Enterprise Maps

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Windows and Linux Operating System

User Guide

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be present in this PDF version. Those topics can be successfully printed from within the online help.

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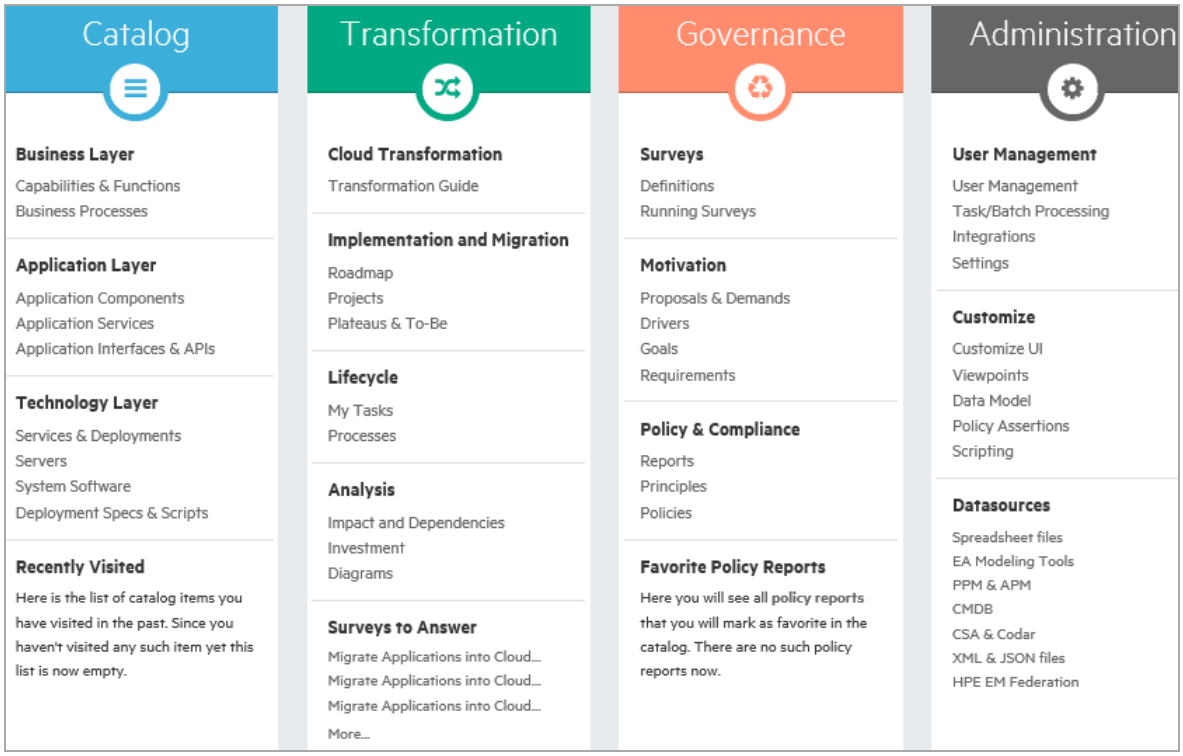
Chapter 1: Get Started

HPE Enterprise Maps helps you centralize the enterprise infrastructure.This guide describes the key features and their inter-dependencies. It covers the following topics:

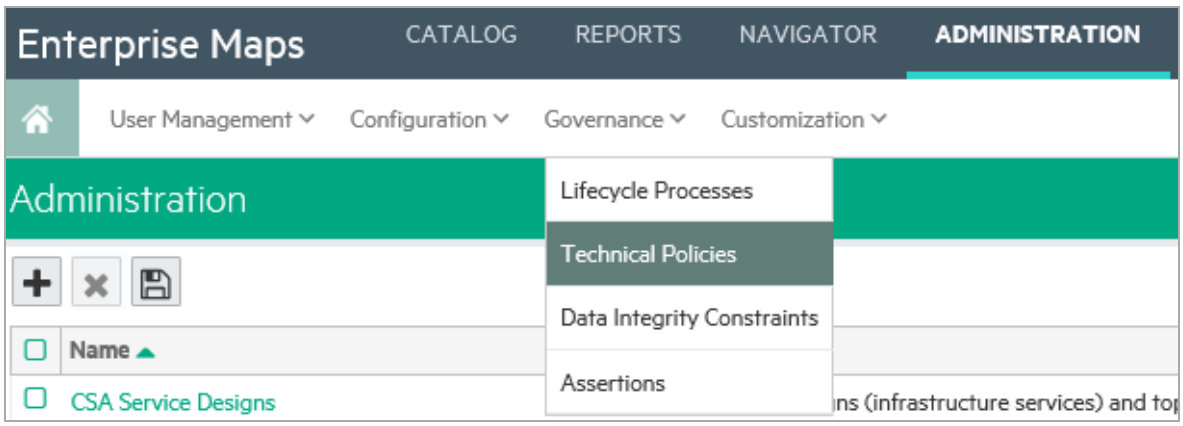
Feature	Description
"Catalog " on page 8	Explains how to create, edit, view artifacts and their relationships, and search for artifacts.
"Navigator" on page 46	Explains how to view related artifacts in graphical mode.
"Reports" on page 48	Explains how to view, print reports and customize the dashboard.
"Enterprise Architecture " on page 68	Explains how to use architecture management to manage architecture changes.
"Cloud Transformation" on page 79	Explains how to use Cloud transformation UI to manage applications' migration into Cloud.
"Surveys" on page 107	Explains how to start, undertake, manage and monitor surveys.
"Collaboration " on page 119	Explains how to add comments, ratings, notify other contacts, share artifacts (provide access to others), complete assigned tasks and view artifact feeds and events.
"Excel/CSV File Export and Import" on page 132	Explains how to export and import spreadsheet data.
"Extension for Sparx Systems EA " on page 144	Explains how to use the Extension for Sparx Systems EA.

Chapter 2: Catalog

The HPE Enterprise Maps Catalog tab home page starts you off with a set of panels which present the most common managerial functions. You can quickly jump to the desired UI by clicking the links on these panels.



