software AG

ARIS
ARCHIMATE® 3.0 USER GUIDE

Version 10.0 - Service Release 2

October 2017

Contents

Text conventions

Menu items, file names, etc. are indicated in texts as follows:

- Menu items, key combinations, dialogs, file names, entries, etc. are displayed in **bold**.
- User-defined entries are shown **<in bold and in angle brackets>**.
- Single-line example texts (e.g., a long directory path that covers several lines due to a lack of space) are separated by ↵ at the end of the line.
- File extracts are shown in this font format:

  `This paragraph contains a file extract.`
- Warnings have a colored background:

  Warning

  This paragraph contains a warning.

References

[1] ArchiMate® 3.0 Specification, June 2016, The Open Group

[2] ArchiMate® Model Exchange File Format, Version 2.1, August 2015, The Open Group

[3] ArchiMate® Model Exchange File Format for the ArchiMate® Modeling Language, Version 3.0, May 2017, The Open Group

1   Introduction

This document describes the usage and maintenance of ArchiMate 3.0 in ARIS 10 SR2 and subsequent versions.

Chapter 2 focuses on modeling and maintaining ArchiMate 3.0 content and is therefore mostly relevant for ArchiMate modelers.

Chapter 3 focuses on the prerequisites to provide an effective modeling environment for multiple modelers and is therefore mostly relevant for ArchiMate administrators.

Chapter 4 focuses on the import and export of ArchiMate files from and to other ArchiMate tools. Information on setting up the functionality is relevant for administrators while information on using it is relevant for both administrators and modelers.

The appendices list details on how ArchiMate 3.0 elements and relationships are mapped and visualized in ARIS.

1   Introduction

2 ArchiMate 3.0 modeling

2.1 Create ArchiMate 3.0 models

ArchiMate 3.0 models are preferably created or updated through standard **ArchiMate Viewpoint** model types (see Appendix D: Viewpoints in ArchiMate 3.0 filter) or through custom ArchiMate Viewpoint model types that have been selected for your organization. Each viewpoint contains a subset of elements and relationships from the ArchiMate meta model and is geared towards a particular audience. When opening an **ArchiMate Viewpoint** model type in ARIS, only relevant ArchiMate elements are displayed in the **Symbols** bar.

Various options exist to create a new ArchiMate 3.0 model. The following section describes the procedure using the Explorer of the **ARIS Architect** or **ARIS Designer** client.

Prerequisite

- You are logged in to a database with an appropriate method filter, e.g. **ArchiMate 3.0**.
- The model type that your model is based on is allowed by the method filter used (see paragraph 3.2)

Procedure

1. Click **ARIS >** 📰 **Explorer**.
2. Click ⚙ **Navigation** in the bar panel if the **Navigation** bar is not activated yet.
3. Open the relevant database.
   If you open the database for the first time, you can specify the filter that needs to be applied and the language you want to use for the models. Then click **Finish**.
4. Select the group in which the new model is to be saved.
5. Click ➕ **New >** 🔷 **Model**. The Model Wizard opens (see Figure 1).
6. Select an appropriate model type, give it a meaningful name and click **Finish**.

A new model is created in the selected group and opened for editing in a new tab.
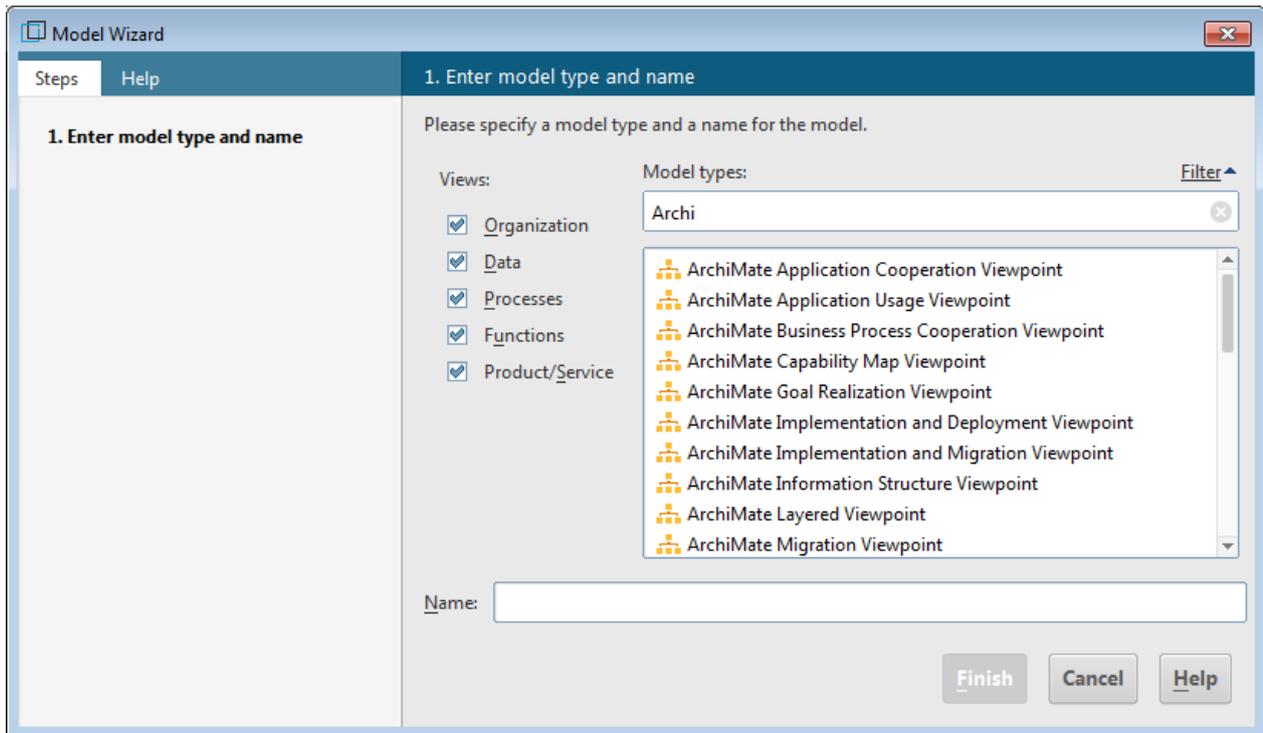
Figure 1: **Model Wizard** filtered for model types with 'Archi' in their name

2.2 Change the appearance of ArchiMate models

ARIS Help describes multiple ways in which ARIS supports a modeler in changing the appearance of a model.

