

Architecture Validation Extension

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Disclaimer

Version 2.0.x of the *Architecture Validation Extension* has been successfully tested for deployment with EA version 12.1, 13.x, 14.x, and 15.x.

This deployment, as well as the guidelines, may or may not be applicable to any later version of the tool as released by the vendor, Sparx Systems. If required, updates to this software will be made available to support future versions of Enterprise Architect.

There is no guarantee that versions prior to EA 12.1 will work properly. No effort will be made to support earlier releases of Enterprise Architect.

Great care has been taken during development to use SQL statements that are supported across the common backend database platforms. Nonetheless, should a statement fail to execute correctly, please refer to the [Troubleshooting](#) part of this User Guide for assistance.

If any other problems are encountered, either during installation or operation of this software, please [contact us](#) through any of the channels listed at the bottom of this document.

Dependencies

The add-in depends on the following components being installed on the system:

- Interop.EA.dll (part of the standard Sparx installation files).
- Microsoft .Net Framework 4 Client Profile.

Limitations of the trial version.

The following limitations apply to the trial version:

- The software activation is granted for five (5) consecutive days only.
- Only the first ten (10) rule matches for any rule are reported back to the User, for a maximum of 250 total.
- Custom rules are not supported (i.e. only the [default rule set](#) can be executed).

Supported rule types

A global property for the entire rule configuration file can be set to exclude all Packages with a particular Status value (see the [default rule set](#)). This allows filtering out sandbox or other non-production models from the result set.

This filter is applied only when the validation is [performed at the Package level](#) (i.e. not when performed against the entire repository).

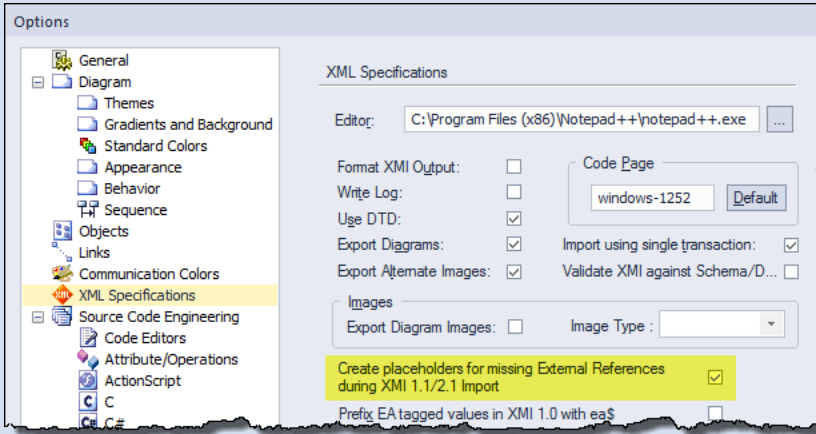
To see the specific ways in which each rule type can be customized, or additional rules defined for the type, please follow the hyperlinks.

Connector related rules

Rule Type	Connector Ends
Description	Validates that only certain connector types/stereotypes are used between specified element types/stereotypes.
Default Rule/s	Use Case-to-Use Case connector types Use Case-to-Use Case connector stereotypes Actor-to-Use Case connector types

Rule Type	Sequence Messages Operations
Description	Validates that Sequence diagram Messages trace back to a defined Operation in the model, and/or that the specified Operation still exists in the model. Filters are available at the Message stereotype and target element type/stereotype levels.
Default Rule/s	Sequence Messages with no defined Operation Sequence Messages with a broken Operation reference

Rule Type	Orphan connectors
Description	Locates relationships in the repository which are not visible on any diagram. Filters are available at the connector type/stereotype, source element type/stereotype, and target element type/stereotype levels.
Default Rule/s	All orphan connectors

Rule Type	Unresolved connector ends
Description	<p>Locates relationships in the repository in which either the source or the target element is missing from the repository. Missing connector end references typically occur during the import (manually or through version control) of incomplete models from other repositories.</p> <p>Caveat: the rule can only detect this condition if the <i>Create Placeholders for Missing External References</i> property is set!</p> 
Default Rule/s	All unresolved connectors

Rule Type	Association End Properties
Description	<p>Validates that an association end has one or more of the following properties defined:</p> <ul style="list-style-type: none"> - Multiplicity. - Role name. <p>Filters are available at the following levels:</p> <ul style="list-style-type: none"> - Source & target element type/stereotype. - Connector type/stereotype, direction, and navigability. <p>Multiple connector types can be specified per rule.</p>
Default Rule/s	UML Class association end properties

Diagram related rules

Rule Type	Empty Diagrams
Description	Reports diagrams with no elements present.
Default Rule/s	All empty diagrams.

Rule Type	Diagram Objects with no Connectors
Description	<p>Reports elements present on a diagram with no relationships to another element on the same diagram. Filters are available at the diagram type and element type levels.</p> <p>Note: by default sequence diagrams are excluded from the search, but this can be overridden in a custom rule.</p>
Default Rule/s	Locates all unconnected UML Class and Use Case elements that are present on one or more diagrams.

Rule Type	Diagram Objects with no Classifiers
Description	Intended for diagrams which are modeled at the object/instance level, this rule reports diagram elements with no associated classifier (i.e. orphan objects). Filters are available at the diagram type and element type levels.
Default Rule/s	Locates all elements on Sequence diagrams that do not have an associated classifier (e.g. a UML Class, Interface, or Component).

Element related rules

Rule Type	Orphan Elements
Description	Finds elements which are not present on any diagram AND have no relationships. This rule is an expansion of the built-in “Find Orphans” search definition. A filter is available at the element type/stereotype level.
Default Rule/s	Locates all orphan elements.

Rule Type	Elements with no Description
Description	Finds elements which do not have a description text in their Notes field. A filter is available at the element type/stereotype level.
Default Rule/s	Actors with no description. Use Cases with no description. Components with no description. Classes with no description.

Rule Type	Elements with Duplicates Names
Description	Reports elements <u>of the same type</u> (e.g. Actors) with the same name. A filter is available at the element type/stereotype level.
Default Rule/s	Duplicate Actor names.

Rule Type	Unrealized Elements
Description	Reports elements (e.g. Requirements) which are not realized by any other element through a specific connector type (typically a Realization relationship). Filters are available at the element type/stereotype, related element type/stereotype, and connector type/stereotype levels.
Default Rule/s	Unrealized Requirements. Unrealized Interfaces.

Rule Type	Missing Relationships
Description	Finds elements which are not connected (as a source) to other elements (as a target) through one or more relationships. Filters are available at the source element type/stereotype, target element type/stereotype, and connector type/stereotype levels.
Default Rule/s	Missing Use Case to Requirement relationships.

Rule Type	Missing Relationships - Extended
Description	<p>Finds elements which are not connected (as a source) to other elements (as a target) through one or more relationships. This rule targets elements such as UML Components where the relationship can be either:</p> <ul style="list-style-type: none"> - Direct (element to element). - Indirect (element to Port, Port to element, or Port to Port). <p>Filters are available at the source element type/stereotype, target element type/stereotype, and connector type/stereotype levels.</p>
Default Rule/s	Missing Component to Component relationships.

Rule Type	Missing Interfaces
Description	<p>Finds elements such as UML Components which are not realizing a UML Interface. This rule targets elements where the realization can be either:</p> <ul style="list-style-type: none"> - Direct (Realization connector from element to Interface). - Indirect (element with provided or required Interface, Port with provided or required Interface, or Port classified by an Interface). <p>Filters are available at the element type/stereotype level.</p>
Default Rule/s	Missing Component to Interface relationships.

Rule Type	Unresolved Classifiers
Description	<p>Reports elements for which the classifier specified is not (or no longer) in the repository. Missing classifier references typically occur during the import (manually or through version control) of incomplete models from other repositories.</p> <p>Caveat: the rule can only detect this condition if the <i>Create Placeholders for Missing External References</i> property is set!</p> <p>Filters are available at the element type/stereotype level.</p>
Default Rule/s	All unresolved classifiers.

Attribute related rules

Rule Type	Unresolved Attribute Data Types
Description	<p>Finds Attributes for which the classifier specified is not (or no longer) in the repository. Missing data type classifier references typically occur during the import (manually or through version control) of incomplete models from other repositories.</p>
Default Rule/s	All unresolved Attribute data types.

Operation related rules

Rule Type	Unresolved Operation Argument Data Types
Description	<p>Finds Operation arguments for which the classifier specified is not (or no longer) in the repository. Missing argument data type classifier references typically occur during the import (manually or through version control) of incomplete models from other repositories.</p>
Default Rule/s	All unresolved Operation argument data types (including the return type).

Installation

The installation process is the same for both the trial and the full version.

First, **exit any running instances of Enterprise Architect**, then launch the “setup.exe” program and follow the on-screen instructions.

The installation will attempt to update the Windows registry, so the User needs to ensure that s/he has sufficient privileges to run the setup program.

The recommended install path is to place the DLL and any supporting files in an *Addins* folder in the Sparx Systems installation directory, e.g.

C:\Program Files (x86)\Sparx Systems\Addins.

