files. Each screenshot example within this section provides recommended values for the TecDoc Supplier Data Importer and the parameters displayed.

Prerequisites

It is expected that anyone configuring an IIEP for use with a TecDoc Supplier Data Import is familiar with the configuration and other processing of standard inbound integration endpoints. For more information, see the **Inbound Integration Endpoints** topic within the **Data Exchange** section of **STEP Online Help**.

Configuration Steps

1. Go to System Setup, select and then right-click the **Inbound Integrations Endpoints** setup group, and click **Create Inbound Integration Endpoint**.
2. Once the Inbound Integration Endpoint Wizard displays, populate each parameter with values that best identify the IIEP. By default, all parameters display blank, and the following fields are mandatory: Endpoint ID, Endpoint Name, and User.

In the example below, a 'TecDoc Supplier Data Import' user was created prior to configuring this IIEP. This is recommended to more easily track when this IIEP is responsible for changes to data.

The screenshot shows the 'Inbound Integration Endpoint Wizard' window. On the left, a 'Steps' list includes: 1. Identify Endpoint (highlighted), 2. Choose Receiver, 3. Configure Endpoint, 4. Configure PreProcessor, 5. Configure Processing Engine, 6. Configure PostProcessor, 7. Schedule Endpoint, and 8. Configure Error Reporter. The main area is titled 'Identify Endpoint' and contains four input fields: 'Endpoint ID' with the value 'TecDocSupplierInboundEndpoint', 'Endpoint Name' with 'TecDoc Supplier Inbound Endpoint', 'Description' (empty), and 'User' with 'TecDoc Supplier Data Import (TECDOSUPPLIERDATAIMPORT)' and a dropdown arrow. At the bottom right are 'Back', 'Next', 'Finish', and 'Cancel' buttons.

For more information about the parameters, see the **IIEP - Identify Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

- Click the **Next** button, and the Choose Receiver parameters will display. By default, the parameters are populated as recommended and shown below, except the Hotfolder parameter. This mandatory parameter must be populated with a hotfolder name before the Next button will enable. The value within this parameter will be used to create the new hotfolder on the application server, once the Finish button is clicked.

Inbound Integration Endpoint Wizard

Steps

1. Identify Endpoint
- 2. Choose Receiver**
3. Configure Endpoint
4. Configure PreProcessor
5. Configure Processing Engine
6. Configure PostProcessor
7. Schedule Endpoint
8. Configure Error Reporter

Choose Receiver

Receiver: Hotfolder Receiver

Hotfolder: TecDocSupplierInputFolder

Keep file after load: Yes

Ignore sub folders: No

In folder:

Buttons: Back, **Next**, Finish, Cancel

For more information about the parameters, see the **IIEP - Choose Receiver** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

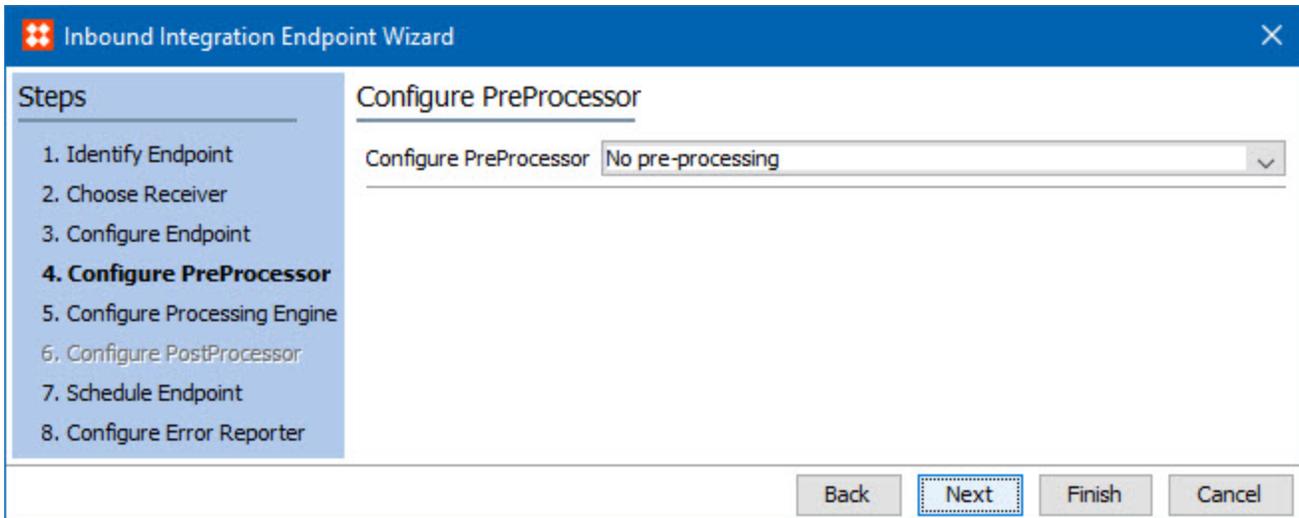
- Click the **Next** button, and the Configure Endpoint parameters will display. By default, the parameters are populated as recommended and shown below, except the following:
 - Processing Engine
 - Maximum number of old processes
 - Maximum age of old processes

Important: The Import Flow Processor is only responsible for picking up files from the configured hotfolder, creating an Entity controller object, and updating the Entity with the Import Flow State BGP's and Status. The Import Flow Processor works with the Background Process Service for each workflow state to handle the import of a file. The IIEP / Import Flow Processor is NOT responsible for actually importing the content of the file, the BGP in each state does that processing. If a new Processing Engine is created through the Extension API, then it **cannot** be used with the automotive import framework.

- Click the dropdown option for the 'Processing Engine' parameter and select the **Import Flow Processor** option.
- Optionally, update the values for the 'Maximum number of old processes' and 'Maximum age of old processes' parameters to those shown above.

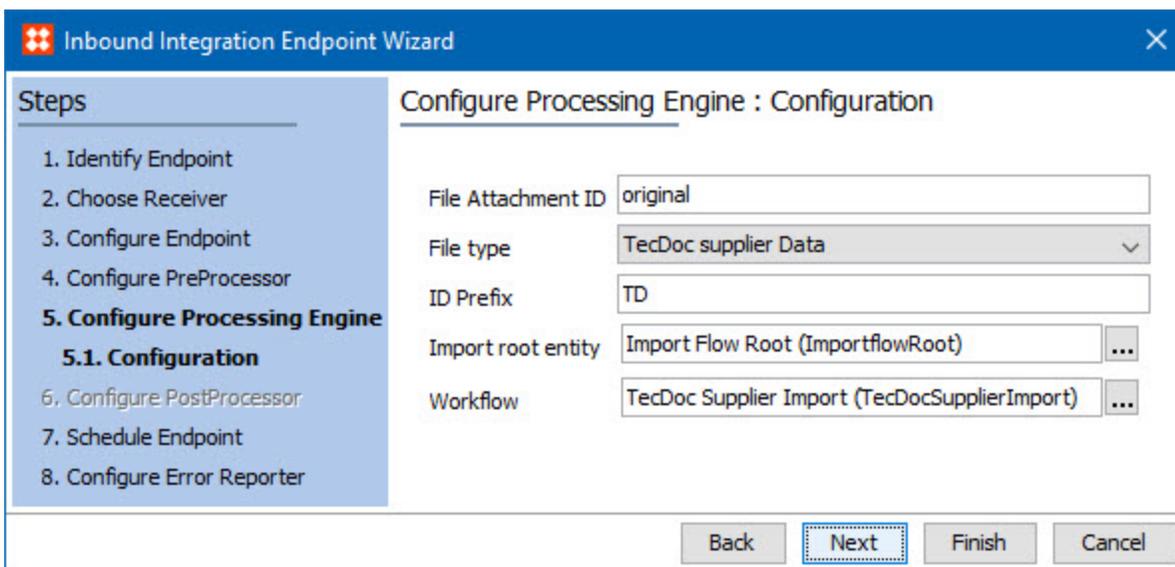
For more information about the parameters, see the **IIEP - Configure Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

5. Click the **Next** button, and the Configure PreProcessor parameter will display. By default, the parameter is populated as recommended and shown below.



For more information about the parameter, see the **IIEP - Configure PreProcessor** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

- Click the **Next** button, and the **Configure Processing Engine : Configuration** parameters for the Import Flow Processor will display. By default, only the File Attachment ID parameter is populated as recommended and shown below.



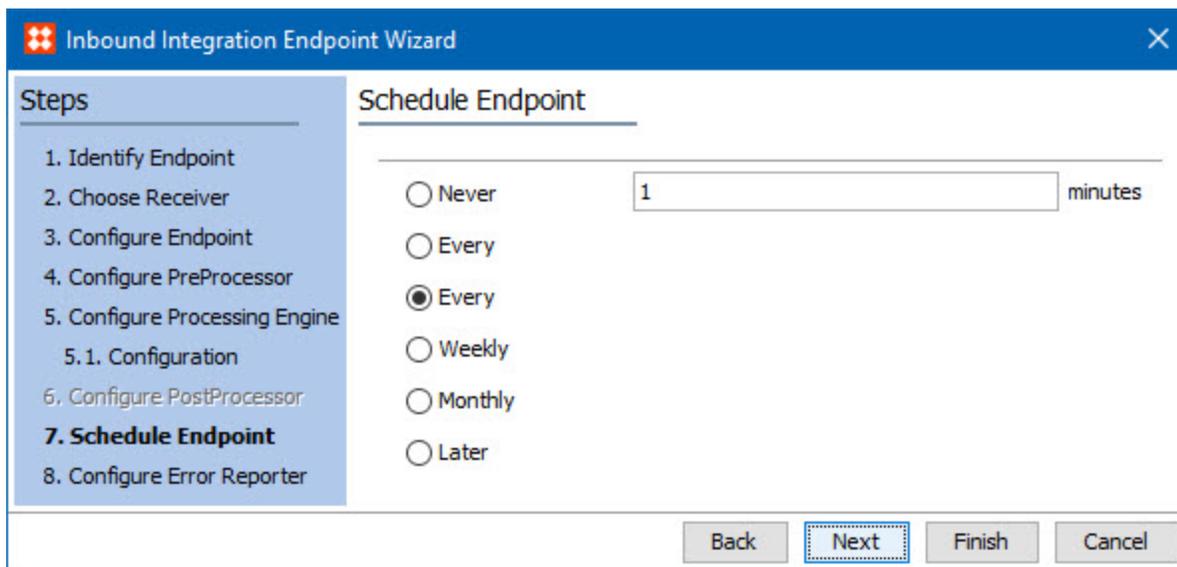
The prior **Configure Endpoint** step determines the options available for the **Configure Processing Engine** step.

- Click the 'File type' parameter dropdown and select the **TecDoc supplier Data** option.
- Within the 'ID Prefix' parameter, enter a prefix value to easily identify import entities created by this IIEP.
- Click the ellipsis button (...) for the 'Import root entity' parameter, and select a desired root entity location to store the import entities created by this IIEP.

- Click the ellipsis button (...) for the 'Workflow' parameter, and select the **TecDoc Supplier Import** workflow or a desired workflow.

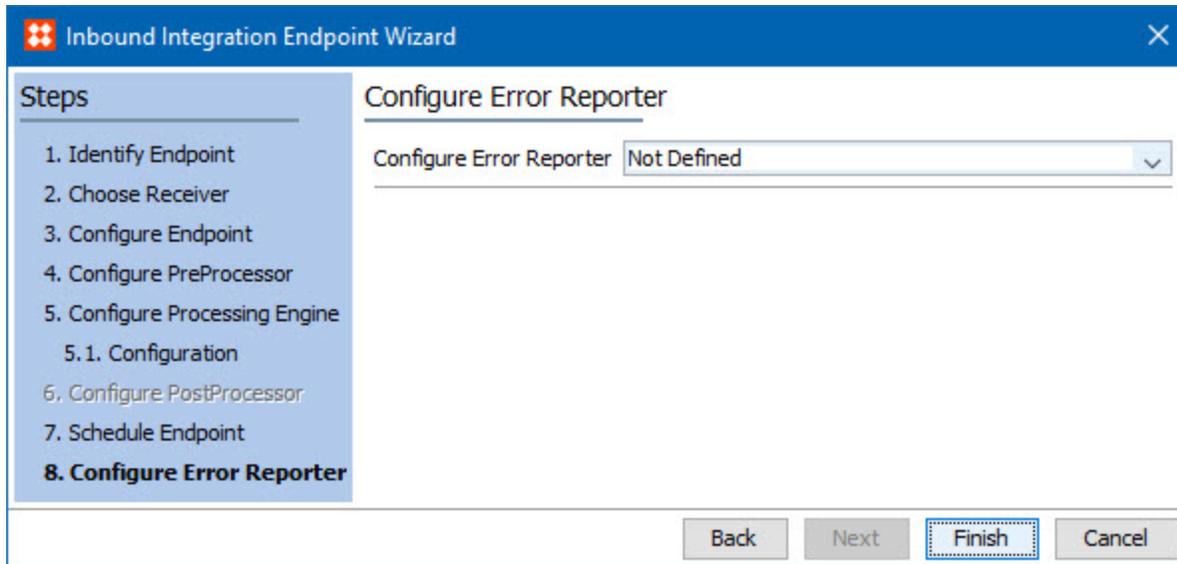
Note: It is possible to use a workflow that is not created by Easy Setup actions to handle an import file in a way that better fits an organizations needs. However, along with creating the workflow and selecting it within the Workflow parameter shown above, all the states for that workflow must be created along the processing steps of the file (i.e., Validation, Conversion, Import). Use of the Extension API is required to write the processing steps.

7. Click the **Next** button, and the Schedule Endpoint parameters will display. By default, 'Never' is selected. Optionally, update the values to those shown below.



For more information about the parameters, see the **IIEP - Schedule Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

8. Click the **Next** button, and the Configure Error Reporter parameter will display. By default, the parameter is populated as recommended and shown below.



For more information about the parameter, see the **IIEP - Configure Error Reporter** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

9. Click the **Finish** button, the Inbound Integration Endpoint Wizard will close, and the newly created endpoint will display within workbench.

Important: An endpoint must be enabled before it can start processing data. For more information, see the **Running an Inbound Integration Endpoint** topic within the **Inbound Integration Endpoint** section of **STEP Online Help**.

If users need to access the IIEP via a Web UI, then the IIEP must be configured within a File Loading Widget. For more information, see the **Configuring a File Loading Widget for TecDoc Supplier Data Imports** topic.

Configuring a File Loading Widget for Supplier Data Imports

When configured, Web UI users can import TecDoc Supplier Data files into STEP using a File Loading Widget. Users can also monitor the progress of Supplier Data imports using a Status Selector Homepage Widget and a Node Details component.

Prerequisites

Before starting to configure the Web UI portion of this solution, an IIEP for TecDoc Supplier data imports must be configured within workbench. For more information, see the **Configuring an IIEP for Supplier Data Imports** topic.

Additionally, it is helpful to know how to add a widget to a Web UI Homepage. Details on how to do this can be found in the **Adding Widgets to a Homepage** topic in the **Getting Started** documentation.

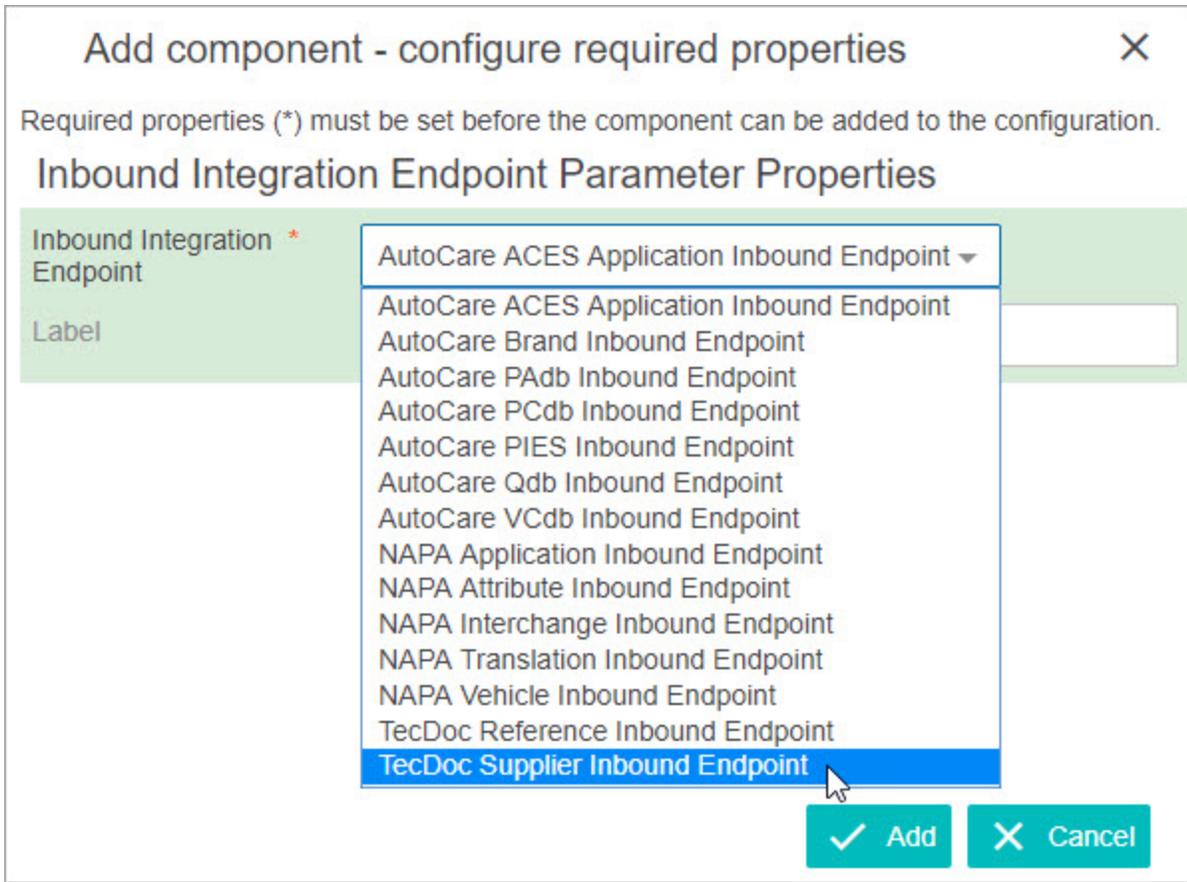
Configuration

Each screenshot example within this section provides recommended values for the TecDoc Supplier Data Importer and the parameters displayed.

This topic describes how to configure a File Loading Widget so that users can drag and drop TecDoc Supplier Data files onto a File Loading Widget on a Web UI Homepage.

Note: If Easy Setup actions for the TecDoc solution have been completed as described in the **3. Run Easy Setup of Standards** topic of **STEP Automotive Quick Start Guide**, then the 'TECDOC IMPORTS' File Loading Widget will automatically be added to the TecDoc Web UI Homepage as shown in the examples below. Otherwise, the steps below can be used to complete configuration.

1. Go to the Web UI Homepage where a File Loading Widget configured with the 'TECDOC IMPORTS' title is configured with a 'Supplier' drop area available for users to drag and drop supplier import files.
2. Using Web UI design mode, select the existing File Loading Widget to be used or add a new File Loading Widget to the Homepage Widget Grid component. For more information, see the **File Loading Widget** topic within the **Web User Interfaces** section of **STEP Online Help**.
3. Go to the Inbound Integration Endpoint Parameters field, click the **Add** button, and the Inbound Integration Endpoint Parameters Properties dialog will display.
4. Click the dropdown for the Inbound Integration Endpoint parameter, and select **TecDoc Supplier Inbound Endpoint** (the IIEP created for TecDoc Supplier imports).



Note: If the desired IIEP does not display in the dropdown, then it can be created using the steps described in the **Configuring an IIEP for Supplier Data Imports** topic.

5. Optionally, provide a label to be displayed within the drop zone of the widget.

In the example below:

- A File Loading Widget labeled as 'TECDOC IMPORTS' is displayed above its configurations.
- The File Loading Widget and its configurations are shown with the default configurations provided automatically when Easy Setup actions for the TecDoc component model are completed.
- An IIEP for both the TecDoc Supplier and Reference importers is added within the 'TECDOC IMPORTS' File Loading Widget.



The screenshot displays two overlapping windows from a software interface. The background window is titled 'File Loading Widget Properties' and features a list of 'Inbound Integration Endpoint Parameters'. The list contains two entries: 'Inbound Integration Endpoint Parameter (Reference / TecDocReferenceInboundEndp)' and 'Inbound Integration Endpoint Parameter (Supplier / TecDocSupplierInboundEndpoint)'. Below the list are buttons for 'Add...', 'Edit...', 'Remove', 'Up', and 'Down'. The 'Label' field for this widget is set to 'TECDOC IMPORTS'. A red arrow points from the second parameter in the list to a foreground dialog box. This dialog box is titled 'Edit component' and 'Inbound Integration Endpoint Parameter Properties'. It has a dropdown menu for 'Inbound Integration Endpoint' set to 'TecDoc Supplier Inbound Endpoint' and a text field for 'Label' set to 'Supplier'. At the bottom right of the dialog are 'Save' and 'Cancel' buttons.

6. Click the **Save** and **Close** buttons to save the changes and close the designer.

Exporting Automotive Data

The Automotive solution provides extensive export capabilities. For information on the supported versions, see the **Supported Versions and Formats** topic within this guide. For information on the way a user initiates and manages exports, see the **Using Automotive Exporters** section of the **Automotive Quick Start Guide**.

This section addresses the following available automotive exporters:

- AutoCare ACES Application Exporter
- AutoCare PIES 6.5 Exporter
- NAPA Application Exporter

AutoCare ACES Application Exporter

The AutoCare ACES Application Exporter is used to export application data in ACES format. ACES versions 3.0 and 3.2 are supported. The exporter requires that applications be stored in the standard AutoCare data model.

This topic addresses using the exporter, considerations for version 3.0 vs. 3.2, and sending data downstream.

Prerequisites

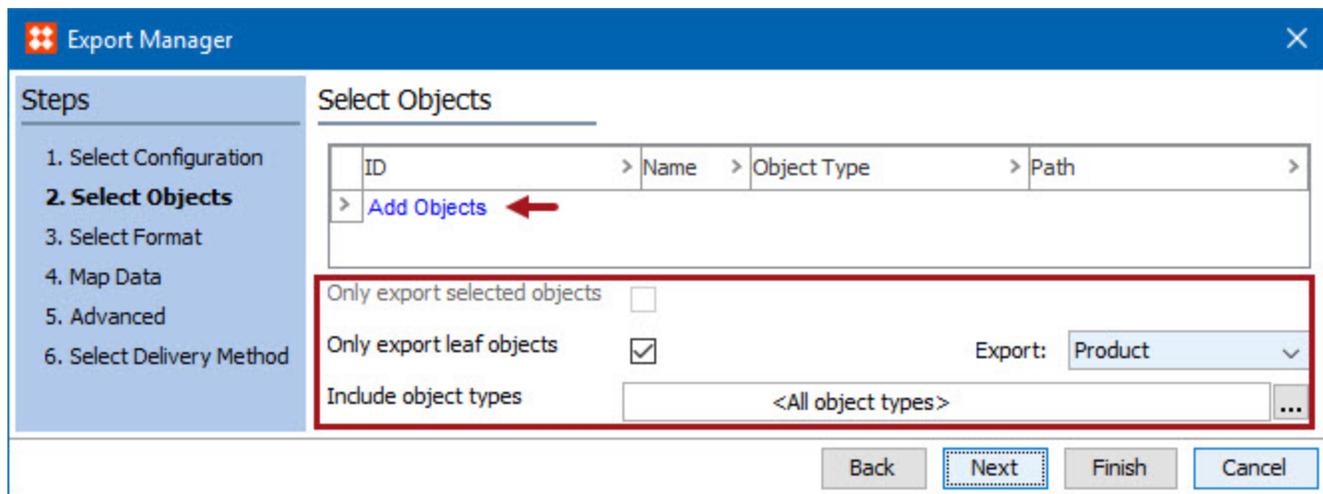
The ACES exporter runs using standard Export Manager functionality so only information specific to the ACES exporter is covered within this guide. Additional information on general Export Manager functionality is covered in the **Export Manager** topic within the **Data Exchange** section of **STEP Online Help**.

Using the AutoCare ACES Application Exporter

The AutoCare ACES Application Exporter can be started via standard Export Manager methods, e.g. File > Export > Data, or by selecting an object in Tree, right-clicking, and selecting 'Export Data Below' from the context menu. In the case of the right-click option, an object in the AutoCare PIES Product hierarchy or a yellow classification where the applications are linked to must be selected.

Step 2. Select Objects

In the Select Objects dialog, the only parameter that is read by the exporter is the actual object selection. The additional parameters (shown within the red box in the screenshot below) are disregarded.



Click the **Add Objects** link to add one or more blue folders in the AutoCare PIES Products hierarchy, or one or more classification folders.

The result is that all ACES Application objects beneath the selection(s) (either as child objects or via links) are exported.

Step 3. Select Format

Select **AutoCare ACES Application Exporter** format to expose options specific to the ACES exporter. The version will default to 3.2, but version 3.0 can be selected as well from the drop-down list. All fields in bold require manual data population and the Next button will not enable until they have been populated.

Export Manager

Steps

- 1. Select Configuration
- 2. Select Objects
- 3. Select Format**
- 4. Map Data
- 5. Advanced
- 6. Select Delivery Method

Select Format

AutoCare ACES Application Exporter

Exports data in AutoCare ACES format.

Version: 3.2

Company

Sender Name

Sender Phone

Sender Phone Ext

Mfr Code

Brand AAIAID

Document Title

Doc Form Number

Effective Date: 2017-09-19

Approved For: Denmark US

Mapper Company

Mapper Contact

Mapper Phone

Mapper Phone Ext

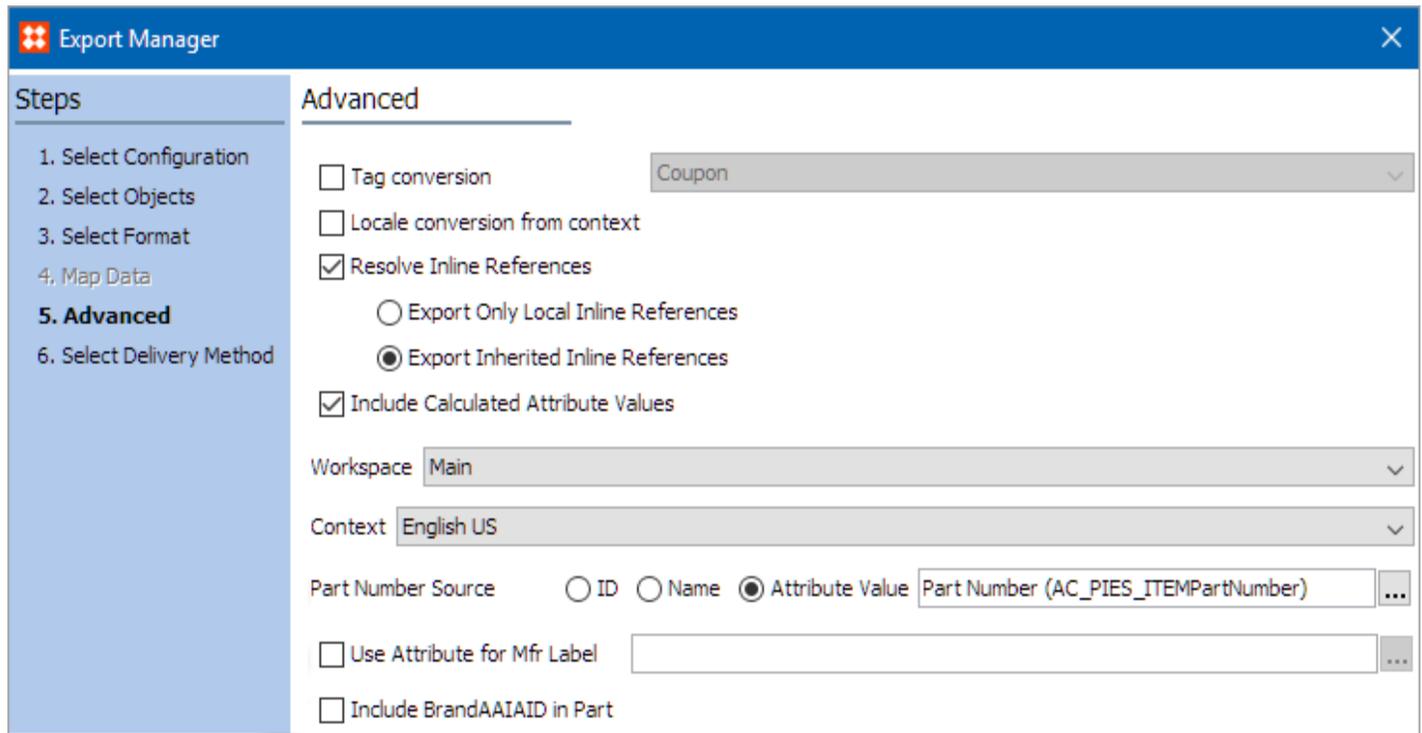
Mapper Email

Back Next Finish Cancel

Note: Use of the Approved For field requires manual setup, which is covered in the Admin Setup portion of this Quick Start Guide.

Step 5. Advanced

The Advanced step includes two unique parameters for the ACES exporter:



1. Part Number Source:

- Selecting the **ID** option inserts the STEP ID of the parental PIES part into the <Part> field of the exported file.
- Selecting the **Name** option inserts the STEP Name of the parental PIES part into the <Part> field of the exported file.
- Selecting the **Attribute Value** option inserts the selected attribute's value from the parental PIES part into the <Part> field of the exported file.
- Selecting the **Use Attribute for Mfr Label** option inserts the selected attribute's value from the parental PIES part or the exported applications into the <MfrLabel> field of the exported file.
- Data is exported from the PIES Item (object type ID = AC_PIESItem) that is parent to the applications being exported.

2. Use Attribute for Mfr Label:

- 'Use Attribute for Mfr Label' data gives users the option to supply any attribute value from the parental PIES Item or the ACES application object to be populated in the <MfrLabel> tag of the application.
- If the 'Use Attribute for Mfr Label' option is not selected and the application has a value for the ACES Mfr Label attribute, then that attribute value will get exported as the value in the <MfrLabel> tag.

3. Include BrandAAIAID in Part:

- By default this parameter is deselected. When the '**Include BrandAAIAID in Part**' parameter is disabled, then the part number is inserted into the <part> field of the exported file.
- Enabling the parameter inserts the part number and the BrandAAIAID in <part> field of the exported file.

Considerations for Version 3.0 vs. 3.2

- <ACES version="X.X"> must be populated accordingly in the Header segment
- The ApprovedFor tag in the Header segment varies based on format. Assuming values of 'US' and 'DK' are included:
 - 3.0:


```
<ApprovedFor>DK,US</ApprovedFor>
```
 - 3.2:


```
<ApprovedFor>
<Country>DK</Country>
<Country>US</Country>
</ApprovedFor>
```
- The DigitalAsset segment is excluded for ACES 3.0 export.
 - If an application has an asset linked to it, only the AssetName will get exported with the application.
 - For a 3.2 export, AssetName will also be populated within the application record, but an additional DigitalAsset segment with details about the asset is also included.
 - The value for AssetName comes from attribute ID=AC_PIES_ASSTAssetID on the asset.
 - The asset included in an export must be linked to the application record using any of these Image and Document Reference Types:
 - AC_ACESApplicationToInstallation
 - AC_ACESApplicationToOwnersManual
 - AC_ACESApplicationToPrimaryProductImage
 - AC_ACESApplicationToProductImage.

Note: ACES standard only supports one asset linked to each application, but STEP supports multiple assets linked per application. If more than one asset is linked to the application in STEP, only one asset is exported randomly. An entry is written to the execution report of the export for any skipped assets.

Sending Data Downstream

In order to send data to downstream systems in both ACES 3.0 and 3.2 formats, the AutoCare ACES Application Exporter has a Version parameter to select either 3.0 or 3.2 format.

The version will default to 3.2, but if 3.0 is selected, then the exported file will contain the following:

- UTF-8 encoding
- <ACES version="3.0">
- *The ApprovedFor tag in the Header is in the 3.0 format: <ApprovedFor>DK,US</ApprovedFor>*

Important: This tag must be removed from the a 3.0 file before importing through the STEP ACES Importer, otherwise it will fail validation against 3.2 XSD.

AutoCare PIES 6.5 Exporter

The AutoCare PIES 6.5 Exporter is used to export parts data in PIES 6.5 format. The exporter defaults to exporting data in the standard AutoCare data model, but configuration options are also available to export data in PIES format from an Own model.

This topic addresses using the exporter, as well as how to export Own part objects other than PIES Items.

Note: Exporting from a non-PIES data model requires that the alternate data model utilizes the PIES attributes and references from the standard model, and has Packaging and Hazmat objects as children to the PIES Items (if packaging and hazmat objects are to be included in the export).

Prerequisites

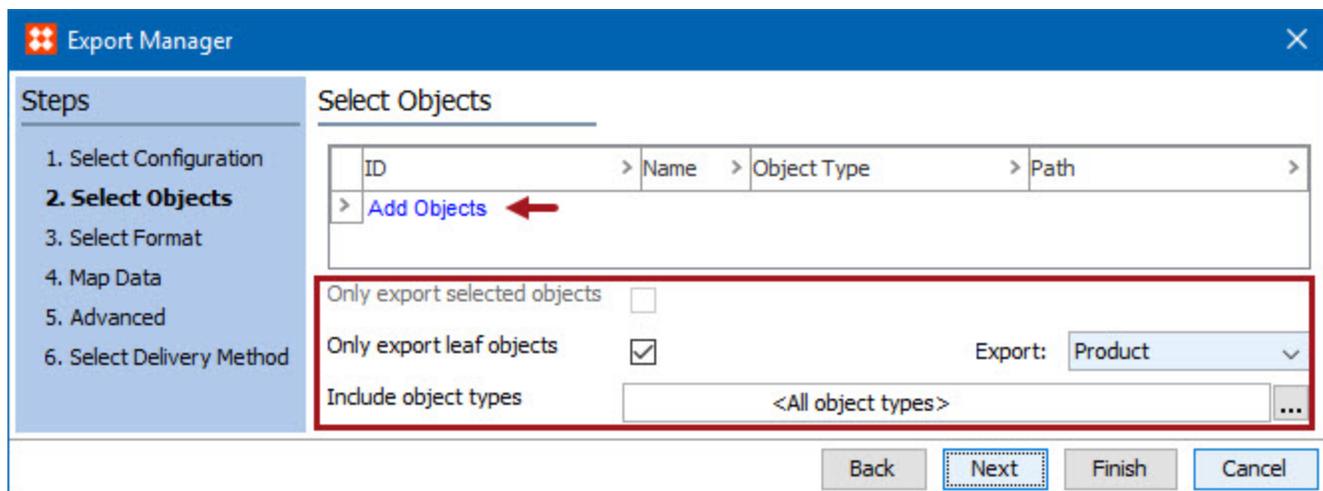
The PIES exporter runs using standard Export Manager functionality so only information specific to the PIES exporter is covered within this guide. Additional information on general Export Manager functionality is covered in the **Export Manager** topic within the **Data Exchange** section of **STEP Online Help**.

Using the PIES 6.5 Exporter

The AutoCare PIES 6.5 Exporter can be started via standard Export Manager methods, e.g. File > Export > Data, or by selecting an object in Tree, right-clicking, and selecting 'Export Data Below' from the context menu. In the case of the right-click option, an object in the AutoCare PIES Product hierarchy, an object in an Own model hierarchy that uses PIES data, or a yellow classification where part objects are linked to must be selected.

Step 2. Select Objects

In the Select Objects dialog, the only parameter that is read by the exporter is the actual object selection. The additional parameters (shown within the red box in the screenshot below) are disregarded.



Click the **Add Objects** link to add one or more blue folders in the AutoCare PIES Products hierarchy, or one or more blue folders from an Own hierarchy, or one or more classification folders.

The result is that all PIES objects beneath the selection(s) (either as child objects or via links) are exported.

If the standard AutoCare model is used, no additional selection is required. If an Own model is used, a PIES object type selection must be made in the next step of the Export Manager wizard.

Step 3. Select Format

Select **AutoCare PIES 6.5 Exporter** to expose the PIES exporter configuration parameters. If the standard AutoCare model is used, no selections should be made in the Own Model Settings section. If an Own model is used, the Own Model Settings must be populated as described below. In either case, the only other parameters that need to be populated are those in bold, and the Next button will not enable until data has been provided for them.

Export Manager [Close]

Steps

- 1. Select Configuration
- 2. Select Objects
- 3. Select Format**
- 4. Map Data
- 5. Advanced
- 6. Select Delivery Method

Select Format

AutoCare PIES 6.5 Exporter

Exports data in AutoCare PIES 6.5 format.

Own Model Settings	Configuration to export PIES data from Own Model
Hierarchy Top Node	<input type="text"/> ...
Part Object Type	<input type="text"/> ...
Packaging Object Type	<input type="text"/> ...
Hazardous Materials Object Type	<input type="text"/> ...
Blanket Effective Date	2017-09-19 ...
Parent DUNS Number	<input type="text"/>
Parent GLN	<input type="text"/>
Parent VMRSID	<input type="text"/>
Parent AAIAID	<input type="text"/> ...
Brand Owner VMRSID	<input type="text"/>
Brand Owner AAIAID	<input type="text"/> ...
Buyer Duns	<input type="text"/>
Currency Code	<input type="text"/>
Language Code	<input type="text"/>
Technical Contact	<input type="text"/>
Contact Email	<input type="text"/>
Brand Owner DUNS/GLN	
Brand Owner DUNS	<input type="text"/>
Brand Owner GLN	<input type="text"/>

Back Next Finish Cancel

The Own Model Settings are described below, and should only be populated if data should be exported from an Own model rather than the standard AutoCare model.

Export objects (Own parts) other than PIES Items

The PIES Exporter includes the following four parameters that allow users to select their own object types to be included in the exported file:

- **Hierarchy Top Node:** This is an optional parameter for selection of a product hierarchy top node (where Price Sheet data would be stored).
 - If the PIES Pricing segment **does not** need to be included in the export, then this parameter can be left empty.
 - If the PIES Pricing segment **is** to be included in the export, then the parental node where the price sheet information is stored needs to be specified in this parameter. The attribute group and attributes used to store the price sheet information must use the AutoCare IDs which is prefixed with '**AC_PIES_PRCs_.**'

An example of the attribute ID structure:

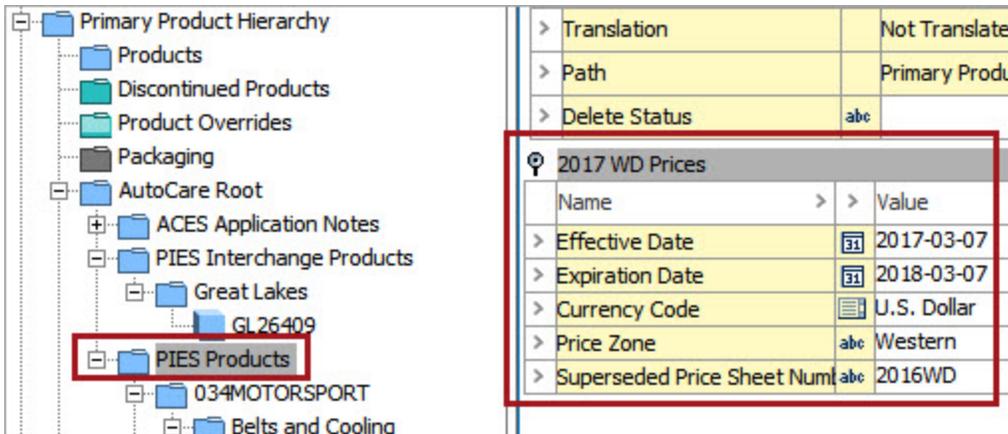
The screenshot shows the SAP System Setup interface. On the left, a tree view displays the hierarchy: PIES Price Segment PRCs > 2017 WD Prices > Currency Code. The 'Currency Code' attribute is selected. On the right, the 'Currency Code - A' attribute details are shown in a table format.

Description	
Name	Value
ID	AC_PIES_PRCs_2017WD_CurrencyCode
Name	Currency Code
Last edited by	2017-04-24 13:38:17 by EASYSETUP
Full Text Indexable	No
Externally Maintained	No
Completeness Score	
Hierarchical Filtering	None
Calculated	No
Type	Specification

PIES Importer creates price sheet attributes as they are needed, based on price sheet data in any import file. The data inherits to the product, but it is not maintainable there, and needs to be present on the parental node to be included in the export.

Important: If the export will include price data in PIES format, all Price Sheet attributes must be created and populated properly on the parental node from which they are exporting beneath.

For example, in the AutoCare PIES hierarchy, there is a PIES Products top node (ID=AC_PIESProducts) with Price Sheet attributes populated:



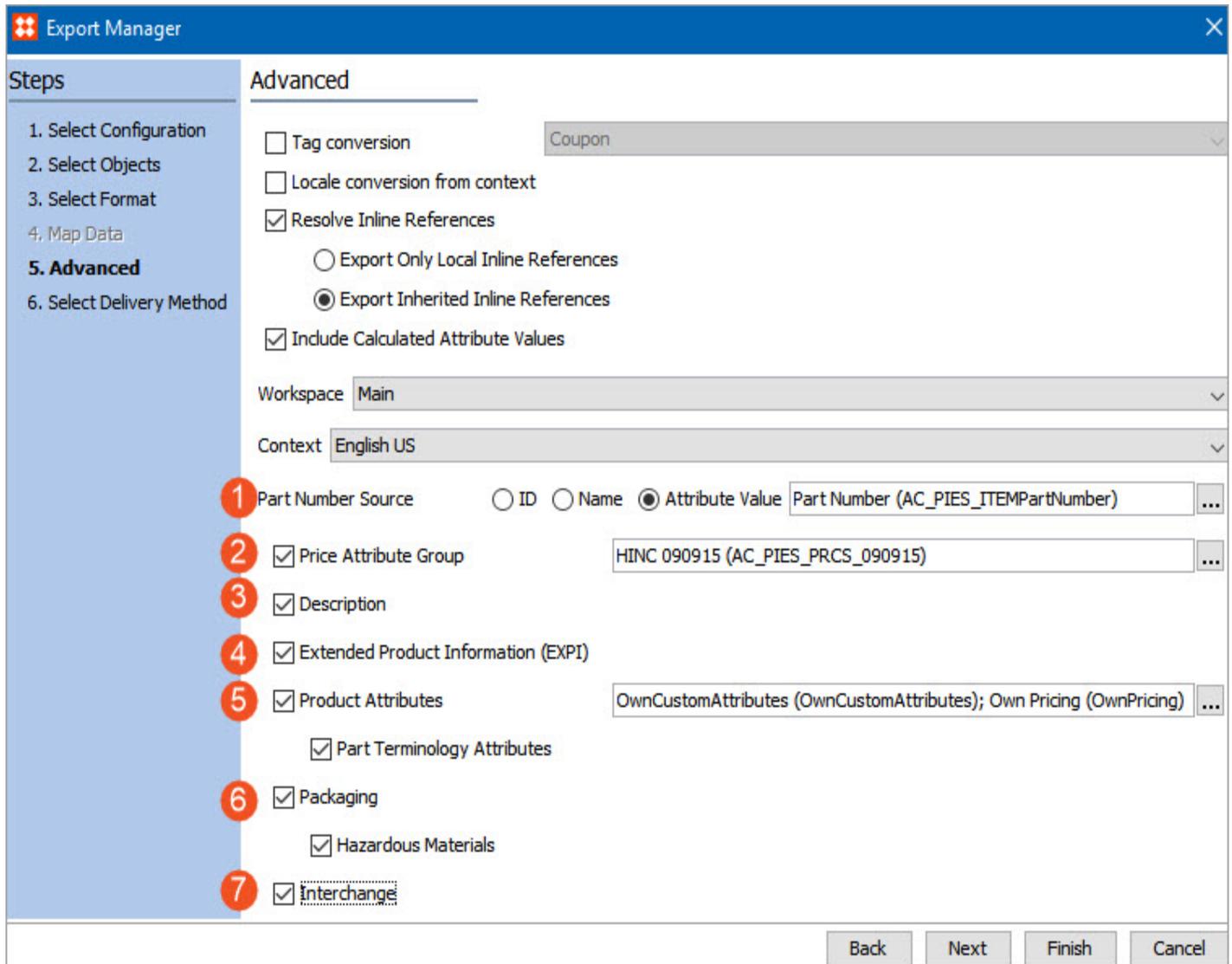
- **Part Object Type:** This is a required parameter for selection of the Own model object type representing the PIES Item.
 - The selected object must have all required PIES attributes and references (including the AC_ProductToPartTerminology reference) from the standard model made valid on the object and populated with data.
 - If the required data is not provided, the file will fail XSD validation on downstream systems.

Note: The Part Object Type cannot be a direct child of the Hierarchy Top Node.

- **Packaging Object Type:** This is an optional parameter for selection of Packaging object type.
 - If PIES Packaging segment is to be included in an export running outside of the AutoCare PIES hierarchy, the customer packaging object(s) must exist as child to the part object.
 - If not selected, users cannot expect packaging data to export properly, and the export may fail if selections in the subsequent screen of the wizard (step 5. Advanced) try to include it.
- **Hazmat Object Type:** This is an optional parameter for selection of Hazmat object type.
 - If PIES Hazmat segment is to be included in an export running outside of the AutoCare PIES hierarchy, the Hazmat object(s) must exist as child to the Packaging object.
 - If not selected, users cannot expect hazmat data to export properly, and the export may fail if selections in the subsequent screen of the wizard (step 5. Advanced) try to include it.

Step 5. Advanced

The Advanced screen include many options that controls what data gets exported. In the descriptions, the "PIES object" is taken to mean either the standard AutoCare PIES Item object, or the Own model object representative of a PIES Item. In either case, the standard AutoCare PIES attributes for the segment must be valid on the object type and populated for the data to be included in the export.



1. Part Number Source:

- Selecting the **ID** option inserts the STEP ID of the PIES object in the <PartNumber> field in the exported file
 - Selecting the **Name** option inserts the STEP Name of the PIES object in the <PartNumber> field in the exported file
 - Selecting the **Attribute Value** option inserts the selected attribute's value of the PIES object in the <PartNumber> field in the exported file
2. **Price Attribute Group:** If the PIES Pricing segment (<PriceSheets> and <Prices>) is to be included in the export, then the attribute group that holds the PIES Pricing attributes needs to be selected in this option.
 3. **Description:** If this option is selected, all standard PIES Description attributes that are valid for the PIES object and have a value will be exported in the <Descriptions> segment.

4. **Extended Product Information (EXPI):** If this option is selected, all standard PIES EXPI attributes that are valid for the PIES object and have a value will be exported in the <ExtendedInformation> segment.
5. **Product Attributes / Part Terminology Attributes:** This option allows the customer to select attribute groups that contain their own custom attributes to be included in the exported file, e.g. any attributes outside of those included in the PIES standard can be sent in this way. The values for these attributes will be included in the <ProductAttributes> segment for the PIES Item.
6. **Packaging / Hazardous Materials:** If this option is selected, exported data will be displayed in the <Packages> and <HazardousMaterial> segments.
 - If PIES Packaging and Hazmat segment are to be included in an export running outside of the AutoCare PIES hierarchy, the customer's Packaging object(s) must exist as child to the PIES product object and the Hazmat object(s) must exist as a child to the Packaging object. Additionally, the standard PIES attributes for these segments must be made valid on the corresponding Own objects, and all required data for the segments must be populated or the file will fail XSD validation in downstream systems.
7. **Interchange** - If this option is selected, exported data will be displayed in the <PartInterchangeInfo> segment.
 - The PIES Importer creates interchange records under the PIES Interchange Products node, which has a Brand and an Interchange child structure. If PIES Interchange data is to be exported, then this standard structure must be in place with the appropriate data on the interchanges (as is created with the PIES Importer).

Name	Value
> ID	AC_PIESInterchangeProducts
> Name	PIES Interchange Products
> Object Type	PIES Interchange Products
> Revision	0.3 Last edited by USER on Wed Jul 05 13:52:44 EDT 2017
> Approved	✘ Never Been Approved
> Translation	Not Translated
> Path	Primary Product Hierarchy/AutoCare Root/PIES Interchange Products

Important: If interchanges should be included in an export running from an Own model, the Own PIES Product object type must be added as a valid source for the Product Reference with ID= AC_PIESInterchange, and a reference must exist from the Own PIES Product to the AutoCare PIES Interchange object.

NAPA Application Exporter

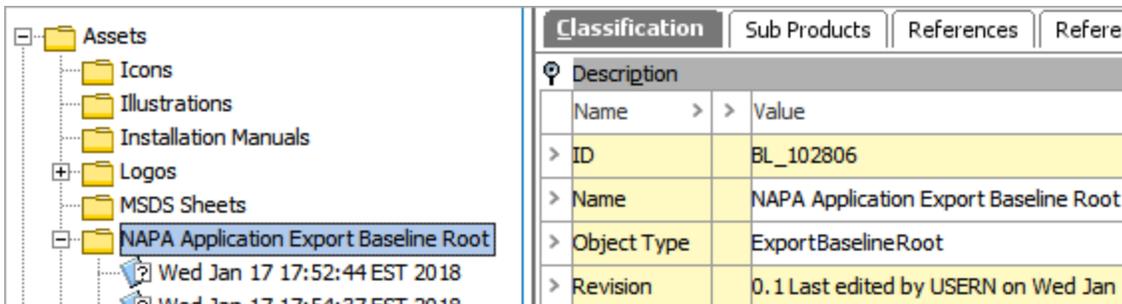
The NAPA Application Exporter is used to export application data that resides in a NAPA product hierarchy. Users can select an object from the NAPA product hierarchy, and the NAPA Application objects beneath the selected object (both child objects and linked objects) will be exported. The export file is then available in the NAPA Application format.

Prerequisites

- **NAPA Data Model Requirements:** The exporter requires applications be stored in the standard NAPA data model.
- **NAPA Product Requirements:** The NAPA Product MPCC is expected to have an ID structure prefixed with NAPA_MPCC_, and the NAPA Product is expected to have the following ID structure: NAPA_Product_[Line Abbrev][PartNumber] (i.e., NAPA_Product_FIL1515). When a NAPA Product is created, the NAPA Part Number attribute (NAPA_PartNumber) must be populated with the Part Number value, as this attribute value is used to determine the Part Number in the NAPA Application Exporter.

Important: Because some Product Lines only have two characters, the NAPA Product Number, if used without the overlying ID structure, might create an inconsistent pattern when trying to use the Product Number for the ID.

- **Object Type Requirements:** The following object types must exist within STEP: ExportBaselineRoot (Alternate Classification) and ExportBaselineAsset (Assets). As of the Automotive 8.3 release, these object types are created automatically when Easy Setup is run via System Setup > Component Models > Automotive - NAPA Model > Right-click Automotive - NAPA Model > 1. Configure NAPA Data Model.
- **Classification Requirements:** Additionally, a new classification using the alternate classification object (ExportBaselineRoot) must be manually created to hold the delta baseline assets. In the example below, NAPA Application Export Baseline Root has been created below the Assets root node.

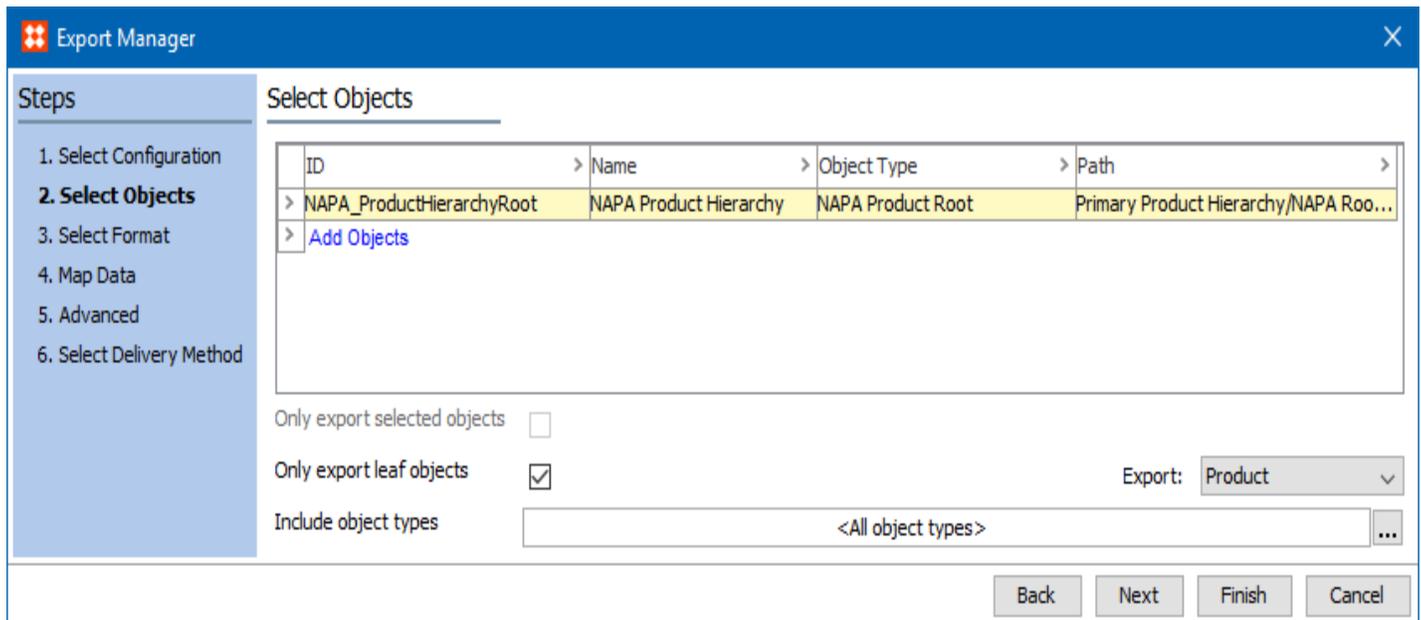


Using the NAPA Application Exporter

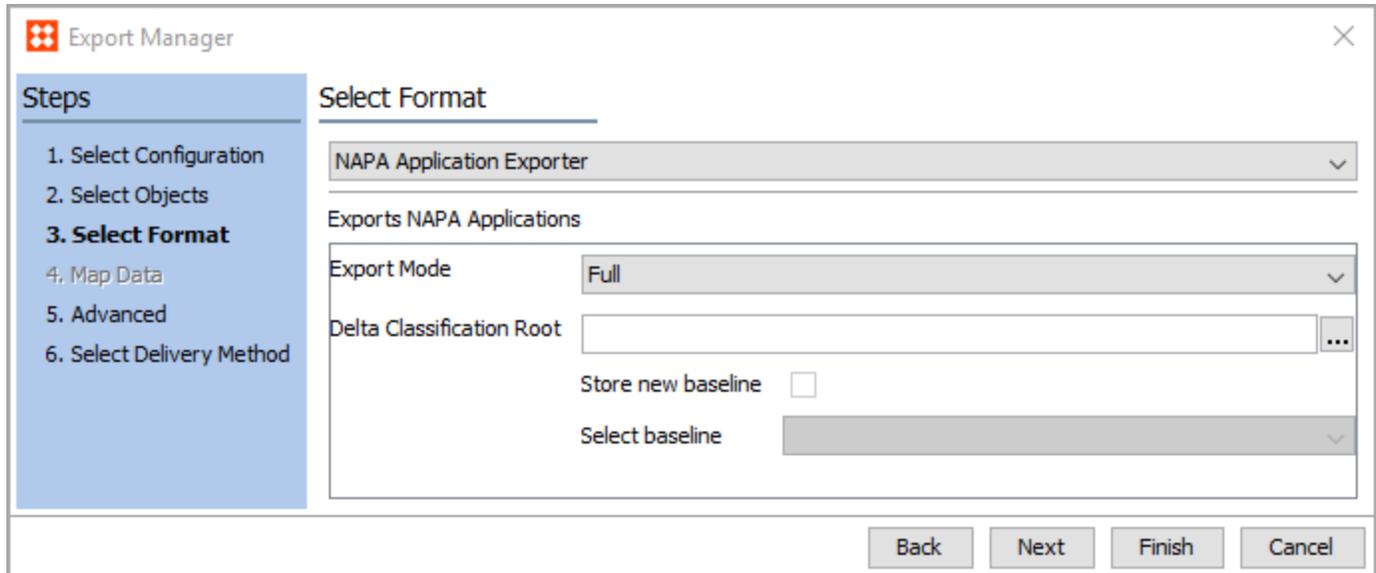
The steps below describe how to use the NAPA Application Exporter.

1. Go to the NAPA product hierarchy parent folder of the application(s) to be exported, Right-click, and select **Export Data Below**. The Export Manager will display with the parent folder object automatically added. In the

example below, the 'NAPA Product Hierarchy' was selected, and has been automatically added. Optionally, add additional objects.



- Click the **Next** button, and the Export Manager will display the Select Format options. Use the dropdown to select the NAPA Application Exporter, and the Export Manager will display as shown below.

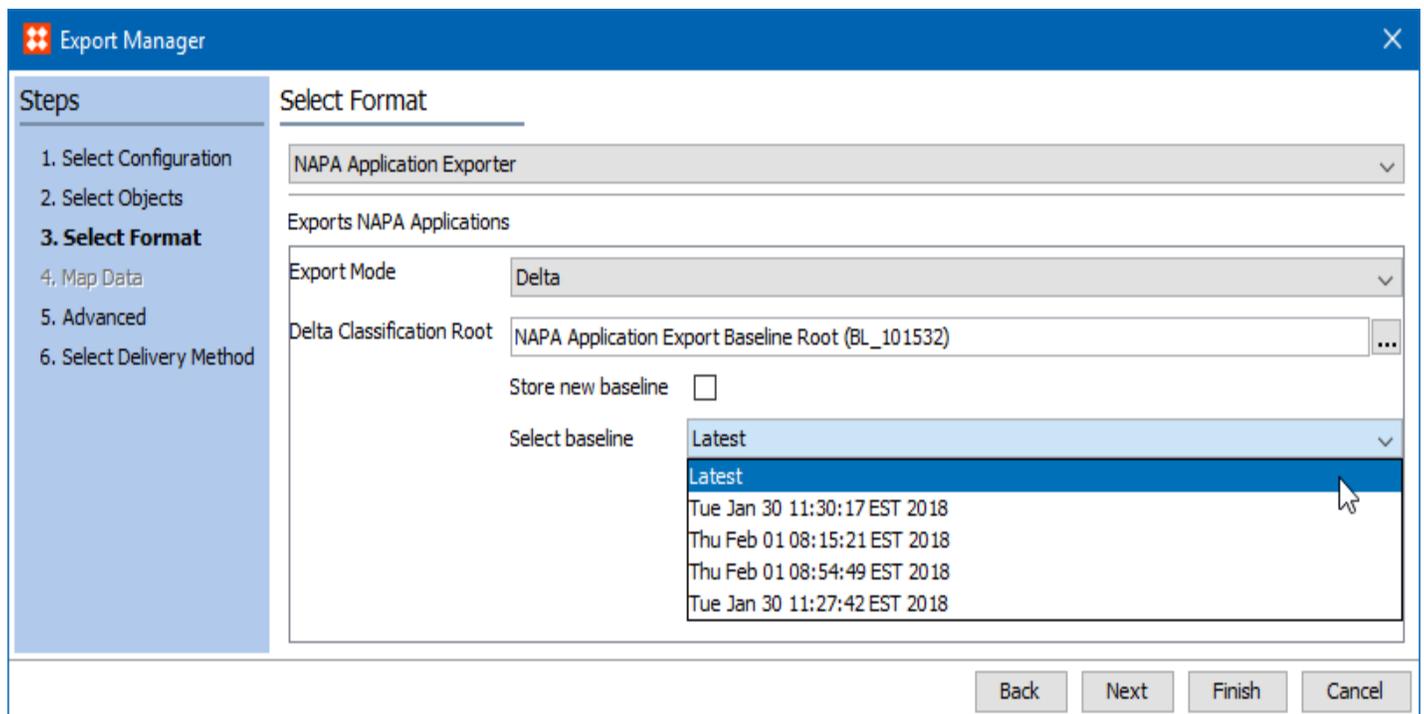


- Select the one of the following Export Modes from the dropdown:
 - Full:** This export mode will export applications linked to and/or beneath the objects selected in the previous step.

- **Delta:** This export mode will export only applications changed in comparison to the baseline selected below. A baseline must be selected, otherwise the delta file will be blank. Within the exported delta file, values that have changed will be marked with a 'D' Update Type for the old value on the record, and a separate line in the exported file will contain an 'A' Update Type for the new value.

Important: Before the Delta option can be used, at least one baseline must be stored by generating a FULL export and enabling the 'Store new baseline' checkbox. Otherwise the exporter has nothing to reference.

