

***How to Build an Enterprise Architecture  
With ArchiMate and System Architect***

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## Overview

This workshop is an introduction to the practical application of Enterprise Architecture with ArchiMate 3.1.

### INTRODUCTION

An enterprise architecture blueprint is an important resource to consolidate, link, and analyze organizational information. An enterprise architecture blueprint is created by capturing different domains of the organization, including:

- Missions, goals, strategies and tactics
- Business processes
- Information Systems: applications, services and data
- Technology infrastructures: networks, systems, and hardware components

## REQUIREMENTS

The workshop is dependent upon:

- UNICOM System Architect v 11.4.11 upwards

You will use UNICOM System Architect to define and exploit the enterprise architecture blueprints.



### Important!





If you encounter problems during the course of this lab, please call the attention of the workshop instructor or any of the lab assistants.

## YOUR MAIN OBJECTIVES ARE TO

- Begin an EA effort by consolidating key sources of record and “asking the architecture questions.”
- Understand how an assessment of the business yields requirements for new Capabilities, which can be implemented by new Applications and Application Services. We’ll also look at the Technologies that Application use.

## ICONS

The following symbols appear in this document at places where additional guidance is available.

Icon	Purpose	Explanation
	Important!	This symbol calls attention to a particular step or command. For example, it might alert you to type a command carefully because it is case sensitive.
	Information	This symbol indicates information that might not be necessary to complete a step, but is helpful or good to know.
	Trouble-shooting	This symbol indicates that you can fix a specific problem by completing the associated troubleshooting information.
	Import	This symbol indicates importing information into the repository.

## Lab Preparation

1. Make sure **UNICOM System Architect 11.4.11** or later is installed.
2. Make sure the **ArchiMate\_Workshop** folder is available on the desktop.

## Create the EA Repository

### Objectives of this Section:

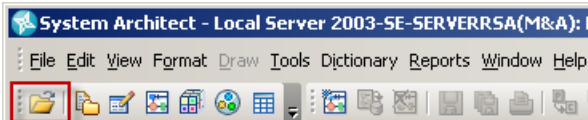
- Understand what the underlying technology the EA is stored in
- Create the EA Repository



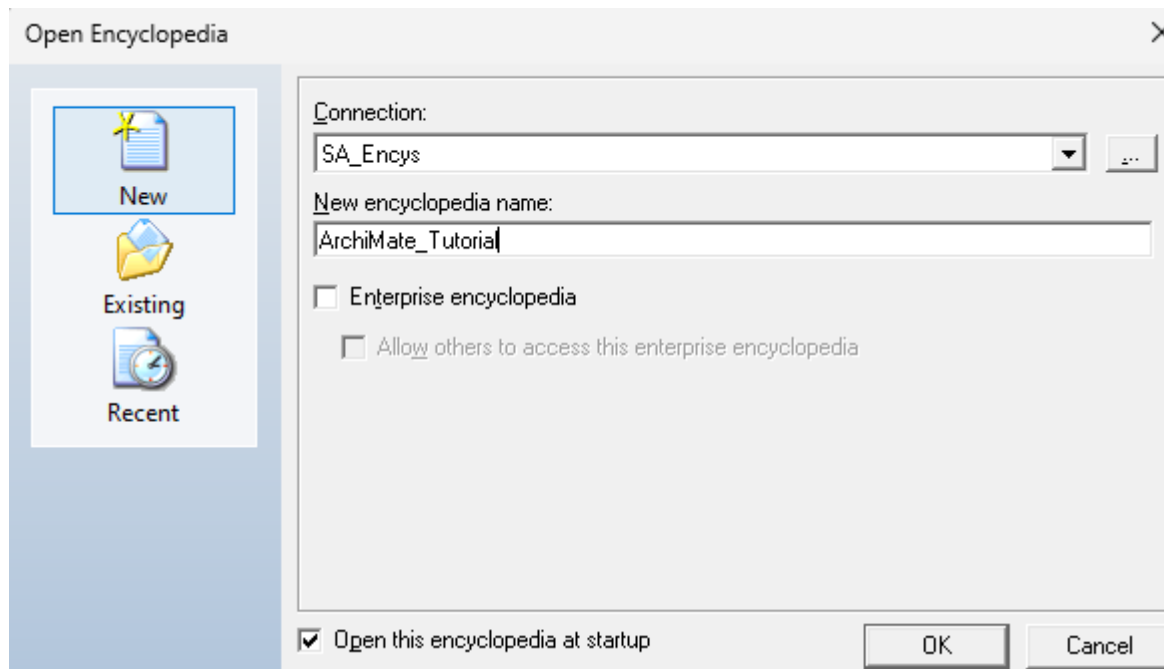
An encyclopedia is the **UNICOM System Architect** repository of information that you store about your enterprise architecture. The encyclopedia includes all components of your enterprise architecture, namely, the diagrams and definitions that make up your architecture, and references to any external documents or internal documents.

### Create a New 'Encyclopedia'

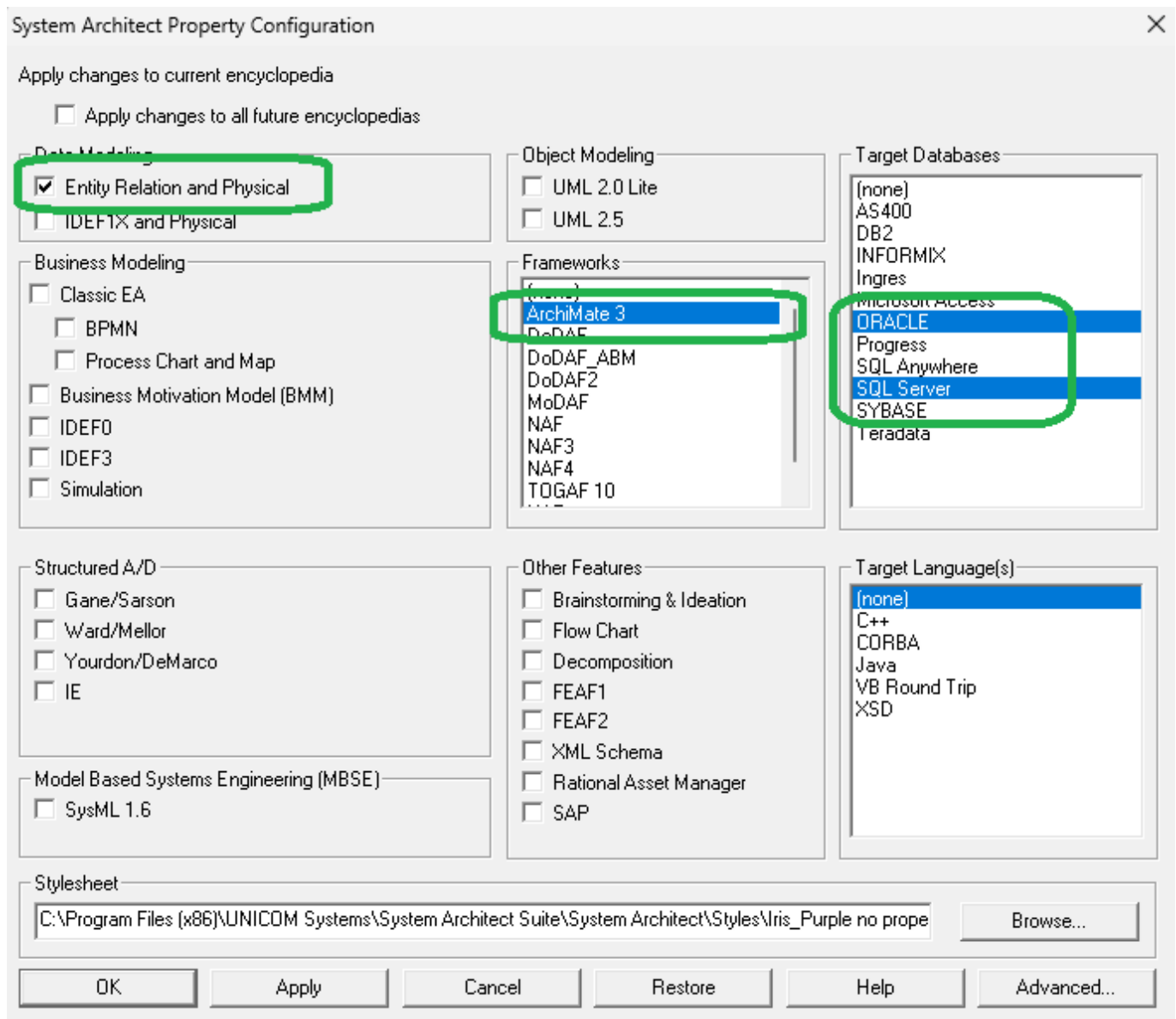
1. In UNICOM System Architect, select **File, Open Encyclopedia**, or click upon the **New or open an existing encyclopedia** icon on the toolbar.



2. In the **Open Encyclopedia** dialog, select the **New** button on the left.



3. In the **Connection** property, choose the existing server connection from the drop-down list. The connection serves as a pointer between the server and the encyclopedia (database) that you are creating.
4. Type in **ArchiMate\_Tutorial** in the **New encyclopedia name** field and select **OK**.
5. In the System Architect Property Configuration dialog, toggle on **ArchiMate 3** as the framework, and then also toggle on “**Entity Relation and Physical**”, and select the Database Properties “**Oracle**” and “**SQL Server**”.



6. Click OK to create a new encyclopedia (under the covers a database on SQL Server Express is created).



## Establish Metamodel

### Objectives of this Section:

- Examine the ArchiMate Metamodel
  - Understand how to customize the metamodel
1. Examine the partial view of the ArchiMate metamodel below.
  2. Notice that:
    - The Business, Application, and Technology layers all have a “Service” – Business Service, Application Service, and Technology Service.
    - All 3 layers pictured also include a “Process” – Business Process, Application Process, and Technology Process.
    - ArchiMate also has a Motivation and Migration layer -- not shown in this view.
    - Also not shown in this view is that an Application is specified as either a Logical Application (example, Word Processing tool), and Physical Application (example, Microsoft Word). The same goes for Technology.

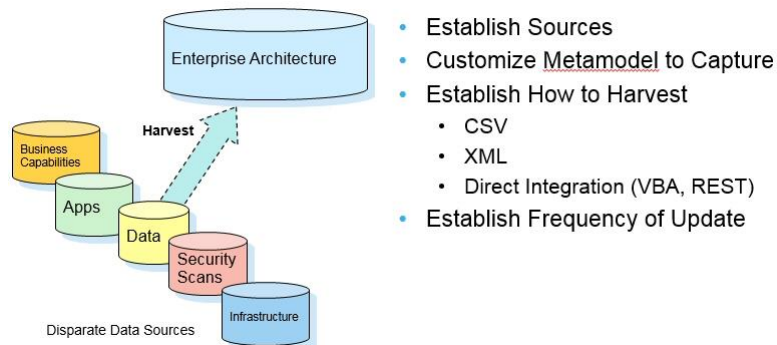


## Add Metamodel Changes

We want to capture the following for our organization:

- Portfolio Management information for Physical Applications
- Analysis of Capabilities

System Architect is renowned for its feature of allowing users to easily customize the metamodel to great breadth and depth. This allows information from sources of record to “have a place to land” upon automatic import into the EA repository, and also allows addition of properties for analysis of all kinds. Metamodel additions or changes are done in a file called Usrprops.txt.



### Import Usrprops File to Modify Metamodel



#### IMPORT INTO REPOSITORY

1. In System Architect, select **Tools, Customize User Properties, Import USRPROPS.TXT (Encyclopedia)**.
2. Browse to and select the **USRPROPS.TXT** file provided in the Desktop\ArchiMate\_Workshop directory, and import it.
3. **Reopen the encyclopedia** for the changes to take effect.
4. **Read** the next section to see what the metamodel extensions the USRPROPS.TXT added to the encyclopedia.

## Application Portfolio Management

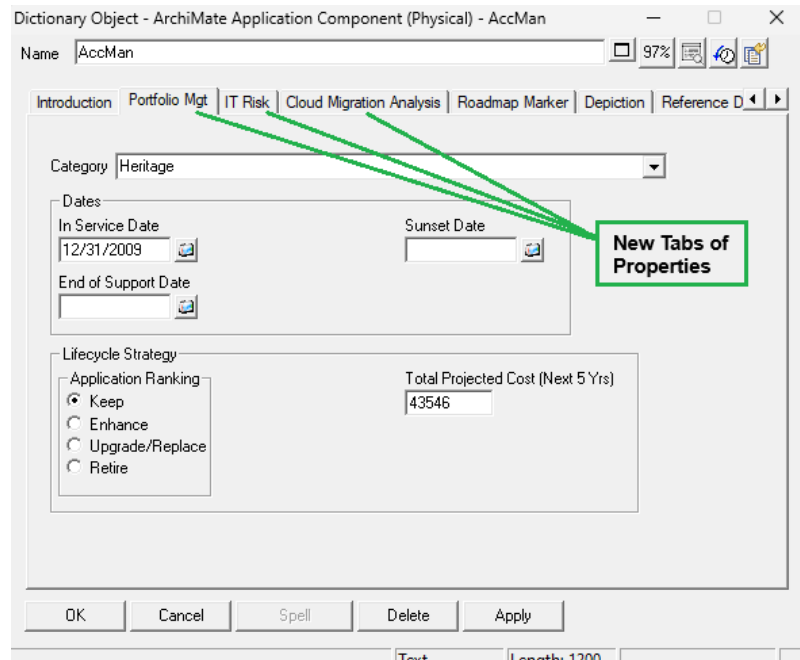
We have added custom properties for the ArchiMate Application Component (Physical) definition to do Application Portfolio Analysis.

- Three new tabs have been added to the definition type: Portfolio Mgt, IT Risk, and Cloud Migration Analysis.
- These new properties will allow us to import spreadsheets from the IT department to automatically populate the properties with values.
- We can also use the properties to do analysis.

### Portfolio Management

For Portfolio Management, the IT dept captures:

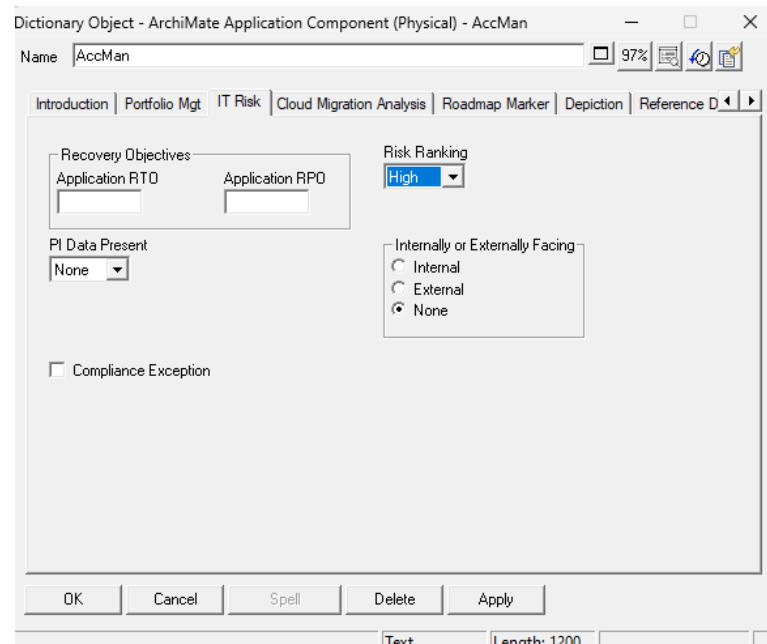
- In Service Date of the App
- Sunset Date of the App
- End of Support Date
- Lifecycle Strategy for the App
- Total Projected Cost for Next 5 Years of the App



### IT Risk

For IT Risk, the following is being captured:

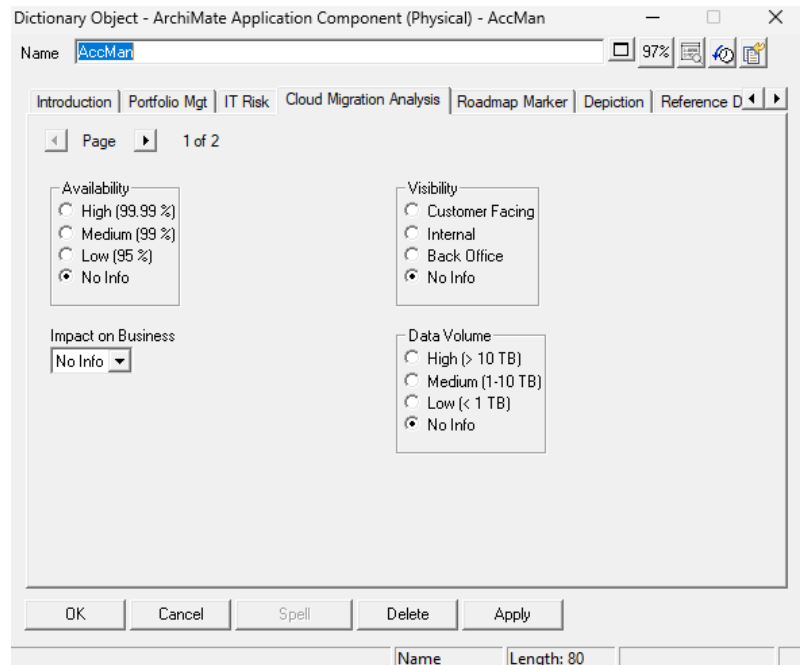
- Recovery Objectives
  - Recovery Time Objectives: the maximum length of an application outage before business operations experience considerable damage.
  - Recovery Point Objectives: the amount of data loss that can occur before a company experiences substantial operational or financial repercussions.
- If Personal Information (PI) is captured by the App
- Risk Ranking for the App
- If it is External Facing or not
- If there is a Compliance Exception for it.



## Cloud Migration Analysis

For Cloud Migration Analysis, the following is being captured:

- Needed Availability of the App
- Visibility of the App
- Impact on the Business if it goes down.
- The Data Volume it processes
- Response Time (on Page 2 of the tab, not shown here)
- Recovery Time (on Page 2 of the tab, not shown here)
- Weekly Hours of Operation (on Page 2 of the tab, not shown here).



## Examine the Usrprops

The custom properties above were added by importing the USRPROPS.TXT file and reopening the encyclopedia.

5. You can optionally open the USRPROPS.TXT file and examine it, correlating the USRPROPS code to the changes to the metamodel shown above. It is a very easy and powerful language to use.

```

Definition "ArchiMate Application Component (Physical)"
{
  Chapter_Order {"Introduction", "Portfolio Mgt", "IT Risk", "Cloud Migration Analysis", "Roadmap Marker"}
  Chapter "Introduction"
  LAYOUT { COLS 2 TAB ALIGN OVER }
  CHAPTER "Portfolio Mgt"
  PROPERTY "Category" {EDIT Text LIST "Application category" DEFAULT "Legacy" DISPLAY { FORMAT string LEGEND "$$NONE$"} }

  GROUP "Dates"
  {
    LAYOUT { COLS 2 TAB ALIGN OVER }
    PROPERTY "In Service Date" {EDIT Date LENGTH 10}
    PROPERTY "Sunset Date" { EDIT Date LENGTH 10 }
    PROPERTY "End of Support Date" { EDIT Date LENGTH 10 }
  }

  GROUP "Lifecycle Strategy"
  {
    LAYOUT {COLS 2 ALIGN OVER TAB}
    //property "Life Cycle Strategy (TIME)" (edit text listonly list "Application Life Cycle Strategy" default "None")
    PROPERTY "Application Ranking" { EDIT TEXT LISTONLY LIST "Application Ranking" DEFAULT "Keep" LENGTH 20 ZOOMABLE}
    property "Total Cost" {INVISIBLE}
    property "Total Projected Cost (Next 5 Yrs)" {edit numeric LENGTH 10}
  }

  Chapter "IT Risk"
  LAYOUT {COLS 2 ALIGN OVER TAB}

  GROUP "Recovery Objectives"
  {
    LAYOUT {COLS 2 ALIGN OVER TAB}
    property "Application RTO" {edit text length 12}
    property "Application RPO" {edit text length 12}
  }

  property "Risk Ranking" {edit text listonly list "Risk Ranking List" default "None"}
  property "PII Data Present" {edit text listonly list "PII Data Present" default "None"}
  property "Internally or Externally Facing" {edit text listonly list "Internal / External" default "None"}
  property "Compliance Exception" {edit boolean default "F" }

  Chapter "Cloud Migration Analysis"
  LAYOUT {COLS 2 ALIGN OVER TAB}
  property "Availability" {edit text listonly list "Application Availability" default "No Info"}
}
    
```

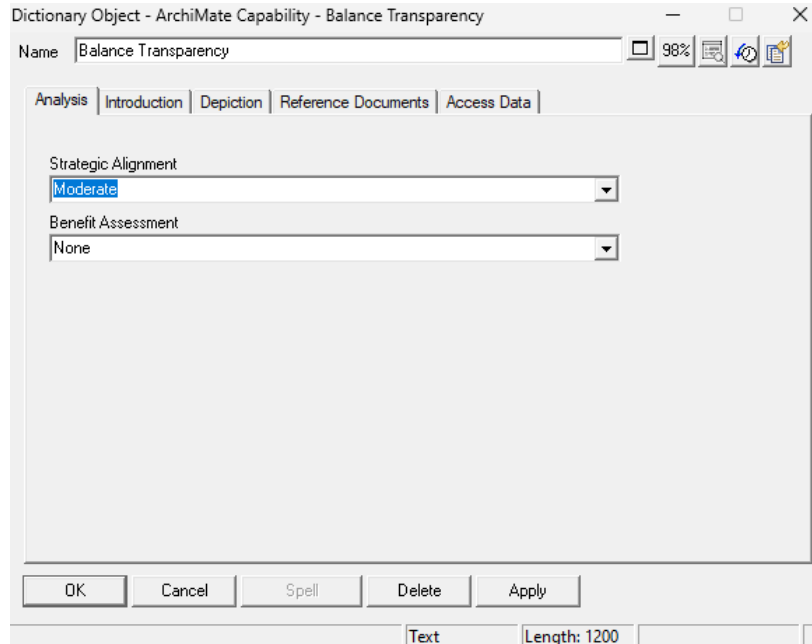
## Capability Analysis

The customizations also add properties that the business wants to capture to analyze Capabilities.