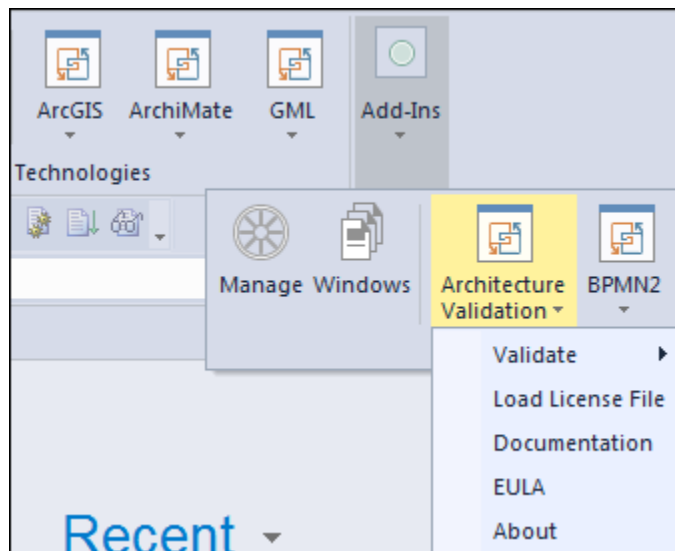
Note that older versions of the software are automatically removed and replaced.

Should the installation fail for any reason other than insufficient User privileges, please take appropriate screenshots and email the data to the [support](#) address listed at the bottom of this document.

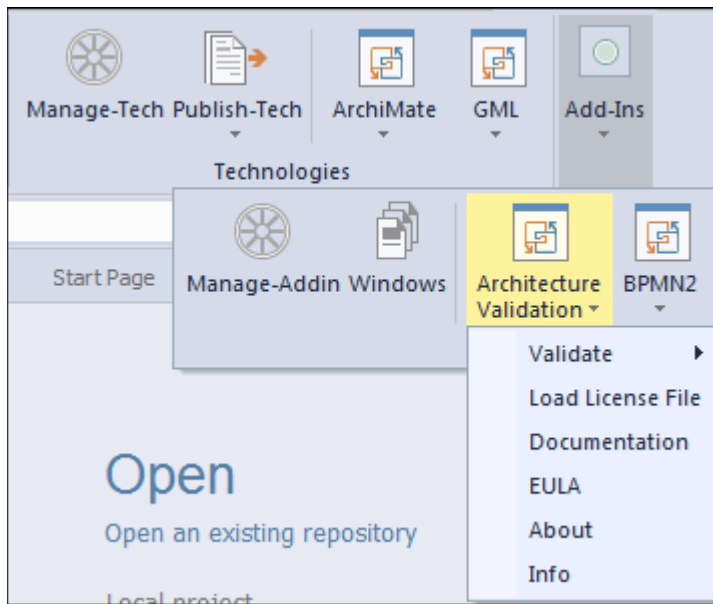
Verifying the installation

Bring up Enterprise Architect, without necessarily opening a repository, and verify that the *Architecture Validation* extension has been loaded using the SPECIALIZE ribbon:

In EA 14.x:



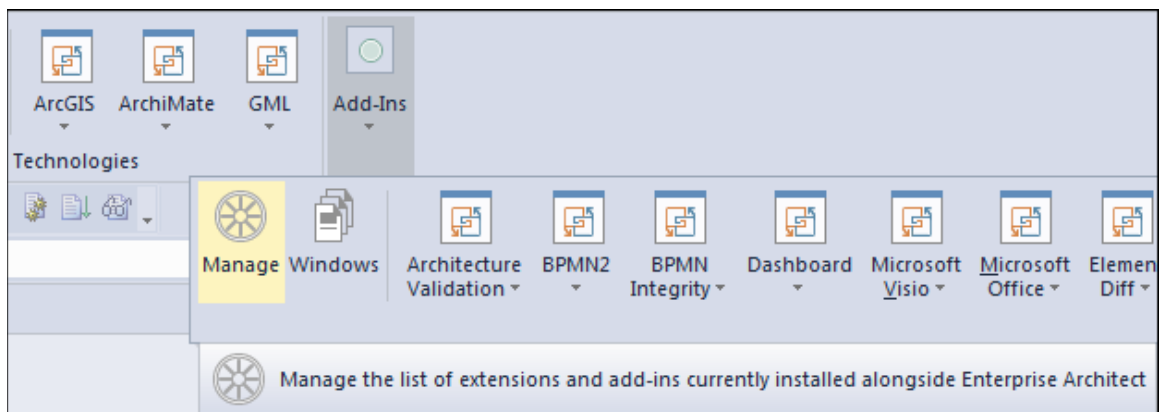
In 15.x:



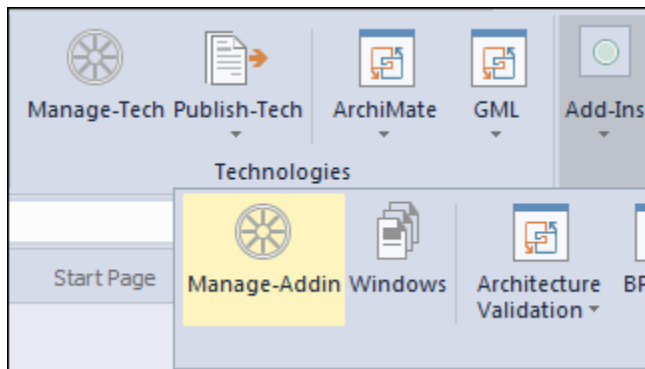
Note that other extensions shown in the above screenshots may or may not be present, depending on your Enterprise Architect version and configuration.

Should the extension not be present, use the SPECIALIZE ribbon and select:

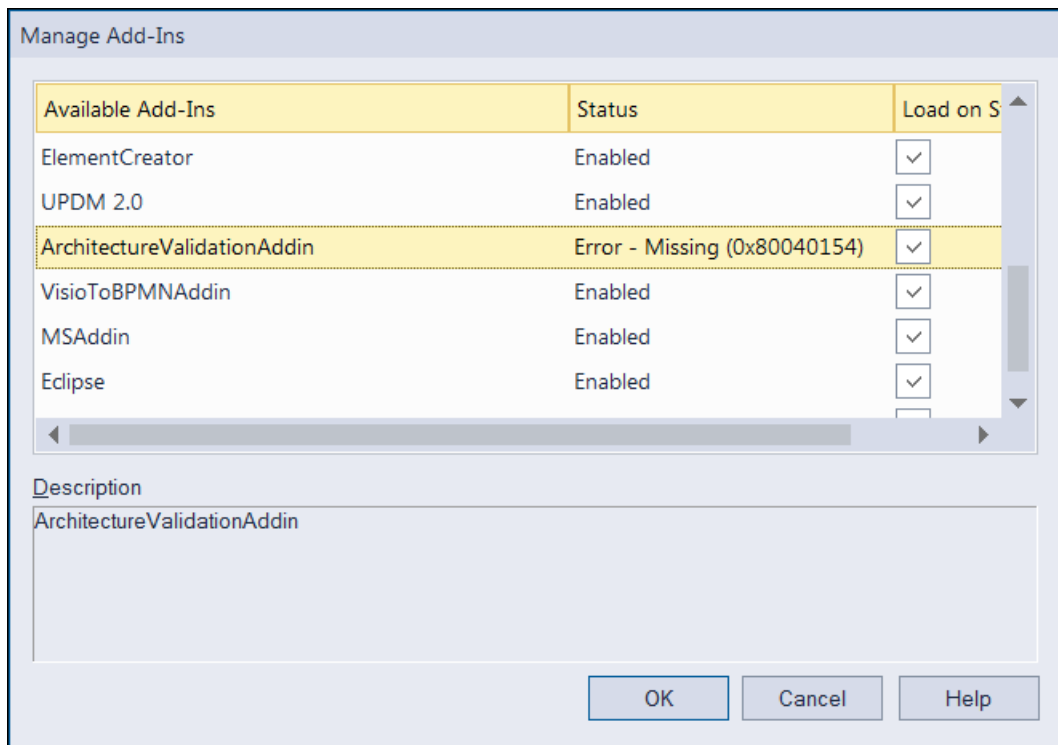
In EA 14.x:



In EA 15.x:



And confirm that the *Architecture Validation* extension is loaded and enabled:



If an error status is shown, as in the example above, this typically means that either:

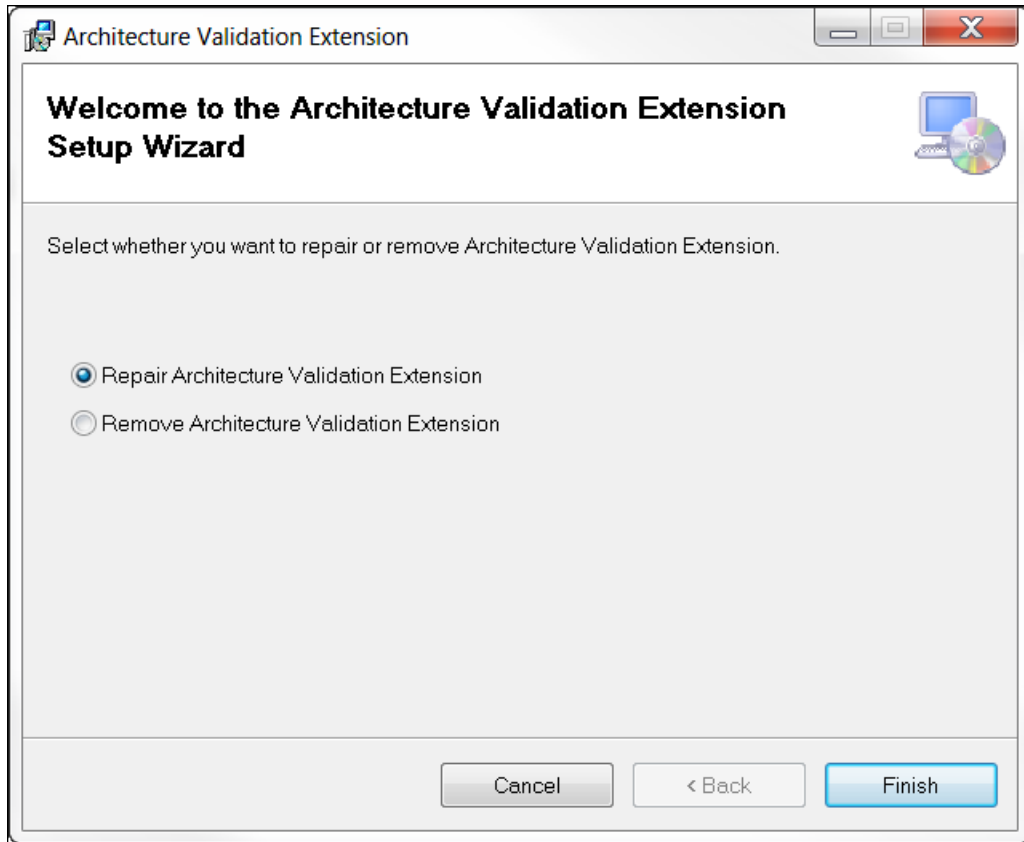
- The installation process failed and that the DLL cannot be located in the Windows registry, or in the file system.
- The installation did succeed but the DLL file was later moved or deleted.