Prerequisite

The model is open for editing in **ARIS Architect** or **ARIS Designer** client

Procedure

1. Activate ARIS Help from the menu option **ARIS >** ❓ **Help**.
   The **ARIS Help** start page opens in the browser.
2. Click **Working with ARIS**.
   The ARIS Help opens on a new browser tab.
3. In the **Contents** tab, open **Create models > ARIS models**.
   Select a topic of choice how to change the model appearance, e.g.
   - Align model items to the grid
   - Match size of model items
   - Change arrangement of overlapping model items
   - Place model attributes
4. Select **Use objects > Basics** how to manipulate an object, e.g.
   - Change object size
   - Fill object with a solid color
   - Format painter
   - Place object attributes
5. Return to the model tab to edit the model accordingly.
6. Click 💾 **Save (Ctrl+S)** to keep the changes.

The model appearance has been changed according to the modeler's needs.

2.3   Align ArchiMate elements with (non-)ArchiMate models

An ARIS **assignment** is a feature to navigate from an object occurrence such as an ArchiMate element to a model. This model could be specified in another modeling language such as UML, BPMN, etc. This way an ArchiMate user can drill down from an architecture landscape model directly into a design specification model.

Assignments can be used to navigate from a coarse-grained ArchiMate element – e.g. a business process – to a detailed specification model for that element – e.g. a BPMN collaboration diagram.

2.3.1   Assign a new model to an ArchiMate element

Prerequisite

An existing model that specifies an ArchiMate element in more detail is not (yet) available.

Procedure

1. Right-click the ArchiMate element and select **New >** 🛢 **Assignment**.
    If you are using a license covering ARIS UML Designer, the **Create assignment** dialog opens. Click **ARIS model**.
2. The Assignment Wizard opens.
3. Enable the **New model** option button.
    The model types that can be assigned to the selected model in compliance with the method are available for selection.
4. Select the required model type.
5. Click **Next**.
6. Select the group in which you want to save the new model.
7. Click **Finish**.
    The Assignment Wizard is closed and the new model opens.

You can now start modeling the detailed specification for this ArchiMate element. The newly created model is assigned to the ArchiMate element from which the procedure was started. The name of the created model is identical to the name of the ArchiMate element.

2.3.2   Assign an existing model to an ArchiMate element

Prerequisite

An existing model that specifies an ArchiMate element in more detail is available.

Procedure

1. Right-click an ArchiMate element and select **New > 📑 Assignment**.
    If you are using a license covering ARIS UML Designer, the **Create assignment** dialog opens. Click **ARIS model**.
2. The Assignment Wizard opens.
3. Enable the **Existing model** option button.
    The model types that can be assigned to the selected model in compliance with the method filter are available for selection.
4. Select the required model type.
5. Click **Next**.
6. Select the group in which the required model is located.
7. Select the name of the model.
8. Click **Finish**.
    The Assignment Wizard is closed and the new model opens.

The selected model is assigned to the ArchiMate element from which the procedure was started.

2.4   Reuse ArchiMate elements in non-ArchiMate models

A symbol in ARIS is the representation of an object in the repository. Each ArchiMate element is depicted by a recognizable symbol while its properties are captured by the corresponding object definition in the repository. An ArchiMate element can be reused – i.e. depicted on other (non-)ArchiMate models – as long as its object type is allowed for these models by the ARIS method and filter.

An ArchiMate element can be reused in another model by a **Copy** and **Paste** or **Paste as > Occurrence Copy** action.

Note

Reused ArchiMate elements share a single object definition. A change in one of its attributes (e.g. its name) will immediately be visible in all models where this object occurs.

3 ArchiMate 3.0 administration

3.1 Change symbol palette

Ever since ARIS 9 was introduced, the symbol palette of most ARIS supported methods has been restyled. ArchiMate 3.0 symbols are available in this restyled format from ARIS 10 SR1 (see Figure 2).

Figure 2: ArchiMate symbols in ARIS default palette and ARIS default palette (classic)

Organizations that want to keep using the classic symbol palette and thereby ArchiMate symbols that look like the ones in the ArchiMate 3.0 specification, can do so by changing a database property, as explained in this paragraph.

Prerequisite

You are logged into a database with **ARIS Architect** and **database management** privileges.

Procedure

1. Right-click the database name and select **Properties**.
2. Click **Palette and method filter**.
3. Change **Symbol palette** value (see Figure 3).
4. Click **OK** to close the **Properties** dialog.
5. Log out of the database.

The symbol palette in use for this database has been changed for both **ARIS Architect/Designer** and **ARIS Connect** users.

Note

The database symbol palette can be overwritten by a method filter in case a mixture of default and classic palette symbols within the same database is desired.
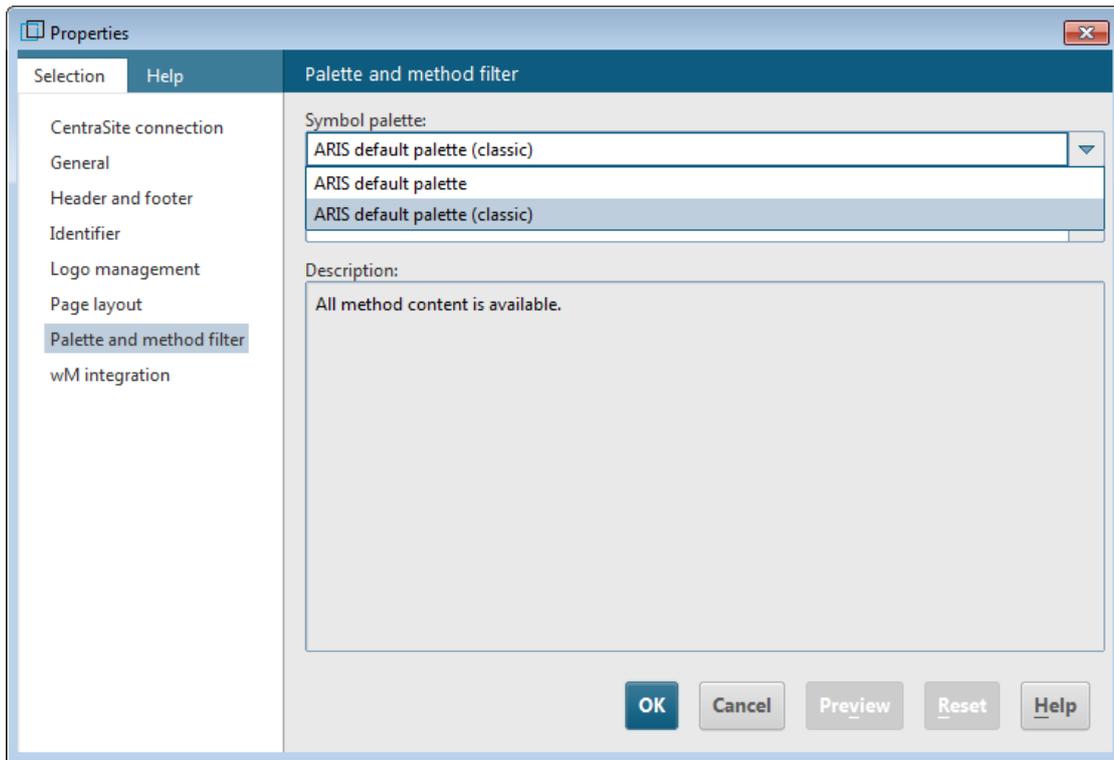
Figure 3: Properties dialog to change the symbol palette of an ARIS database