3. Within the Delta Classification Root parameter, click the ellipsis button (...) to find and select the alternate classification object (ExportBaselineRoot). Once the Delta Classification Root is populated, the Select baseline parameter dropdown will be enabled.
4. Select the desired baseline from the dropdown list. In the example below, four previous baselines and the 'Latest' baseline can be selected. (Optionally, the 'Store new baseline' checkbox can be enabled to create a new baseline).



5. Click the **Next** button and/or **Finish** button to complete the Export Manager wizard. For more information on the core parameters within the Export Manager, see the **Export Manager** topic within the Data Exchange section of Online Help.

Automotive Business Rule Plugins

A number of business rule plugins are provided to assist in extending the core Automotive solution. This section addresses many of the Automotive business rule plugins as they are available when configuring Business Actions and Business Conditions.

Prerequisites

It is assumed that the admin user has knowledge of STEP administrative functions and experience working in System Setup, including creating and editing business rules, workflows, and Web UIs. This section targets only the specific information needed for a knowledgeable STEP admin user to identify and configure the Automotive-specific business rule plugins. For more introductory material of these concepts, see the **Business Rules**, **Workflows Web User Interfaces** sections of **STEP Online Help**.

Business Action Operations

Menu	Operation Name	Components required for use	Description
Automotive	Change assembly	Application Manager, Bulk Update action button	Allows users to use a Bulk Updates action button within an Application Manager to change the assembly / vehicle of one or more existing applications. Will not change the assembly of a missing application. For more information, see Business Action: Change Assembly .
Automotive	Change part	Application Manager, Bulk Update action button	Allows users to use a Bulk Updates action button within an Application Manager to change the part for a selected application. For more information, see Business Action: Change Part .
Automotive	Change part type	Application Manager, Bulk Update action button	Allows users to use a Bulk Updates action button within an Application Manager to change the part type for a selected application. Will not change the part type of a missing application. For more information, see Business Action: Change Part Type .
Automotive	Copy application to other assembly	Application Manager, Bulk Update action button	Allows users to use a Bulk Updates action button within an Application Manager to copy one or more existing applications to another assembly / vehicle. For more information, see Business Action: Copy Application to Other Assembly .
Automotive	Copy application to other part	Application Manager, Bulk Update action button	Allows users to use a Bulk Updates action button within an Application Manager to copy one or more existing applications to another part. For more information, see Business Action: Copy Application to Other Part .
Automotive	Copy applications to related parts	Application Manager, Bulk Update action button	Allows users to use a Bulk Updates action button within an Application Manager to copy one or more existing applications to one or more related parts. For more information, see Business Action: Copy Applications to Related Parts .
Automotive	Copy	Anywhere a bulk	Allows users to update the product hierarchy to match the classification hierarchy. The

Menu	Operation Name	Components required for use	Description
	classification hierarchy to product hierarchy	update can be run	operation has the ability to disregard the classification prefix in order to create the product hierarchy using a defined product prefix. Can be used after a VCDB update has created new vehicles within the yellow classification folders to create blue hierarchy nodes. CAUTION: Object Types need to be similar in that they should have the same ID (without the prefix).
Automotive	Move ACES Applications for PIES Part		Moves all ACES applications from one PIES Item to another by following a reference between the parts. For more information, see Business Action: Move ACES Applications for PIES Part .
Automotive	Set Condition Links on Part Types		Links application conditions / options to part types to assist in configuring display options in the Web UI Application Record Editor. For more information, see Business Action: Set Condition Links on Part Types .
Automotive	Sync ACES Applications between PIES Parts		Synchronizes all ACES applications between two PIES Items by following a reference between the parts. For more information, see Business Action: Sync ACES Applications Between PIES Parts .
Automotive	Unique application record constraint		Calculates a unique value based on the part, assembly and the conditions for the applications.
Import flow	Set import status attributes	Workflow: Import State	Allows for the implementation of change flags; a way for users to view what data has been created or changed due to an import. Must be used within the Import state of a workflow. For more information, see Business Action: Set Import Status Attributes .

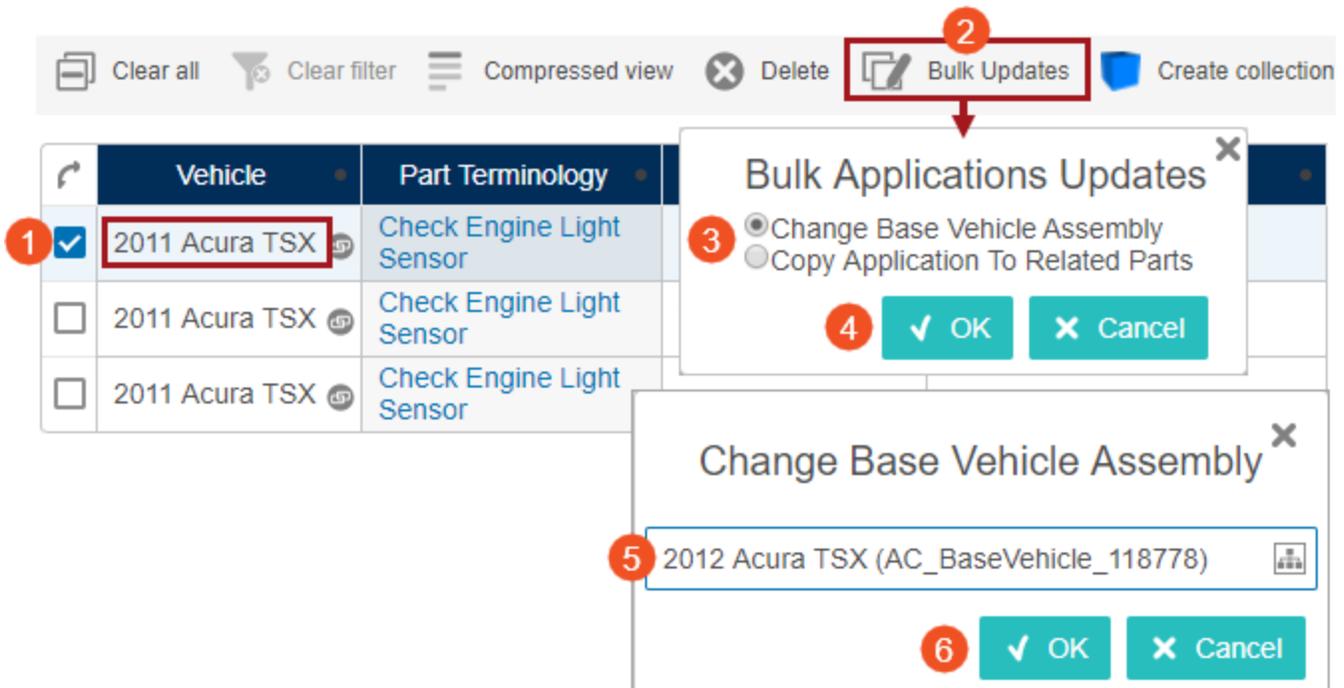
Business Condition Operations

Menu	Operation Name	Description
Automotive	Validate Application	Prevents any applications from being imported that do not have both a part type and vehicle / assembly that exists in the STEP database. When a record is found that does not meet the condition, an error is written to the execution report of the import process and the record is not imported. This condition is automatically created and added to the Import state of the relevant workflow when the Easy setup of the import process has been run.
Automotive	Check path for missing application	Improves the accuracy of Application Manager search results involving specific part types by allowing the data model to include a relationship between conditions on applications and different vehicle configurations. This can be helpful when specific part types do not apply to certain vehicle configurations. For more information, see Business Condition: Check Path for Missing Application .

Business Action: Change Assembly

This automotive business action allows users to use a Bulk Updates action button within an Application Manager to change the assembly / vehicle of one or more existing applications. However, it will not change the assembly / vehicle of a missing application, and thus any missing applications selected when the bulk update is run will be ignored. For more information about missing coverage, see the **Missing Application Coverage Functionality** topic within this guide.

Once configured, a Bulk Updates button within an Application Manager can be used to change the assembly for one or more existing application. Below are the steps for using the business action in Web UI.



Note: If only one bulk update is configured, then the Bulk Applications Updates dialog will not display.

1. Within the configured Application Manager, search for applications and select one or more applications to be changed.
2. Click the **Bulk Updates** action button. If more than one bulk update is configured then the Bulk Updates dialog will display (as shown above), otherwise this dialog is skipped and the change assembly dialog will display (skip to step 5 below).
3. Select the Change Base Vehicle Assembly radio button from the list displayed within the Bulk Applications Updates dialog. For this example, 'Change Base Vehicle Assembly' is used, but the business action name displayed within the list is dependent upon the business action's Name parameter.
4. Click the **OK** button and the change assembly dialog will display. For this example, 'Change Base Vehicle Assembly' is used, but the title of this dialog is controlled by the business action's Name parameter.

5. Select the desired assembly / vehicle for the application(s).
6. Click the **OK** button to close the dialog, and a background process notification will display.
7. Once the background process has completed, click the **Find applications** button to display the newly created application(s) within the Application Manager results table.

The diagram illustrates a change in the 'Vehicle' column of a table. On the left, a table with three rows is shown. The first row is selected (checkbox checked) and has a red box around '2011 Acura TSX'. A red arrow points to the right, where the same table is shown, but the first row now has '2012 Acura TSX' selected and boxed in red.

	Vehicle	Part Terminology
<input checked="" type="checkbox"/>	2011 Acura TSX	Check Engine Light Sensor
<input type="checkbox"/>	2011 Acura TSX	Check Engine Light Sensor
<input type="checkbox"/>	2011 Acura TSX	Check Engine Light Sensor

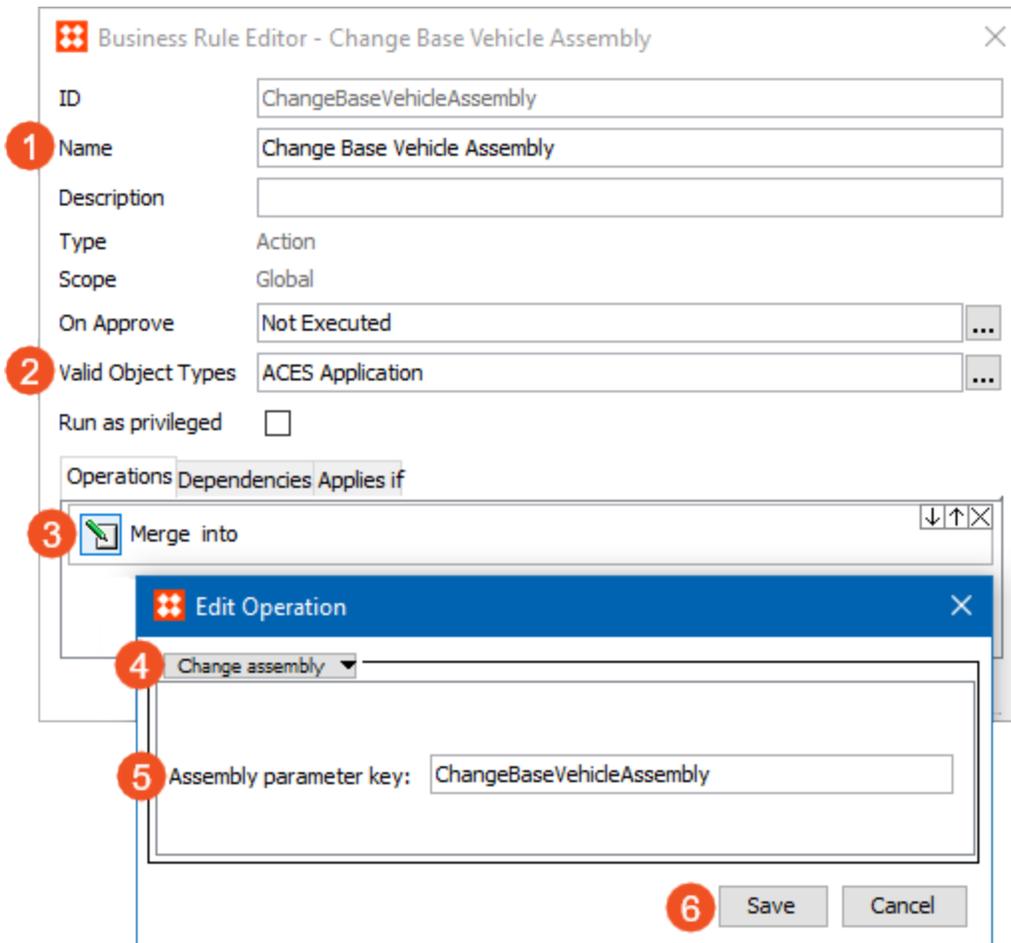
	Vehicle	Part Terminology
<input checked="" type="checkbox"/>	2012 Acura TSX	Check Engine Light Sensor
<input type="checkbox"/>	2011 Acura TSX	Check Engine Light Sensor
<input type="checkbox"/>	2011 Acura TSX	Check Engine Light Sensor

Setup is required within both STEP Workbench and Web UI for the action to be available to users. For more information, see the configuration topics below:

- Configuring the Change Assembly Business Action in Workbench
- Configuring the Change Assembly Business Action in Web UI

Configuring the Change Assembly Business Action in Workbench

The 'Change assembly' business operation is found within the STEP Workbench Business Rule Editor under the Automotive menu and requires population of a single parameter (Assembly parameter key). However, setup is required within both STEP Workbench and Web UI for the action to be available to users. This section addresses the steps necessary within the workbench.



1. Create the business action with a name that accurately describes to the user what this action will do. The name of the business action displays within the Web UI and should be easy for the user to identify. For this example, the business action name is 'Change Base Vehicle Assembly.'

Note: The business action Name will display to the Application Manager user once the Bulk Updates action button is selected. If more than one bulk update is configured, then the name displays both within the Bulk Applications Update dialog, and within the change assembly dialog where the user enters the assembly for the application (as shown in the example within the **Using the Configured Change Assembly Business Action in Web UI** section of the **Business Action: Change Assembly** topic within this guide).

2. Edit the new business rule, click the ellipsis button (...) next to the Valid Object Types parameter and select the valid object types for this business action. For this example, the 'ACES Application' object type is selected, however the TecDoc and NAPA applications can also be selected within the same or separate business actions. This decision is at the discretion of the administrator.
3. On the Operations tab of the Business Rule Editor, click the **Add new Business Action** link, and click the edit button to open the Edit Operation dialog.
4. Use the dropdown menu within the Edit Operation dialog to select **Automotive > Change assembly** operation, and the parameter 'Assembly parameter key' will display (as shown above).
5. Within the parameter enter a unique way (key) to identify this rule. Uniqueness is the only restriction for this key. It will not be displayed to the user. It is case sensitive.

Important: Common setup is to copy the key so it can be pasted in the Web UI designer when configuring the business action in Web UI.

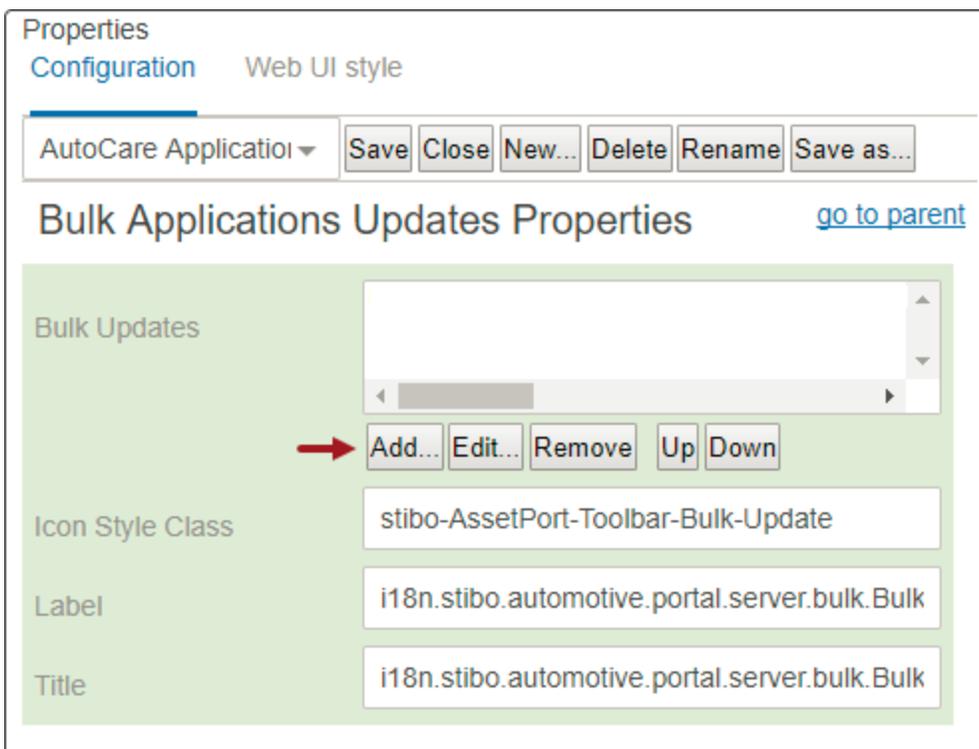
6. Click the **Save** button and continue to the next topic, **Configuring the Change Assembly Business Action in Web UI**.

Configuring the Change Assembly Business Action in Web UI

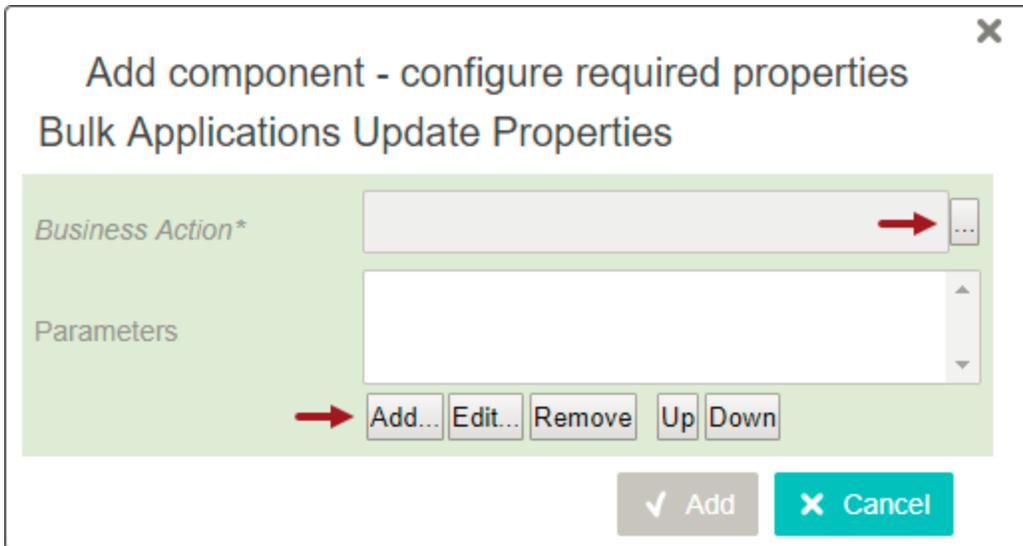
Once the business action has been configured in the workbench, configuration within Web UI is necessary. This section addresses the steps necessary within Web UI.

Note: After the initial setup, the access to the dialogs does not change, therefore these steps can be helpful when editing the configuration. However, when editing the 'Add' button will be replaced with the 'Save' button, and the 'Add component...' labels at the top of the dialogs will display as 'Edit component... '.

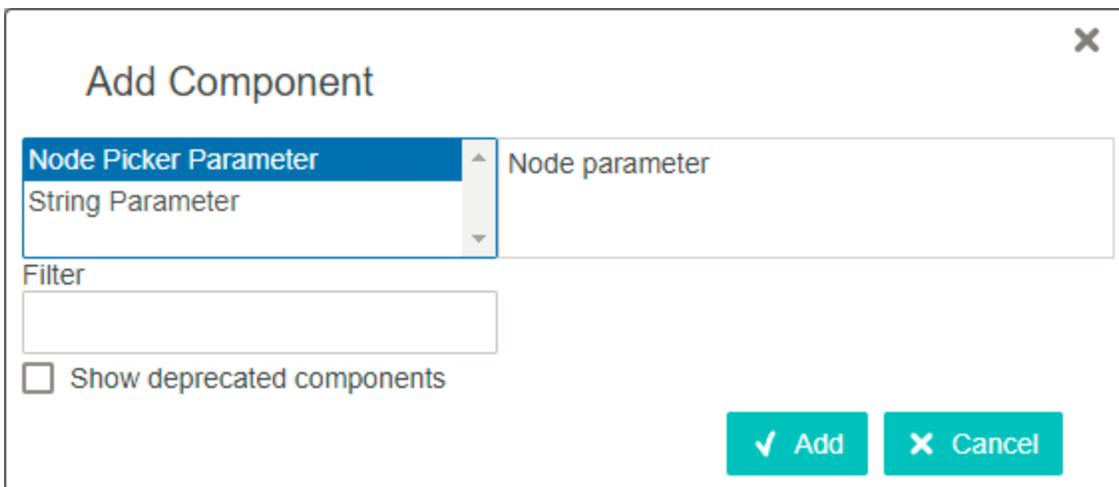
1. Access the Application Manager screen where the business action needs to be available to users.
2. Access the Designer > navigate to Node List Properties > Child Components > Actions > Double click **Bulk Applications Updates** and the 'Bulk Applications Updates Properties' dialog will display (as shown below).



3. Click the **Add** button beneath the Bulk Updates parameter, and the 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



4. Click the ellipsis button (...) next to the Business Action parameter > select the business action previously created > click the **OK** button to close the dialog, and return to the Bulk Applications Update Properties dialog. The selected action is displayed in the Business Action parameter.
5. Click the **Add** button beneath the Parameters field, and the Add Component dialog will display (as shown below).

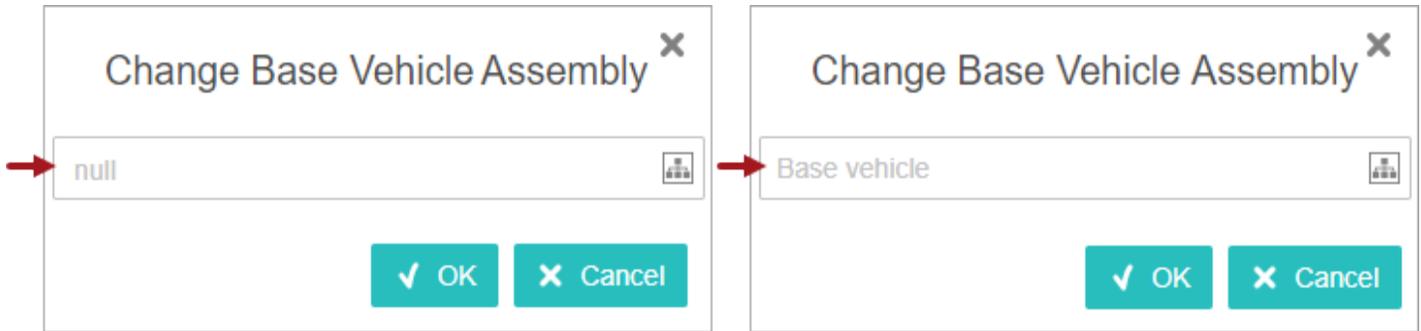


6. Select **Node Picker Parameter** > click the **Add** button to close the dialog, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display (as shown below).

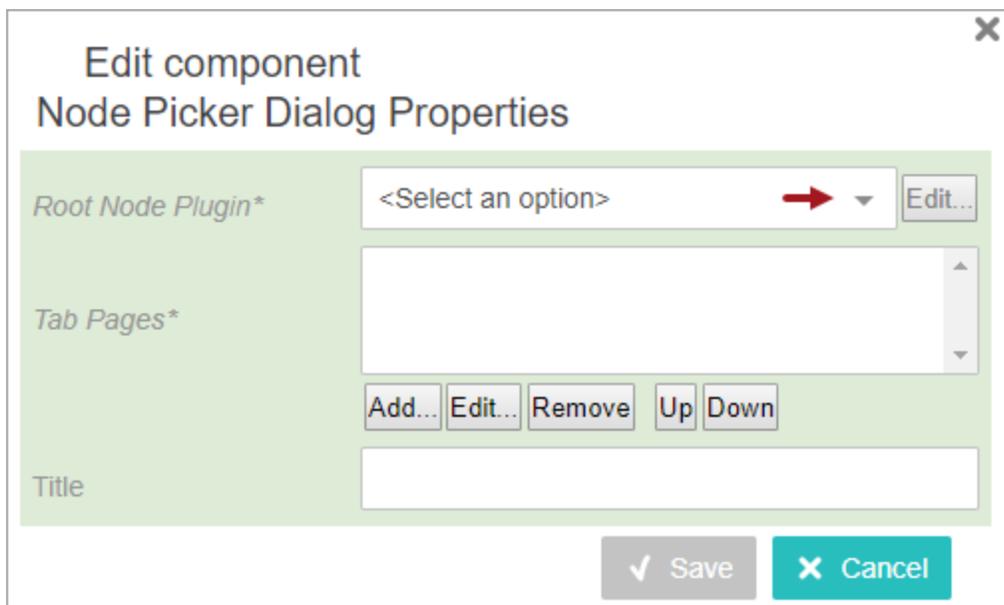
7. Within the Key parameter, enter the exact key created within the 'Assembly parameter key' parameter during step 5 of the **Configuring the Change Assembly Business Action in Workbench** topic. This is the only required parameter.

Important: If this key is not entered exactly in both places, then the business action will not properly function within the Web UI.

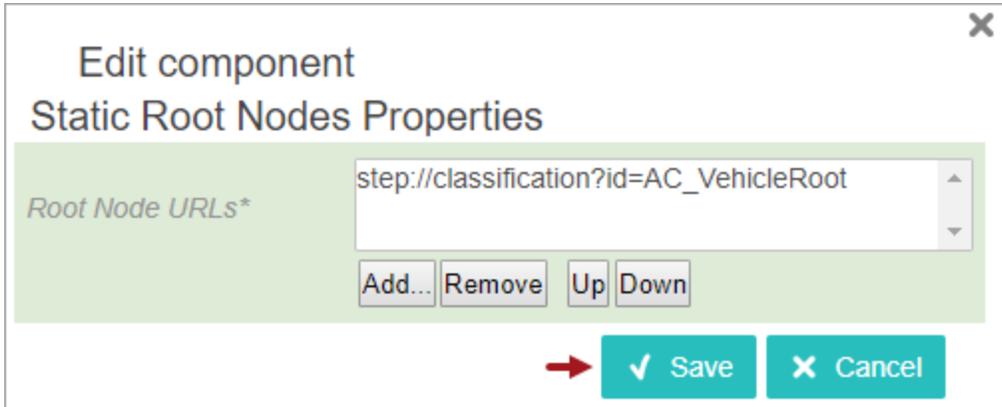
8. Within the Label parameter, enter text that will prompt the user as to what they should select when using this business action. For example, when the Label parameter is blank the parameter within the dialog will display as 'null' as shown in the image on the left. If the Label parameter is populated with 'Base vehicle' the parameter within the dialog will display with 'Base vehicle' as shown within the image on the right.



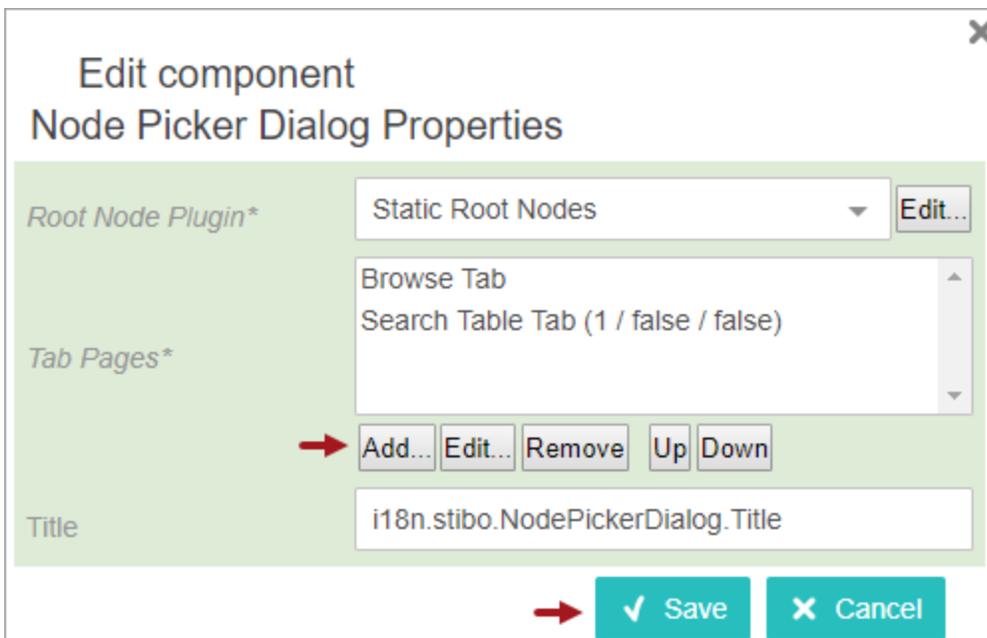
- Use the Node Picker Configuration parameter dropdown to select the **Node Picker Dialog** option, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display.



- Use the Root Node Plugin parameter dropdown to select the **Static Root Nodes** option, and the 'Edit component' for the 'Static Root Nodes Properties' dialog will display.
- Click the **Add** button beneath the Root Nodes URLs parameter > select the root nodes that the user should be able to choose from when changing the part type (for this example AC_VehicleRoot is used) > click the **OK** button to close the dialog, and return to the 'Edit component' for 'Static Root Nodes Properties' dialog. Optionally, repeat this step to add additional nodes for a user to browse from when looking for a part type.



12. Click the **Save** button, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display with the Root Node Plugin parameter populated with Static Root Nodes.
13. Click the **Add** button beneath the Tab Pages parameter > select the **Browse Tab** component > click the **Add** button to close the dialog and the 'Edit component' for 'Node Picker Dialog Properties' will display with the Tab Pages parameter populated with Browse Tab. Optionally, repeat this step and add the Search Table Tab.



Note: Leave the Title parameter blank and *after the configuration is saved* an i18n key will be populated (as shown above). For more information, see the **Localization** topic within the **Administration Portal** section of the **STEP Online Help**. Otherwise, text entered within the Title parameter will display in place of the default 'Select Node(s)' title for the dialog used to select the vehicle assembly.

14. Click the **Save** button, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display with the Node Picker Configuration parameter populated.

- Use the dropdown located beneath the Valid Node Types parameter to select **CLASSIFICATION_TYPE** > click the **Add** button beneath the Valid Node Types parameter so that CLASSIFICATION_TYPE is displayed within the Valid Node Types parameter (as shown below).
- Click the **Add** button beneath the Valid Object Types parameter > select the desired valid object types > Click the **OK** button to return to the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog.

Add component - configure required properties

Node Picker Parameter Properties

Key*

Label

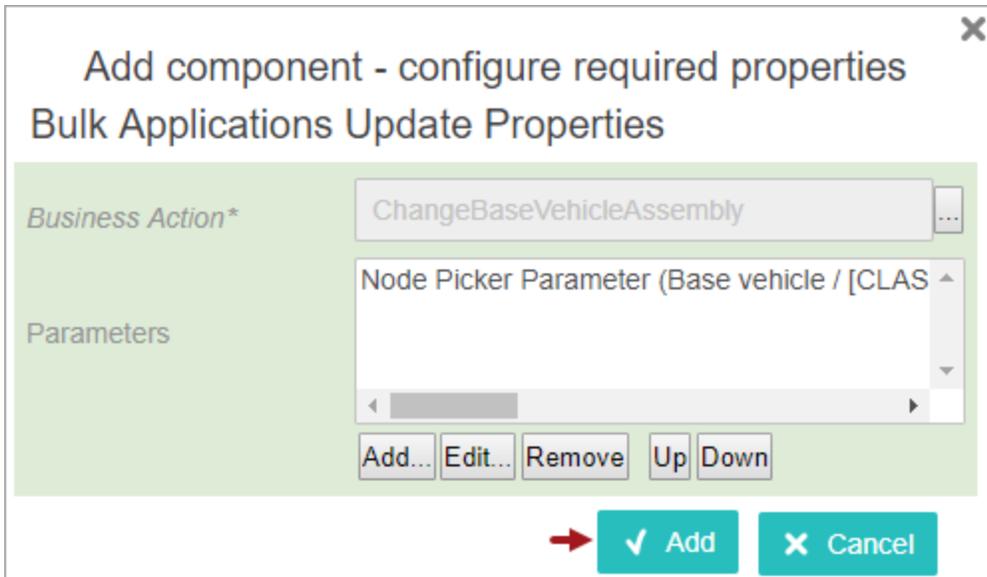
Mandatory

Node Picker Configuration

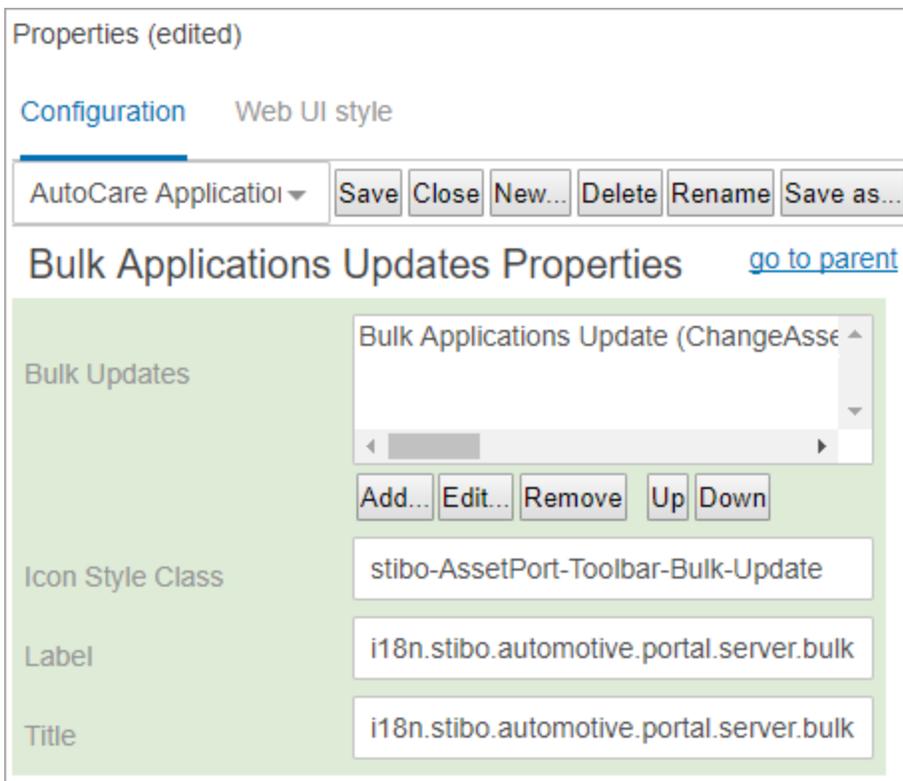
Valid Node Types

Valid Object Types

- Click the **Add** button, and 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



- Click the **Add** button, and the 'Bulk Applications Updates Properties' dialog will display with the newly added Bulk Update listed.



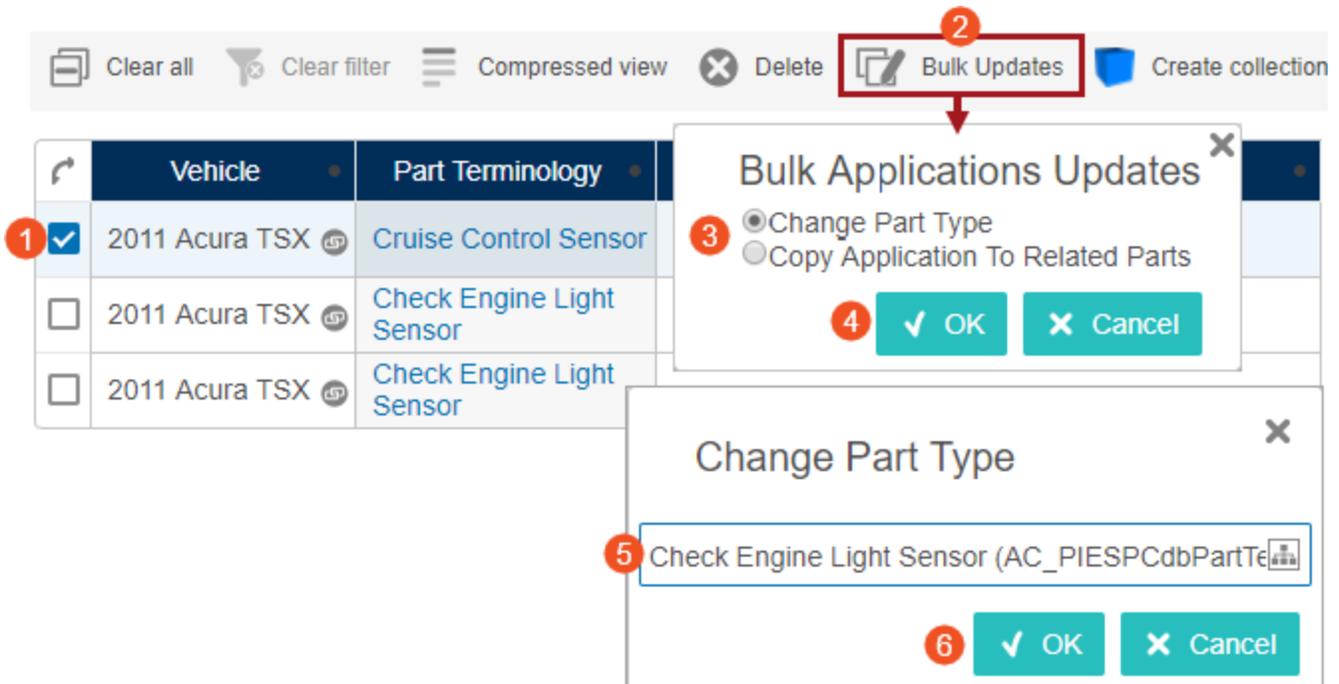
- Click the **Save** button and then click the **Close** button to close the designer.

To use the newly configured business action, see the **Using the Configured Change Assembly Business Action in Web UI** section of the **Business Action: Change Assembly** topic.

Business Action: Change Part Type

This automotive business action allows users to change the part type of one or more existing applications by clicking a Bulk Updates action button within an Application Manager. However, it cannot change the part type of a missing application, and thus any missing applications selected when the bulk update is run will be ignored. For more information, see the **Missing Application Coverage Functionality** topic. Setup is required within both STEP Workbench and Web UI for the action to be available to users.

Once configured, a Bulk Updates button within an Application Manager can be used to change the part type for an existing application. Below are the steps for using the business action in Web UI.



Note: If only one bulk update is configured, then the Bulk Applications Updates dialog will not display.

1. Within the configured Application Manager, search for applications and select one or more applications to be changed.
2. Click the **Bulk Updates** action button. If more than one bulk update is configured, the Bulk Applications Updates dialog will display (as shown above), otherwise this dialog is skipped and the Change Part Type dialog will display (skip to step 5 below).
3. Select the Change Part Type radio button from the list displayed within the Bulk Application Updates dialog. For this example, 'Change Part Type' is used, but the business action name displayed within the list is dependent upon the business action's Name parameter.
4. Click the **OK** button and the Change Part Type dialog will display. For this example, 'Change Part Type' is used, but the title of this dialog is controlled by the business action's Name parameter.
5. Select the desired part type for the application(s).

6. Click the **OK** button to close the dialog, and a background process notification will display.
7. Once the background process has completed, click the **Find applications** button to display the newly created application(s) within the Application Manager results table.

The diagram illustrates the process of finding applications. It shows two side-by-side screenshots of the Application Manager results table. The left screenshot shows a table with two columns: 'Vehicle' and 'Part Terminology'. The 'Vehicle' column contains '2011 Acura TSX' and the 'Part Terminology' column contains 'Cruise Control Sensor'. A red box highlights 'Cruise Control Sensor'. A red arrow points from this box to the right screenshot. The right screenshot shows the same table, but the 'Part Terminology' column now contains 'Check Engine Light Sensor', which is also highlighted with a red box. Both rows have a checkmark in the first column.

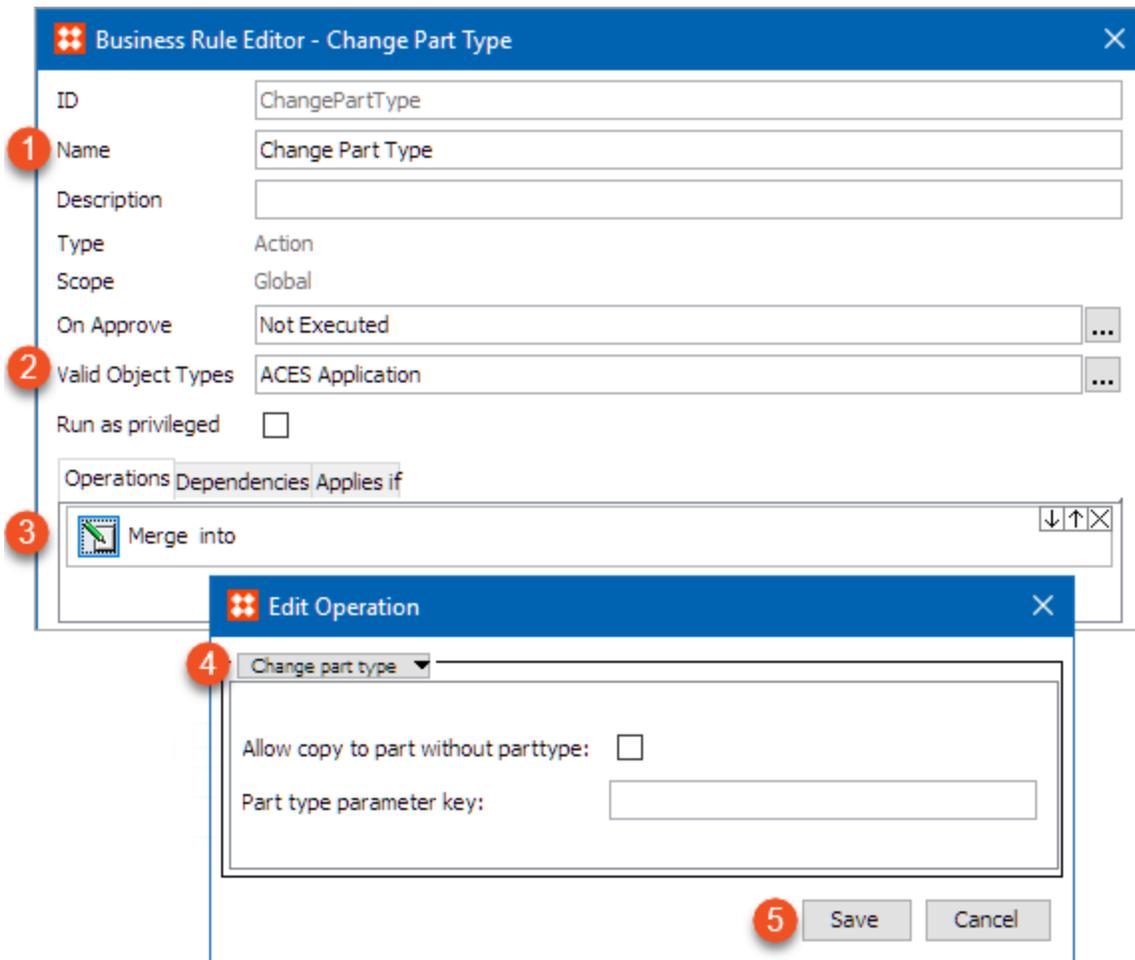
	Vehicle	Part Terminology
<input checked="" type="checkbox"/>	2011 Acura TSX	Cruise Control Sensor
<input checked="" type="checkbox"/>	2011 Acura TSX	Check Engine Light Sensor

Setup is required within both STEP Workbench and Web UI for the action to be available to users. For more information, see the configuration topics below:

- Configuring the Change Part Type Business Action in Workbench
- Configuring the Change Part Type Business Action in Web UI

Configuring the Change Part Type Business Action in Workbench

The 'Change part type' business operation is found within the STEP Workbench Business Rule Editor under the Automotive menu and requires population of a single parameter (Part type parameter key). However, setup is required within both STEP Workbench and Web UI for the action to be available to users. This section addresses the steps necessary within the workbench.



1. Create the business action with a name that accurately describes to the user what this action will do. The name of the business action displays within the Web UI and should be easy for the user to identify. For this example, the business action name is 'Change Part Type.'

Note: The business action Name will display to the Application Manager user once the Bulk Updates action button is selected. If more than one bulk update is configured, then the name displays both within the Bulk Applications Update dialog, and within the change part type dialog where the user enters the part type for the application (as shown in the example within the **Using the Configured Change Part Type Business Action in Web UI** section of the **Business Action: Change Part Type** topic).

2. Edit the new business rule, click the ellipsis button (...) next to the Valid Object Types parameter and select the valid object types for this business action. For this example, the 'ACES Application' object type is selected, however the TecDoc and NAPA applications can also be selected within the same or separate business actions. This decision is at the discretion of the administrator.
3. On the Operations tab of the Business Rule Editor, click the **Add new Business Action** link, and click the edit button to open the Edit Operation dialog.
4. Use the dropdown menu within the Edit Operation dialog to select **Automotive > Change part type** operation, and the following parameters will display (as shown above):
 - **Part Type parameter key:** By default, this required parameter is blank. Within the parameter enter a unique way (key) to identify this rule. Uniqueness is the only restriction for this key. It will not be displayed to the user. It is case sensitive.

Important: Common setup is to copy the key so it can be pasted in the Web UI designer when configuring the business action in Web UI.

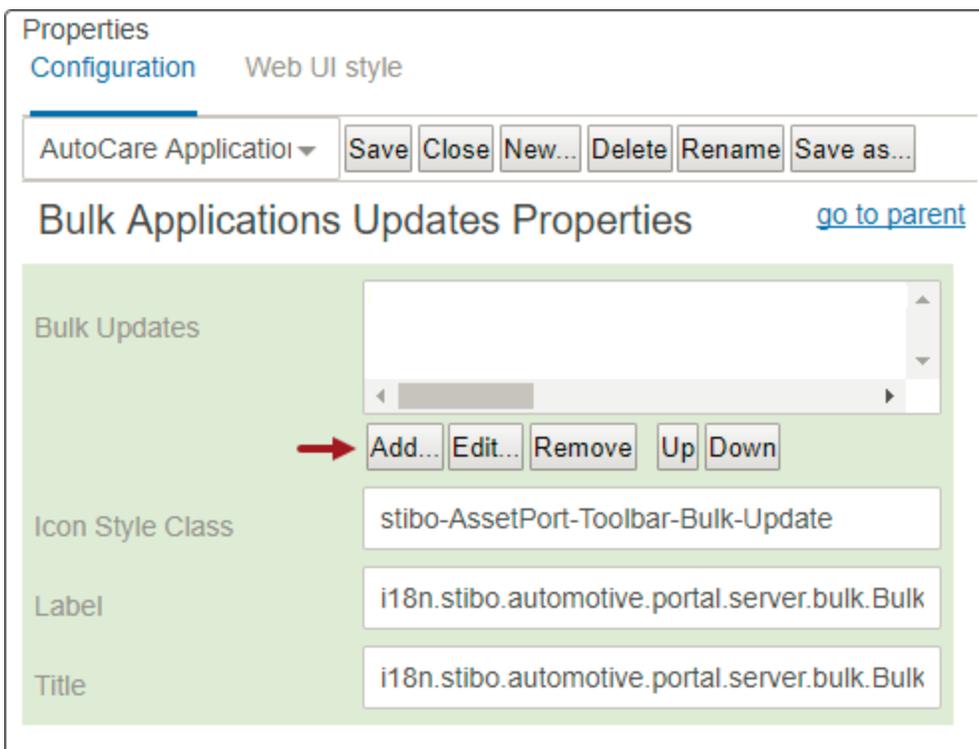
5. Click the **Save** button and continue to the next topic, **Configuring the Change Part Type Business Action in Web UI**.

Configuring the Change Part Type Business Action in Web UI

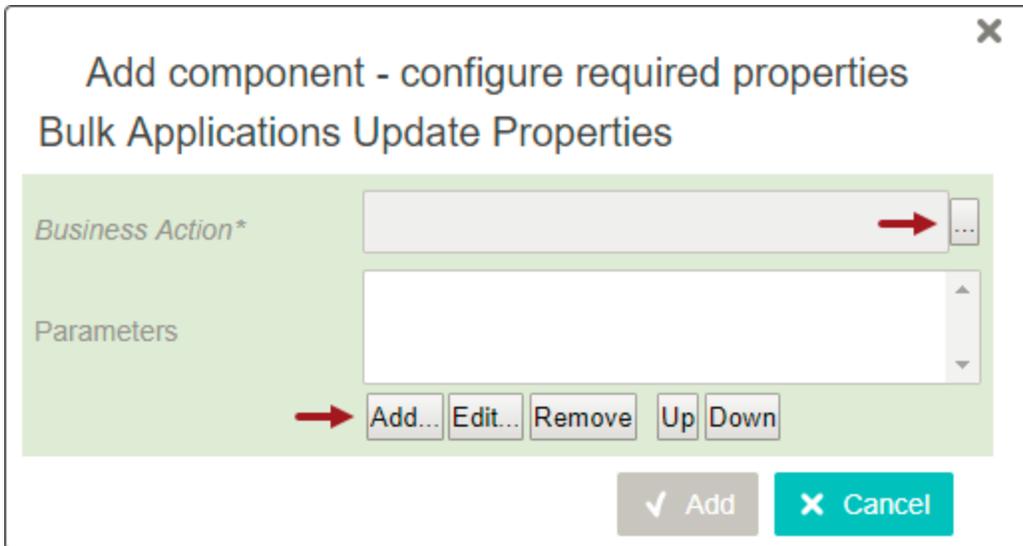
Once the business action has been configured in the workbench, configuration within Web UI is necessary. This section addresses the steps necessary within Web UI.

Note: After the initial setup, the access to the dialogs does not change, therefore these steps can be helpful when editing the configuration. However, when editing the 'Add' button will be replaced with the 'Save' button, and the 'Add component...' labels at the top of the dialogs will display as 'Edit component... '.

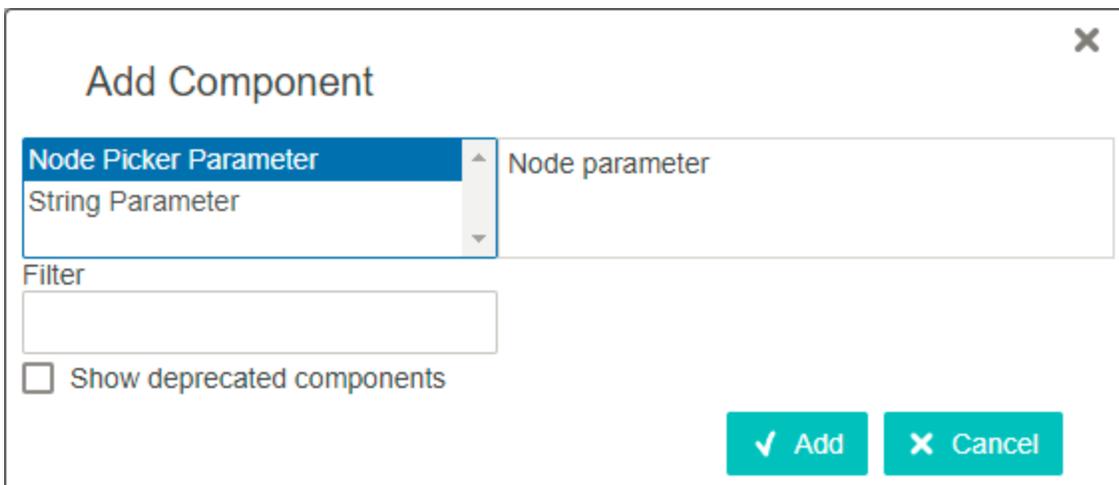
1. Access the Application Manager screen where the business action needs to be available to users.
2. Access the Designer > navigate to Node List Properties > Child Components > Actions > Double click **Bulk Applications Updates** and the 'Bulk Applications Updates Properties' dialog will display (as shown below).



3. Click the **Add** button beneath the Bulk Updates parameter, and the 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



4. Click the ellipsis button (...) next to the Business Action parameter > select the business action previously created > click the **OK** button to close the dialog, and return to the Bulk Applications Update Properties dialog. The selected action is displayed in the Business Action parameter.
5. Click the **Add** button beneath the Parameters field, and the Add Component dialog will display (as shown below).

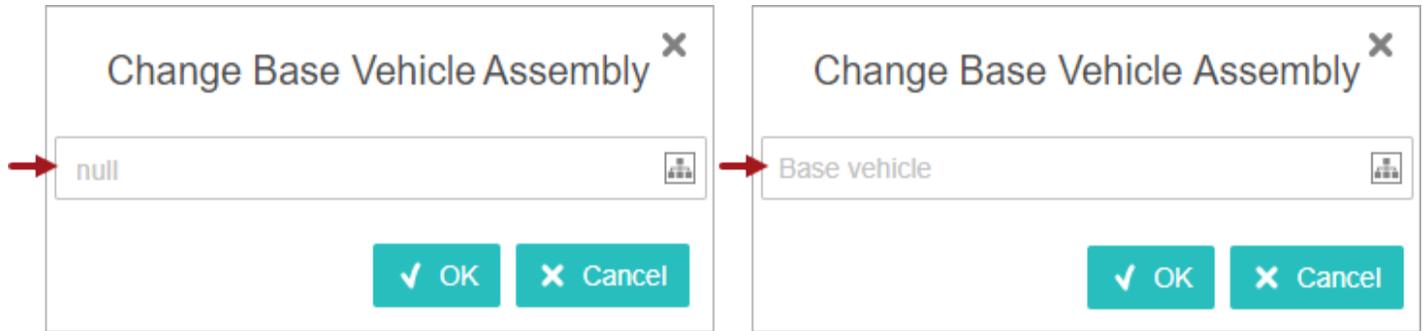


6. Select **Node Picker Parameter** > click the **Add** button to close the dialog, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display (as shown below).

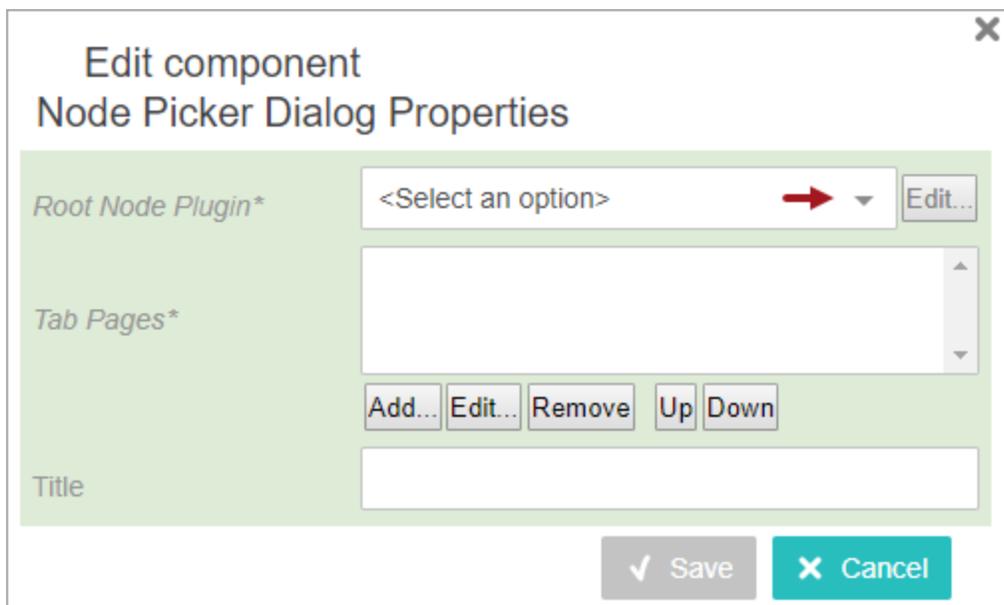
7. Within the Key parameter, enter the exact key created within the 'Part type parameter key' parameter during step 5 of the **Configuring the Change Part Type Business Action in Workbench** topic. This is the only required parameter.

Important: If this key is not entered exactly in both places, then the business action will not properly function within the Web UI.

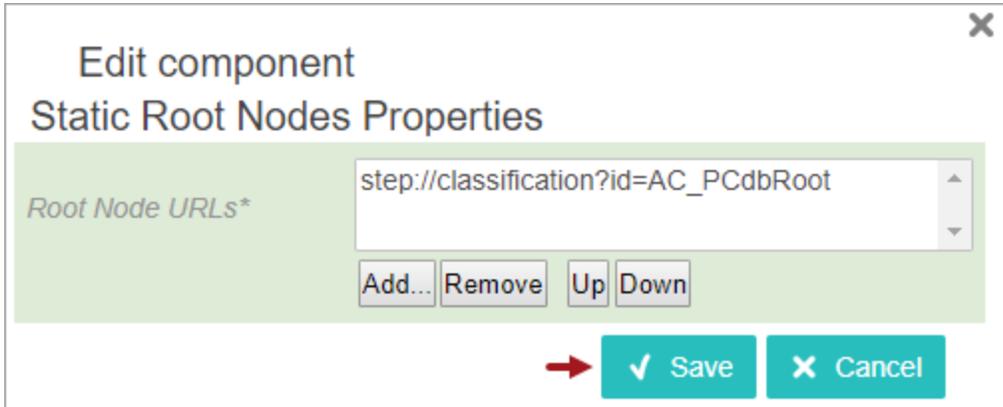
8. Within the Label parameter, enter text that will prompt the user as to what they should select when using this business action. For example, when the Label parameter is blank the parameter within the dialog will display as 'null' as shown in the image on the left. If the Label parameter is populated with 'Base vehicle' the parameter within the dialog will display with 'Base vehicle' as shown within the image on the right.



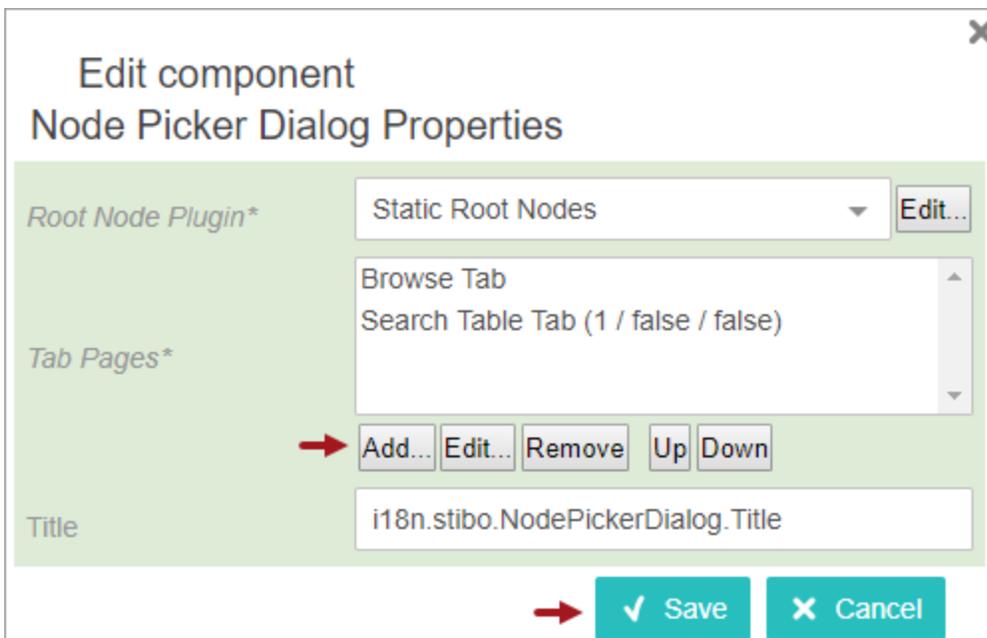
- Use the Node Picker Configuration parameter dropdown to select the **Node Picker Dialog** option, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display.



- Use the Root Node Plugin parameter dropdown to select the **Static Root Nodes** option, and the 'Edit component' for the 'Static Root Nodes Properties' dialog will display.
- Click the **Add** button beneath the Root Nodes URLs parameter > select the Root Nodes that the user should be able to choose from when changing the part type (For this example AC_PCdbRoot is used) > click the **OK** button to close the dialog, and return to the 'Edit component' for 'Static Root Nodes Properties' dialog. Optionally repeat this step to add additional nodes for a user to browse from when looking for a part type.



12. Click the **Save** button, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display with the Root Node Plugin parameter populated with Static Root Nodes.
13. Click the **Add** button beneath the Tab Pages parameter > select the **Browse Tab** component > click the **Add** button to close the dialog and the 'Edit component' for 'Node Picker Dialog Properties' will display with the Tab Pages parameter populated with Browse Tab. Optionally, repeat this step and add the Search Table Tab.



Note: Leave the Title parameter blank and *after the configuration is saved* an i18n key will be populated (as shown above). For more information, see the **Localization** topic within the **Administration Portal** section of the **STEP Online Help**. Otherwise, text entered within the Title parameter will display in place of the default 'Select Node(s)' title for the dialog used to select the vehicle assembly.