If the *Architecture Validation* entry itself is not found then the extension installation did not complete successfully.

To fix an incorrect installation:









- Exit out of all instances of Enterprise Architect.

- Launch the setup process again. The installer will automatically provide a repair option:



If, after the repair procedure, the *Architecture Validation* extension is still not loaded correctly in Enterprise Architect, remove the program through the Windows control panel and start the installation process over.

At the completion of a successful installation the following files are installed in the selected directory:

Name	Type	Size
 ArchitectureValidationAddin.dll	Application extension	103 KB
 ArchitectureValidationExtension.pdf	Adobe Acrobat Document	186 KB
 Cephas_Software_EULA.pdf	Adobe Acrobat Document	60 KB
 Cephas_Software_EULA.rtf	Rich Text Format	126 KB
 EA.TLB	TLB File	215 KB
 Interop.EA.dll	Application extension	296 KB
 register_ArchitectureValidationAddin.bat	Windows Batch File	1 KB
 Unregister_ArchitectureValidationAddin.bat	Windows Batch File	1 KB

Installing the license key file

Trial version

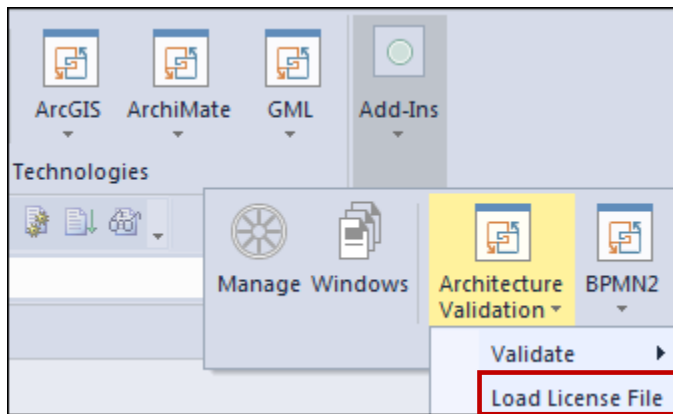
The software installation automatically loads the trial version license key. Skip to the [Adding the User license key](#) section.

Licensed version

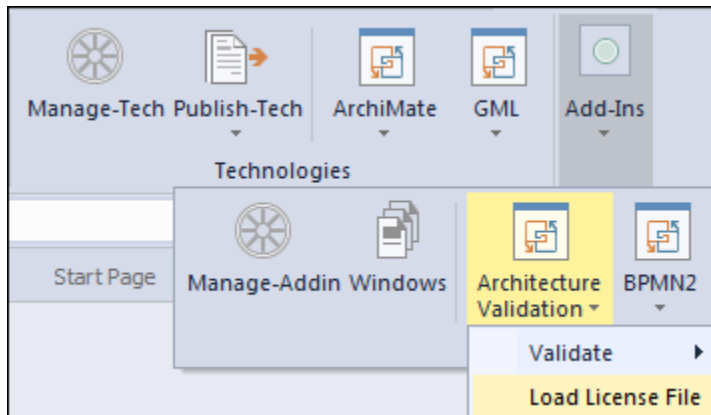
Once the full version of the product has been purchased, a <license type>.keys file will be provided by Cephass Consulting which needs to be installed by each licensed User of the software, even if floating license keys are purchased.

To install the license key file, using the SPECIALIZE ribbon, select:

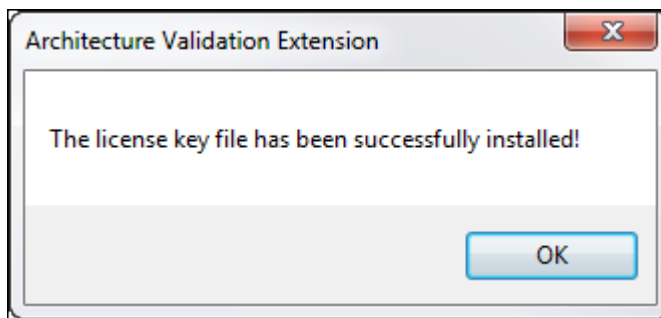
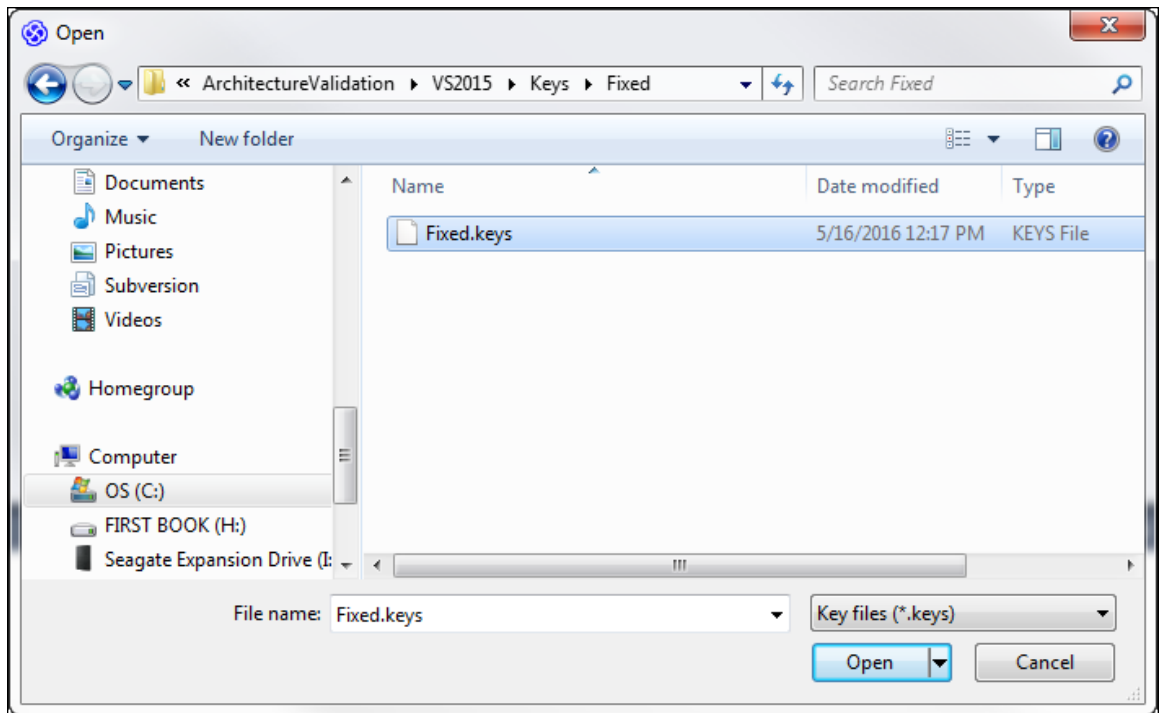
In EA 14.x:



In EA 15.x:



Next, select the provided file. For example, for a fixed license key:



After installing the license key file, continue with the next section.