3.2 Import ArchiMate 3.0 filter in ARIS

ArchiMate 3.0 is supported from ARIS 10 SR1 onward. It is included by default in ARIS Connect server. For ARIS Design Server the *Extension Pack ArchiMate* is required. The main model type for ArchiMate 3.0 is **ArchiMate model (3.0)**. After import of the **ArchiMate 3.0 filter**, an additional 23 **ArchiMate Viewpoint** model types will be available in the ARIS method (see Appendix D: Viewpoints in ArchiMate 3.0 filter).

> **Warning**
>
> If a filter with the same GUID already exists, it will be overwritten during import. To merge filters first duplicate the current filter, then import the older version of the filter. The two versions can be merged afterwards.

Prerequisite

- You have access to the folder **Content/ArchiMate v3.0** on the ARIS DVD.
- You are logged into **ARIS Architect** as **configuration administrator** for this tenant.

Procedure

1. Click **ARIS >** 🔧 **Administration**.
2. Click ⚙ **Navigation** in the bar panel if the **Navigation** bar is not activated yet.
3. In the navigation bar, click ⚙ **Configuration >** § **Conventions**.
4. Right-click **Filter** and click ⤢ **Import filter**. The **Import filter** dialog opens.
5. Select the path to the **ArchiMate 3.filter** file that you want to import.
6. Click **OK**.

The **ArchiMate 3** filter is imported and additional **ArchiMate Viewpoint** model types are added to the ARIS method. To start using it, log out of all databases and log in again with this filter.

3.3   Create a filter with custom ArchiMate viewpoints

Prerequisite

You are logged into **ARIS Architect** as **configuration administrator** for this tenant.

Procedure

1. Click **ARIS >** 🔧 **Administration**.
2. Click 🎛 **Configuration >** 🏛 **Method >** 🏛 **Model types**.
3. Right-click **ArchiMate model (3.0) > New > Derive model type**.
4. Add a unique name and optional description for the custom ArchiMate viewpoint.
5. Follow the other steps of the **Derive model type** wizard to add custom attributes, symbols or connections or directly click **Finish**.
6. Click **ARIS >** 🗄 **Explorer**.
7. Right-click the server, click **New >** 🗄 **Database**, and name it **<Company name> filter database**.
8. Log in log in to the database.
9. Right-click a group and click **New >** 🔗 **Model**.
   The **Model Wizard** opens.
10. Search for the newly created model type, add a meaningful name and click **Finish**.
    A new tab with the name of the model is opened.
11. Now model all ingredients you want to have available for this custom ArchiMate viewpoint. Each model attribute, symbol, object attribute, object assignment, connection, and connection attribute has to be specified at least once per type. For example, to activate short descriptions in your filter for Business functions, add any character in the Short description attribute of a **Function** object type.
12. When finished click **ARIS >** 🗗 **Save all**.
13. Click **ARIS >** 🔧 **Administration**.
14. Click 🎛 **Configuration >** § **Conventions >** § **Filter**.
15. Right-click § **Filter > New >** 🝆 **Filter**.
    The **Filter Wizard** opens.
16. Give your filter a meaningful name and description and click **Next**.
    Tip: structure your description to follow changes over time (<u>who</u> changed <u>what</u> and <u>when</u>).
17. In step 2 **Select creation mode** check **Create automatically**.
18. In step 3 **Select database** click **<Company name> filter database** and click **Finish**.

A new filter with your custom viewpoints is now available.

> **Note**
>
> You can create a new consolidated filter that combines your filter with custom viewpoints and other existing filters such as the ArchiMate 3 filter (see chapter 3.4).

3.4   Create consolidated method filter

Prerequisite

You are logged into **ARIS Architect** as **configuration administrator** for this tenant.

Procedure

1. Click **ARIS >** 🔧 **Administration**.
2. Click ⚙ **Configuration >** § **Conventions**.
3. Right-click § **Filter > New >** ▼ **Filter**.
    The **Filter Wizard** opens.
4. Give your filter a meaningful name and description and click **Next**.
    Tip: structure your description to follow changes over time (<u>who</u> changed <u>what</u> and <u>when</u>).
5. In step 2 **Select creation mode** check **Merge filters**.
6. In step 3 **Select filter** click at least two filters you would like to merge and click **Finish**.

A new consolidated method filter is now available. A user that logs in to a database will be able to select this consolidated filter.

4   ArchiMate Model Exchange File Format

The support of the **ArchiMate Model Exchange File Format** (AMEFF) is new in ARIS 10 SR2. This standard from The Open Group facilitates the exchange of ArchiMate content between tools that support the AMEFF.

ARIS 10 SR2 can import and export ArchiMate content from other tools by using the AMEFF for **ArchiMate 2.1** as well as the AMEFF for **ArchiMate 3.0**.

Note

Though modeling in ArchiMate 2.1 will continue to be supported in ARIS, the AMEFF is only available to import and export content from and to ARIS when ArchiMate 3.0 is used.