14. Click the **Save** button, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display with the Node Picker Configuration parameter populated.

- Use the dropdown located beneath the Valid Node Types parameter to select **CLASSIFICATION_TYPE** > click the **Add** button beneath the Valid Node Types parameter so that CLASSIFICATION_TYPE is displayed within the Valid Node Types parameter (as shown below).
- Click the **Add** button beneath the Valid Object Types parameter > select the desired valid object types (For this example AC_PartTerminology is used)> click the **OK** button to return to the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog.

Add component - configure required properties

Node Picker Parameter Properties

Key*

Label

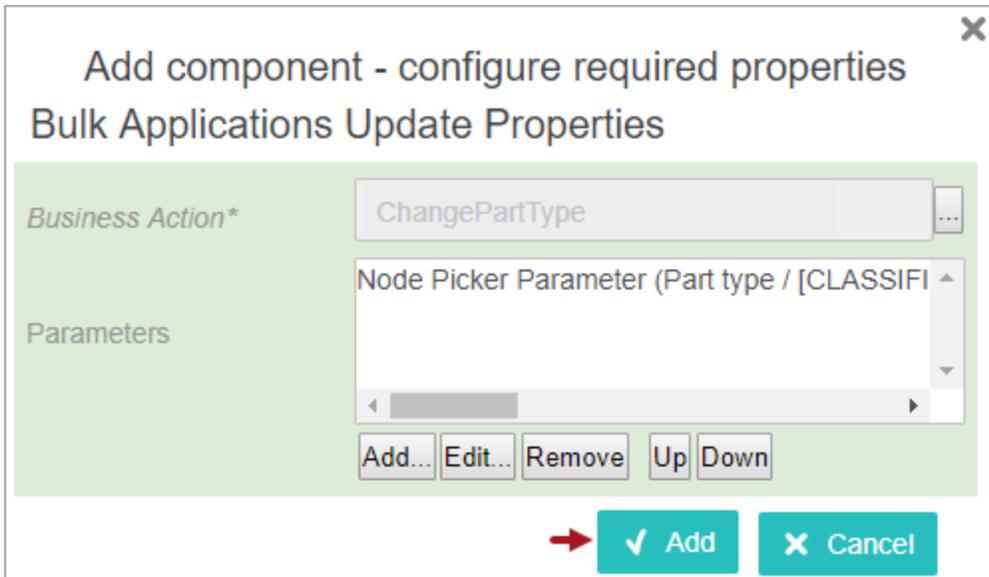
Mandatory

Node Picker Configuration

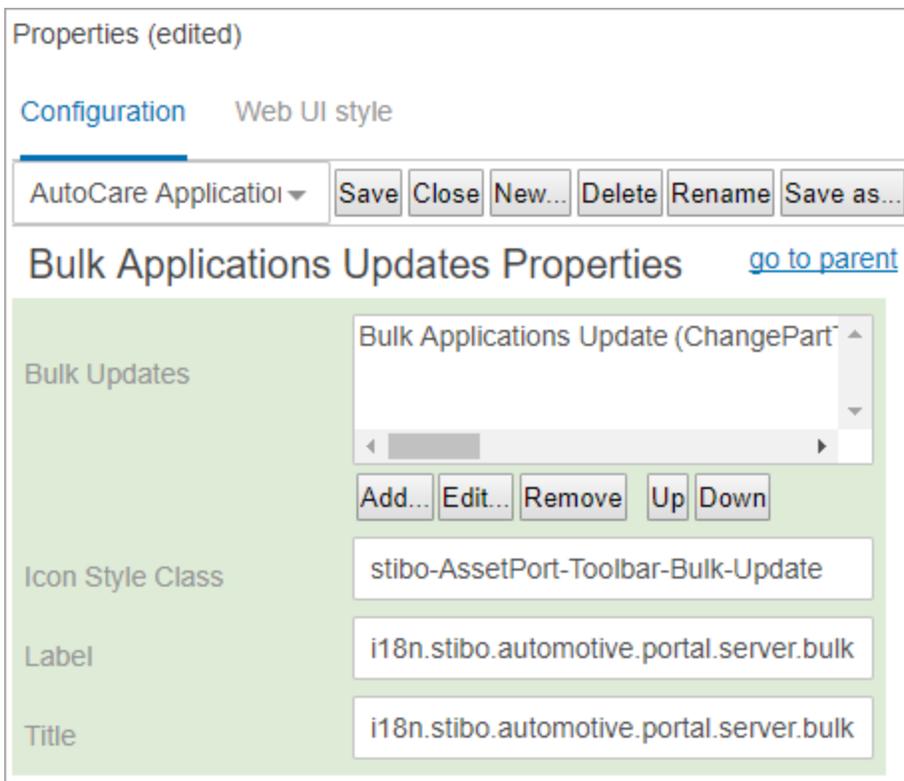
Valid Node Types

Valid Object Types

- Click the **Add** button, and 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



- Click the **Add** button, and the 'Bulk Applications Updates Properties' dialog will display with the newly added Bulk Update listed.



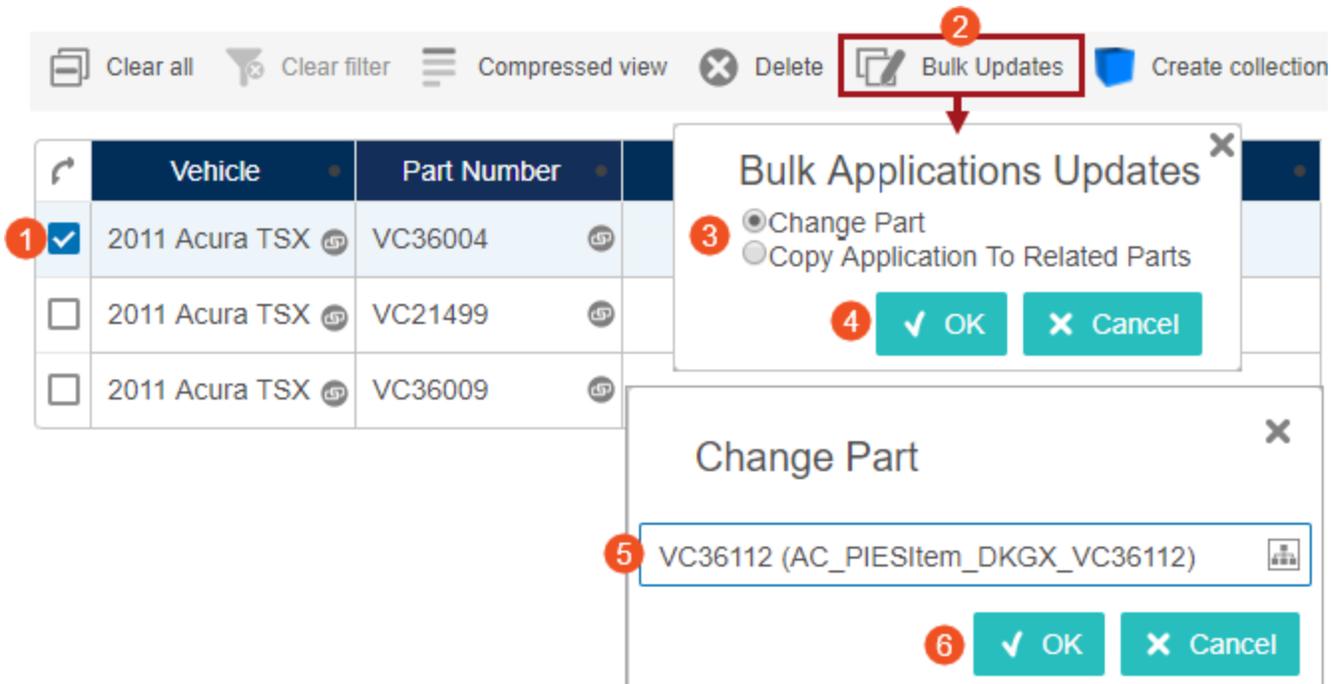
- Click the **Save** button and then click the **Close** button to close the designer.

To use the newly configured business action, see the **Using the Configured Change Part Type Business Action in Web UI** section of the **Business Action: Change Part Type** topic.

Business Action: Change Part

This automotive business action allows users to change the part of an existing application by clicking a Bulk Updates action button within an Application Manager. However, it cannot change the part of a missing application, and thus any missing applications selected when the bulk update is run will be ignored. For more information, see the **Missing Application Coverage Functionality** topic. Setup is required within both STEP Workbench and Web UI for the action to be available to users.

Once configured, a Bulk Updates button within an Application Manager can be used to change the part for an existing application. Below are the steps for using the business action in Web UI.



Note: If only one bulk update is configured, then the Bulk Applications Updates dialog will not display.

1. Within the configured Application Manager, search for applications and select one or more applications to be changed.
2. Click the **Bulk Updates** action button. If more than one bulk update is configured then the Bulk Updates dialog will display (as shown above), otherwise this dialog is skipped and the Change Part dialog will display (skip to step 5 below).
3. Select the Change Part radio button from the list displayed within the Bulk Application Updates dialog. For this example, 'Change Part' is used, but the business action name displayed within the list is dependent upon the business action's Name parameter.
4. Click the **OK** button and the Change Part dialog will display. For this example, 'Change Part' is used, but the title of this dialog is controlled by the business action's Name parameter.
5. Select the desired part for the application(s).

6. Click the **OK** button to close the dialog, and a background process notification will display.
7. Click the BGP link to view the Background Process Details screen, or look for the gray background process (BGP) notification icon to display with a green dot  or orange dot  Notification icon. Once the business action has completed successfully, the gray background process (BGP) notification icon will display with a green dot . If the business action has failed or completed with errors, the BGP notification icon will display with an orange dot . For more information, see the **Background Process Notification Component** topic.
If the business action BGP fails, access the Background Process Details page for more information.

Note: Before completing this business action, by default, STEP confirms that the application's part type matches one or more part types assigned to the part. If one or more part types associated with the application's part do not match the application's part type, then an error can occur. However, this functionality can be overridden by using the 'Allow copy to part without parttype' parameter within the business action. For more information, see the **Configuring the Change Part Business Action in Workbench** topic

In the example below, the Background Process Details screen displays the failed BGP with the following error message: Selected part did not did not match parttype from application [application ID].

Background Process Details

ID BGP_104103
 Started By USERB
 Description Run application bulk update with action: Change Part
 Template ID AppBulkUpdService
 Status  Failed
 Started 10/29/18 9:23:35 AM
 Finished 10/29/18 9:23:35 AM
 Elapsed 1 s

 Select all  Export

ID	Type	Text
<input type="checkbox"/> 10	Error	Selected part did not did not match parttpe from application: AC_ACESApp_2626c57b1edf6aa287c3be9d6172e
<input type="checkbox"/> 20	Error	com.stibo.core.domain.businessrule.plugin.BusinessRulePluginException: Selected part did not did not match parttpe from application: AC_ACESApp_2626c57b1edf6aa287c3be9d6172e

8. Once the background process has successfully completed, click the **Find applications** button to display the updated application(s) within the Application Manager results table.

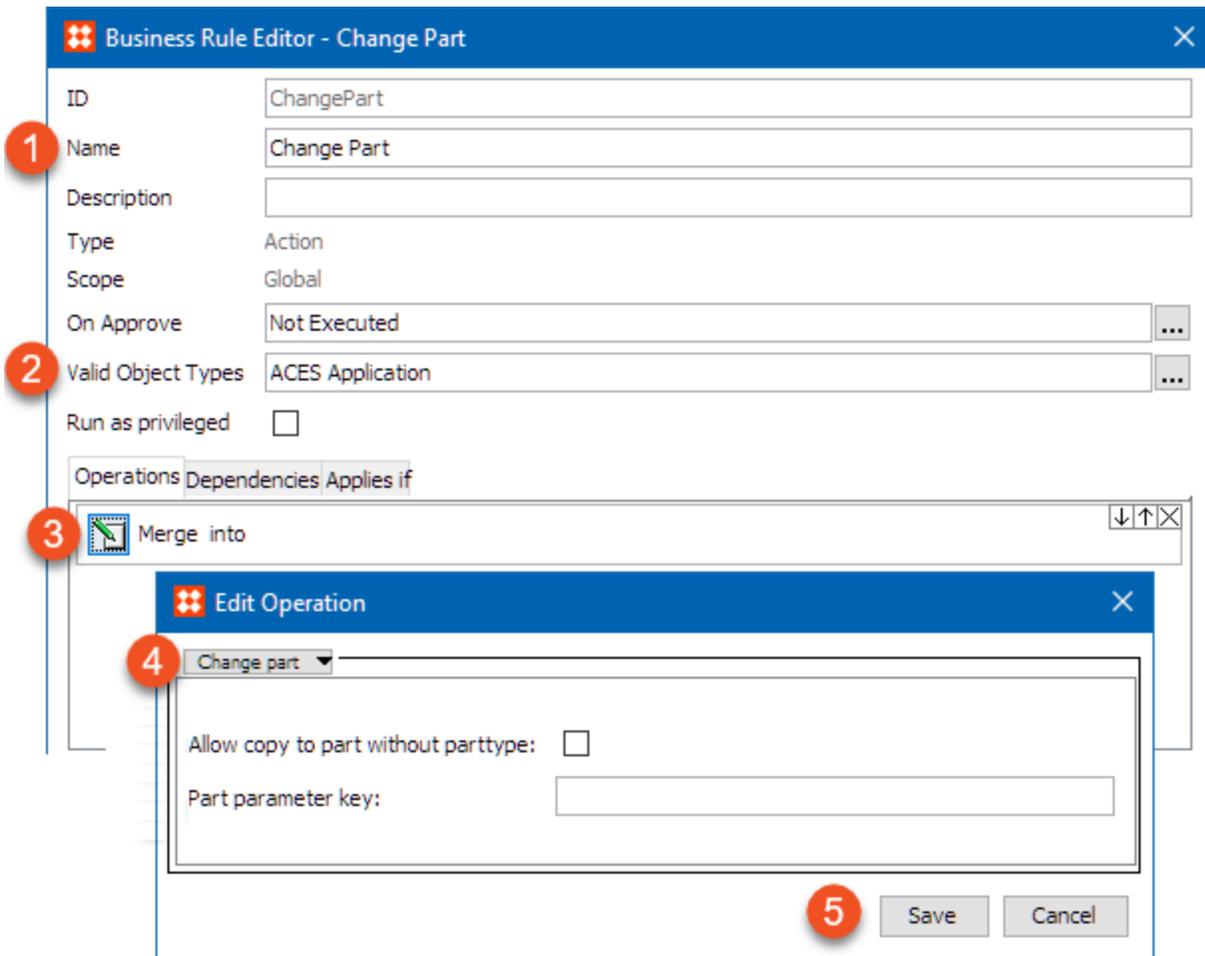
	Vehicle	Part Number	
<input checked="" type="checkbox"/>	2011 Acura TSX 	VC36004 	→
<input type="checkbox"/>	2011 Acura TSX 	VC21499 	
<input type="checkbox"/>	2011 Acura TSX 	VC36009 	
<input checked="" type="checkbox"/>	2011 Acura TSX 	VC36112 	
<input type="checkbox"/>	2011 Acura TSX 	VC21499 	
<input type="checkbox"/>	2011 Acura TSX 	VC36009 	

Setup is required within both STEP Workbench and Web UI for the action to be available to users. For more information, see the configuration topics below:

- Configuring the Change Part Business Action in Workbench
- Configuring the Change Part Business Action in Web UI

Configuring the Change Part Business Action in Workbench

The 'Change part' business operation is found within the STEP Workbench Business Rule Editor under the Automotive menu and requires population of a single parameter (Part parameter key). However, setup is required within both STEP Workbench and Web UI for the action to be available to users. This section addresses the steps necessary within the workbench.



1. Create the business action with a name that accurately describes to the user what this action will do. The name of the business action displays within the Web UI and should be easy for the user to identify. For this example, the business action name is 'Change Part.'

Note: The business action Name will display to the Application Manager user once the Bulk Updates action button is selected. If more than one bulk update is configured, then the name displays both within the Bulk Applications Update dialog, and within the change part dialog where the user enters the part for the application (as shown in the example within the **Using the Configured Change Part Business Action in Web UI** section of the **Business Action: Change Part** topic within this guide).

2. Edit the new business rule, click the ellipsis button (...) next to the Valid Object Types parameter and select the valid object types for this business action. For this example, the 'ACES Application' object type is selected, however the TecDoc and NAPA applications can also be selected within the same or separate business actions. This decision is at the discretion of the administrator.
3. On the Operations tab of the Business Rule Editor, click the **Add new Business Action** link, and click the edit button to open the Edit Operation dialog.

Important: Common setup is to copy the key so it can be pasted in the Web UI designer when configuring the business action in Web UI.

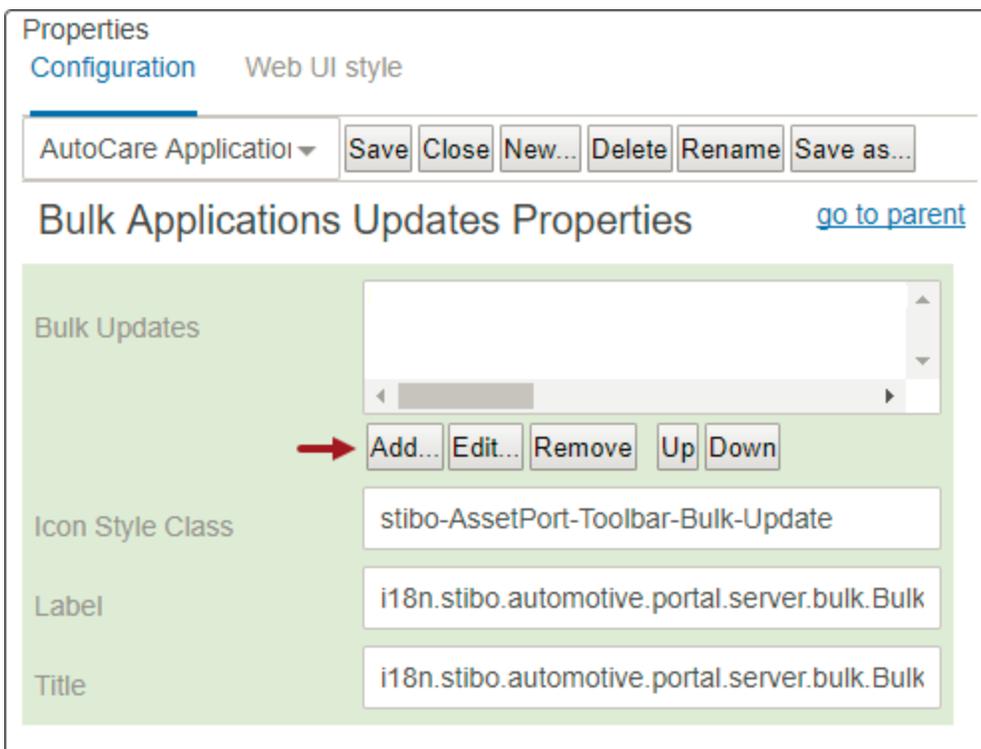
6. Click the **Save** button and continue to the next topic, **Configuring the Change Part Business Action in Web UI**.

Configuring the Change Part Business Action in Web UI

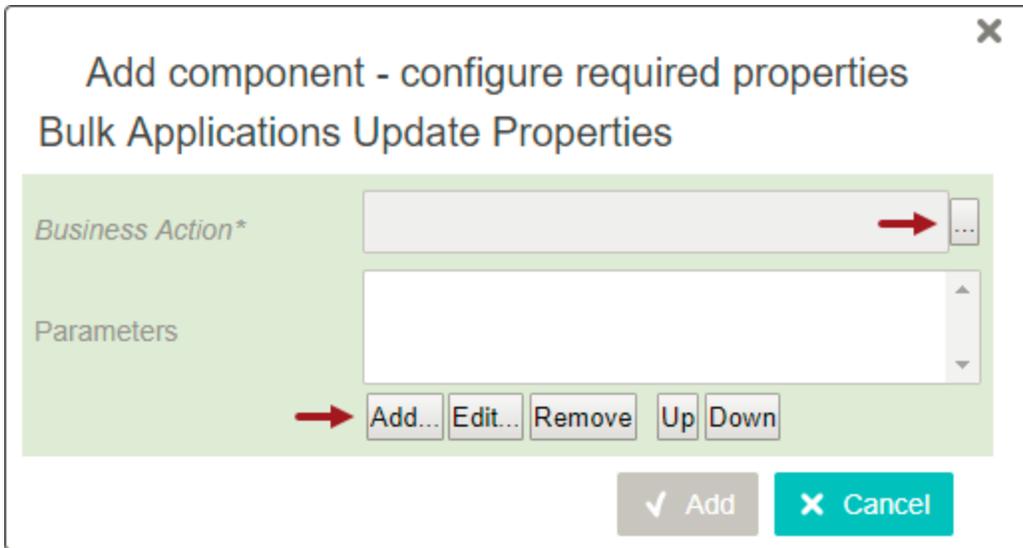
Once the business action has been configured in the workbench, configuration within Web UI is necessary. This section addresses the steps necessary within Web UI.

Note: After the initial setup, the access to the dialogs does not change, therefore these steps can be helpful when editing the configuration. However, when editing the 'Add' button will be replaced with the 'Save' button, and the 'Add component...' labels at the top of the dialogs will display as 'Edit component... '.

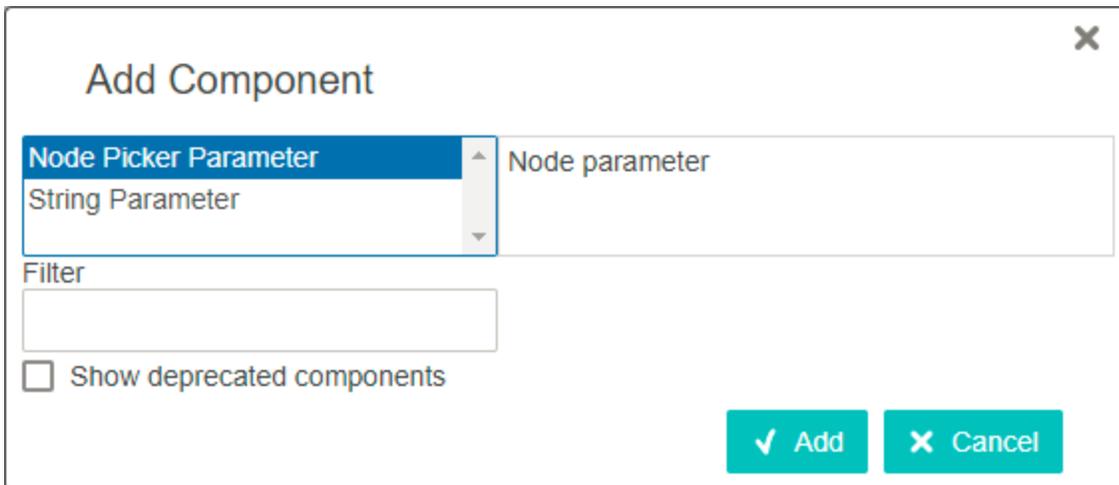
1. Access the Application Manager screen where the business action needs to be available to users.
2. Access the Designer > navigate to Node List Properties > Child Components > Actions > Double click **Bulk Applications Updates** and the 'Bulk Applications Updates Properties' dialog will display (as shown below).



3. Click the **Add** button beneath the Bulk Updates parameter, and the 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



4. Click the ellipsis button (...) next to the Business Action parameter > select the business action previously created > click the **OK** button to close the dialog, and return to the Bulk Applications Update Properties dialog. The selected action is displayed in the Business Action parameter.
5. Click the **Add** button beneath the Parameters field, and the Add Component dialog will display (as shown below).

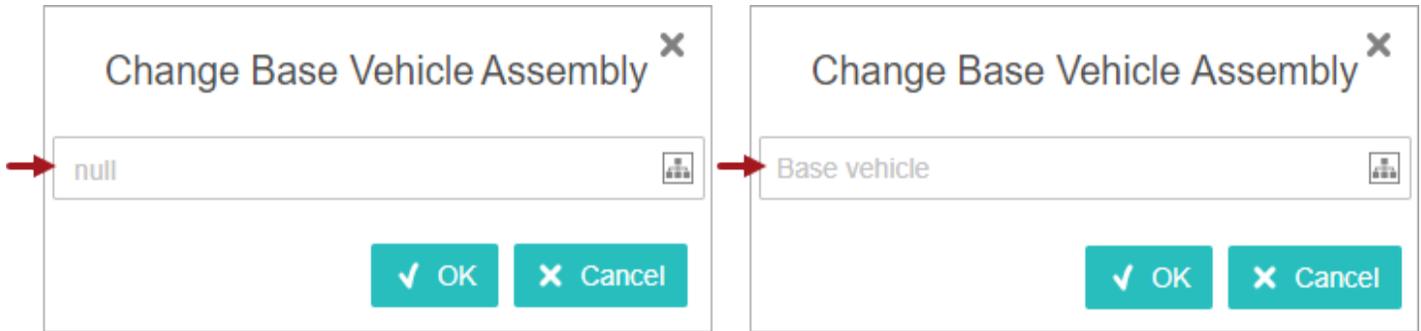


6. Select **Node Picker Parameter** > click the **Add** button to close the dialog, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display (as shown below).

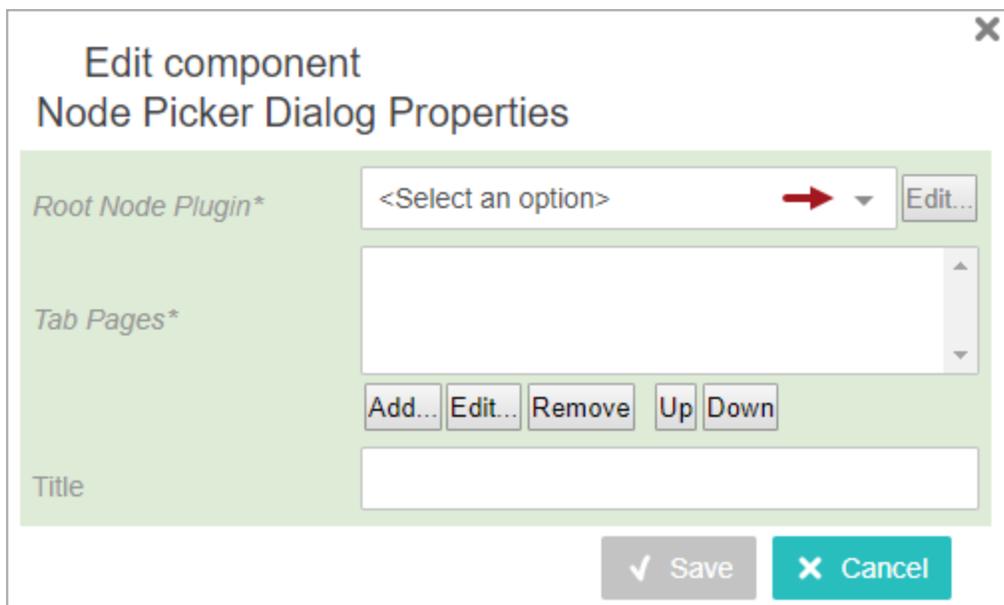
7. Within the Key parameter, enter the exact key created within the 'Part type parameter key' parameter during step 5 of the **Configuring the Change Part Business Action in Workbench** topic. This is the only required parameter.

Important: If this key is not entered exactly in both places, then the business action will not properly function within the Web UI.

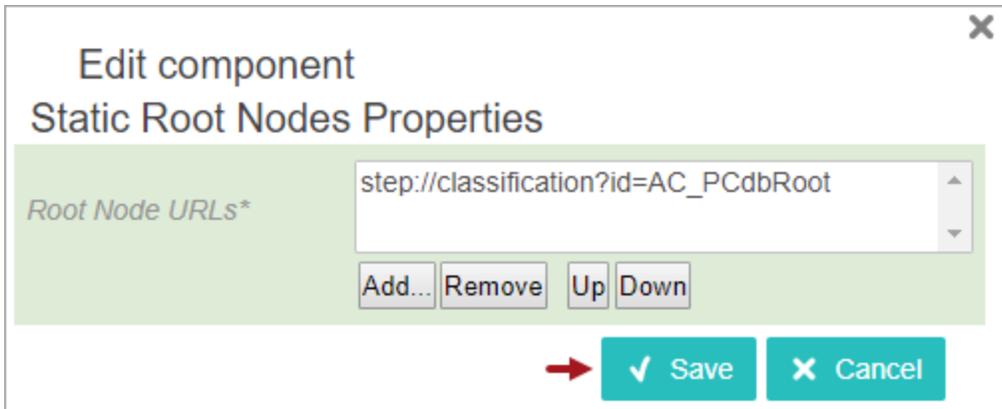
8. Within the Label parameter, enter text that will prompt the user as to what they should select when using this business action. For example, when the Label parameter is blank the parameter within the dialog will display as 'null' as shown in the image on the left. If the Label parameter is populated with 'Base vehicle' the parameter within the dialog will display with 'Base vehicle' as shown within the image on the right.



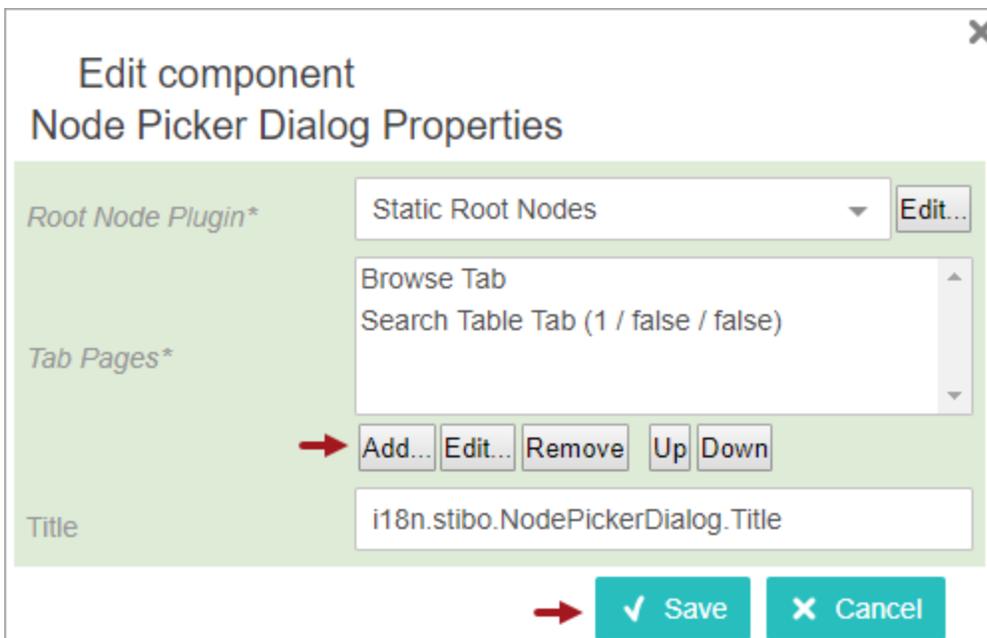
- Use the Node Picker Configuration parameter dropdown to select the **Node Picker Dialog** option, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display.



- Use the Root Node Plugin parameter dropdown to select the **Static Root Nodes** option, and the 'Edit component' for the 'Static Root Nodes Properties' dialog will display.
- Click the **Add** button beneath the Root Nodes URLs parameter > select the Root Nodes that the user should be able to choose from when changing the part (For this example AC_PCdbRoot is used) > click the **OK** button to close the dialog, and return to the 'Edit component' for 'Static Root Nodes Properties' dialog. Optionally repeat this step to add additional nodes for a user to browse from when looking for a part type.



12. Click the **Save** button, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display with the Root Node Plugin parameter populated with Static Root Nodes.
13. Click the **Add** button beneath the Tab Pages parameter > select the **Browse Tab** component > click the **Add** button to close the dialog and the 'Edit component' for 'Node Picker Dialog Properties' will display with the Tab Pages parameter populated with Browse Tab. Optionally, repeat this step and add the Search Table Tab.

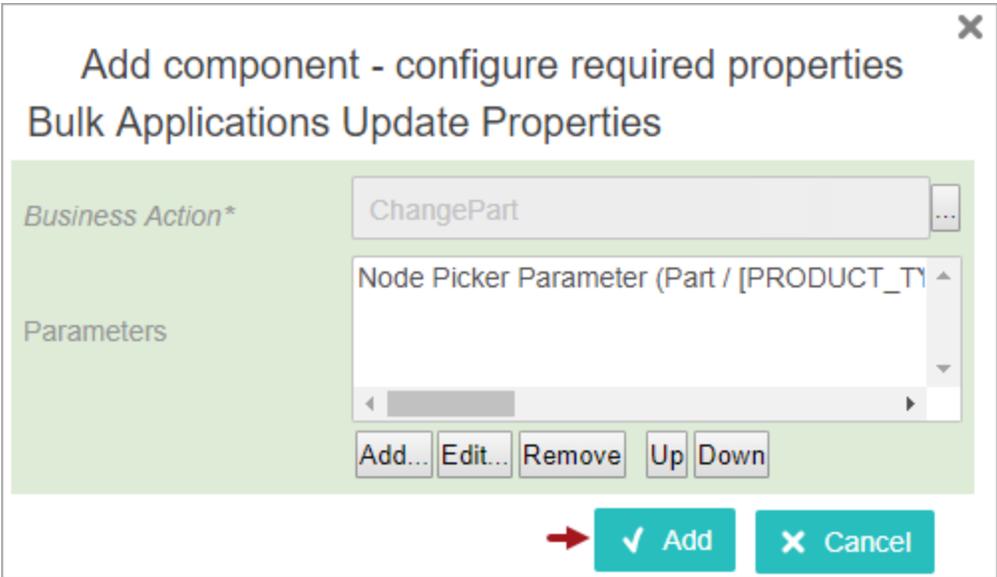


Note: Leave the Title parameter blank and *after the configuration is saved* an i18n key will be populated (as shown above). For more information, see the **Localization** topic within the **Administration Portal** section of the **STEP Online Help**. Otherwise, text entered within the Title parameter will display in place of the default 'Select Node(s)' title for the dialog used to select the vehicle assembly.

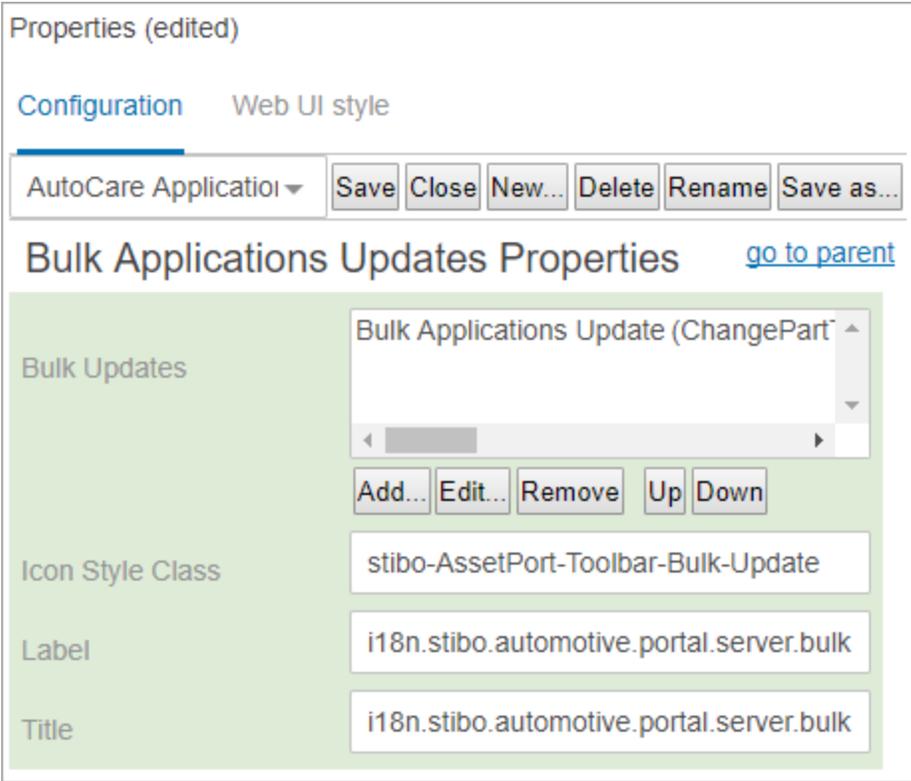
14. Click the **Save** button, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display with the Node Picker Configuration parameter populated.

15. Use the dropdown located beneath the Valid Node Types parameter to select **PRODUCT_TYPE** > click the **Add** button beneath the Valid Node Types parameter so that PRODUCT_TYPE is displayed within the Valid Node Types parameter (as shown below).
16. Click the **Add** button beneath the Valid Object Types parameter > select the desired valid object types (For this example AC_PIESItem is used) > click the **OK** button to return to the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog.

17. Click the **Add** button, and 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



18. Click the **Add** button, and the 'Bulk Applications Updates Properties' dialog will display with the newly added Bulk Update listed.



19. Click the **Save** button and then click the **Close** button to close the designer.

To use the newly configured business action, see the **Using the Configured Change Part Business Action in Web UI** section of the **Business Action: Change Part** topic.

Business Action: Copy Application to Other Assembly

This automotive business action allows users to use a Bulk Updates action button within an Application Manager to copy one or more existing applications to another assembly / vehicle. However, it will not copy an assembly / vehicle that is missing an application, and thus any missing applications selected when the bulk update is run will be ignored. For more information, see the **Missing Application Coverage Functionality** topic within this guide. Setup is required within both STEP Workbench and Web UI for the action to be available to users.

Once configured, a Bulk Updates button within an Application Manager can be used to copy one or more existing applications to another assembly / vehicle. Below are the steps for using the business action in Web UI.

	Vehicle	Part Number
<input checked="" type="checkbox"/>	2011 Acura TSX	VC36112
<input checked="" type="checkbox"/>	2011 Acura TSX	VC21499
<input checked="" type="checkbox"/>	2011 Acura TSX	VC36009

Bulk Applications Updates

Change Base Vehicle

Copy Application To Other Assembly

Copy Application To Other Assembly

2012 Acura TSX (AC_BaseVehicle_118778)

Note: If only one bulk update is configured, then the Bulk Applications Updates dialog will not display.

1. Within the configured Application Manager, search for applications and select one or more applications to be copied.
2. Click the **Bulk Updates** action button. If more than one bulk update is configured, then the Bulk Updates dialog will display (as shown above), otherwise this dialog is skipped and the Copy Application To Other Assembly dialog will display (skip to step 5 below).
3. Select the Copy Application To Other Assembly radio button from the list displayed within the Bulk Application Updates dialog. For this example, 'Copy Application To Other Assembly' is used, but the business action name displayed within the list is dependent upon the business action's Name parameter.

4. Click the **OK** button and the Copy Application To Other Assembly dialog will display. For this example, 'Copy Application To Other Assembly' is used, but the title of this dialog is controlled by the business action's Name parameter.
5. Select the desired assembly for the application(s).
6. Click the **OK** button to close the dialog, and a background process notification will display.
7. Once the background process has completed, click the **Find applications** button to display the newly created application(s) within the Application Manager results table.

	Vehicle	Part Number
✓	2011 Acura TSX	VC36112
✓	2011 Acura TSX	VC21499
✓	2011 Acura TSX	VC36009

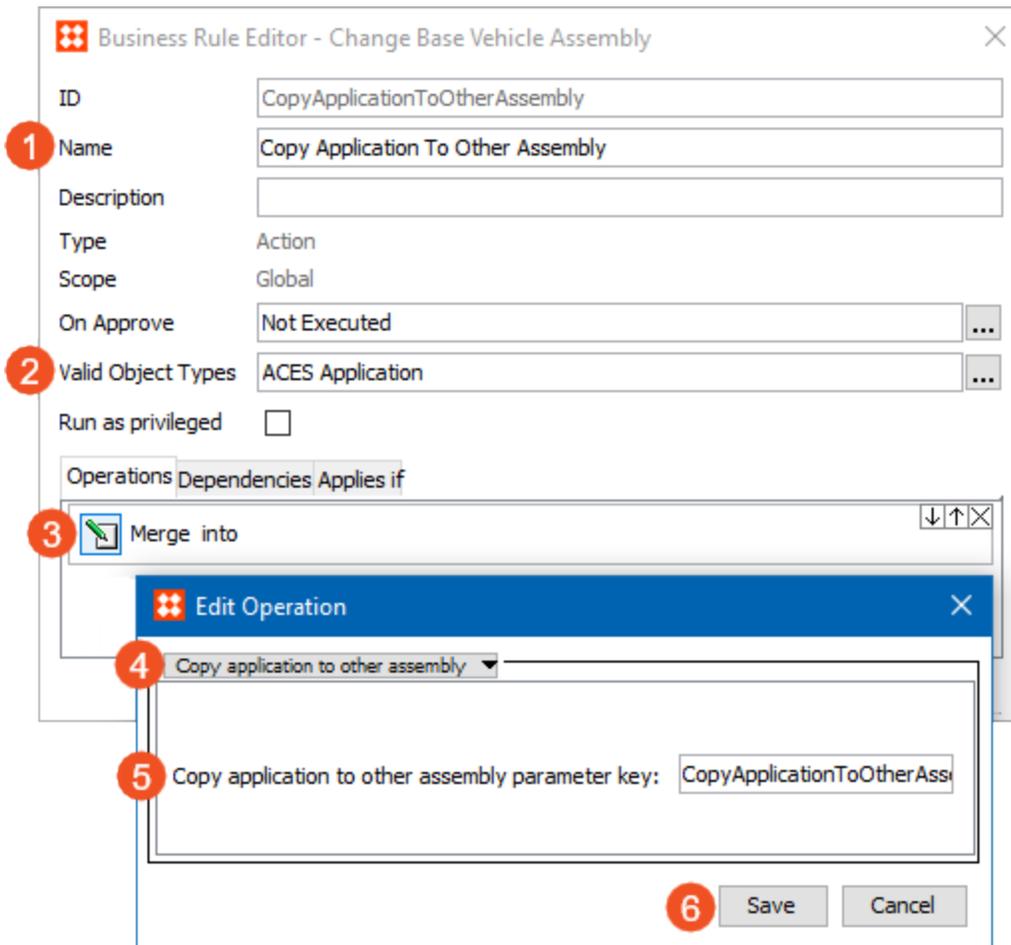
	Vehicle	Part Number
✓	2011 Acura TSX	VC36112
✓	2011 Acura TSX	VC21499
✓	2011 Acura TSX	VC36009
✓	2012 Acura TSX	VC21499
✓	2012 Acura TSX	VC36009
✓	2012 Acura TSX	VC36112

Setup is required within both STEP Workbench and Web UI for the action to be available to users. For more information, see the configuration topics below:

- Configuring the Copy Application to Other Assembly Business Action in Workbench
- Configuring the Copy Application to Other Assembly Business Action in Web UI

Configuring the Copy Application to Other Assembly Business Action in Workbench

The 'Copy application to other assembly' business operation is found within the STEP Workbench Business Rule Editor under the Automotive menu and requires population of a single parameter (Copy application to other assembly parameter key). However, setup is required within both STEP Workbench and Web UI for the action to be available to users. This section addresses the steps necessary within the workbench.



1. Create the business action with a name that accurately describes to the user what this action will do. The name of the business action displays within the Web UI and should be easy for the user to identify. For this example, the business action name is 'Copy Application To Other Assembly.'

Note: The business action Name will display to the Application Manager user once the Bulk Updates action button is selected. If more than one bulk update is configured, then the name displays both within the Bulk Applications Update dialog, and within the copy application to other assembly dialog where the user enters the assembly for the application (as shown in the example within the **Using the Configured Copy Application To Other Assembly Business Action in Web UI** section of the **Business Action: Copy Application To Other Assembly** topic within this guide).

2. Edit the new business rule, click the ellipsis button (...) next to the Valid Object Types parameter and select the valid object types for this business action. For this example, the 'ACES Application' object type is selected, however the TecDoc and NAPA applications can also be selected within the same or separate business actions. This decision is at the discretion of the administrator.
3. On the Operations tab of the Business Rule Editor, click the **Add new Business Action** link, and click the edit button to open the Edit Operation dialog.
4. Use the dropdown menu within the Edit Operation dialog to select **Automotive > Copy application to other assembly** operation, and the parameter 'Copy application to other assembly parameter key' will display (as shown above).
5. Within the parameter enter a unique way (key) to identify this rule. Uniqueness is the only restriction for this key. It will not be displayed to the user. It is case sensitive.

Important: Common setup is to copy the key so it can be pasted in the Web UI designer when configuring the business action in Web UI.

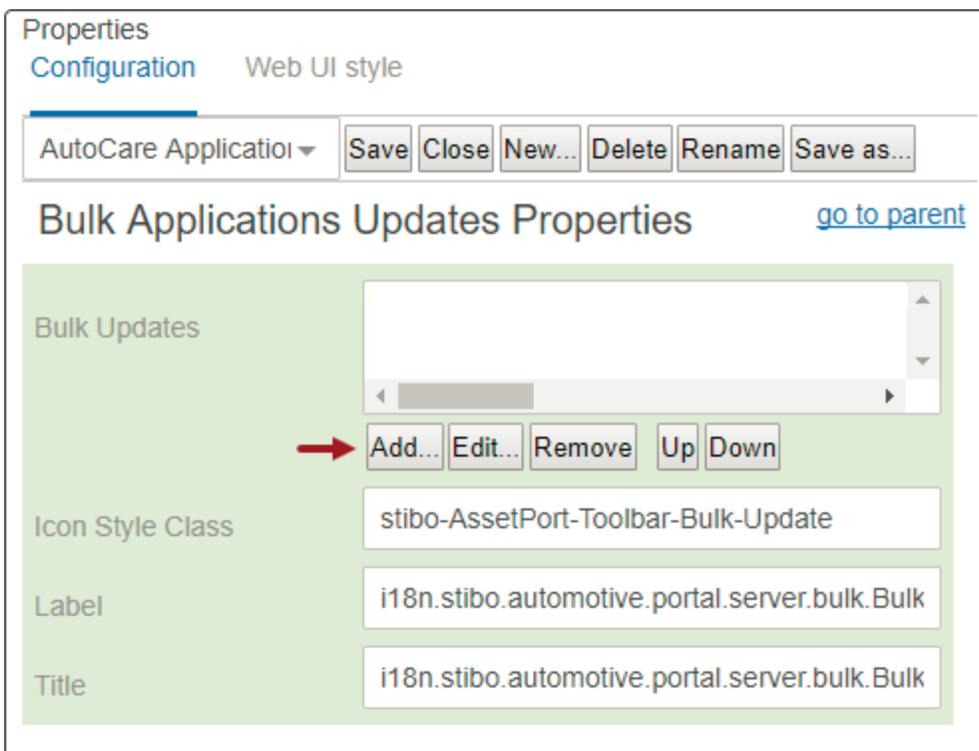
6. Click the **Save** button and continue to the next topic, **Copy Application to Other Assembly Business Action in Web UI**.

Configuring the Copy Application to Other Assembly Business Action in Web UI

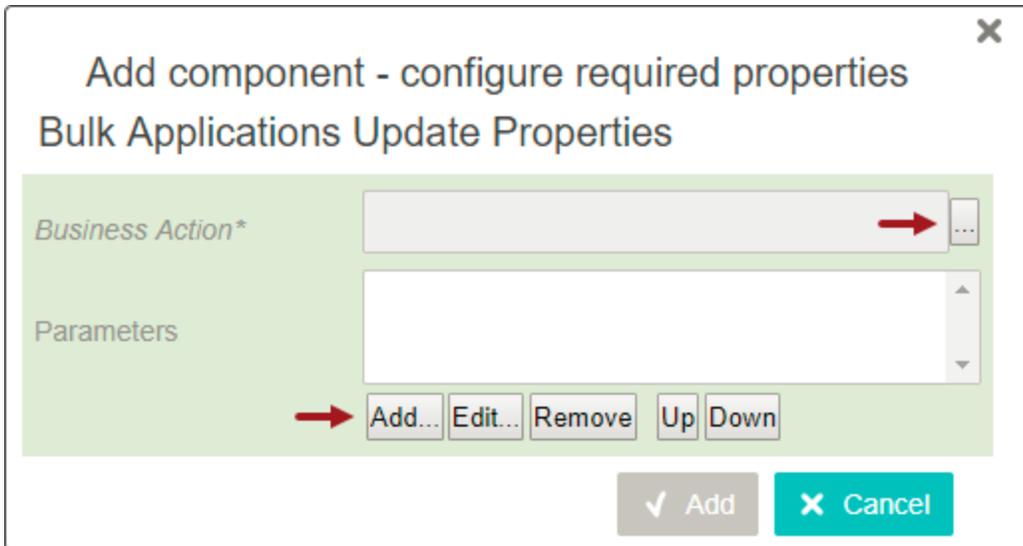
Once the business action has been configured in the workbench, configuration within Web UI is necessary. This section addresses the steps necessary within Web UI.

Note: After the initial setup, the access to the dialogs does not change, therefore these steps can be helpful when editing the configuration. However, when editing the 'Add' button will be replaced with the 'Save' button, and the 'Add component...' labels at the top of the dialogs will display as 'Edit component... '.

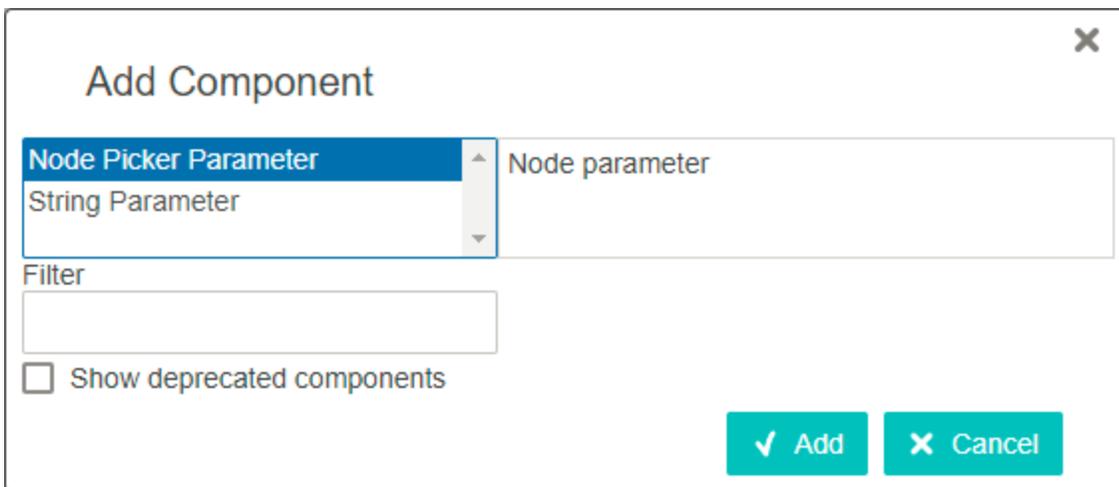
1. Access the Application Manager screen where the business action needs to be available to users.
2. Access the Designer > navigate to Node List Properties > Child Components > Actions > Double click **Bulk Applications Updates** and the 'Bulk Applications Updates Properties' dialog will display (as shown below).



3. Click the **Add** button beneath the Bulk Updates parameter, and the 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



4. Click the ellipsis button (...) next to the Business Action parameter > select the business action previously created > click the **OK** button to close the dialog, and return to the Bulk Applications Update Properties dialog. The selected action is displayed in the Business Action parameter.
5. Click the **Add** button beneath the Parameters field, and the Add Component dialog will display (as shown below).

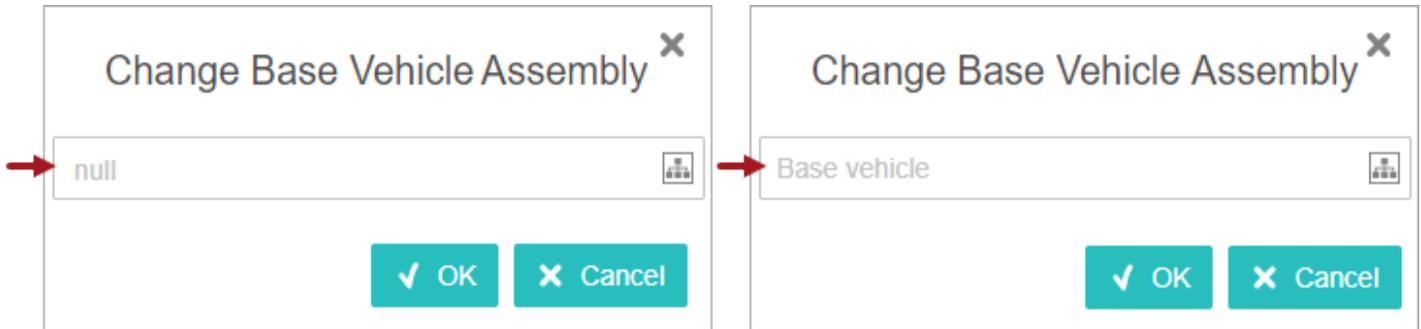


6. Select **Node Picker Parameter** > click the **Add** button to close the dialog, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display (as shown below).

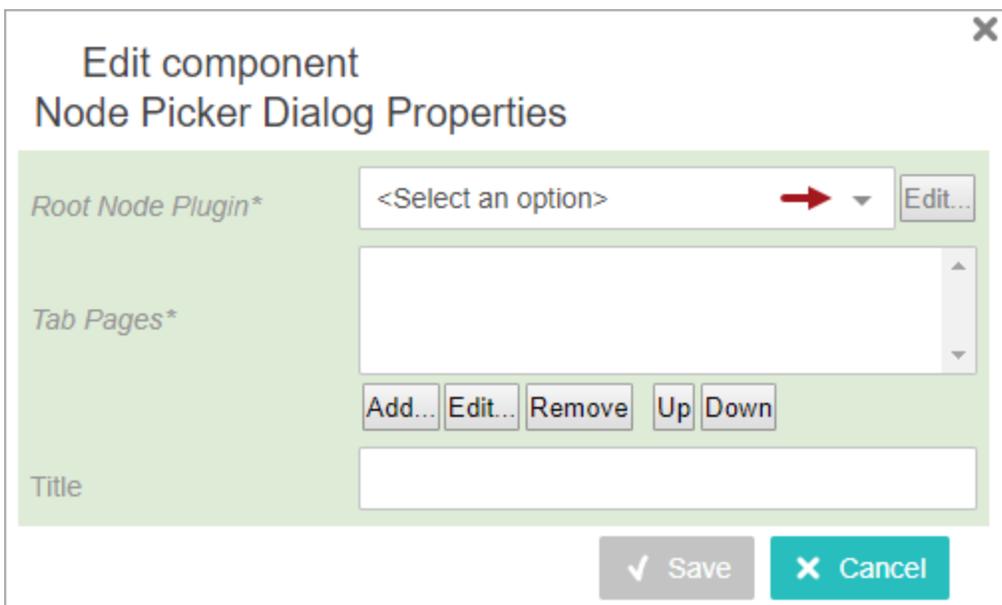
7. Within the Key parameter, enter the exact key created within the 'Assembly parameter key' parameter during step 5 of the **Configuring the Copy Application to Other Assembly Business Action in Workbench** topic. This is the only required parameter.

Important: If this key is not entered exactly in both places, then the business action will not properly function within the Web UI.

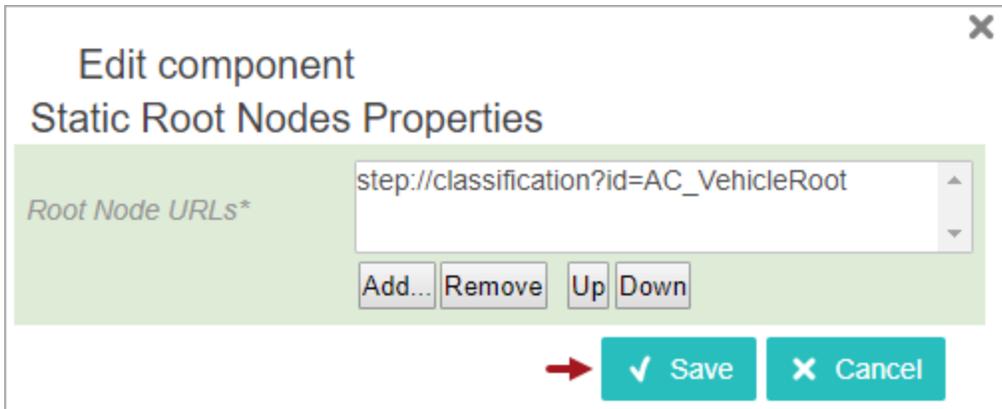
8. Within the Label parameter, enter text that will prompt the user as to what they should select when using this business action. For example, when the Label parameter is blank the parameter within the dialog will display as 'null' as shown in the image on the left. If the Label parameter is populated with 'Base vehicle' the parameter within the dialog will display with 'Base vehicle' as shown within the image on the right.



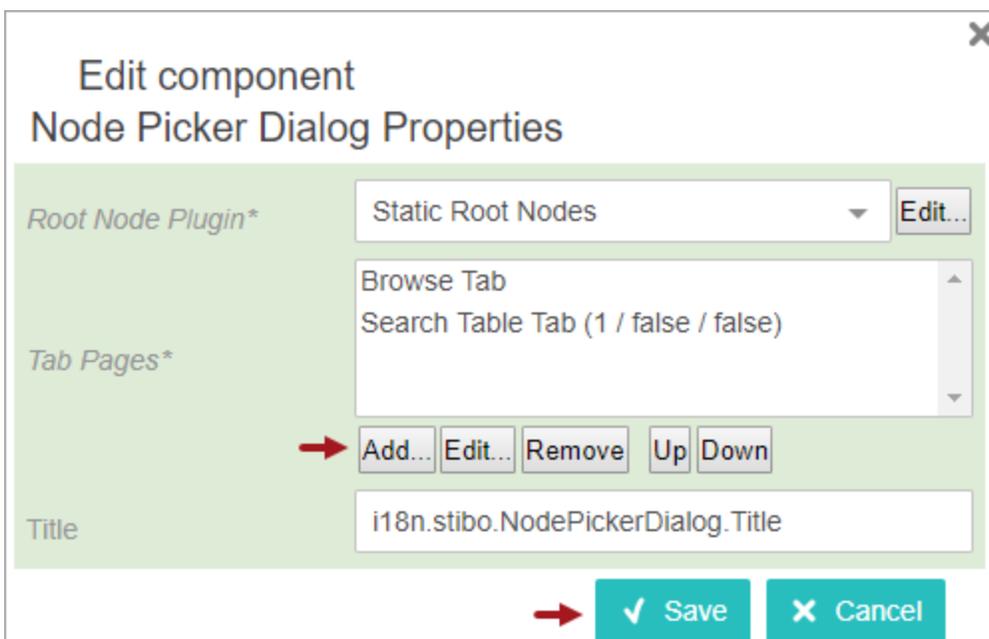
- Use the Node Picker Configuration parameter dropdown to select the **Node Picker Dialog** option, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display.



- Use the Root Node Plugin parameter dropdown to select the **Static Root Nodes** option, and the 'Edit component' for the 'Static Root Nodes Properties' dialog will display.
- Click the **Add** button beneath the Root Nodes URLs parameter > select the Root Nodes that the user should be able to choose from when changing the part type (For this example AC_VehicleRoot is used) > click the **OK** button to close the dialog, and return to the 'Edit component' for 'Static Root Nodes Properties' dialog. Optionally repeat this step to add additional nodes for a user to browse from when looking for a part type.



12. Click the **Save** button, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display with the Root Node Plugin parameter populated with Static Root Nodes.
13. Click the **Add** button beneath the Tab Pages parameter > select the **Browse Tab** component > click the **Add** button to close the dialog and the 'Edit component' for 'Node Picker Dialog Properties' will display with the Tab Pages parameter populated with Browse Tab. Optionally, repeat this step and add the Search Table Tab.



Note: Leave the Title parameter blank and *after the configuration is saved* an i18n key will be populated (as shown above). For more information, see the **Localization** topic within the **Administration Portal** section of the **STEP Online Help**. Otherwise, text entered within the Title parameter will display in place of the default 'Select Node(s)' title for the dialog used to select the vehicle assembly.

14. Click the **Save** button, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display with the Node Picker Configuration parameter populated.

- Use the dropdown located beneath the Valid Node Types parameter to select **CLASSIFICATION_TYPE** > click the **Add** button so that CLASSIFICATION_TYPE is displayed within the Valid Node Types parameter (as shown below).
- Click the **Add** button beneath the Valid Object Types parameter > select the desired valid object types > click the **OK** button to return to the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog.