We want to capture their:

- Strategic Alignment
- Benefit Assessment

6. Again, you can examine the USRPROPS.TXT file provided to see what the code looks like to implement these changes.



```

definition "ArchiMate Capability"
{
  Chapter_Order {"Analysis", "Introduction"}
  Chapter "Analysis"
  LAYOUT { COLS 2 TAB ALIGN OVER }
  Property "Strategic Alignment" {edit text list "Strategic Alignment" default "None"}
  Property "Benefit Assessment" {edit text list "Benefit Assessment" default "None"}
}

```

## Stakeholder Viewpoint

### Goals of this Lab:

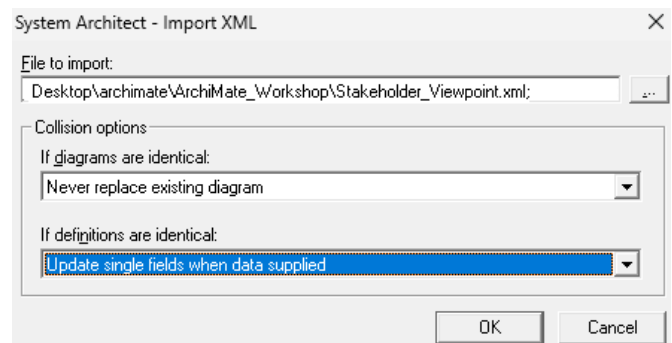
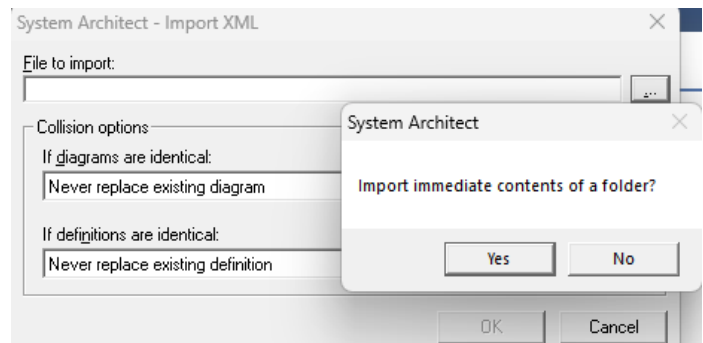
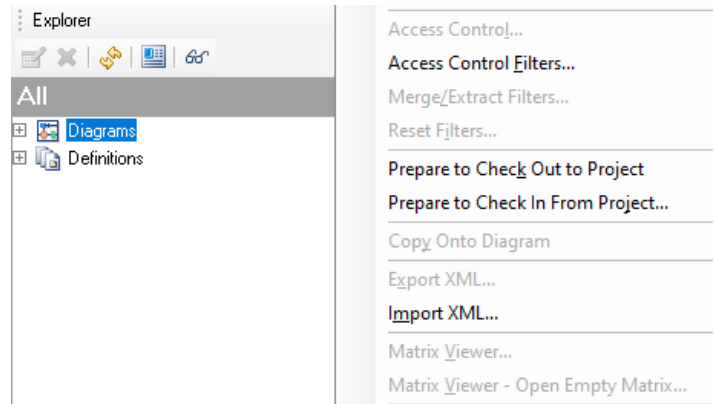
- Understand the ArchiMate Stakeholder Viewpoint
- Add definitions to the Stakeholder Viewpoint

### Import XML of an ArchiMate Viewpoint from Another SA Encyclopedia



#### IMPORT INTO REPOSITORY

1. Right-mouse click in an empty area of the Explorer tree (on the left in System Architect) and select Import XML from the popup menu.
2. In the File to Import dialog, click the ... browse button and select “No” to the question, “Import immediate contents of a folder?”
3. Navigate to the ArchiMate\_Workshop folder and select the **Stakeholder\_Viewpoint.xml** file.
4. In the File to Import dialog, leave the “Never replace existing diagram” choice on, and specify “**Update single fields when data supplied**” for the “If definitions are identical” selection. You should receive a message that the file was successfully imported.

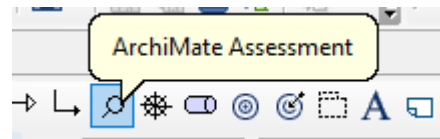
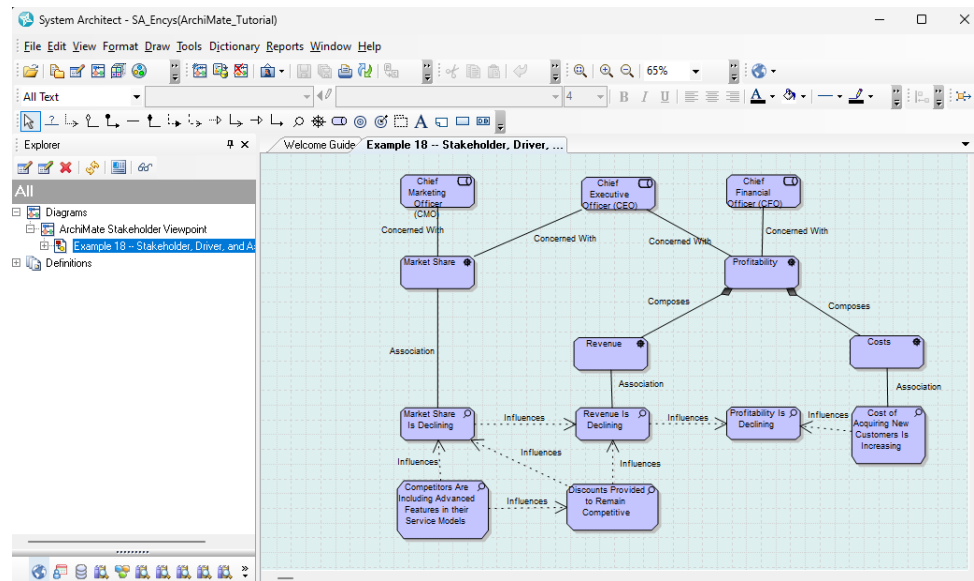


## Open the Imported Stakeholder Viewpoint and Add to It

5. Navigate to the diagram in the Explorer tree in System Architect – it

6. Note that this diagram is explained in the [ArchiMate documentation](#). It includes Stakeholders, Drivers, and Assessments.

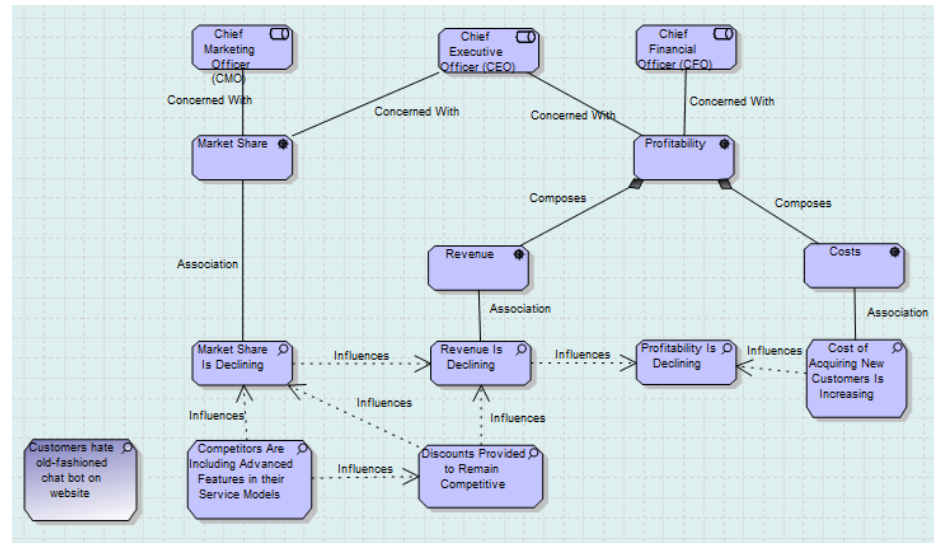
7. Add an Assessment definition to the diagram – selecting the Assessment icon from the Draw menu, and left-mouse clicking to add it to the lower-left corner of the diagram. Name it: **Customers hate old-fashioned chat bot on website**.



By default the symbol is added with Gradient Fills turned on.

8. Double click on the symbol to open its definition (or right-mouse click on it and select Edit – Customers hate old-fashioned chat bot on website (3<sup>rd</sup> bottom from top of popup menu)).

Note that there is a diagram choice to turn on/off Gradient properties for all symbols on the diagram – available by right-mouse clicking on the diagram workspace, and selecting Diagram Properties.



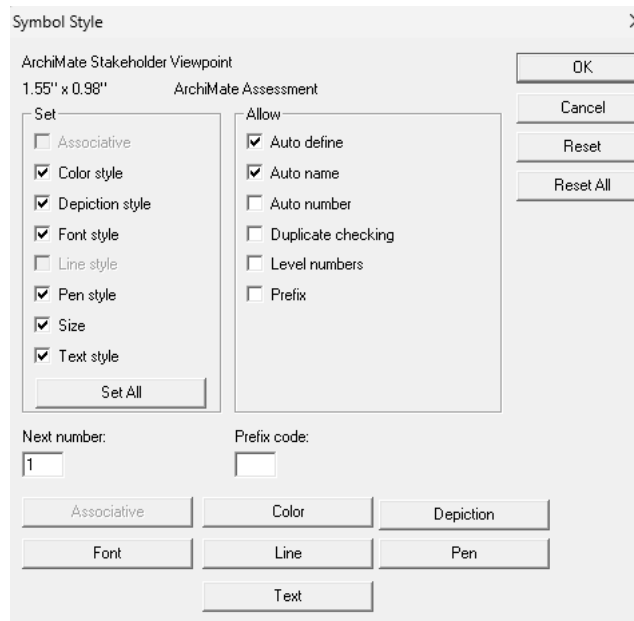
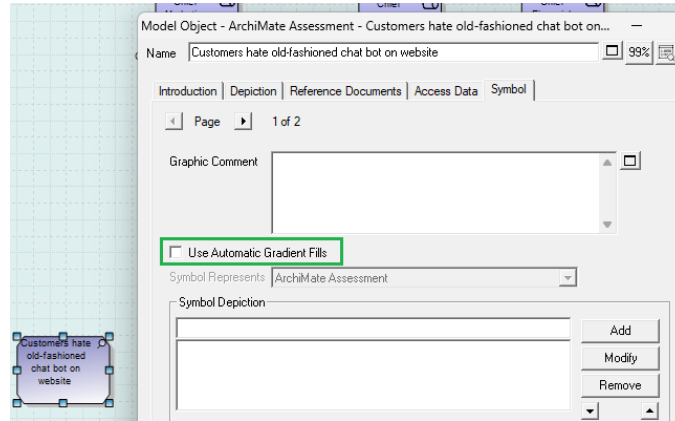
9. The color purple of the new symbol does not match the purple color of the other symbols on the diagram. To fix this – right-mouse click on one of the other existing symbols, and choose **Format, Symbol**

**Format, Symbol Style.**

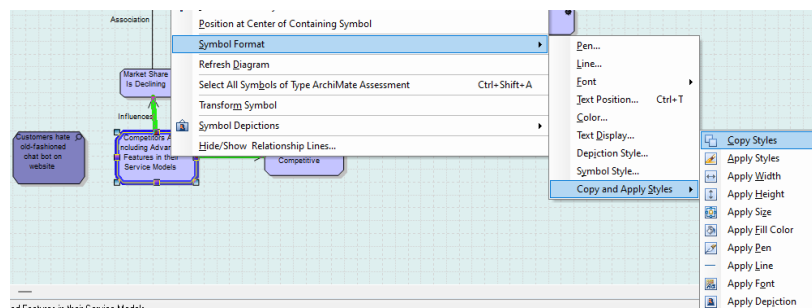
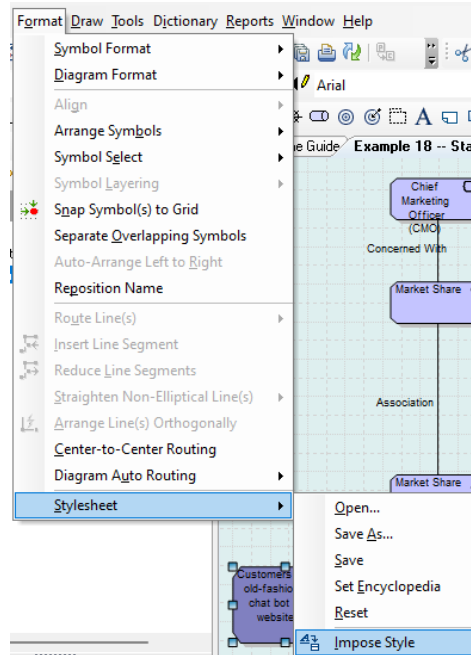
10. In the Symbol Style dialog, toggle on Color, and optionally toggle on all the other selections. This will set the style for all new Assessment symbols drawn on diagrams.

11. Apply the new stylesheet setting to the symbol we just drew – select it, and then select Format, Stylesheet, Impose Style.

An alternate way to quickly change the color, size etc of a symbol to match another symbol is to right-mouse click on a symbol with a desired color, size, etc, and choose **Symbol Format, Copy and Apply Styles, Copy Styles** – then right-mouse click on the symbol you want to change and select **Symbol Format, Copy and Apply Styles, Apply Style**. (See picture below, right.)



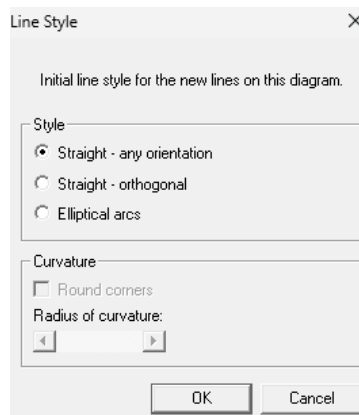
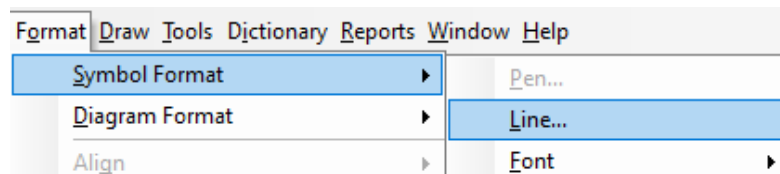




### Set Line Style

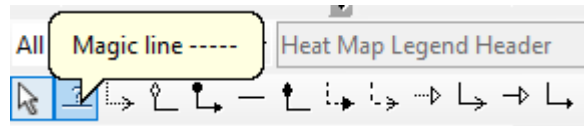
Before we draw our first line symbol, let's specify what type of lines to draw.

1. Select Format, Symbol Format, Line.
2. Toggle on Straight – Any Orientation
3. Also select Format, Center-to-Center Routing.
4. Note that there are a lot of relationship lines that can be drawn between definitions on the Draw toolbar. If you know precisely what relationship you want to draw, you can select the appropriate symbol – but let's let System Architect

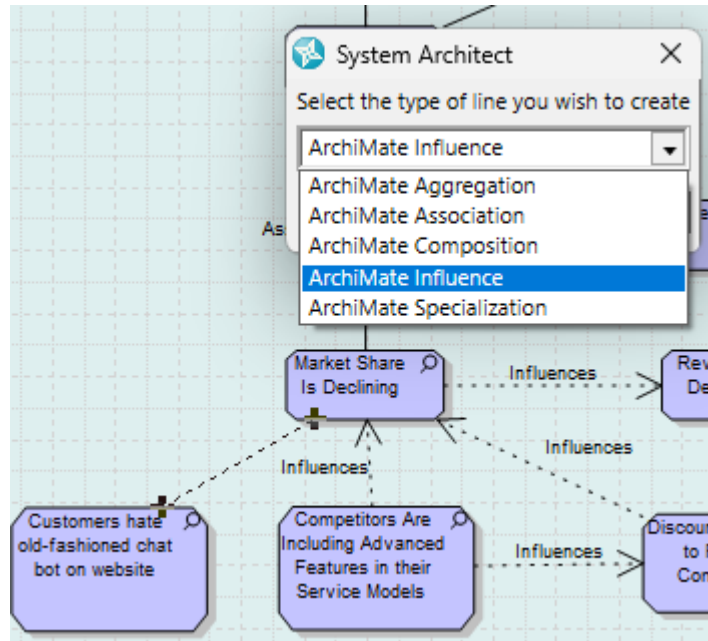


narrow the choice for us.

5. Select the Magic Line symbol on the Draw toolbar.

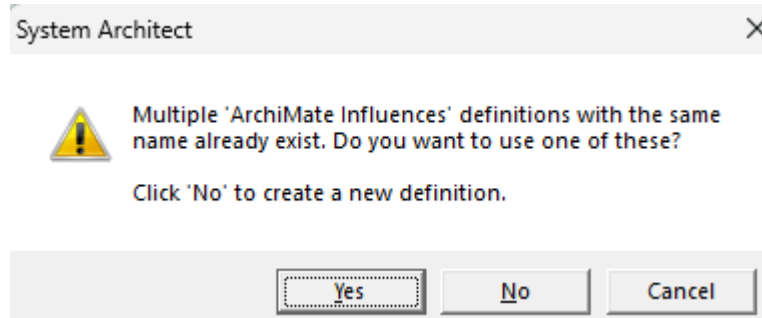


6. Click on the new symbol, Customers hate old-fashioned chat bot on website, to get a plus mark, release your mouse and move it to the symbol, Market Share Declining. Note that you will get a ghostbuster symbol until you hover over a symbol that the line can be drawn to. Left-mouse click again to gain a plus mark on the “to” symbol – and then choose “ArchiMate Influence” from the list of possible relationships that can be drawn.