4.1   Import ArchiMate 3.0 models

Prerequisite

- You are logged into a database with **ARIS Architect** with **Read**, **Write** and **Delete** privileges to a group.
- An AMEFF file is available for import.

Procedure

1. Click **ARIS >** **Explorer**.
2. Right-click the group and click **Import > ArchiMate file**.
3. Select an XML file compatible with the AMEFF and click **Next**.
4. Check the ArchiMate import settings (see Figure 4) and click **Finish**.
5. ArchiMate content will be imported into the group.

ArchiMate 3.0 models from an **ArchiMate Model Exchange File Format** file are imported.

Warning

In case the import file contains custom viewpoints that are not configured yet in the ARIS method, an **Ignore ArchiMate import issues** dialog will be displayed (see Figure 5).

When the user selects **OK**, the import will continue, however, concepts from the custom viewpoints that are not yet configured will be depicted on an **ArchiMate model (3.0)** model type instead.

In order to import custom viewpoints, they have to be created upfront and mapped in the import configuration (see paragraph 4.3).
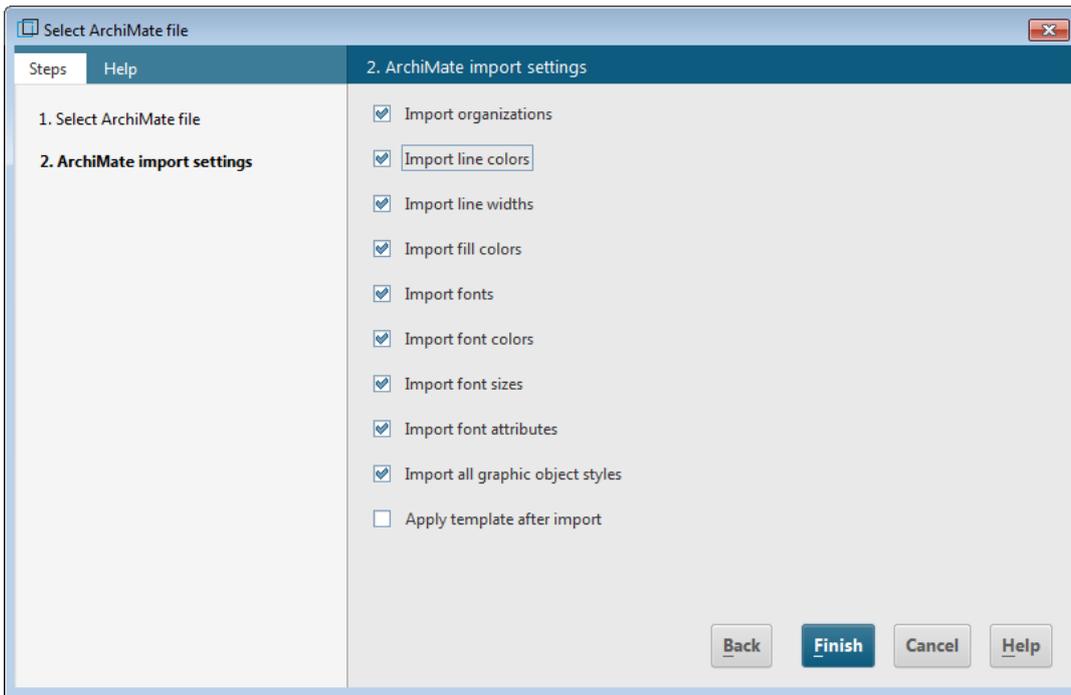
Figure 4: ArchiMate import settings dialog
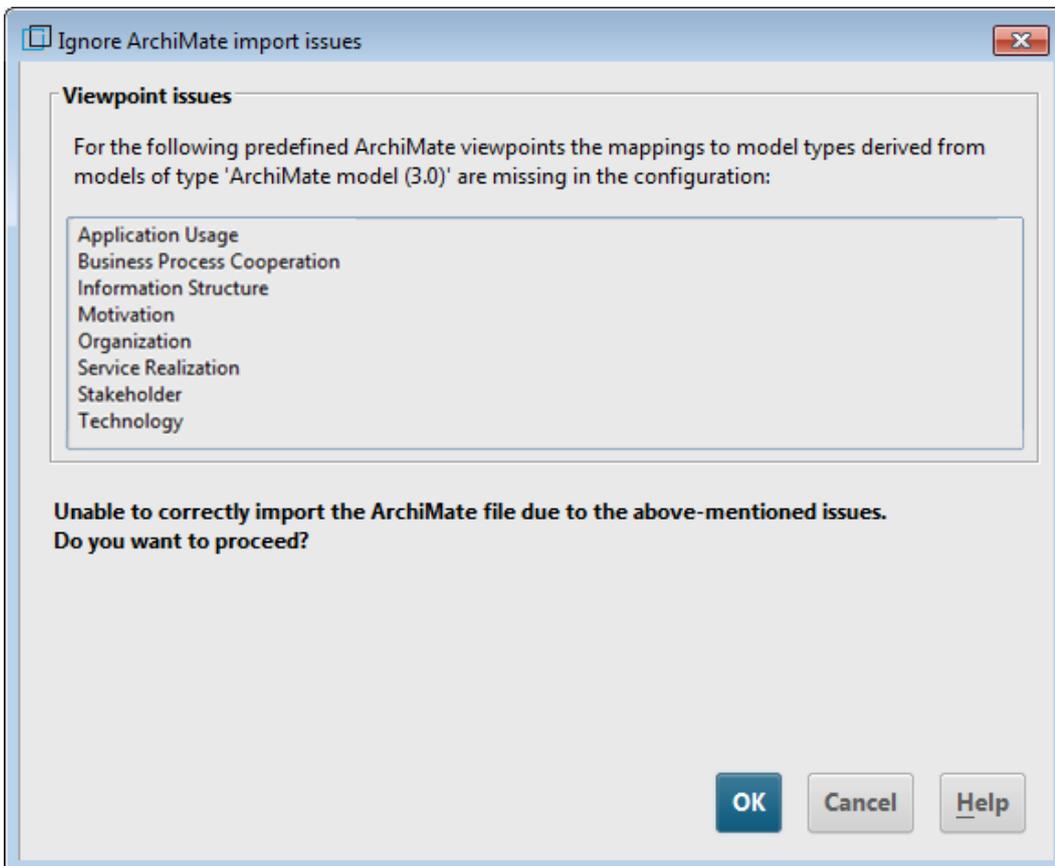
Figure 5: Ignore ArchiMate import issues dialog