Add component - configure required properties

Node Picker Parameter Properties

Key*

Label

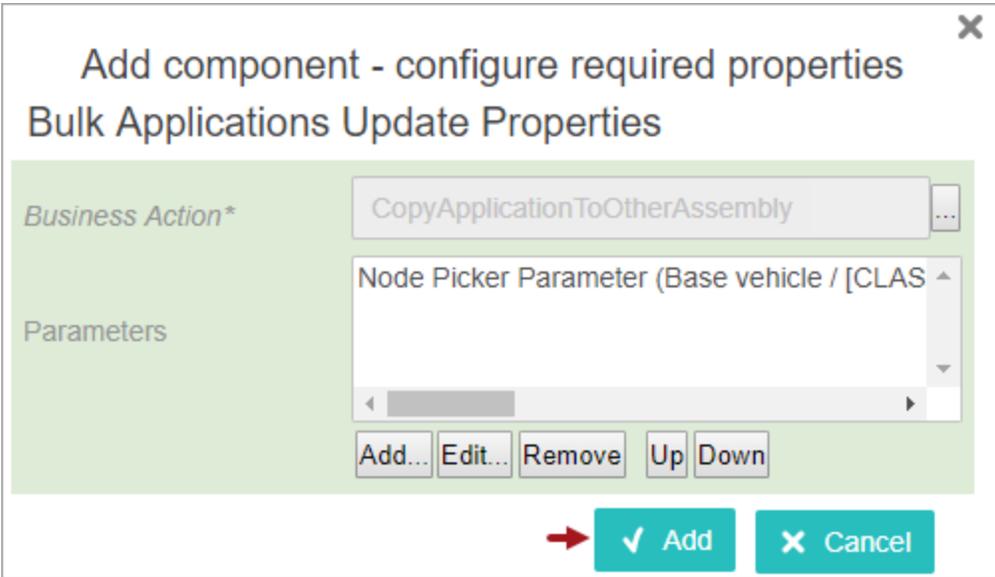
Mandatory

Node Picker Configuration

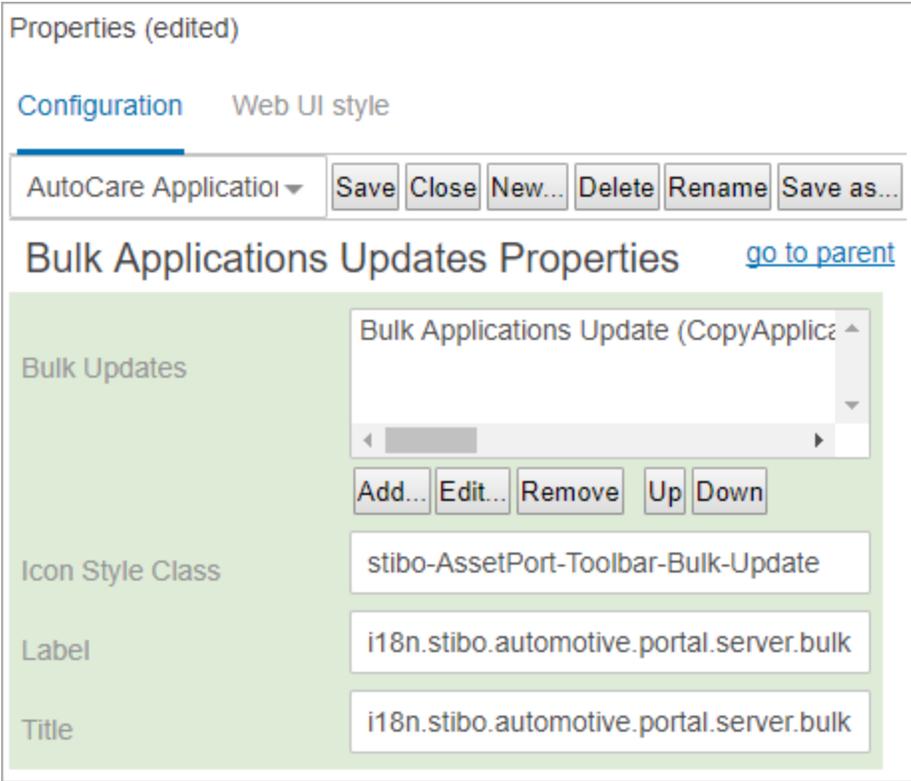
Valid Node Types

Valid Object Types

- Click the **Add** button, and 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



18. Click the **Add** button, and the 'Bulk Applications Updates Properties' dialog will display with the newly added Bulk Update listed.



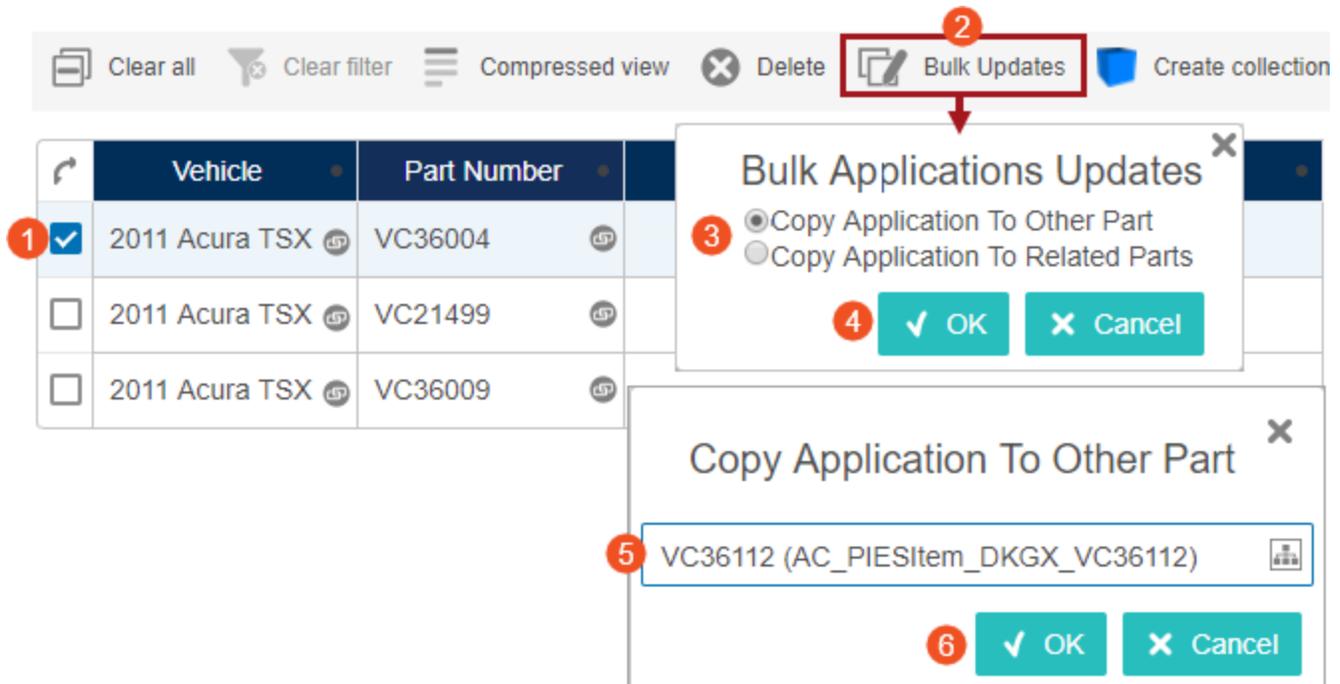
19. Click the **Save** button and then click the **Close** button to close the designer.

To use the newly configured business action, see the **Using the Configured Copy Application to Other Assembly Business Action in Web UI** section of the **Business Action: Copy Application to Other Assembly** topic.

Business Action: Copy Application to Other Part

This automotive business action allows users to copy one or more existing applications to another part by clicking a Bulk Updates action button within an Application Manager. However, it cannot copy the part of a missing application, and thus any missing applications selected when the bulk update is run will be ignored. For more information, see the **Missing Application Coverage Functionality** topic within this guide. Setup is required within both STEP Workbench and Web UI for the action to be available to users.

Once configured, a Bulk Updates button within an Application Manager can be used to copy one or more existing applications to another part. Below are the steps for using the business action in Web UI.



Note: If only one bulk update is configured, then the Bulk Applications Updates dialog will not display.

1. Within the configured Application Manager, search for applications and select one or more applications to be copied.
2. Click the **Bulk Updates** action button. If more than one bulk update is configured then the Bulk Updates dialog will display (as shown above), otherwise this dialog is skipped and the Copy Application To Other Part dialog will display (skip to step 5 below).
3. Select the Copy Application To Other Part radio button from the list displayed within the Bulk Application Updates dialog. For this example, 'Copy Application to Other Part' is used, but the business action name displayed within the list is dependent upon the business action's Name parameter.
4. Click the **OK** button and the Copy Application To Other Part dialog will display. For this example, 'Copy Application To Other Part' is used, but the title of this dialog is controlled by the business action's Name parameter.

5. Select the desired part for the application(s).
6. Click the **OK** button to close the dialog, and a background process notification will display.
7. Once the background process has completed, click the **Find applications** button to display the newly created application(s) within the Application Manager results table.

	Vehicle	Part Number	
<input checked="" type="checkbox"/>	2011 Acura TSX	VC36004	→
<input type="checkbox"/>	2011 Acura TSX	VC21499	
<input type="checkbox"/>	2011 Acura TSX	VC36009	

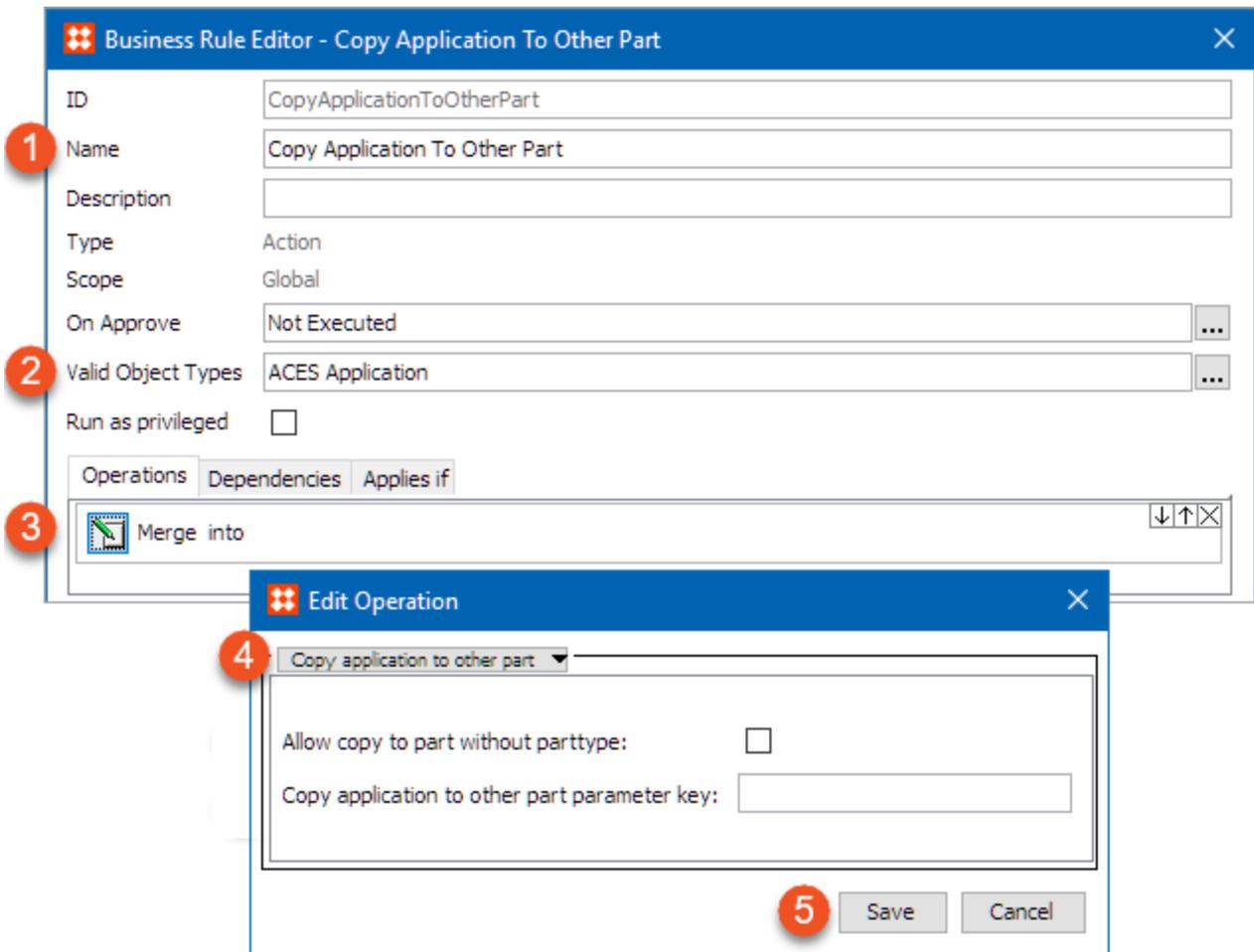
	Vehicle	Part Number	
<input checked="" type="checkbox"/>	2011 Acura TSX	VC36112	
<input type="checkbox"/>	2011 Acura TSX	VC21499	
<input type="checkbox"/>	2011 Acura TSX	VC36009	

Setup is required within both STEP Workbench and Web UI for the action to be available to users. For more information, see the configuration topics below:

- Configuring the Copy Application to Other Part Business Action in Workbench
- Configuring the Copy Application to Other Part Business Action in Web UI

Configuring the Copy Application to Other Part Business Action in Workbench

The 'Copy application to other part' business operation is found within the STEP Workbench Business Rule Editor under the Automotive menu and requires population of a single parameter (Copy application to other part parameter key). However, setup is required within both STEP Workbench and Web UI for the action to be available to users. This section addresses the steps necessary within the workbench.



1. Create the business action with a name that accurately describes to the user what this action will do. The name of the business action displays within the Web UI and should be easy for the user to identify. For this example, the business action name is 'Copy Application To Other Part.'

Note: The business action Name will display to the Application Manager user once the Bulk Updates action button is selected. If more than one bulk update is configured, then the name displays both within the Bulk Applications Update dialog, and within the change part dialog where the user enters the part for the application (as shown in the example within the **Using the Configured Copy Application To Other Part Business Action in Web UI** section of the **Business Action: Copy Application To Other Part** topic within this guide).

2. Edit the new business rule, click the ellipsis button (...) next to the Valid Object Types parameter and select the valid object types for this business action. For this example, the 'ACES Application' object type is selected, however the TecDoc and NAPA applications can also be selected within the same or separate business actions. This decision is at the discretion of the administrator.
3. On the Operations tab of the Business Rule Editor, click the **Add new Business Action** link, and click the edit button to open the Edit Operation dialog.

Important: Common setup is to copy the key so it can be pasted in the Web UI designer when configuring the business action in Web UI.

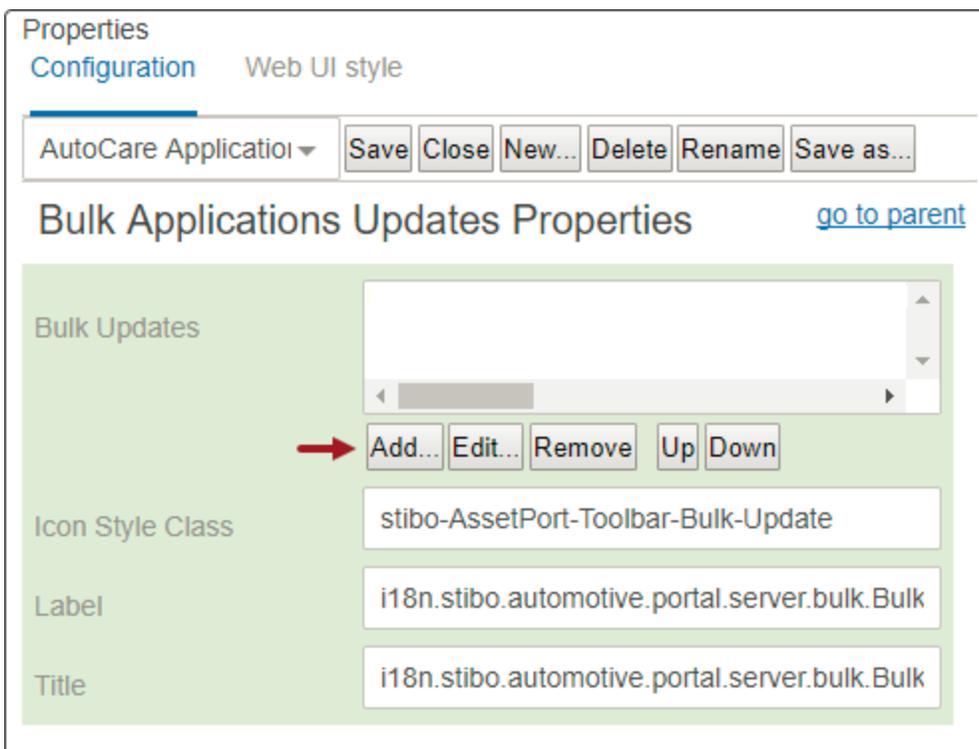
1. Click the **Save** button and continue to the next topic, **Configuring the Copy Application to Other Part Business Action in Web UI**.

Configuring the Copy Application to Other Part Business Action in Web UI

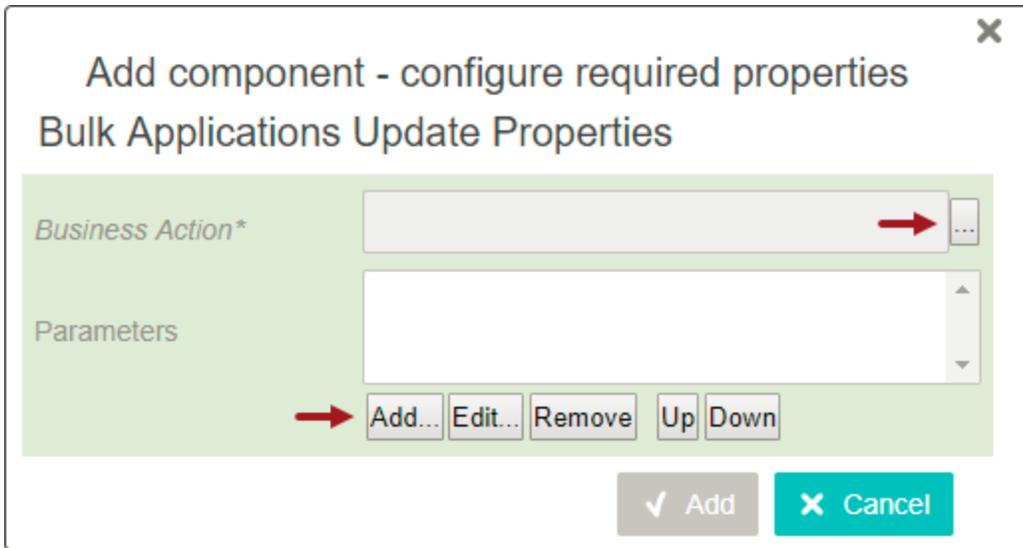
Once the business action has been configured in the workbench, configuration within Web UI is necessary. This section addresses the steps necessary within Web UI.

Note: After the initial setup, the access to the dialogs does not change, therefore these steps can be helpful when editing the configuration. However, when editing the 'Add' button will be replaced with the 'Save' button, and the 'Add component...' labels at the top of the dialogs will display as 'Edit component... '.

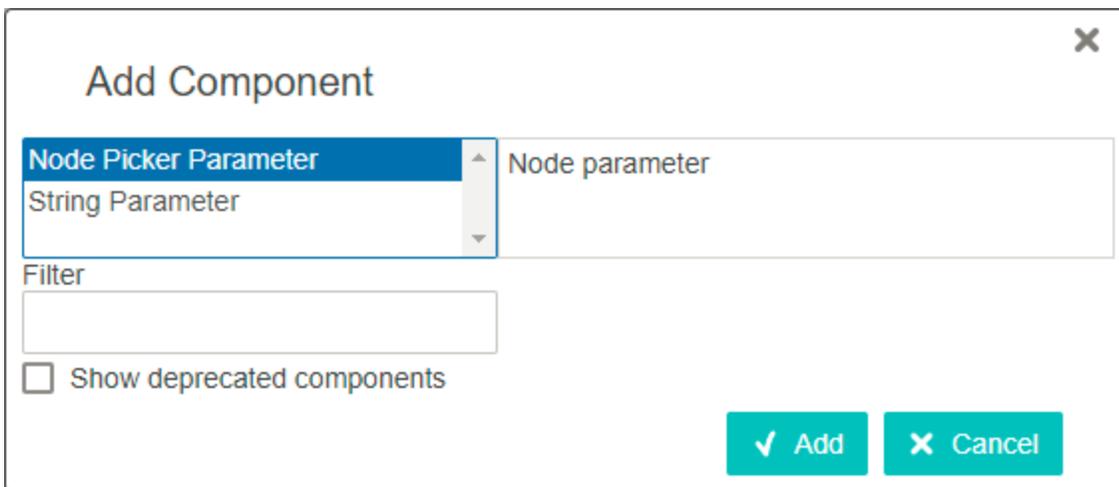
1. Access the Application Manager screen where the business action needs to be available to users.
2. Access the Designer > navigate to Node List Properties > Child Components > Actions > Double click **Bulk Applications Updates** and the 'Bulk Applications Updates Properties' dialog will display (as shown below).



3. Click the **Add** button beneath the Bulk Updates parameter, and the 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



4. Click the ellipsis button (...) next to the Business Action parameter > select the business action previously created > click the **OK** button to close the dialog, and return to the Bulk Applications Update Properties dialog. The selected action is displayed in the Business Action parameter.
5. Click the **Add** button beneath the Parameters field, and the Add Component dialog will display (as shown below).

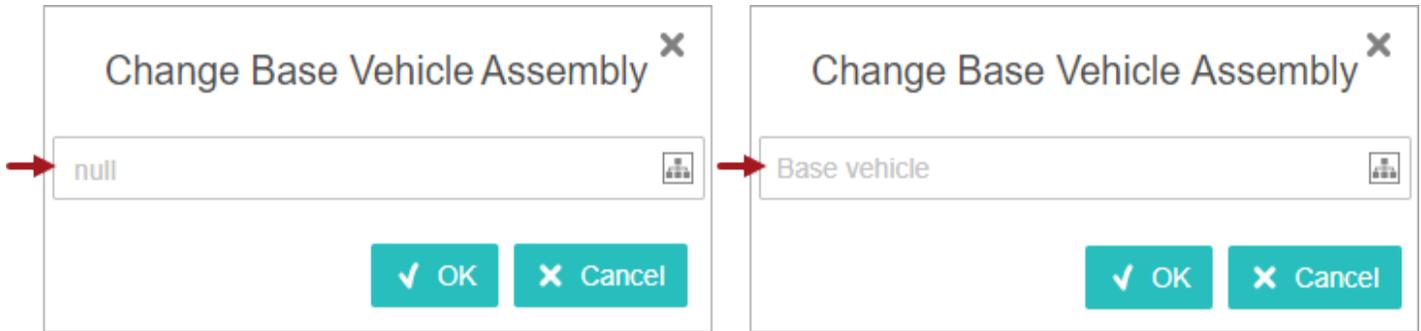


6. Select **Node Picker Parameter** > click the **Add** button to close the dialog, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display (as shown below).

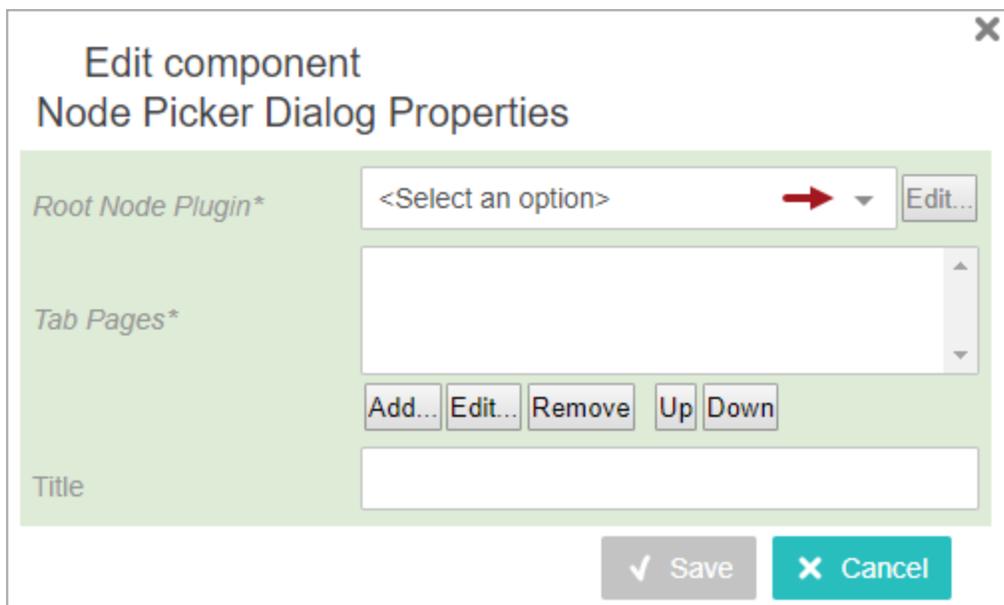
7. Within the Key parameter, enter the exact key created within the 'Part type parameter key' parameter during step 5 of the **Configuring the Copy Application to Other Part Business Action in Workbench** topic. This is the only required parameter.

Important: If this key is not entered exactly in both places, then the business action will not properly function within the Web UI.

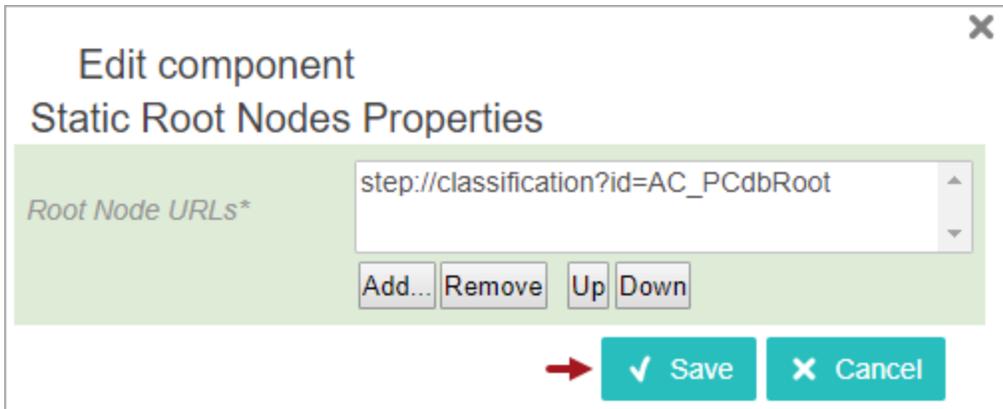
8. Within the Label parameter, enter text that will prompt the user as to what they should select when using this business action. For example, when the Label parameter is blank the parameter within the dialog will display as 'null' as shown in the image on the left. If the Label parameter is populated with 'Base vehicle' the parameter within the dialog will display with 'Base vehicle' as shown within the image on the right.



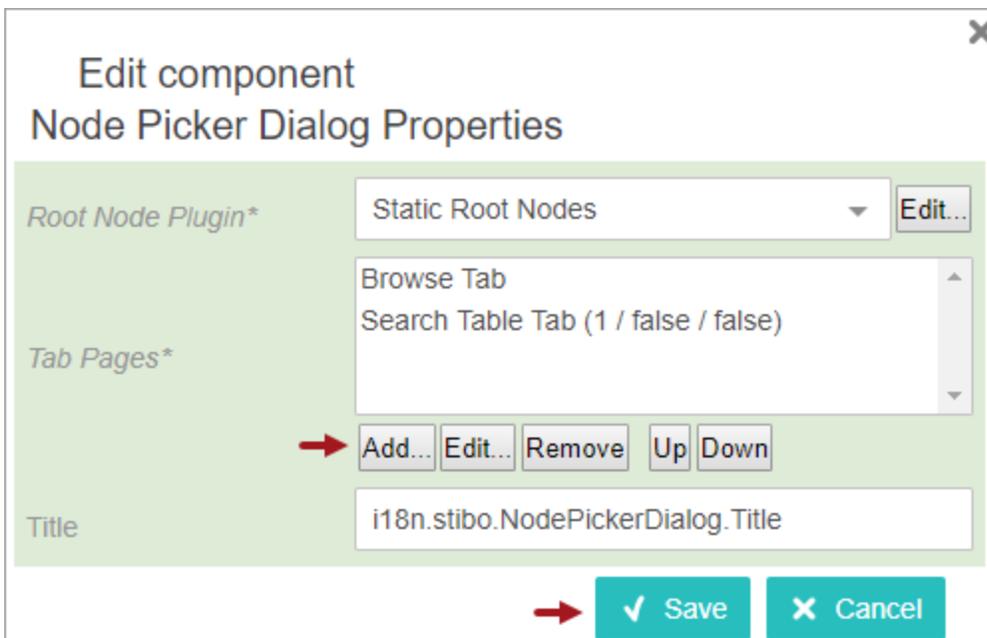
- Use the Node Picker Configuration parameter dropdown to select the **Node Picker Dialog** option, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display.



- Use the Root Node Plugin parameter dropdown to select the **Static Root Nodes** option, and the 'Edit component' for the 'Static Root Nodes Properties' dialog will display.
- Click the **Add** button beneath the Root Nodes URLs parameter > select the Root Nodes that the user should be able to choose from when changing the part (For this example AC_PCdbRoot is used) > click the **OK** button to close the dialog, and return to the 'Edit component' for 'Static Root Nodes Properties' dialog. Optionally repeat this step to add additional nodes for a user to browse from when looking for a part type.



12. Click the **Save** button, and the 'Edit component' for the 'Node Picker Dialog Properties' dialog will display with the Root Node Plugin parameter populated with Static Root Nodes.
13. Click the **Add** button beneath the Tab Pages parameter > select the **Browse Tab** component > click the **Add** button to close the dialog and the 'Edit component' for 'Node Picker Dialog Properties' will display with the Tab Pages parameter populated with Browse Tab. Optionally, repeat this step and add the Search Table Tab.



Note: Leave the Title parameter blank and *after the configuration is saved* an i18n key will be populated (as shown above). For more information, see the **Localization** topic within the **Administration Portal** section of the **STEP Online Help**. Otherwise, text entered within the Title parameter will display in place of the default 'Select Node(s)' title for the dialog used to select the vehicle assembly.

14. Click the **Save** button, and the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog will display with the Node Picker Configuration parameter populated.

15. Use the dropdown located beneath the Valid Node Types parameter to select **PRODUCT_TYPE** > click the **Add** button so that PRODUCT_TYPE is displayed within the Valid Node Types parameter (as shown below).
16. Click the **Add** button beneath the Valid Object Types parameter > select the desired valid object types (For this example AC_PIESItem is used)> click the **OK** button to return to the 'Add component - configure required properties' for the 'Node Picker Parameter Properties' dialog.

Add component - configure required properties

Node Picker Parameter Properties

Key*

Label

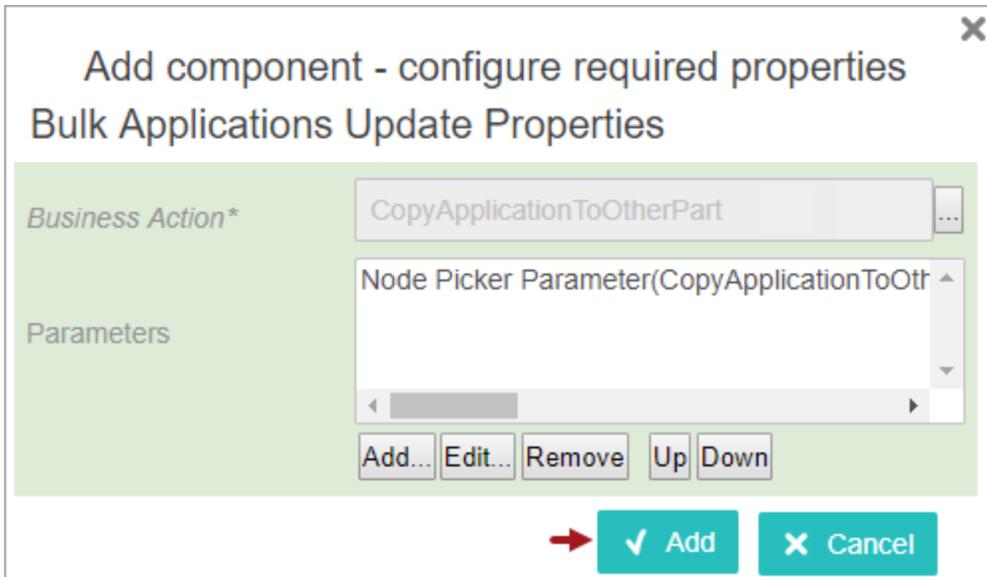
Mandatory

Node Picker Configuration

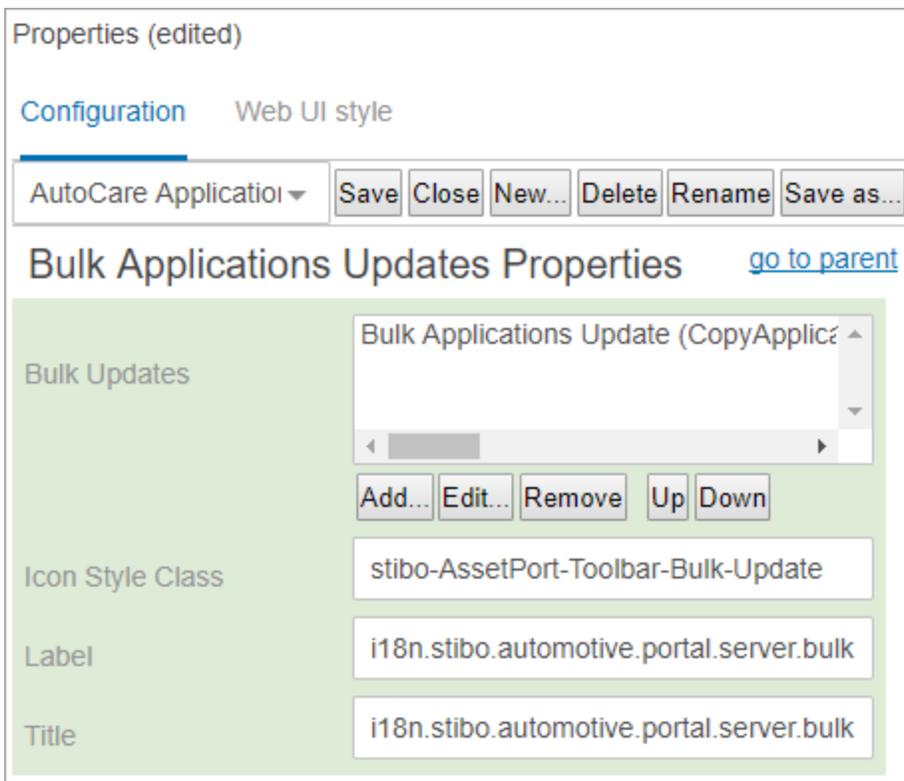
Valid Node Types

Valid Object Types

17. Click the **Add** button, and 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



- Click the **Add** button, and the 'Bulk Applications Updates Properties' dialog will display with the newly added Bulk Update listed.



- Click the **Save** button and then click the **Close** button to close the designer.

To use the newly configured business action, see the **Using the Configured Copy Application to Other Part Business Action in Web UI** section of the **Business Action: Copy Application to Other Part** topic.

Business Action: Copy Applications to Related Parts

This automotive business action allows users to copy one or more existing applications to one or more related parts by clicking a Bulk Updates action button within an Application Manager. However, it cannot copy the part of a missing application, and thus any missing applications selected when the bulk update is run will be ignored. For more information, see the **Missing Application Coverage Functionality** topic within this guide. Setup is required within both STEP Workbench and Web UI for the action to be available to users.

Once configured, a Bulk Updates button within an Application Manager can be used to copy one or more existing applications to one or more related parts based upon the population of the Part Relation reference type. To understand the results of the business action, it is important to understand a Part Relation reference type configuration. This section will first review a Part Relation reference type configuration, and then provide the steps for using the business action in Web UI.

Part Relation Reference Type Configuration

When the Copy applications to related parts business action is applied within a Web UI, the selected application will be copied to the part(s) that have the selected application's part listed within the reference type 'Part Relation.' In other words, the business action will create applications for any parts that have a relationship with the part used within the selected application.

For example, when using the References tab in workbench to view part VC21499 and VC36009, the Part Relation Reference Type can be viewed as 'VC36112.'

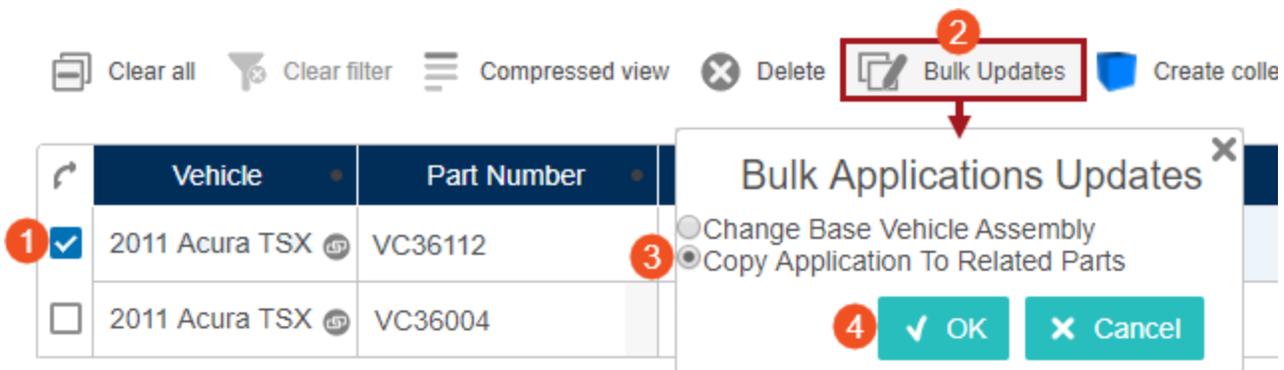
The image displays two screenshots of a software interface, likely a CAD or PLM system, showing a tree view and a references table. The top screenshot shows the tree view with 'VC21499' selected under 'Check Engine Light Sensor'. The bottom screenshot shows the tree view with 'VC36009' selected under 'Check Engine Light Sensor'. Both screenshots show a 'References' table with 'Part Relation' pointing to 'VC36112'.

Product	Sub Products	References	Referenced By	Ima
Reference Type	>	Target	>	>
>	Part Relation	+ VC36112		X
>	PIES Supersession	+ VC36112		

With the above configuration in place, the Application Manager can be used to select an application using part VC36112, and when the Bulk Updates action button is clicked, applications will be created for the parts VC21499 and VC36009 (as shown below).

Steps for Using the Business Action in Web UI

When the Parts Relation Reference Type is populated as shown above, the steps below can be used to copy an application to related parts using the Web UI.



Note: If only one bulk update is configured, then the Bulk Applications Updates dialog will not display.

1. Within the configured Application Manager, search for the applications to be copied. Select one or more applications with a part that uses the Part Relation reference type. For this example, part number VC36112 is used.
2. Click the **Bulk Updates** action button. If more than one bulk update is configured then the Bulk Updates dialog will display (as shown above), otherwise this dialog is skipped and the copy applications to related parts bulk update background process will run (skip to step 5 below).
3. Select the Copy Application To Related Parts radio button from the list displayed within the Bulk Applications Updates dialog. For this example, 'Copy Application to Related Parts' is used, but the business action name displayed within the list is dependent upon the business action's Name parameter.
4. Click the **OK** button and the copy applications to related parts business action will run for the selected applications.
5. Once the background process has completed, click the **Find applications** button to display the newly created application(s) within the Application Manager results table. For this example, notice that two new applications for the related parts have been created (as shown below).

Vehicle	Part Number
2011 Acura TSX	VC36112
2011 Acura TSX	VC36004
2011 Acura TSX	VC21499
2011 Acura TSX	VC36009

Setup is required within both STEP Workbench and Web UI for the action to be available to users. For more information, see the configuration topics below:

- Configuring the Copy Applications to Related Parts Business Action in Workbench
- Configuring the Copy Applications to Related Parts Business Action in Web UI

Configuring the Copy Applications to Related Parts Business Action in Workbench

The 'Copy applications to related parts' business operation is found within the STEP Workbench Business Rule Editor under the Automotive menu and does not offer additional parameters, but does require the use of the reference type 'Part Relation.' Setup is required within both STEP Workbench and Web UI for the action to be available to users. This section addresses configuring the reference type and business action within the workbench.

Configuring the Reference Type

Before the business action can be used within Web UI, the reference type 'Part Relation' must be populated with one or more parts that relate to the selected part. If the business rule is run against an application using a part that has a blank Part Relation parameter, then no changes will occur. In the example below, parts VC21499 and VC36009 have part VC 36112 populated within the Part Relation reference type.

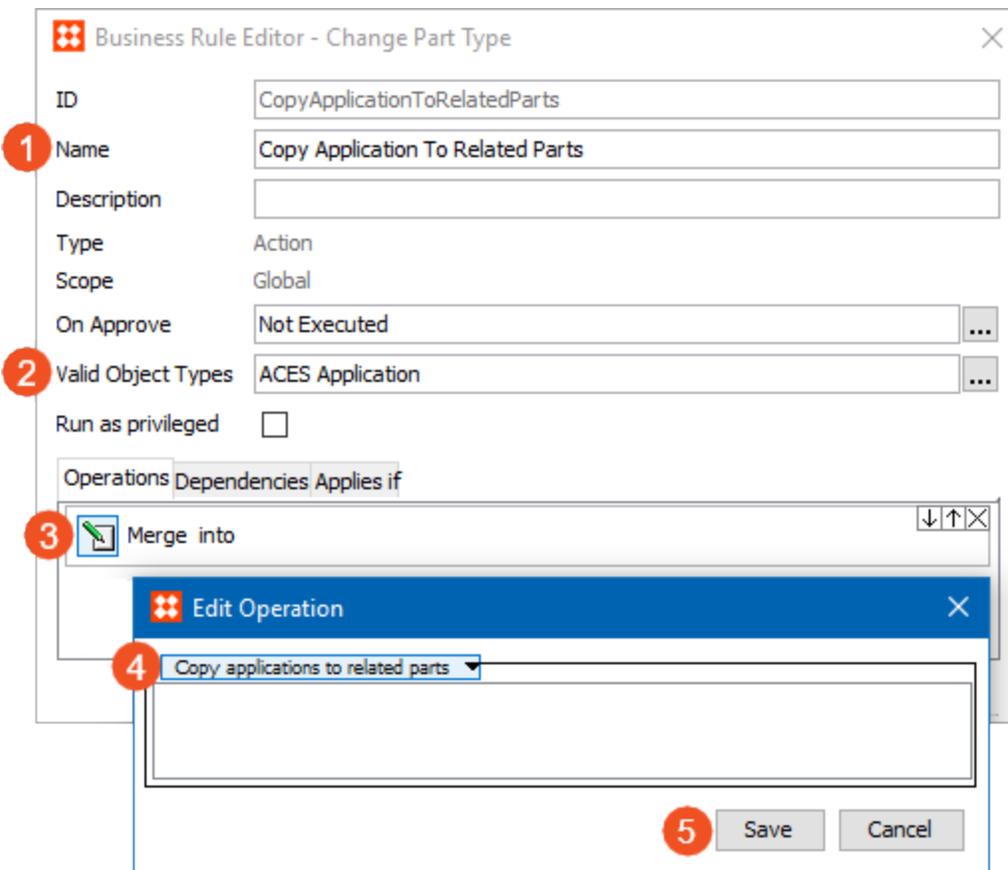
The image displays two screenshots of the STEP Workbench interface, illustrating the configuration of the 'Part Relation' reference type. Both screenshots show a tree view on the left and a table on the right.

Top Screenshot: The tree view shows the hierarchy: PIES Products > Wako > Engine > Sensors > Check Engine Light Sensor. Under 'Check Engine Light Sensor', parts VC21499, VC36004, VC36009, and VC36112 are listed. The table on the right has columns: Product, Sub Products, References, Referenced By, and Image. The 'References' column is expanded, showing a 'Reference Type' dropdown set to 'Part Relation' and a 'Target' dropdown set to 'VC36112'. A plus sign (+) is next to 'Part Relation', and a blue icon with a magnifying glass is next to 'VC36112'. Below this, 'PIES Supersession' is also listed with a plus sign (+) and a blue icon.

Bottom Screenshot: The tree view is identical to the top screenshot, but 'VC36009' is highlighted. The table on the right is also identical, showing 'Part Relation' linked to 'VC36112' and 'PIES Supersession' listed below it.

Configuring the Business Action

Before the business action can be used within Web UI, the business action must be created. Below are the steps required to create the business action.



1. Create the business action with a name that accurately describes to the user what this action will do. The name of the business action displays within the Web UI and should be easy for the user to identify. For this example, the business action name is 'Copy Applications To Related Parts.'

Note: The business action Name will display to the Application Manager user once the Bulk Updates action button is selected. If more than one bulk update is configured, then the name displays both within the Bulk Applications Update dialog, and within the copy applications to related parts dialog where the user enters the part for the application (as shown in the example within the **Using the Configured Copy Applications To Related Parts Business Action in Web UI** section of the **Business Action: Copy Applications To Related Parts** topic within this guide).

2. Edit the new business rule, click the ellipsis button (...) next to the Valid Object Types parameter and select the valid object types for this business action. For this example, the 'ACES Application' object type is selected, however the TecDoc and NAPA applications can also be selected within the same or separate business actions. This decision is at the discretion of the administrator.
3. On the Operations tab of the Business Rule Editor, click the **Add new Business Action** link, and click the edit button to open the Edit Operation dialog.
4. Use the dropdown menu within the Edit Operation dialog to select **Automotive > Copy applications to related parts** operation, and the Save button will become active (as shown above).

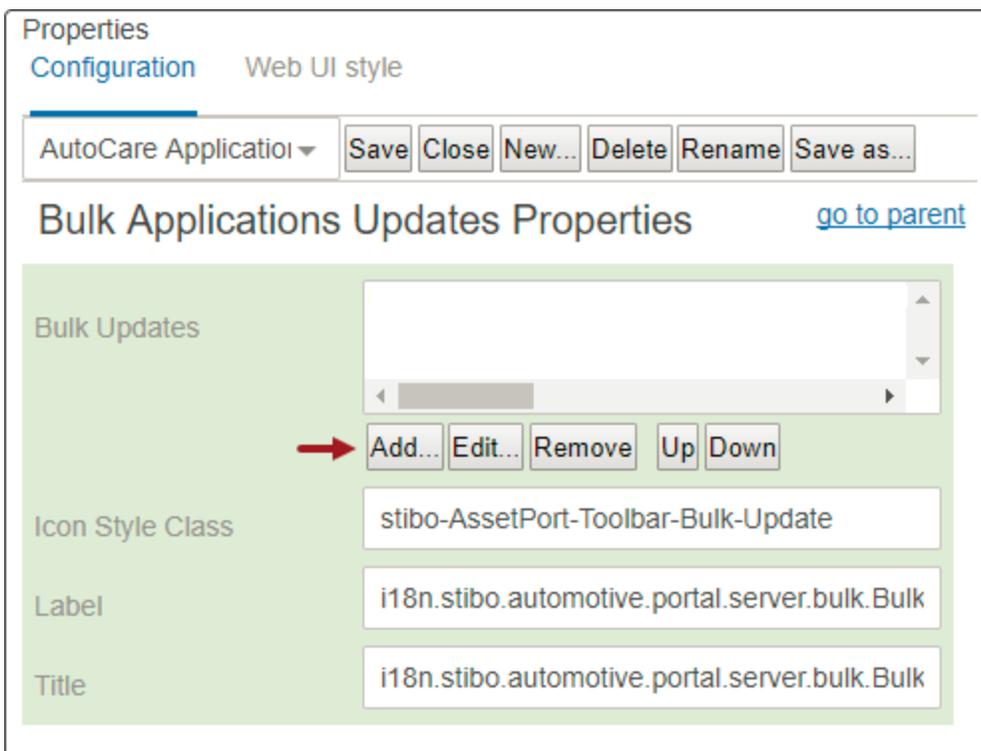
5. Click the **Save** button and continue to the next topic, **Configuring the Copy Applications To Related Parts Business Action in Web UI**.

Configuring the Copy Applications to Related Parts Business Action in Web UI

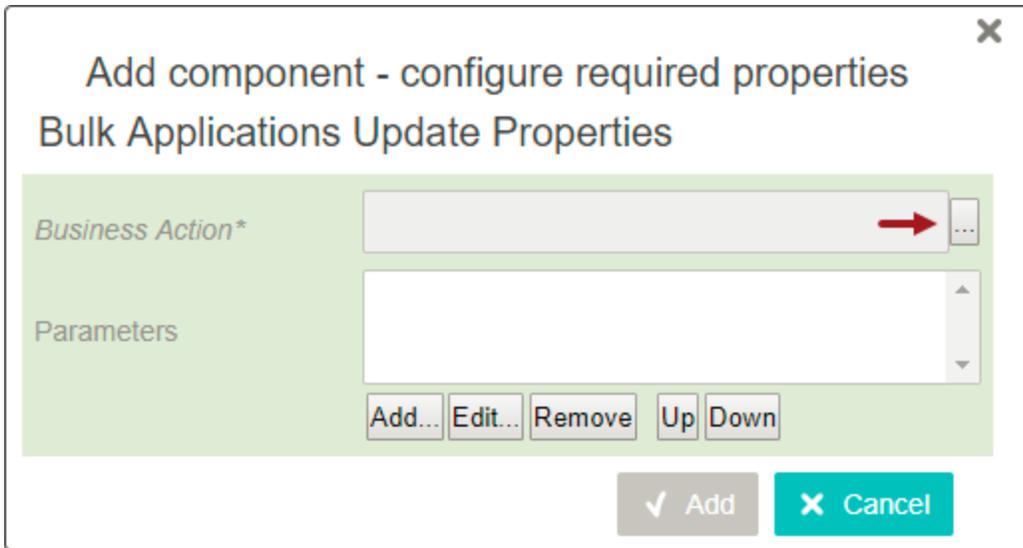
Once the business action has been configured in the workbench, configuration within Web UI is necessary. This section addresses the steps necessary within Web UI.

Note: After the initial setup, the access to the dialogs does not change, therefore these steps can be helpful when editing the configuration. However, when editing the 'Add' button will be replaced with the 'Save' button, and the 'Add component..' labels at the top of the dialogs will display as 'Edit component... '.

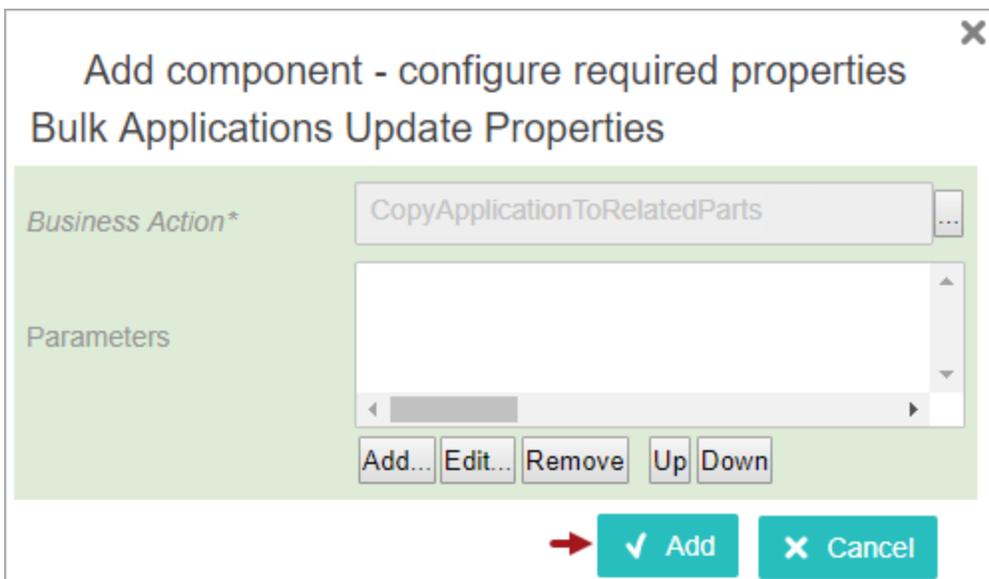
1. Access the Application Manager screen where the business action needs to be available to users.
2. Access the Designer > navigate to Node List Properties > Child Components > Actions > Double click **Bulk Applications Updates** and the 'Bulk Applications Updates Properties' dialog will display (as shown below).



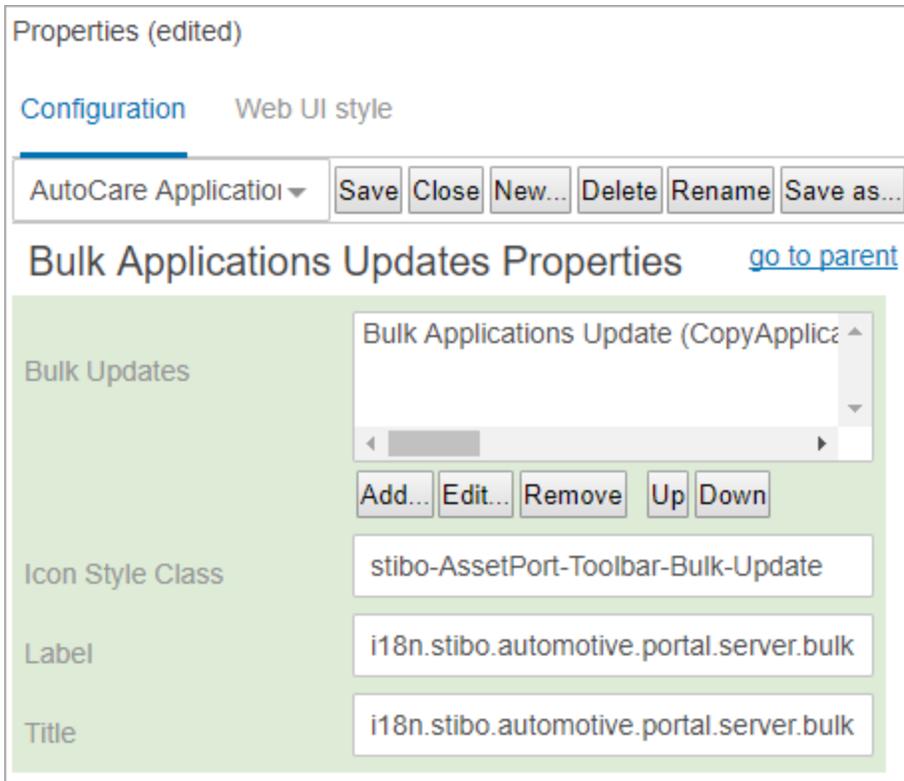
3. Click the **Add** button beneath the Bulk Updates parameter, and the 'Add component - configure required properties' for the 'Bulk Applications Update Properties' dialog will display (as shown below).



- Click the ellipsis button (...) next to the Business Action parameter > select the business action previously created > click the **OK** button to close the dialog, and return to the Bulk Applications Update Properties dialog. The selected action is displayed in the Business Action parameter.



- Click the **Add** button, and the 'Bulk Applications Updates Properties' dialog will display with the newly added Bulk Update listed.



6. Click the **Save** button and then click the **Close** button to close the designer.

To use the newly configured business action, see the **Using the Configured Copy Applications to Related Parts Business Action in Web UI** section of the **Business Action: Copy Applications to Related Parts** topic.

Business Action: Move ACES Applications for PIES Part

This rule is a business action found under the Automotive menu that will move all ACES applications from one PIES Item to another by following a reference between the parts. The rule has a single parameter (Reference Type), which requires selection of a reference. For the rule to function properly, the selected reference must be a product reference with the PIES Item object type (ID=AC_PIESItem) as both the source and the target, and the rule must be set with the PIES Item as the valid object type.

The action evaluates all ACES applications that are child to the selected part on which the rule is being executed and moves the child applications from the current object to the target(s) of the reference identified in the rule. If the PIES Item has no reference of this type, no action is taken and the existing applications will remain in place. If the PIES Item has one or multiple targets of the reference, the applications will be duplicated to all targets and removed from the source object.

When a move occurs, the application is moved with all data on the original record retained, except the part number. The part that the application is being moved to is applied as the part number in both the application name and the hash function of the application ID, as well as within the ACES Replacement Context metadata value. The brand element of the replacement context is also updated if the part that the application is being moved to is from another brand (indicated by the value of the attribute with ID=AC_PIES_ITEMBrandAAIAID on the PIES Item).

Important: ACES supports only a single asset being linked to any application. If multiple assets are present on an application, all will be linked to the moved record, but only one will be accounted for in the application ID. This could lead to duplicate applications in the system so it is important to ensure that the standard is adhered to and only one asset is present for any application.

Note that this rule cannot be used to move applications outside of the AutoCare model (using PIES Item and ACES Application object types) as the functionality for construction of the application ID and other related data relies on the standard model.

Business Action: Set Condition Links on Part Types

This rule is a business action found under the Automotive menu that serves to link application conditions / options to part types to assist in configuring display options in the Web UI Application Record Editor (Application Manager Screen). Additional information on the display settings can be found in the Application Manager section of this guide (specifically, the section titled Controlling Display of Conditions in the Editor) so the details of this functionality are not described.

The rule requires selection of one or more application records and if it should be applied en masse, it may be useful to use search functionality and apply the rule as a bulk update using the Run Business Rule operation in the Bulk Update wizard. When run, the rule will evaluate all selected applications and identify which conditions are populated on the applications, per part type. It will then link the attributes or references representing the conditions to the part types, using standard attribute links or the Reference Part Type Links metadata attribute as appropriate.

The business action has two parameters:

- **Attribute groups:** Select one or more attribute groups that hold the condition attributes. All attributes and references in the selected group will be evaluated and any that are populated on the selected application records will be linked to the part type of the application on which it was populated. Attributes and references that are not part of the selected group(s) will remain unaltered.
- **Display condition:** Check this box if the display condition should be set to true for the link, meaning that the attribute or reference will display in its own column within the editor using the 'Application Condition Header - Individual' column. If unchecked, conditions will be linked without the 'true' display condition, meaning that they will show up within the 'Application Condition Header - Group' consolidated column in the editor.

If attribute or reference links already exist on any part type for the populated conditions, the existing links are not altered by running the rule - only new links are added.

Business Action: Set Import Status Attributes

While not strictly required, it may be helpful to implement change flags; a way for users to view what data has been created or changed due to an import.

In order to enable the system to indicate when data is new and/or changed, metadata attributes and the 'Set import status attributes' business action can be used within the Import state of a workflow. At a minimum, at least one attribute is required for delete statuses, new statuses, and changed statuses for all imports. If additional distinction is desired, unique attributes can be created to store delete, new, and changed statuses for varying objects or imports. In either case, when an importer determines that data should be flagged as delete, new, or changed, it writes 'true' in the attributes indicated in the business action configuration. This allows each customer to determine their own strategy for managing delete, new, and/or changed data, such as processing the new and/or changed data via a workflow.

In the example below, an ACES import created a new application for part VC21499. Because the application is new, the configured attribute New Object displays the value of 'true.'

Name	Value
ID	AC_ACESApp_39792bde003b9d01d4a3171aa8241
Name	VC21499
Object Type	ACES Application
Revision	0.4 Last edited by USERN on Fri Feb 02 15:10:14 E
Approved	✘ Never Been Approved
Translation	Not Translated
Path	Primary Product Hierarchy/AutoCare Root/PIES Pro
ACES Replacement Context	abc
Changed Object	abc
Delete Status	abc
New Object	abc true ←

If the application had previously existed and had information changed during the import, then only the Changed Object attribute value would display 'true.'

Name	Value
ID	AC_ACESApp_39792bde003b9d01d4a3171aa8241
Name	VC21499
Object Type	ACES Application
Revision	0.4 Last edited by USERN on Fri Feb 02 15:12:17 ES
Approved	✘ Never Been Approved
Translation	Not Translated
Path	Primary Product Hierarchy/AutoCare Root/PIES Proc
ACES Replacement Context	abc
Changed Object	abc true ←
Delete Status	abc
New Object	abc

Important: This business action can ONLY be used within the Import state of a workflow. Additionally, an error will occur when delete flags are used for TecDoc reference data on an 8.2 system. It is recommended that change flags for TecDoc reference data only be implemented on 8.3 (or newer) releases.