However, these functions are also available from the main menus under their respective tabs. For example: Policies link under Governance panel is available in **Administration tab > Governance > Technical Policies** menu.



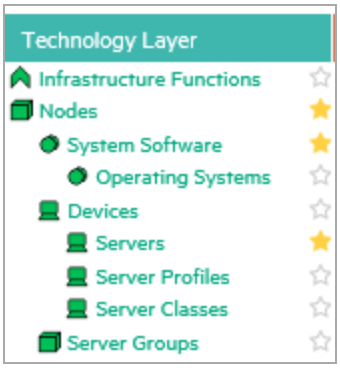
> **Note:** However, Administration panel is only visible to administrators.

Catalog Browser

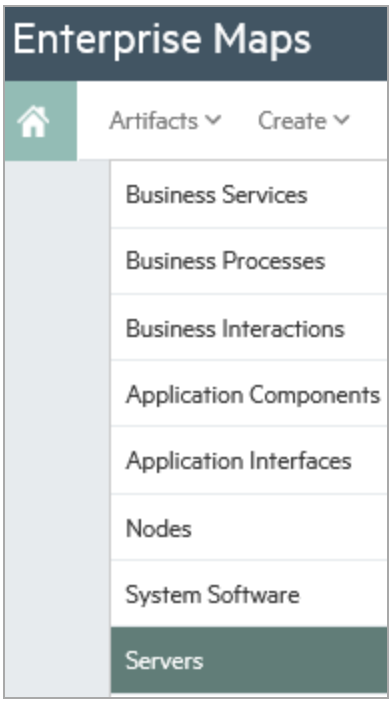
The HPE EM catalog browser is the place for viewing artifacts by artifact collection type and Archimate model layer.

1. To open the catalog browser, click **Catalog > Artifacts > Show More**.

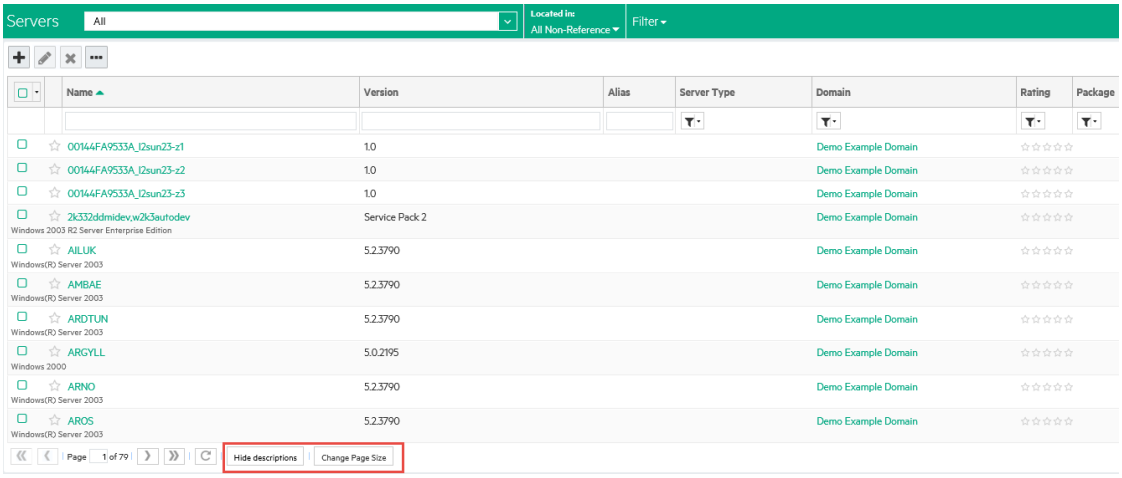
2. To open a collection of artifacts, click the type of artifact that you want to view. In this example, click **Servers** under the Technology Layer. It will appear under the artifacts as in below image:



> **Tip:** You can pin the Server artifact collection to your Artifact menu, by clicking the Pin next to the Server collection. Pinning a collection makes it quick and easy to select.



3. After you select the artifact collection you want to view, the collection page opens. In the sample below, the Server collection is displayed.

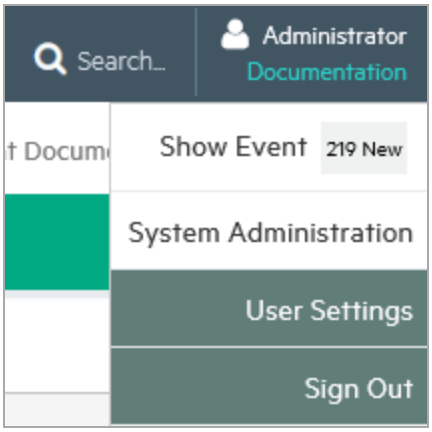


4. To customize your view, you can sort, filter, and manage columns.

> **Note:** Column filters are not visible if all artifacts are shown on a single page.

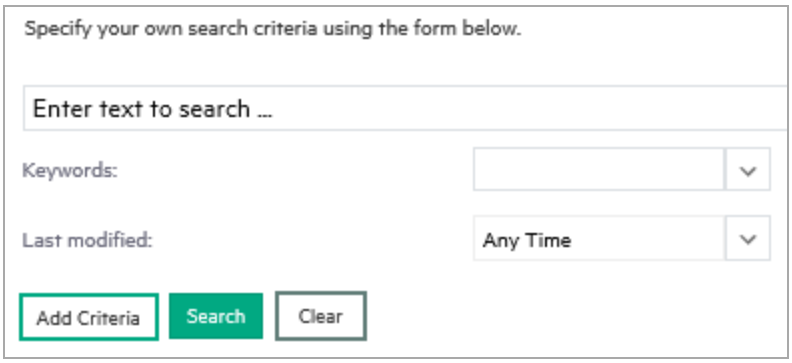
5. You can use controls at the bottom of the collection page to control the page size and amount of

description displayed. Revised page sizes are stored. To reset, go to **User Settings** menu on the top right, under the user name.