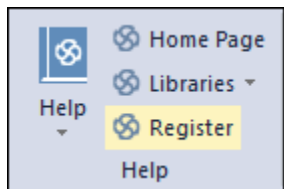
Adding the User license key

Trial and Fixed Licenses

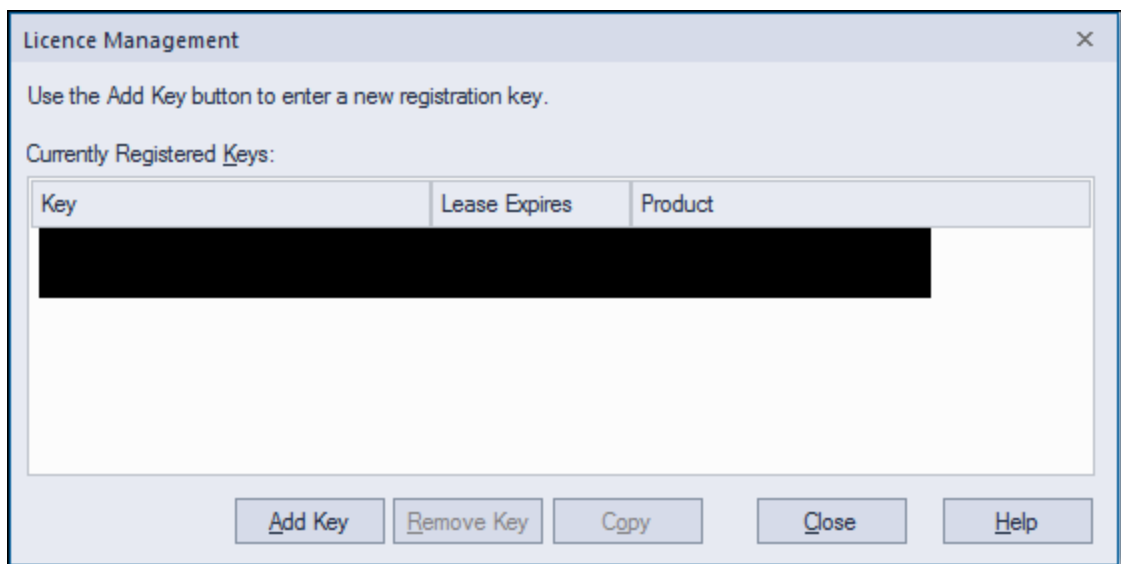
The following step is required for both the trial and the fixed version of the software (in the latter case, after installing the license key file as described in the previous section) in order to make Enterprise Architect verify the software license.

See [here](#) for how to install a floating license.

In 14.x or 15.x open the START ribbon and select:



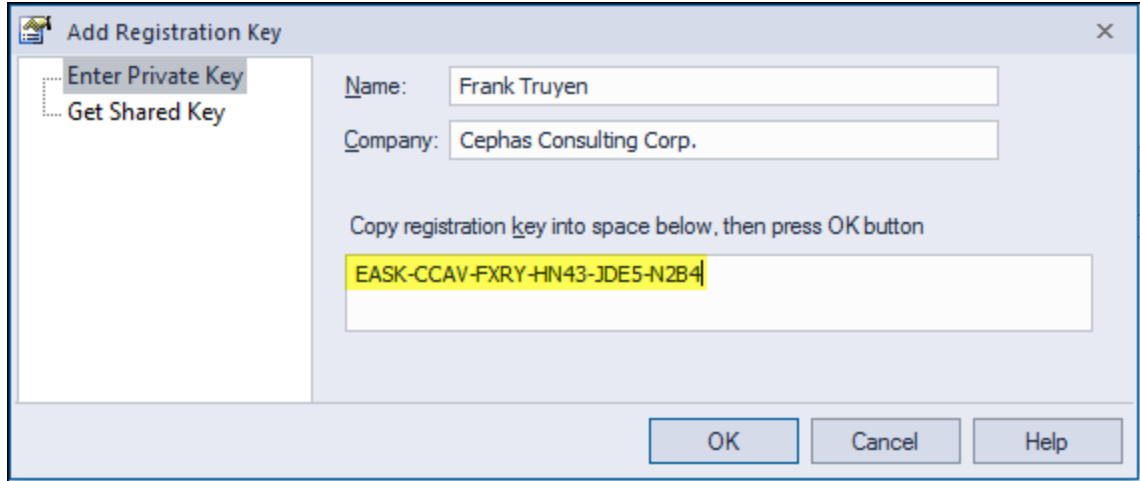
Next, click “Add Key”:



Enter or copy/paste, either the trial key:

EASK-CCAV-FXRY-HN43-JDE5-N2B4

Or one of the fixed license keys provided as part of the software purchase.



Add Registration Key

Enter Private Key
Get Shared Key

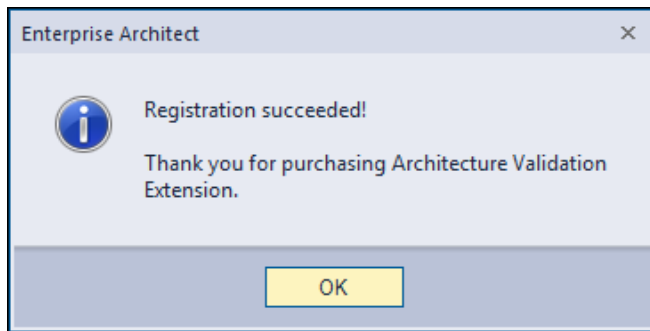
Name: Frank Truyen
Company: Cephas Consulting Corp.

Copy registration key into space below, then press OK button

EASK-CCAV-FXRY-HN43-JDE5-N2B4

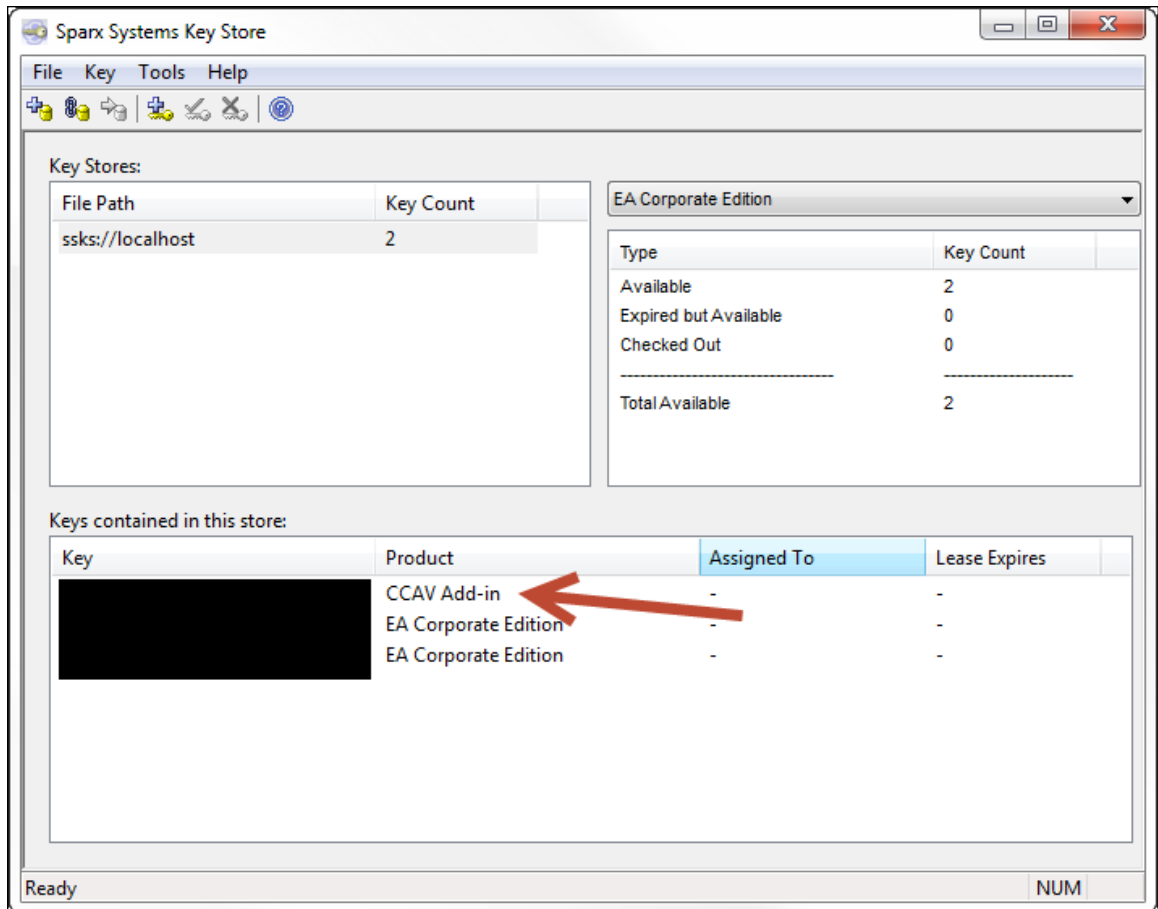
OK Cancel Help

Enterprise Architect will confirm the successful addition of a key:

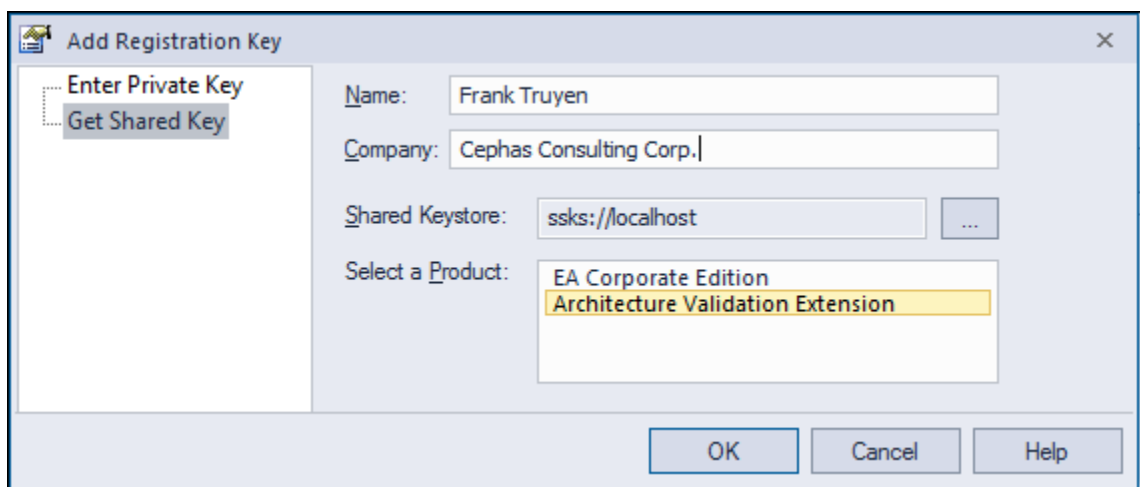


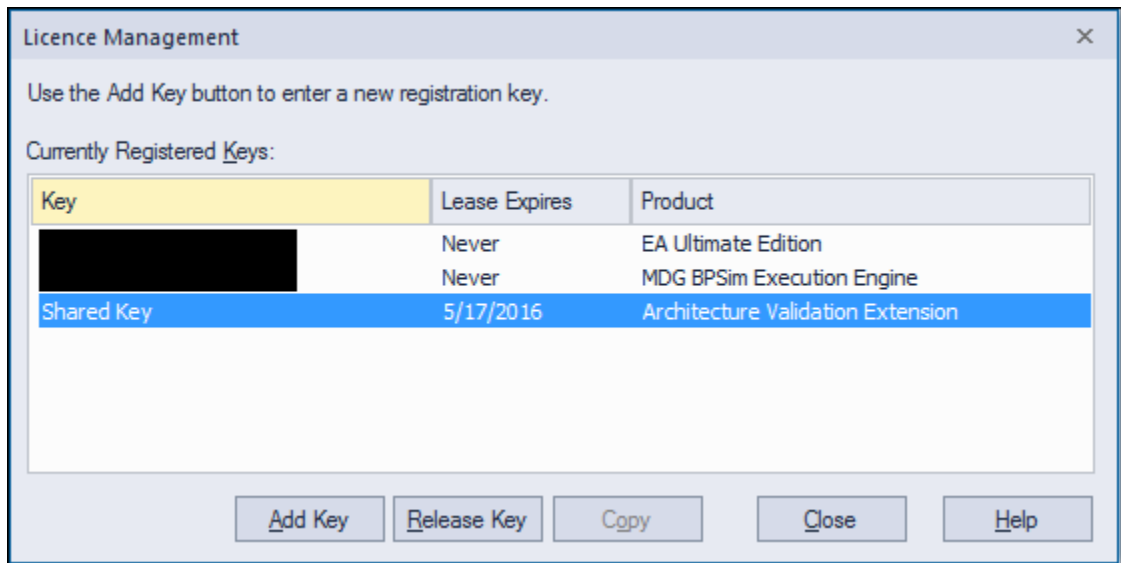
Floating Licenses

First the administrator needs to add the key/s to the Sparx System key store (**version 2.3 or higher**), using the same process as for Enterprise Architect license keys:



Individual Users can then obtain a key from the store using the “Get Shared Key” tab:



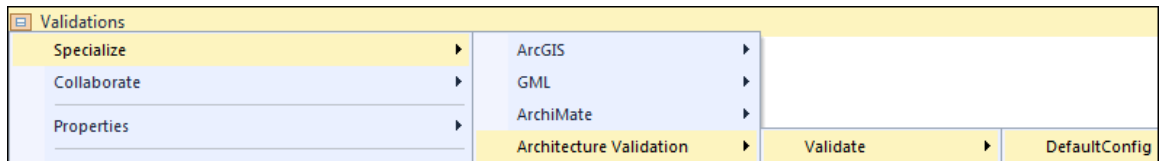


Running the validation

The validation can be performed in two possible contexts:

- At the package level: all child packages in the hierarchy (if any) are included by default (Packages can be filtered out by setting the [IgnorePackageWithStatus](#) property in the rule set).

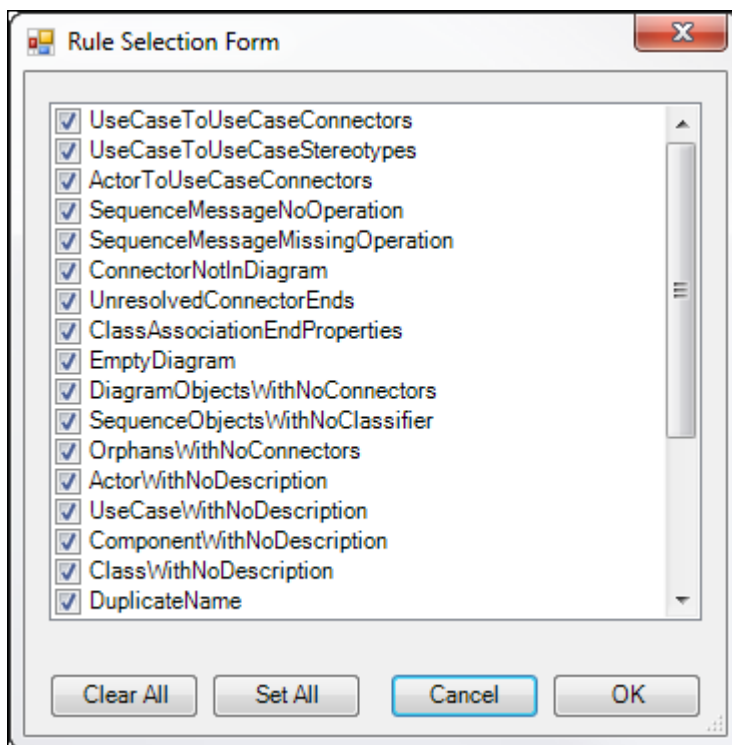
Right click a Package, or the top of a Package hierarchy, and select:



- In any other context (element, diagram,...): the entire model is validated.

Caveat: the larger the package hierarchy the slower the execution of the SQL statements. To validate the entire model, select a non-package context as opposed to the model root node.

Unless the [RunSilent](#) option is enable for the rule set, the following prompt will display when launching the validation:



This allows rules to be enabled/disabled for a specific validation. To disable rules by default, create a [custom rule set](#).