Configuring Change Flags for New and/or Updated Objects

To properly configure this business action to track new and/or updated objects, the following is needed:

- Create / Identify Valid Attributes
- Configure a Business Action to Use the Set Import Status Attributes Operation
- Update Workflow Settings

Create / Identify Valid Attributes

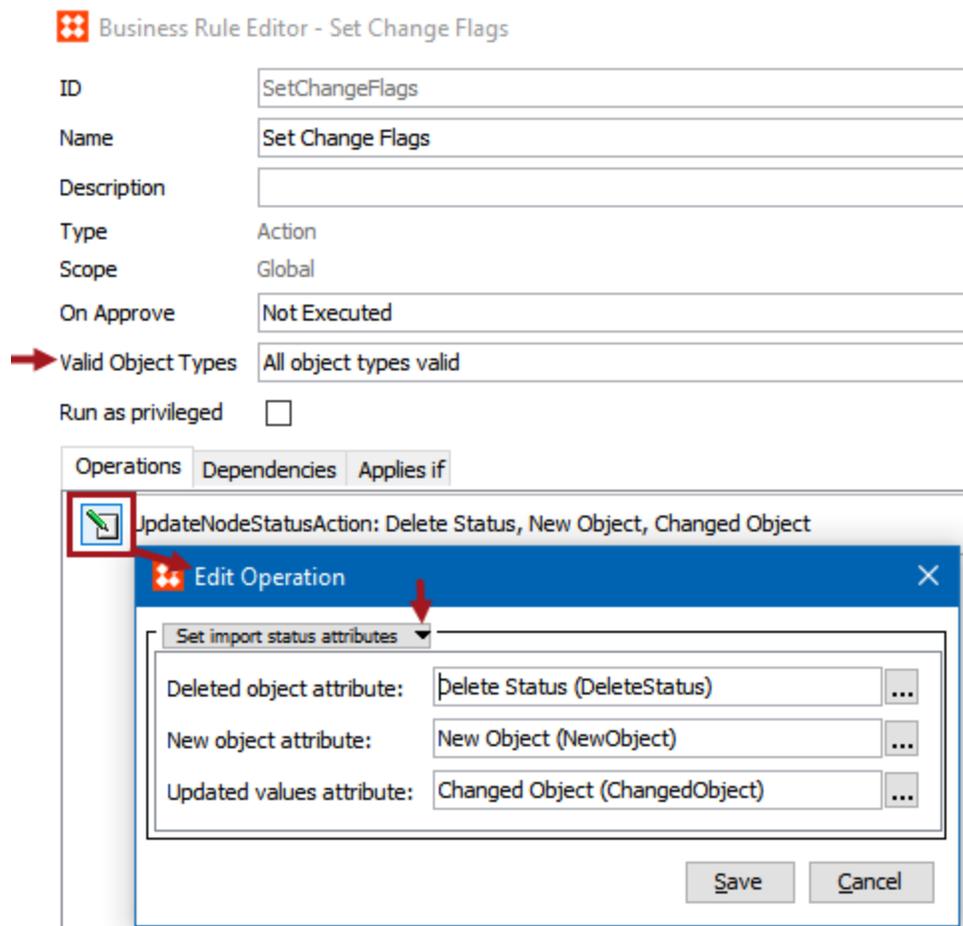
1. Create the necessary attributes (or verify that they exist) to be used to store the new and/or changed data (i.e. Delete Status, New Object, Changed Object).
2. Make sure the attributes are valid for the object(s) being managed by the import.

For example, an attribute used in the AutoCare ACES Application Importer must be valid on ACES Application objects. Alternatively, an attribute used in the AutoCare PCdb Importer must be valid on all nodes in the PCdb classification hierarchy.

Configure a Business Action to Use the Set Import Status Attributes Operation

1. Create a business action and give it a name that users can easily identify. In the example below, Set Change Flags is used.
2. Click the ellipsis button (...) to the right of the Valid Object Types parameter to find and select the necessary object type(s). In the Set Change Flags example below, ACES Application is selected.
3. On the Operations tab, click the 'Merge into' button, and the Edit Operation dialog will display.

4. Click on the Edit Operation dropdown, click **Import flow**, and then click **Set import status attributes**.
5. Three parameters will display. Configure the parameters to use the necessary attributes.
 - **Deleted object attribute:** Click the ellipsis button (...) to find and select an attribute to be used to identify when an object should be marked for deletion. The attribute that is used in this parameter should be the same attribute that is configured in the delta calculation. For the example below, the Delete Status attribute (created / identified in the previous section) is selected.
 - **New object attribute:** Click the ellipsis button (...) to find and select an attribute to be used to identify when an object is added. For the example below, the New Object attribute (created / identified in the previous section) is selected.
 - **Updated values attribute:** Click the ellipsis button (...) to find and select an attribute to be used to identify when an object is changed. For the example below, the Changed Object (created / identified in the previous section) is selected.
6. Click the **Save** buttons to save and close the business rule.



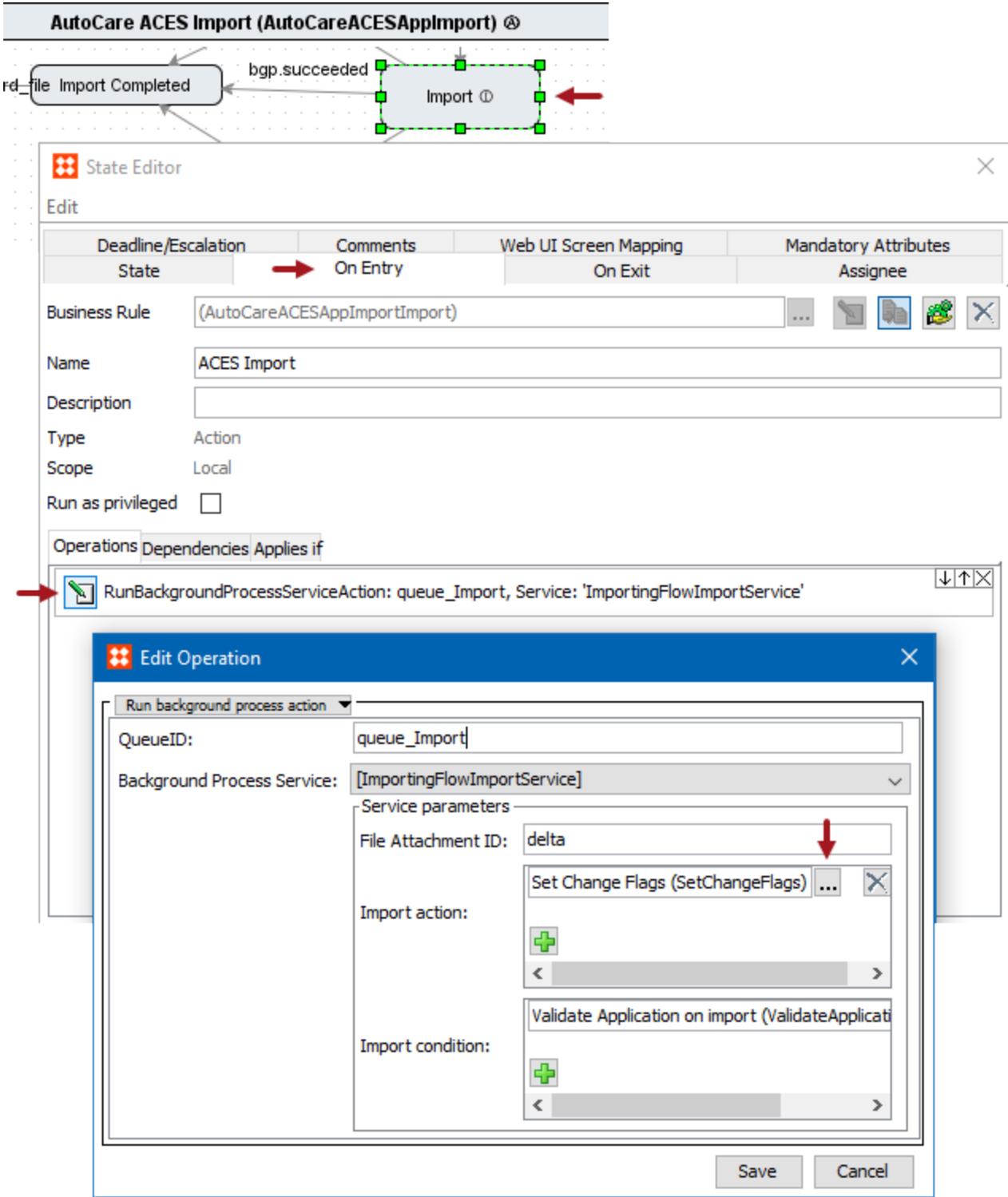
For more information on creating and/or editing business rules, see the **Creating a Business Rule or Library** topic, and the **Editing a Business Rule** topic within the **Business Rules** guide.

Update Workflow Settings

Once the business rule is configured, the necessary workflows need to be updated to use the business rule. Below are the steps to update a workflow to use the business rule created in the previous section.

Important: Because the business rule created in the previous section is configured to work with ACES Application valid object types, the ACES Import Workflow is used for the example below. If the business rule is configured to also work with TecDoc and/or NAPA Applications, then those import workflows would need to also be edited.

1. Go to workbench > System Setup > Workflows > select a workflow.
2. Right-click, and select **Edit STEP Workflow**.
3. On the STEP Workflow Designer window, double click on the **Import** state to open the State Editor.
4. Select the **On Entry** tab, and within the Operations tab, click the Edit icon to display the Edit Operations Dialog (as shown below).



- 5. In the Edit Operation dialog, click the ellipsis button (...) to the right of the Import action parameter to find and select the business action previously created.
- 6. Click the **Save** button, and exit the workflow.

Business Action: Sync ACES Applications Between PIES Parts

This rule is a business action found under the Automotive menu that will synchronize all ACES applications between two PIES Items by following a reference between the parts.

Note: This rule cannot be used to move applications outside of the AutoCare model (using PIES Item and ACES Application object types) as the functionality for construction of the application ID and other related data relies on the standard model.

The rule has a single parameter (Reference Type), which requires selection of a reference. For the rule to function properly, the selected reference must be a product reference with the PIES Item object type (ID=AC_PIESItem) as both the source and the target, and the rule must be set with the PIES Item as the valid object type.

The action evaluates all ACES applications that are child to the selected part on which the rule is being executed, and the applications on the target(s) of the reference indicated in the business rule configuration. The records are then synchronized between the parts, excluding duplicates. For example, assume Part A has 3 records and Part B has 2 records. One of the records on each part is a match to the other, meaning that all data for the application is identical, except the part number. Following the sync, both parts will have 4 records.

When a sync occurs, the applications are copied between the referenced parts with all data on the original records retained, except the part number. The part that the application is being applied to is written as the part number in both the application name and the hash function of the application ID, as well as within the ACES Replacement Context metadata value. The brand element of the replacement context is also updated if the part that the application is being moved to is from another brand (indicated by the value of the attribute with ID=AC_PIES_ITEMBrandAAIAID on the PIES Item).

Important: ACES supports only a single asset being linked to any application. If multiple assets are present on an application, all will be linked to the record being created by the sync, but only one will be accounted for in the application ID. This could lead to duplicate applications in the system so it is important to ensure that the standard is adhered to and only one asset is present for any application.

Business Condition: Check Path for Missing Application

This business condition improves the accuracy of search results involving specific part types by allowing the data model to include a relationship between conditions on applications and different vehicle configurations. This can be helpful when specific part types do not apply to certain vehicle configurations. Additionally, it allows the Web UI Application Manager to search for applications with conditions for all sub models.

Prerequisites

Easy Setup actions automatically create the Missing Application Conditions attribute (MissingApplicationConditions) and the 'Check path for missing application' plugin; however, configuration is required prior to use.

When Easy Setup actions are used to create the Missing Application Conditions attribute (MissingApplicationConditions), the attribute is also made valid for NAPA MPCC, Part Terminology, and Standard Assembly GA object types. This validity must be applied manually if the attribute was created manually.

When Easy Setup actions are completed, the 'Check path for missing applications' plugin is created. However, the business condition must be made valid for the necessary object types.

Improving Search Result Accuracy

When an Application Manager is used to search for existing and missing applications for a specific part type, it is possible to get results that are not accurate based upon the relationship between the vehicle configuration and options for a part.

For example, when searching for missing applications for spark plugs on a 2013 Audi A3, the result table will list both Gas and Diesel engines, since Diesel engines do not use spark plugs, this is inaccurate. However, when the validation path functionality is implemented in conjunction with the 'Missing Application Conditions' attribute and the 'Check path for missing application' business condition, the search results will display more accurately because the application coverage will consider both the Condition and Part Type values.

Make/Model Audi A3 X	Year 2013 X	Sub Model ▼	Engine ▼	Part Type Spark Plug X
Enter Make/Model	Enter Year	Enter Sub Model	Enter Engine	Enter Part Type

Existing and Missing Applications ▼ All Brands ▼ **Report** Clear Criteria **Search**

Select all Clear filter Compressed view

Vehicle	Part Terminology	Part Number	ACES Sub Model	Options	Notes
<input type="checkbox"/> 2013 Audi A3	Spark Plug	00729571		ACES Fuel Type: GAS	
<input type="checkbox"/> 2013 Audi A3	Spark Plug			ACES Fuel Type: DIESEL	

Number of items : 2

Once the application coverage is configured to consider the Condition and Part Type values, then searches like the 2013 Audi A3 example above will no longer include the DIESEL vehicle configuration results.

For more information, see the **Missing Application Coverage Functionality** topic within this guide.

For configuration instructions, see the **Configuring the Check Path for Missing Application in Workbench** topic of this guide.

Configuring the Check Path for Missing Application Business Condition in Workbench

Implementing this solution includes configuring a Business Condition using the 'Check path for missing application' plugin, and then adding the Business Condition to the 'Missing Application Conditions' attribute.

Configuring the Business Condition

This section provides steps for configuring a Business Condition using the 'Check path for missing application' plugin within Workbench.

1. Confirm the 'Missing Application Conditions' attribute (MissingApplicationConditions) exists, otherwise create it.
2. Confirm the Missing Application Conditions attribute (MissingApplicationConditions) is valid for the necessary object types for each standard being used. For example, when Easy Setup Actions are completed, the following are made valid when the AutoCare, NAPA, and TecDoc standards are used: Part Terminology, NAPA MPCC, and Standard Assembly GA.
3. Create a new Business Condition with a name that represents the Condition or Part Type value to be filtered. In the example below, the Spark Plug Part Type value will determine if a vehicle with the Diesel option will display within the results table, thus the Name is **Missing Application Spark Plug**.
4. Within the Business Rule Editor, click the **Add new Business Condition** link, and a Business Condition will display within the Operations tab.
5. Click the **Edit icon**, and an Edit Operation dialog will display.
6. Click the dropdown within the Edit Operation dialog to select the **Automotive** option, and then the **Check path for missing application** plugin (as shown below).

The image illustrates the steps to add a new business condition in the Business Rule Editor:

- 3** Name: Missing Application Spark Plug
- 4** Add new Business Condition (indicated by a red box and arrow pointing to the plus icon in the Operations tab)
- 5** True if value for Attribute (indicated by a red box and arrow pointing to the plus icon in the Operations tab)
- 6** Attribute Value Comparison (indicated by a red box and arrow pointing to the dropdown menu in the Edit Operation dialog)

The dropdown menu in the Edit Operation dialog includes the following options:

- Attribute Value Comparison
- Automotive > Check path for missing application
- TecDoc > Validate Application
- Attribute Value Comparison
- Evaluate JavaScript
- Function
- LOV Cross-Validation
- OR Condition
- Reference other Business Condition
- Valid Hierarchies
- Validate Google Shopping Product
- Validate Product Variant

7. Once the plugin is selected, the Edit Operation dialog will display the following parameters:

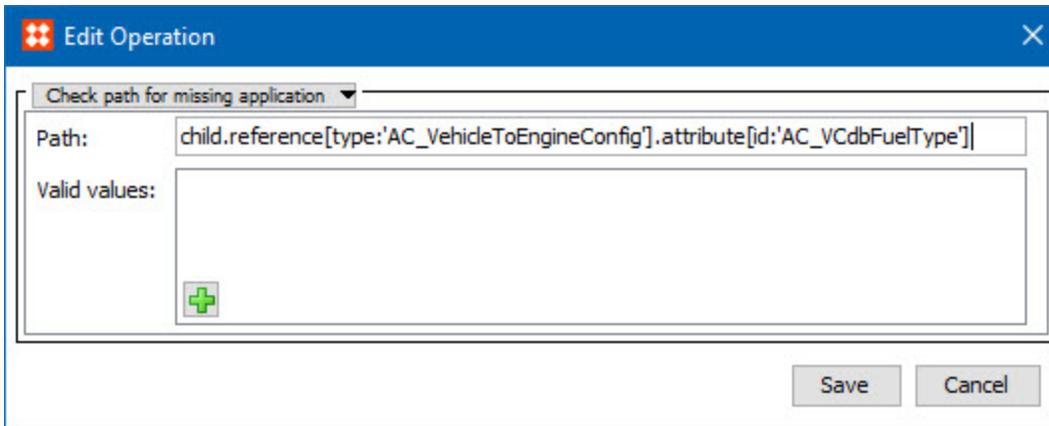
- **Path:** Defines the reference that should be followed on the application to retrieve the attribute value defined in the path. The Path information for an attribute lives on a referenced object that is referenced from another referenced object from the child of the actual vehicle. For this example, the Path information for Fuel Type (GAS/DIESEL) is stored on the Automotive Validation Path attribute (as shown below).

Note: For more information on the Automotive Validation Path, see the Automotive Validation Path Functionality section within the **STEP Automotive Reference Guide** found within the **Solution Enablement** section of **STEP Online Help**.

The screenshot shows the 'System Setup' interface. On the left is a tree view of 'Attribute Groups' with 'AutoCare ACES Attributes' expanded, and 'Fuel Type' selected. On the right is the 'Attribute' tab of the 'Edit Operation' dialog, displaying a table of attribute details. The 'Automotive Validation Path' attribute is highlighted with a red box, showing its value as a complex path expression.

Name	Value
ID	AC_ACESFuelType
Name	Fuel Type
Last edited by	2018-06-27 09:08:47 by USERN
Full Text Indexable	No
Externally Maintained	No
Completeness Score	
Hierarchical Filtering	None
Calculated	No
Type	Specification
ATTR_Sort Nr	123
ATTR_Sucesser To	abc
ATTR_Valid For	
Attribute Help Text	abc
Automotive Validation Path	abc child.reference[type:'AC_VehideToEngineConfig'].attribute[id:'AC_VCdbFuelType']

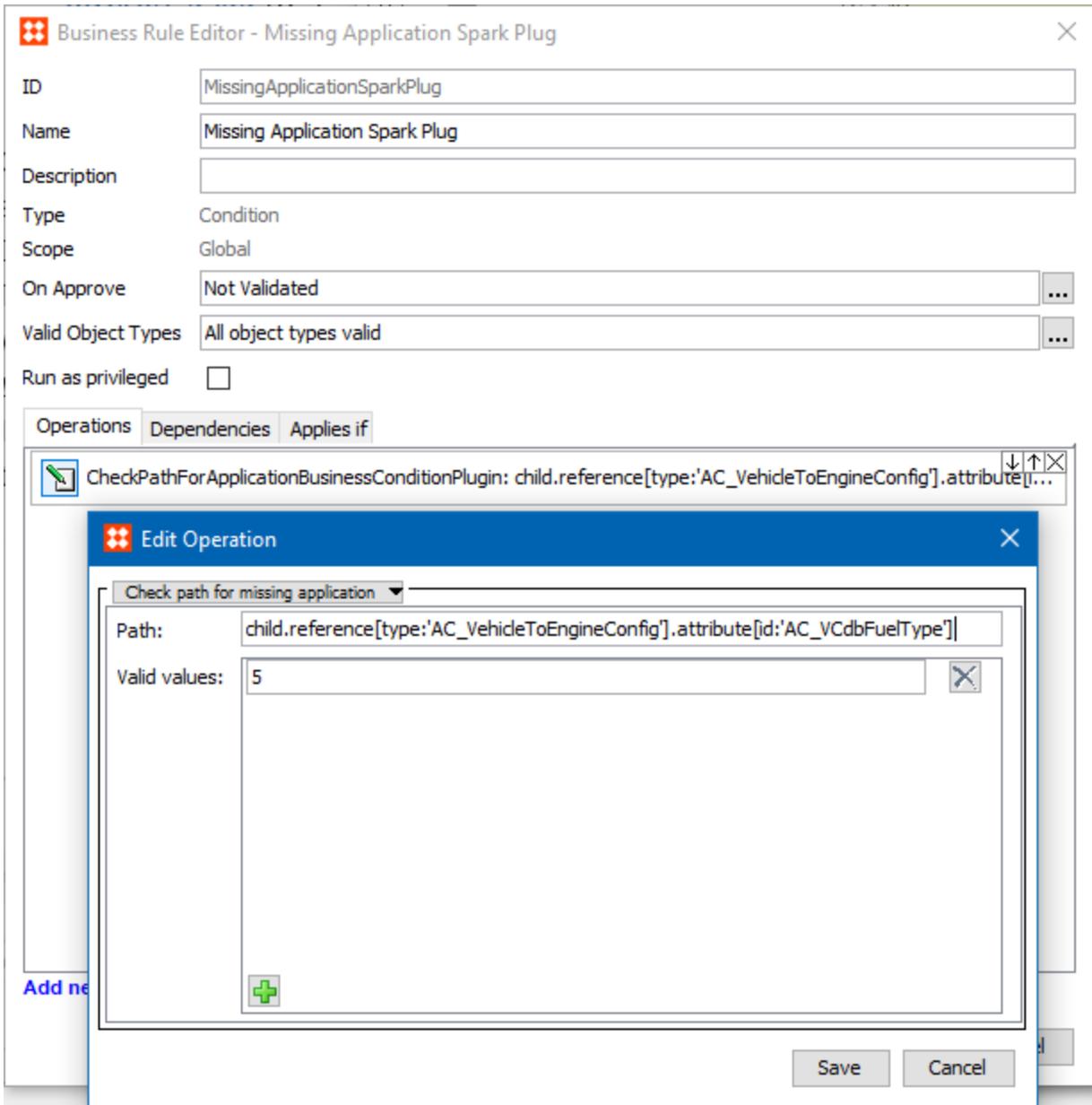
The Path information (attribute value) must be copied from the Fuel Type specification Automotive Validation Path attribute, and pasted into the Path parameter (as shown below).



- **Valid Values:** One or more IDs of an LOV value must be entered. IDs entered will be displayed within the Application Manager Results Table when applicable. In the example below, the value ID for the Fuel Type - List of Vales GAS is 5.

Fuel Type - List of Values	
Values	Value ID
> BI-FUEL	13
> BIODIESEL	23
> CNG	8
> DIESEL	6
> ELECTRIC	10
> ELECTRIC/DIESEL	16
> ELECTRIC/FLEX	17
> ELECTRIC/GAS	14
> ELECTRIC/HYDROGEN	22
> FLEX	7
> GAS	5
> LPG	9
> N/A	20
> U/K	18

8. Within the Edit Operation dialog, click the **green plus sign** icon () to add a value ID to the **Valid values** parameter.
9. In the example below the number 5 is entered so that the GAS Fuel Type will display when the Spark Plug part type is searched.



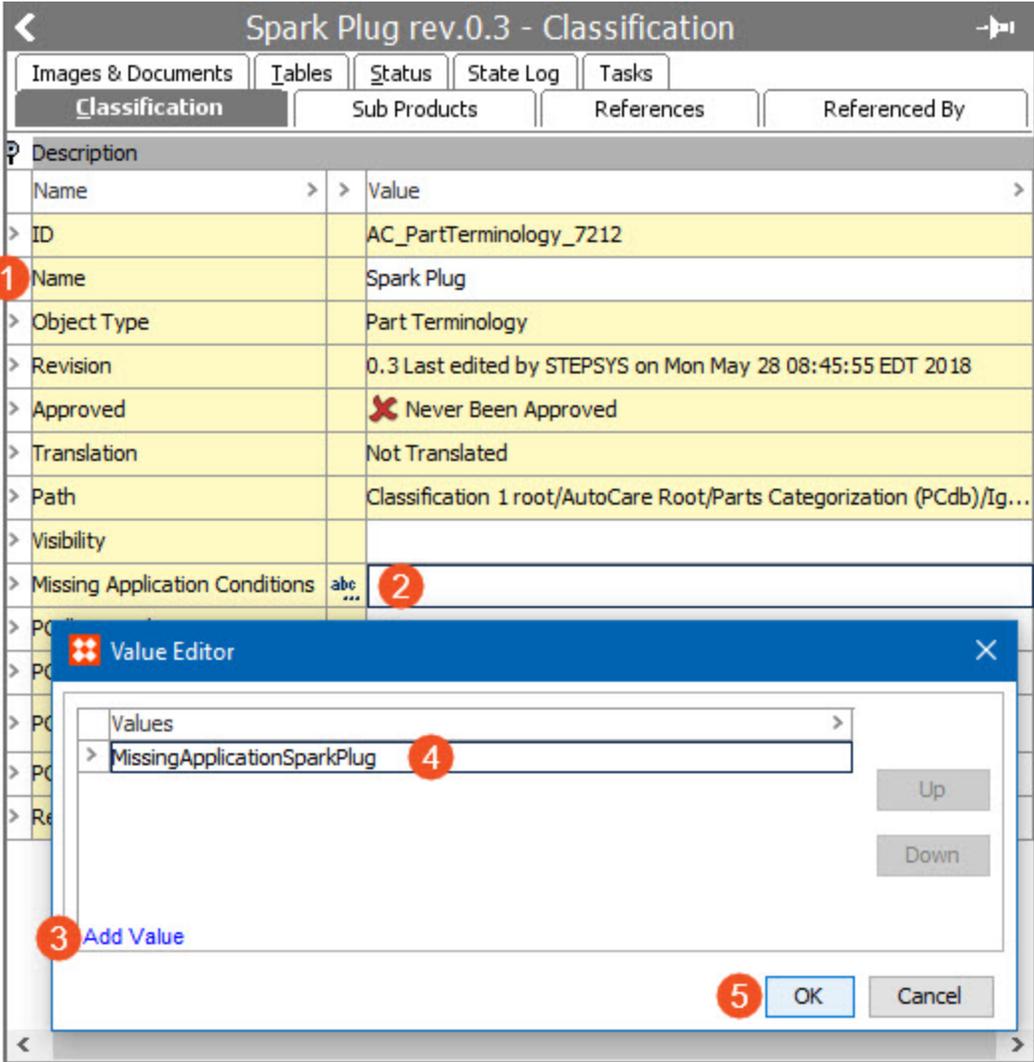
10. Optionally, click the **green plus sign** icon () to add more value IDs, if more Fuel Types should display when the Spark Plug part type is searched.
11. Click the **Save** and **Close** buttons to save the Business Condition.

Note: Copy the ID of the Business Condition for the next steps.

Adding the Business Condition to the Missing Application Conditions Attribute

Once the Business Condition has been configured, it must be added to the Missing Application Conditions attribute. Below are the steps necessary to add the Business Condition to the Part Type attribute.

1. Go to the Part Type that needs its results improved. For the example below, the 'Spark Plug' Part Type is used.
2. Go to the 'Missing Application Conditions' attribute, double click to add a value, and the Value Editor will display.
3. Click the **Add Value** link, and a blank row will display.
4. Paste the ID of the Business Condition into the value row.
5. Click the **OK** button to save, and the Business Condition ID will display as the attribute value.

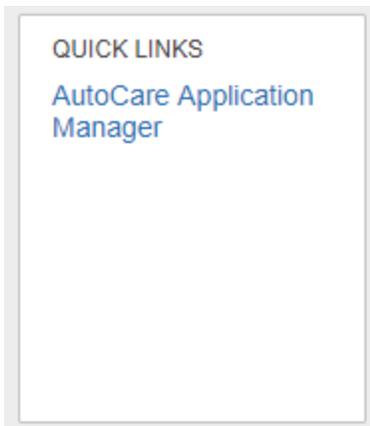


Application Manager

Application Manager is an interactive and robust tool that combines the power of an easy-to-use intelligent search interface with an effective results table. This allows Web UI users to quickly and easily build custom searches involving valid combinations of different vehicle types, makes, models, years, options, regions, and part types. Once a broad (or narrow) search criteria is selected, users can view, create, edit, and delete part applications, along with many other aspects of the search results. Additionally, users can easily create an Excel report for the customized search criteria results by clicking the Report button.

When Easy Setup actions have been used to create a standard data model, by default, much of the Application Manager is ready to be used, and for ease of access a link to the Application Manager screen is added to the Quick Links widget on the Web UI Homepage. In the example below, Easy Setup has configured the AutoCare Application Manager and provided a link within the Quick Links widget.

Note: Prior to completing the Easy Setup actions, if links exist in the Quick Links widget, then the Application Manager link will be added at the very bottom of the list.



Important: An error will occur when trying to access an Application Manager screen if the Vehicle table classifications have not been properly configured. When this error displays, the user must log out and then back in to the Web UI. Once the Vehicle reference data is imported, the link to the Application Manager will function properly.

Until the Vehicle table classification is properly configured, the Quick Links widget cannot be used to access the Application Manager screen because when Easy Setup actions are used to configure an Application Manager, the mandatory parameters within the Designer are populated with Vehicle root nodes. Thus, if Vehicle tables have not been imported, and the link to the Application Manager within the Quick Links widget is clicked, the error shown below will display because the Vehicle root does not exist.

Unexpected error. Please contact your system administrator. Index: 0, Size: 0

Note: The Application Manager is highly configurable via the Web UI Designer, and more than one Application Manager can be created within each Web UI (i.e., for each automotive standard). Therefore, it is expected that a Web UI administrator will configure an Application Manager in a manner that best meets their user's needs. Thus, your Application Manager may look different from what is described within this guide. For more information on configuring an Application Manager, see the **Configuring Application Manager** topic.

The top half of the Application Manager screen offers features related to the intelligent search interface. The bottom half of the screen is dedicated to the search results table and its toolbar. Both halves of the screen can benefit from the automotive validation path functionality.

The screenshot displays the Application Manager search interface. At the top, there are five filter panels: Make/Model (Toyota), Year (2018), Sub Model (TRD Pro), Region (United States (USA)), and Part Type (Spark Plug). Below these filters is a toolbar with a dropdown menu showing 'New Toyota TRD Pro', buttons for 'Existing and Missing Applications', 'All Brands', 'Report', 'Clear All', and 'Search'. Below the toolbar are options for 'Select all', 'Clear filter', and 'Normal view'. The main area is a table with columns: Vehicle, Part Terminology, Part Number, Options, Notes, Qualifiers, and Assets. The table contains two rows of search results. At the bottom left, it says 'Number of items : 14'.

Vehicle	Part Terminology	Part Number	Options	Notes	Qualifiers	Assets
<input type="checkbox"/> 2015 Toyota 4Runner	Spark Plug		United States (USA), TRD Pro			
<input type="checkbox"/> 2015 Toyota Tacoma	Spark Plug		United States (USA), TRD Pro			

In the example above, an Application Manager is used to find existing and missing spark plug applications for Toyotas manufactured in the United States with the TRD Pro sub model option.

This section provides details on the use and configuration of the many powerful features that can be configured within an Application Manager screen with the following:

- Variations Across Standards
- Intelligent Search Interface
- Results Table and Toolbar
- Automotive Validation Path
- Configuring Application Manager

Variations Across Standards

There are terminology variations within the Application Manager for each standard, as well as minor variations in the available headers for the results table.

For example:

- AutoCare offers search results column headers labeled as Vehicle, Part Terminology, and Part.
- AutoCare contains a Qualifiers header, whereas a TecDoc editor does not.
- NAPA offers search results column headers labeled as Vehicle, MPCC, NAPA Product, Conditions, and Comments.
- TecDoc offers search results column headers labeled as Assembly, Generic Article, and Article.

Despite these differences, the overall functionality is the same, allowing users to search for applications, and view and edit application data. The upper half of the screen provides the search functionality, and the lower half of the screen displays the results and allows for editing of application records.

Note: Each implementation has the option to add and remove data to the results display. Additionally, the vehicle options / criteria that are displayed vary dynamically by the part types included in the results, based on configuration options which are described below.

Intelligent Search Interface

The top half of the Application Manager screen offers features related to the intelligent search interface. The bottom half of the screen is dedicated to the search results table and its toolbar. For more information about the Results Table, see the **Results Table and Toolbar** topic. This section provides an overview of the interface, and then addresses the following:

- **Using Intelligent Search Interface**
- **Saved Search Tool**
- **Missing Application Coverage Functionality**
- **Application Coverage Report**

Intelligent Search Interface Overview

The intelligent search interface of an Application Manager screen is composed of the following:

The screenshot shows the Intelligent Search Interface with the following components and callouts:

- 1:** Vehicle type icon (car).
- 2:** Vehicle Type Search Panel containing:
 - Make/Model: Toyota X
 - Year: (empty)
 - Sub Model: TRD Pro X
 - Region: United States (USA) X
 - Part Type: Spark Plug X
 - AND operator
 - Input prompts: Enter Make/Model, Enter Year, Enter Sub Model, Enter Region, Enter Part Type
- 3:** Saved search tool: New Toyota TRD Pro
- 4:** Existing and Missing Applications
- 5:** All Brands
- 6:** Report button
- 7:** Clear All button
- 8:** Search button

- 1. Vehicle type icon:** A visual representation of the 'Vehicle Type Search Panel' contents. Clicking a vehicle type icon displays the configured Vehicle Type Search Panel for the vehicle type (i.e., Personal Cars, Buses, Marine, Street Bikes). Hovering over the icon will display the name configured for the Vehicle Type Search Panel. Each Application Manager must have at least one vehicle type icon. Up to six icons can be displayed within the same Application Manager. For a list of available icons, and more information about the Vehicle type icon, see the **Configuring Application Manager** topic within this guide.
- 2. Vehicle Type Search Panel:** Has many configuration parameters, and can consist of up to four 'search box types' (Make/Model, Year, Options Group, and Part Type). Because many of the search boxes are synchronized, search criteria can be entered into any one of the search boxes in any order, and the available search criteria will display in the typeahead dropdown based upon the criteria entered within the other search boxes. For more information on using the Search Boxes within the Vehicle Type Search Panel, see the **Using Intelligent Search Interface** topic within this guide.

Note: Though only four search box types exist, the above screenshot displays five. This is possible because the search boxes labeled Sub Model and Region are both part of the Options Group search box type. For more information on the Options search boxes, see the **Using the Options Search Boxes** topic within this guide.

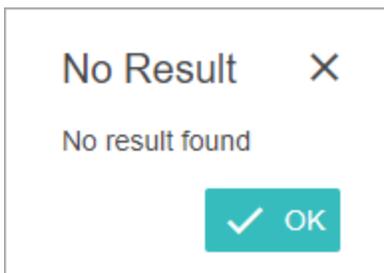
3. **Saved search tool:** Allows users to save previously selected search criteria with custom names, and then quickly populate previously saved search criteria by selecting the name of a saved search from the saved search dropdown. The tool consists of a saved search dropdown field, as well as Save, Rename, and Delete icons. For more information about the saved search tool, see the **Saved Search Tool** section of this guide.
4. **Existing and missing applications dropdown:** Allows users to determine if their search should or should not contain missing applications. To search or report on missing applications, users can select either the 'Missing Applications Only' or 'Existing and Missing Applications' options from the Existing and Missing Applications dropdown. Additionally, users can select the 'Existing Applications Only' option, if the desired results should only display existing applications. For more information about missing applications, see the **Missing Application Coverage Functionality** topic within this guide.
5. **Hierarchy Restriction dropdown:** Allows users to restrict the Application Manager search results by object type. Users can select from a pre-configured dropdown list of object types. This can be helpful when search results needs to be filtered by Brand, Manufacturer, OEM, Product Line, etc. When the parameter is blank, the Hierarchy Restriction dropdown will not display within the Application Manager. In other words, this option can be removed from an Application Manager screen by removing all object types from the Hierarchy Restriction Object Types parameter. For more information, see the **Configuring Application Manager** topic within this guide.

Note: Both the 'Existing and missing applications' and 'Hierarchy Restriction' dropdowns are tied to the Vehicle type icon. Each time a Vehicle Type icon is selected, the two dropdowns will reset to their defaults ('Existing Applications Only' and 'All Brands').

6. **Application Coverage Report button:** Allows users to export an Application Coverage Report in an Excel spreadsheet (XLSX file type). This report provides results based upon the combination of the search criteria, Existing and Missing Applications dropdown, and Brand dropdown selections. Because this report is built to work with the intelligent search interface of the Application Manager, it is extremely configurable. This allows users the flexibility to choose the report criteria that best suits their needs on demand, and then easily export the search results. The Report button remains disabled until at least one search box is populated. For more information, see the **Application Coverage Report** topic within this guide.
7. **Clear All link:** Allows users to easily clear all search criteria, results, and filters applied to Results Table. The Clear All link remains disabled until at least one criterion for one of the search boxes is populated. When text is typed into a search box, but is not yet selected, clicking the link will also remove the text typed into the search box.. Additionally, criterion can be cleared one at a time by clicking the 'X' to the right of a value within a search box. Clearing criteria in either way does not update the search results. Once any unnecessary criteria are removed, the Report or Search buttons must be used to update the results table.

Note: When the results table is populated, and one or more criteria are changed, clicking the Search button will initiate a new search and the results table will only display results related to that search.

8. **Search button:** When clicked, the Search button will use the criteria provided within the search boxes, selections made within the Existing and Missing Applications dropdown, and/or Brand dropdown, and then provide any results in the results table. The Search button remains disabled until at least search boxes is populated. Requiring only one criterion within the Make/Model, Part Type, or Options search boxes, allows users to conduct very broad searches. For example, to view existing applications for Spark Plugs, simply type 'Spark Plugs' into the Part Type search box. With 'Existing Applications Only' selected, click the Search button to display all the existing applications for Spark Plugs in the results table. However, to view missing applications, this type of broad search would be very time consuming, therefore it is recommended to use additional search criteria, or use the Application Coverage Report button, instead of the Search button. When the Search button is clicked, and no results are available, a 'No Result' dialog will display, as shown below. Clicking the **OK** button closes the dialog, and allows the remaining search criteria to be adjusted.



Using Intelligent Search Interface

The Application Manager intelligent search interface has been carefully designed to allow users to quickly and easily select criteria for valid combinations of different vehicle types, makes, models, years, options (i.e., sub models, regions), and part types. This allows users to create accurate search criteria on the fly and benefit from the customized search results. This is accomplished by allowing users to select only valid criteria across multiple search boxes per the configuration of the Vehicle Type Search Panel.

Within an Application Manager screen, the Vehicle Type Search Panel can be configured to display up to four search box types. Because the Options Group search box type allows for up to two Options search boxes, up to five search boxes can be displayed. Within each search box, a typeahead field is used to view and select valid search criteria. Because only valid criteria can be selected from each dropdown list, the Application Manager provides automated intelligence for each search. Thanks to the synchronization of the search boxes, the valid criteria is considered upon each selection and within any of the displayed search boxes, no matter the order of entry.

For example, if the Make/Model search box contains a vehicle that was only produced from 1994-2010, then the dropdown within the Year search box will only display those years for selection. Because Chrysler established Ram trucks as a new brand (Make) beginning with the 2011 model year, the available years are displayed as 1994-2010 when Make/Model 'Dodge Ram 3500' is selected (as shown below).

Make/Model	Year
Dodge Ram 3500 X	
Enter Make/Model	Enter Year
	1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

Note: The Vehicle Type Search Panel, and its search boxes, have many configuration options. If your screen, or search criteria dropdown options display differently than the examples within this section, contact your Web UI administrator. For more information on configuring an Application Manager, see the **Configuring Application Manager** topic within this guide. For information about the general layout and features of the Application Manager, see the **Application Manager** topic within this guide.

However, if the Ram 3500 is added to the Make/Model search box, then the available years display as 1994-2018 (as shown below).

Make/Model	Year
Dodge Ram 3500 × Ram 3500 ×	
Enter Make/Model	Enter Year
	1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Additionally, consider being able to easily view the engines used for selected vehicles. In the screenshot below, a Dodge Ram 3500 is selected for the Make/Model search box, and some available years have also been selected. Therefore, when the Engine option is selected for the Options search box, and the cursor is placed within the search box field, only those engines used for those vehicles display for selection.

The screenshot shows a search interface with four main sections: 'Make/Model' (1), 'Year' (2), 'Sub Model', and 'Engine' (3). The 'Make/Model' section contains a search box with 'Dodge Ram 3500' and a list icon. The 'Year' section contains a search box with '2007', '2008', '2009', and '2010'. The 'Sub Model' section contains a search box with 'Enter Sub Model'. The 'Engine' section contains a search box with 'Enter Engine' and a dropdown menu showing '5.7L L8, -CC, 345CID', '5.9L L6, -CC, 359CID', and '6.7L L6, -CC, 408CID'. An 'AND' button is located between the 'Sub Model' and 'Engine' sections.

Taking this example a step further, after selecting Dodge Ram 3500 for the Make/Model search box, and 6.7L L6, -CC, 408CID for the Engine options search box, users can easily view the valid years the selected engine has been manufactured within the selected vehicle (as shown below).

The screenshot shows the same search interface as above, but with the 'Engine' search box (2) containing '6.7L L6, -CC, 408CID'. The 'Year' search box (3) is now empty, and a dropdown menu below it shows the years '2007', '2008', '2009', and '2010'.

This section addresses the following:

- Using Search Boxes
- Search Box Synchronization
- Using Make/Model Search Box

- **Using Year Search Box**
- **Using Options Search Boxes**
- **Using Part Type Search Box**

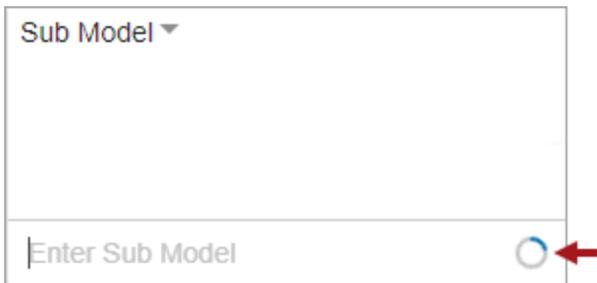
Using Search Boxes

Though each search box contains its own typeahead field, and each typeahead field displays data specific to that search box, the behavior of the field is similar, and common keyboard shortcuts are compatible. Functionality specific to each search box is addressed in subsequent sections of this guide. This section addresses the following functionality that is consistent across the Application Manager search boxes:

- Searching for Criteria
- Selecting Valid Criteria
- Removing Criteria

Searching for Criteria

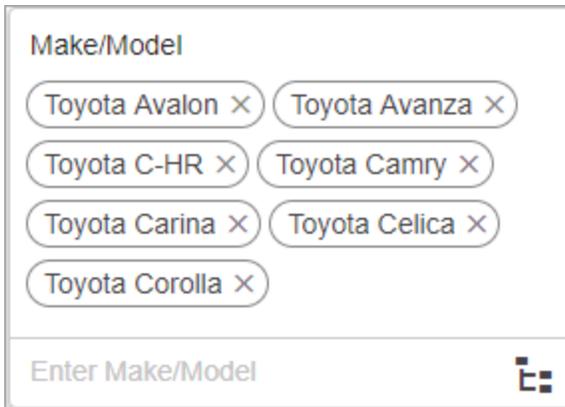
The cursor is activated for each search box either by clicking within the box itself or within the typeahead field at the bottom of the box. Text typed into the field is used to filter and then display only valid criteria within a dropdown list. Typing an asterisk (*) displays any available criteria for selection in the dropdown. Typing additional text allows for a wildcard search to occur against the available criteria. If the display of a dropdown list is delayed, a blue and gray circle will display within the typeahead field indicating the request is in progress (as shown below).



Once the dropdown list for a search box displays, if the list of options is too long to display within the screen, then a scroll bar will display to the right of the list. The scroll feature on a mouse and/or the Up and Down arrows on a keyboard can be used to navigate up and down the dropdown list.

Selecting Valid Criteria

Once one or more desired criteria are highlighted, pressing the Enter key on the keyboard (or using the mouse to select) will add the highlighted criteria to the search box. Each selected criterion will display as a tile within the search box. In the example below, seven Toyota model criterion tiles have been added to the Make/Model search box.



Once a criterion is selected to display within a search box, it will no longer display within the dropdown for selection. This allows users to focus on valid options they have not yet selected.

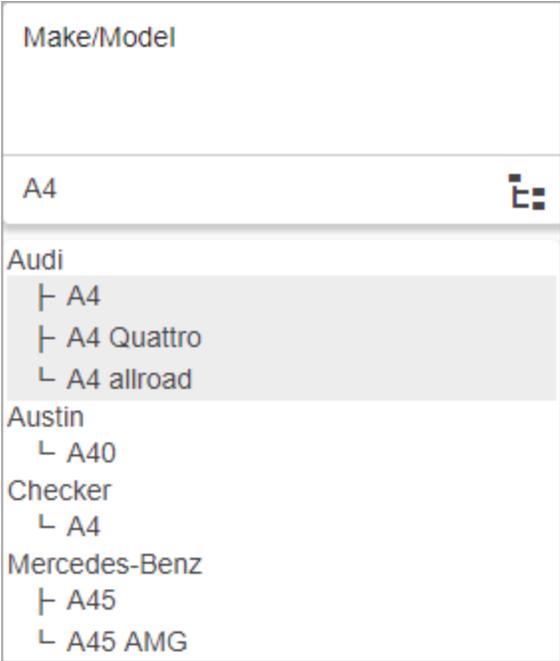
The Tab key on the keyboard can be used to move the cursor from left to right across different search boxes. Holding the keyboard Shift key down while pressing the Tab key will move the cursor from right to left.

Note: When multiple options are available for selection within an Options search box, the Tab key will move the cursor to the Options dropdown, and the down and up arrow keys can be used to change the selected option.

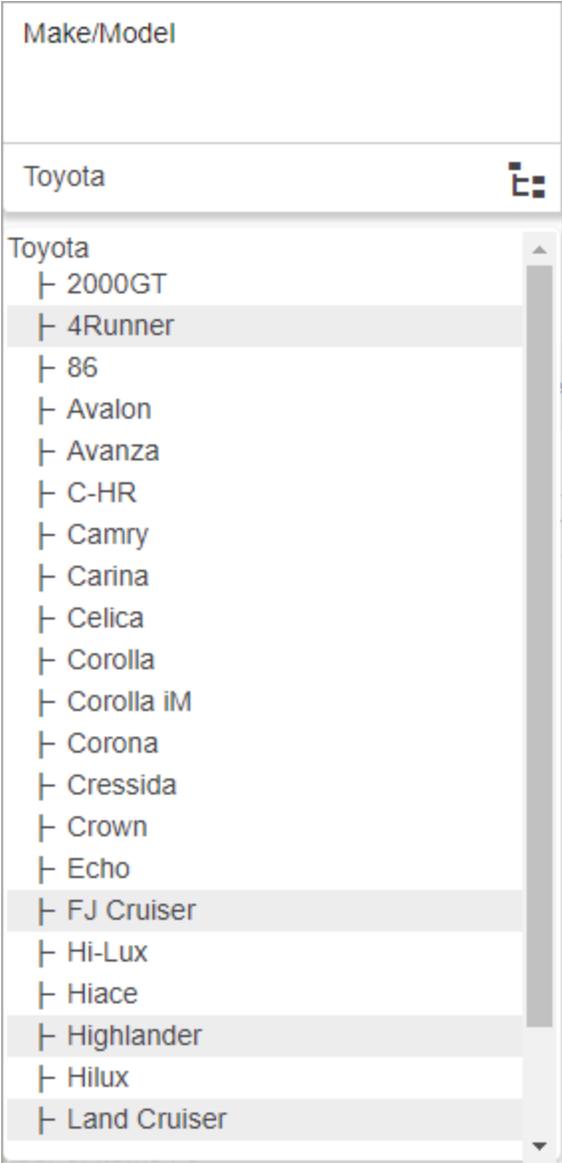
Selecting Multiple Criteria

Within a dropdown list, multiple criteria (either as a group or scattered throughout the list) can be selected and added to a search box. Holding down the Shift key on a keyboard will enable the selection of multiple criteria. While holding down the Shift key, the mouse pointer can be used to click on a criterion listed at the top and/or bottom of a group of desired criteria, next the mouse pointer can be used to click on a criterion listed at the bottom and/or top of that group, resulting in the group of selected criteria being highlighted. Optionally, a keyboard can be used to highlight a collective group by holding down the Shift key, and using the arrow up and down keys to highlight a group of criteria. Once the group is highlighted, pressing the Enter key on the keyboard will add the selected criteria as tiles within the search box.

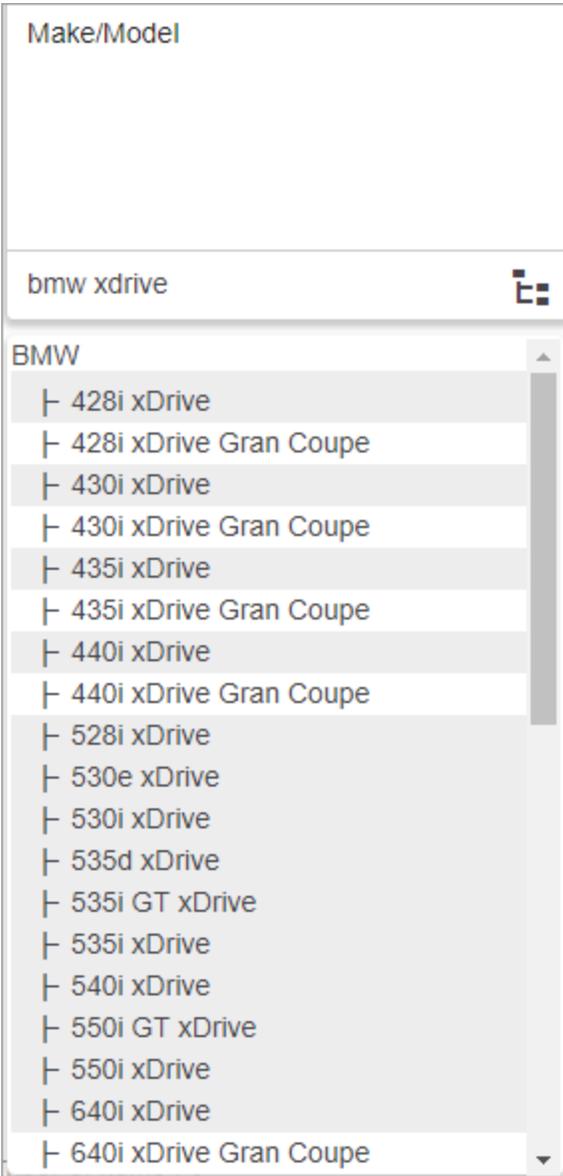
In the example below, after a list of valid criteria options displayed are within the dropdown list, the down arrow key was used to highlight the Audi A4 option, the Shift key was held down, and the down arrow key was used to highlight the two additional Audi model options.



To select multiple criteria that are not grouped next to each other in the dropdown, hold down the Ctrl key on the keyboard, and use the mouse to click on the desired criterion. Once the desired criteria are highlighted, pressing the Enter key on the keyboard will add the selected criteria to the search box.



Optionally, when a group of criteria are highlighted, but one or more criteria within the list should not be selected, holding down the Ctrl key on the key board, and then using the mouse to click the undesired criterion will remove the highlight. In the example below, a large group of BMW xDrive Models have been highlighted for selection, and then those with 'Gran Coupe' have been deselected.



Removing Criteria

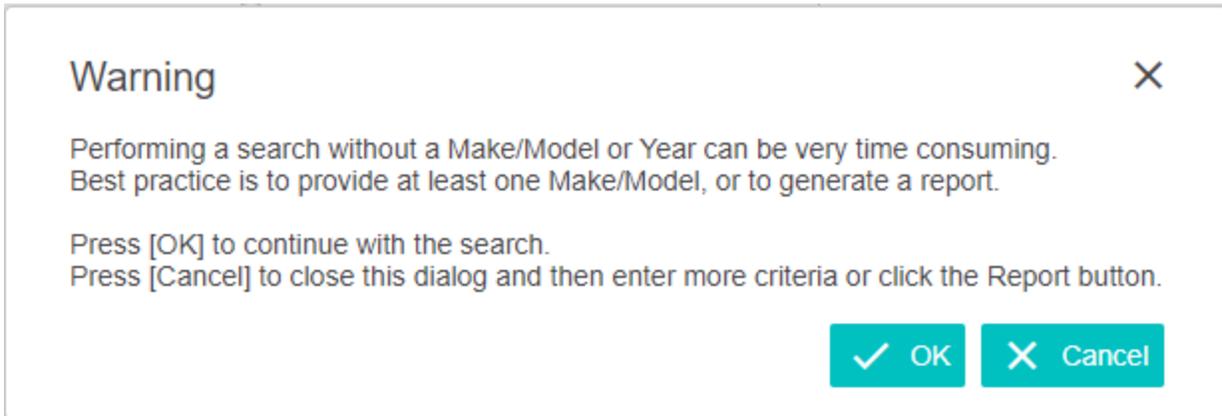
Criterion can be individually removed from a search box, or the Clear All link can be used to remove all selected criteria. To remove a criterion from a search box using the mouse, click the 'X' at the right of a criterion tile. Optionally when the Tab key on the keyboard is used to select a criterion, pressing the Enter key on the keyboard will remove the criterion.

Minimum Search Criteria

Though only one value within one search box is required for the Search button to be enabled, best practice is to provide as much detail as possible prior to running a search. When broad search criteria is provided (especially by leaving the Make/Model search box type blank) results can take much longer than expected to display.

When the use of broad search criteria is necessary, best practice is to use the Application Coverage Report by clicking the Report button within the Application Manager. For more information about using the Report button, see the **Application Coverage Report** topic.

When users attempt to run a search without populating the Make/Model search box, a dialog will display warning that the search may be time consuming, and reminding them of the Report button option. Below is an example of the warning dialog.



Search Box Synchronization

Because the Make/Model, Year, and Options Group Search Boxes are synchronized, search criteria can be entered into any one of the search boxes in any order, and the available search criteria will display in the dropdown based upon the criteria entered within the other search boxes. For example, when 'Tahoe' is selected for the Make/Model search box, 'Z71' is selected for the Sub Model search box, and the cursor is placed within the Year search box field, then the years displayed within the typeahead are only those that the Chevy Tahoe with the Z71 option were manufactured.

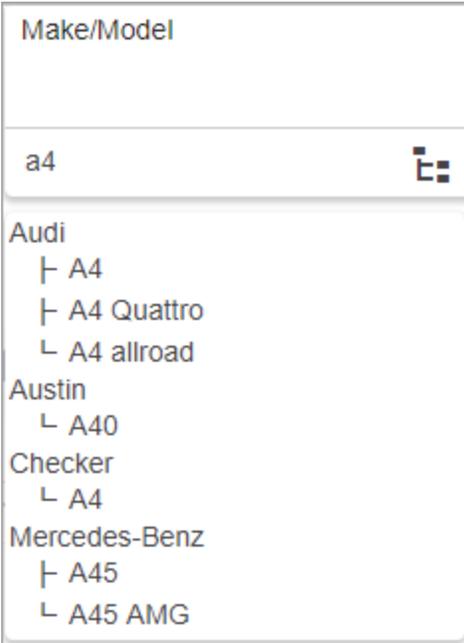
Make/Model 1 Chevrolet Tahoe X	Year	Sub Model ▾ 2 Z71 X
Enter Make/Model	Enter Year 3	Enter Sub Model
	2000 2003 2004 2005 2006 2008 2009 2016 2017	

Note: To remove criteria that is displayed within a search box, click the 'X' to the right of the value, or use the Clear All link to clear all criteria within all search boxes.

Using Make/Model Search Box

The Make/Model search box allows users to add one or more make and/or model criteria to their search. This section addresses functionality that is specific to the Make/Model search box. For more information on the general functionality found within the search boxes, see the **Using Search Boxes** topic within this guide.

Within the Make/Model Search Box, the typeahead field can be used to search for make and/or model criteria. The dropdown list will display the criteria options alphabetically by Make, and then by Model. Models are always displayed below their respective Make. For example, if 'a4' is typed into the field, then the dropdown list displays the Audi, Austin, Checker, and Mercedes-Benz makes alphabetically, and the Models that match the information typed into the field (a4) will be listed alphabetically below their respective makes (as shown below).



If the text typed in matches a make only, then all Models below that make will be displayed. For example, if 'maz' is typed into the field, then the dropdown list will display the Mazda make with all its available Models listed below.

Make/Model	
maz	
Mazda	
└ 1200	
└ 1500	
└ 1800	
└ 2	
└ 3	
└ 3 Sport	
└ 323	
└ 5	
└ 6	
└ 616	
└ 618	
└ 626	
└ 808	
└ 929	
└ B1600	
└ B1800	
└ B2000	
└ B2200	
└ B2300	
└ B2500	
└ B2600	
└ B3000	

If the text typed in matches a model only, then the make for the matching model is displayed with only the model that matches the search string. For example, if 'fox' is typed into the field, then the dropdown list will display the Audi and Volkswagen makes with the 'Fox' Models listed below.

Make/Model
fox 
Audi <ul style="list-style-type: none">└ Fox
Volkswagen <ul style="list-style-type: none">└ Fox

If the text typed in matches the make AND Model, then the matching makes and/or Models will display within the dropdown for selection. For example, if 'opel' is typed into the field, then the dropdown list will display the Buick make with the Opel model beneath, and then the Opel make will display with all of its available Models below.

Make/Model
opel 
Buick <ul style="list-style-type: none">└ Opel
Opel <ul style="list-style-type: none">└ 1900└ Caravan└ Deluxe└ Kadett└ Kapitan└ Manta└ Olympia└ Olympia Rekord└ Opel└ Rallye

To search for a make within a specific Model, two or more characters can be typed into the field to narrow down the Make, then using the keyboard space bar allows for the following text to conduct a 'contains' search for Models. For example, to display all the Audi models containing Quattro, then the following can be entered into the Make/Model field: 'aud [space bar] qua.'

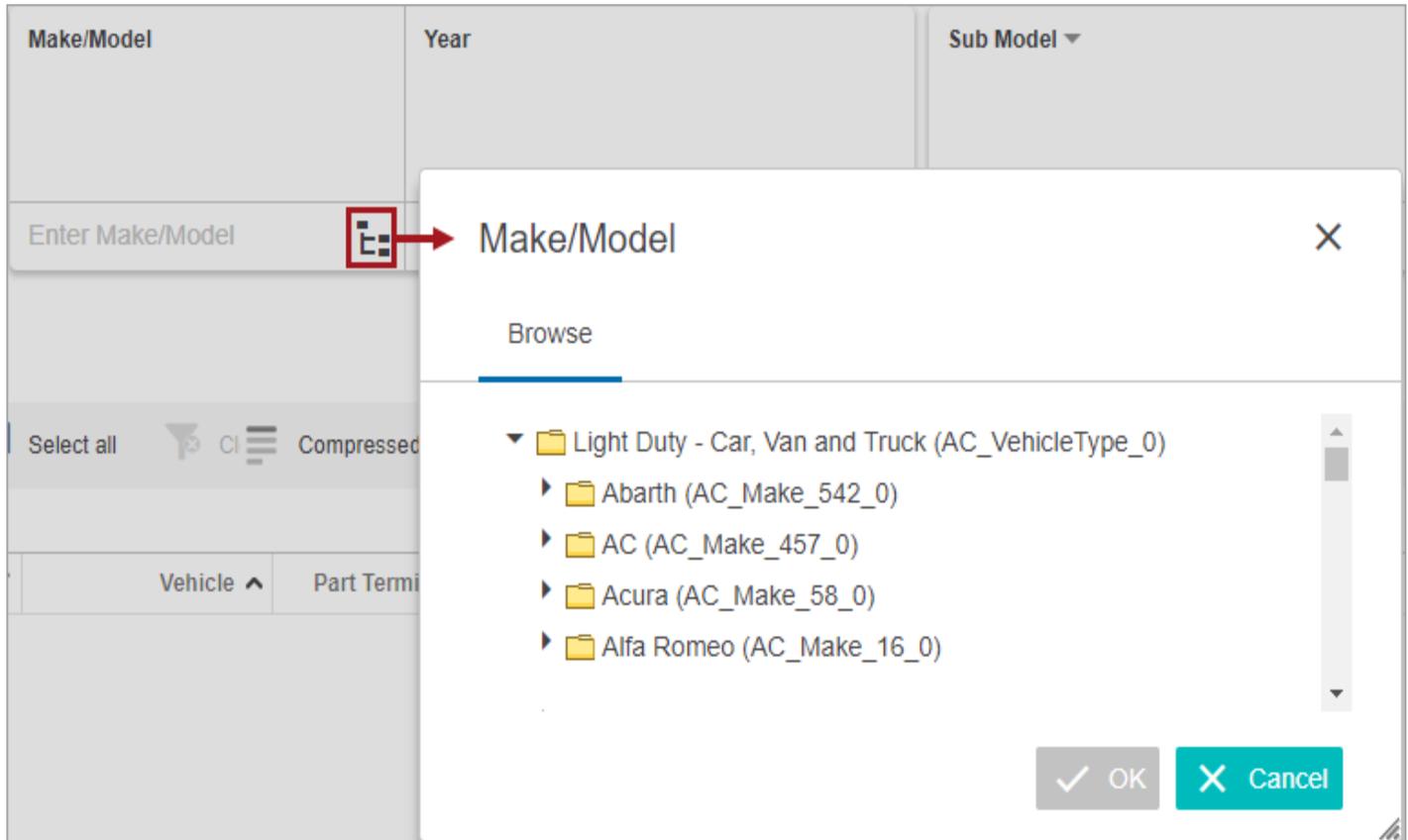
Make/Model

Aud qua 

Audi

- ┆ 100 Quattro
- ┆ 200 Quattro
- ┆ 4000 Quattro
- ┆ 5000 Quattro
- ┆ 80 Quattro
- ┆ 90 Quattro
- ┆ A3 Quattro
- ┆ A4 Quattro
- ┆ A5 Quattro
- ┆ A6 Quattro
- ┆ A7 Quattro
- ┆ A8 Quattro
- ┆ Allroad Quattro
- ┆ Coupe Quattro
- ┆ Q2 Quattro
- ┆ Q3 Quattro
- ┆ Quattro
- ┆ TT Quattro
- ┆ V8 Quattro

Additionally, users can browse for the Make/Model criteria by clicking the browse icon located to the right of the Make/Model typeahead field. In the screenshot below, the Make/Model Browse dialog displays after the node picker browse icon is selected.