> **Warning**
>
> After import a warning will be displayed when implicit relationships are used on models (see Figure 6). Implicit relationships (used for 'box in box' modeling) are allowed by the ArchiMate standard. Such relationships will be captured as connections in the ARIS repository. Therefore a warning of this kind does not indicate that information is lost during import.
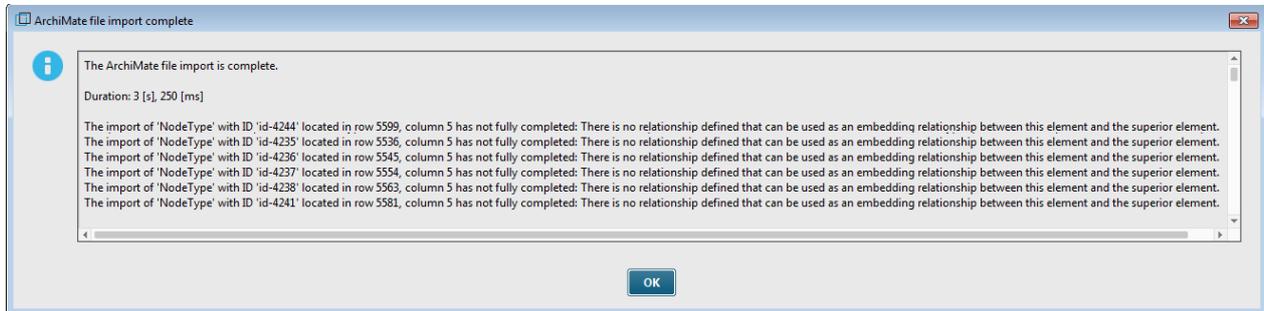
Figure 6: Warning after import when implicit relationships are used

4.2   Export ArchiMate 3.0 models

Prerequisite

You are logged into a database with **ARIS Architect** with at least Read privileges to a group

Procedure

1. Right-click **Main group >** 🔍 **Find** to have all ArchiMate models that need to be exported listed in the search results.
    TIP: use attribute filter and a (combination of) model attribute(s) to quickly retrieve all models from the database.
2. Select all relevant models from search result, right-click the selection and click **Export > ArchiMate file**.
3. Specify a name for the export file and click **Next**.
4. Select in which languages the content should be exported and click **Next**.
5. Select the ArchiMate export settings (see Figure 7) and click **Finish**.
6. When message appears that the ArchiMate file export is complete, click **OK**.

ArchiMate 3.0 models are exported to an **ArchiMate Model Exchange File Format** file.

Figure 7: ArchiMate export settings

4.3   Configure ArchiMate mapping

Out of the box ARIS can import all ArchiMate elements and viewpoints listed in the ArchiMate specification. Derived elements and custom viewpoints have to be configured upfront; else they will lead to a warning during import of the AMEFF file (see Figure 5).
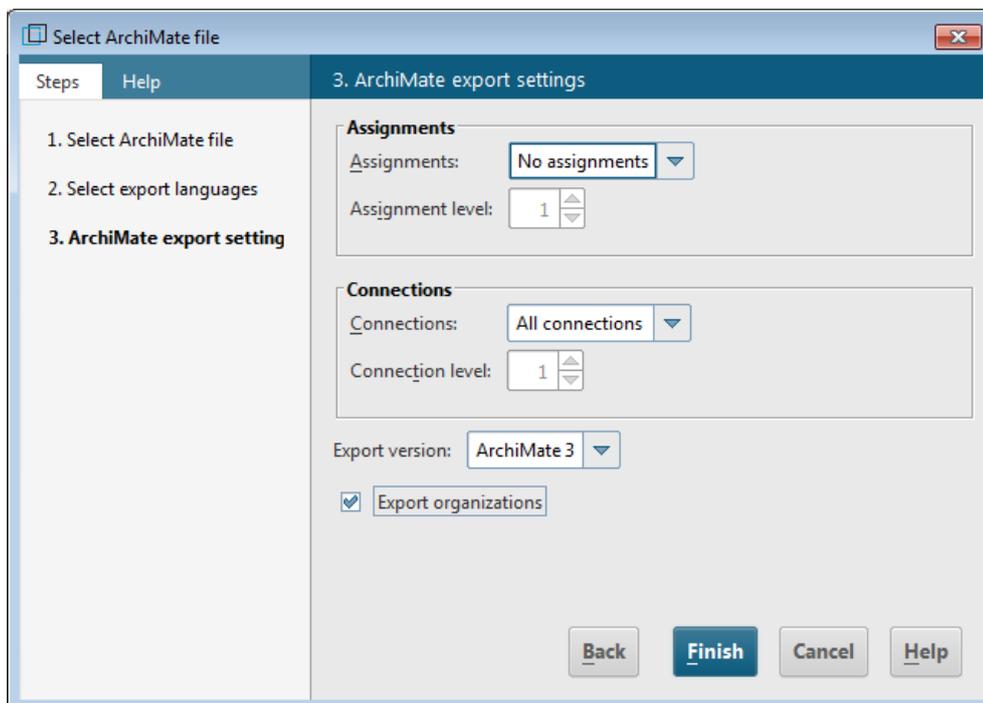
Prerequisite

You are logged into ARIS Architect with **Configuration Administrator** privileges for this tenant.

Procedure

1. Select **ARIS >** 🔧 **Administration**.
2. Click ⚙ **Configuration >** § **Conventions >** § **Import/Export > ArchiMate**.
3. Here you can configure ArchiMate mappings (see Figure 8).
   a. Figure 9 depicts how to map ArchiMate 🌐 **Languages**.
   b. Figure 10 depicts how to map ArchiMate 🏷 **Property definitions**.
   c. Figure 11 depicts how to map ArchiMate 👁 **Viewpoints**.