7. Name the line **Influences** – you will get a messages stating other definitions of the same name exist.

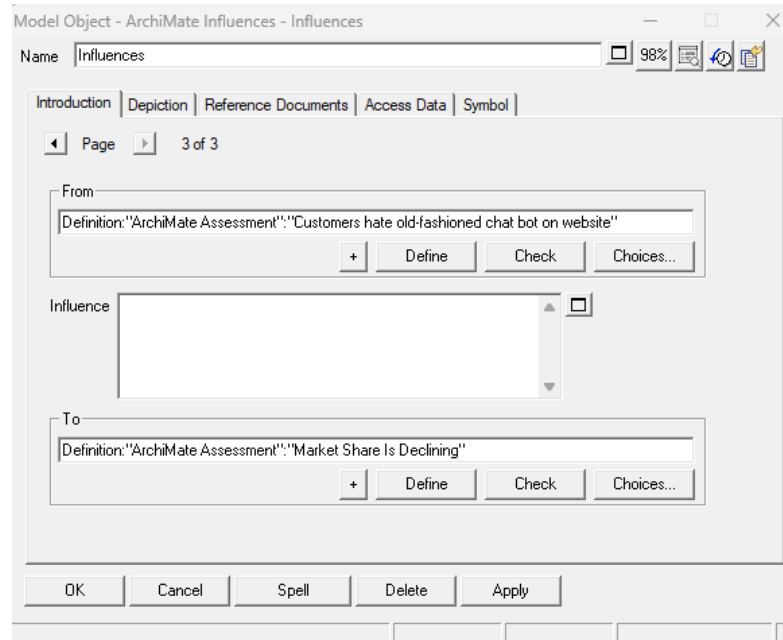
8. Click **No** to create a new definition with that same name.



9. Open the definition of the new relationship added – by double-clicking on it or right-mouse clicking and choosing Edit.

10. Note that the Assessment relationship is a definition of its own right, within which you can add information on the assessment itself. This kind of relationship is called an “explicit join” in System Architect metamodel parlance (some relationships are simple references, called “implicit

joins”). This is important to know when building a report for this information later on.



## Goal Realization Viewpoint

### Goals of this Lab:

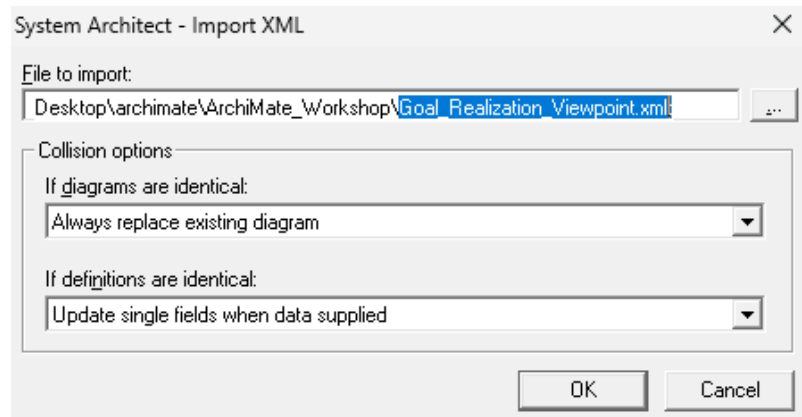
- Understand the ArchiMate Goal-Realization Viewpoint
- Add definitions to the Goal-Realization Viewpoint

### Import XML of an ArchiMate Viewpoint from Another SA Encyclopedia



#### IMPORT INTO REPOSITORY

1. Right-mouse click in an empty area of the Explorer tree (on the left in System Architect) and select Import XML from the popup menu.
2. In the File to Import dialog, click the ... browse button and select “No” to the question, “Import immediate contents of a folder?”
3. Navigate to the ArchiMate\_Workshop folder and select the **Goal\_Realization\_Viewpoint.xml** file.
4. In the File to Import dialog, select “Always replace existing diagram”, and specify “**Update single fields when data supplied**” for the “If definitions are identical” selection. You should receive a message that the file was successfully imported.



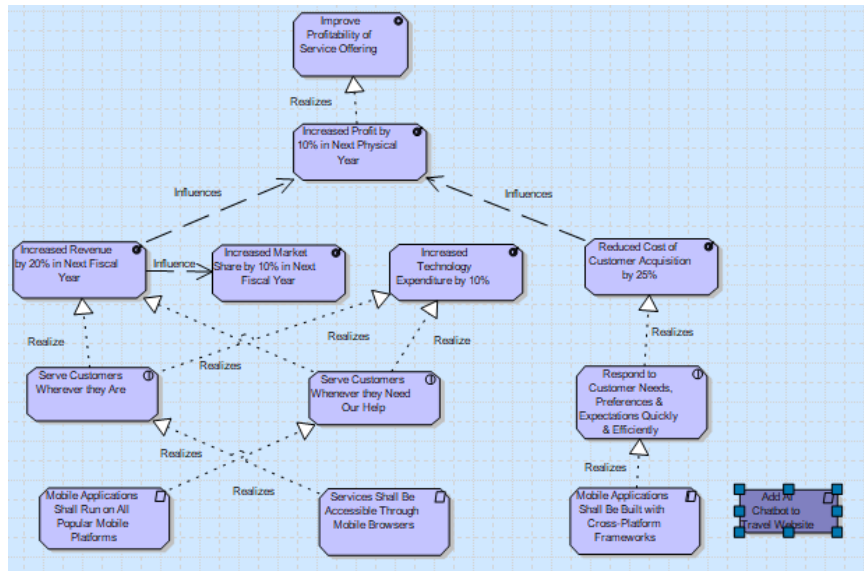
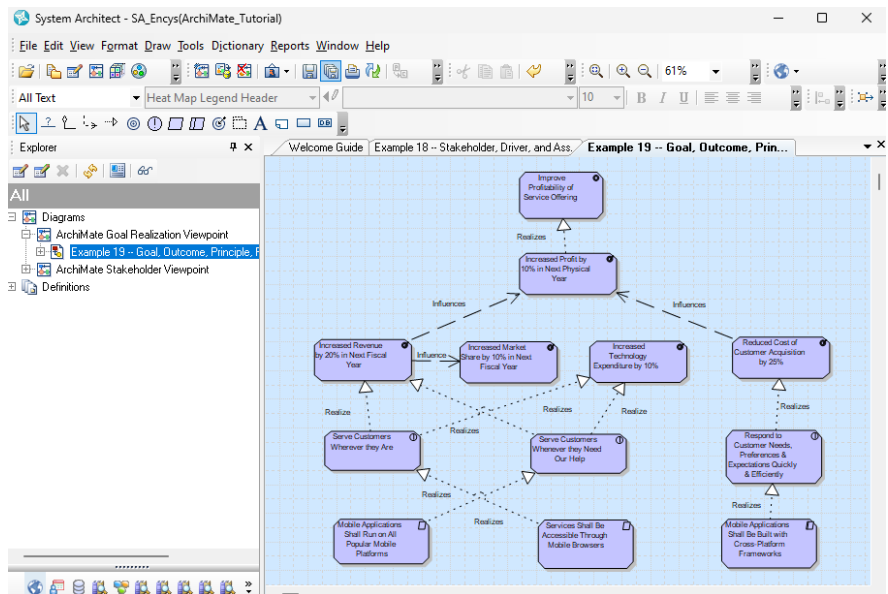
## Open the Imported Stakeholder Viewpoint and Add to It

5. Navigate to the diagram in the Explorer tree in System Architect – it

6. Note that this diagram is explained in the [ArchiMate documentation](#). It includes Stakeholders, Drivers, and Assessments.

7. Add a Requirement definition to the diagram – selecting the ArchiMate Requirement icon from the Draw menu. Name it: **Add AI Chatbot to Travel Website**.

The color purple of the new symbol does not match the purple color of the other symbols on the diagram. To fix this – right-mouse click on a symbol with a desired color, size, etc, and choose **Symbol Format, Copy and Apply Styles, Copy Styles** – then right-mouse click on the symbol you want to change and select **Symbol Format, Copy and Apply Styles, Apply Style**. (See picture below, right.)



## Set Line Style

Before we draw our first line symbol, let's specify what type of lines to draw.

8. Select **Format, Symbol Format, Line**.

9. Toggle on **Straight – Any Orientation**

10. Also select **Format, Center-to-Center Routing**.

11. Note that there are a lot of relationship lines that can be drawn between definitions on the Draw

toolbar. If you know precisely what relationship you want to draw, you can select the appropriate symbol – but let’s let System Architect narrow the choice for us.

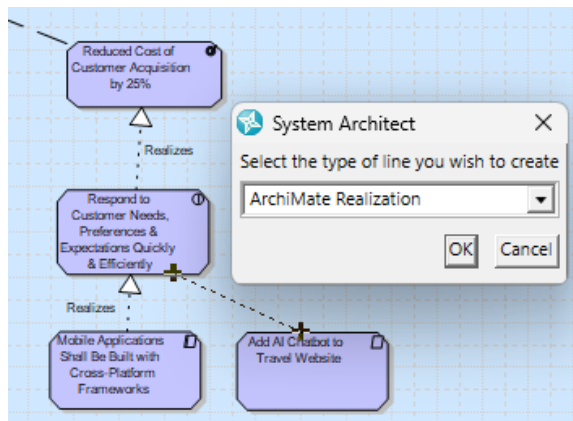
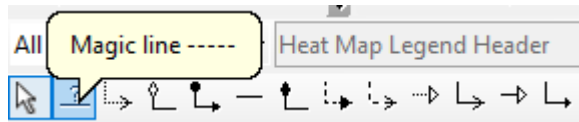
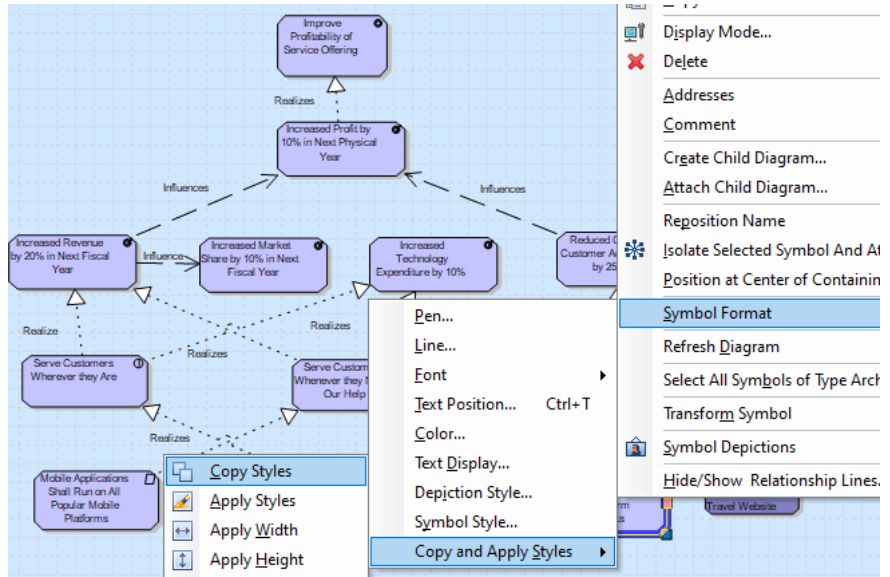
12. Select the **Magic Line** symbol on the Draw toolbar.

13. Click on the new symbol, **Add AI Chatbot to Travel Website**, to get a plus mark, release your mouse and move it to the symbol, **Respond to Customer needs, Preferences, & Expectations Quickly & Efficiently**.

Note that you will get a ghostbuster symbol until you hover over a symbol that the line can be drawn to. Left-mouse click again to gain a plus mark on the “to” symbol – and then choose “ArchiMate Influence” from the list of possible relationships that can be drawn.

14. Name the line **Realizes** – you will get a messages stating other definitions of the same name exist.

15. Note that the Realizes relationship is an “implicit joins” – it does not have an underlying definition, but populates the definitions on either end with information. This is important to know when building a report for this information later on.



## Capability Viewpoint

### Goals of this Lab:

- Understand the ArchiMate Capability Viewpoint

## Capturing Capabilities of the Business

### Objectives of this Section:

- Import Capability Map
- Add a Capability
- Run Analytics on Capability Map

### Import Capability Map



#### IMPORT INTO REPOSITORY

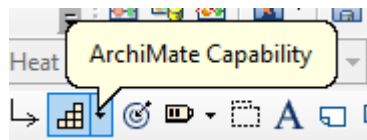
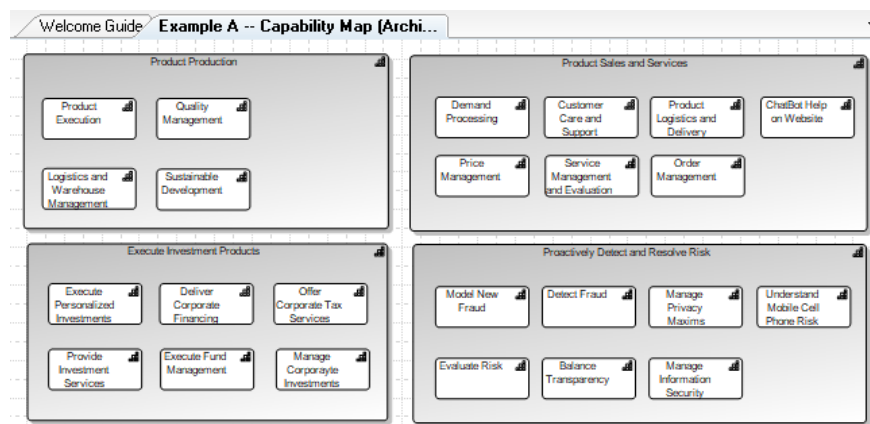
1. Right-mouse click in an empty area of the Explorer tree (on the left in System Architect) and select Import XML from the popup menu.

2. In the File to Import dialog, click the ... browse button and select “No” to the question, “Import immediate contents of a folder?”

3. Navigate to the ArchiMate\_Workshop folder and select the **Capability\_Map\_Viewpoint.xml** file.

4. In the File to Import dialog, select “Always replace existing diagram”, and specify “**Update single fields when data supplied**” for the “If definitions are identical” selection. You should receive a message that the file was successfully imported.

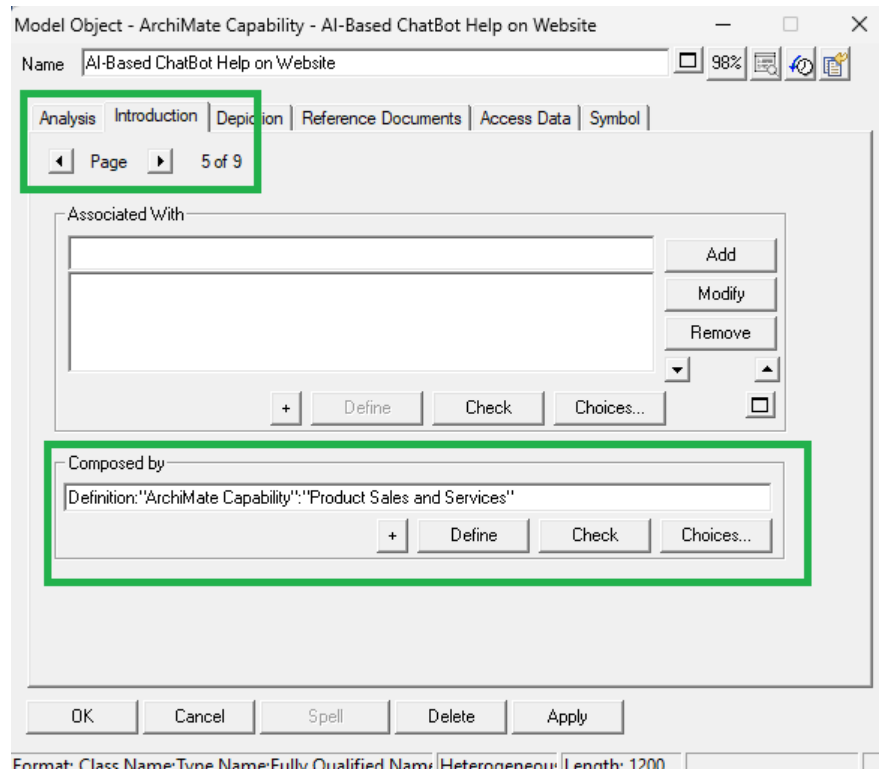
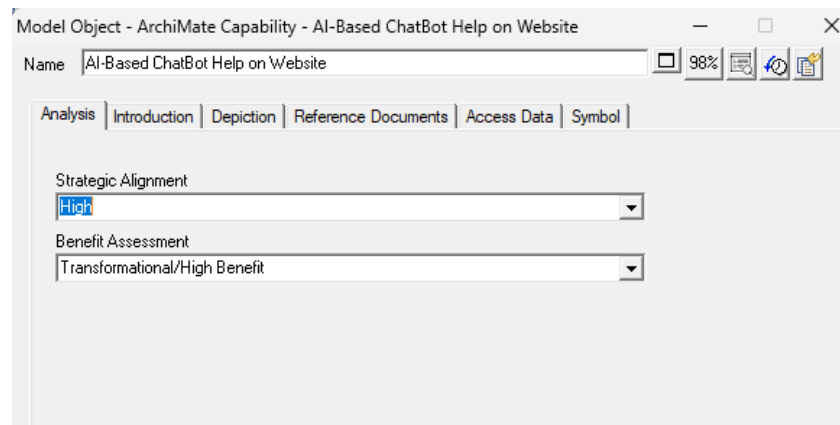
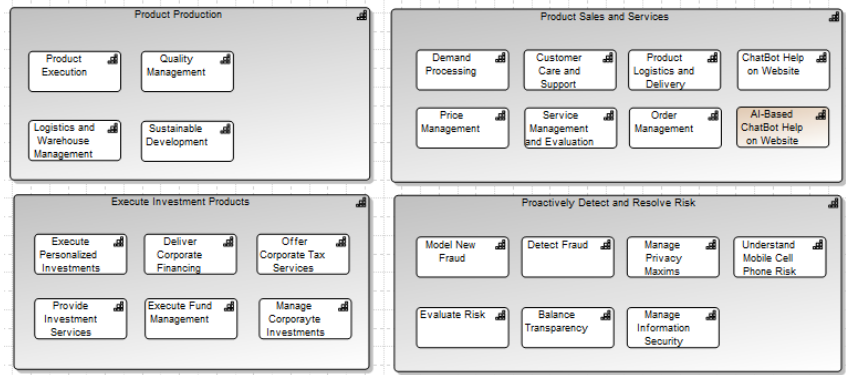
1. Add a new Capability to the diagram, named **AI-Based ChatBot**



**Help on Website** – and place it within the existing overall Capability, **Product Sales and Services**.

2. Open the definition of the new Capability. Note that the first tab, Analysis, shows the properties we added by customizing the metamodel. Set Strategic Alignment to “High”, and Benefit Assessment to “Transformational/High Benefit”

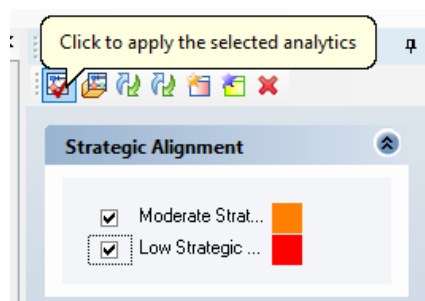
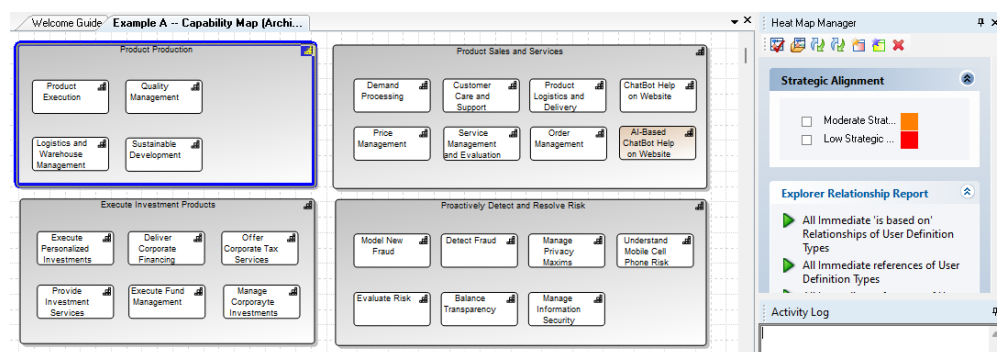
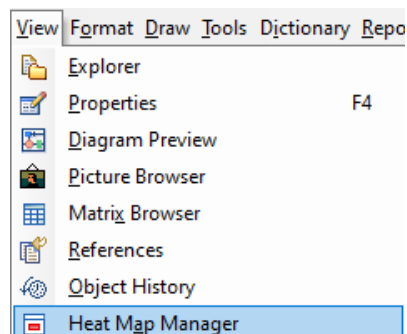
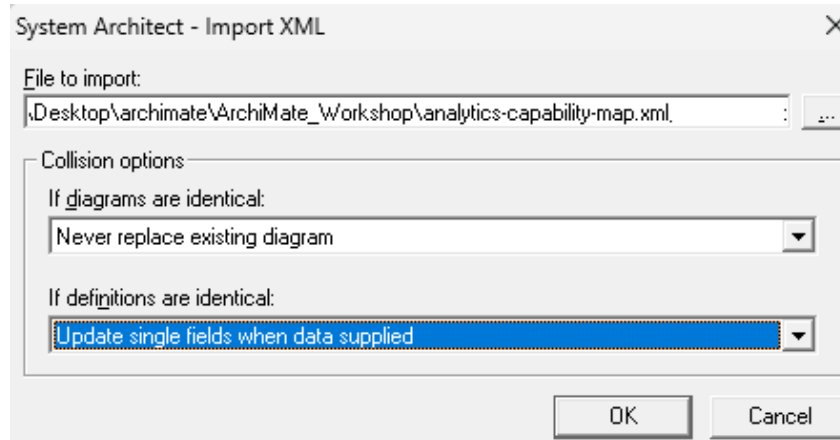
3. Note that on the Introduction tab, Page 5 – the Composed by relationship is automatically filled in, because we put the Capability symbol inside the larger Capability symbol “Product Sales and Services”