Default Rule Set

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<!DOCTYPE Validations >
<Validations Version="4" RunSilent="False" VerboseLevel="1" IgnorePackageWithStatus="">
  <Connectors>
    <ConnectorEnds Enabled="True" ID="UseCaseToUseCaseConnectors" AnyDirection="True">
      <ConnectorType MatchFilterCriteria="False" Name="'UseCase','Generalization'" />
      <ConnectorStereotype MatchFilterCriteria="False" Name="" Subtype="" />
      <Source Type="'UseCase'" Stereotype="" />
      <Target Type="'UseCase'" Stereotype="" />
    </ConnectorEnds>
    <ConnectorEnds Enabled="True" ID="UseCaseToUseCaseStereotypes" AnyDirection="True">
      <ConnectorType MatchFilterCriteria="True" Name="'UseCase'" />
      <ConnectorStereotype MatchFilterCriteria="False" Name="'include','extend'" Subtype="'Includes','Extends'" />
      <Source Type="'UseCase'" Stereotype="" />
      <Target Type="'UseCase'" Stereotype="" />
    </ConnectorEnds>
    <ConnectorEnds Enabled="True" ID="ActorToUseCaseConnectors" AnyDirection="True">
      <ConnectorType MatchFilterCriteria="False" Name="'UseCase','Association'" />
      <ConnectorStereotype MatchFilterCriteria="False" Name="" Subtype="" />
      <Source Type="'Actor'" Stereotype="" />
      <Target Type="'UseCase'" Stereotype="" />
    </ConnectorEnds>
    <SequenceMessageOperation Enabled="True" ID="SequenceMessageNoOperation" Stereotype="">
      <Target Type="" Stereotype="" />
    </SequenceMessageOperation>
    <SequenceMessageOperation Enabled="True" ID="SequenceMessageMissingOperation" Stereotype="">
      <Target Type="" Stereotype="" />
    </SequenceMessageOperation>
    <OrphanConnectors Enabled="True" ID="ConnectorNotInDiagram" MatchFilterCriteria="True" Type="" Stereotype="">
      <Source Type="" Stereotype="" />
      <Target Type="" Stereotype="" />
    </OrphanConnectors>
    <UnresolvedConnectorEnds Enabled="True" ID="UnresolvedConnectorEnds" MatchFilterCriteria="True" Type="" Stereotype="" />
  </Connectors>
  <AssociationEndProperties>
    <CompleteProperties Enabled="True" ID="ClassAssociationEndProperties" MatchFilterCriteria="True" Type="'Class'" Stereotype="" />
  </AssociationEndProperties>
</Validations>
```

In the default rule set:

- All rules are enabled.
- The *RunSilent* option is set to false.
- The *VerboseLevel* value is set to 1 (default setting).
 - A value of 2 adds the number of matches found for each rule.
 - A value of 3 adds the time taken by each rule execution.
- No status value is defined in the *IgnorePackageWithStatus* property.

Customizing the Rule Set

Note: this option is not available in the trial version!

Caveat: it is strongly recommended not to modify the default rule set!

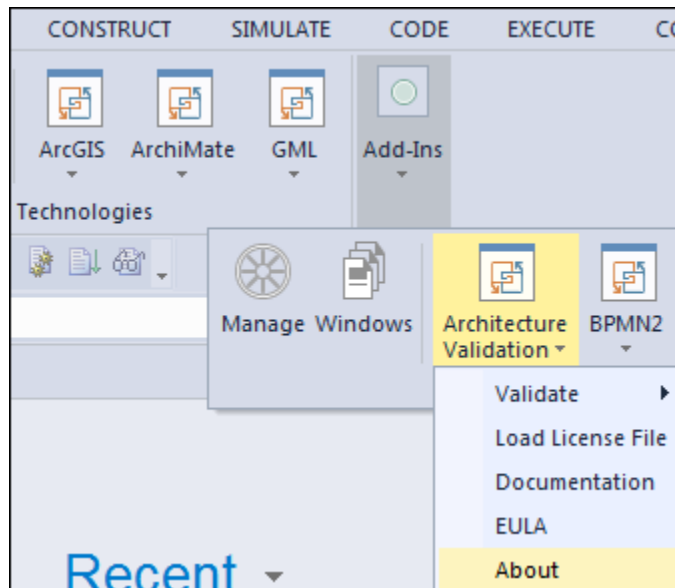
Instead:

- Make a copy of the *DefaultConfig.xml* file **in the same** folder.
- Open the file in any XML editor and make the required changes in that copy.

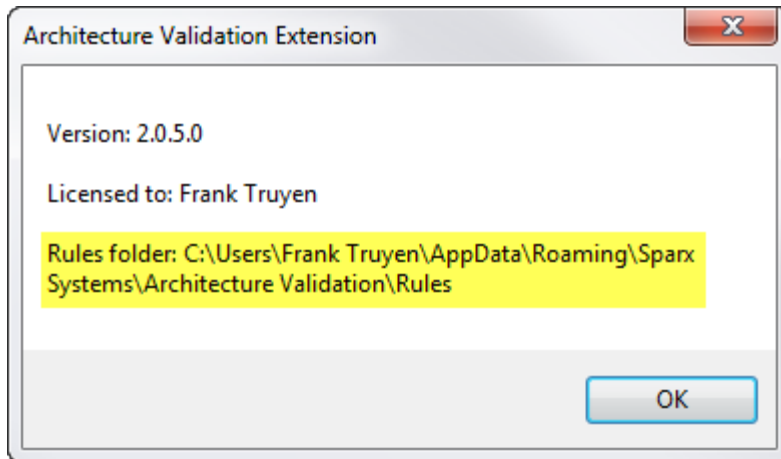
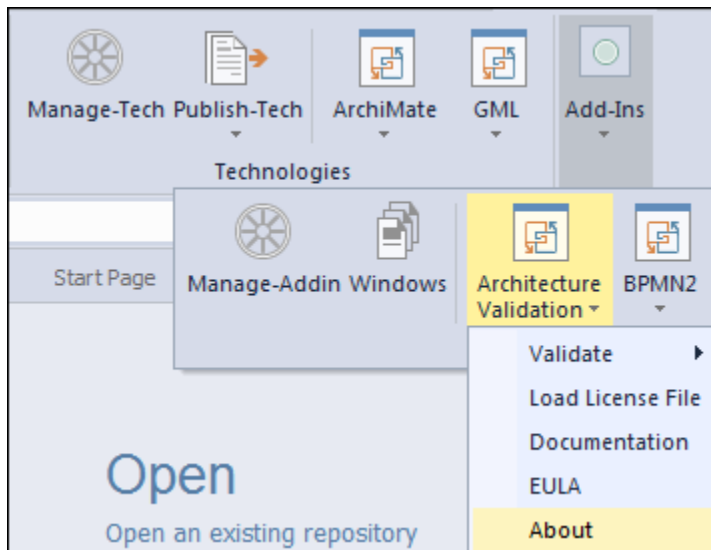
When adding a new rule to a set, ensure that it is given a unique ID (i.e. name) value.

To determine the location of the rules folder on your system, select the *About* menu item.

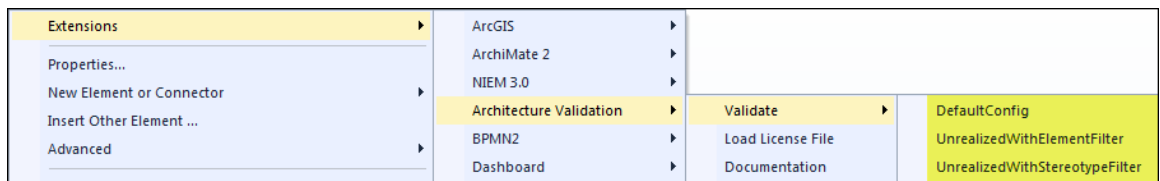
In EA 14.x:



In EA 15.x:



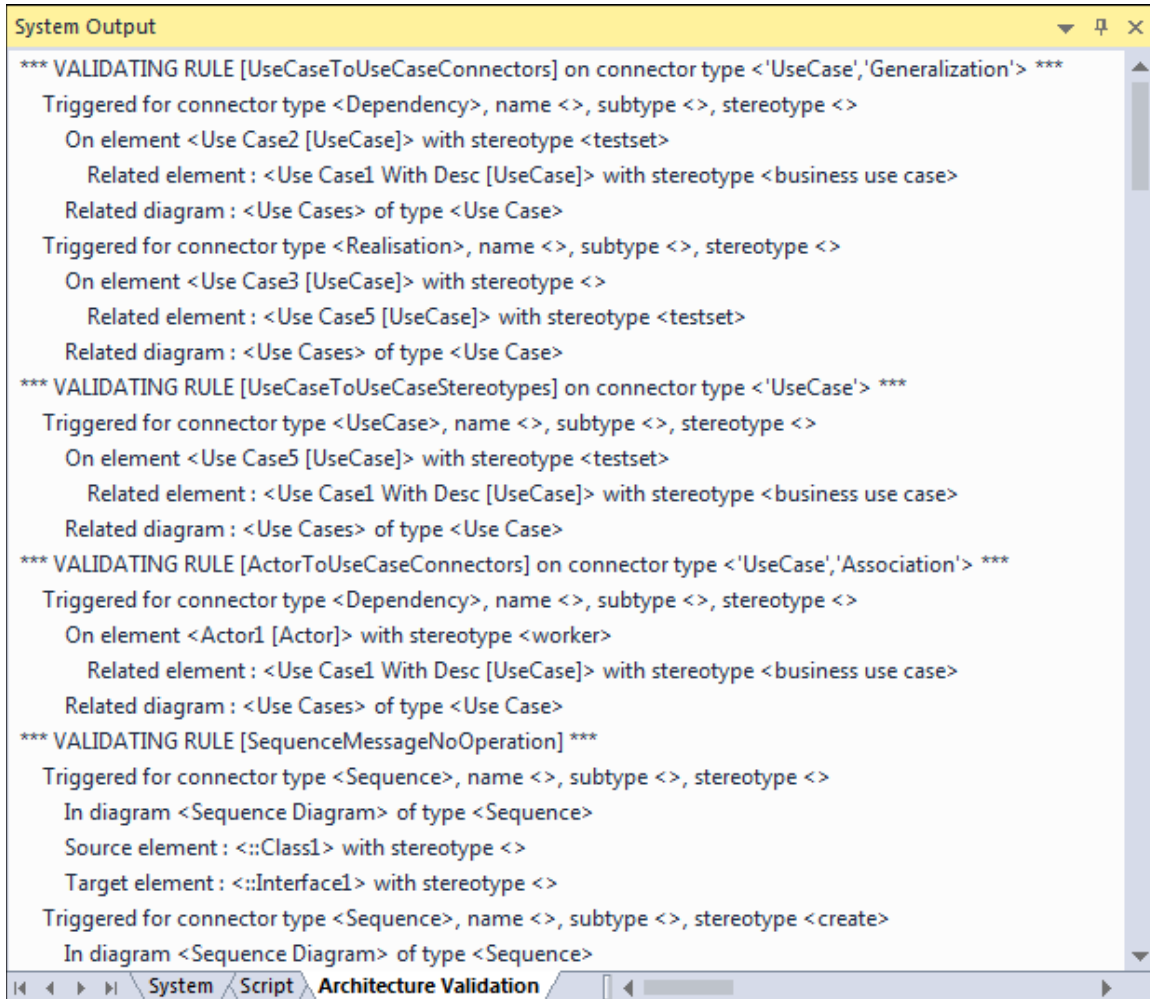
Custom rule sets are automatically detected and made available for selection. For example:



Rule changes can be made in between validations, while EA is running!

Verifying the result set

During execution the “Architecture Validation” tab in the System Output window will automatically open and display the results of the validation:



```

System Output
*** VALIDATING RULE [UseCaseToUseCaseConnectors] on connector type <'UseCase','Generalization'> ***
  Triggered for connector type <Dependency>, name <>, subtype <>, stereotype <>
    On element <Use Case2 [UseCase]> with stereotype <testset>
      Related element : <Use Case1 With Desc [UseCase]> with stereotype <business use case>
      Related diagram : <Use Cases> of type <Use Case>
    Triggered for connector type <Realisation>, name <>, subtype <>, stereotype <>
      On element <Use Case3 [UseCase]> with stereotype <>
        Related element : <Use Case5 [UseCase]> with stereotype <testset>
        Related diagram : <Use Cases> of type <Use Case>
*** VALIDATING RULE [UseCaseToUseCaseStereotypes] on connector type <'UseCase'> ***
  Triggered for connector type <UseCase>, name <>, subtype <>, stereotype <>
    On element <Use Case5 [UseCase]> with stereotype <testset>
      Related element : <Use Case1 With Desc [UseCase]> with stereotype <business use case>
      Related diagram : <Use Cases> of type <Use Case>
*** VALIDATING RULE [ActorToUseCaseConnectors] on connector type <'UseCase','Association'> ***
  Triggered for connector type <Dependency>, name <>, subtype <>, stereotype <>
    On element <Actor1 [Actor]> with stereotype <worker>
      Related element : <Use Case1 With Desc [UseCase]> with stereotype <business use case>
      Related diagram : <Use Cases> of type <Use Case>
*** VALIDATING RULE [SequenceMessageNoOperation] ***
  Triggered for connector type <Sequence>, name <>, subtype <>, stereotype <>
    In diagram <Sequence Diagram> of type <Sequence>
    Source element : <::Class1> with stereotype <>
    Target element : <::Interface1> with stereotype <>
  Triggered for connector type <Sequence>, name <>, subtype <>, stereotype <create>
    In diagram <Sequence Diagram> of type <Sequence>
  
```

Every rule match is listed in this window using the format:

Triggered for <connector, element, Attribute, Operation or diagram name>
{additional information}

For rules relating to connectors, the associated objects (source and/or target) and diagram/s are reported on additional output lines.

Where applicable, additional output lines may be added to include related diagrams.

Single click a line to automatically locate its related element, Attribute, Operation or diagram in the Project Browser (note that some element types in EA are not included in the Project Browser). For connector related rules, click a related diagram (if provided) to

automatically open it and select the connector in that diagram (you may need to scroll the window to see the selection).

Double click a line to open the element, Attribute or Operation properties, or to open the diagram associated with the rule.

Rule Type Properties

ConnectorEnds

Properties

Property/Sub-property	Value
AnyDirection	If false , the validation of the element types is specific to the source and target values specified in the XML file (e.g. Actor-to-Use Case, where Actor must be the source and Use Case the target). If true , either source or target end of the connector can match the specified element type (e.g. Actor can be source or target).
ConnectorType	
MatchFilterCriteria	If false , the connectors that do NOT match the specified type name are evaluated. If true , the connectors that DO match the specified type name are evaluated for a rule match.
Name	The connector types that the rule filters on. One or more values can be specified, enclosed in single quotes, and comma separated. At least one type must be specified!
ConnectorStereotype	The <u>optional</u> connector stereotypes that are either allowed or not allowed between the source and target element types. One or more values can be specified, enclosed in single quotes, and comma separated.
MatchFilterCriteria	If false , the connector stereotypes that do NOT match the specified name are evaluated. If true , the connector stereotypes that DO match the specified stereotype values are evaluated for a rule match.
Name	The connector stereotypes that the rule filters on. One or more values can be specified, enclosed in single quotes, and comma separated.
Subtype	The connector subtypes that the rule filters on. One or more values can be specified, enclosed in single quotes, and comma separated.
Source	Either a type or a stereotype (or both) must be provided!
Type	One or more source element types can be specified, enclosed in single quotes, and comma separated.

Stereotype	One or more source element stereotypes can be specified, enclosed in single quotes, and comma separated.
Target	Either a type or a stereotype (or both) must be provided!
Type	One or more target element types can be specified, enclosed in single quotes, and comma separated.
Stereotype	One or more target element stereotypes can be specified, enclosed in single quotes, and comma separated.

Default Rules

```

<Connectors>
  <ConnectorEnds Enabled="True" ID="UseCaseToUseCaseConnectors" AnyDirection="True">
    <ConnectorType MatchFilterCriteria="False" Name="'UseCase', 'Generalization'" />
    <ConnectorStereotype MatchFilterCriteria="False" Name="" Subtype="" />
    <Source Type="'UseCase'" Stereotype="" />
    <Target Type="'UseCase'" Stereotype="" />
  </ConnectorEnds>
  <ConnectorEnds Enabled="True" ID="UseCaseToUseCaseStereotypes" AnyDirection="True">
    <ConnectorType MatchFilterCriteria="True" Name="'UseCase'" />
    <ConnectorStereotype MatchFilterCriteria="False" Name="'include', 'extend'" Subtype="'Includes', 'Extends'" />
    <Source Type="'UseCase'" Stereotype="" />
    <Target Type="'UseCase'" Stereotype="" />
  </ConnectorEnds>
  <ConnectorEnds Enabled="True" ID="ActorToUseCaseConnectors" AnyDirection="True">
    <ConnectorType MatchFilterCriteria="False" Name="'UseCase', 'Association'" />
    <ConnectorStereotype MatchFilterCriteria="False" Name="" Subtype="" />
    <Source Type="'Actor'" Stereotype="" />
    <Target Type="'UseCase'" Stereotype="" />
  </ConnectorEnds>

```

SequenceMessageOperation

Properties

Property/Sub-property	Value
Stereotype	An optional connector stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Target	Optional target element filters
Type	Filters the Sequence Messages by their target element type. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Filters the Sequence Messages by their target element stereotype. One or more values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```

<SequenceMessageOperation Enabled="True" ID="SequenceMessageNoOperation" Stereotype="">
  <Target Type="" Stereotype="" />
</SequenceMessageOperation>
<SequenceMessageOperation Enabled="True" ID="SequenceMessageMissingOperation" Stereotype="">
  <Target Type="" Stereotype="" />

```

OrphanConnectors

Properties

Property/Sub-property	Value
MatchFilterCriteria	If false , the connectors that do NOT match the specified type/s and stereotype/s (if any) are evaluated. If true , the connectors that DO match the specified type and stereotype values (if any) are evaluated for a rule match.
Type	Optional connector type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Optional connector stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Source	Optional source element filter
Type	One or more source element types can be specified, enclosed in single quotes, and comma separated.
Stereotype	One or more source element stereotypes can be specified, enclosed in single quotes, and comma separated.
Target	Optional target element filter
Type	One or more target element types can be specified, enclosed in single quotes, and comma separated.
Stereotype	One or more target stereotypes can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<OrphanConnectors Enabled="True" ID="ConnectorNotInDiagram" MatchFilterCriteria="True" Type="" Stereotype="">
  <Source Type="" Stereotype="" />
  <Target Type="" Stereotype="" />
</OrphanConnectors>
```

UnresolvedConnectorEnds

Properties

Property/Sub-property	Value
MatchFilterCriteria	If false , the connectors that do NOT match the specified type/s and stereotype/s (if any) are evaluated. If true , the connectors that DO match the specified type and stereotype values (if any) are evaluated for a rule match.
Type	Optional connector type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Optional connector stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<UnresolvedConnectorEnds Enabled="True" ID="UnresolvedConnectorEnds" MatchFilterCriteria="True" Type="" Stereotype="" />
```

AssociationEndProperties

Currently this rule type has a single sub-type (*CompleteProperties*). Additional sub-types may be added in future releases.

Properties

Property/Sub-property	Value
MatchFilterCriteria	If false , the source and target elements that do NOT match the specified type/s and stereotype/s (if any) are considered for this rule. If true , the source and target elements that DO match the specified type and stereotype values (if any) are considered.
Type	Optional source and target element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Optional source and target element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
<Connector Type>	A valid (recognized by EA) connector type, e.g. Association.
MatchFilterCriteria	If false , the connectors that do NOT have the specified stereotype, direction and navigability properties are considered for this rule. If true , the connectors that DO have these specified properties are considered.
WithStereotype	Optional connector stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
WithDirection	Optional connector direction as specified in EA (e.g. 'Source -> Destination') to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
OnNavigableEndOnly	If true , only the connector ends where the navigability value in EA is set to "Navigable" are checked for conformance. If false, all connector ends are validated regardless of navigability.
Properties	The properties of the association end that are validated in this rule
HasMultiplicity	If true, the rule verifies that the connector end multiplicity is set.
HasRoleName	If true, the rule verifies that the connector end role name is set.

Default Rules

```
<AssociationEndProperties>
  <CompleteProperties Enabled="True" ID="ClassAssociationEndProperties" MatchFilterCriteria="True" Type="Class" Stereotype="">
    <Association Enabled="True" MatchFilterCriteria="True" WithStereotype="" WithDirection="" OnNavigableEndOnly="True">
      <Properties HasMultiplicity="True" HasRoleName="True" />
    </Association>
  </CompleteProperties>
  <Aggregation Enabled="True" MatchFilterCriteria="True" WithStereotype="" WithDirection="" OnNavigableEndOnly="True">
    <Properties HasMultiplicity="True" HasRoleName="True" />
  </Aggregation>
</AssociationEndProperties>
```

EmptyDiagram

No properties are currently associated with this rule.

Default Rules

```
<EmptyDiagram Enabled="True" ID="EmptyDiagram" />
```

DiagramObjectsWithNoConnectors

Properties

Property/Sub-property	Value
Diagram	Optional diagram filter.
MatchFilterCriteria	If false , the diagrams that do NOT match the specified type/s (if any) are evaluated. If true , the diagrams that DO match the specified type values (if any) are evaluated for a rule match.
Type	One or more diagram type values can be specified, enclosed in single quotes, and comma separated.
Element	Optional element filter.
MatchFilterCriteria	If false , the elements that do NOT match the specified type/s (if any) are evaluated. If true , the elements that DO match the specified type values (if any) are evaluated for a rule match.
Type	One or more values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<DiagramObjectsWithNoConnectors Enabled="True" ID="DiagramObjectsWithNoConnectors">
  <Diagram Type="" MatchFilterCriteria="True" />
  <Element Type="'Class','UseCase'" MatchFilterCriteria="True" />
</DiagramObjectsWithNoConnectors>
```

DiagramObjectsWithNoClassifier

Properties

Property/Sub-property	Value
Diagram	Optional diagram filter.
MatchFilterCriteria	If false , the diagrams that do NOT match the specified type/s (if any) are evaluated. If true , the diagrams that DO match the specified type values (if any) are evaluated for a rule match.
Type	One or more diagram types can be specified, enclosed in single quotes, and comma separated.
Element	Optional element filter.
MatchFilterCriteria	If false , the elements that do NOT match the specified type/s (if any) are evaluated. If true , the elements that DO match the specified type values (if any) are evaluated for a rule match.
Type	One or more element types can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<DiagramObjectsWithNoClassifier Enabled="True" ID="SequenceObjectsWithNoClassifier">
  <Diagram Type="'Sequence'" MatchFilterCriteria="True" />
  <Element Type="'Sequence','Object'" MatchFilterCriteria="True" />
</DiagramObjectsWithNoClassifier>
```