6. To perform bulk operations on artifacts in the collection, you can use the toolbar at the top of the collection page.

7. You can set up custom filters, such as a filter for favorite artifacts or artifacts that you own.

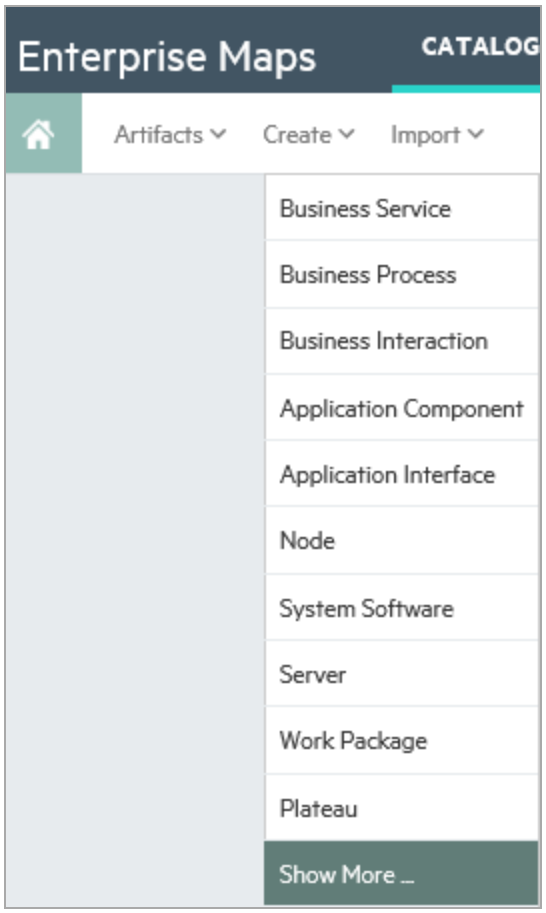


Creating Artifacts

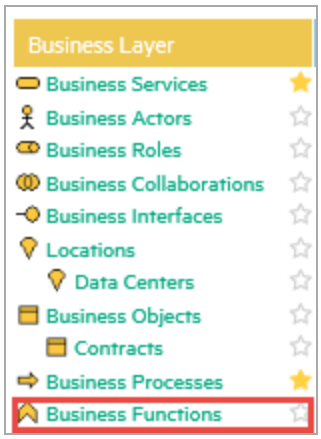
You can use HPE EM to create new artifacts, and the attributes and relationships that impact those artifacts.

To create a new artifact:

1. Click **Catalog > Create > Show More** to open the catalog browser Create Artifact window.

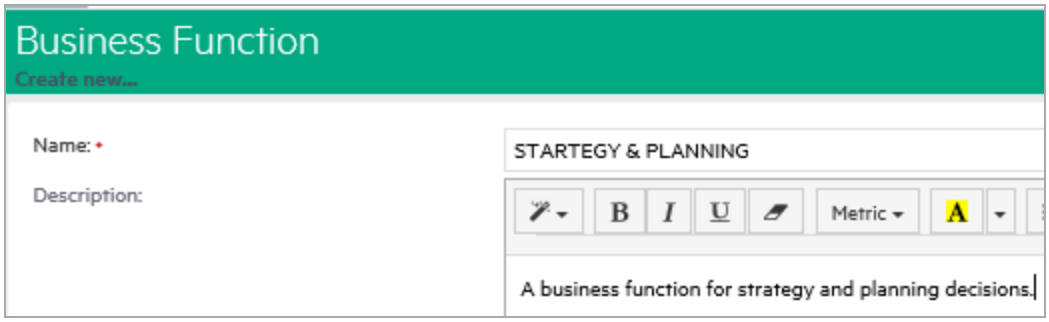


2. Select the artifact type that you want to create. The new artifact opens. In this example, select the **Business Function** artifact on the Business Layer.

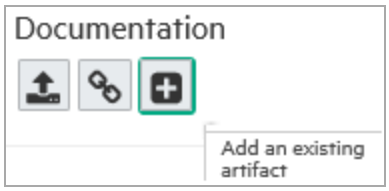


3. Or you can click the **Open create dialog for this artifact** icon on Business Function collection page to create a new artifact.

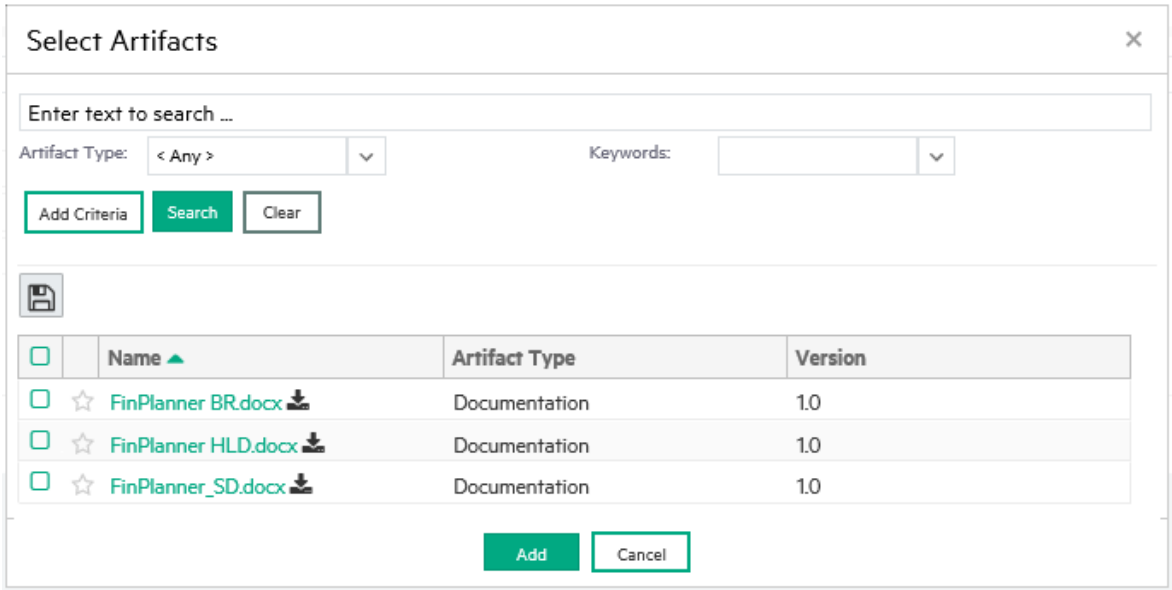
4. Enter the name of your new artifact. You can optionally add a **Description**, select a **Status**, **Investment Priority**, or **Type**.