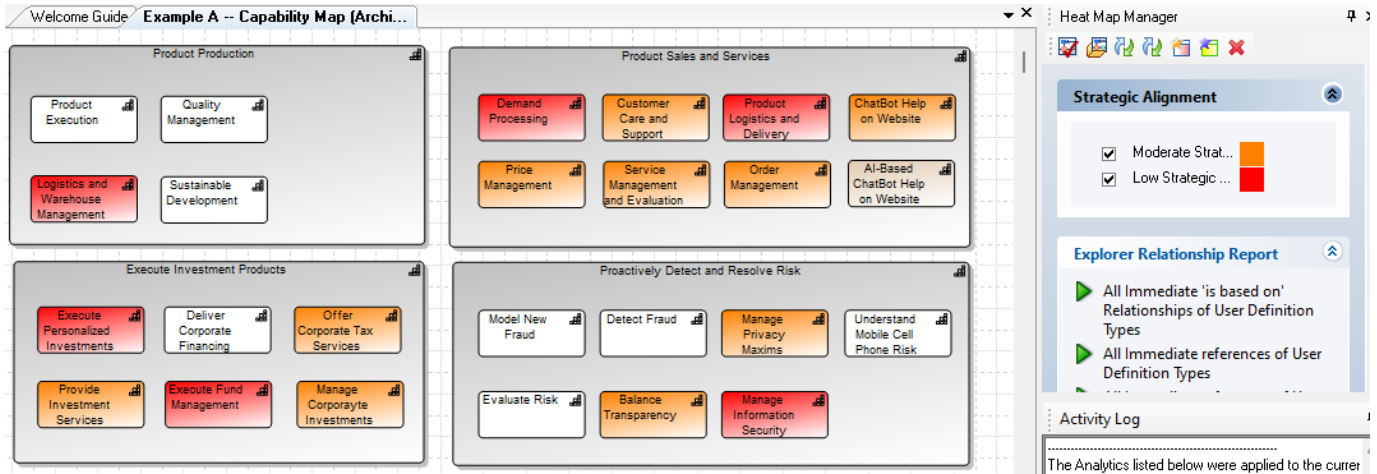


## Run Analytics Reports

1. Right-mouse click in an empty area of the Explorer tree (on the left in System Architect) and select Import XML from the popup menu.
2. In the File to Import dialog, click the ... browse button and select “No” to the question, “Import immediate contents of a folder?”
3. Navigate to the ArchiMate\_Workshop folder and select the **analytics-capability-map.xml** file.
4. In the File to Import dialog, leave the “Never replace existing diagram” choice on, and specify **“Update single fields when data supplied”** for the “If definitions are identical” selection. You should receive a message that the file was successfully imported.
5. Select View, Heat Map Manager. The Heat Map Manager will open, to the right of the workspace.
6. Toggle on the 2 choices in the Strategic Alignment box – Moderate Strategic Alignment, and Low Strategic Alignment.
7. Click the checkmark button “Click to apply the selected analytics”. The



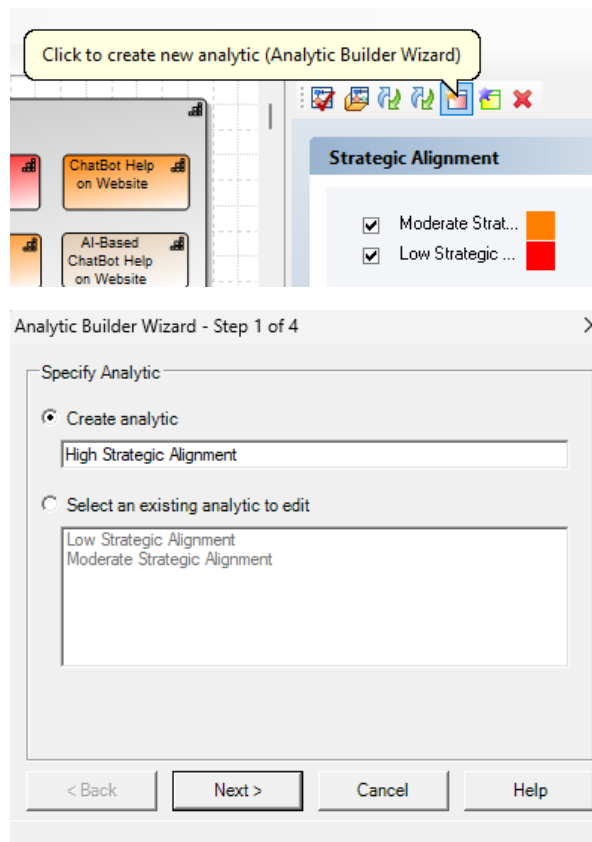
analytics will run on the diagram, changing the color of capabilities based on their Strategic Alignment value.



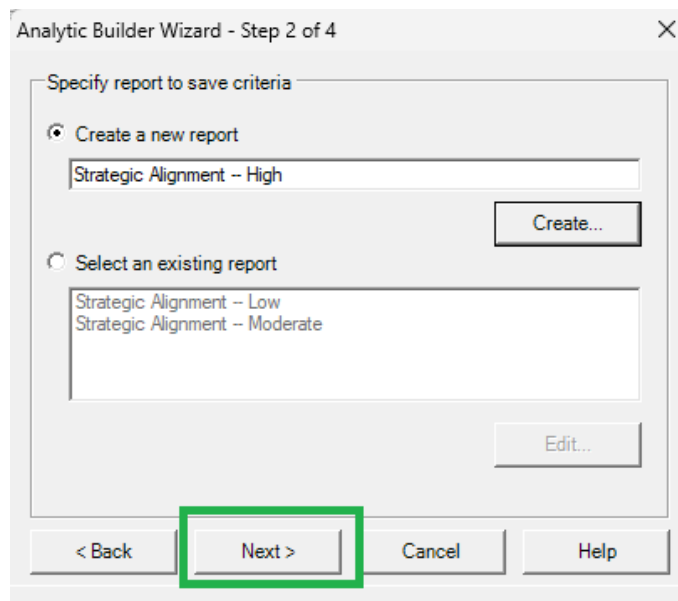
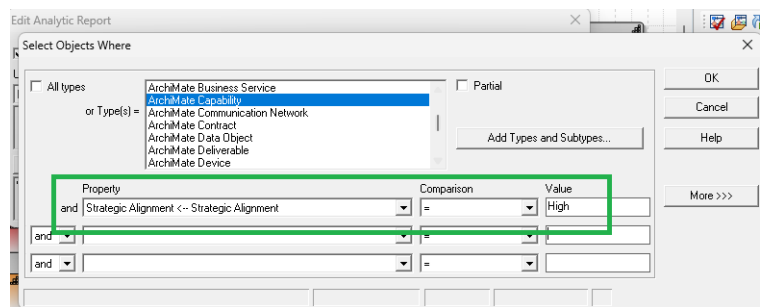
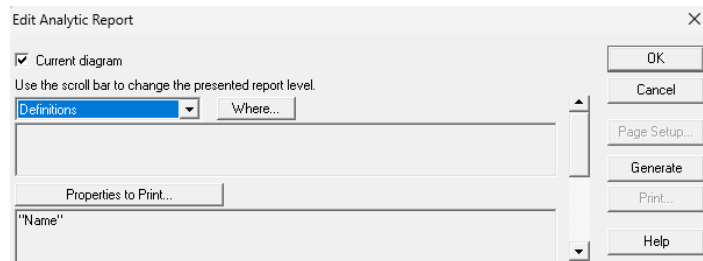
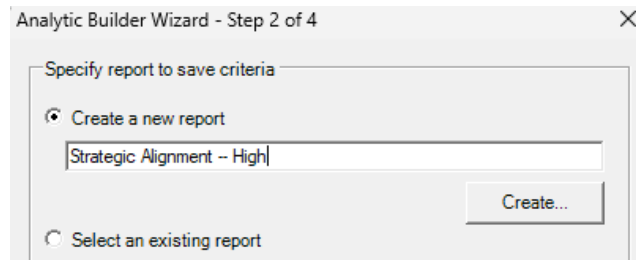
### Create an Analytic Report

Build a new analytic that will color green the Capabilities whose Strategic Alignment is High:

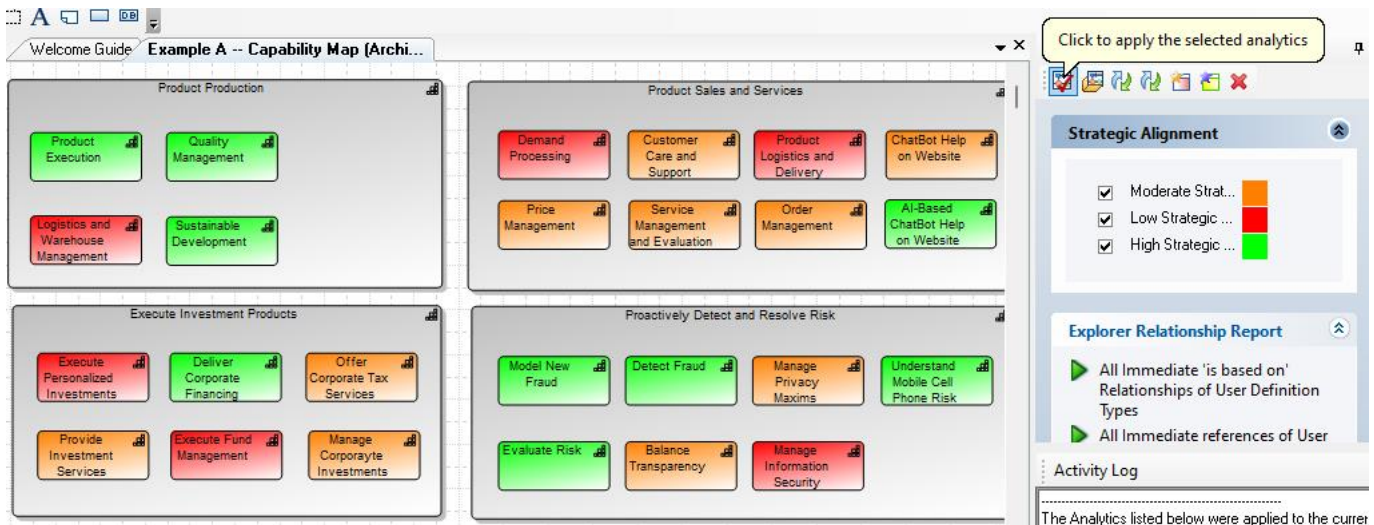
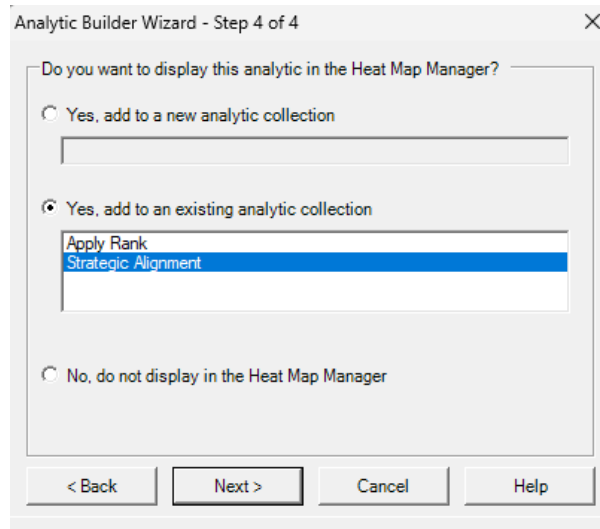
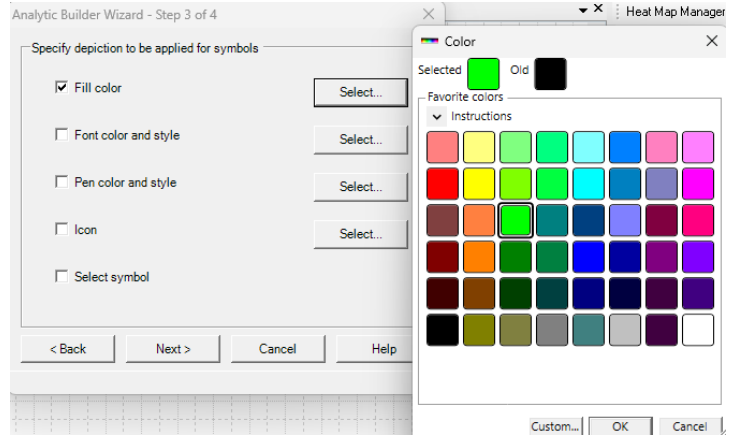
1. Click on the 3<sup>rd</sup> button from the right at the top of the Heat Map Manager, labeled “Click to create new analytic (Analytic Builder Wizard)”
2. In the wizard that opens, click to Create Analytic, and name it **High Strategic Alignment**. Click the Next button.



3. On the next dialog, toggle on Create New Report, and type in the name of the report: **Strategic Alignment – High** – then click the **Create** button.
4. In the Edit Analytic Report dialog that opens, choose **Definitions** from the drop-down list at the left and click the **Where** button.
5. In the Select Objects Where dialog, toggle off **All types**, and find and select **ArchiMate Capability** in the list.
6. In the Property section at the bottom of the dialog, find and select the property **Strategic Alignment – Strategic Alignment** from the list.
7. Leave the Comparison at the default “=” sign, and type in the word **High** in the Value box. Make sure to spell it with a capital “H”.
8. Click OK, and back in the main wizard, click Next to go to the next dialog.



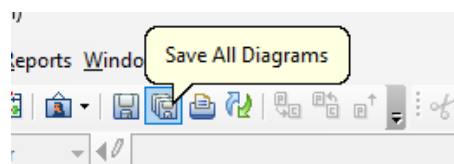
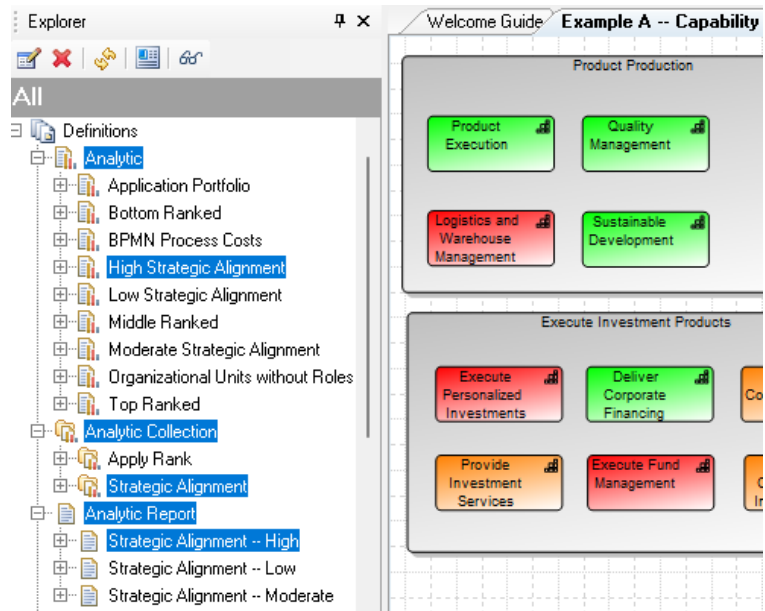
9. In the next dialog of the wizard, toggle on Fill Color, and click the Select button – choose a green color, and click OK.
10. Click Next in the main wizard to get to the final dialog – Step 4.
11. Toggle on **Yes, add to an existing analytic collection**, and choose **Strategic Alignment**.
12. Click Next and OK to finish and close the wizard.
13. Back on the diagram, notice that the Heat Map Manager updates to show the new analytic.
14. Toggle on the new analytic High Strategic Alignment – so that all analytics are toggled on – and click the checkbox again at the top of the wizard. The analytics will run and update the diagram.
15. Notice that the new capability you added is colored green.



16. Go to the Definitions area of the Explorer tree on the left – and expand the Analytic, Analytic Collection, and Analytic Report definition types. Notice that the work you did in the wizard is available for editing – the new Analytic definition, the new Analytic Report to go with it, and the Analytic Collection.

17. Save and close the diagram. There are many ways to do this – File, Save Diagram, or via the buttons at the top of the menu. You can close a diagram by simply clicking the x in the upper right-hand corner.

18. Save and close the Heat Manager by clicking the x button in its upper right-hand corner.



### What did you just do?

Added a Capability to a Capability Map, applied analytics, created your own analytic, and ran it.

## Application and Technology Portfolio Analysis

### Goals of this Lab:

- Visualize Physical Applications in the Organization
- Understand interfaces between Physical Applications

## Visualize the Physical Applications in the Organization

### Objectives of this Section:

- Import spreadsheet of Applications (physical apps)
- Import spreadsheet of Technologies
- Use Explorer diagram to visualize portfolio analysis – understand what apps are being retired that support important Capabilities, and what are their replacements
- Add a new Application
- Use Explorer Object report to populate a standard diagram with Applications that meet a certain criteria

## Import Spreadsheet of Applications

The enterprise architecture team has acquired from the IT team a spreadsheet that lists the applications of the business.

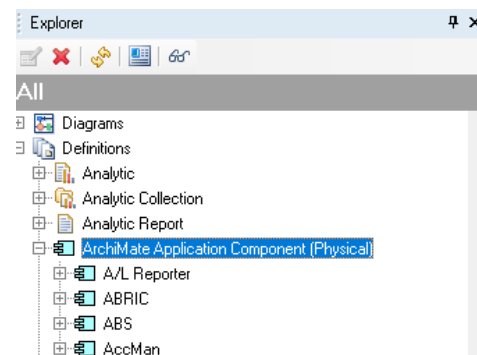
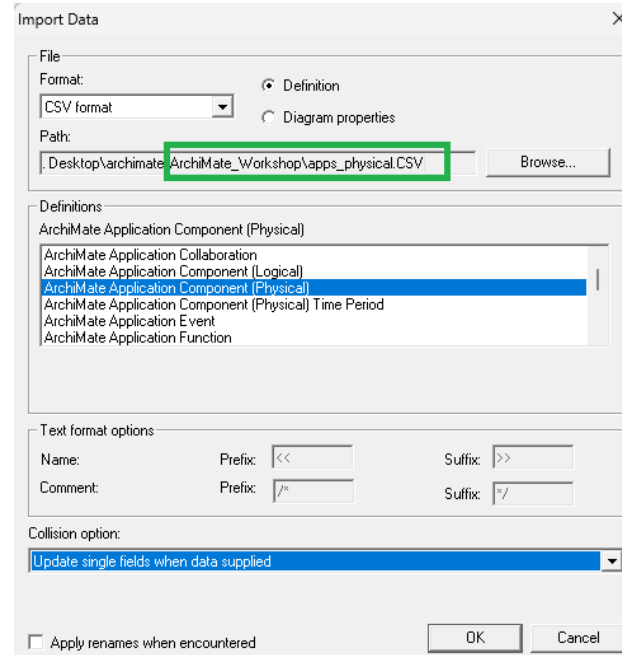


Note that often times, the EA team may harvest this kind of information in other forms -- such as an application map diagrams developed in something like Microsoft Visio. If that were the case, the EA team would use the System Architect-Microsoft Visio Mapper tool (available on the UNICOM [Customer Portal](#)) to automatically map the applications and their interfaces into System Architect. For this workshop, we'll import a spreadsheet.