Important: Best practice is to provide at least one value for the Make/Model search box, otherwise longer than expected wait times can occur. When the use of broad search criteria is required, best practice is to use the Application Coverage Report by clicking the Report button within the Application Manager. For more information about running a search without the Make/Model search box populated, see the **Minimum Search Criteria** section of the **Using Search Boxes** topic.

Using Year Search Box

The Year search box allows users to add one or more year criteria to their search. This section addresses functionality that is specific to the Year search box. For more information on the general functionality found within the search boxes, see the **Using Search Boxes** topic within this guide.

When the cursor is placed within the typeahead field for the Year search box, and all other search boxes are blank, the dropdown will not display until at least one number is typed into the typeahead field. However, when one or more criteria are added to the Make/Model search box, and then the cursor is placed within the Year field, a dropdown list will display with only those years that pertain to the criteria within the other synchronized search boxes. For example, when the Make/Model search box is populated with the '4Runner' criterion, and the cursor is placed within the typeahead field of the Year search box, then a list of years from 1984-2018 displays. However, when the Sub Model search box is populated with the 'TRD Pro' criterion, and then the cursor is placed within the typeahead field of the Year search box, then a list of years from 2015-2018 displays (as shown below).

Make/Model Toyota 4Runner ×	Year	Sub Model ▾ TRD Pro ×
Enter Make/Model	Enter Year	Enter Sub Model
	2015 2016 2017 2018	

Note: The Make/Model search box must be populated with at least one criterion for the dropdown options for the Year and Options search boxes to automatically display when the cursor is placed within the search box field.

For more information about synchronized search boxes, see the **Search Box Synchronization** topic within the **Using Intelligent Search Interface** section of this guide.

Using Options Search Boxes

Attributes or references within STEP can be displayed as options within an Application Manager. The attribute and/or reference values can then be selected as search criteria.

The Options search boxes allow users to choose pre-configured attribute and/or reference type options, and the valid criteria, to their search. This section addresses functionality that is specific to the Options search boxes. For more information on the general functionality found within the search boxes, see the **Using Search Boxes** topic within this guide.

The Options search boxes can be configured to allow users to select up to two attribute and/or reference type options. The attribute and/or reference type option dropdown is located in the top left corner of the Options search box. Clicking the down arrow to the right of the Options search box label, or clicking the label itself will display the available options within the dropdown. Using the Options search box dropdown, users can choose criteria related to different search options (i.e., Sub Model, Region, Engine, Fuel Type). In the example below, two Options search boxes have been configured. The Options search box on the left displays the option 'Sub Model' by default, and the one on the right displays the option 'Region' by default. Clicking the option label displays a dropdown of available options for each Options search box (as shown below).

Make/Model	Year	Sub Model ▾ Sub Model Region Engine Fuel Type	Region ▾ Transmission Speeds Region Drive Type	Part Type
Enter Make/Model	Enter Year	Enter Sub Model	Enter Region	Enter Part Ty

A Search Panel can have up to two Options search boxes. When two Options search box types are configured, an AND / OR toggle button displays between the two boxes. This toggle button allows users to determine if the search criteria within the two Options search box types should be inclusive or exclusive of each other. The AND / OR toggle button only applies to the criteria within the two Options search box types. It does not affect the inclusion of the criteria within the other search box types (i.e., Make/Model, Year, Part Type).

When the toggle button displays 'AND,' then the search results only display a match for the criteria provided within Options search box 1 **and** Options search box 2. However, when the toggle button displays 'OR,' then the search results will display a match for the criteria provided within Options search box 1 **or** Options search box 2.

The Options search box typeahead field results are dependent upon selections made in the Make/Model and Year search boxes. In the example below, the Toyota 4Runner is added to the Make/Model search box, and the 2015 year is added to the Year search box, allowing the Sub Model search box dropdown to only display options related to the 2015 4Runner. When the Sub Model option criteria is selected, then the dropdown displays only those sub models available for the 2015 4Runner.

Make/Model Toyota 4Runner X	Year 2015 X	Sub Model ▾
Enter Make/Model	Enter Year	Enter Sub Model
		Limited SR5 TRD Pro Trail

Adding additional makes or models to the Make/Model search box will expand the Options search box dropdown results. In the example below, the Toyota and Jeep makes have been added, and result in all Toyota, Jeep, and 4Runner sub models displaying within the Sub Model Options search box dropdown. (Though the long list of available sub models cannot be seen in the screenshot, the display of a mixture of available sub models is apparent with the inclusion of the Jeep Rubicon, Toyota Hybrid SE, and Toyota 4Runner TRD Pro.)

Make/Model Toyota 4Runner X Toyota X Jeep X	Year 2015 X	Sub Model ▾
Enter Make/Model	Enter Year	Enter Sub Model
		L One Hybrid SE Technology TRD Pro Unlimited Rubicon VX XLE Touring

By changing the Option selection from Sub Model to Engine, the results dropdown only displays the one engine available for the 2015 4Runner.

Make/Model Toyota 4Runner X	Year 2015 X	Engine ▼
Enter Make/Model	Enter Year	Enter Engine
		4.0L L6, 3956CC, 241CID

Additionally, when two Options search boxes are enabled, allowing for the 'AND / OR' toggle button to be set to 'AND,' the dropdown for the options cards will also be dependent upon selections made between the two Options search boxes. In the example below, the Region criterion has been set to Canada, so the Sub Model search box displays only those sub model options available for the 2015 4Runner in Canada. Notice from the previous example, the TRD Pro was available for selection, until the Canada region criterion was added, because the 2015 TRD Pro sub model is not available in Canada.

Make/Model Toyota 4Runner X	Year 2015 X	Sub Model ▼	Region Canada (CAN) X
Enter Make/Model	Enter Year	Enter Sub Model	Enter Region
		Limited SR5 Trail	

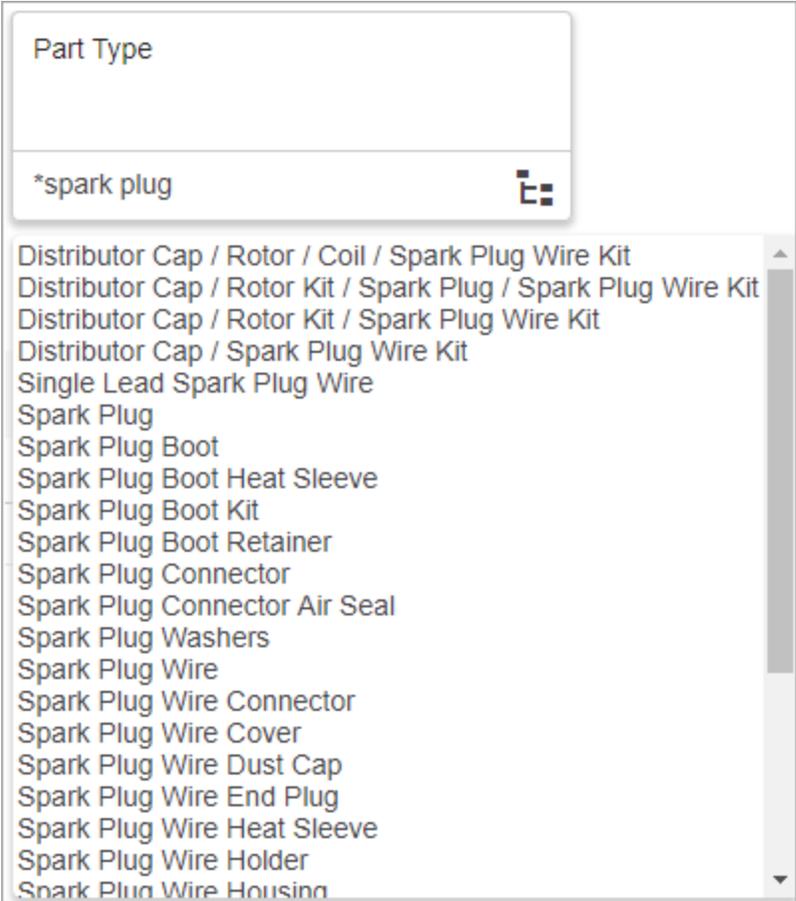
Note: The Options search boxes will not automatically display the suggested dropdown options until at least one value is added to the Make/Model search box.

Optionally, the Report button can be used to export these results to an Excel file. For more information, see the **Using Application Coverage Report** section of this guide.

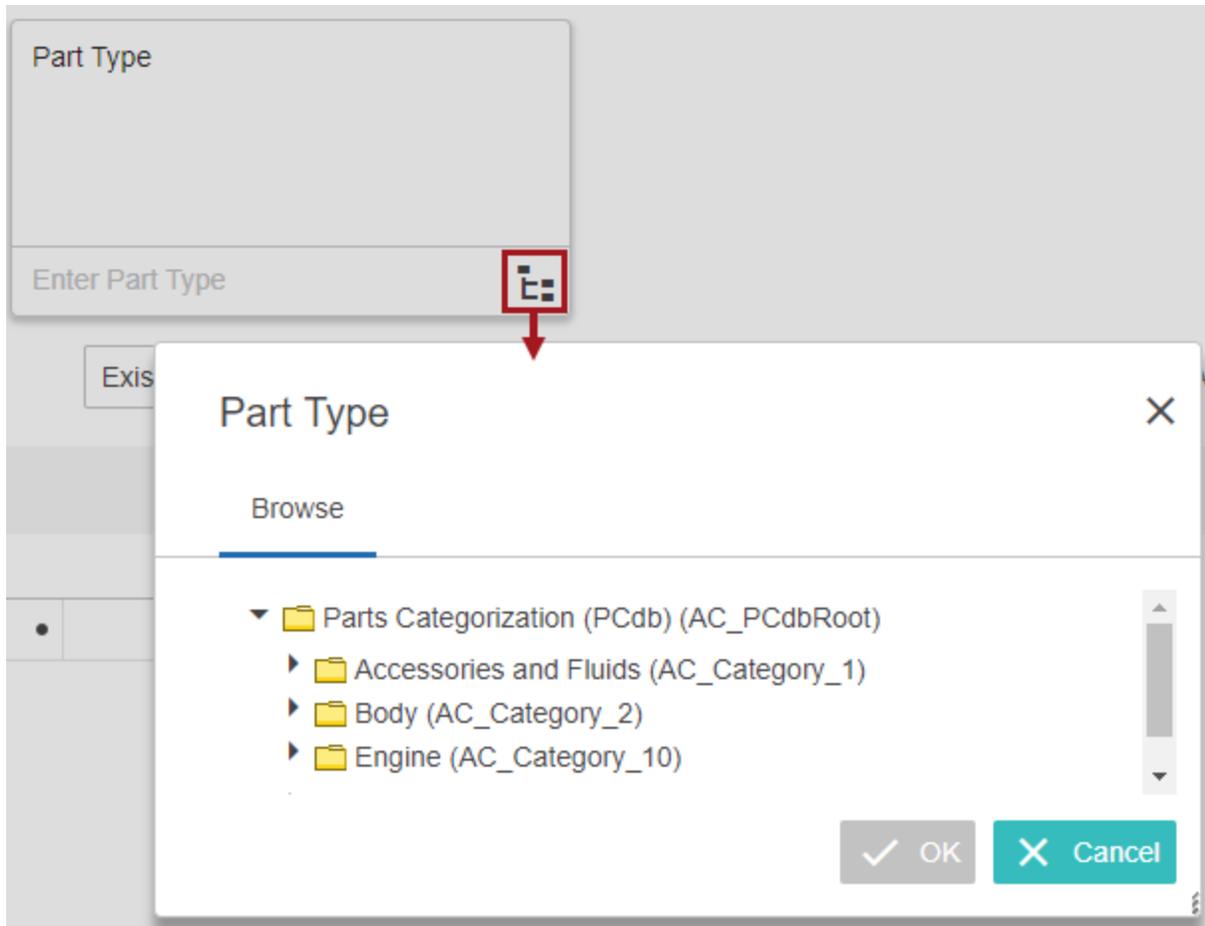
Using Part Type Search Box

The Part Type Search Box allows users to add one or more part type criteria to their search. This section addresses functionality that is specific to the Part type search box. For more information on the general functionality found within the search boxes, see the **Using Search Boxes** topic.

Within the Part Type Search Box, the typeahead field can be used to search for part type criteria, and the use of an asterisk will allow for a wildcard search. Only part type Names are searched, not IDs. The dropdown list displays criteria options alphabetically. For example, if '*spark plug' is typed into the field, then the dropdown list displays the any part type name containing 'spark plug' alphabetically (as shown below).



Additionally, users can browse for the Part Type criteria by clicking the node picker browse icon located to the right of the Make/Model typeahead field. In the screenshot below, the Part Type Browse dialog displays after the node picker browse icon is selected.



Important: When searching on Part Type, the part type link must be established on an application or part in order for the applications to be displayed in the search results table. If the part type link is on the part and the application does not have a link, then it will inherit from the part. If the application has a link, then it will override the link that's on the part. For example, if a user is searching for the Part Type Spark Plugs, and an application is not linked to Spark Plugs (in AutoCare, the Product to Classification Link Type ID = AC_ProductToPartTerminology), then that application will not display in the search results table.

Saved Search Tool

Users can quickly populate previously saved search criteria by selecting the name of a saved search from the saved search dropdown. Saved searches can consist of many different combinations of intelligent search interface selections, including criteria within one or more search boxes, existing and/or missing application coverage selection, and/or brand selection.

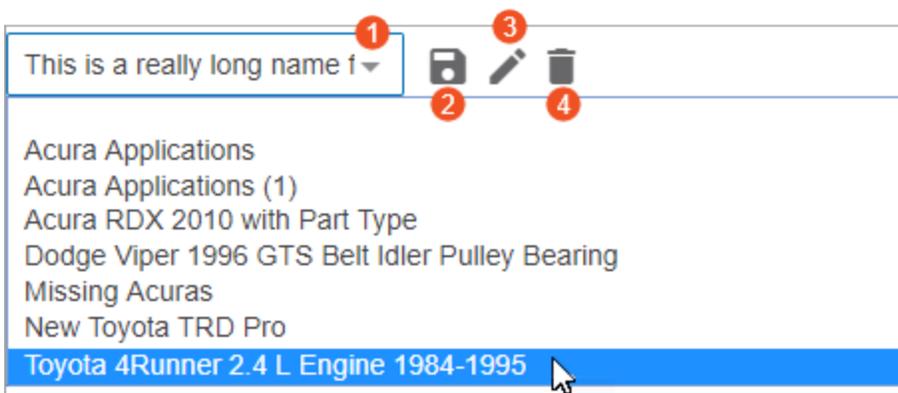
Once one or more search criteria selections are made, users can save the selections with a custom name. Using previously saved searches can be helpful when the same search criteria is needed repeatedly, or when using a basic set of saved search criteria aids users in more quickly building complex searches.

Saved searches are restricted by User login, Web UI, Vehicle Type Search Panel, and Screen ID. In other words, users will only see the saved searches created with their login for the specific Web UI being used. Additionally, this allows users to create a succinct list of saved searches that is relative to each Vehicle Type Search Panel.

Note: The saved search tool does not save search results, but rather the search box criteria, existing and/or missing application dropdown selection, and/or brand selection. Once a saved search is selected from the dropdown, the Search and/or Report buttons can be used to view the search results.

The saved search tool is located at the bottom left of the intelligent search interface (below the first search box), and consists of the following:

1. **Saved search dropdown:** Allows users to select the name of a previously saved search from an alphabetized list of saved search names.
2. **Save icon:** Allows users to save the intelligent search interface selections (i.e., criteria within search boxes, existing or missing application coverage selection, brand selection) by either creating a new saved search or overwriting an existing saved search.
3. **Rename icon:** Allows users to edit the name of the selected saved search.
4. **Delete icon:** Allows users to delete the selected saved search.



Saving a Search

The Save icon is disabled until at least one criterion is added, removed, or edited. The steps involved with saving search criteria are different when a new saved search is being created, versus an existing search being overwritten. This section will first address the steps involved with creating a new saved search, and then overwriting an existing saved search.

Creating a Saved Search

Once one or more criteria have been added to a search box, and the Save icon is enabled, the following steps can be used to create a new saved search.

1. Click the Save icon, and the 'Save search' dialog will display as shown below.

Note: As long as a saved search has not been selected (thus the saved search dropdown is blank), then the Save search dialog will display as shown above.

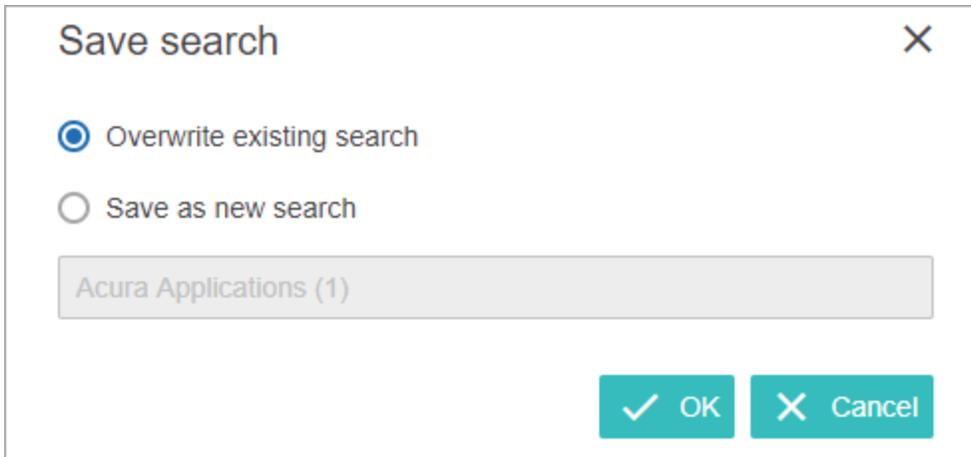
2. Within the Name parameter, type a name that best describes the saved search. The name can be created using any alphanumeric combination, but should be easy to identify for future use in the saved search dropdown.
3. Once at least one character is entered into the Name parameter, the OK button is enabled. Click the OK button to finish creating the saved search. The Save search dialog will close and the newly created saved search will display in the saved search dropdown.

Note: The Cancel button can be clicked at any time. Doing so will close the dialog without saving any changes.

Overwriting an Existing Search

When a saved search is selected in the dropdown, one or more criteria have been added or removed from a search box, and the Save icon is enabled, the following steps can be used to overwrite a saved search.

1. Click the Save icon, and the 'Save search' dialog will display as shown below.



The 'Save search' dialog box features a title bar with a close button (X) in the top right corner. Below the title, there are two radio button options: 'Overwrite existing search' (which is selected) and 'Save as new search'. A text input field below these options contains the text 'Acura Applications (1)'. At the bottom right, there are two buttons: a teal 'OK' button with a checkmark icon and a teal 'Cancel' button with an X icon.

Note: As long as a saved search has been selected (thus the saved search dropdown is populated), then the Save search dialog will display as shown above.

Overwrite existing search: By default, the 'Overwrite existing search' option is selected. Choosing this option will overwrite the currently selected saved search with the newly edited criteria.

Save as new search: Selecting the 'Save as new search' option will enable the Name parameter. By default, the Name parameter is populated with the currently selected saved search name appended with '(1)'. Populate the Name parameter in a way that is easy to identify for future use in the saved search dropdown.

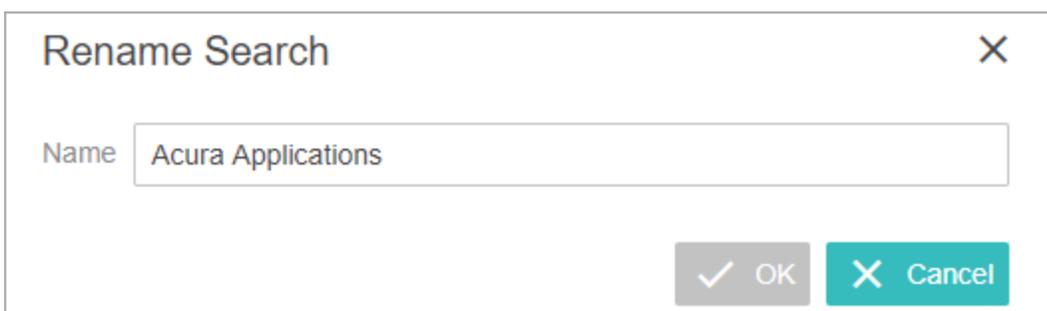
2. Once the desired option is selected and/or populated, click the OK button. The Save search dialog will close and the newly created saved search will display in the saved search dropdown.

Note: The Cancel button can be clicked at any time. Doing so will close the dialog without saving any changes.

Renaming a Saved Search

Once a previously saved search name is selected from the dropdown and the Rename icon is enabled, the following steps can be used to edit the name of a saved search.

1. Click the Rename icon, and the Rename Search dialog will display the Name parameter populated with the current name of the saved search. In the example below, the Acura Applications Saved search was used.



The 'Rename Search' dialog box has a title bar with a close button (X) in the top right corner. Below the title, there is a text input field labeled 'Name' containing the text 'Acura Applications'. At the bottom right, there are two buttons: a greyed-out 'OK' button with a checkmark icon and a teal 'Cancel' button with an X icon.

2. Populate the Name parameter in a way that is easy to identify for future use in the saved search dropdown.
3. Once the desired Name is populated, click the OK button to save the change.

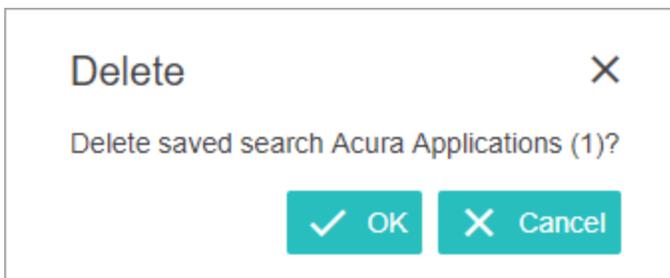
Note: The Cancel button can be clicked at any time. Doing so will close the dialog without saving any changes.

Deleting a Saved Search

Once a previously saved search name is selected from the dropdown, and the Delete icon is enabled, the following steps can be used to delete the saved search.

Important: Once the saved search is deleted, it will no longer display for selection in the dropdown, and cannot be recovered.

1. Click the Delete icon, and the Delete dialog will display confirming the Name of the saved search to be deleted (as shown below).



2. Click the OK button, the dialog will close, and the saved search will no longer display in the dropdown list.

Note: The Cancel button can be clicked at any time. Doing so will close the dialog without saving any changes.

Missing Application Coverage Functionality

Application coverage is determined by both the Condition and Part Type values. The existing and missing applications dropdown allows users to determine if their search should or should not contain existing and/or missing applications. The following three options are available for the existing and missing applications dropdown:

- Existing Applications Only
- Existing and Missing Applications
- Missing Applications Only

The screenshot shows a search interface with two input fields: 'Make/Model' and 'Year'. Below these fields are two text boxes labeled 'Enter Make/Model' and 'Enter Year'. To the right of the 'Enter Make/Model' box is a small icon of a grid. Below the input fields is a dropdown menu with three options: 'Existing Applications Only', 'Existing and Missing Applications', and 'Missing Applications Only'. The 'Missing Applications Only' option is highlighted in blue, and a mouse cursor is pointing at it. To the left of the dropdown menu are three icons: a folder, a pencil, and a trash can.

To search or report on missing applications, users can select either the 'Missing Applications Only' or 'Existing and Missing Applications' options from the dropdown located below the search boxes, and to the left of the Report button.

Important: Though it is not required, it is strongly recommended to include criteria for at least one Vehicle and one Part Type before conducting a missing application search. Failure to do so may result in very long search times, timeout, or inconsistent results.

When users select the 'Missing Applications Only' option, and the Search or Report button is clicked, the following occurs:

1. STEP searches for and displays existing combinations of the vehicles and part types defined in the search that do not have applications.
2. If the Part Type search box is left blank, then the results table will display a new row for each combination of the vehicle(s) valid for the search criteria and the part types valid for that vehicle (and/or any additional search criteria).
3. If applications exist for the vehicles and part types defined in the search, then STEP checks if the applications cover all the different configurations of the vehicle. This is found by using attributes that are populated and have a validation path. The additional configurations of the vehicle(s) are displayed as a new row in the results table.

For more information about validation paths, see the **Automotive Validation Path Functionality** topic within this guide.

Note: By default, search results are limited to 5,000 rows maximum. If a search needs to return more than the maximum results allowed, then an Application Coverage Report can be run to view the full results. For more information, see the **Application Coverage Report** section.

When the 'Existing and Missing Applications' option is selected, in addition to the actions described above, STEP also searches for and displays existing combinations of the vehicles and part types defined in the search.

In other words, when a search for missing applications is run, by selecting either the 'Missing Applications Only' or 'Existing and Missing Applications' option, the populated values on the existing applications are evaluated to ensure that every option / criteria that is populated with a value (and included in the attribute group identified in the 'Application Condition Header - Group') is considered for all valid configurations of the selected vehicle(s). Each combination that is considered valid, and does not have an application, is displayed as a single row within both the Application Manager results table, and the Application Coverage Report.

Note: A blank / null value for any option / criteria equates to that option being valid for ALL values of that option.

For example, consider a vehicle that has two Sub Models, each of which is available with Gas or Diesel fuel types, and each fuel type has a valid configuration with each Sub Model; totaling four valid configurations of this vehicle. Further, assume that only Sub Model and Fuel Type are populated on the records we are working with (e.g., no other options have data populated in any of the existing records for the selected vehicle and part type), and that Sub Model and Fuel Type are both included in the attribute group identified in the application condition header. Some of the scenarios based on data population and the expected missing coverage outcome are as follows:

Existing Record	Missing Application Record
One record where Sub Model and Fuel Type are null	None, as the existing record is understood to work for all Sub Model and Fuel Type options
One record where Sub Model is populated with Sub Model 1 and Fuel Type is null	One record: Sub Model 2 + null Fuel Type
One record where Fuel Type is populated with Gas and Sub Model is null	One record: null Sub Model + Diesel
One record where Sub Model is populated with Sub Model 1 and Fuel Type is Gas	Three records: Sub Model 2 + Diesel, Sub Model 1 + Diesel, Sub Model 2 + Gas
Two records: Sub Model 1 + null Fuel Type, Sub Model 2 + Gas	One record: Sub Model 2 + Diesel
No records	One record with both Sub Model and Fuel Type as null

Improving Part Type Accuracy

As previously mentioned, the application data model (Automotive - Application Model) includes a relationship between conditions on applications and different configurations of vehicles. This is possible due to the automotive validation path functionality. However, sometimes the conditions on specific part types need to be considered to ensure that missing applications display more accurately.

For example, when searching for missing applications for spark plugs on a 2013 Audi A3, the result table will list both Gas and Diesel engines, since Diesel engines do not use spark plugs, this is inaccurate. However, when the validation path functionality is implemented in conjunction with the 'Missing Application Conditions' attribute and the 'Check path for missing application' business condition, the search results will display more accurately because the application coverage will consider both the Condition and Part Type values.

To implement this improvement, the automotive validation path functionality and Check Path for Missing Application Business Condition must be implemented. For more information, see the **Automotive Validation Path Functionality** and the **Business Condition: Check Path for Missing Application** topics within this guide.

Application Coverage Report

The Application Coverage Report can display missing and/or existing application data in an Excel spreadsheet (XLSX file type). The results displayed within an Application Coverage Report are based on the search criteria selected within an Application Manager screen. Since the Application Coverage Report is built to work with the Application Manager's intelligent search interface, it is extremely configurable, and provides users on-demand flexibility to choose the report criteria that best meets their needs.

Before an Application Coverage Report can be run, the desired search criteria must be entered into the Application Manager Search Panel, either manually or by selecting from the list of saved searches. Once criteria have been selected, clicking the 'Report' button allows users to export the Application Coverage Report.

Within an Application Coverage Report, each application and/or missing application will display as its own row. Missing application rows are prepopulated with the condition(s) that are currently missing coverage. Because the missing coverage is visible within the Application Manager results table, it becomes easy for the user to apply the part by entering the part number necessary for the vehicle and its conditions.

Prerequisites

Before attempting to understand how the Application Coverage Report is used, it is recommended to first become familiar with the **Application Manager Overview** and **Using Application Manager Intelligent Search Interface** topics within this guide.

Application Coverage Report Results

The Web UI designer can be used to easily add and/or remove the display of columns within the Application Manager results table. Within an Application Coverage Report, when the following column headings are configured within the Application Manager results table, they will display within the Application Coverage Report:

- Application Assembly Value
- Application Competitor or OE Part Numbers
- Application Condition Header - Group
- Application Condition Header - Individual
- Application Part Type Value
- Application Part Type Title Header
- Application Part Value
- Application Set Assembly
- Application Set Part

Along with the columns configured to display within the results table, several ID columns (that may not display within the results table) will display to the right of their respective Name columns within the report. Below is an example of the attribute and/or classification references that will display an ID column:

- NAPA_ApplicationToEngine
- AC_ACESApplicationToEngineBase
- AC_ACESApplicationToTransmissionBase

- LOVs using an ID (i.e., NAPA_BodyStyleLOV, NAPA_EngineDesignatorLOV)
- Application Part Type Title Header
- Application Set Assembly
- Application Set Part

Additionally, attributes that are both valid for the search criteria provided, and configured within the 'Application Condition Header - Group' component, will display within the Application Coverage Report. For ease of use, each valid attribute name is listed within a column header of the report. For more information on the Application Condition Header - Group' component, see the **Application Condition Headers** topic within this guide.

Important: Only options that contain a value will be exported. When an option is exported, its name will display as a column heading. Even when the following options are added to the Node List Properties Headers, they will not be exported because they are not handled: Application comments (AC Comment), ACES Application Qualifiers, Comments, NAPA Notes, and Application Asset References.

Running an Application Coverage Report

Users can choose to export existing applications and/or missing applications by selecting one of the following options in the dropdown to the left of the Report button:

- Existing Applications Only
- Existing and Missing Applications
- Missing Applications Only

When the 'Existing and Missing Applications' or 'Missing Applications Only' options are selected, STEP performs specific actions known as missing application coverage functionality. For more information about missing applications, see the **Missing Application Coverage Functionality** topic within this guide.

After at least one criterion has been added to a search box, the Report button will enable. Once enabled, the Report button can be clicked before or after clicking the Search button. In other words, users are not required to use the Search button prior to the Report button. In fact, for searches that are time consuming or vague, it is recommended to use the Report button instead of the Search.

Once the Report button is clicked, a background process is initiated, and a notification displays informing users of the linked background process ID, and that the process has started. In the example below, the background process notification displays with the ID link displayed as 'BGP_101869.'



Within the notification, clicking the 'X' will close the dialog, whereas clicking the ID link will close the dialog and display the Background Process Details (as shown below).

Background Process Details

ID BGP_101869

Started By USERM

Description Run application coverage report.

Template ID AppCoverageReportSrvc

Status ✓ Succeeded
[ApplicationCoverageReport-2018-05-08.xlsx](#)

Started 5/8/18 1:13:15 PM

Finished 5/8/18 1:13:16 PM

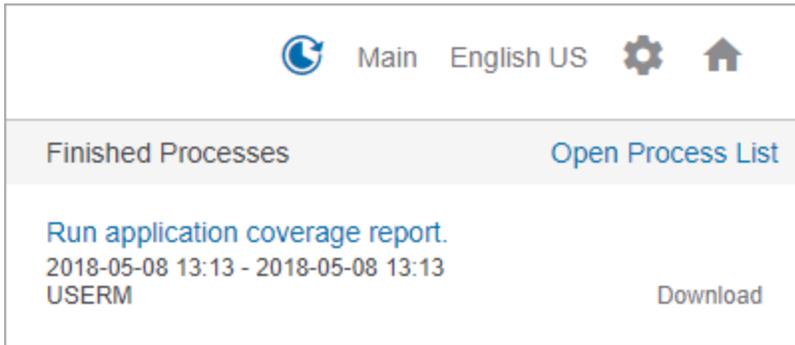
Elapsed 2 s

Select all Export

ID	Type	Text
<input type="checkbox"/> 10	Info	Application Coverage Report Service - start. (Tue May 08 13:13:15 EDT 2018)
<input type="checkbox"/> 20	Info	Created Application Search Specification. (Tue May 08 13:13:15 EDT 2018)
<input type="checkbox"/> 40	Info	Finding applications. (Tue May 08 13:13:15 EDT 2018)
<input type="checkbox"/> 50	Info	Found 2 applications. (Tue May 08 13:13:16 EDT 2018)
<input type="checkbox"/> 70	Info	Generating Application Coverage Report. (Tue May 08 13:13:16 EDT 2018)
<input type="checkbox"/> 80	Info	Created workbook. (Tue May 08 13:13:16 EDT 2018)
<input type="checkbox"/> 120	Info	Populated data to workbook. (Tue May 08 13:13:16 EDT 2018)
<input type="checkbox"/> 130	Info	Start writing data to excel file (Tue May 08 13:13:16 EDT 2018)
		Excel file written (Tue May 08

Once the Background Process Details screen Status parameter displays as 'Succeeded,' the download link for the Application Coverage Report will display. In the example above, the link displays as 'ApplicationCoverageReport-2018-05-08.xlsx.'

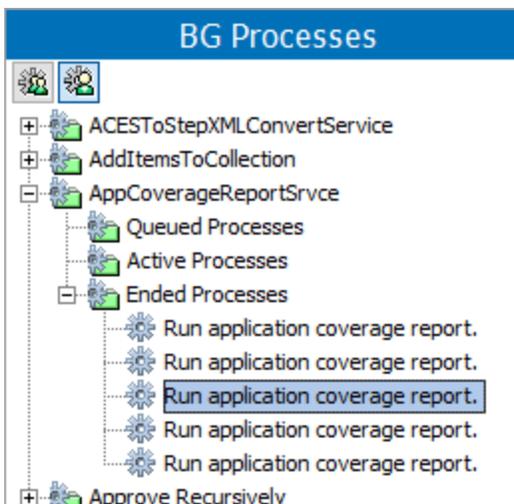
If the Background Process Notification Component is enabled, then users can easily track the progress of the report in the right side panel. In the example below, the 'Run application coverage report' link displays within the 'Finished Processes' of the side panel.



From within the notification of the Background Process side panel, users can click the background process link (Run application coverage report), and the Background Process Details screen will display. Users can also click the 'Download' link to download the .XLSX Application Coverage Report. For more information on the Background Process Notification Component, see the **Background Process Notification Component** topic within **STEP Online Help**.

Additionally, the report can be downloaded from the workbench. To download the report from the workbench, go to the BG Processes tab > AppCoverageReprtSrvce > Ended Processes. Locate the desired process and click the save icon in the lower right corner of the workbench.

In the example below, the third of six background processes for the Application Coverage reports is selected.



Adding the Application Coverage Report to a Background Processes Screen

Optionally, the progress of a download for the Application Coverage Report can be configured to display within a Background Processes Screen. When configured, users can navigate to a Background Processes screen to view the following: TemplateID, ID, Started By, Progress, Start Date (and time), Finish Date (and time), Results download (as shown below).

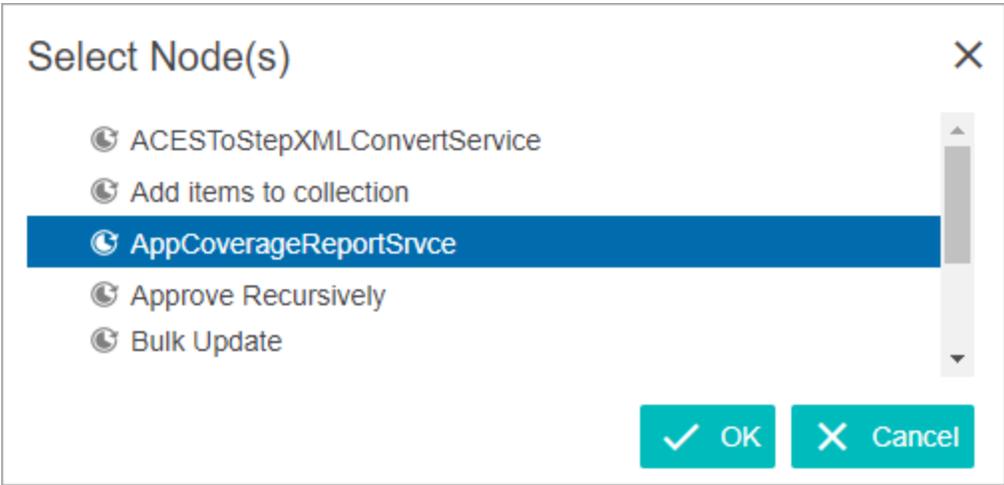
Background Processes List							
TemplateID	ID	Started By	Progress	Start Date	Finish Date	Result	
AppCoverageReportSrvc	BGP_101833	USERM	✓ Succeeded	5/7/18 5:03 PM	5/7/18 5:03 PM		→

From this table, users can optionally click on the BGP ID and the Background Process Details screen will display, or click the Results download to download the report.

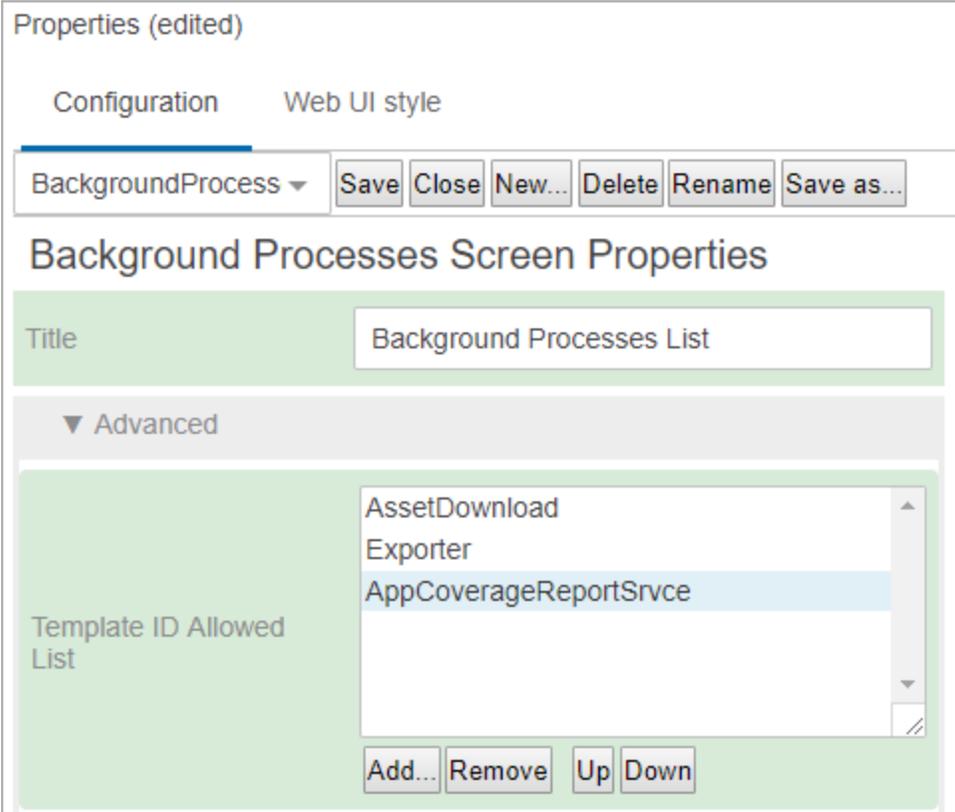
Below are the steps to add the Application Coverage Report to a Background Processes Screen.

1. Within a Web UI, go to a Background Processes Screen, access the Designer, and the Background Processes Screen Properties will display as shown below.

2. Click the **Add** button below the 'Template ID Allowed List' parameter, and the Select Nodes list will display.
3. Select the **AppCoverageReportSrvc** node, as shown below.



4. Click the **OK** button, the dialog will close, and the 'Template ID Allowed List' parameter will display with the newly added AppCoverageReportSrvc (as shown below).



5. Click the **Save** and **Close** buttons on the Designer.

For more information about the Background Process List Screen, see the **Background Process List Screen** topic within **STEP Online Help**.

Results Table and Toolbar

The bottom half of the Application Manager screen offers features related to the results table and its toolbar. The top half of the screen is dedicated to the intelligent search interface. For more information about the intelligent search interface, see the **Intelligent Search Interface** topic.

This section provides an overview of the results table and toolbar and addresses the following:

- Results Table Default Columns
- Controlling Display of Conditions in Application Manager
- Creating Applications

Results Table and Toolbar Overview

The results table and toolbar of an Application Manager screen are composed of the following:

The screenshot shows the results table and toolbar of an Application Manager screen. The toolbar at the top contains the following items: Clear all, Clear filter, Compressed view, Delete, Bulk Updates, Export, and Create Collection. The table below has the following columns: Vehicle, Part Terminology, Part Number, ACES Fuel Type, ACES Position, Options, Notes, Qualifiers, and Assets. The table contains four rows of data. The first row is for a 2006 Acura CSX with a Spark Plug. The second row is for a 2008 Acura CSX with an Air Bag Sensor. The third row is for a 2008 Acura CSX with an A/C Drive Belt Idler Pulley Bearing. The fourth row is for a 2009 Acura CSX with an A/C Drive Belt Idler Pulley. The table also includes a 'Number of items : 15' indicator at the bottom left.

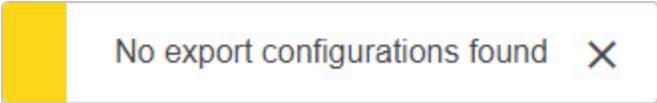
Vehicle	Part Terminology	Part Number	ACES Fuel Type	ACES Position	Options	Notes	Qualifiers	Assets
2006 Acura CSX	Spark Plug	12345678						
2008 Acura CSX	Air Bag Sensor	034-VC30002		Left	ACES Quantity: 1			
2008 Acura CSX	A/C Drive Belt Idler Pulley Bearing	034-VC36004	GAS		ACES Sub Model: Technology			
2009 Acura CSX	A/C Drive Belt Idler Pulley	034-VC30002			ACES Quantity: 1	12946 - with Air Bags 393 - 15 / 20 Press Fit Diameter 6 - #1 & #2 In take Inlets are Oval		

1. Results table toolbar



Contains action buttons relative to the Application Manager results table. Action buttons can be configured using the Web UI Designer. For more information about action buttons, see the **Action Buttons** section of the **Web User Interfaces** guide within **STEP Online Help**.

- **Button labels:** When the 'Include Labels' parameter within the Node List Properties is disabled, the labels for each icon within the toolbar will not display. However, when a user hovers over an icon, help text will display.
- **Clear all / Select all:** The 'Clear all' button displays when one or more rows are selected using the 'row selection boxes.' When no rows are selected, the 'Select all' button will display. Clicking the 'Clear all' button will remove the selections within the 'row selection boxes.' Clicking this button will not clear the actual table results, but rather disables the selection of 'row selection boxes.' Clicking the 'Select all' button enables the 'row selection boxes' for each row within the results table.
- **Clear filter:** The 'Clear filter' button displays when one or more filters are applied to columns in the Results table. Clicking the 'Clear filter' button will remove any filter selections within the Results table columns but will not clear the actual table results. Within the filter dialog for each column is a 'Reset filter' button that can be used to reset the filter setting for each column. Additionally, the 'Clear All' link above the Results table (not to be confused with the 'Clear all' action button within the Results table toolbar) can be used to clear all filters and search criteria. For more information, see the **Clear All link** section of the **Intelligent Search Interface** topic.
- **Compressed / Normal view:** By default, the table results display using the 'Normal view.' Clicking the 'Compressed view' button will compress the values displayed in the Options column by removing the attribute labels and displaying only the attribute values. When the table displays as compressed, the 'Normal view' button will display within the toolbar instead of the 'Compressed view' button.
- **Delete:** For the Delete button to display, one or more rows must be selected by enabling 'row selection boxes.' No warning nor confirmation dialog will display, and the application (and its data) will be permanently deleted.
- **Bulk Updates:** For the Bulk Updates button to display, one or more rows must be selected by enabling the 'row selection boxes.' The Bulk Updates action button is not configured automatically by Easy Setup Actions, and must be configured for use with Automotive Business Rule Plugins. For more information, see the **Automotive Business Rule Plugins** section within the **STEP Automotive Reference Guide**.
- **Export:** For the Export button to display, one or more rows must be selected by enabling 'row selection boxes.' The Export action button is not configured automatically by Easy Setup Actions. To properly function, a Web UI Designer User must add an export configuration to the 'Narrowed Export Configurations' parameter of the Export action button. If the Export button has not yet been configured, and the button is selected, a 'No export configurations found' warning message will display (as shown below).



- **Create Collection:** For the Create Collection button to display, one or more rows must be selected by enabling 'row selection boxes.' Clicking the Create Collection button displays a 'Create New Collection' dialog where users can provide a Name of the new collection, and select a Collection Group to store the collection in. For more information, see the **Collections** topic within the **Getting Started Section** of the **STEP Online Help**.

2. Flip table icon



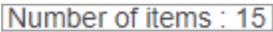
Allows users to change or flip the orientation of the table.

3. Row selection boxes



Allows for selection of one or more rows within the table. Selecting at least one row can change the action buttons that display within the toolbar.

4. Number of items



List the total number of rows available for display within the results table.

Note: By default, search results are limited to 5,000 rows maximum. If a search needs to return more than the maximum results allowed, then an Application Coverage Report can be run to view the full results. For more information, see the **Application Coverage Report** section.

5. Column Headers

Vehicle ●	Part Terminology ●	Part Number ●	ACES Fuel Type ●	ACES Position ●	Options ●	Notes ●	Qualifiers ●	Assets ●
-----------	--------------------	---------------	------------------	-----------------	-----------	---------	--------------	----------

Displays the column headings as configured within the Headers parameter for the Node List Properties Child Component of the Application Manager.

- **Sorting and filtering columns:** Each column displays a black dot to the right of the Heading. Clicking the black dot will display the sort and filter options for the column. By default, search results are sorted by the Vehicle column. When a sort selection is made an up or down arrow displays in place of the black dot, indicating the search is respectively ascending or descending. When a filter selection is made, a black filter displays in place of the black dot. This makes it easy for users to identify any sorting and/or filtering applied to the results table. When one or more filters are applied, the 'Clear filter' button within the toolbar can be used to clear all the filters. Otherwise, any sort and filter selections made will remain (even after conducting a new search) until the Application Manager page is exited.

By default, the following components are configured within the Headers parameter for the Node List Properties Child Component of the Application Manager:

- Application Set Assembly (labeled as 'Vehicle')
- Application Part Type Title Header (labeled as 'Part Terminology')
- Application Set Part (labeled as 'Part Number')
- Application Condition Header - Individual (labeled as 'Additional Options,' but displays the relative attribute name.) In the example above, ACES Fuel Type and ACES Position are displayed because the attributes are linked to a part type with the display condition set to 'true.' For more information on how to display linked attributes, see the **Business Action : Set condition Links on Part Types** topic within the **Automotive Business Rule Plugins** section.
- Application Condition Header - Group (labeled as 'Options')
- Application Comment (labeled as 'Notes')
- Application Asset Reference (labeled as 'Assets')

For information on adding columns to the results table, see the **Adding Additional Headers to Application Screens** topic within the **STEP Automotive Quick Start Guide**.

Note: When the Easy Setup actions for the AutoCare solution are completed, the 'ACES Application Qualifiers' component is automatically configured (labeled as 'Qualifiers') in addition to the components listed above.

6. Edited items panel



Contains an expand / collapse arrow, Save , and Reset buttons. When the panel is expanded and changes are made to the results table, the changes are displayed as a list in the panel. In the example above, it is easy to see that the 2008 Acura application has been edited. By default, the 'Use Immediate Save' parameter within the Node List Properties is disabled. When enabled, the Save button will not display, and the list of edited items will briefly display.

7. Edit icons



Clicking on any one of the Edit icons within the results table will display a Value editor dialog where the value ID and/or Name are displayed. From a Value editor dialog, users can add and/or remove References.

8. Hyperlinks



When text within the results table displays as a hyperlink, users are able to click the text and a screen specific to that text will display. The most common use of this is with the Part Terminology (classifications) and Vehicle columns.

- **Classification Hyperlinks:** For classification hyperlinks to display within a results table, a Node Details component should be used to create a 'Classification Details' screen that is configured to display details about the classification object types. To make sure this screen displays when a classification is selected within the results table, be sure to add the necessary Mappings to the Web UI MAIN screen. For more information, see the **Mappings** topic within the **Main Properties Overview** of the **STEP Online Help**.
- **Part Number Hyperlinks:** For Part Number hyperlinks to display within a results table, the 'Enable Link' parameter must be enabled within the 'Application Set Part' component. By default, this is enabled. When a user clicks a part number hyperlink, an Application Editor screen will display. Values within cells can be edited by double-clicking in a cell. Once a cell is active, a typeahead or Node Picker can be used to select a new value.
- **Vehicle Hyperlinks:** For Vehicle hyperlinks to display within a results table, the 'Enable Link' parameter must be enabled within the 'Application Set Assembly' component. By default, this is enabled. When a user clicks a vehicle hyperlink, an Application Editor screen will display. Values within cells can be edited by double-clicking in a cell. Once a cell is active, a typeahead or Node Picker can be used to select a new value.

9. Results table

Vehicle •	Part Terminology •	Part Number •	Options •	Notes •	Qualifiers •	Assets •
2008 Acura CSX	Air Bag Sensor	034-VC30001	ACES Quantity: 1	✓		✓
2008 Acura CSX	A/C Drive Belt Idler Pulley Bearing	034-VC21499	ACES Sub Model: Technology	✓		✓
2009 Acura CSX	A/C Drive Belt Idler Pulley	034-VC36004	ACES Quantity: 1	✓	12946 - with Air Bags 393 - 15 / 20 Press Fit Diameter 6 - #1 & #2 In take Inlets are Oval	✓

Note: The example above is from an AutoCare Application Manager. However, NAPA and TecDoc Application Managers use the same results table settings, but the AutoCare specific headers are removed. The vehicle names and part numbers shown above display as plain text because the 'Enable Link' parameter for the 'Application Set Assembly' and 'Application Set Part' components are disabled.

A Node List component is used to display the results of selections made within the intelligent search interface. This includes criteria selected within the Vehicle Type Search Panel, and selections made within the Existing and Missing Applications and Hierarchy Restriction dropdowns. For more information on the intelligent search interface, see the **Intelligent Search Interface** topic.

Once the Search button is clicked, valid results display within the results table. However, it is possible to click the Search button and have zero results display. For example, if the 'Existing Applications Only' dropdown option is selected, and the search criteria is limited to vehicles types that do not have any applications, then a 'No Result' dialog will display, and the results table will only display column headings. When results are displayed within the results table, users have the option to create, edit, or delete part application data.

For more information on column headers, and editing data using the different Header components, see the **Results Table Default Columns** topic.

Note: Each column label can be edited as needed by accessing the Application Manager Node List Properties Child Component Headers parameter.

Results Table Default Columns

As shown in the image below, by default, an Application Manager results table uses a Node List component to display:

- 'Vehicle' column as configured with the **Application Set Assembly Component**.
- 'Part Terminology' column as configured with the **Application Part Type Title Header Component**.
- 'Part Number' column as configured with the **Application Set Part Component**.
- 'Options' column as configured with the Application Condition Header - Group Component found within the **Application Condition Header Components** topic.
- 'Notes' column as configured with the **Application Comment Component**.
- 'Qualifiers' column (AutoCare solution only) as configured with the **ACES Application Qualifiers Component**.
- 'Assets' column as configured with the **Application Asset Reference Component**.

Note: Each column label can be edited as needed by accessing the Application Manager Node List Properties Child Component Headers parameter.

Vehicle •	Part Terminology •	Part Number •	Options •	Notes •	Qualifiers •	Assets •
2008 Acura CSX	Air Bag Sensor	034-VC30001	ACES Quantity: 1	🔍		🔍
2008 Acura CSX	A/C Drive Belt Idler Pulley Bearing	034-VC21499	ACES Sub Model: Technology	🔍		🔍
2009 Acura CSX	A/C Drive Belt Idler Pulley	034-VC36004	ACES Quantity: 1	🔍	12946 - with Air Bags 393 - 15 / 20 Press Fit Diameter 6 - #1 & #2 In take Inlets are Oval	🔍

Note: The example above is from an AutoCare Application Manager. However, NAPA and TecDoc Application Managers use the same results table settings, but the AutoCare specific headers are removed.

Application Condition Header Components

The Application Manager results table can be configured to display vehicle option data for applications within columns using the following two header components:

- **Application Condition Header - Individual:** Allows table headers to be expanded to display condition attributes and/or references in individual columns. Condition attributes can be displayed in their own column in the results table and/or Application Coverage Report when one of the following are configured:
 - Condition attribute is linked to the part type of the application, and has metadata `DisplayCondition=true`.
 - Condition attribute is linked to the part type of the application, and has an attribute ID = `ReferencePartTypeLinks` valid on a part type that contains 'true' after the reference ID.
- **Application Condition Header - Group:** This is used to group multiple conditions into a single column and requires that one or more attribute groups be selected for which all attributes and references in that group will be evaluated. Any attributes or references that have values but do *not* have the attribute linked to the part type with a `DisplayCondition=true` are displayed in a single column using this header. Clicking in the cell to edit options will open the Value editor where all populated options are displayed, along with all unpopulated options that are linked to the part type but do not have a true display condition. A search feature is also available to add unlinked options to the Value editor for population.

As described above, whether a vehicle option is displayed in its own column or in a consolidated column, and whether or not it displays by default in the Value editor or must be searched for, is determined by if and how the condition is linked to the part type.

If the condition is modeled using an attribute, the condition link is handled via a simple attribute link to the part type classification.

In the example below:

- **ACES Brake ABS** and **ACES Brake System** are both linked to the part type and have a 'true' Display Condition, allowing them to display within the Value editor, in their own columns and in the order indicated by the Display Sequence within the Application Manager results table.
- **ACES Mfr Label** and **ACES Quantity** both have values but are not linked to the part type, so they are displayed in the consolidated column and in the Value editor.
- **ACES Position** is also linked, but without a true Display Condition so it is displayed in the Value editor by default. Any other conditions can be accessed by typing in the search field.

The screenshot shows the Stibo Systems interface. On the left is a 'Tree' view of assets, with 'Disc Brake Pad Set' selected. On the right is a 'Disc Brake Pad' details page with a 'References' tab active. The 'References' tab displays a table of attributes.

ID	Name	Display Condition	Display Sequence
AC_PAdb_9059	Abutment Clips Included		
AC_ACESBrakeABS	ACES Brake ABS	true	2
AC_ACESBrakeSystem	ACES Brake System	true	1
AC_ACESPosition	ACES Position		
AC_PAdb_4	Friction Material Bonding Type		
AC_PAdb_3	Friction Material Composition		
AC_PAdb_79	Friction Material Thickness In		
AC_PAdb_106	Friction Material Thickness Ou		
AC_PAdb_3390	Grade Type		
AC_PAdb_30	Mounting Hardware Included		
AC_PAdb_55	Pad FMSI Number		
AC_PAdb_34	Pad Shims Included		
AC_PAdb_1217	Pad Wear Sensor Included		

In the screenshot below, the **ACES Brake System** and **ACES Brake ABS** attributes are displayed as individual columns within the results table of an Application Manager. Whereas, the **ACES Mfr Label**, **ACES Position**, and **ACES Quantity** display within the Value editor.

The screenshot displays a table with the following columns: Vehicle, Part Terminology, Part Number, ACES Brake System, ACES Brake ABS, and Options. A row is selected with the following data: 2011 Acura TSX, Disc Brake Pad Set, 034-VC21499. A 'Value editor' dialog box is open, showing the following fields: ACES Mfr Label (Acura), ACES Position (dropdown), and ACES Quantity (1). The dialog box also includes a text input field for 'Type name of new condition and hit Enter to add' and 'OK' and 'Cancel' buttons.

The behavior of the Value editor is the same, whether the condition is modeled using an attribute or a reference. However, on references, the condition link is modeled using the Reference Part Type Links metadata attribute (ID=ReferencePartTypeLinks). The Reference Part Type Links attribute is created by Easy Setup and made valid on part type objects in the Classification Hierarchy for any standards for which setup has been run (e.g., Part Terminology for AutoCare, MPCC for NAPA, and Generic Article for TecDoc). It can then be populated on part types using the same concepts as with an attribute, where both a display condition and display sequence are indicated. For example, in an AutoCare model where Engine Base and Transmission Base are references, if you wanted to make these options available on a particular part type, you would populate the Reference Part Type Links attribute on that part type using the following syntax:

[ReferenceType ID(string)]:[should it be displayed in separate column(boolean - true/false)]:
[IntegerForSortSequence(integer)]

For example:

Disc Brake Pad Set rev.0.4 - Classification								
Classification	Sub Products	References	Referenced By	Images & Documents	Tables	Status	State Log	Tasks
Description								
Name	>	>	Value					
ID			AC_PartTerminology_1684					
Name			Disc Brake Pad Set					
Object Type			Part Terminology					
Revision			0.4 Last edited by USER on Wed Sep 20 14:29:15 EDT 2017					
Approved			✘ Never Been Approved					
Translation			Not Translated					
Path			Classification 1 root/AutoCare Root/Parts Categorization (PCdb)/Brake/Disc Pads and Brake Shoes/Disc Brake Pad Set					
Visibility								
Delete Status		abc						
PCdb Part Alias		abc						
PCdb Part Description		abc						
PCdb Part Use			ACES PIES					
PCdb Revision Date			2003-02-07 00:00:00					
Reference Part Type Links		abc	AC_ACESApplicationToTransmissionBase:false:2;AC_ACESApplicationToEngineBase:true:1					

Since the transmission reference is set to false and the engine reference is set to true, the engine option is displayed within its own column in the Application Manager results table, and the transmission option is only displayed within the Value editor (as shown below).

Vehicle	Part Terminology	Part Number	ACES Application To Engine Base	ACES Brake System	ACES Brake ABS	Options
2011 Acura TSX	Disc Brake Pad Set	034-VC21499				ACES Mfr Label: Acura ACES Quantity: 1

Value editor - 1 item selected

ACES Application To Transmission Base

ACES Mfr Label: Acura

ACES Position

ACES Quantity: 1

Type name of new condition and hit Enter to add

OK Cancel

Controlling Display of Conditions in Application Manager

The Application Manager results table can be configured to display vehicle option data for applications using an Application Condition Header component. For more information about the components, see the **Application Condition Header Component** topic.

Creating Applications

Creating an application for a vehicle can be done within the results table.

Once a vehicle is listed within the results table, a user can create an application by clicking into the Part Number cell, and providing a part number for the vehicle. In the example below the Part Number cell was blank, upon double clicking within the cell, the gray borders of the cell change to blue, indicating it is active and ready to be edited, and a node selector icon displays.

Vehicle ●	Part Terminology ●	Part Number ●
1997 Acura CL	Auxiliary Light	<input type="text"/>

Once the Part Number cell is active, users can type in the necessary part number. As the Part Number is typed in, the typeahead dropdown will display a list of potential part number matches. Users can use the down arrow key to navigate from the field down into the list, and then use the Enter key to populate the field with the part number. Optionally, the mouse pointer can be used to click on the valid part number.

Vehicle ●	Part Terminology ●	Part Number ●
1997 Acura CL	Auxiliary Light	<input type="text" value="034"/> 034-VC30002 034-VC21499 034-VC36004 034-VC36004

Optionally, the node browser icon can be clicked, and the Part Number Search dialog will display (as shown below).

Part Number Search

Search Browse

ID	Name
----	------

⏪ < 0 > ⏩

When the Search tab within the Part Number Search dialog is used, a portion of a part number can be typed in, and the Search button can be clicked to display a list of part IDs and Names. In the example below, '034' is typed into the search field, and four potential matches are displayed.

Part Number Search

Search Browse

034 Search

ID	Name
AC_PIESItem_GWWQ_034-VC21499	034-VC36004
AC_PIESItem_GWWQ_034-VC30002	034-VC30002
AC_PIESItem_GWWQ_034-VC36004	034-VC36004
AC_PIESItem_GWWQ_NikkiPart	034-VC36004

1-4 of 4 OK Cancel

Using Multi-Select

In the Application Manager results table, it is possible to multi-select a set of records and edit them. If you use the consolidated options header for editing, a value editor dialog will display all attributes and references in the attribute group(s) identified in the header configuration AND have data populated on any of the selected records or have the attributes linked to one or more of the selected part types (in the case of references, the 'linking' is via the Reference Part Type Links metadata attribute on the part type).