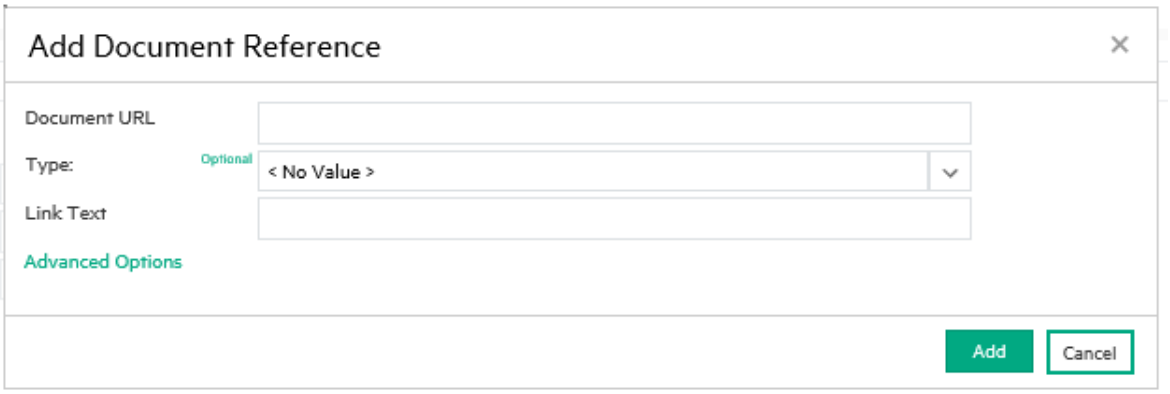
5. In the Documentation area, you can attach or link to any associated documentation. Documents that you load are viewable on the Documentation tab.



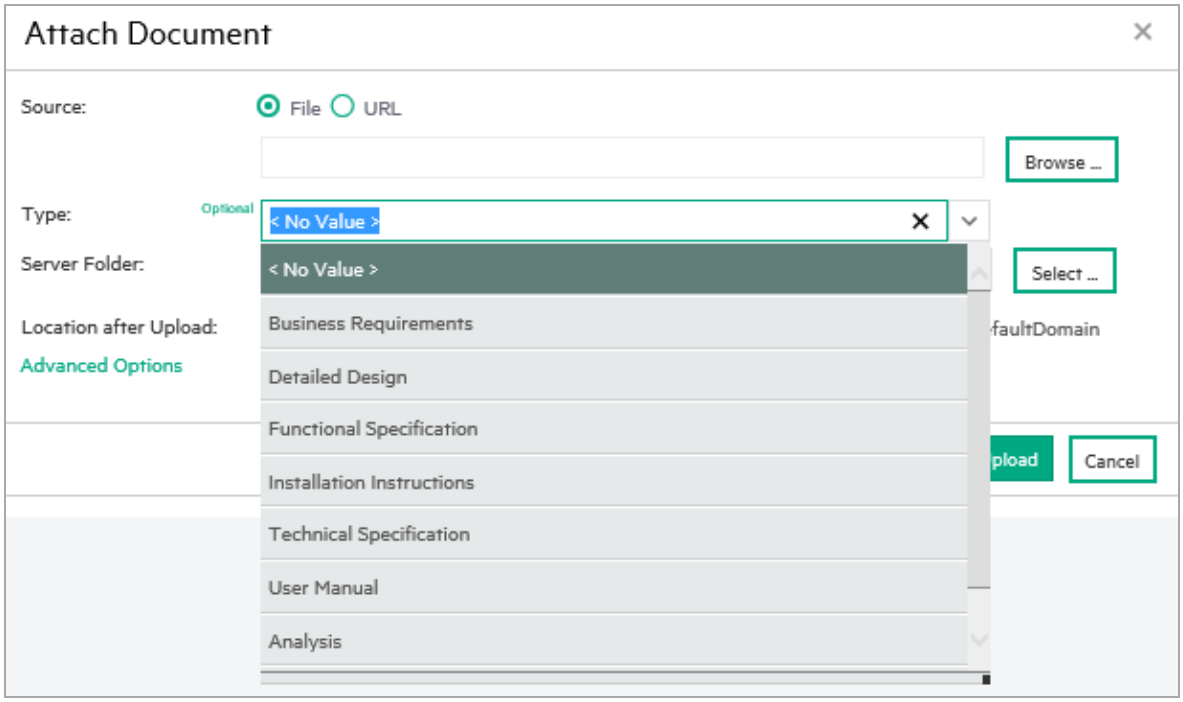
6. To add documentation from an existing artifact, click the **Add an existing artifact** icon. The Select Artifact window displays a list of documentation artifacts to choose from.



7. To add a link to documentation from a web resource, click the **Link a Web Resource** icon. The Add Document Reference window opens and you can use it to enter the document URL, the document type, and any text or keywords that you want to appear with the link.