## IMPORT TO REPOSITORY

1. Select **Dictionary, Import Definitions**.
2. Select Browse, and choose to import the **apps\_physical.csv** file in the ArchiMate\_Workshop folder.
3. Select to map to the Definitions type **ArchiMate Application Component (Physical)**.
4. For Collision options at the bottom of the dialog, select **Update single fields when data supplied**.
5. Click OK. Wait for the applications to import – watch the bottom of the screen to view completion status. It should take a minute.
6. In the Explorer tree, expand Definitions, and then expand **ArchiMate Application Component (Physical)**. The Applications that you imported are listed.

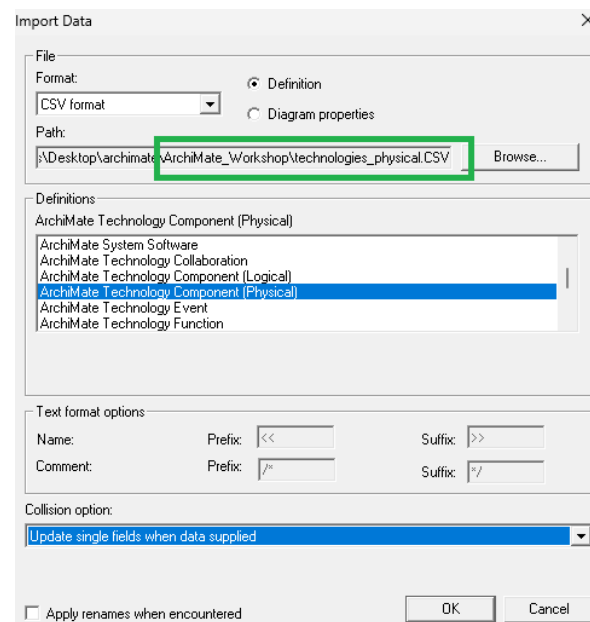


## Import Technologies



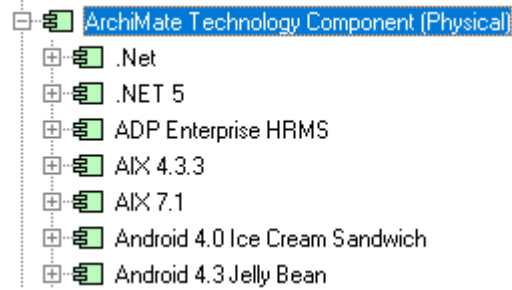
## IMPORT TO REPOSITORY

1. Select **Dictionary, Import Definitions**.
2. Select Browse, and choose to import the **technologies\_physical.csv** file in the ArchiMate\_Workshop folder.
3. Select to map to the Definitions type **ArchiMate Technology Component (Physical)**.
4. For Collision options at the bottom of the dialog, select **Update single fields when data**



supplied.

- Click OK. Wait for the technologies to import – watch the bottom of the screen to view completion status. It should take a minute.
- In the Explorer tree, expand Definitions, and then expand **ArchiMate Technology Component (Physical)**. The technologies that you imported are listed.

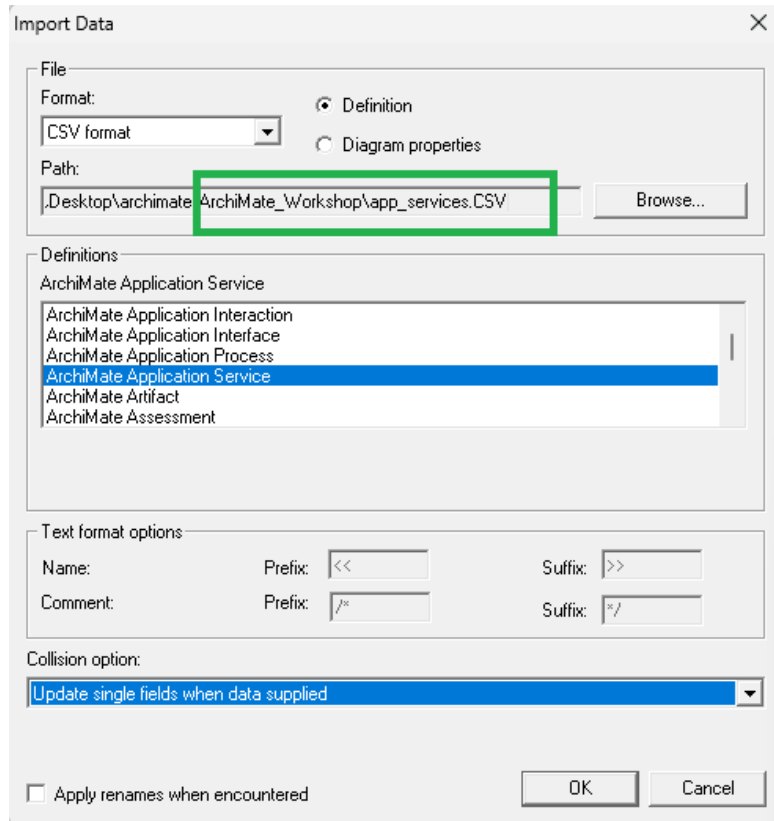


### Import Application Services



### IMPORT TO REPOSITORY

- Select **Dictionary, Import Definitions**.
- Select Browse, and choose to import the **app\_services.csv** file in the ArchiMate\_Workshop folder.
- Select to map to the Definitions type **ArchiMate Application Service**.
- For Collision options at the bottom of the dialog, select **Update single fields when data supplied**.
- Click OK. Wait for the Application Services to import – watch the bottom of the screen to view completion status.



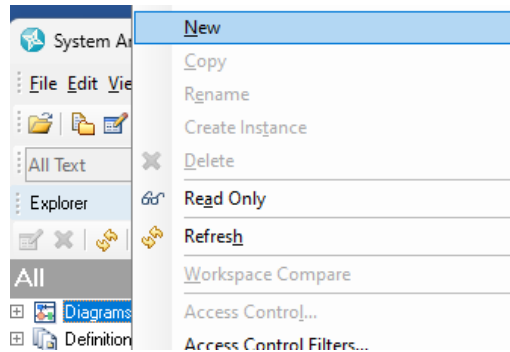


## Visualize Portfolio Analysis with Explorer Diagram and Explorer Reports

Let's use an Explorer diagram to do some portfolio analysis, visually.

1. Create a new diagram of type **Explorer**, named **Application Analysis** – this is done by right-mouse clicking on the Diagrams header in the Explorer tree and selecting New (or selecting File, New Diagram).

2. Leave the default type of **Network Style** and click OK to create the diagram.



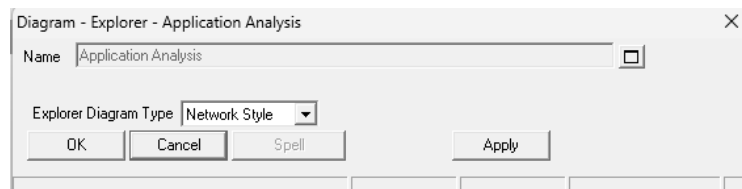
### Import Explorer Reports



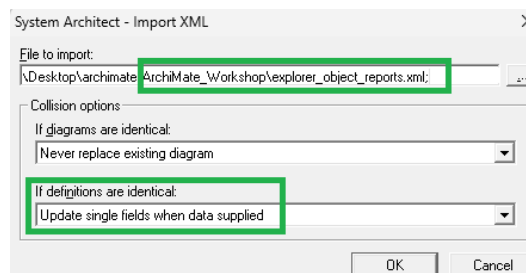
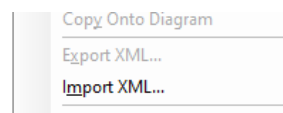
#### IMPORT TO REPOSITORY

1. Right-mouse click in an empty area of the Explorer tree on the left, and choose **Import XML** from the popup menu.

2. Select to import the file explorer\_object\_reports.xml – specify **NO** when asked to “**Import immediate contents of a folder?**”

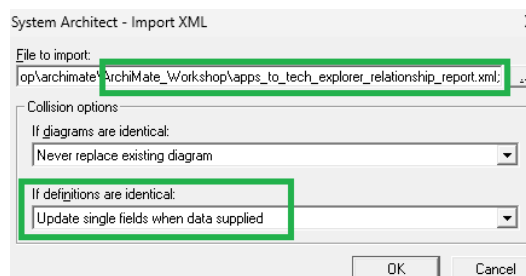


3. Perform steps 4 and 5 again to import the file **apps\_to\_tech\_explorer\_relationship\_report.xml**.



4. Select **View, Heat Map Manager** – the Heat Map Manager will open to the right of the diagram workspace.

5. Click on the Explorer Object Report, **Technologies for Retired Apps**. The diagram will be populated with a grouping of technologies.

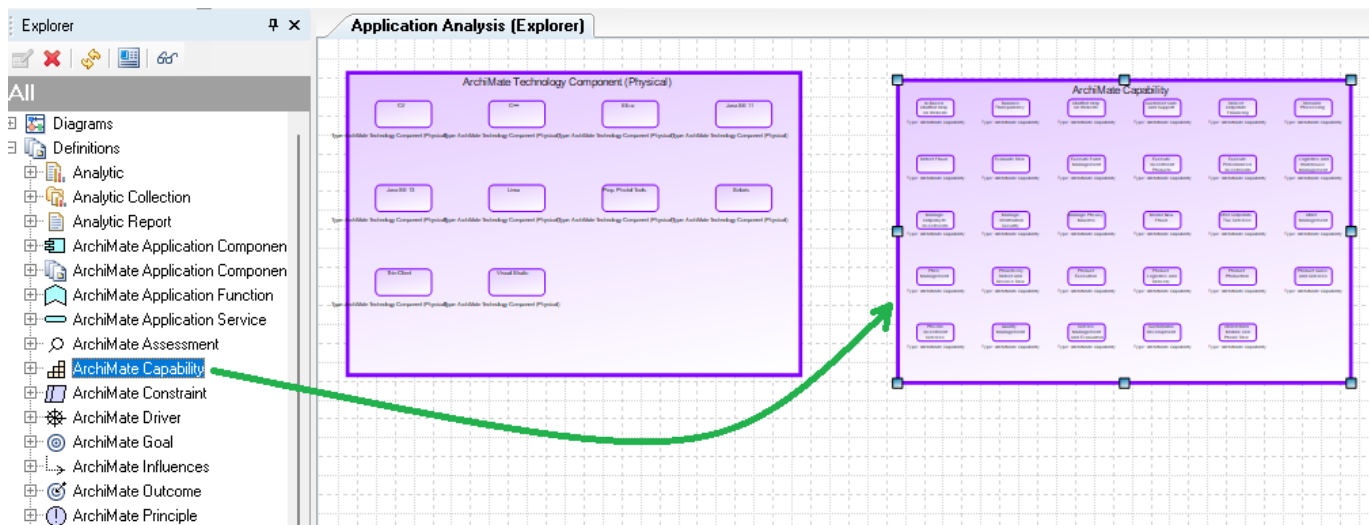
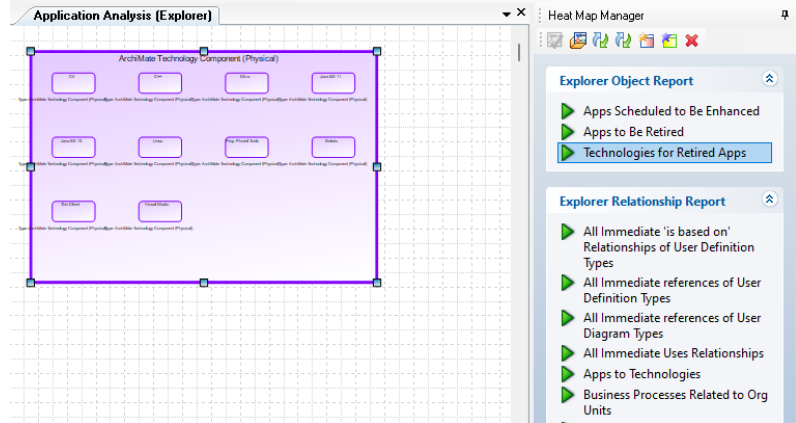


6. Select the outer box and move the group

to the upper left of the diagram workspace.

7. In the Explorer tree, under Definitions, find the heading ArchiMate Capability.

8. Select and drag the header onto the the diagram – to an empty place to the right of the Technologies. All Capabilities are added to the diagram in a grouping. You basically ran a report to get all Capabilities.



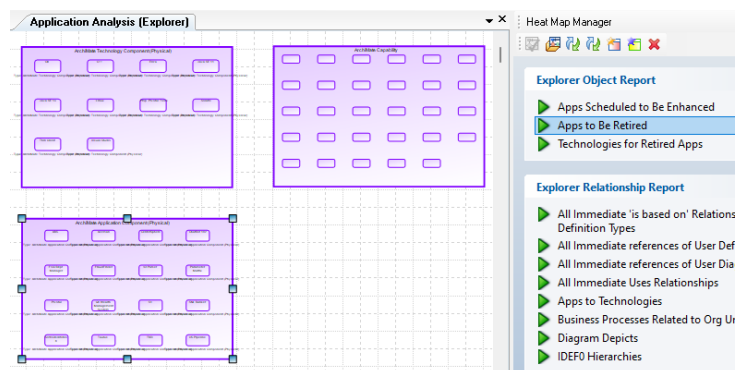
9. In the Heat Map Manager, click on the Explorer Object Report, **Apps to Be Retired**. It will add a set of Applications to the diagram.

10. Select the outer box of the Applications and move it to the right, underneath the Technologies.

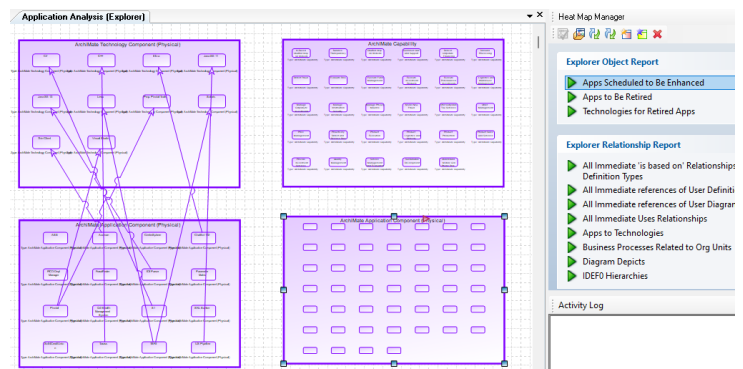
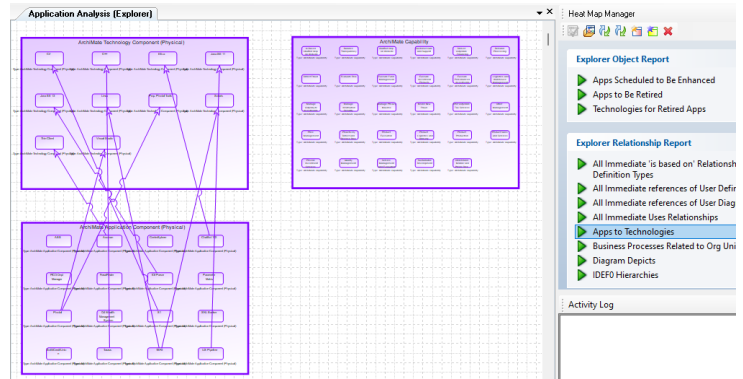
11. Run the Explorer **Relationship** Report, **Apps to Technologies**. A line will be drawn from Applications to the Technologies that they use.

12. Run the Explorer **Object** Report, **Apps Scheduled to Be Enhanced** – it will add a set of Applications to the diagram. Move the group underneath the Capabilities.

**IMPORTANT** – choose the collision option for Definitions – Update Single Fields When Data Supplied.

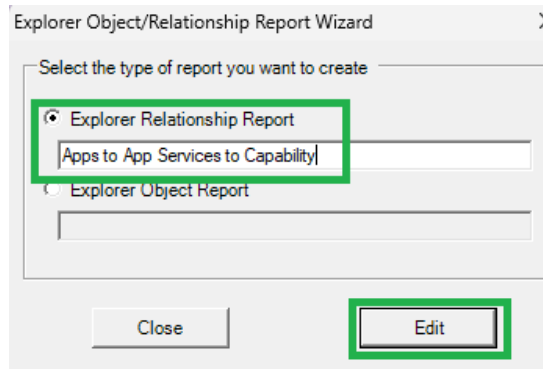
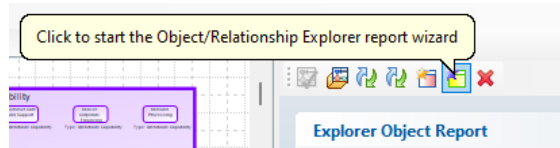


13. Click **OK** to import the update of information.

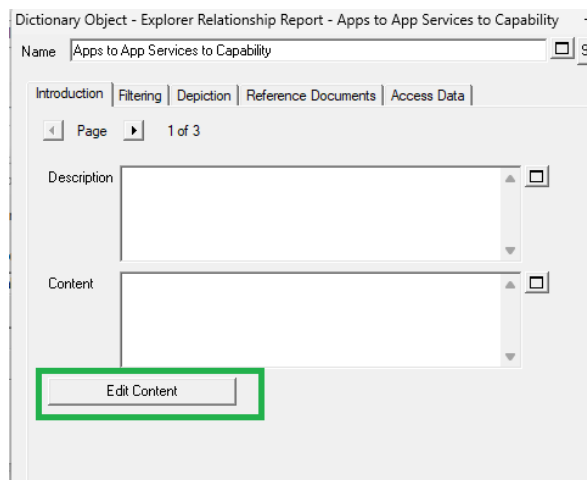


## Create New Explorer Relationship Report

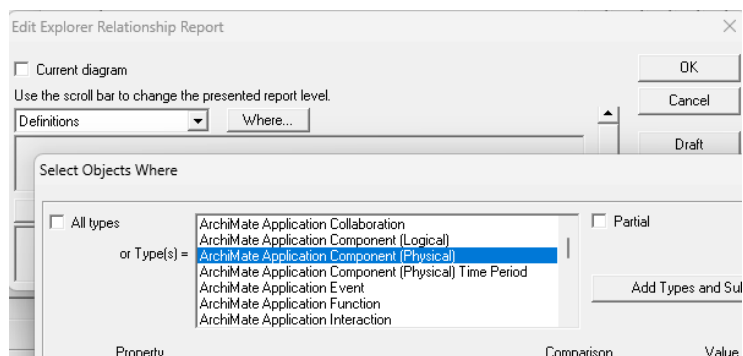
1. In the Heat Map Manager, click on the 2<sup>nd</sup> button from the right, "Click to start the Object/Relationship Explorer report wizard".
2. Toggle on the choice to add an Explorer Relationship Report, and name it **Apps to App Services to Capability**
3. Click the **Edit** button to open the Explorer Relationship Report definition.



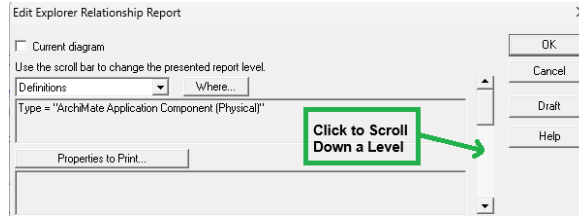
4. In the dialog that opens, click the **Edit Content** button to open the Reporting Engine interface.



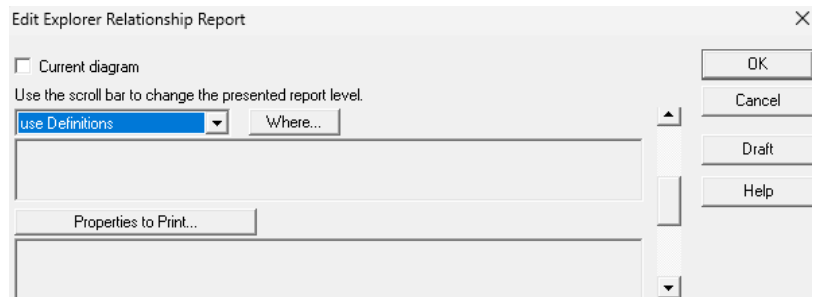
5. At the top of the dialog, select **Definitions** from the drop-down list.
6. Click the **Where** button, and toggle **off All Types**.
7. Find and select **Archimate Application Component (Physical)**. Click OK to close the dialog.