Optionally, to export an ArchiMate mapping configuration to another ARIS tenant:

4. Select **ArchiMate >** ↪ **Export ArchiMate mappings**.

Optionally, to import an ArchiMate mapping configuration from another ARIS tenant:

5. Select **ArchiMate >** ⤵ **Import ArchiMate mappings**.

ARIS is prepared to map custom names of **Languages**, **Property definitions** and **Viewpoints** to pre-existing elements in the ARIS Configuration during import of **ArchiMate Model Exchange File Format** files.

> **Note**
> **Languages, attributes types** or **model types** have to be available in the ARIS Configuration before they can be mapped.
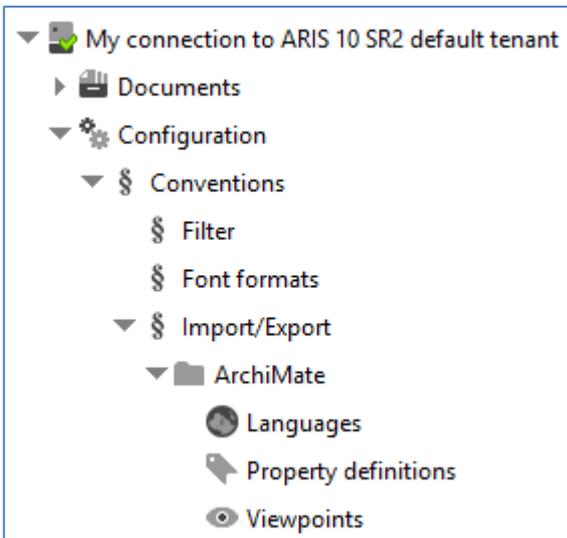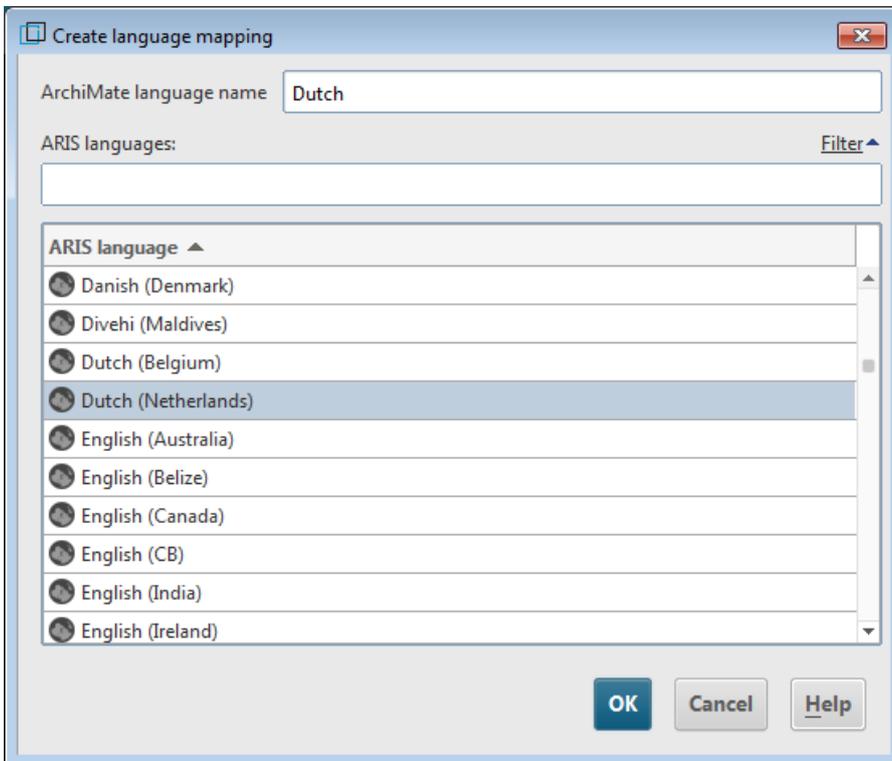
Figure 8: ArchiMate mapping options

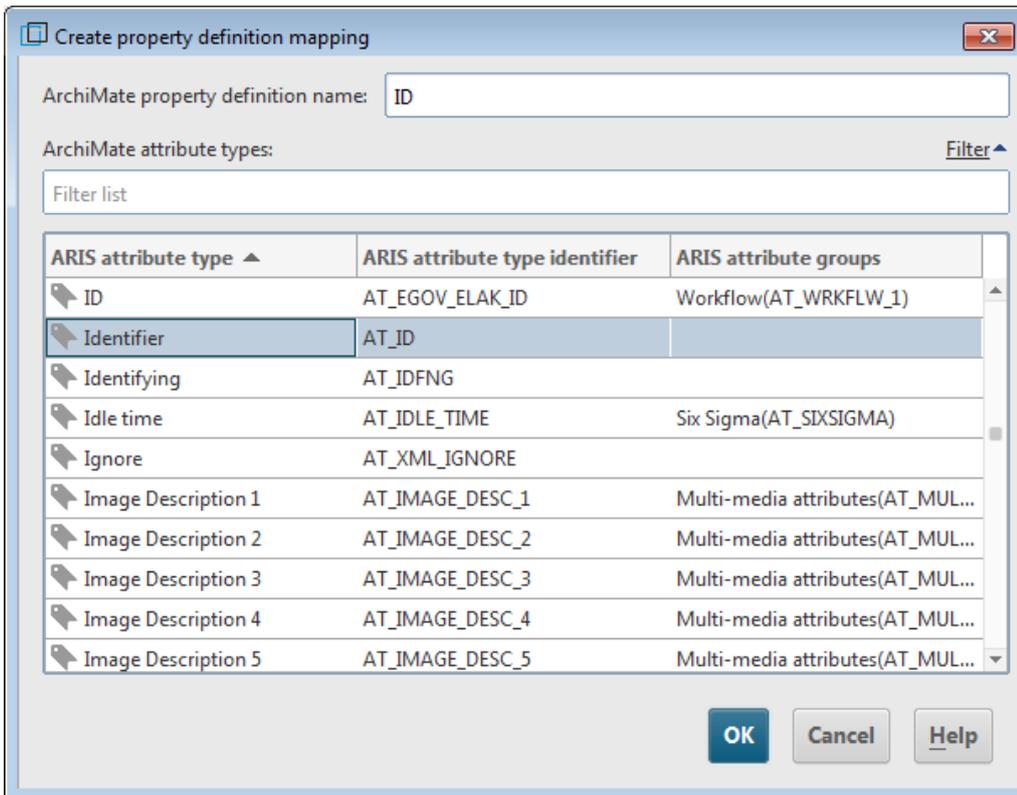Figure 9: Create ArchiMate language mapping