If the records you have selected already have values populated in the displayed attributes / references, then the Value editor will display the data values for the cell that is double clicked by the user. In other words, if three records are selected and then the cell in the middle is double clicked, those records are the data values that will display.

Automotive Validation Path Functionality

Having the optional automotive validation path functionality in place ensures Application Manager users are able to select valid configurations when selecting criteria for their search, applying parts to vehicles, adding / editing options for applications, and maintaining missing applications. The premise behind the concept is that when some level of 'valid configuration' data for vehicles is provided, the Application Manager is able to intelligently decipher those.

Data for an automotive validation path is represented in STEP via a series of objects, references, and attributes. The values for those attributes and references are stored on the Vehicle Configuration objects, and the Application to Base Vehicle reference is applied to the individual application. Regardless of the model / standard you are working in, the system always evaluates the automotive validation path by beginning with the Base Vehicle / assembly object used in application records.

For example, for the Fuel Type attribute (AC_ACESFuelType), the validation path is configured as:

```
child.reference[type:'AC_VehicleToEngineConfig'].attribute[id:'AC_VCdbFuelType']
```

This automotive validation path is determined by:

1. Identifying the application and following the ACES Application To Base Vehicle reference (AC_ACESApplicationToBaseVehicle) to the Base Vehicle object type (AC_BaseVehicle).
2. Examining all vehicle children (AC Vehicle) of the Base Vehicle.
3. Following the Vehicle To Engine Config reference (AC_VehicleToEngineConfig) on the vehicle to the target object.
4. Evaluating the value of the VCdb Fuel Type attribute (AC_VCdbFuelType) that is stored on the Engine Config object (AC_EngineConfig).

After running Easy Setup, the application data model (Automotive - Application Model) includes configuration for object types and link types that define the relationship between different configurations of vehicles and conditions on applications. This relationship data is captured within the Automotive Validation Path attribute.

Within the AutoCare model, the validation path attribute is populated on some standard ACES vehicle options during Easy Setup when the attribute and/or reference modeling option is first created. This allows many features (including validation error handling) to be available within the Application Manager intelligent search interface, and results table value editor. Details on these features can be found within the **Intelligent Search Interface** and **Results Table and Toolbar** topics within this guide.

This section addresses:

- **Validation Path Functionality and Search Box Criteria**
- **Validation Path Functionality and Options on Applications**
- **Validation Path Functionality and Missing Applications**
- **Validation Path Functionality and Advanced Filtering**
- **Workbench Configurations Related to Validation Path**

Validation Path Functionality and Search Box Criteria

The validation path concept drives the intelligence that allows Application Manager search boxes to display only valid options filtered by previous selections and/or specific vehicle configurations.

For example, the 2013 Audi A3 was manufactured with six engine options, and some of those engines require diesel fuel instead of gas. When the Make/Model search box is populated with the Audi A3 criterion, and the Year search box is populated with the 2013 criterion, then the Fuel Type options search box will display the two available fuel types; Diesel and Gas (as shown below).

Note: Options search boxes can be configured with many different attributes and/or references. For the following examples, the Options search boxes are displayed using the Fuel Type and Engines attributes.

Make/Model Audi A3 X	Year 2013 X	Fuel Type ▾	Engine ▾
		AND	
Enter Make/Model	Enter Year	Enter Fuel Type	Enter Engine
		DIESEL GAS	

When the Fuel Type options search box is left blank, then the Engine options search box will display the six engines available for the 2013 Audi A3 (as shown below).

Make/Model Audi A3 X	Year 2013 X	Fuel Type ▾	Engine ▾
		AND	
Enter Make/Model	Enter Year	Enter Fuel Type	Enter Engine
			1.4L L4, 1390CC, 85CID 1.4L L4, 1395CC, 85CID 1.8L L4, 1798CC, 110CID 2.0L L4, 1968CC, 120CID 2.0L L4, 1984CC, 121CID 2.0L L4, 1984CC, 121CID

Whereas, when the Diesel criterion is selected for the Fuel Type options search box, then the Engine options search box will display the engine that uses diesel fuel and is available for the 2013 Audi A3 (as shown below).

Make/Model Audi A3 x	Year 2013 x	Fuel Type DIESEL x	Engine AND
Enter Make/Model	Enter Year	Enter Fuel Type	Enter Engine 2.0L L4, 1968CC, 120CID

Notice in the examples provided above, the AND/OR toggle button is set to AND. When the toggle button is set to OR, then the Options search boxes (displaying the 'Fuel Type' and 'Engine' options in the screenshot below) do not limit the display of valid criteria based upon each other. However, the Options search boxes always consider the Make/Model and Year search box criteria before displaying the valid criteria options within the dropdown. In the example below, the same criteria is selected from the previous example, however the OR toggle button is active, and all the valid engines for the 2013 Audi A3 display.

Make/Model Audi A3 x	Year 2013 x	Fuel Type DIESEL x	Engine OR
Enter Make/Model	Enter Year	Enter Fuel Type	Enter Engine 1.4L L4, 1390CC, 85CID 1.4L L4, 1395CC, 85CID 1.8L L4, 1798CC, 110CID 2.0L L4, 1968CC, 120CID 2.0L L4, 1984CC, 121CID 2.0L L4, 1984CC, 121CID

For more information on the Options search boxes, see the **Using the Options Search Boxes** topic within the Intelligent Search Interface section of this guide.

Validation Path Functionality and Options on Applications

The application data model (Automotive - Application Model) includes configurations for object types and link types that define the relationship between conditions / options on applications and different configurations of vehicles. This allows an Application Manager to be used to search for applications with specified conditions / options (i.e., engines, fuel type, regions, sub models). The validation path concept affects the options on missing applications by automatically populating selected options on applications, and allowing the selection of valid options within the Value editor.

Automatic Population of Options on Applications

When criteria are selected within the Options search boxes (displaying the 'Fuel Type' and 'Engine' options in the screenshot below), and the Search button is clicked, the Results table will display each vehicle that is missing an application with the Options cell automatically populated based upon the Options search box criteria. Once the part is applied to the vehicle the automatically populated options will be stored as references on the application.

For example, when an Options search box has the Fuel Type option type displayed with the Diesel criterion selected, the second Options search box has the Engine option type displayed with the '2.0L L4, 1968CC, 120CID' criterion selected, and the Search button is clicked, the results table will display the valid vehicle with the Options cell automatically populated with the specified Fuel Type and Engine (as shown below).

The screenshot shows a search interface with the following search criteria:

- Make/Model: Audi A3
- Year: 2013
- Fuel Type: DIESEL
- Engine: 2.0L L4, 1968CC, 120CID
- Part Type: Car Cover

Buttons include: Existing and Missing Applications, All Brands, Report, Clear All, Search.

Table actions: Select all, Clear filter, Compressed view.

Vehicle	Part Terminology	Part Number	Options
2013 Audi A3	Car Cover		<ul style="list-style-type: none"> → ACES Application To Engine Base: "2.0L L4, 1968CC, 120CID" → Fuel Type: DIESEL

Options Within the Value Editor

Once an application has been created within the Results Table at the bottom of an Application Manager, double clicking the Options cell of the application row displays the 'Value editor.' Within the Value editor, some options automatically display, however additional options (conditions) can be selected to display for population. The selection of valid options, and their valid values, is driven by the validation path functionality.

Validation Path Functionality and Missing Applications

The automotive validation path functionality aids in displaying missing application coverage by evaluating all options and/or criteria for existing applications and displaying only those options that are valid for the vehicle configuration. In other words, consider when a vehicle is available with two different engines, and a part is applied to engine A, vehicles with engine B will display as a missing application.

When automotive validation path functionality is in place, and a part is applied for a vehicle, a missing application will display for each condition related to the part in the search as a single row within both the Application Manager results table, and the Application Coverage Report.

More information on missing application coverage can be found within the **Missing Application Coverage Functionality** topic of this guide.

Validation Path Functionality and Advanced Filtering

This can be helpful when searching for a part type that only pertains to specific configurations of a vehicle. For example, this type of relationship can be helpful when searching for spark plugs for a 2013 Audi A3, and the result table lists both Gas and Diesel engines.

Since Diesel engines do not use spark plugs, listing the Diesel engines as missing application coverage for spark plugs is inaccurate. However, when the 'Missing Application Conditions' attribute is used in conjunction with the 'Check path for missing application' business condition, and a validation path, the results table will no longer display the inaccurate option.

Error Handling

If an attribute contains an invalid Automotive Validation Path, the condition attribute with the invalid path will display all available options, other condition attributes will retain the valid filtered options in the dropdown list.

If the condition attribute with the invalid path is displayed in its own column, then a warning icon will be displayed and hovering over the icon will display a message indicating which reference or attribute contains the error.

If the condition attribute with the invalid path is not displayed in its own column, then accessing the value editor will display a yellow square with the error message below the condition with the invalid path.

In the example below, the ACES Aspiration attribute has an invalid path, and the error message is displayed.

Note: When using a Mac computer, invalid values (options) do not change style (gray out, italic font), but are instead represented with three dashes (---) before the invalid value. For example, in the screenshot below the ACES Sub Model dropdown on the left is from a PC using the Chrome browser, and the dropdown on the right is from a Mac using the Chrome browser. This problem exist only on Mac computers for both Safari and Chrome browsers.

Value editor - 1 item selected ✕

ACES Application To Engine Base 2.4L L4, 2354CC, -CID ▾

ACES Engine Mfr Honda ▾

ACES Engine Version i-VTEC ▾

ACES Sub Model ▾

Type name of new c... Base ---V6 d

Base V6

✓ OK ✕ Cancel

Workbench Configurations Related to Validation Path Functionality

The automotive validation path functionality is automatically configured for the AutoCare standard through Easy Setup in the workbench. The validation path functionality must be manually configured within the workbench for the NAPA and TecDoc standards. Though configuration occurs in the workbench, it is not intended that the workbench be used to create, nor edit, part application data. Rather the Application Manager has been designed specifically for this. Nonetheless, it can be helpful to review the following workbench configurations related to automotive validation path prior to using or configuring an Application Manager.

This section addresses the following workbench configurations related to the automotive validation path functionality:

- **Vehicle Configurations**
- **Base Vehicle Applications**
- **Options on Applications**

Note: Within the AutoCare model, validation paths are populated on some standard ACES vehicle options during Easy Setup when the reference modeling option is first created. If an automotive validation path is subsequently deleted, it can be reapplied manually using the syntax described within this guide. The attribute or reference can be deleted and Easy Setup can be re-run (System Setup > Component Models > Automotive - AutoCare Model > 1. Configure AutoCare Data Model). However, this is not the recommended method for production environments since deleting the reference also deletes all existing data for the reference. It is recommended to re-populate a deleted validation path manually on production environments.

Vehicle Configurations

Options for different vehicle configurations are stored within STEP as attributes on a classification object type. Classification object types are referenced by Vehicles that are children of the Base Vehicle object type.

In the example below, the **VCdb Body Num Doors**, and **VCdb Body Type** AutoCare options are modeled as attributes within the **Body Style Config** classification object type. The valid configuration for the '2 door, Coupe' consists of '2' doors and a 'Coupe' body type.

The screenshot displays a software interface with two main panels. On the left is a 'Tree' view showing a hierarchical structure under 'AutoCare Root'. The 'Vehicle Configuration (VCdb)' folder is expanded to show 'Vehicle Configurations', which includes 'Body Style Configurations'. Under 'Body Style Configurations', several folders are listed, including '2 door, Coupe', which is highlighted with a red box. On the right is a detailed view of the '2 door, Coupe' classification object. It features a table with the following data:

Name	Value
ID	AC_BodyStyleConfig_7
Name	2 door, Coupe
Object Type	Body Style Config
Revision	0.2 Last edited by USER on
Approved	✘ Never Been Approved
Translation	Not Translated
Path	Classification 1 root/AutoCa
Visibility	
Delete Status	abc
VCdb Body Num Doors	2
VCdb Body Type	Coupe

All 2 door coupe vehicles reference the **2 door, Coupe** body style using the **Vehicle To Body Style Config** Reference Type. A vehicle can have more than one 'Vehicle To Body Style Config' reference and if so, it will display as multiple references on the vehicle (as shown below).

The screenshot shows a software interface with a tree view on the left and a table on the right. The tree view is expanded to '2 door, Coupe'. The table on the right is titled '2 door, Coupe rev.0.2 - Referenced By' and has tabs for 'Classification', 'Sub Products', 'References', 'Referenced By', 'Images & Documents', and 'Tables'. The 'Referenced By' tab is active, showing a table of references. The 'Vehicle To Body Style Config' reference is highlighted in red.

Reference Type	Source
	1975 Lamborghini Countach, LP400, United States
	1976 Lamborghini Countach, LP400, United States
	1978 Plymouth Sapporo, Base, United States
	1979 Plymouth Sapporo, Base, United States
	1980 Plymouth Sapporo, Base, United States
	1981 Lamborghini Countach, LP400S, United States
	1982 Lamborghini Countach, LP400S, United States
	1983 Lamborghini Countach, LP500S, United States
	1984 Lamborghini Countach, LP500S, United States
	1989 Lamborghini Countach, 25th Anniversary, United States
	1990 Lamborghini Diablo, Base, United States
	1991 Lamborghini Diablo, Base, United States
	1992 Lamborghini Diablo, Base, United States
	1993 Eagle Summit, DL, United States
	1996 Eagle Summit, DL, United States
	1996 Eagle Summit, FCI, United States

In the example below, the **1996 Dodge Viper GTS, United States** has only one valid **Vehicle To Body Style Config** reference target, the **2 door, Coupe**.

The screenshot shows a software interface with a tree view on the left and a table on the right. The tree view is expanded to '1996 Dodge Viper, GTS, United States'. The table on the right is titled '1996 Dodge Viper, GTS, United States' and has tabs for 'Images & Documents', 'Tables', 'Status', 'State Log', 'Tasks', 'Classification', 'Sub Products', and 'References'. The 'References' tab is active, showing a table of references. The 'Vehicle To Body Style Config' reference is highlighted in red.

Reference Type	Target	VCdb s
> Vehicle To Bed Config	+ N/R, N/R, N/R	
> Vehicle To Body Style Config	+ 2 door, Coupe	
> Vehicle To Brake Config	+ Power, Non-ABS, Front=Disc	
> Vehicle To Drive Type	+ RWD	
> Vehicle To Engine Config	+ 8.0L L10, 7990CC, 488CID, F	

Since only one valid body style exists for this vehicle, it would be invalid for an application to be supplied for the vehicle where any other body style was implied. Additionally, within the Application Manager, it is not possible for a user to select a value other than 2 for the Body Num Doors value, or Coupe for the Body Type value.

Base Vehicle Applications

Part application data is not applied to Vehicle object types (i.e., **1996 Dodge Viper, GTS, United States**) but rather to Base Vehicle object types (i.e., **1996 Dodge Viper**). Thus, an application is applied to the parent of the Vehicle object type.

In the example below, the **1996 Dodge Viper** Base Vehicle object type is displayed along with its four children vehicle object types

The screenshot shows a tree view on the left with folders for years 1992-1999 Dodge Viper. The 1996 Dodge Viper folder is expanded, showing sub-folders for Base (Canada and United States) and GTS (Canada and United States). On the right, the 'Classification' details for '1996 Dodge Viper rev.0.2' are shown. The 'Object Type' is highlighted in red and set to 'Base Vehicle'.

1996 Dodge Viper rev.0.2 - Classification	
Description	
Name	Value
ID	AC_BaseVehicle_2090
Name	1996 Dodge Viper
Object Type	Base Vehicle
Revision	0.2 Last edited by NIFE on Fri Aug 18 15:09:31 EDT 2017
Approved	✗ Never Been Approved
Translation	Not Translated
Path	Classification 1 root/AutoCare Root/Vehide Configuration (VCdb)/Vehi

In order to know all valid body style configurations for a Base Vehicle object type, all child vehicles (the 'Base' and 'GTS' vehicles for the United States and Canada) must first be evaluated. In doing this, it can be seen that the 1996 Dodge Viper Base Canada and United States models have a **2 door, Convertible** body style (as shown below) whereas the 1996 Dodge Viper GTS Canada and United States models have the **2 door, Coupe** body style (as previously mentioned).

The screenshot shows the tree view with '1996 Dodge Viper, Base, United States' selected. The right panel shows 'References' for this model. The 'Vehicle To Body Style Config' reference is highlighted in red, pointing to '2 door, Convertible'.

1996 Dodge Viper, Base, United States rev.0.2 - References	
Ungrouped Classification References	
Reference Type	Target
Vehicle To Bed Config	N/R, N/R, N/R
Vehicle To Body Style Config	2 door, Convertible
Vehicle To Brake Config	Power, Non-ABS, Front=Disc, Rear=Disc
Vehicle To Drive Type	RWD
Vehicle To Engine Config	8.0L L10, 7990CC, 488CID, FI, MFI, Electronic, SFI
Vehicle To Mfr Body Code	SR
Vehicle To Spring Type Config	Front=Coil, Rear=Coil
Vehicle To Steering Config	Power, Rack
Vehicle To Transmission	Standard, 6 Speed, T56, Borg Warner

Therefore the **1996 Dodge Viper Base Vehicle** object type has two valid body style configurations; both have only 2 doors, but the body type can be either Coupe or Convertible. If a user tries to provide an application for the vehicle that specifies '4' doors or a 'Sport Utility' Vehicle body style, it would be allowed, but also invalid.

Options on Applications

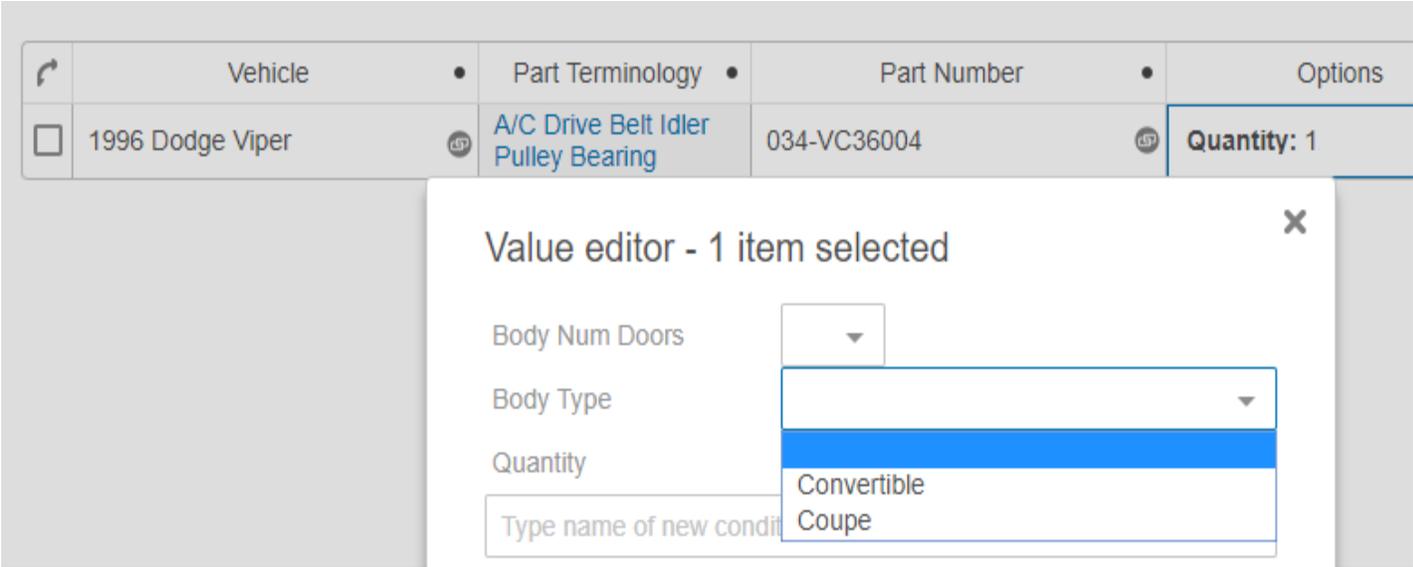
On an application, an attribute or reference exists to model each data point in a valid configuration. For the **Vehicle To Body Style Config** reference type an attribute for **Body Num Doors** and **Body Type** exists (similar to the configuration classification object shown above).

In the workbench example below, the dropdown for the **Body Type** attribute displays all the available body types that can be chosen for the selected application.

AutoCare ACES Attributes	
Name	Value
> Aspiration	
> Bed Length	
> Bed Type	
> Body Num Doors	
> Body Type	
> Brake ABS	Cab & Chassis - Medium Conventional (98)
> Brake System	Cab & Chassis - Stripped Chassis (58)
> Cylinder Head Type	Convertible (10)
> Drive Type	Coupe (9)
> Engine Designation	Crew Cab Pickup (22)
> Engine Mfr	Cutaway (102)
> Engine Version	Cutaway - Cab Forward (108)
> Engine VIN	Cutaway Van (26)

Though the workbench could be used to select any one of the available options, this would be done without the safeguarding of the intelligent automotive validation path functionality, and therefore is not recommended. Applications are not intended to be created nor edited in the workbench. Instead, a robust results table and value editor are provided within an Application Manager Web UI screen.

Within a Web UI Value editor, users can view and select only the valid options for the vehicle they are working with. In the example below, the Application Manager results table 'Value editor' is displayed for the **1996 Dodge Viper** Base Vehicle, and only the **Convertible** and **Coupe** options display for selection in the dropdown.



When an application is created, validation paths are available for conditions / options stored as either attributes or references. However, each has its own configuration, as described below.

Options / Conditions Stored as Attributes

When the data model uses an attribute to store the vehicle option / criteria, the automotive validation path data is managed as described below.

Easy Setup creates an Automotive Validation Path attribute (AutomotiveValidationPath). This attribute is made valid as metadata on the attribute basic object type, making it available for population on any attribute.

Attribute	References	Attribute Transformation	Validity	Profile	Log	State Log	Tasks
Description							
Name	>	>	Value				
ID	AC_ACESBodyNumDoors						
Name	Body Num Doors						
Last edited by	2017-07-07 09:47:16 by USER						
Full Text Indexable	No						
Externally Maintained	No						
Completeness Score							
Hierarchical Filtering	None						
Calculated	No						
Type	Specification						
Dimension Dependencies							
Mandatory	No						
Attribute Help Text	abc						
Automotive Validation Path	abc child.reference[type:'AC_VehideToBodyStyleConfig'].attribute[id:'AC_VCdbBodyNumDoors']						

Regardless of the model / standard you are working in, the system always evaluates the automotive validation path by beginning with the Base Vehicle / assembly object used in application records.

In the example above, the automotive validation path data within the data model is determined by:

1. Identifying the application and following the ACES Application To Base Vehicle reference (AC_ACESApplicationToBaseVehicle) to the Base Vehicle.
2. Examining all vehicle children of the Base Vehicle.
3. Following the Vehicle To Body Style Config (AC_VehicleToBodyStyleConfig) reference on the vehicle to the Body Style Config target object.
4. Evaluating the value of the VCdb Body Num Doors attribute (AC_VCdbBodyNumDoors) on that target object.

Syntax

The syntax of the automotive validation path is a series of commands, each separated by a period (.). Using the child, reference, ID (shown below), and attribute elements (including IDs of the applicable references and attributes to be followed), an automotive validation path can be applied to any attribute for which the data is modeled in STEP. When the vehicle option is modeled using an attribute, the final element of the syntax should always be an attribute where the value should be retrieved.

Note: Within the AutoCare model, validation paths are populated on some standard ACES vehicle options during Easy Setup when the reference modeling option is first created. If an automotive validation path is subsequently deleted, it can be reapplied manually using the syntax described within this guide. The attribute or reference can be deleted and Easy Setup can be re-run (System Setup > Component Models > Automotive - AutoCare Model > 1. Configure AutoCare Data Model). However, this is not the recommended method for production environments since deleting the reference also deletes all existing data for the reference. It is recommended to re-populate a deleted validation path manually on production environments.

Options / Conditions Stored as References

When the data model uses a reference to store the vehicle option / criteria, the automotive validation path data is managed as described below.

The Automotive Validation Path attribute described in the previous section is still relevant. When created by Easy Setup, the attribute is made valid on the Reference Type basic object type (in addition to the attribute basic object type). Thus, the Automotive Validation Path attribute can then be populated on any reference.

Reference Type	Validity	Log
Description		
Name	>	> Value
> ID		AC_ACESApplicationToEngineBase
> Name		ACES Application To Engine Base
> Last edited by		2017-07-07 10:24:13.0 by USER
> Externally Maintained		No
> Dimension Dependencies		
> Completeness Score		
> Allow multiple references		No
> Mandatory		No
> Inheritance		None
> Automotive Validation Path	abc	child.reference[type:'AC_VehideToEngineConfig'].reference[type:'AC_EngineConfigToEngineBase'].ID

In the example above, the automotive validation path data within the data model is determined by:

1. Identifying the application and following the ACES Application To Base Vehicle reference (AC_ACESApplicationToBaseVehicle) to the Base Vehicle.
2. Examining all vehicle children of the Base Vehicle.
3. Following the Vehicle To Engine Config reference (AC_VehideToEngineConfig) on the vehicle to the Engine Config target object.
4. Following the Engine Config To Engine Base reference (AC_EngineConfigToEngineBase) from the Engine Config Object (which are now considered sources of the Engine Config To Engine Base reference) to the Engine Base target object.
5. Retrieving the STEP Name of the Engine Base object to be displayed in Application Manager.

Syntax

The syntax of the automotive validation path is a series of commands, each separated by a period (.). Using the child, reference, ID, and attribute elements (including IDs of the applicable references and attributes to be followed), an automotive validation path can be applied to any reference for which the data is modeled in STEP. When the vehicle option is modeled using a reference, the final element of the syntax should always be an ID of the reference where the STEP Name should be displayed.

Configuring Application Manager

The Easy Setup actions must be run for each standard that will be accessed using an Application Manager, and by default each standard is configured to use their own instance of an Application Manager. Optionally, after Easy Setup actions have configured an Application Manager, the Vehicle Type Search Panel and results table columns can be manually modified. Before doing this, it is helpful to review how the Vehicle Type Search Panel and results table are used per the **Using Intelligent Search Interface** topic, the **Results Table and Toolbar** topic, and then review the search box configuration options within this topic. Additionally, for information on adding columns to the results table, see the **Adding Additional Headers to Application Screens** topic within the **STEP Automotive Quick Start Guide**.

When Easy Setup actions have been used to create a standard data model, by default, much of the Application Manager is ready to be used, including the addition of an easy to use link to the Application Manager screen from the Quick Links widget on the Web UI Homepage. For more information, see the **Application Manager** topic.

Important: An error will occur when trying to access an Application Manager screen if the Vehicle table classifications have not been properly configured. When this error displays, the user must log out and then back in to the Web UI. Once the Vehicle reference data is imported, the link to the Application Manager will function properly.

Own Model Considerations

An Application Manager screen can be configured for use with an Own model. It is easiest to accomplish this after first using the Easy Setup actions to configure the Automotive - Application Model for an automotive standard.

Important: For an Application Manager to function properly, some component model types (i.e., Part Type) may need to be configured, even if otherwise not needed.

To implement an Own model within an Application Manager screen, the following must be in place:

1. All components within the Automotive - Application Model must be populated with a value.
2. The Application, Assembly, Part, Part type, Part type list, Application to assembly, Leading part relation, Leading part type relation, Part type link type, and Part type list to part type aspects must be configured with Own object types and references in the Automotive - Application Model component.
3. Create a new Product to Classification Link Type and define the own part and application object types as valid Product Types, and the own part type object type as a valid Classification Type. Then add this new Product to Classification Link Type to the 'Part type link type' aspect within the Automotive - Application Model..
4. The 'Part type list to part type' aspect requires a Classification Reference Type to connect a part type list / group to a part type that is used in behind the scene code (not visible for a user to interact with). The object type that is used for the Valid Source Type in the reference must also be defined in the 'Part type list' aspect. The object type that is used for the Valid Target Type must also be defined in the 'Part type' aspect.
5. The Vehicle Type Search Panel within an Application Manager must be configured to use the Own application and vehicle object types, and Own vehicle root node.

6. The own application must have the references established to the own vehicle and part type.

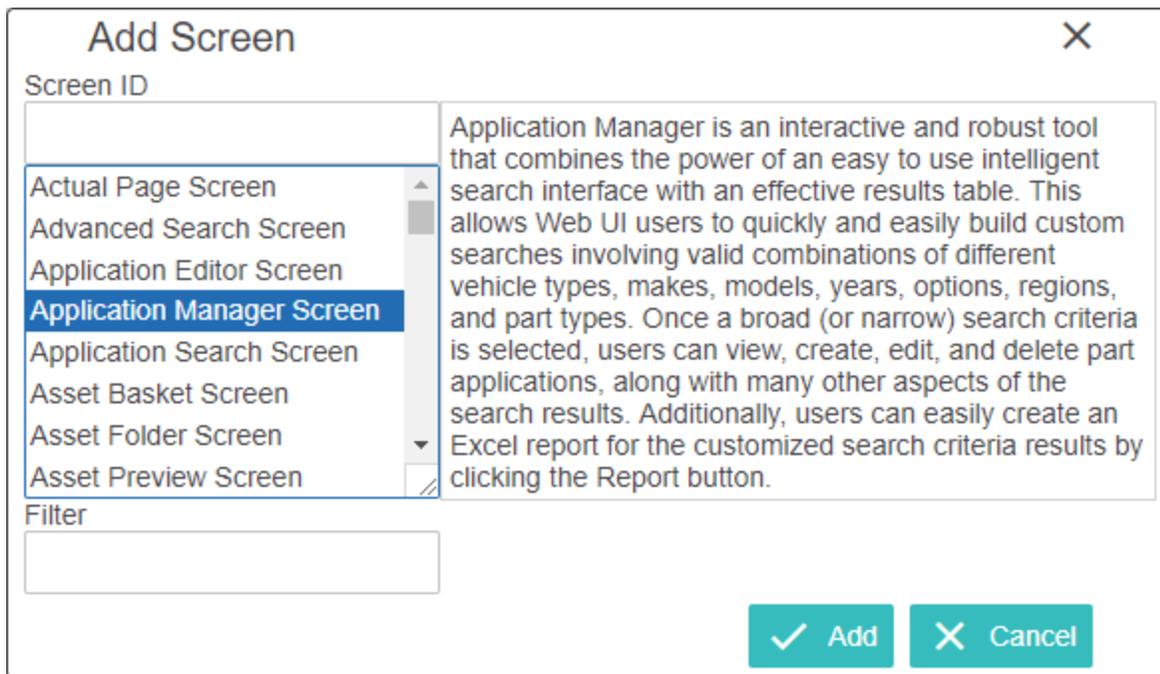
Configuring an Application Manager Screen in Web UI

Steps to configure an Application Manager screen in Web UI are below.

Note: After the initial setup, access to the configuration dialogs does not change, therefore these steps can be helpful when editing the configuration. However, when editing, the 'Add' button is replaced with the 'Save' button, and the 'Add component...' labels at the top of the dialogs display as 'Edit component...'

Important: Easy Setup actions for at least one standard must be run before an Application Manager Screen can be manually added to a Web UI and configured for that standard.

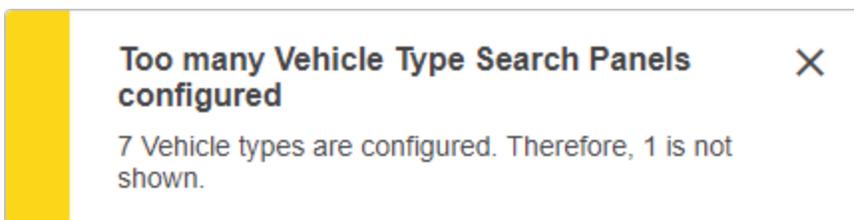
1. Log in to the Web UI where the Application Manager will be used, and access the Web UI Designer.
2. Click the **New** button at the top of the Designer, and the Add Screen dialog will display.



3. Search for and select the 'Application Manager Screen,' enter a Screen ID, click the **Add** button, and the Application Manager Screen Properties dialog will display as shown below.

Within the Application Manager Screen Properties dialog, the following parameter is required:

Vehicle Type Search Panel: Allows for up to six different Vehicle Type Search Panels to be configured within each Application Manager. Populating this required parameter allows for a Vehicle type icon and Vehicle Type Search Panel to display within the Application Manager. If more than six vehicle type search panels are added, only the first six vehicle types listed will display for the Application Manager user. Additionally, a warning dialog will display each time the Designer is accessed informing the user that more vehicle type search panels are configured than can be displayed. In the example below, seven vehicle type search panels have been configured.



Note: If a vehicle search type is created, and the vehicle root node that has been configured for the Vehicle Type is later removed from STEP, then the vehicle search type created within the Application Manager will no longer display. If the vehicle root node is re-created, then the Application Manager will display as it did before the vehicle root node was deleted.

Within the Application Manager Screen Properties dialog, the following parameters are optional:

Hierarchy Restriction Label: Type a label that best describes the Hierarchy Restriction option to the Application Manager user. By default, the label is populated with 'All data.' If users are filtering by brand, then 'Brand' could be an appropriate label.

Hierarchy Restriction Object Types: Allows users to restrict the Application Manager search results by an object type. Users can select from a pre-configured dropdown list of product or classification object types. This can be helpful when search results needs to be filtered by Brand, Manufacturer, OEM, Product Line, etc. Once an object types is added, it will display in the dropdown list. Use the Up and/or Down buttons to edit the order of the dropdown list, as the objects will display to the user in the order listed within the parameter. When the parameter is blank, the Hierarchy Restriction dropdown will not display within the Application Manager. Adding at least one object type to the parameter will result in the Hierarchy Restriction dropdown displaying below the search boxes of the Application Manager.

- Click the **Add** button below the Vehicle Type Search Panel parameter, and the Vehicle Type Search Panel Properties will display as shown below.

Within the Vehicle Type Search Panel Properties dialog, the following parameters are required:

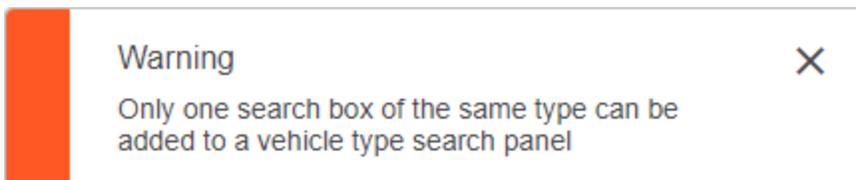
Application Object Types: Allows for applications created within the Application Manager to be restricted to the listed object type. Click the Add button below the parameter field to browse or search for the necessary object types.

- Object type(s) selected for this parameter must be configured as an Application within the 'Automotive - Application Model.' Easy Setup configures the Automotive - Application Model in this way.
- Any object that is selected, and is configured as an Application in the Automotive - Application Model, will be displayed in the search results table. For example, a user can have their own application, as well as an AutoCare ACES application.
- When applications are created, their object type is determined based on the part number that is applied to the Vehicle. For example, if part number 123 is a PIES Item, and part number 456 is a Own part number, then when a user applies part number 123 to a Vehicle, then the application record is created using an ACES application object type.

Search Box Types: Allows one to four search boxes to be added to the Vehicle Type Search Panel. Only one search box is required, and each search box type can be added only once. The order listed determines the order of display within the Application Manager search panel. The Part Type search box type does not require additional configuration, whereas the other search box types do. Clicking the Add button below the Search Box Types parameter displays an Add Component dialog with the option to add one of the following search box types: Make/Model, Options Group, Part Type, and Year. Steps for configuring each search box type can be found in their respective sections below:

- Configuring Make/Model Search Box
- Configuring Options Group Search Box
- Configuring Part Type Search Box
- Configuring Year Search Box

Because each search box type can be only be configured once for each Application Manager, if a second search box of the same type is added, a Warning dialog will display as shown below, and the Search Box Types parameter will remain unchanged.



Name: Allows for a custom name for the Vehicle Type Search Panel to display when a user hovers over the Vehicle type icon. Type in the desired name.

Root Nodes: Allows for the restriction of root nodes to be used within the Application Manager when searching for a vehicle. The root node(s) listed should correspond to the Icon and Name parameters because the search input field displays only suggestions for Make/Model objects that belong in the root node defined within this parameter. Additionally, when the Node Picker is used, its dialog will display the only those classification folders that pertain to the root nodes defined within this parameter. Click the Add button below the parameter field to browse or search for the necessary vehicle root node object(s).

Vehicle Object Types: Allows vehicles within the Application Manager to be of the listed object type. Object type(s) selected for this parameter must be configured as an Assembly aspect within the 'Automotive -

Application Model.' Easy Setup configures the Automotive - Application Model in this way. Click the Add button below the parameter field to browse or search for the necessary object types.

Within the Vehicle Type Search Panel Properties dialog, the following parameter is optional:

Icon: The Vehicle type icon is a visual representation of the Vehicle Type Search Panel. Clicking a Vehicle type icon displays the Vehicle Type Search Panel configured specifically for that vehicle type (i.e., Personal Cars, Buses, Marine, Street Bikes). Hovering over the icon will display the name configured for the Vehicle Type Search Panel. Each Application Manager must have at least one Vehicle type icon. However, only up to six icons can be displayed within the same Application Manager. Therefore up to six Vehicle Type Search Panels can be specifically configured to best meet the needs of different search types. The following Vehicle Type icons are available for selection:

-  Directions Car
-  Motorcycle
-  Directions Bus
-  Directions Boat
-  Agricultural And Farm
-  Commercial Vehicles And Vans
-  Industrial
-  Large Commercial Vehicles And Trucks
-  Marine
-  Recreational And Sports

Note: The values populated for the required fields should all correspond to one or more vehicle types being configured for the Application Manager.

Below is an example of a configured Vehicle Type Search Panel Properties dialog for an AutoCare Application Manager.

Vehicle Type Search Panel Properties

Application Object Types * AC_ACESApplication

Add... Remove Up Down

Search Box Types *
Make Model Card (AC_Model / AC_Make)
Year Card (AC_VCdbYear)
Options Group (And) (Options Card (Sub Model) & Options Card (Region))
Part Type Card

Add... Edit... Remove Up Down

Vehicle Type Icon

Name *  Directions Car

Person vehicles

Root Nodes *
step://classification?id=AC_VehicleType_0

Add... Remove Up Down

Vehicle Object Types *
AC_BaseVehicle

Add... Remove Up Down

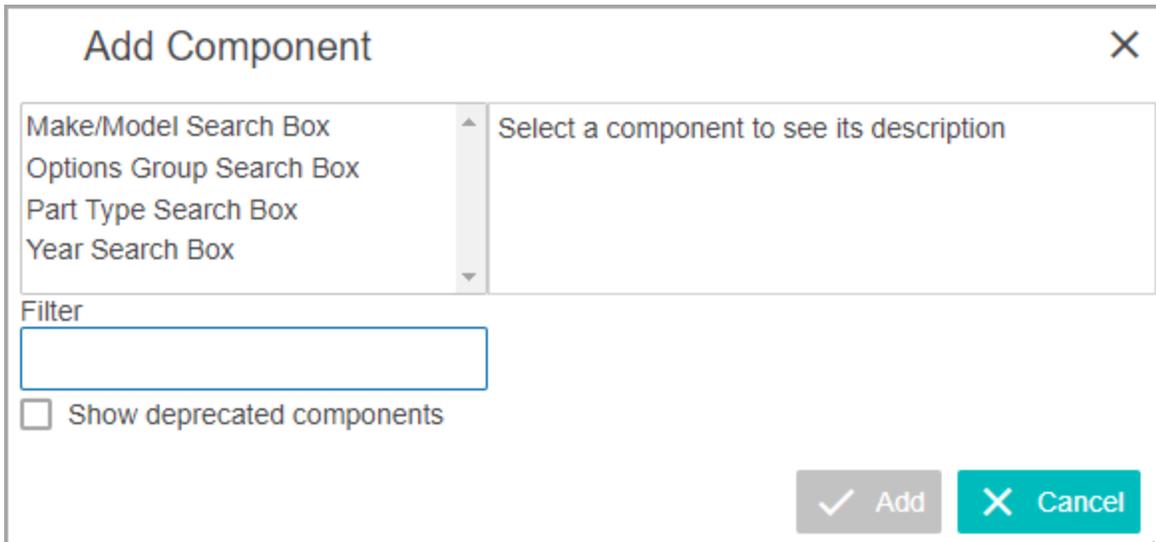
5. Once the required parameters are populated, click the **Save** and **Close** buttons to exit the Designer.

Many optional parameters are available within the Application Manager Screen Properties > Child Components > Node List.

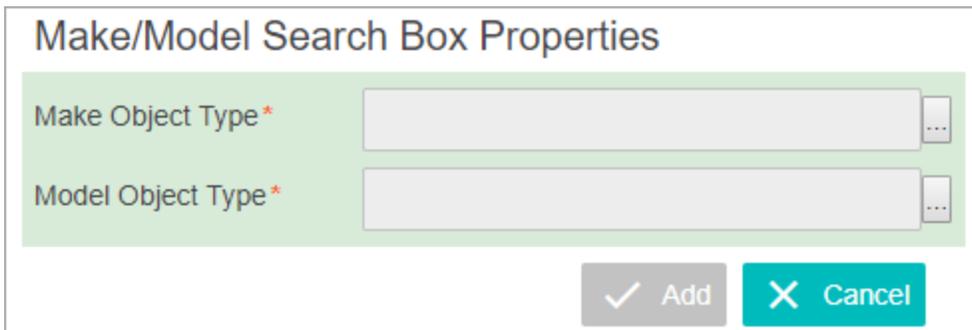
Configuring Make/Model Search Box

Steps for adding and configuring the Make/Model search box type for a Vehicle Type Search Panel are below.

1. From the Vehicle Type Search Panel Properties dialog, click the **Add** button below the Search Box Types parameter field, and the Add Component dialog will display.



2. Click **Make/Model Search Box** from the list of components.
3. Click the **Add** button, and the Make/Model Search Box Properties will display two required fields, as shown below.



Make Object Type: Determines the Make objects that a user can select within the Make/Model search box. Click the ellipsis button (...) to find and select the Make Object Type for the Makes that exist in the vehicle classification (defined in the 'Root Nodes' parameter) and should be displayed for a user to select within the search box.

Model Object Type: Determines the Model objects that a user can select within the Make/Model search box. Click the ellipsis button (...) to find and select the Model Object Type for the Models that exist in the vehicle

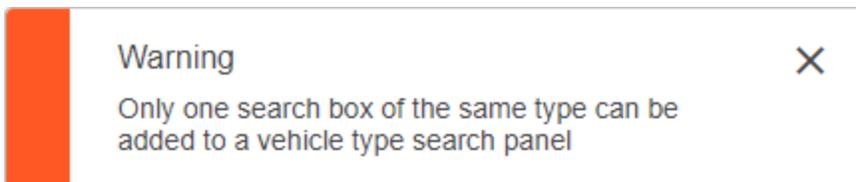
classification (defined in the 'Root Nodes' parameter) and should be displayed for a user to select within the search box.

4. Click the ellipsis button (...) to select the Object Type for the makes that should display within the search box for a user to select.
5. Click the ellipsis button (...) to select the Object Type for the Models that should display within the search box for a user to select.

Below is an example of a Make/Model Search Box Properties dialog configured for the AutoCare standard.

6. Once the required parameters are populated, click the **Add** button to return to the Vehicle Type Search Panel Properties, and optionally add another search box type, or move on to the next required parameter.

Because each search box type can be only be configured once for each Application Manager, if a second search box of the same type is added, a Warning dialog will display as shown below, and the Search Box Types parameter will remain unchanged.

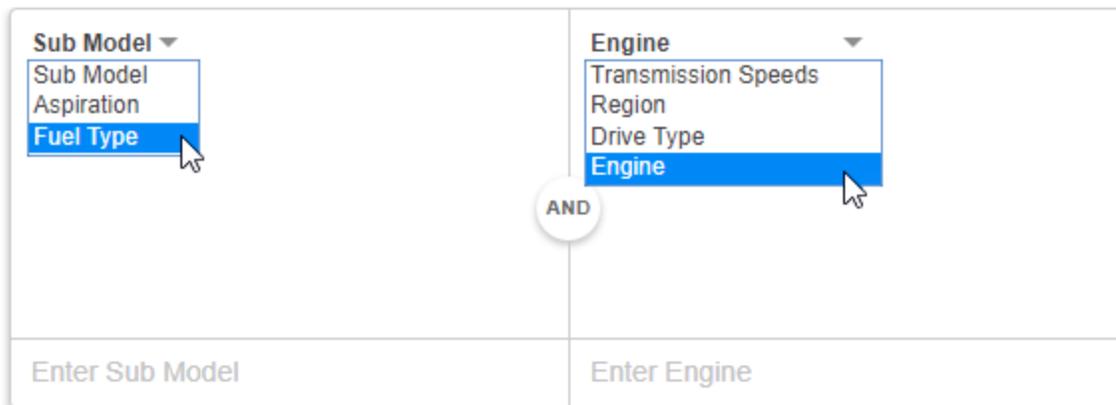


Configuring Options Group Search Box

Attributes or References within STEP can be displayed as Options within an Application Manager Options Search Box. The Option values (attribute and/or reference values) can then be selected as criteria for a search.

Though many options (attributes and/or references) can be added to an Options Search Box, only one Options Group search box type can be configured for each 'Vehicle Type Search Panel.' However, either one or two Options Search Boxes can be configured within the Options Group search box type. In other words, one Options Search Box can be configured to list multiple options or two Options Search Boxes can be configured. When two Options Search Boxes are configured, then an AND/OR toggle button displays between the two Options Search Boxes.

In the example below, an Options Group search box type is configured with two Options Search Boxes. Each Options Search Box is configured to display multiple attributes and/or References available for selection. In the screenshot below, the dropdown selections for both Options Search Boxes are displayed for the purposes of this example.



Note: It is possible to instead list all of the options within one Options Search Box, however users would lose the ability to apply the 'AND' function to their search. Additionally, each Options Search Box can be configured to list the same options as the other Options Search Box.

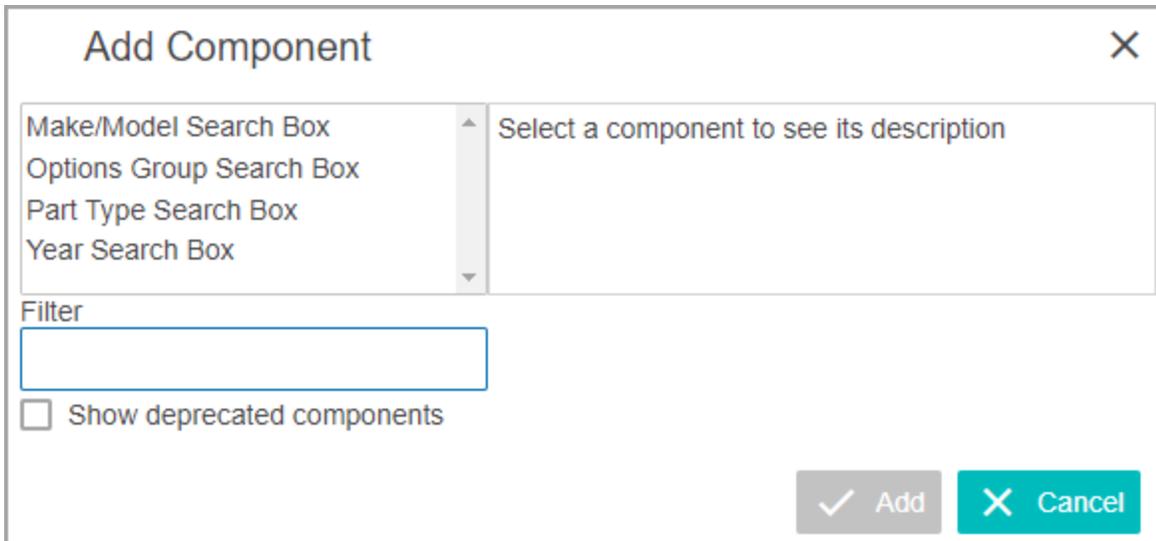
Prerequisites

Prior to configuring an Options Group Search Box, it is helpful to know one or more attributes and/or References that will be displayed as an option, along with the exact validation path for each. Setup requires an exact validation path for each of the attributes and/or References used. Though this topic provides example for each validation path type, more information about validation paths, can be found within the **Automotive Validation Path** topic of this guide.

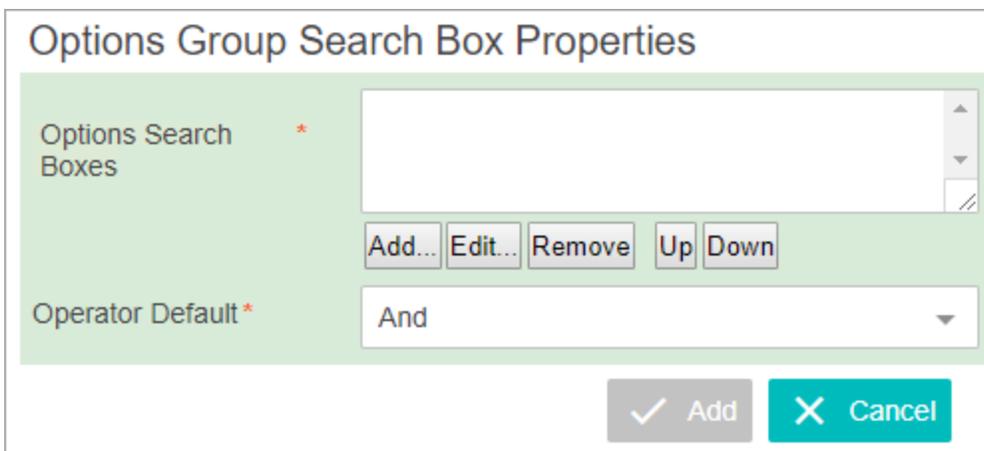
Configuring Options Group Search Box

Steps for adding and configuring the Options Group search box type for a Vehicle Type Search Panel are below.

1. From the Vehicle Type Search Panel Properties dialog, click the **Add** button below the Search Box Types parameter field, and the Add Component dialog will display.



2. Click **Options Group Search Box** from the list of components.
3. Click the **Add** button, and the Options Group Search Box Properties will display as shown below.

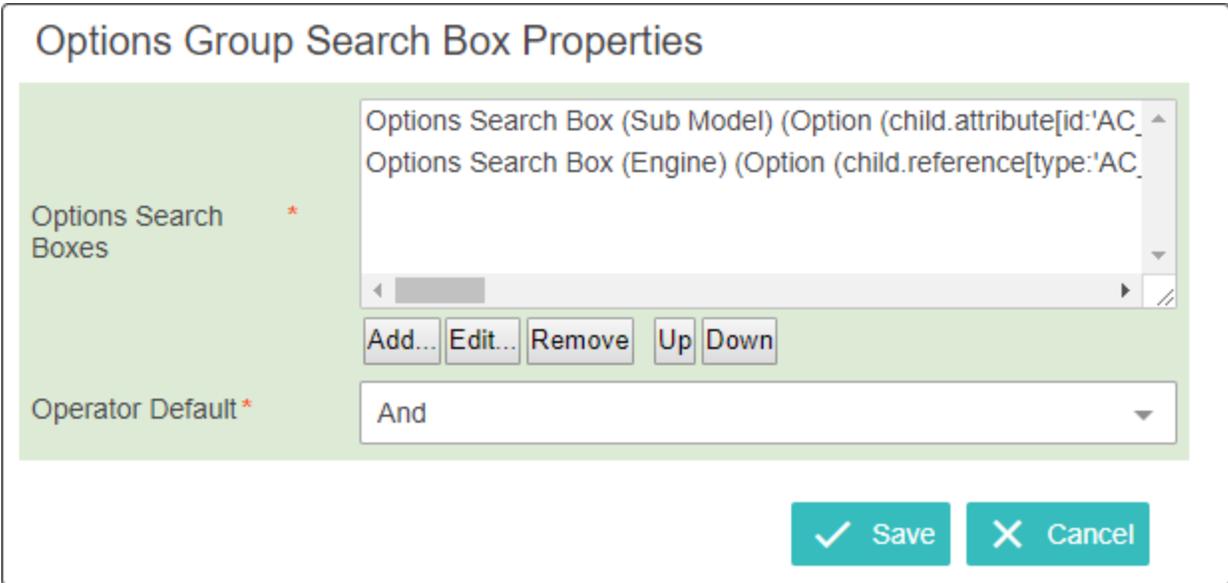


Within the Options Group Search Box Properties dialog, the following parameters are required:

Options Search Boxes: Allows either one or two Options search boxes to display within the Vehicle Type Search Panel. Each Options search box can be configured to allow users to choose from a dropdown list of options. At a maximum, only two Options Search Boxes can be added to an Options Group Search Box.

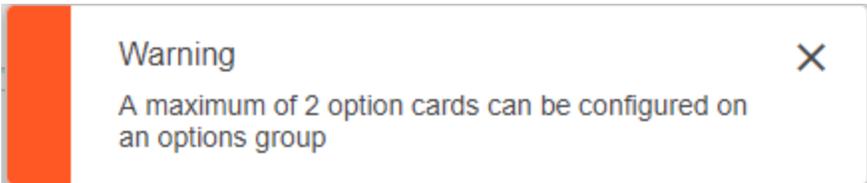
Operator Default: Allows the default AND / OR operator to be configured for two Options search boxes. By default, AND is selected.

Below is an example of an Options Group Search Box Properties dialog configured for the AutoCare standard.



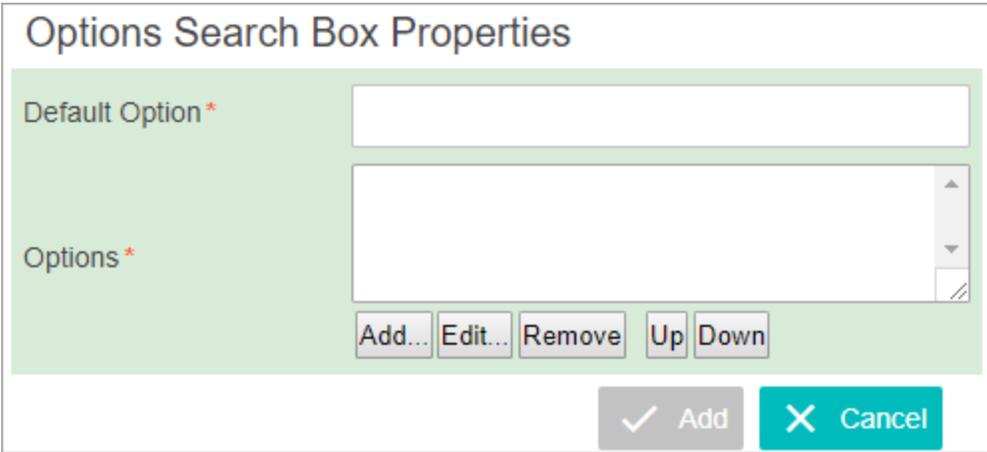
The dialog box is titled "Options Group Search Box Properties". It features a list of search boxes on the left with the label "Options Search Boxes" and a red asterisk. The list contains two entries: "Options Search Box (Sub Model) (Option (child.attribute[id:'AC_...])" and "Options Search Box (Engine) (Option (child.reference[type:'AC_...])". Below the list are buttons for "Add...", "Edit...", "Remove", "Up", and "Down". At the bottom left, there is a field for "Operator Default" with the value "And" and a dropdown arrow. At the bottom right, there are "Save" and "Cancel" buttons.

Because only two Options Search Boxes can be configured for each Option Group search box type, if a user tries to add a third Options Search Box, a Warning dialog will display as shown below.



The warning dialog has a red header bar with the word "Warning" and a close button (X). The main text reads: "A maximum of 2 option cards can be configured on an options group".

- 4. Click the **Add** button beneath the Options Search Boxes parameter, and the Options Search Box Properties will display as shown below.



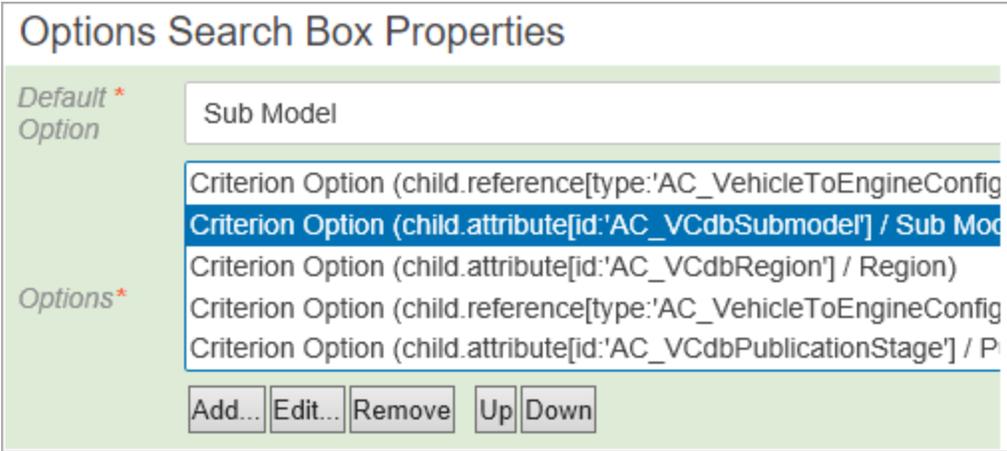
The dialog box is titled "Options Search Box Properties". It has a "Default Option" field at the top. Below it is a list of "Options" with a red asterisk. The list is currently empty. Below the list are buttons for "Add...", "Edit...", "Remove", "Up", and "Down". At the bottom, there are "Add" and "Cancel" buttons.

Within the Options Search Box Properties dialog, the following parameters are required:

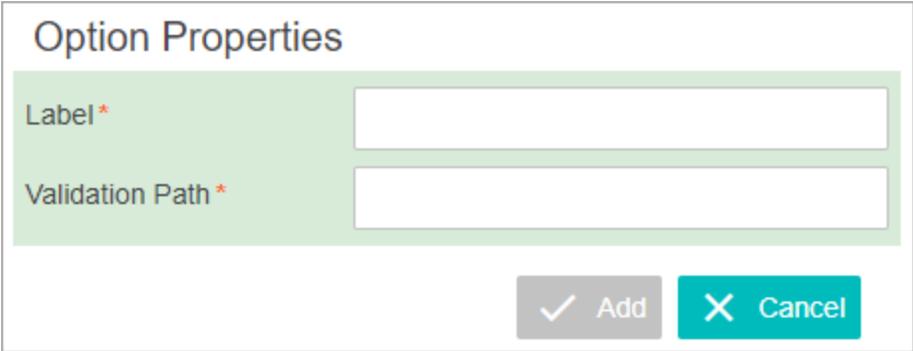
Default Option: Allows for a default option to display when users access the Application Manager. The value within this parameter must match the 'Label' parameter configured within the Options parameter listed below this parameter.

Options: Allows for one or more attributes or References to be displayed as Options within the Options Search Box. Once an Option is selected, the typeahead dropdown field will display only values that pertain to the selected option. When more than one Options search box is used, the attributes and/or reference Options configured within one Options search box can optionally be configured to display in the second Options search box.

Below is an example of an Options Search Box Properties dialog configured for the AutoCare standard.



- 5. Click the **Add** button to add an option to an Options Search Box, and the Option Properties dialog will display two required parameters:



Within the Option Properties dialog, the following parameters are required:

Label: Provide a label that best describes the option being added to the Options Search Box. The value can be used within the 'Default Option' parameter on the previous dialog.

Validation Path: Provide a validation path for the option being configured. The option should correlate to an attribute or reference. It is recommended to copy the 'Automotive Validation Path' value for the attribute or

reference from the workbench, and paste it into the Validation Path parameter field. Examples for each type of validation path can be found below.

- Attribute Validation Path Example:

Below is an example of a Option Properties dialog configured for the ACES attribute, Sub Model.

Option Properties

*Label**

*Validation Path**

The Validation Path is configured by the Easy Setup and displayed in the workbench. For this example, the Validation Path for the ACES Sub Model can be found by navigating to System Setup > Attribute Groups > AutoCare Attributes > AutoCare ACES Attributes > ACES Sub Model.

ACES Sub Model - Attribute	
Attribute	References
Description	
Name	Value
> ID	AC_ACESSubModel
> Name	Sub Model
> Last edited by	2017-11-17 14:14:33 by EASYSETUP
> Full Text Indexable	No
> Externally Maintained	No
> Completeness Score	
> Hierarchical Filtering	None
> Calculated	No
> Type	Specification
> Automotive Validation Path	abc child.attribute[id:'AC_VCdbSubmodel'] ←

- Reference Validation Path Example:

Below is an example of how to configure the Option Properties for the ACES reference, ACES Application To Engine Base.