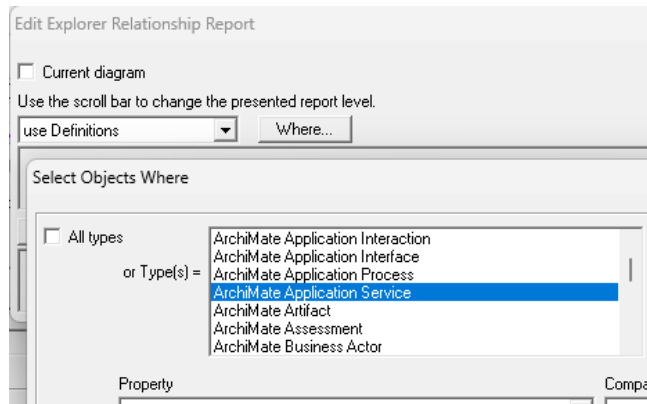
8. Back in the reporting interface, click the scroll bar to go down a level (in the SQL join report we are building).



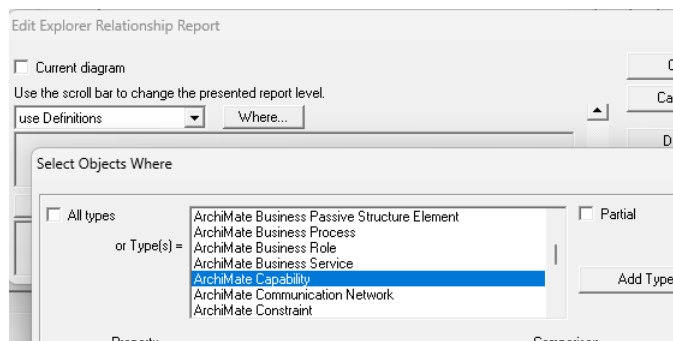
9. On the next level down, select **use Definitions** in the list of relationships on the left.



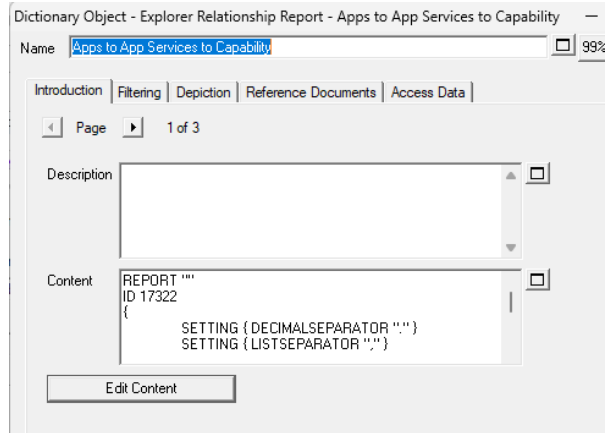
10. Click the Where button, toggle **off** All Types, and find and select **ArchiMate Application Service**. Click OK.



11. Hit the Scroll bar again to go down another level, and select use Definitions again, click the Where button, toggle off All types, and find and select ArchiMate Capability. Click OK.



12. Note that in the main dialog, the SQL code of the report you have just built is shown in the window.



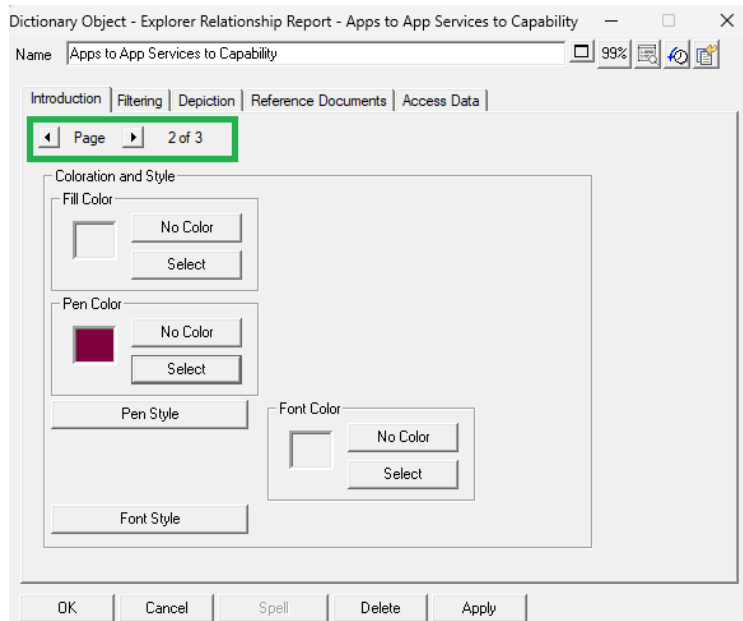
13. Go to Page 2 of the Explorer Relationship Report definition, and click to select a Pen Color – in our example, we choose a violet red.

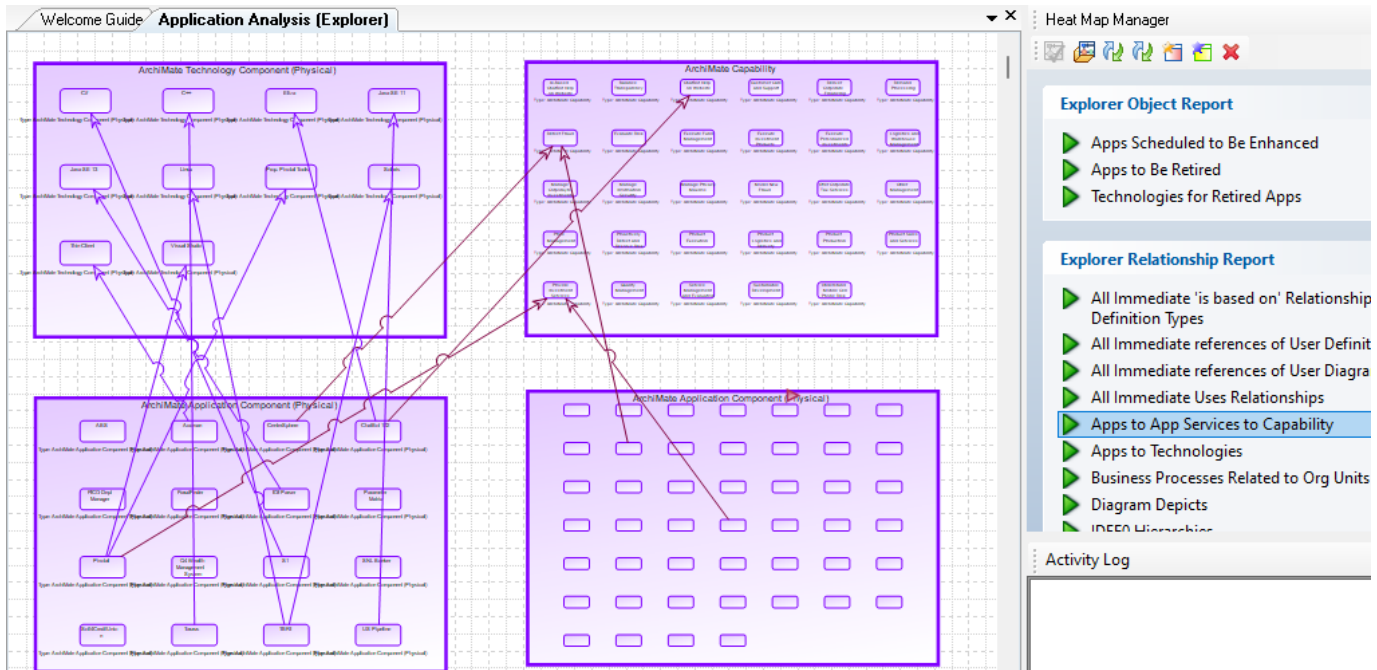
14. Click OK to close the definition dialog.

15. Click **Close** to close the wizard.

16. Notice that the Heat Map Manager automatically refreshes, and the new it **Apps to App Services to Capability** report is added under Explorer Relationship Reports.

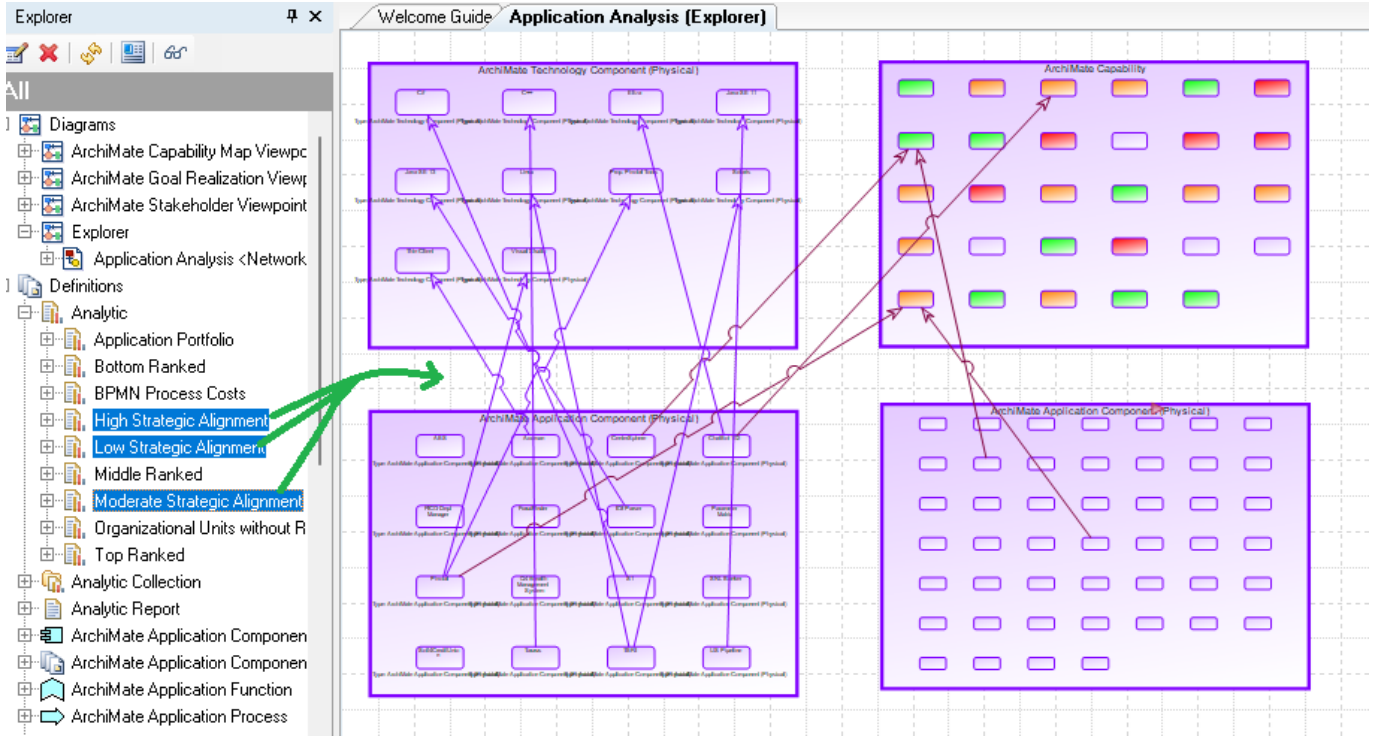
17. Click the it **Apps to App Services to Capability** to run it.



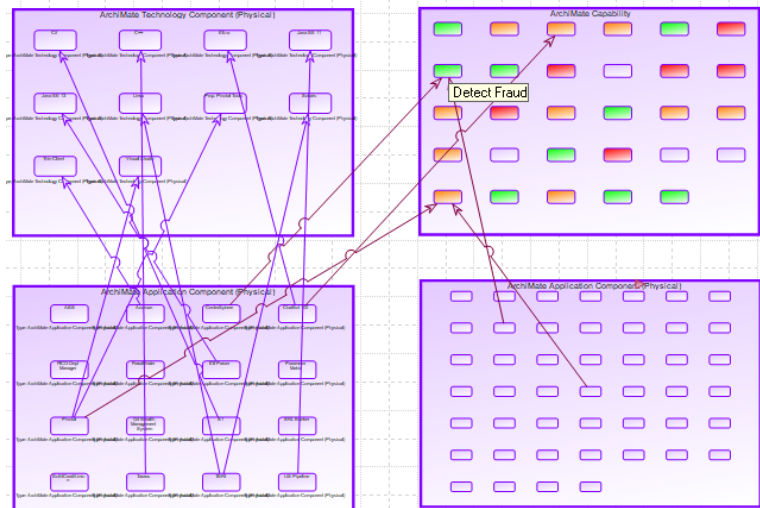


18. In the Explorer tree under Definitions, expand the Analytic definition type, and select the 3 analytics we ran previously on the Capability Map – **High Strategic Alignment**, **Moderate Strategic Alignment**, and **Low Strategic Alignment**.

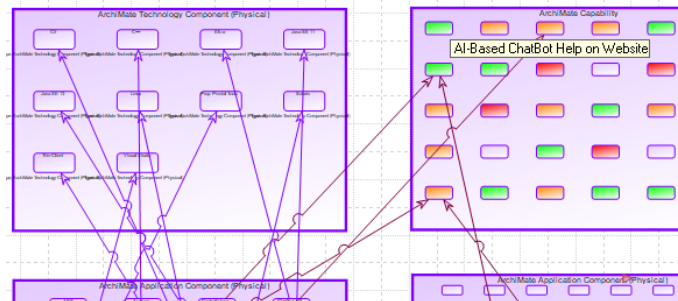
19. Simply drag them onto the diagram workspace – they will run and color the Capabilities appropriately.



20. Hover over the Capability, Detect Fraud.  
 Notice that you can visually see – from following the lines -- the Application that supported it which is being sunset, and the new Application that will replace it. This relationship line is a Calculated relationship based on the report you write (App to App Service to Capability).



21. Hover over the Capability AI-Based ChatBot Help on Website – note that it does not have an Application (and/or Application Service) providing it yet.

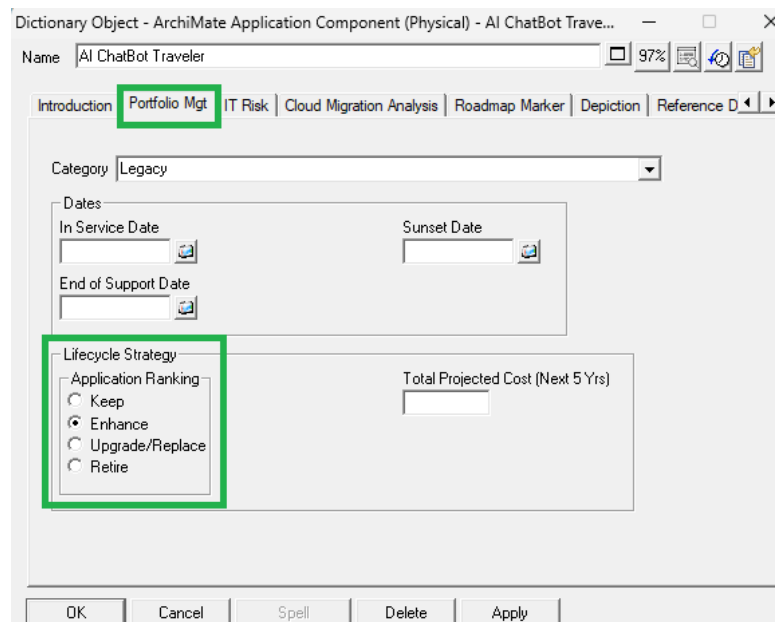
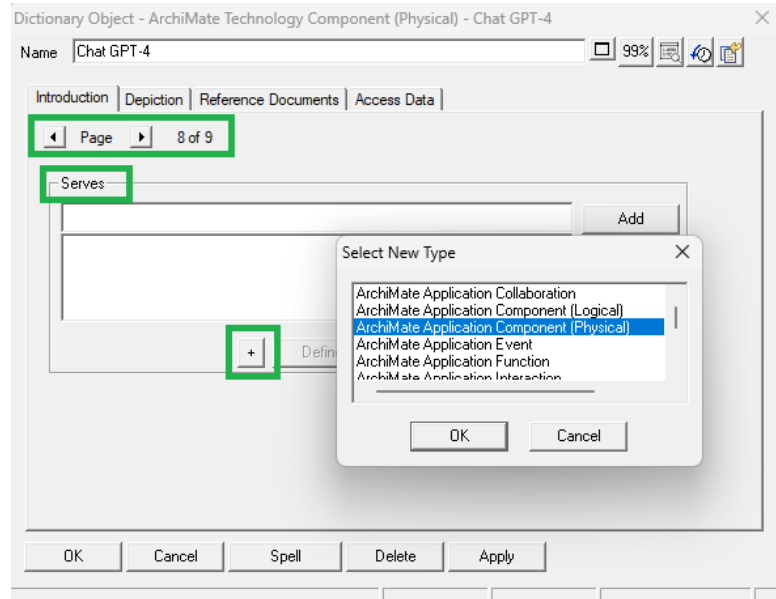




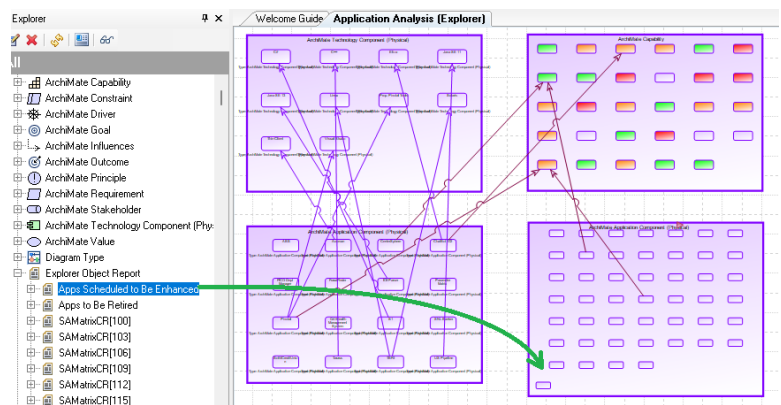
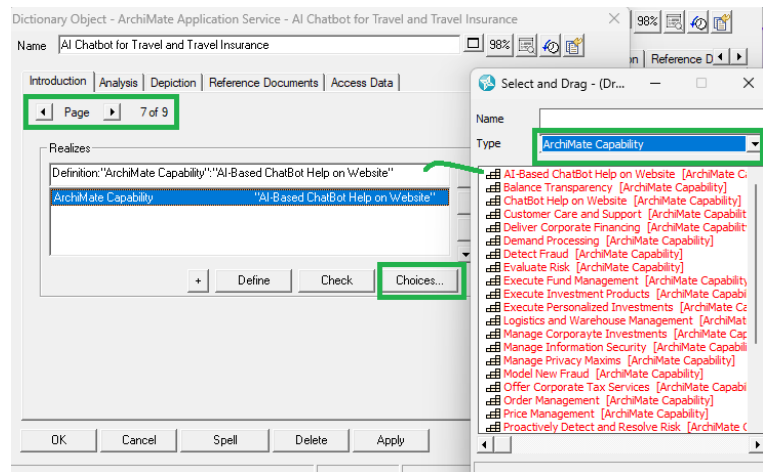
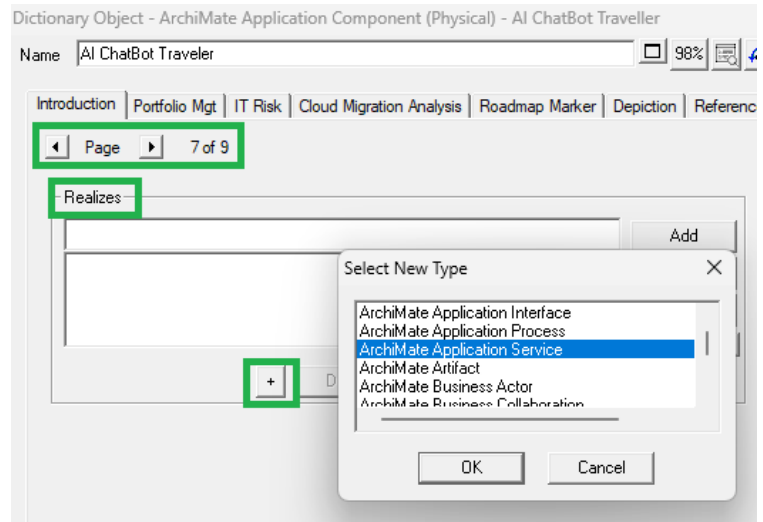
## Add an Application

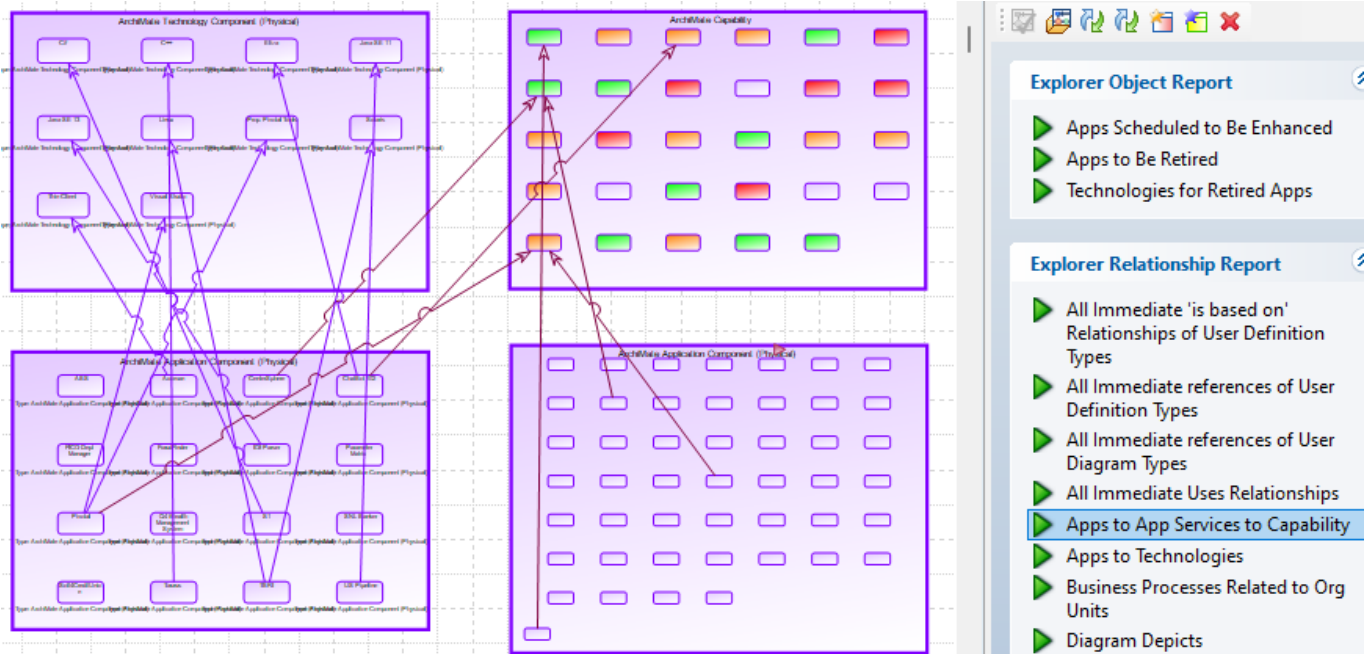
Let's add an Application to provide the new AI-based Chatbot capability.