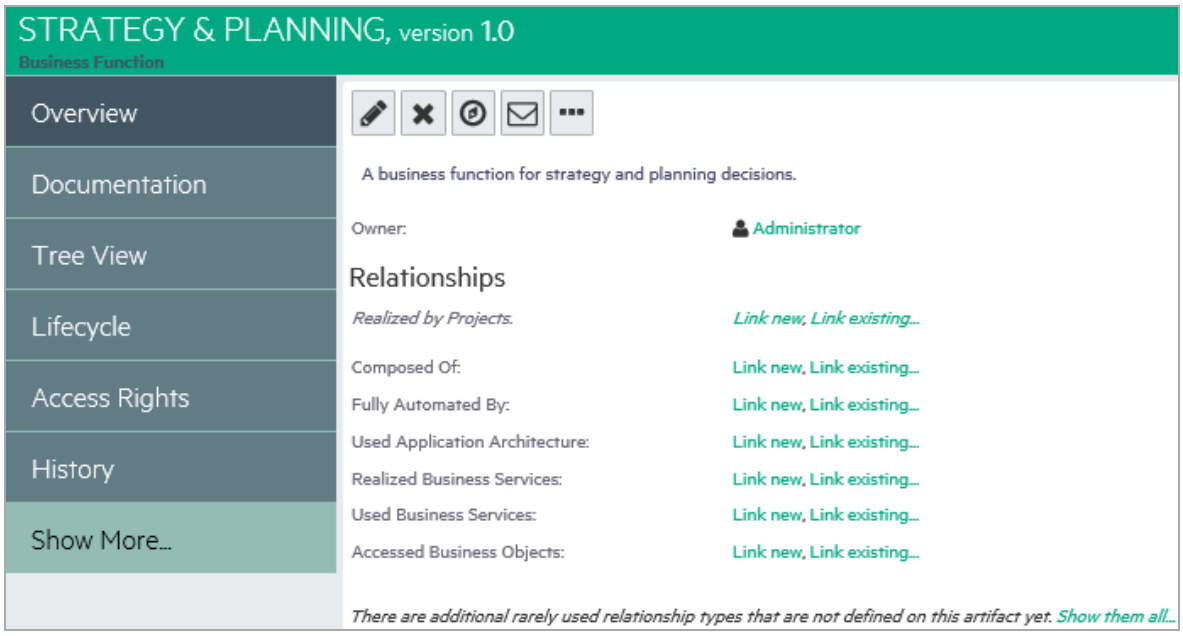


8. To attach a documentation artifact directly, click the **Upload a Local File to the repository** icon. The Attach Document window opens and you can use it to enter the document source location, the document type, the server folder, and the location where the document should reside after upload, as well as keywords that you want to enable so that users can find the document. In this example, the document types are shown.



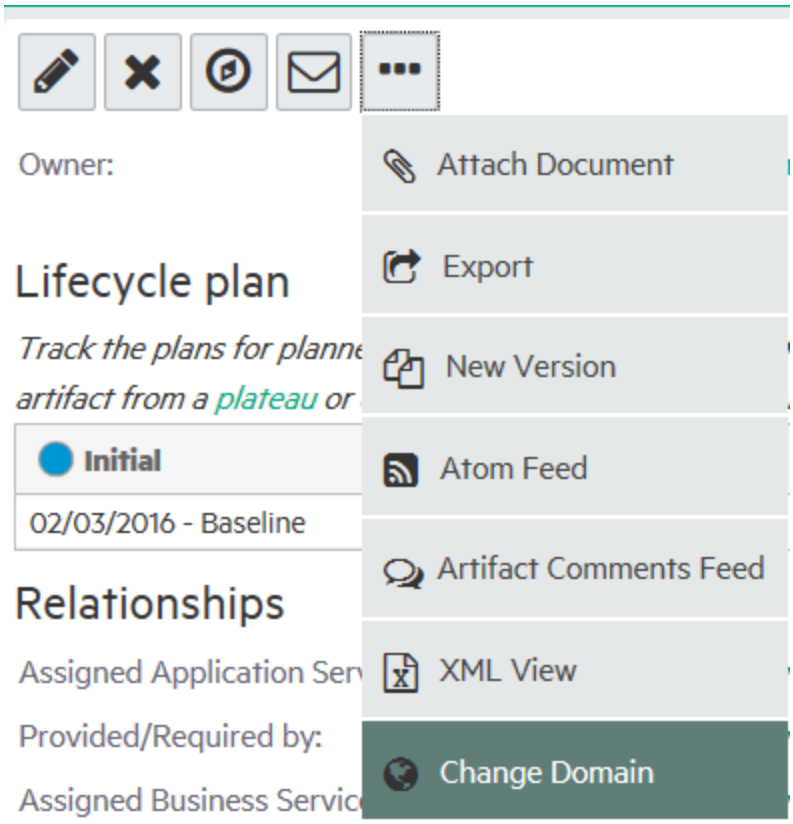
9. Click **Save** to save the new artifact that you created. Your new artifact record is displayed and you can add or modify attributes and relationships using the tabs. Documentation artifacts are shown

on the Documentation tab.



Domain Visualization

EM enables you to create or import artifacts in your working domain in which the artifacts are created or imported. Click ***Located in <domain>*** and select the working domain. You can click the domain name and change if required as depicted in the 2 images below.



To switch the working domain, click ***Create new in <domain>*** in Enterprise Maps header and select from the list. Thereafter, the artifacts are created or imported in the new working domain.

When you view artifacts through reports menu tab, the ***Show data in <domain>*** indicates the domains where artifacts are queried from. The selected domains are personalized for each user and are retained across Catalog collections, Navigator and Reports UI.

The data in ***Show data in <domain>*** is displayed as follows:

- **All Non-reference**

  If As-is/To-be Architecture and Demo Data domain types are selected. This is the default domain (i.e. excluding Reference Model domains).

- **All Reference Models**

If Reference Model domain type is selected.

- **All Architecture Domains**

  If As-is/To-be Architecture domain type is selected

- **All Demo Data Domains**

  If Demo Data domain type is selected

- **All Domains**

  If As-is/To-be Architecture, Demo Data and Reference Model domain types are selected.

- **All Reference Architecture Domains**

  If As-is/To-be Architecture and Reference Model domain types are selected.

- **All Reference Demo Domains**

  If Demo Data and Reference Model domain types are selected.

- **Selected Domains**

  If one or more domains are selected from list.