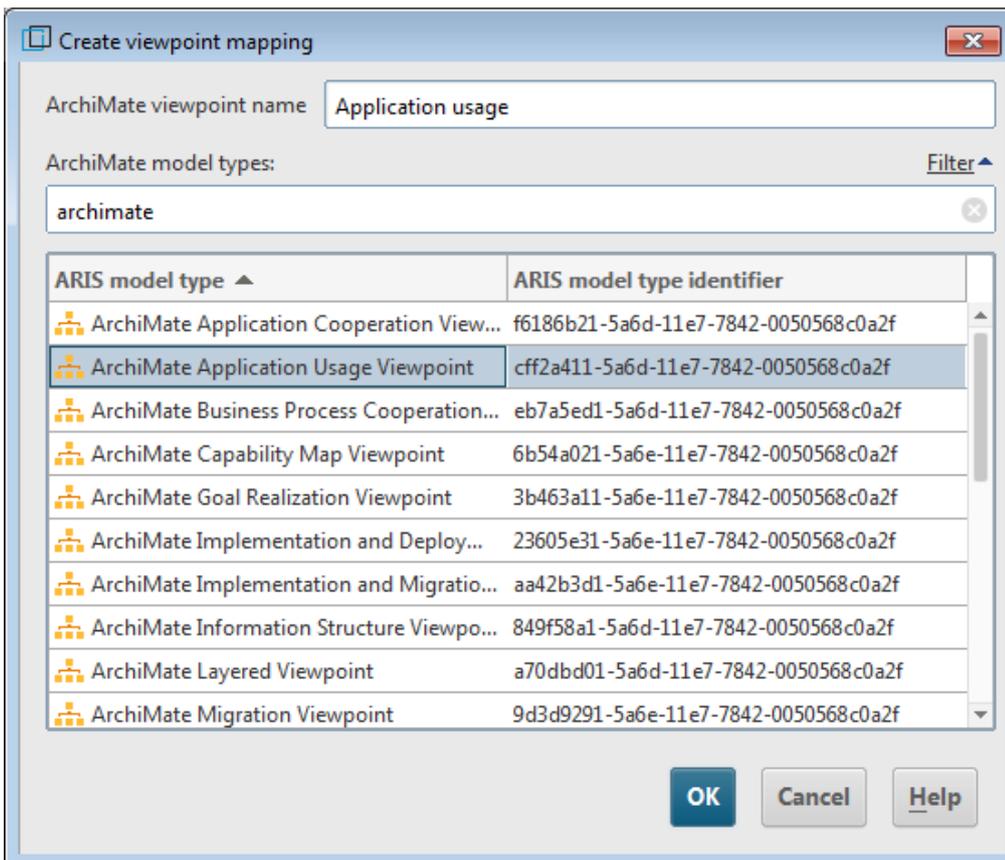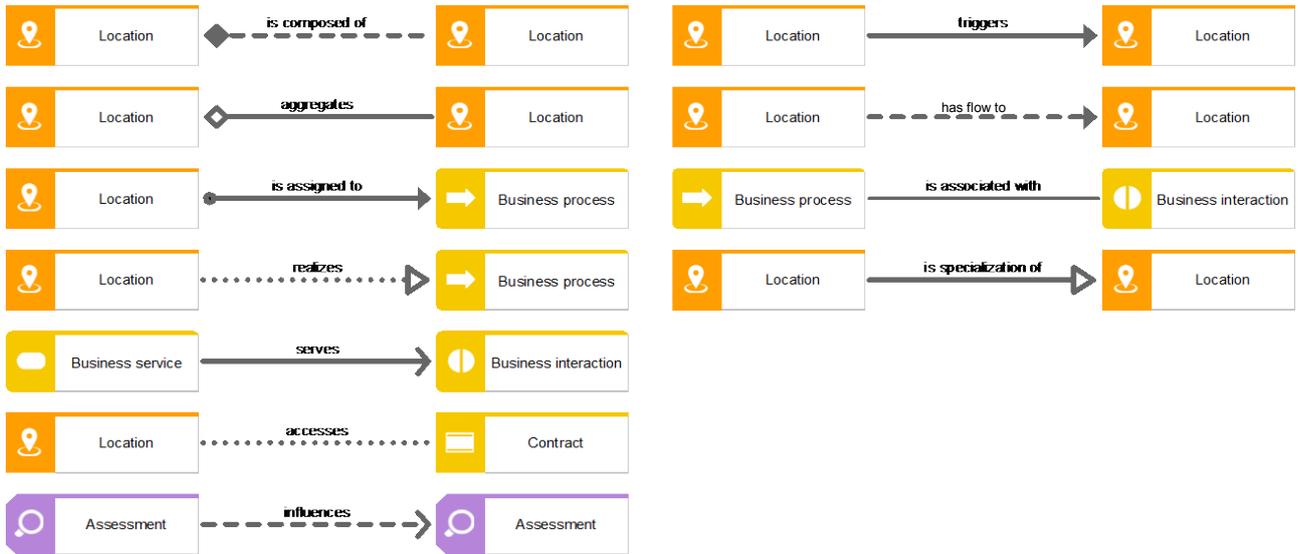Figure 10: Create property definition mapping