1. Select Dictionary, New Definition, or right-mouse click on the Definitions heading in the Explorer tree and select New – create a new ArchiMate Technology Component (Physical) definition named **ChatGPT-4**.
2. Go to Page 8 of the definition's Introduction tab, and click the + mark to add a new definition that the Technology serves – in the list that pops up, select ArchiMate Application Component (Physical) and name the new application **AI Bot Traveler**.
3. In the Dictionary Object -- Application Component dialog, type in the name **AI ChatBot Traveler**.
4. Go to the Portfolio Mgt tab of the definition dialog that opens, and toggle on **Enhance for Lifecycle Strategy**.
5. Go back to the Introduction tab of the AI ChatBot Traveler definition, and navigate to page 7, and click the + mark to add a new **ArchiMate Application Service** that the application realizes.
6. Name the new Application Service, **AI Chatbot for Travel and Travel Insurance**, and click **OK**. Its definition will open.



7. Go to page 7 of the Introduction tab in the Application Service definition, and click the Choices button – all possible definitions that the App Service can realize are presented.
8. At the top of the Choices dialog, select ArchiMate Capability to filter the list to just see Capabilities.
9. Select and drag the capability, AI-Based ChatBot Help on Website into the Realizes list box.
10. Click OK to close all definition dialogs.
11. Expand Definitions in the Explorer tree on the left, and then expand Explorer Object Reports.
12. Select and drag-and-drop the Explorer Object Report, **Apps Scheduled to Be Enhanced** into the box that holds the output of the same report run earlier – doing this will re-run the report, updating the group. The new app is added to the group.
13. From the Heat Map Manager, re-run the Explorer Relationship Report, Apps to App Services to Capability. A new line will be drawn from the new app to the strategic capability, **AI-Based ChatBot Help on Website**.

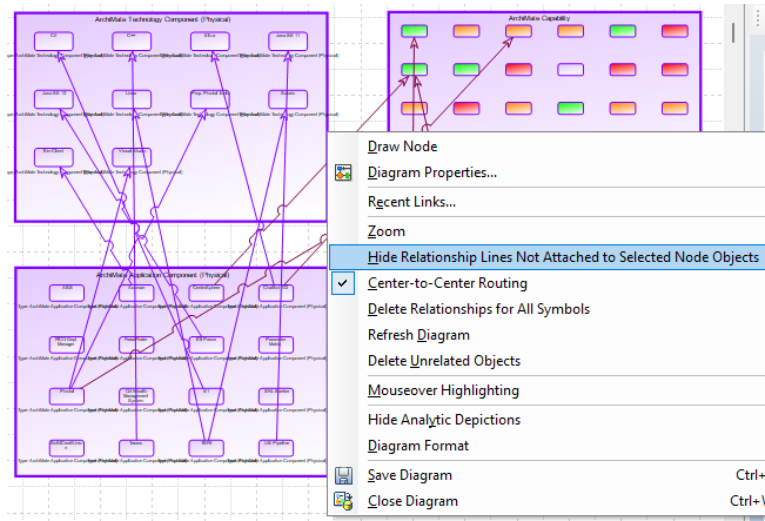




14. Right-mouse click on an empty space of the diagram, and select **Hide Relationship Lines Not Attached to Selected Node Objects**.

15. Hover over the Capabilities to find ChatBot Help on Website – then select it. Notice that a relationship line (which is a calculated relationship from App to App Service to Capability) is revealed showing its related Application.

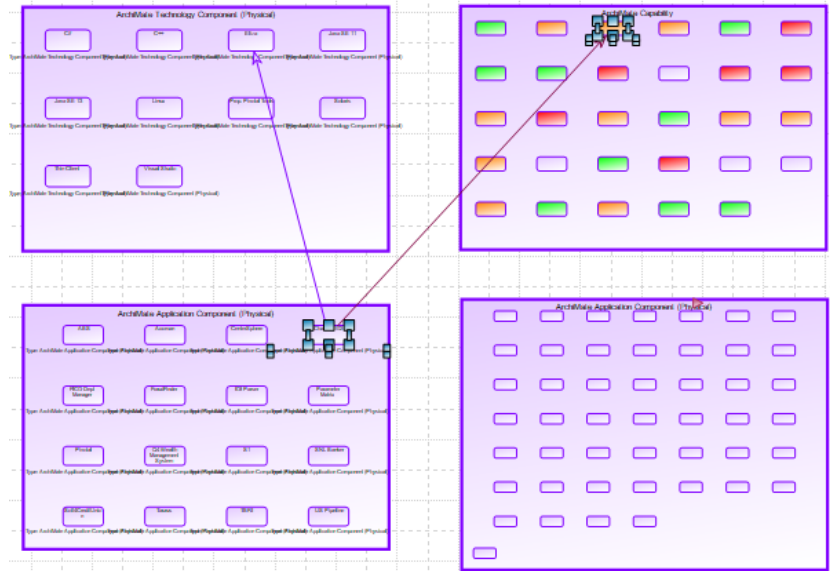
16. Hold you CTRL key down and select the Application – its related Technology is revealed.



17. You can explore the Portfolio this way, and at any point optionally save the diagram.

18. You can also right-mouse click on an empty spot on the diagram workspace and choose **Reveal All Relationship Lines** to show all lines again.

19. Save and close the diagram.



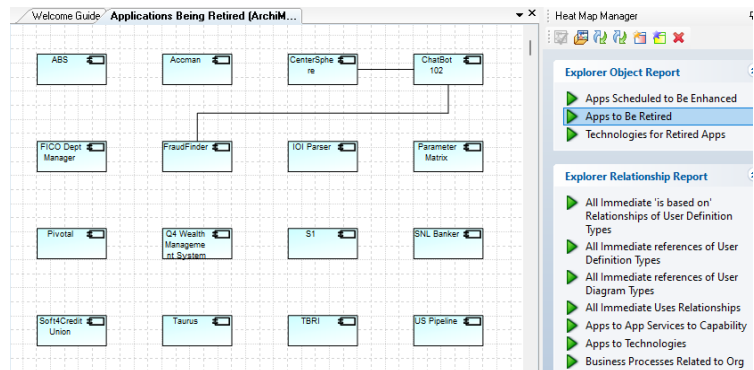
## Analyze Architecture by Auto-Building Diagrams with Explorer Reports

### Goals of this Lab:

- Understand how to use Explorer Object and Explorer Relationship reports and data-driven behavior to automatically build diagrams and analyze the architecture.

### Auto-Populate a Diagram with Apps Meeting a Certain Criteria

- Create a new diagram of type ArchiMate Application Cooperation Viewpoint – and name it **Applications Being Retired**. (Note: to create a new diagram, select File, New Diagram, or right-mouse click on the Diagrams header in the Explorer tree and select New).
- If the Heat Map Manager is not open, open it by selecting View, Heat Map Manager.
- Click on the Explorer Object Report, **Apps to Be Retired**.
- Notice that the appropriate applications are added to the diagram – and any relationships between them are automatically added. The relationships are drawn because of data-driven behavior.



This set of steps shows that you can create or add Explorer Object reports to any diagram type to “Find Things” – and similarly, you can run Explorer Relationship Reports on any diagram type.

## Reporting – “Ask the Architecture Questions”

### Goals of this Lab:

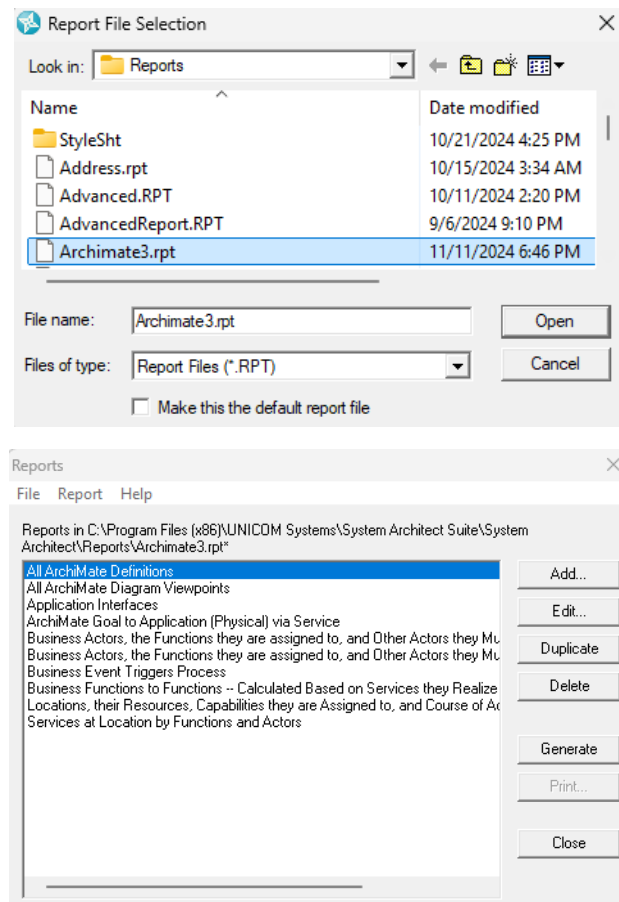
- Utilize System Architect’s built-in reporting engine to “ask the architecture questions.”

### Run a Report

1. Select **Reports, Report Generator**.
2. A dialog will open that will present a number of .rpt files in a Reports directory (the full directory path is C:\Program Files (x86)\UNICOM Systems\System Architect Suite\System Architect\Reports). Find and select the **Archimate3.rpt** file – and click the Open button to load it.
3. Double click on the top report – All ArchiMate Definitions (or select the report and click the Generate button to the right). The report will run, showing all definitions in the encyclopedia so far.

The report generates to a Grid, which is a user interface into the architecture – you can double-click on any cell to open the definition. You can save the Grid to Excel, etc.

4. Click the button on the top left, “Click to Merge/Unmerge Cells” – to get all items grouped by row or not.



All ArchiMate

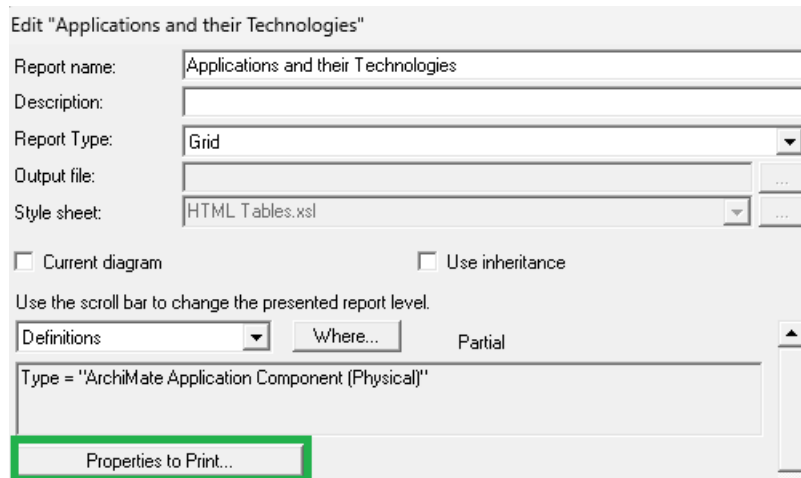
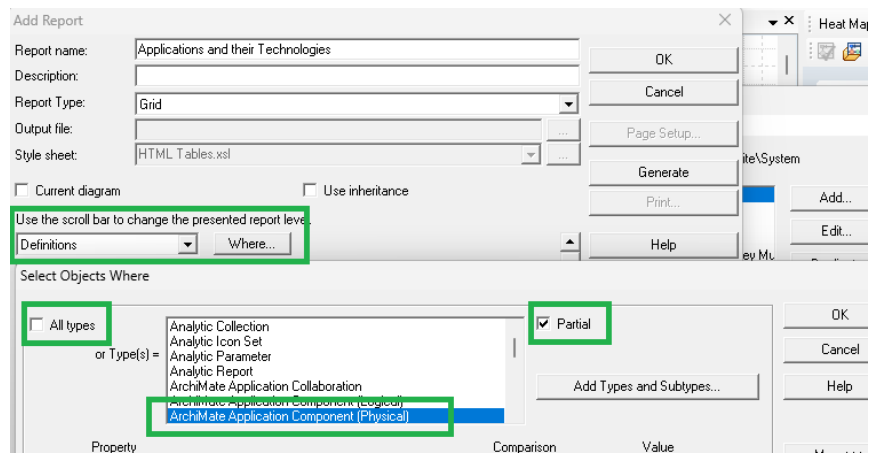
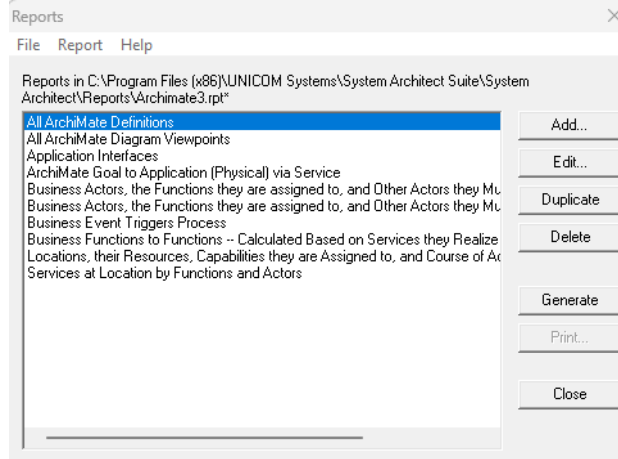
Click to merge/unmerge cells

Found 949 items.

Related ArchiMate Definition	Type	Related ArchiMate Definition	Type
.NET 5	ArchiMate Technology Component (Physical)		
.Net	ArchiMate Technology Component (Physical)		
A/L Reporter	ArchiMate Application Component (Physical)		
ABRIC	ArchiMate Application Component (Physical)	C#	ArchiMate Technology Component (Physical)
ABS	ArchiMate Application Component (Physical)		
ADP Enterprise HRMS	ArchiMate Technology Component (Physical)		
AI ChatBot Traveler	ArchiMate Application Component (Physical)	Chat GPT-4	ArchiMate Technology Component (Physical)
AI Chatbot for Travel and Travel Insurance	ArchiMate Application Service	AI ChatBot Traveler	ArchiMate Application Component (Physical)
AI-Based ChatBot Help on Website	ArchiMate Capability	Product Sales and Services	ArchiMate Capability
AI-Based ChatBot Help on Website	ArchiMate Capability	AI Chatbot for Travel and Travel Insurance	ArchiMate Application Service
AIX 4.3.3	ArchiMate Technology Component (Physical)		
AIX 7.1	ArchiMate Technology Component (Physical)		
AMDOCS	ArchiMate Application Component (Physical)	Design	ArchiMate Application Component (Physical) Time Period
AMDOCS	ArchiMate Application Component (Physical)	Develop	ArchiMate Application Component (Physical) Time Period
AMDOCS	ArchiMate Application Component (Physical)	Test	ArchiMate Application Component (Physical) Time Period
AMDOCS	ArchiMate Application Component (Physical)	Deploy	ArchiMate Application Component (Physical) Time Period
AMDOCS	ArchiMate Application Component (Physical)	AT&T NetClient	ArchiMate Technology Component (Physical)

## Build a Report

1. In the Reports dialog, click the **Add** button on the right.
2. In the dialog that opens, type **Applications and their Technologies** as the new Report Name.
3. Select **Definitions** from the drop-down list of Diagrams, Definitions, or Symbols.
4. Click the **Where** button.
5. Toggle off All types, and select **ArchiMate Application Component (Physical)**.
6. Toggle on the **Partial** choice and click OK.
7. Back in the main dialog, click the **Properties to Print** button.





8. Find and select the following properties from Available properties list on the left, and click the **Add** button to move them to the right box:

- Name
- Total Projected Cost
- Application Ranking
- Risk Ranking
- Response Time
- Sunset Date

9. Highlight Name in the upper left box, and in the middle of the dialog, type over Name and instead type **Application** – this will put “Application” at the top of the column in the output report, instead of Name.