> **Note: Show data in <domains>** is not applicable to the following reports:
>
> - Policy reports (use Definition UI to set domains)
> - Governance Dashboard
> - Custom reports (use DQL or SQL definitions to query artifacts)

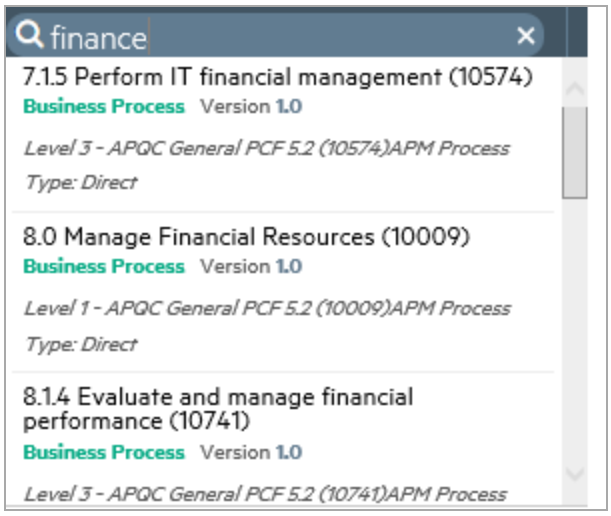
Searching for Artifacts

HPE EM enables you to perform artifact search quickly and easily from every page.

To perform a basic search:

1. Enter the text to search for in the Search box.

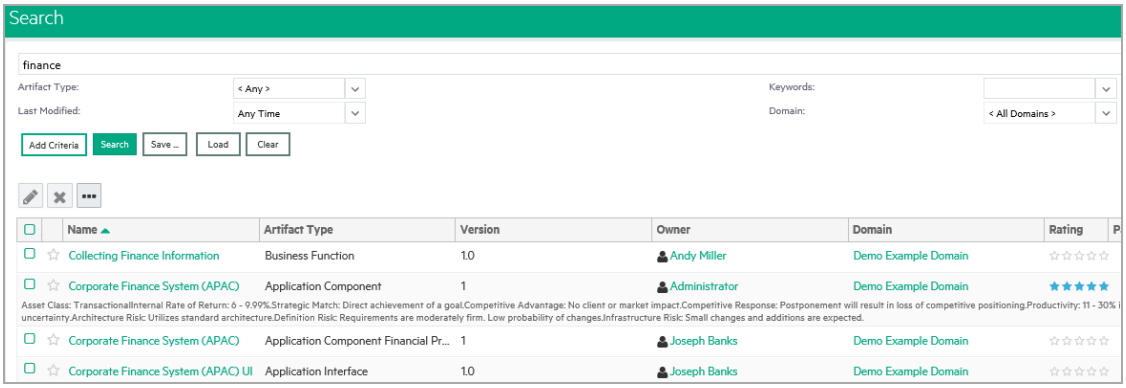
2. For example, if you search for the word "finance," a drop-down list of results is displayed.



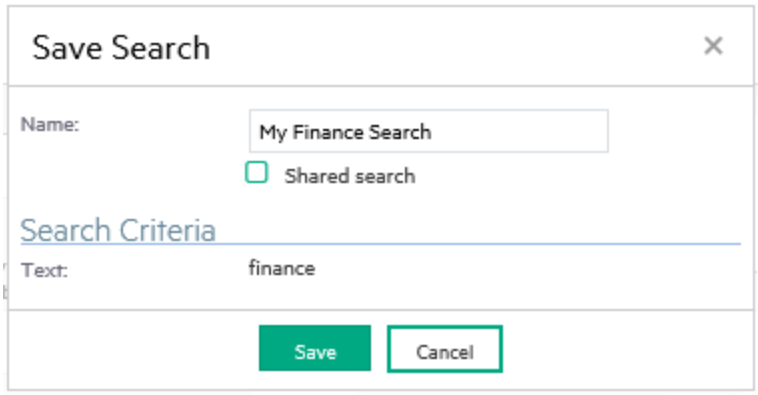
3. Click on the artifact you are interested in to open the Artifact details page.

To perform an advanced search:

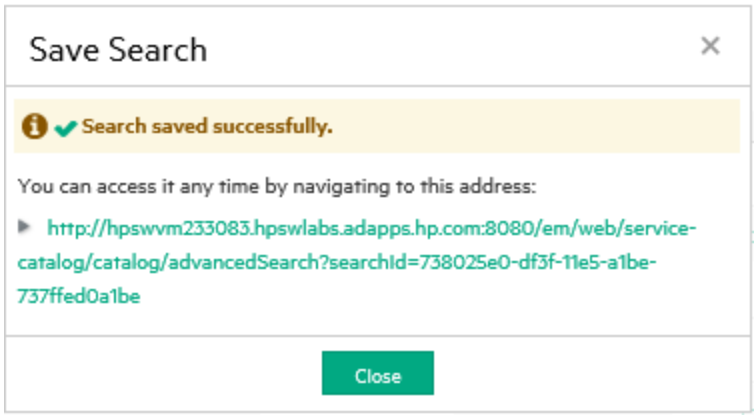
1. Enter the text to search for in the Search box and press enter. The Search page opens showing the text you searched for. In this case, the search word "finance" is shown.



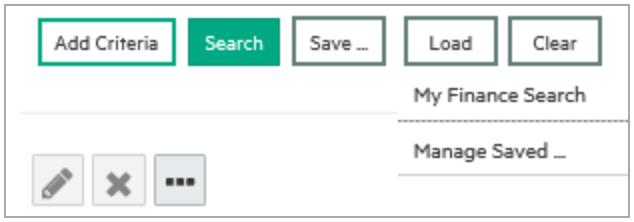
2. To refine your query, use the additional boxes to add additional search terms, key words, or to add criteria.
3. If you want to save the Search for future use, click **Save**. The Save Search box opens.



4. Type the name of your search, and then click **Save**. You can access your search at any time by navigating to the URL address provided. You can also share the search URL with others.



Once you have saved a search, it is displayed each time you click **Load** in the Search page.