Orphans

Properties

Property/Sub-property	Value
MatchFilterCriteria	If false , the elements that do NOT match the specified type/s and stereotype/s (if any) are evaluated. If true , the elements that DO match the specified type and stereotype values (if any) are evaluated for a rule match.
Type	Optional element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Optional element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<Orphans Enabled="True" ID="OrphansWithNoConnectors" MatchFilterCriteria="True" Type="" Stereotype="" />
```

NoDescription

Properties

Property/Sub-property	Value
MatchFilterCriteria	<p>If false, the elements that do NOT match the specified type/s and stereotype/s are evaluated. If true, the elements that DO match the specified type and stereotype values are evaluated for a rule match.</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	<p>Element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.</p>
Stereotype	<p>Element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.</p>

Default Rules

```

<NoDescription Enabled="True" ID="ActorWithNoDescription" MatchFilterCriteria="True" Type="'Actor'" Stereotype="" />
<NoDescription Enabled="True" ID="UseCaseWithNoDescription" MatchFilterCriteria="True" Type="'UseCase'" Stereotype="" />
<NoDescription Enabled="True" ID="ComponentWithNoDescription" MatchFilterCriteria="True" Type="'Component'" Stereotype="" />
<NoDescription Enabled="True" ID="ClassWithNoDescription" MatchFilterCriteria="True" Type="'Class'" Stereotype="" />

```

DuplicateName

Properties

Property/Sub-property	Value
MatchFilterCriteria	<p>If false, the elements that do NOT match the specified type/s and stereotype/s are evaluated. If true, the elements that DO match the specified type and stereotype values are evaluated for a rule match.</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	<p>Element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.</p>
Stereotype	<p>Element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.</p>

Default Rules

```
<DuplicateName Enabled="True" ID="DuplicateActorName" MatchFilterCriteria="True" Type="'Actor'" Stereotype="" />
```

Unrealized

Properties

Property/Sub-property	Value
MatchFilterCriteria	If false , the target elements of the relationship that do NOT match the specified type/s and stereotype/s are evaluated. If true , target the elements that DO match the specified type and stereotype values are evaluated for a rule match. Either the type or the stereotype (or both) must be set!
Type	Target element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Target element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
RelatedElement	Optional filter on the source element (i.e. the other side of the relationship which realizes the target).
Type	One or more source element type values enclosed in single quotes and comma separated.
Stereotype	One or more source element stereotype values enclosed in single quotes and comma separated.
Connector	Filter on the connector representing the realization relationship.
Type	Single type value (i.e. <u>no single quotes</u>). Must be set!
Stereotype	Optional connector stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<Unrealized Enabled="True" ID="UnrealizedRequirements" MatchFilterCriteria="True" Type="'Requirement'" Stereotype="">
  <RelatedElement Type="" Stereotype="" />
  <Connector Type="Realisation" Stereotype="" />
</Unrealized>
<Unrealized Enabled="True" ID="UnrealizedInterfaces" MatchFilterCriteria="True" Type="'Interface'" Stereotype="">
  <RelatedElement Type="" Stereotype="" />
  <Connector Type="Realisation" Stereotype="" />
</Unrealized>
```

MissingRelationship

Properties

Property/Sub-property	Value
MatchFilterCriteria	<p>If false, the source elements of the relationship that do NOT match the specified type/s and stereotype/s are evaluated. If true, the source elements that DO match the specified type and stereotype values are evaluated for a rule match.</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	Source element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Source element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
RelatedElement	<p>Filter on the target element (i.e. the other side of the relationship).</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	One or more target element type values enclosed in single quotes and comma separated.
Stereotype	One or more target element stereotype values enclosed in single quotes and comma separated.
Connector	Optional filter on the connector representing the desired relationship. If omitted, any relationship is valid.
Type	One or more connector type values can be specified, enclosed in single quotes, and comma separated.
Stereotype	One or more connector stereotype values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<MissingRelationship Enabled="True" ID="MissingUseCaseToRequirement" MatchFilterCriteria="True" Type="'UseCase'" Stereotype="">
  <RelatedElement Type="'Requirement'" Stereotype="" />
  <Connector Type="'Realisation'" Stereotype="" />
</MissingRelationship>
```


MissingRelationshipEx

Properties

Property/Sub-property	Value
MatchFilterCriteria	<p>If false, the source elements of the relationship that do NOT match the specified type/s and stereotype/s are evaluated. If true, the source elements that DO match the specified type and stereotype values are evaluated for a rule match.</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	Source element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Source element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
RelatedElement	<p>Filter on the target element (i.e. the other side of the relationship).</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	One or more target element type values enclosed in single quotes and comma separated.
Stereotype	One or more target element stereotype values enclosed in single quotes and comma separated.
Connector	Optional filter on the connector representing the desired relationship. If omitted, any relationship is valid
Type	One or more connector type values can be specified, enclosed in single quotes, and comma separated.
Stereotype	One or more connector stereotype values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```

<MissingRelationshipEx Enabled="True" ID="MissingComponentToComponent" MatchFilterCriteria="True" Type="'Component'" Stereotype="">
  <RelatedElement Type="'Component'" Stereotype="" />
  <Connector Type="'Association','Connector','Assembly','Delegate'" Stereotype="" />
</MissingRelationshipEx>

```

MissingInterface

Properties

Property/Sub-property	Value
MatchFilterCriteria	<p>If false, the elements that do NOT match the specified type/s and stereotype/s are evaluated. If true, the elements that DO match the specified type and stereotype values are evaluated for a rule match.</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	<p>Element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.</p>
Stereotype	<p>Element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.</p>

Default Rules

```
<MissingInterface Enabled="True" ID="MissingComponentToInterface" MatchFilterCriteria="True" Type="'Component'" Stereotype="" />
```

UnresolvedClassifiers

Properties

Property/Sub-property	Value
MatchFilterCriteria	<p>If false, the elements that do NOT match the specified type/s and stereotype/s are evaluated. If true, the elements that DO match the specified type and stereotype values are evaluated for a rule match.</p> <p>Either the type or the stereotype (or both) must be set!</p>
Type	Element type to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.
Stereotype	Element stereotype to be used as a filter. One or more values can be specified, enclosed in single quotes, and comma separated.

Default Rules

```
<UnresolvedClassifiers Enabled="True" ID="UnresolvedClassifiers" MatchFilterCriteria="True" Type="" Stereotype="" />
```

UnresolvedDataType

No properties are currently associated with this rule.

Default Rules

```
<Attributes>
  <UnresolvedDataType Enabled="True" ID="UnresolvedAttributeDataType" />
</Attributes>
```

UnresolvedArguments

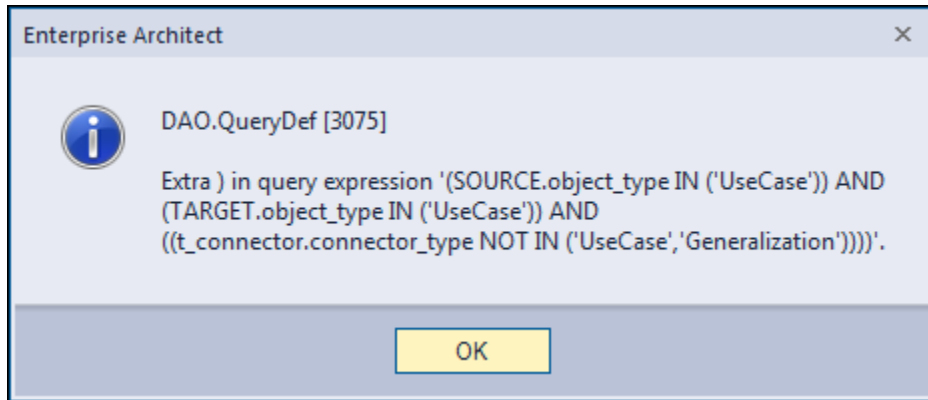
No properties are currently associated with this rule.

Default Rules

```
<Operations>
  <UnresolvedArguments Enabled="True" ID="UnresolvedOperationArgument" />
</Operations>
```

Troubleshooting

Should a SQL statement fail to execute properly, Enterprise Architect will display an error message dialog similar to this:



As of version 15.0 of Enterprise Architect this type of error is not relayed back to the application which is unaware that a problem occurred.

Please follow this procedure:

- Take a screenshot of the error message.
- Locate the DBError.txt file in %APPDATA%\Sparx Systems\EA and include it in your message.
- Before dismissing the dialog box, look at the System Output window to determine the rule being executed at the time of the error. For example:

```
*** VALIDATING RULE [UseCaseToUseCaseConnectors] on connector type <'UseCase','Generalization'> ***
```

- If you are validating the repository using a [customized rule set](#), please include that xml file in the data provided back to Cephass.
- Also provide your database type (Microsoft Access, SQL Server, Oracle, etc.) and version number.

Support and contact information

Use the contact information below for any installation or runtime issues with the extension.

Feature requests or suggestions for improvement are also welcome!

Contact: Frank Truyen

Email: support@enterprisemodelingsolutions.com

Phone : 714-573-7112.