Option Properties

Label *

Validation * Path

The Automotive Validation Path for the **ACES Application To Engine Base** reference type can be found in the workbench by navigating to System Setup > Reference Types > Classification Reference Types > ACES Application To Engine Base.

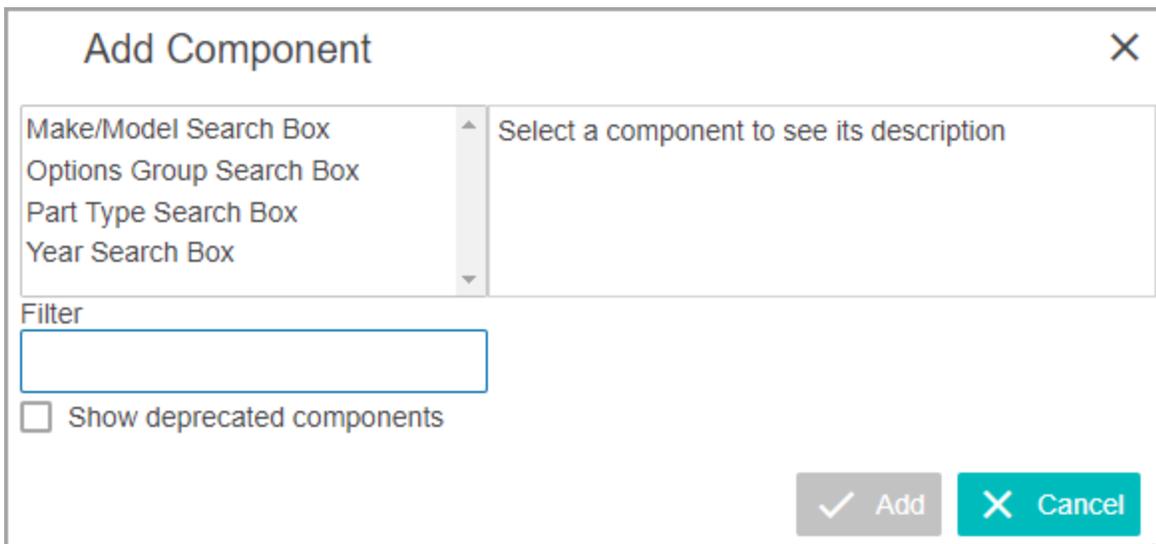
ACES Application To Engine Base - Reference Type		
Reference Type	Validity	Log
Description		
Name	>	Value
ID	>	AC_ACESApplicationToEngineBase
Name	>	ACES Application To Engine Base
Last edited by	>	2018-04-05 13:53:26.0 by EASYSETUP
Externally Maintained	>	No
Allow multiple references	>	No
Mandatory	>	No
Inheritance	>	None
Automotive Validation Path	abc	child.reference[type:'AC_VehicleToEngineConfig'].reference[type:'AC_EngineConfigToEngineBase'].ID

- Once the required parameters are populated, click the **Add** button to return to the Options Search Box Properties, and optionally add additional options for the Options Search Box, or click the **Add** button and return to the Options Group Search Box Properties.
- Optionally repeat the steps above to add an additional Options Search Box, or click the **Add** button to return to the Vehicle Type Search Panel Properties.
- Once the required parameters are populated, click the **Add** button to return to the Vehicle Type Search Panel Properties, and optionally add another search box type, or move on to the next required parameter.

Configuring Part Type Search Box

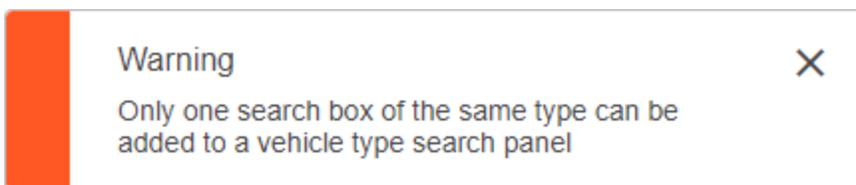
Because the Part Type search box type does not require additional configuration, it can quickly be added to the Search Box Types parameter within the Vehicle Type Search Panel Properties dialog by following the steps listed below:

1. From the Vehicle Type Search Panel Properties dialog, click the **Add** button below the Search Box Types parameter field, and the Add Component dialog will display.



2. Click **Part Type Search Box** from the list of components.
3. Click the **Add** button, and the Vehicle Type Search Panel Properties will display with the Part Type Search Box added to the Search Box Types parameter.

Because each search box type can be only be configured once for each Application Manager, if a second search box of the same type is added, a Warning dialog will display as shown below, and the Search Box Types parameter will remain unchanged.

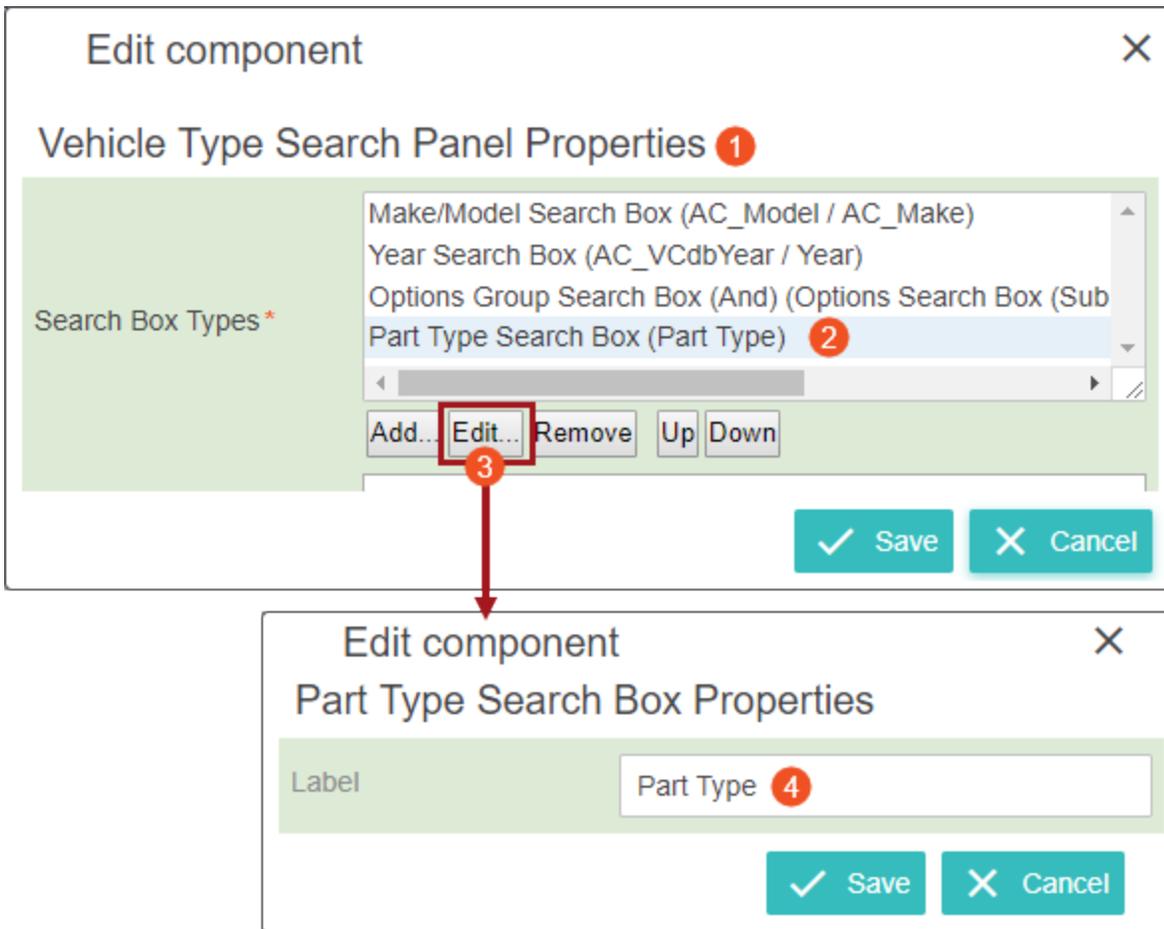


Editing the Part Type Search Box Label

The Part Type search box label displayed within the Application Manager can be edited by following the steps listed below:

1. Go to the Vehicle Type Search Panel Properties for the Application Manager.
2. Within the Search Box Types parameter, select the **Part Type Search Box**.

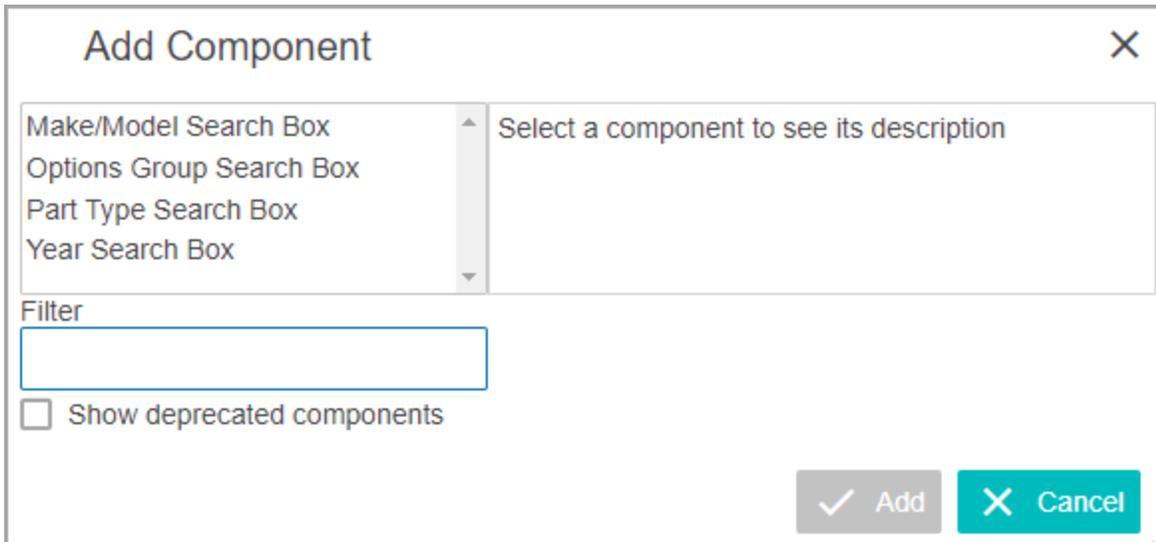
3. Click the **Edit** button, and the Part Type Search Box Properties dialog will display as shown below.
4. Edit the **Label** parameter field with the desired text to be displayed within the Application Manager. By default, the label text is 'Part Type.'



Configuring Year Search Box

Steps for adding the Year search box type to a Vehicle Type Search Panel are below.

1. From the Vehicle Type Search Panel Properties dialog, click the **Add** button below the Search Box Types parameter field, and the Add Component dialog will display.



2. Click **Year Search Box** from the list of components.
3. Click the **Add** button, and the Year Search Box Properties will display, as shown below.



Label: Optionally, provide a label for the Year search box that best communicates to the user what criteria are available for selection within the Application Manager. By default, the label is set to 'Year.'

Year Attribute: This required field determines the Year Attribute that allows users to add one or more year criteria to their search. All attribute validation base types (e.g., Text, Number, List Of Values) are allowed. Click the ellipsis button (...) to find and select the necessary Year Attribute. The selected attribute must be valid for the object type that is defined in the Vehicle Object Types parameter, and the Year Attribute value must be populated on that object in order for it to display correctly.

4. Once the required parameters are populated, click the **Save** button to return to the Vehicle Type Search Panel Properties, and optionally add another search box type, or move on to the next required parameter.

Below is an example of a configured Year search box type for the AutoCare standard.

Year Search Box Properties

Label	Year
Year Attribute *	AC_VCdbYear

Because each search box type can be only be configured once for each Application Manager, if a second search box of the same type is added, a Warning dialog will display as shown below, and the Search Box Types parameter will remain unchanged.

Warning ✕

Only one search box of the same type can be added to a vehicle type search panel

Competitor and OE Numbers Solution

A competitor number refers to the part number used by a competitor. Whereas an OE number refers to the original parts used by the original equipment manufacturer to assemble a vehicle at the factory. This number is only unique within parts from that manufacturer. For example, an OE number should always be displayed with the OEM (Original Equipment Manufacturer) name behind the number. This means that ABC123 AUDI will usually not be the same part as ABC123 BMW. But on the other hand, they could be the same part if both manufacturers acquired their part from the same supplier.

With the automotive solution, it is easy to maintain data related to both the competitor part number and OE number. The automotive solution not only helps users more easily view, edit, and create competitor and/or OE part number references for specific parts, but also suggest potential matches. In other words, when configured, STEP can suggest potential matches for competitor and/or OE part numbers based on existing competitor and/or OE part number references and/or matching part numbers within STEP. This occurs when a part is selected, STEP looks at the configured Reference Types and displays their targets, attribute values, and/or metadata via configurations within the 'Part Number References' Node Editor component.

In the example below, part 90069 is selected within a Web UI Tree, and a Web UI screen (Product Details) is configured to display the competitor and OE numbers on separate tabs (OE Numbers, Competitor Numbers). Though only the content for the OE Numbers tab is displayed below, the layout and features on both tabs are the same.

Product Details
 OE Numbers Competitor Numbers

1 Existing OE Part Number References

Make	Manufacturer	Original Number	Name
ABARTH	ABARTH	46444287	
FIAT	FIAT	60815616	

4 Enter a manufacturer name and/or part number

2 OE Part Number Suggestions

Reference has the same number: '60815616'

Make	Manufacturer	Original Number	Info	Add	Remove
ABARTH			3 ⓘ	5 +	7 ×
ALFAROMEIO		46444287	ⓘ	+	×
LANCIA		60815616	ⓘ	+	×
MASERATI		60815616	ⓘ	+	×

When these components are configured as shown above, Web UI users can:

1. View existing competitor and/or OE part number references and related data.
2. View competitor and/or OE part number reference suggestions and related data.
3. View information about the suggested part number.
4. Add competitor and/or OE part number references manually.
5. Add competitor and/or OE part number references from suggestions.
6. Remove existing competitor and/or OE part number references.
7. Remove competitor and/or OE part number references from suggestions.

Note: The components used for this solution are extremely flexible and can be configured to display both the competitor and OE numbers on the same screen. Also, additional column headers can be added to the components to display more information than is shown in this example.

This section addresses:

- Prerequisites
- Adding Part Number References Manually

- Configuring the Part Number References Component
- Configuring the Part Number Suggestions Component

Prerequisites

When implementing this solution, it is suggested to create a 'Product Details' screen within a Web UI and configure it to display when a product is selected within the Tree navigator. The Product Details screen should be created via a Node Details screen with a Tab Control that is configured to display a 'Competitor Numbers' and an 'OE Numbers' Tab Page. Within each of these Tab Pages a Node Editor can be configured with 'Part Number References' and/or 'Part Number Suggestions' components. The Part Number References component can be configured to display competitor and/or OE number data. Whereas, the 'Part Number Suggestions' component can be configured to display suggested competitor and/or OE part numbers.

For more details on configuring screen mappings so that a 'Product Details' screen will display when a product is selected within the Tree navigator, see the **Mappings** topic within the **Main Properties Overview** of **STEP Online Help**.

Adding Part Number References Manually

Users can easily add an existing competitor and/or OE part number reference to a selected part within Web UI. When the Part Number References component is configured, and a part is selected, STEP looks at the configured Reference Types and displays their targets, attribute values, and/or metadata via configurations within the 'Part Number References' Node Editor component. Whether or not references are displayed, at a minimum a blank typeahead field will display prompting users to 'Enter a manufacturer name and/or part number.' This typeahead field can be used to manually add a reference from an existing part number to the selected part.

In the example below, part 90069 is selected within the Web UI Tree, and an OE Numbers tab is configured to display results for 'Existing OE Part Number References.' Within the results, two Makes / Manufacturer part numbers are displayed, along with the blank typeahead field that prompts users to 'Enter a manufacturer name and/or part number.'

Make	Manufacturer	Original Number	Name
ABARTH	ABARTH	46444287	✕
FIAT	FIAT	60815616	✕

Enter a manufacturer name and/or part number

Note: Though a new part number can be created using the Create New Part dialog, a new manufacturer name cannot be created.

When the manufacturer name and part number exist in STEP, users can type in the manufacturer name [space bar] part number to easily find the desired part number. Once a manufacturer name is typed into the typeahead field, available part numbers for the manufacturer will display in the dropdown list. Clicking a listed part number will add the part number to the top of the references list.

In the example below, 'lancia 46444' is typed into the typeahead field and the Lancia part numbers that begin with 46444 display within the dropdown list.

Product Details

OE Numbers Competitor Numbers

Existing OE Part Number References

Make
ABARTH
FIAT
<u>lancia</u> 46444

LANCIA

- ├ 46444284
- └ 46444287

Clicking on 46444287 adds the part number to the top of the references list, as shown below.

Product Details

OE Numbers Competitor Numbers

Existing OE Part Number References

Make	Manufacturer	Original Number	Name
LANCIA	LANCIA	46444287	×
ABARTH	ABARTH	60815616	×
FIAT	FIAT	60815616	×

Enter a manufacturer name and/or part number

If the Part Number Suggestions component is configured below the references list, then the suggestions list will update as new part numbers are added to the references list.

Configuring the Part Number References Component

The Part Number References component is a Node Editor component used to display referenced part numbers and their attribute and/or metadata values when a part number is selected within the Tree navigator. For information about how to use this component, and prerequisites, see the **Competitor and OE Numbers Solution** topic.

Below are steps to configure the Part Number References component within a Node Editor. Each of the parameters for the Part Number References Properties are described below.

1. Using the Designer, go to Node Editor Properties Child Components Rows parameter for the screen that needs to display competitor and/or OE number information.
2. Click the **Add** button for the Child Components Rows parameter, and the Add Component dialog will display.
3. Find and select the **Part Number References** component, click the **Add** button, and the Part Number References Properties dialog will display (as shown below).

Part Number References Properties

Business Action to Invoke ... Clear

Table Headers *
Manufacturer References
Name Header
Add... Edit... Remove Up Down

New Number Prefix *
NewReferenceNumber_

Original Number Attribute ... Clear

Reference Types *
Add... Remove Up Down

✓ Save X Cancel

Business Action to Invoke: By default, this field is blank. Optionally, select a Business Action to be invoked after a new part is created using the Create New Part dialog. This can be helpful when a Business Action is configured to normalize / harmonize a part number.

Table Headers: By default, the following Table Header components are added to the parameter:

Manufacturer References: Table header component used to display the manufacturer and/or attribute value references of a selected part. Includes the following parameters:

The screenshot shows a dialog box titled "Manufacturer References Properties". It has a light green header. Below the header are three rows of configuration options:

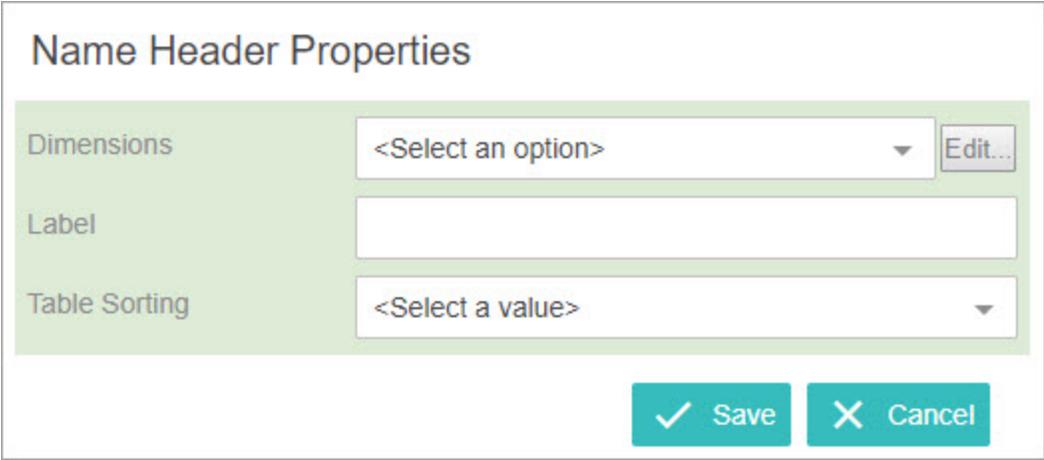
- Label:** A text input field containing the word "Manufacturer".
- Display Value:** A dropdown menu with "PARENT_NAME" selected.
- Attribute:** A text input field that is currently empty, followed by a small button with three dots and a "Clear" button.

At the bottom right of the dialog are two buttons: a green "Save" button with a checkmark icon and a teal "Cancel" button with an 'X' icon.

- **Label:** By default, the Label parameter is populated as 'Manufacturer.' Optionally edit the parameter to a more suitable label.
- **Display Value:** By default, parameter uses the 'PARENT_NAME' value. This allows the parent of the applicated competitor and/or OE part number to display within the Web UI. Optionally, the 'ATTRIBUTE_VALUE' value can be selected. The ATTRIBUTE_VALUE allows the values of the attribute selected within the 'Attribute' parameter to display within the Web UI.
- **Attribute:** Parameter must be populated with an attribute that is valid for the competitor or OE number Object Types.

Note: The Attribute parameter should only be populated when the 'ATTRIBUTE_VALUE' value is selected. Otherwise the component should be configured as shown in the example above.

Name Header: Table header component that displays the name of the part numbers in the table. Includes the following parameters:

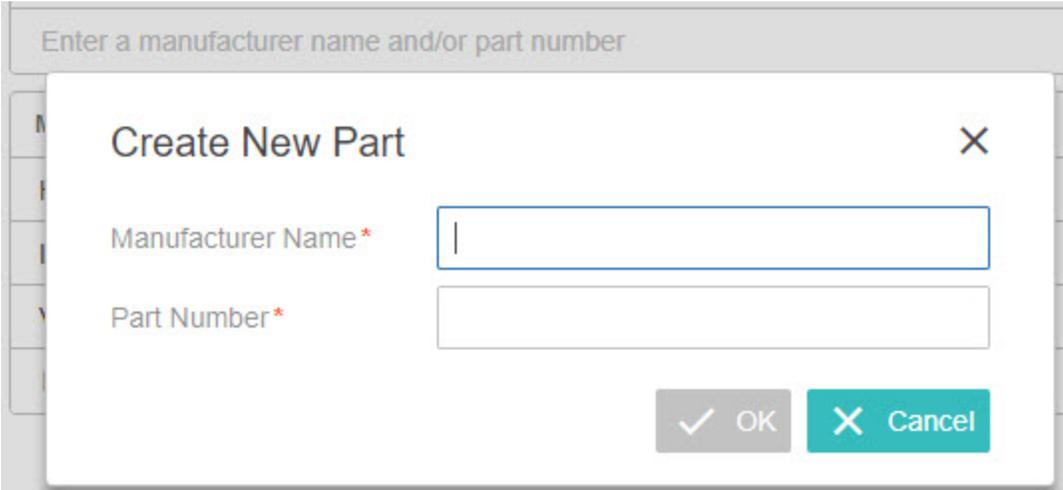


The 'Name Header Properties' dialog box features a light green header and a white body. It contains three main sections: 'Dimensions' with a dropdown menu showing '<Select an option>' and an 'Edit...' button; 'Label' with a text input field; and 'Table Sorting' with a dropdown menu showing '<Select a value>'. At the bottom right, there are two buttons: a green 'Save' button with a checkmark icon and a teal 'Cancel' button with an 'X' icon.

- **Dimensions:** By default, the parameter is blank. Optionally, select to use the 'Table Header Dimensions.'
- **Label:** By default, when the Label parameter is blank, the column label will display as 'Name.' Optionally edit the parameter to a more suitable label.
- **Table Sorting:** Optionally, specifies the default sorting to be applied to the header.

Note: Additional components can be added to the Table Headers parameter. It can be especially helpful to add the 'Headline' child component to provide a visual separation and heading between components, and/or components used within the Headers parameter of an Application Manager Screen (i.e., Application Set Assembly, Application Part Type Title Header, Application Set Part, Application Condition Header - Individual, Application Condition Header - Group, Application Comment, Application Asset References).

New Number Prefix: This prefix will be used for the ID of any part number that is created using this Create New Part dialog (as shown below). This must be a unique prefix. Do not use an existing prefix, otherwise errors will occur. Optionally, if a different prefix is desired, edit the prefix to something more suitable, but unique.



The 'Create New Part' dialog box is a white window with a grey title bar that says 'Enter a manufacturer name and/or part number'. The title bar has a close button (X) on the right. The dialog has a title 'Create New Part' and a close button (X) in the top right corner. It contains two text input fields: 'Manufacturer Name*' and 'Part Number*'. At the bottom right, there are two buttons: a grey 'OK' button with a checkmark icon and a teal 'Cancel' button with an 'X' icon.

Original Number Attribute: By default, this field is blank. Because part numbers created using the Create New Part dialog are normalized / harmonized to use alphanumeric characters only, this parameter allows for the original part numbers created using special characters, spaces, and/or non ASCII characters to be stored and searchable. Optionally, select an attribute that will be used to store the original part number exactly as it is entered when creating a new part using the Create New Part dialog. The attribute selected for this parameter must be valid for the competitor / OE number object type. The normalized / harmonized version will be stored as the STEP Name of the new part number.

Important: An error message will display, and users will not be able to create a new part if the attribute configured within the 'Original Number Attribute' parameter is not valid for the competitor and/or OE part number object type.

Reference Types: By default, this required parameter is blank. However, it is mandatory to add at least one Product Reference Type so that when a part is selected STEP can follow the reference types listed within this parameter and display the target and/or related attribute values on the targets.

For example, within the AutoCare solution, when a part is selected STEP would need to follow the **PIES Interchange** reference and display the targets and/or a related attribute values on the targets.

For example, within the NAPA solution, when a part is selected STEP would need to follow the **Product to Interchange Product** reference and display the targets and/or a related attribute values on the targets.

For example, within the TecDoc solution, when a part is selected STEP would need to follow the **Supplier Article to Competitor Number** and/or the **Supplier Article to OE Number** references and display their targets and/or a related attribute values on the targets.

4. Click the **Save** button and the Part Number References Properties dialog will close, and the newly added component will display within the Rows parameter.
5. Click the **Save** button and then click the **Close** button to close the designer.

Configuring the Part Number Suggestions Component

The Part Number Suggestions component is a Node Editor component used to extend the Part Number References component by displaying part number suggestions. Part number suggestions are based upon the configured references and Suggestion Plugins when a part number is selected within the Tree navigator. For information about how to use this component, and prerequisites, see the **Competitor and OE Numbers Solution** topic.

Configuration Steps

Below are steps to configure the Part Number Suggestions component within a Node Editor. Each of the parameters for the Part Number Suggestions Properties are described below.

1. Using the Designer, go to Node Editor Properties Child Components for the screen that needs to display part number suggestions.
2. Click the **Add** button for the Child Components Rows parameter, and the Add Component dialog will display.
3. Search for and select the Part Number Suggestions component.
4. Click the **Add** button, the Add Component dialog will close, and the Part Number Suggestions Properties dialog will display as shown below.

Properties

Configuration Web UI style

ProductDetails Save Close New... Delete Rename Save as...

Node Editor Properties [go to parent](#)

Child Components 1

Rows

- Headline
- Part Number References
- Headline

2 Add.. Remove Up Down

Add Component

Parent selector

Parent Type Ahead

Parent Value

Part Number References

Part Number Suggestions 3

Planned Spread Revision Compare In Workflow

Filter

Show deprecated components

A component used for suggesting parts that may need to be referenced to a selected part based on existing data (i.e., competitor and/or OE numbers).

4

Edit component

Part Number Suggestions Properties

Table Headers *

Reference Numbers Make Name Header

Add... Edit... Remove Up Down

Reference Types *

Add... Remove Up Down

Table Headers: By default, this required parameter is pre-populated with the Reference Numbers Make and Name Header components. Optionally edit these components, and/or add additional Headers components to display information about the suggested competitor and/or OE number.

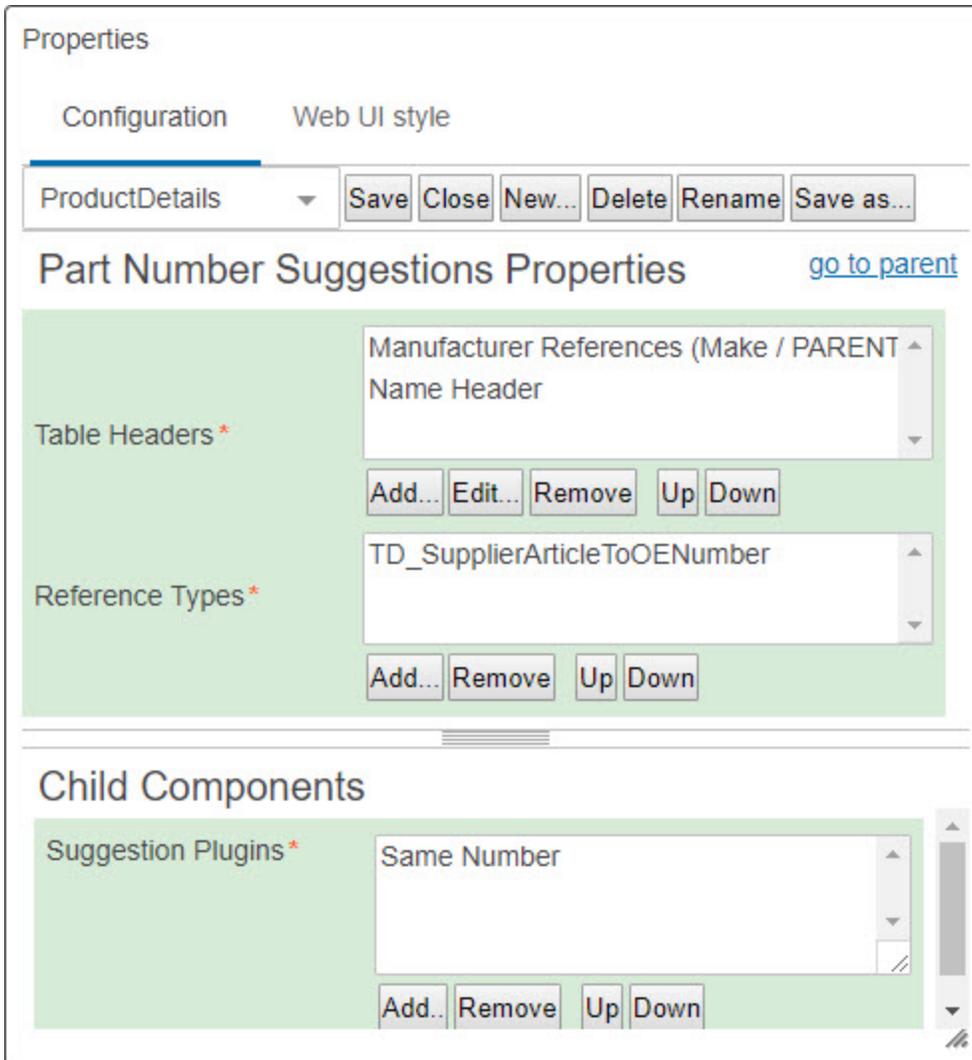
Reference Types: By default, this required parameter is blank. However, it is mandatory to add at least one Product Reference Type so that when a part is selected STEP can follow the reference types listed within this parameter and display the target and/or related competitor and/or OE number information on the targets.

For example, within the AutoCare solution, when a part is selected STEP would need to follow the **PIES Interchange** reference and display the targets and/or a related attribute values on the targets.

For example, within the NAPA solution, when a part is selected STEP would need to follow the **Product to Interchange Product** reference and display the targets and/or a related attribute values on the targets.

For example, within the TecDoc solution, when a part is selected STEP would need to follow the **Supplier Article to Competitor Number** and/or the **Supplier Article to OE Number** references and display their targets and/or a related attribute values on the targets.

5. Click the **Save** button, the Part Number Suggestions Properties dialog will close, and the newly added component will display within the Rows parameter.
6. Double click the newly added Part Number Suggestions component, and the Part Number Suggestions Properties will display as shown below.



Suggestion Plugins: By default, this required parameter is pre-populated with the Same Number plugin.

Same Number: This plugin is used to suggest other part numbers based upon matching part number names used in the Part Number Suggestions component. Additional configuration parameters are not available for this plugin. However, customers with the Extension API license can create their own plugins.

7. Click the **Save** button and then click the **Close** button to close the designer.

Country Handling Solution

Within the automotive industry, it is vital to properly maintain parts data pertaining to country inclusion and/or exclusion to ensure market-specific coverage and legal compliance. The Country Handling solution helps users view, edit, and create accurate country handling inclusion and exclusion references for specific parts and applications. This Web UI solution also prevents users from creating conflicting inclusion and/or exclusion relationships.

The Country Handling solution can be used within an Application Manager Results Table via an 'Application Country Handling Table Header' component and within a Node Editor screen via a 'Country Handling Value' component.

This section addresses

- Prerequisites
- Using Country Handling
- Using Country Handling Value Editor to Add or Edit Country Handling Data
- Configuring Automotive - Country Model Component Model
- Configuring Application Country Handling Table Header
- Configuring Country Handling Value Component

Prerequisites

1. Apply the automotive recipe to the STEP instance to display the 'Automotive - Country Model' component model within Workbench > System Setup > Component Models.
2. Configure the 'Automotive - Country Model' component model.
For more information, see the **Configuring Automotive - Country Model Component Model** topic.
3. If needed, configure the 'Application Country Handling Table Header' component.
For more information, see the **Configuring Application Country Handling Table Header** topic.
4. If needed, configure the 'Country Handling Value' component.
For more information, see the **Configuring Country Handling Value Component** topic.

Additionally, when implementing this solution, it is best practice to create a 'Product Details' screen within a Web UI and configure it to display the Country Handling Value component when a product of a specified object type is selected within the Tree navigator. For more details on configuring screen mappings for this configuration, see the **Mappings** topic within the **Main Properties Overview** of **STEP Online Help**.

Using Country Handling

The Country Handling solution helps users view, edit, and create accurate country handling inclusion and exclusion references for specific parts and applications. This Web UI solution also prevents users from creating conflicting inclusion and/or exclusion relationships.

The Country Handling solution can be used within an Application Manager Results Table via an 'Application Country Handling Table Header' component and/or within a Node Editor screen via a 'Country Handling Value' component.

Prerequisites

Configuration is required before the Country Handling solution can be used. For more information, see the **Prerequisites** section of the **Country Handling Solution** topic.

Using Country Handling within Application Manager

When using the Country Handling solution within an Application Manager, the 'Application Country Handling Table Header' component can be configured to display the country inclusion data within the 'Country' column of the Results Table where users can view country handling data on applications. This component only displays inclusion data for the selected application. Therefore, it does not display inclusion nor exclusion data from the application's parent (i.e., Part). Double clicking a cell within the 'Application Country Handling Table Header' column will display a Value editor where users can add and/or remove country inclusion data.

In the example below, the Application Country Handling Table Header component is displayed with the default column label 'Countries.' In the first row of the Results Table, an application for an ACURA Coupe - NSX displays with 'All (0/249)' within the Countries column. This indicates that the between the configured exclusion and inclusion attributes, zero values are populated. In other words, for the possible 249 countries, no exclusion nor inclusions have been added to STEP. Therefore, the inclusion of all countries is assumed because no data exists in the exclusion and/or inclusion attributes.

The screenshot shows the Stibo Systems application manager interface. At the top, there are search filters for 'Make/Model' (set to ACURA), 'Engine', and 'Model'. Below these are buttons for 'Enter Make/Model', 'Enter Engine', and 'Enter Model'. A central 'AND' button is also visible. Below the filters are dropdown menus for 'Acura Existing Applications', 'Existing Applications Only', and 'All Brands'. The main table has columns for 'Assembly', 'Generic Article', 'Supplier Article', and 'Countries'. The 'Countries' column for the first row is highlighted with a red box, showing 'All (0/249)'. The second row shows a list of country groups and their counts.

Assembly	Generic Article	Supplier Article	Countries
<input type="checkbox"/> ACURA Coupe - NSX - 3.2 1997-08-01-2005-12-31, 206kW, 280HP, cmTech 3179	Ignition Coil	49065	All (0/249)
<input type="checkbox"/> ACURA Coupe - NSX - 3.2 1997-08-01-2005-12-31,	Ignition Coil	49064	All (247/249), ASEAN (10/10), Africa (53/53), Asia / Pacific (16/16), Baltic Countries (3/3), Benelux (3/3), Central America (8/8), Community of Independent States (7/7), Countries of the

To add or edit country inclusion / exclusion data to an application using the 'Application Country Handling Table Header' component, double click the desired cell within the 'Countries' column for the application row, and a Value editor dialog will display. For more information, on using the Value editor, see the **Using Country Handling Value Editor** topic.

Once the Value editor is used to edit the country handling data, the Application Manager Results Table will update to display the country data referenced for inclusion.

In the screenshot below, the cell that once displayed 'All (0/249)' now displays 'All (56/249),' and then lists the country group names with their count of selected countries / number of countries within the group. For example, five of the ten countries included within the ASEAN country group are displayed as selected because they are also included in the 'Left-hand traffic' country group that was selected.

	Assembly	Generic Article	Supplier Article	Countries
<input type="checkbox"/>	ACURA Coupe - NSX - 3.2 1997-08-01-2005-12-31, 206kW, 280HP, cmTech 3179	Ignition Coil	49065	All (56/249), ASEAN (5/10), Africa (13/53), Asia / Pacific (9/16), Countries of the European Union (4/25), Europe (4/40), Except Europe (38/120), Far East (7/13), Left-hand traffic (55/55), South America (2/12), Western Europe (Total) (2/20), Western Europe (without Germany) (2/18)

To remove any of the selected inclusion countries, double click on the cell to access the Value editor. Uncheck any country checkboxes, and click the OK button.

Important: Once a country value is added for inclusion, if it is then added to the exclusion attribute, it is automatically removed from inclusion attribute. The same country cannot exist in both the inclusion attribute and the exclusion attribute.

Using Country Handling within Node Editor

When using the Country Handling solution within a Node Editor, the 'Country Handling Value' component can be configured to display the country inclusion data within a Node Editor screen used to view and/or edit country handling data on parts and/or applications (i.e., Product Details screen).

When configured, this component can be used to view and edit the country inclusion data for applications and/or parts. Once an application and/or part object type is selected, then the Country Handling Value component displays only those countries currently referenced to the attribute or part for inclusion. It only displays inclusion data for the selected object. Therefore, it does not display inclusion nor exclusion data from the part's parent and/or child objects (i.e., Part Types, Applications).

In the example below, when part '49065' is selected within a Web UI Tree, a 'Product Details' screen displays a 'Country Inclusion / Exclusion' tab page where the Country Handling Value component displays 'All Countries (6/273),' indicating that six countries of the 273 available are referenced for inclusion. To the right of that heading, the list of individual country names referenced for inclusion display (Denmark, France, Germany, Great Britain, Norway, and Sweden).

When the component first displays, the 'All Countries (number of countries referenced for inclusion / total number of countries)' group heading displays using bold text and highlighted in blue. Each country group containing a country referenced for inclusion will display in bold below the 'All Countries' heading. Because each country group heading displays the number of countries referenced for inclusion out of the total number of countries within the group, it is easy to get an understanding of the country groups that contain referenced countries for inclusion.

Clicking any one of the country group names will move the blue highlight to that header and display the countries referenced for inclusion within that group to the right of the header. In the example below, the 'Left-hand traffic' country group is selected and its one country referenced for inclusion (Great Britain) displays to the right. From this display, it is easy to see not only the specific country groups that the six countries referenced for inclusion belong to, but also, of the six countries referenced for inclusion, only one is included in the 'Left-hand traffic' group that includes 55 countries.

Selected Countries

Filter countries 

All Countries (6/273)	Great Britain
Countries of the European Union (5/25)	
Europe (6/40)	
Left-hand traffic (1/55)	
Scandinavia (3/4)	
Western Europe (Total) (6/20)	
Western Europe (without Germany) (5/18)	

When country inclusion and/or exclusion data is not provided, then the component will display 'No countries selected' (as shown below). The edit button () can be used to add country handling data.

No countries selected 

No countries selected



To get started, use the pen icon to add or remove countries.

To search for a specific country within any of the listed country groups with inclusion data, type text into the 'Filter countries' text box and the results will display country names that match the typed text to the right of the country group headers.

In the example below, 'den' is typed into the 'Filter countries' text box and where the component once displayed '6/273' it now displays '1/273.' To the right of the country group headers, the filter result (Denmark) displays. Each country group that contains an inclusion filter results match displays in bold. Whereas, any country groups that do not contain a filter result match ('Left-hand traffic') display in gray text.

Selected Countries	<input type="text" value="den"/>	
	All Countries (1/273)	Denmark
	Countries of the European Union (1/25)	
	Europe (1/40)	
	Left-hand traffic (0/55)	
	Scandinavia (1/4)	
	Western Europe (Total) (1/20)	
	Western Europe (without Germany) (1/18)	

When the text typed into the 'Filter countries' text box does not match any of the country names referenced for inclusion, then the 'Country not found' message will display in the results (as shown below).

<input type="text" value="ind"/> 	
<p>All Countries (0/273)</p> <p>Countries of the European Union (0/25)</p> <p>Europe (0/40)</p> <p>Left-hand traffic (0/55)</p> <p>Scandinavia (0/4)</p> <p>Western Europe (Total) (0/20)</p> <p>Western Europe (without Germany) (0/18)</p>	<p>Country not found</p> <p>The country you are looking for cannot be found. You can add and remove countries by clicking the pen icon.</p>

To add or edit country inclusion / exclusion data to an application or part using the 'Country Handling Value' component, click the edit button () to the right of the Filter countries field, and a Value editor dialog will display. For more information on using the Value editor, see the **Using Country Handling Value Editor to Add or Edit Country Handling Data** topic.

Using Country Handling Value Editor to Add or Edit Country Handling Data

Whether the 'Application Country Handling Table Header' or 'Country Handling Value' component is used, the Value editor functions the same.

To add or edit country inclusion / exclusion data to an application using the 'Application Country Handling Table Header' component, double click the desired cell within the 'Countries' column for the application row, and a Value editor dialog will display as shown below. For more information, see the **Configuring Application Country Handling Table Header** topic.

To add or edit country inclusion / exclusion data to an application or part using the 'Country Handling Value' component, click the edit button () to the right of the Filter countries field, and a Value editor dialog will display as shown below. For more information, see the **Configuring Country Handling Value Component** topic.

Value editor - 1 item selected ✕

Filter Countries

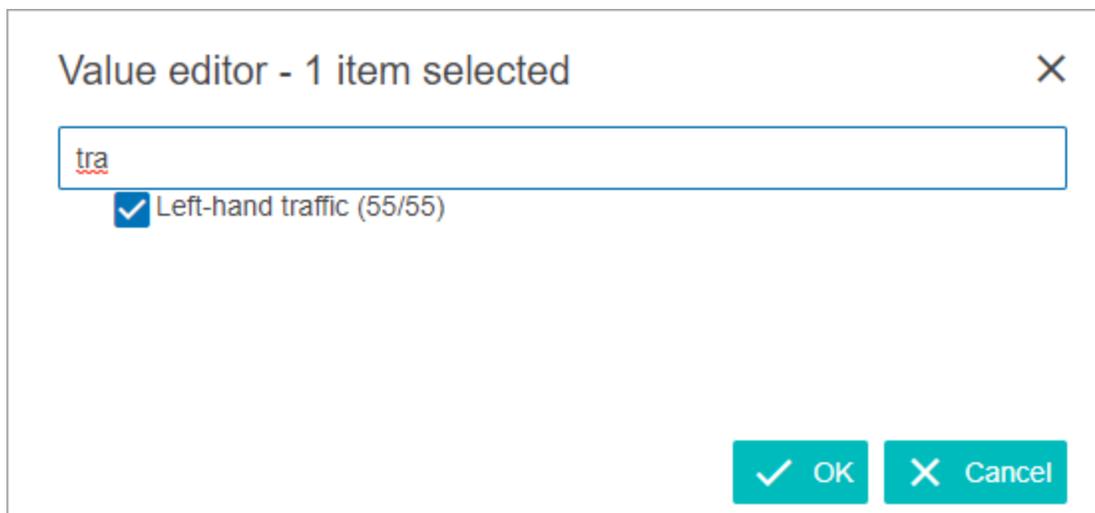
- ▼ All Countries (0/273)
 - ▶ ASEAN (0/10)
 - ▶ Africa (0/53)
 - ▶ Asia / Pacific (0/16)
 - ▶ Baltic Countries (0/3)
 - ▶ Benelux (0/3)
 - ▶ Central America (0/8)
 - ▶ Community of Independent States (0/7)
 - ▶ Countries of the European Union (0/25)
 - ▶ Eastern Europe (0/7)
 - ▶ Europe (0/40)
 - ▶ Except Europe (0/120)
 - ▶ Far East (0/13)
 - ▶ Gulf Countries (0/6)
 - ▶ Iberian Peninsula (0/2)
 - ▶ Left-hand traffic (0/55)
 - ▶ Middle East (0/17)
 - ▶ Middle East (0/4)
 - ▶ NAFTA (0/3)
 - ▶ North Africa (0/4)
 - ▶ North America (0/2)
 - ▶ Scandinavia (0/4)
 - ▶ South America (0/12)

Note: The display of the countries and their groupings vary based upon the configuration of the Automotive - Country Model component model. For more information, see the **Configuring Automotive - Country Model Component Model** topic.

Using the 'Filter Countries' typeahead field, users can type in the first letters of any word within the country name to quickly find the country for selection. Otherwise, scroll through the list of country groups and click on the black arrow heads to expand the groups to view the individual countries within each one. Notice to the right of each country group name, the parentheses show the count of selected countries / number of countries within the group.

When selecting a country group name, the child hierarchy will also automatically be selected. This selection is represented with a blue and white checkmark (☑). If only one country is listed within a country group, and the country is selected, then the country group will also be selected. Otherwise, the country group name displays with a blue and white dash icon (▬) for the group. Additionally, if the selected country belongs to more than one country group, then it will display as checked below each of its country groups. Clicking the blue and white dash icon deselects the country or all countries within the group.

In the example below, 'tra' is entered into the 'Filter Countries' typeahead field, and the country group 'Left-hand traffic (55/55)' is selected and displays with a blue and white checkmark (☑).



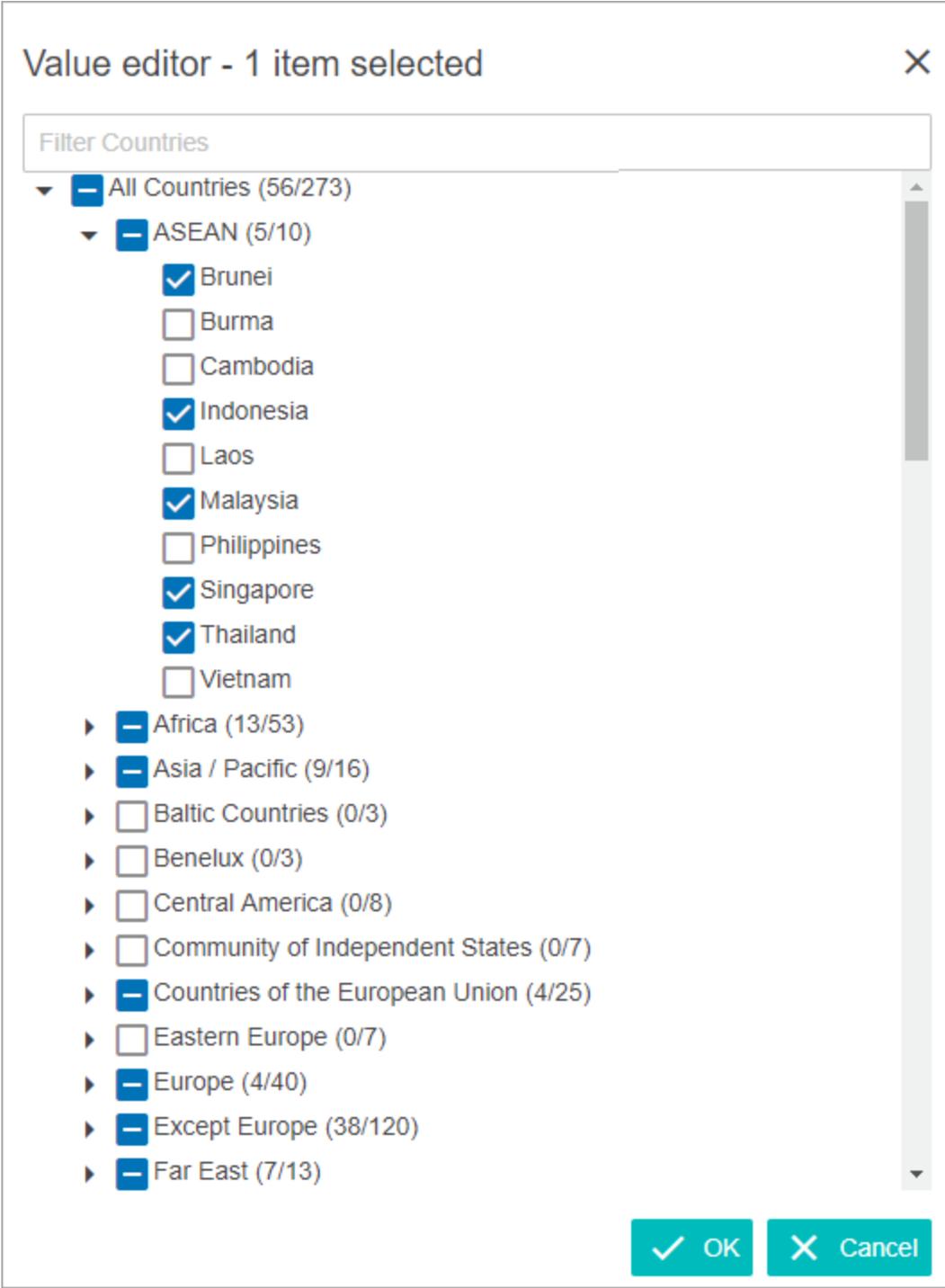
Clicking the OK button closes the dialog and displays the 55 countries selected from the 'Left-hand traffic' country group.

However, as shown in the following example, it is also possible to clear the previously entered text and either enter new search text or view the individual countries selected.

In the example below, the 'tra' text was removed from the 'Filter Countries' field using the backspace key, and the selected countries from the 'Left-hand traffic' country group display selected within their additional country groups.

The blue and white dash icon (▬) is used when only some of the countries in a country group are selected.

Whereas, the blue and white checkmark icon (☑) is used when all the countries within a group are selected. Clicking the checkmark or empty checkbox toggles between selecting all countries and selecting none.



Note: The OK button is only enabled when there are changes to be saved.

Once the desired countries for inclusion are selected, click the OK button to close the dialog and return to the previous screen.

Clearing the checkbox for any of the countries or groups on the list will remove them from inclusion.

Configuring Automotive - Country Model Component Model

Once a STEP system is setup to display the 'Automotive - Application Model' component model, then the 'Automotive - Country Model' component model will also display within Workbench > System Setup > Component Models.

The component model will need to be manually configured. In the example below, the standard TecDoc object types, LOV, and Reference Type have been used to configure the component model values.

Name	Value	Description
> Country	Country	Countries and country groups
	Country Group	
> Country LOV link	Country Code (single value)	Country LOV link
> Country group link	Country To Country Group	Country group link

Note: Click the **Edit** link located below the component parameters to add or remove values for the parameters. All of the parameters must be properly populated for the Country Handling solution to function as expected.

The 'Automotive - Country Model' component model provides the following required parameters:

- Country:** Required parameter used to define the Country and/or Country groups to be used within the Country Handling solution. Add one or more Country and/or Country groups. In the example above, the following values are added: 'Country' (TD_Country) and 'Country Group' (TD_CountryGroup). Though the label is 'Country' (EU can be considered a country, and DK can be considered a country) This solution only considers leaf countries. Countries are modeled within Country Groups via the Classification files and the 'Country to Country Group' (TD_CountryToCountryGroup) Reference Type. The classification folders and references are created upon import of the TD Reference Data importer.

Important: The Country and Country groups classifications must be configured with the Reference Type configured within the 'Country group link' parameter or the solution will not work.

- Country LOV link:** Required parameter used to define the one LOV list of countries to be used for both the inclusion and exclusion attributes. It is important to only use one LOV list as this helps to guarantee the same country will not be referenced for both inclusion and exclusion attributes. The LOV list should be single valued and use LOV Value ID's. In the example above, the following LOV value is added: 'Country Code (single value)' (TD_ATTR_CountryCode).

Important: The 'Country Code (single value)' (TD_ATTR_CountryCode) LOV must contain the country codes of all the countries and/or country groups to be displayed, and the LOV must be made valid for both the inclusion and exclusion attributes.

- **Country group link:** Required parameter used to define the countries that should be listed within each Country group. In the example above, the following value is added: 'Country to Country Group' (TD_CountryToCountryGroup).

To apply this concept to more than one Country Handling solution (i.e., OWN model), Country LOV Link attribute, Country Object Type, and Country group link values need to be configured separate from those used for the TecDoc or AutoCare solutions.

Once the Automotive - Country Model component model is configured, the 'Application Country Handling Table Header' and/or 'Country Handling Value' components need to be configured. For more information, see the **Configuring Application Country Handling Table Header**, and the **Configuring Country Handling Value Component** topics.

Configuring Application Country Handling Table Header

When configured, the 'Application Country Handling Table Header' component can be used to display the country handling data within an Application Manager Results Table. Additionally, when a cell within the Table Header is clicked, a Value editor will display allowing users to edit country handling data.

Prerequisites

Configuration of the Automotive - Country Model component model is required before the Application Country Handling Table Header component can be configured. For more information, see the **Prerequisites** section of the **Country Handling Solution** topic.

Attempting to add the Application Country Handling Table Header component to a Web UI prior to configuring the Automotive - Country Model component model will result in the following warning: The screen cannot be saved while one or more components has configuration errors.



Configuration Steps

Below are steps to configure the Application Country Handling Table Header component within a Node Editor. Each of the parameters for the Application Country Handling Table Header Properties are described below.

1. Using the Web UI designer as shown in the image below, go to Node List Properties Headers parameter for the Application Manager screen that needs to display country handling data.
2. Click the **Add** button for the Headers parameter, and the Add Component dialog will display.
3. Find and select the **Application Country Handling Table Header** component.
4. Click the **Add** button, and the Application Country Handling Table Header Properties dialog will display (as shown below).

Properties

Configuration Web UI style

TecDoc Application I ▾ Save Close New... Delete Rename Save as

Node List Properties

[go to parent](#)

Headers **1**

- Application Set Assembly (Assem
- Application Part Type Title Heade
- Application Set Part (false / false
- Application Competitor or OE Par

2 Add... Edit... Remove Up Down

Add Component

ACES Application Qualifiers

Application Assembly Value

Application Asset Reference

Application Comment

3 Application Country Handling Table Header

Application Country Handling Table Header

Filter

Show deprecated components

4 ✓ Add ✕ Cancel

Add component - configure required properties

Required properties (*) must be set before the component can be added to the configuration.

Application Country Handling Table Header Properties

Dimensions <Select an option> Edit...

Exclude Attribute *

Include Attribute *

Label

Table Sorting <Select a value>

✓ Add ✕ Cancel

5. Populate the required parameters listed below.

- **Exclude Attribute:** This required parameter is used to select a multivalued attribute where the country exclusion data is stored. Attribute values (country names) within this attribute will not be displayed as included within the country handling components. Click the ellipsis button (...) to browse and/or search for the necessary attribute value.
 - For the TecDoc solution, this may be 'TD_ATTR_LKZ_Exclude'

Important: A value cannot exist in both the configured exclude attribute and in the include attribute. If a value is stored within the exclusion attribute, and is later selected for inclusion within the Country Handling Value editor, then the referenced value is removed from the exclusion attribute. However, if that attribute value is deselected from inclusion, it is **NOT** added back to the exclusion attribute. When this occurs, the assumption is that desired attribute values for inclusion are specified within the inclusion attribute, and therefore all others are excluded.

- **Include Attribute:** This required parameter is used to select a multivalued attribute where the country inclusion data will be stored. **Click the ellipsis button (...)** to browse and/or search for the necessary attribute value.
 - For the TecDoc solution, this may be 'TD_ATTR_LKZ_Include'

Important: When an attribute value selection is made within the Country Handling Value editor, the referenced attribute values are stored within the configured inclusion attribute. However, when an attribute value is deselected from inclusion, it is **NOT** added to the exclusion attribute. When this occurs, the assumption is made that desired attribute values for inclusion are specified within the inclusion attribute, and therefore all others are excluded.

6. Optionally, populate the other parameters listed below.

- **Dimensions:** By default, the parameter is blank. Optionally, to configure column width and height, select 'Table Header Dimensions'.
- **Label:** By default, the parameter is blank. But after clicking the **Add** button, the default column header label (Countries) will be stored. Optionally enter a desired label to be displayed as the column header within the Application Manager Results Table.
- **Table Sorting:** By default, the parameter is blank. Optionally, select from the dropdown values to specify the default sorting order of the column data.

7. Once the required parameters are populated, the Add button will activate. Click the **Add** button to save the newly added component to the Headers parameter.

8. Optionally, on the Node List Properties Headers parameter, use the **Up** and/or **Down** buttons to configure the order in which the newly added column should display within the Results Table.

9. Click the **Save** and **Close** buttons for the designer.

Configuring Country Handling Value Component

When using the Country Handling solution within a Node Editor, the 'Country Handling Value' component can be configured to display the country inclusion / exclusion data within a Node Editor screen used to view and/or edit country handling data on parts and/or applications (i.e., Product Details screen).

When configured, this component can be used to view and edit the country inclusion data for applications and/or parts. Once an application and/or part object type is selected, then the Country Handling Value component displays only for those countries currently referenced to the attribute or part for inclusion. It only displays inclusion and exclusion data for the selected object. Therefore it does not display any inclusion nor exclusion data from the part's parent and/or child objects (i.e., Part Types, Applications).

Prerequisites

Configuration of the Automotive - Country Model component model is required before the Country Handling Value component can be configured. For more information, see the **Prerequisites** section of the **Country Handling Solution** topic.

Attempting to add the Country Handling Value component to a Web UI prior to configuring the Automotive - Country Model component model will result in the following warning: The screen cannot be saved while one or more components has configuration errors.



Configuration Steps

Below are steps to configure the Country Handling Value component within a Node Editor. Each of the parameters for the Country Handling Value Properties are described below.

1. Using Web UI designer, go to Node Editor Properties Child Components Rows parameter for the screen that needs to display country handling data.
2. Click the **Add** button for the Child Components Rows parameter, and the Add Component dialog will display.
3. Find and select the **Country Handling Value** component, click the **Add** button, and the Country Handling Value Properties dialog will display (as shown below).

Add component - configure required properties
✕

Required properties (*) must be set before the component can be added to the configuration.

Country Handling Value Properties

Context Help

Exclude Attribute * ...

Include Attribute * ...

Label

✓ Add
✕ Cancel

4. Populate the required parameters listed below.

- **Exclude Attribute:** This required parameter is used to select a multivalued attribute where the country exclusion data is stored. Attribute values (country names) within this attribute will not be displayed as included within the country handling components. Click the ellipsis button (...) to browse and/or search for the necessary attribute value.
 - For the TecDoc solution, this may be 'TD_ATTR_LKZ_Exclude'

Important: A value cannot exist in both the configured exclude attribute and in the include attribute. If a value is stored within the exclusion attribute, and is later selected for inclusion within the Country Handling Value editor, then the referenced value is removed from the exclusion attribute. However, if that attribute value is deselected from inclusion, it is **NOT** added back to the exclusion attribute. When this occurs, the assumption is that desired attribute values for inclusion are specified within the inclusion attribute, and therefore all others are excluded.

- **Include Attribute:** This required parameter is used to select a multivalued attribute where the country inclusion data will be stored. **Click the ellipsis button (...)** to browse and/or search for the necessary attribute value.
 - For the TecDoc solution, this may be 'TD_ATTR_LKZ_Include'

Important: When an attribute value selection is made within the Country Handling Value editor, the referenced attribute values are stored within the configured inclusion attribute. However, when an attribute value is deselected from inclusion, it is **NOT** added to the exclusion attribute. When this occurs, the assumption is made that desired attribute values for inclusion are specified within the inclusion attribute, and therefore all others are excluded.

5. Optionally, populate the other parameters listed below.

- **Context Help:** By default, the parameter is blank. But after clicking the **Add** button, the default label (Selected Countries) will be stored. Optionally, enter desired text to be displayed when a user hovers over the component label.
 - **Label:** By default, the parameter is blank. But after clicking the **Add** button, the default label (Selected Countries) will be stored. Optionally, enter a desired label to be displayed within the Node Editor and to the left of the component.
6. Once the required parameters are populated, the Add button will activate. Click the **Add** button to save the newly added component to the Headers parameter.
 7. Optionally, on the Node Editor Properties Child Components Rows parameter, use the **Up** and/or **Down** buttons to configure the order in which the newly added component should display within the node editor.
 8. Click the **Save** and **Close** buttons for the designer.