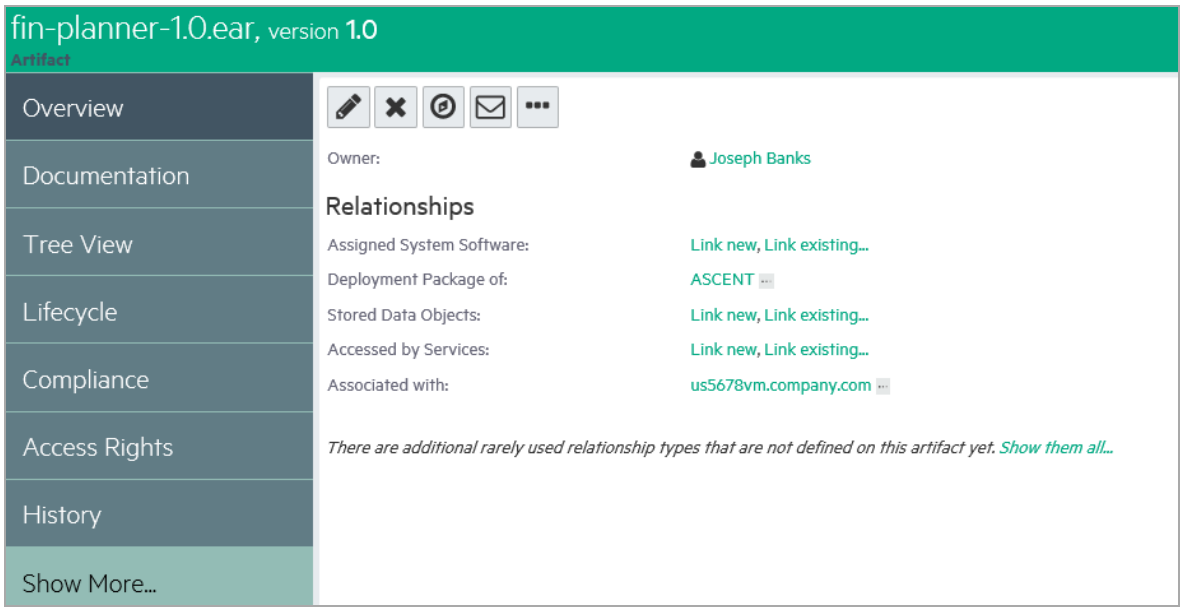


Artifact View Page

An Artifact View page in the Catalog tab presents comprehensive details about each object in the Catalog. Also it provides access to functionality required to perform most of the actions related to individual artifacts.

Each artifact contains a large amount of detail, hence an Artifact View page is organized into a set of tabs enabling you to focus on particular aspects of the artifact.

Access Artifact View page by clicking the name of an artifact wherever it appears in the Catalog tab.



The page header displays the artifact name, artifact type, and artifact ratings. For details about ratings, see "How to Use Ratings" on page 126.

The Artifact page contains all available tabs. When you click **More** further tabs are displayed.

> **Note:** The available tabs and functionality vary according to your role, the artifact type, and your permissions.

Artifact View Page Tabs

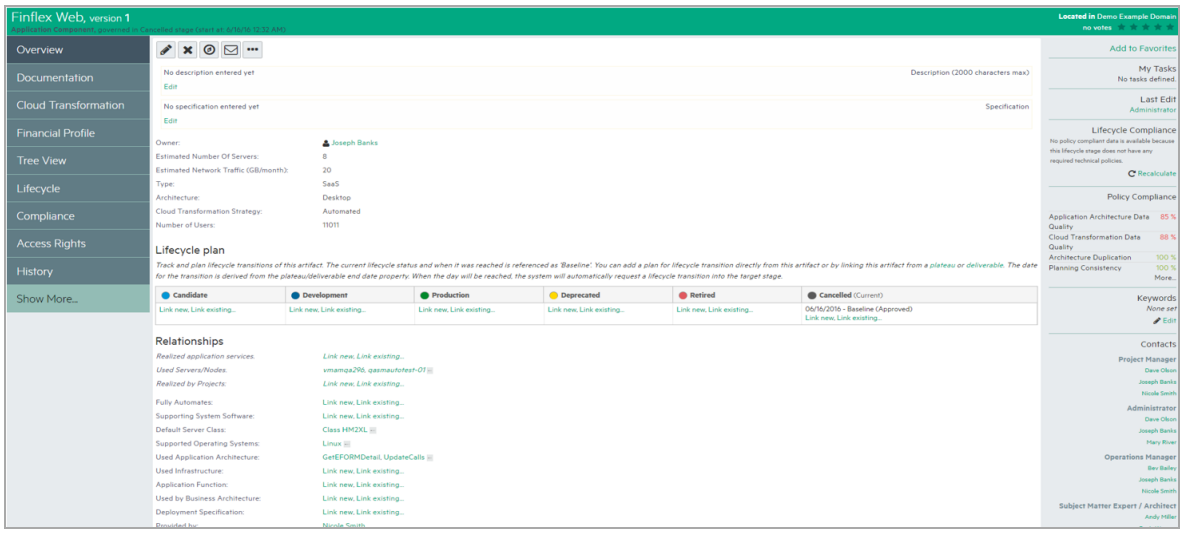
Tabs	Tab Content
"Overview Tab" on the next page	The most important information about the artifact, such as its major properties, the most important relationships, overviews of events, tasks, last edits, overview of policy compliance and keywords.
"Documentation Tab" on page 24	Manage the documents associated with the artifact.
"Cloud Transformation Tab" on page 26	Provides the ability to start, manage and review surveys, which helps assess and analyze current application components. Enables publish of service designs, cost estimation deployment and cloud assessment. Assessment can be done from financial, business and technical perspectives.
"Financial Profile Tab" on page 28	View and manage the financial properties of a Project or Application Component artifact. This tab is only available on the detail page of the project or application component artifact.
"Tree View Tab" on page 29	Shows an artifact structure browser. It either displays composite structure or impact report. In addition to artifact basic information (such as name, owner and type) the browser captures lifecycle

Artifact View Page Tabs, continued

Tabs	Tab Content
	information such as the current stage.
"Lifecycle Tab" on page 30	Information related to the artifact lifecycle, including as a graphical view of the lifecycle process showing stage details.
"Compliance Tab" on page 31	A detailed breakdown of the current policy compliance status of the artifact.
"Access Rights Tab" on page 32	View and manage the access rights for the artifact.
"History Tab" on page 33	Lists artifact revisions enables users to compare selected two revisions and see the differences between them.
"Events Tab" on page 33	Contains all events related to the artifact.
"Contacts Tab" on page 34	View and manage the contacts for the artifact.
"Relationships Tab" on page 35	View all the incoming and outgoing relationships for the artifact.