Figure 11: Create viewpoint mapping

Appendix A: Mapping of ARIS Object Types to ArchiMate Elements

ARIS 10 Object Type	ARIS 10 Symbol Type	ArchiMate 3.0 Element
Application collaboration (478)	Application collaboration (1582)	Application collaboration
Application system type (6)	Application component (1583)	Application component
Assessment (405)	Assessment (1659)	Assessment
Business rule (360)	Constraint (1812)	Constraint
Capability (293)	Capability (1824)	Capability
Cluster/Data model (14)	Business object (1577)	Business object
Contract (399)	Contract (1567)	Contract
Deliverable (480)	Deliverable (1811)	Deliverable
Distribution channel (269)	Business interface (1570)	Business interface
Distribution channel (269)	Distribution network (1833)	Distribution network
Driver (400)	Driver (1813)	Driver
Entity type (17)	Data object (1588)	Data object
Equipment (482)	Equipment (1834)	Equipment
Event (18)	Application event (1828)	Application event
Event (18)	Business event (1576)	Business event
Event (18)	Technology event (1830)	Technology event
Event instance (143)	Implementation event (1837)	Implementation event
Event instance (143)	Plateau (1814)	Plateau
Facility (483)	Facility (1835)	Facility
Function (22)	Business function (1572)	Business function
Function (22)	Business interaction (1573)	Business interaction
Gap (397)	Gap (1815)	Gap
General resource (145)	Resource (1826)	Resource
Group (128)	Business collaboration (1569)	Business collaboration
Hardware component type (24)	Device (1590)	Device
IS service (295)	Application interface (1584)	Application interface
IT function type (105)	Application function (1585)	Application function
IT function type (105)	Application interaction (1586)	Application interaction
IT function type (105)	Application process (1827)	Application process
IT function type (105)	Technology function (1816)	Technology function
IT function type (105)	Technology interaction (1831)	Technology interaction
IT function type (105)	Technology process (1832)	Technology process
Information carrier (27)	Artifact (1596)	Artifact
Information carrier (27)	Representation (1580)	Representation
Knowledge category (230)	Meaning (1578)	Meaning
Location (54)	Location (1807)	Location
Need (267)	Value (1581)	Value
Network connection type (81)	Path (1589)	Path
Network node type (40)	Node (1594)	Node
Network node type (40)	Technology collaboration (1829)	Technology collaboration
Network type (39)	Communication network (1593)	Communication network

ARIS 10 Object Type	ARIS 10 Symbol Type	ArchiMate 3.0 Element
Objective (86)	Goal (1817)	Goal
Operating resource type (116)	Material (1836)	Material
Organizational unit (43)	Business actor (1568)	Business actor
Organizational unit (43)	Stakeholder (1818)	Stakeholder
Participant (303)	Business process (1574)	Business process
Policy (237)	Principle (1819)	Principle
Product/Service (153)	Business service (1575)	Business service
Product/Service (153)	Product (1579)	Product
Requirement (387)	Requirement (1820)	Requirement
Role (78)	Business role (1571)	Business role
Rule (50)	Junction (1598)	Junction
Rule (50)	OR junction (1810)	OR junction
Service type (294)	Application service (1587)	Application service
Socket (296)	Technology interface (1591)	Technology interface
Strategy (239)	Course of action (1825)	Course of action
Structural element (232)	Group (1821)	Group
Success factor (108)	Outcome (1823)	Outcome
System software (479)	System software (1595)	System software
Task (137)	Work package (1822)	Work package
Technology service (481)	Technology service (1592)	Technology service

Appendix B: Overview of ArchiMate 3.0 relationships

Location	◆ is composed of	Location	Location	triggers → Location
Location	◇ aggregates	Location	Location	has flow to Location
Location	is assigned to →	Business process	Business process	is associated with Business interaction
Location	realizes ▷	Business process	Location	is specialization of Location
Business service	serves →	Business interaction		
Location	accesses	Contract		
Assessment	influences ⇢	Assessment		

Appendix C: Default palette of ArchiMate 3.0 symbols

Location		Node	Stakeholder	Resource
Business actor	Group	Device	Driver	Capability
Business role	Application component	System software	Assessment	Course of action
Business collaboration	Application collaboration	Technology collaboration	Value	Work package
Business interface	Application interface	Technology interface	Meaning	Implementation event
Business process	Application process	Technology process	Goal	Deliverable
Business function	Application function	Technology function	Outcome	Plateau
Business interaction	Application interaction	Technology interaction	Principle	Gap
Business service	Application service	Technology service	Requirement	
Business event	Application event	Technology event	Constraint	
Business object	Data object	Artifact		
Contract	Facility	Network		
Representation	Equipment	Communication path		
Product	Material	Distribution network		

Appendix D: Viewpoints in ArchiMate 3.0 filter

A viewpoint contains a relevant subset of ArchiMate elements and their relationships, geared towards particular stakeholders. Following example viewpoints are available in the **ArchiMate 3.0 filter** to facilitate the creation of graphical views (diagrams).

Basic Viewpoints

1. Organization Viewpoint
2. Business Process Cooperation Viewpoint
3. Product Viewpoint
4. Application Cooperation Viewpoint
5. Application Usage Viewpoint
6. Implementation and Deployment Viewpoint
7. Technology Viewpoint
8. Technology Usage Viewpoint
9. Information Structure Viewpoint
10. Service Realization Viewpoint
11. Physical Viewpoint
12. Layered Viewpoint

Motivation Viewpoints

1. Stakeholder Viewpoint
2. Goal Realization Viewpoint
3. Requirement Realization Viewpoint
4. Motivation Viewpoint

Strategy Viewpoints

1. Strategy Viewpoint
2. Capability Map Viewpoint
3. Outcome Realization Viewpoint
4. Resource Map Viewpoint

Implementation and Migration Viewpoints

1. Project Viewpoint
2. Migration Viewpoint
3. Implementation and Migration Viewpoint

Disclaimer

ARIS products are intended and developed for use by persons. Automated processes, such as the generation of content and the import of objects/artifacts via interfaces, can lead to an outsized amount of data, and their execution may exceed processing capacities and physical limits. For example, processing capacities are exceeded if models and diagrams transcend the size of the modeling area or an extremely high number of processing operations is started simultaneously. Physical limits may be exceeded if the memory available is not sufficient for the execution of operations or the storage of data.

Proper operation of ARIS products requires the availability of a reliable and fast network connection. Networks with insufficient response time will reduce system performance and may cause timeouts.

If ARIS products are used in a virtual environment, sufficient resources must be available there in order to avoid the risk of overbooking.

The system was tested using scenarios that included 100,000 groups (folders), 100,000 users, and 1,000,000 modeling artifacts. It supports a modeling area of 25 square meters.

If projects or repositories are larger than the maximum size allowed, a powerful functionality is available to break them down into smaller, more manageable parts.

Some restrictions may apply when working with process administration, ARIS Administration, ARIS document storage, and ARIS Process Board, and when generating executable processes. Process Governance has been tested and approved for 1000 parallel process instances. However, the number may vary depending on process complexity, e.g., if custom reports are integrated.

ARIS document storage was tested with 40.000 documents. We recommend monitoring the number and overall size of stored documents and if needed some documents should be archived.