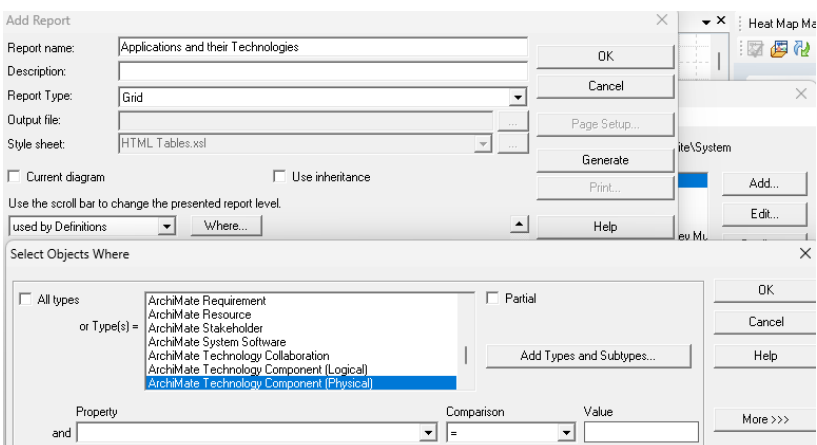
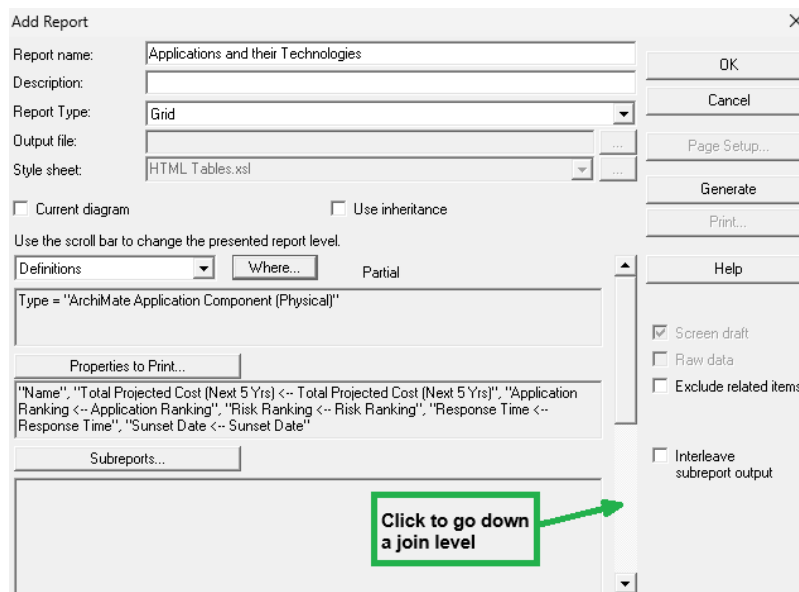
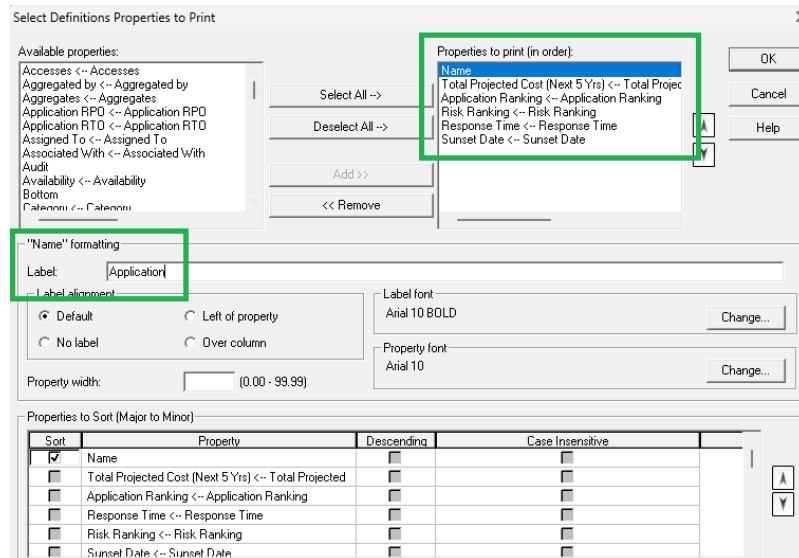
10. Click OK.

11. Back in the main report dialog, click the vertical scroll bar once (you can only click it once). It will bring you to a new level in the SQL report you are building.

12. Select used by Definitions from the drop-down list of relationships.

13. Click the Where button, and in the dialog that opens, toggle **off All types**, and select **ArchiMate Technology Component (Physical)**. Click OK.

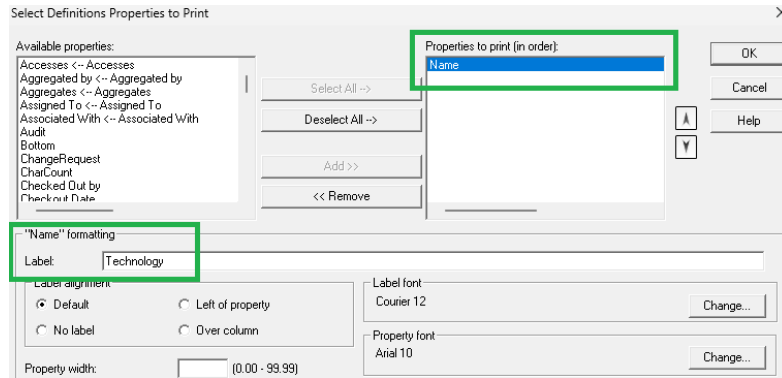
14. Back in the main Report



dialog, click Properties to Print, and select Name – clicking Add to move it to the right column.

15. Select Name, and this time in the middle of the dialog, type **Technology**. Click OK, and OK again to close the report.

16. In the main report dialog, double click on the new report or select it and click Generate to run it.



Click to merge/unmerge cells

Found 598 items.

Application	Total Projec...	Application Ranking	Risk Ranking	Response Time	Sunset Date	Technology
A/L Reporter		Keep	None	No Info		
ABRIC		Keep	None	No Info		C#
ABS	4100	Retire	None	No Info	9/17/2019	
AI ChatBot Traveler		Enhance	None	No Info		Chat GPT-4
AMDOCS	43162	Enhance	None	No Info	7/4/2021	AT&T NetClient
						Cisco Access Points
						Customer Information Control System
						Eclipse
						FireFox
						Internet Explorer
						Thin Client
						Windows 11
Windows Vista						
Windows XP						
APP PYS		Keep	None	No Info		yy
AccMan	43546	Keep	High	No Info		Thin Client
Accman		Retire	Critical	No Info	1/11/2019	Thin Client
		Keep	None	Medium (1-100 ms)	7/17/2025	Certificates / Digital Signature
		Keep	None	Medium (1-100 ms)	7/17/2025	Linux
Active Risk Manager		Keep	None	Medium (1-100 ms)	7/17/2025	MS SQL Server
		Keep	None	Medium (1-100 ms)	7/17/2025	Thin Client
Albany	37644	Keep	None	No Info		Windows 11
		Enhance	None	No Info		IBM z14
Appia FIX Interface & Router		Enhance	None	No Info		Linux
		Enhance	None	No Info		Oracle
		Enhance	None	No Info		Oracle 19c
		Enhance	None	No Info		SAP ASE V15
		Enhance	None	No Info		

Applications and their Technologies

Found 598 items.

Application	Total Projec...	Application Ranking	Risk Ranking	Response Time	Sunset Date	Technology
A/L Reporter		Keep	None	No Info		
ABRIC		Keep	None	No Info		C#
ABS	4100	Retire	None	No Info	9/17/2019	
AI ChatBot Traveler		Enhance	None	No Info		Chat GPT-4 AT&T NetClient Cisco Access Points Customer Information Control System Eclipse FireFox Internet Explorer Thin Client Windows 11
AMDOCS	43162	Enhance	None	No Info	7/4/2021	
APP PYS						
AccMan						
Accman						
Active Risk Mana						Digital Signature
Albany						ver
Appia FIX Interfac						5
Artificial Hip on De						
Atlas						
AutoFit						

**Double-click on any cell of grid to open definition**

Dictionary Object - ArchiMate Technology Component (Physical) - Windows 11

Name: Windows 11

98%

Introduction | Depiction | Reference Documents | Access Data

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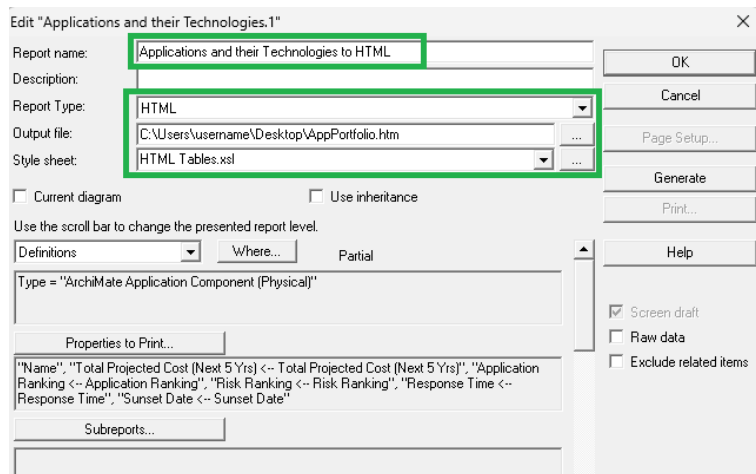
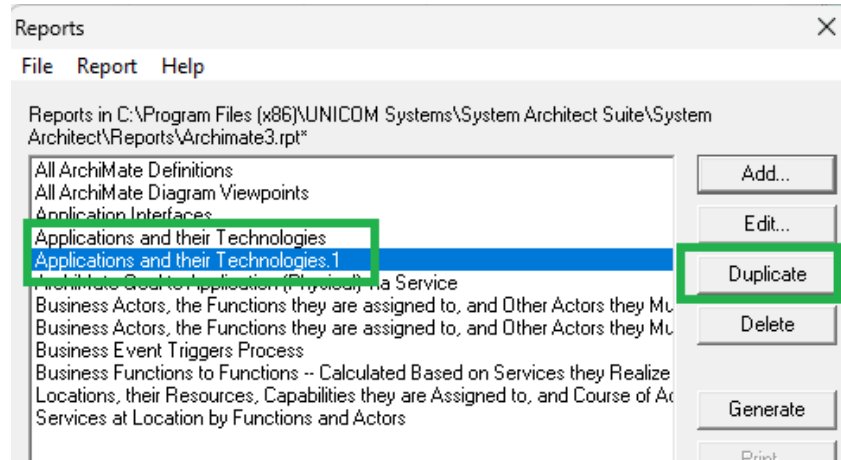
Description

Accesses

Add  
Modify  
Remove

## Generate to HTML

1. In the main Reports dialog, select the new Applications and their Technologies report, and press the Duplicate button. A new version of the report is added with a “.1” at the end of its name.
2. Select the new copy of the report, and click Edit.
3. In the dialog, change the name of the report to **Applications and their Technologies to HTML**.
4. For Report Type, change from Grid, to **HTML**.
5. Click the ... button by Output file, and specify to generate a report to your Desktop, named **AppPorfolio.htm**.
6. Select the **HML Tables.xsl** stylesheet.
7. Click Generate. The report is generated to HTML. You can save it to PDF.



### Applications and their Technologies to HTML

Application	Total Projected Cost (Next 5 Yrs)	Application Ranking	Risk Ranking	Response Time	Sunset Date	Technology
A/L Reporter		Keep	None	No Info		
ABRIC		Keep	None	No Info		C#
ABS	4100	Retire	None	No Info	9/17/2019	
AI ChatBot Traveler		Enhance	None	No Info		Chat GPT-4
AMDOCS	43162	Enhance	None	No Info	7/4/2021	AT&T NetClient Cisco Access Points Customer Information Control System Eclipse FireFox Internet Explorer Thin Client Windows 11 Windows Vista Windows XP
APP PYS		Keep	None	No Info		yy
AccMan	43546	Keep	High	No Info		Thin Client
Accman		Retire	Critical	No Info	1/11/2019	Thin Client
Active Risk Manager		Keep	None	Medium (1-100 ms)	7/17/2025	Certificates / Digital Signature Linux MS SQL Server
Albanu	37644	Keep	None	No Info		Thin Client

## Dashboards in SA XT

### Goals of this Lab:

- Understand how the reports generated could be shown as dashboards in SA XT.

### Viewing the Architecture in SA XT

This workshop does not cover working hands-on in SA XT (System Architect eXtended Team) – the thin web-browser version of System Architect. However, SA XT uses the same Reporting Engine as the one used in SA – albeit with a web interface to build reports.

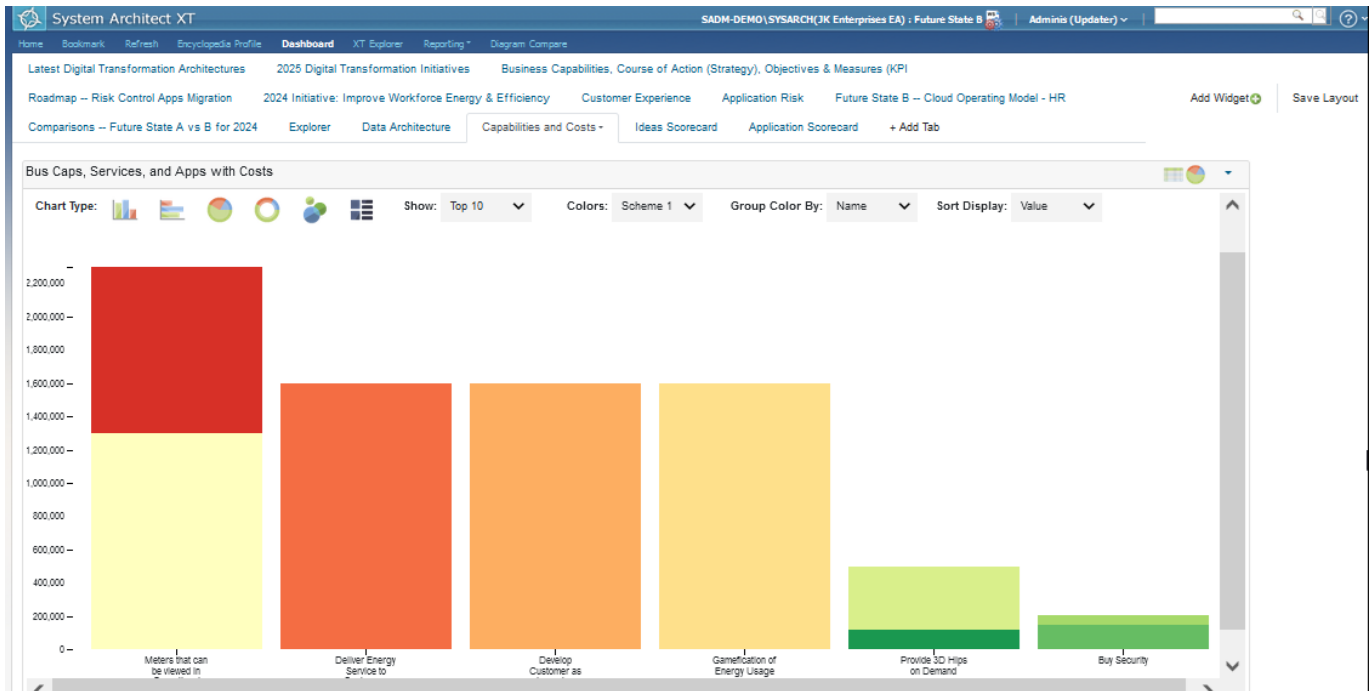
Users can create their own personalized dashboards and place reports in tabs within their dashboards.

The screenshot shows the System Architect XT interface. The main content area displays a report titled "Bus Caps, Services, and Apps with Costs". The report is presented as a table with the following data:

Capability	Service	Application	Total Projected Cost (Next 5 Yrs)
Balance Transparency	Inbound Correspondence Management	Datamatrice	90000
Balance Transparency	Inbound Correspondence Management	Smart Order Routing (SORT)	
Balance Transparency	Inbound Correspondence Management	TESS	
Buy Security	Facial Recognition	COGCompare	150000
Buy Security	Facial Recognition	Cyclops	205000
Buy Security	Facial Recognition	Exotic Eye	
Buy Security	Facial Recognition	FRAcus	32000
Deliver Energy Service to Customers	Energy Point Program	EnergyYOU	1600000
Detect Fraud	Claim Settlement	AMDOCS	43162
Detect Fraud	Claim Settlement	BWL	6600

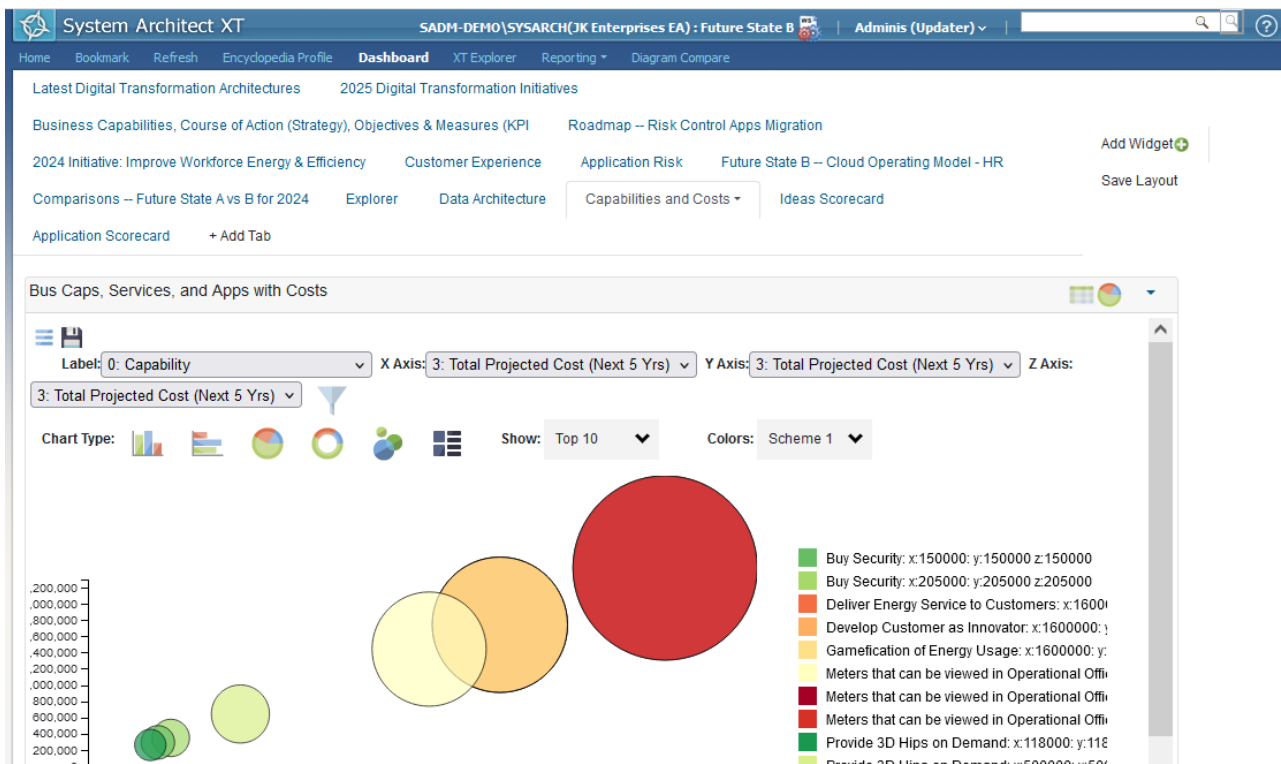
The interface includes a search bar, a "Show 10 entries" dropdown, and a pagination control at the bottom showing "Showing 1 to 10 of 42 entries" and "Previous 1 2 3 4 5 Next".

In SA XT, you can flip between different views of the report – showing it as a table (above) or via various charts (such as the bar chart below).



You can also select Bubble Charts, Tree Charts, Pie Charts, Scorecards, and get live views of diagrams, that you can edit.

You can also create ArchiMate diagrams in a web browser in SA XT.



## Communicating the EA with SA Publisher

### Goals of this Lab:

- Understand how the Enterprise Architecture can be communicated to a wide audience with SA Publisher.

### Communicating the Architecture via SA Publisher

SA Publisher is very popular add-on to System Architect, that allows reports (written with the same SA Reporting Engine) to be grouped and automatically generated to a website, including SVG's of diagrams.

The result is a sophisticated website of the enterprise architecture, that an infinite amount of people can view, without needing a license (just the one license of SA Publisher is needed to generate the website).

An example of SA Publisher output is shown below.

Users can navigate the EA as they would in System Architect, open diagrams, zoom in and out of diagrams, click on symbols in diagrams to open their definitions, etc.

The screenshot shows a web browser displaying the 'JK Enterprises EA' website. The browser address bar shows the file path: file:///C:/Users/Administrator/Documents/JK\_EA\_Output/dc... The website has a navigation menu on the left with categories like Diagram and Definition. The main content area displays a 'Business Capabilities of JK Enterprises' diagram, which is a Business Capability Map. The diagram is divided into four main sections: Product Sales and Service, Provide Account Services, Product Production, and Execute Investment Products. Each section contains various business capabilities represented by colored boxes with labels like 'Order Management', 'Demand Forecasting', 'Service Management and Evaluation', etc. The browser address bar shows the file path: file:///C:/Users/Administrator/Documents/JK\_EA\_Output/dc... The website has a navigation menu on the left with categories like Diagram and Definition. The main content area displays a 'Business Capabilities of JK Enterprises' diagram, which is a Business Capability Map. The diagram is divided into four main sections: Product Sales and Service, Provide Account Services, Product Production, and Execute Investment Products. Each section contains various business capabilities represented by colored boxes with labels like 'Order Management', 'Demand Forecasting', 'Service Management and Evaluation', etc.





You have finished the lab. Thank you for taking it. We hope it has been useful for you.

## Appendix A. Notices

This information was developed for products and services offered in the U.S.A.





# NOTES

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