Overview Tab

The Overview tab is the default view of an artifact and contains the most important information about the artifact and access to the most common artifact operations.



Overview Tab Content

Content	Description
Description	The description of the artifact with 2000 characters max.

Overview Tab Content, continued

Content	Description
Specification	The first sentence of artifact's specification. To view more detail, click at More link to open the Specification tab.
Properties	The first section of the page displays the most important properties of the artifact including options to compare versions, and set the provider.
Relationships	The most important relationships display in the Overview tab and in case of a service, the implementations. Click **Show them all** to show the full relationships section.
Latest Events	Displays the latest actions affecting the artifact. Click **More...** to open the Events tab or the Tool icon to customize the Events component content.For details, see "Events Tab" on page 33 and "How to Use Events" on page 123.
Architecture Changes (Plateau & Deliverable only)	Manages changes for plateau or deliverable. For details, see "Setting Target Architecture" on page 75
Context Actions	Displays a set of context actions for the artifact relevant to the artifact type, its current status, and your role. The available actions include the following: • **Edit** - Open the Edit artifact page. • **Attach Document** - Attach a local or remote document to the artifact. • **Navigator** - Switch to the graphical navigator view for the artifact. • **Delete** - Delete the artifact and its sub-artifacts • **Export** - Create a ZIP archive for the artifact and its sub-artifacts. • **New Version** - Create a new version of the artifact and its sub-artifacts. • **Atom Feed** - Publish a feed for artifact changes or artifact comments. For details, see "How to Use Feeds" on page 127. • **Send Notification** - Send an email notification to artifact stakeholders. For details, see "How to Use Notifications" on page 121. • **Change Domain** - Move the artifact to another domain. • **Artifact Comments Feed** - Subscribing to the feed allows you to view the latest updated comments on the artifacts. • **XML View** - Shows the code view of the artifact.
Last Edit	Displays the user and time for the last change to the artifact.
Policy Compliance	Displays the current compliance status with an option to recalculate it.
My Tasks	Displays any actions you may be required to perform related to the artifact. For

Overview Tab Content, continued

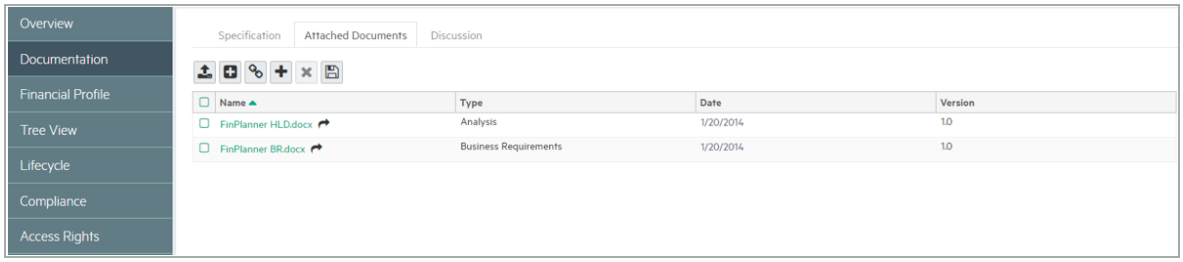
Content	Description
	details, see "How to Use Tasks" on page 125.
Add to Favorites	Click this button to add the artifact to Favorites. Once the artifact is added, the button changes to Favorite button instead. Click this button again to remove it from Favorites.
Keywords	Displays any custom tags applied to the artifact with the option to edit them.
Contacts	Displays the contacts for the artifact with the option to edit them.

Documentation Tab

The Documentation tab provides a place to view and manage the documents associated with the artifact. There are 3 sub-tabs as follows:

Attached Documents

Attached Documents are Documentation artifacts associated with this artifact. For example, a project planning documents of a project.

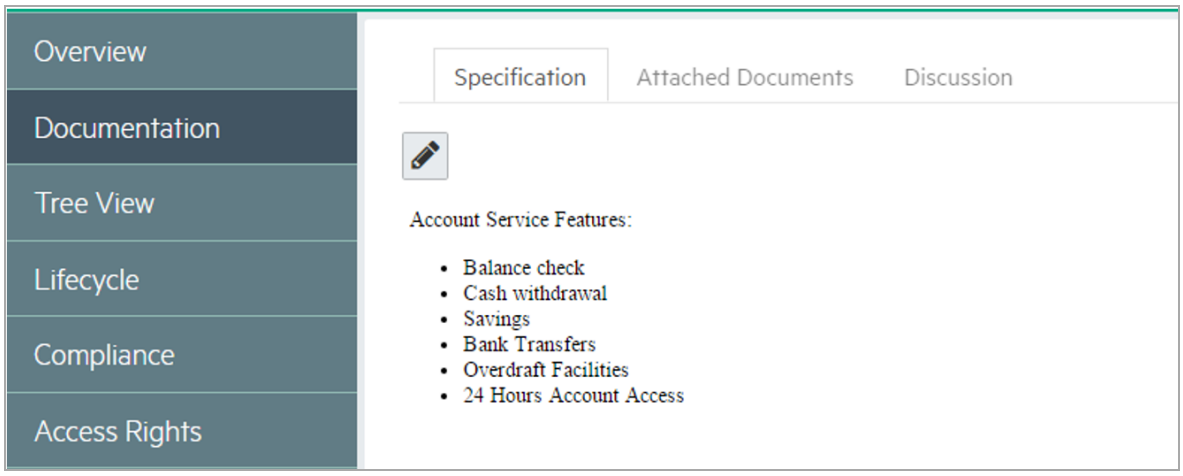


Attached Documents Sub-tab Content

Content	Description
Documentation Table	Displays list of documents associated with the artifact with functionality to manage them and add more.

Specification

The Specification sub-tab provides a place to view and manage a detailed description of the artifact including rich text and HTML support.

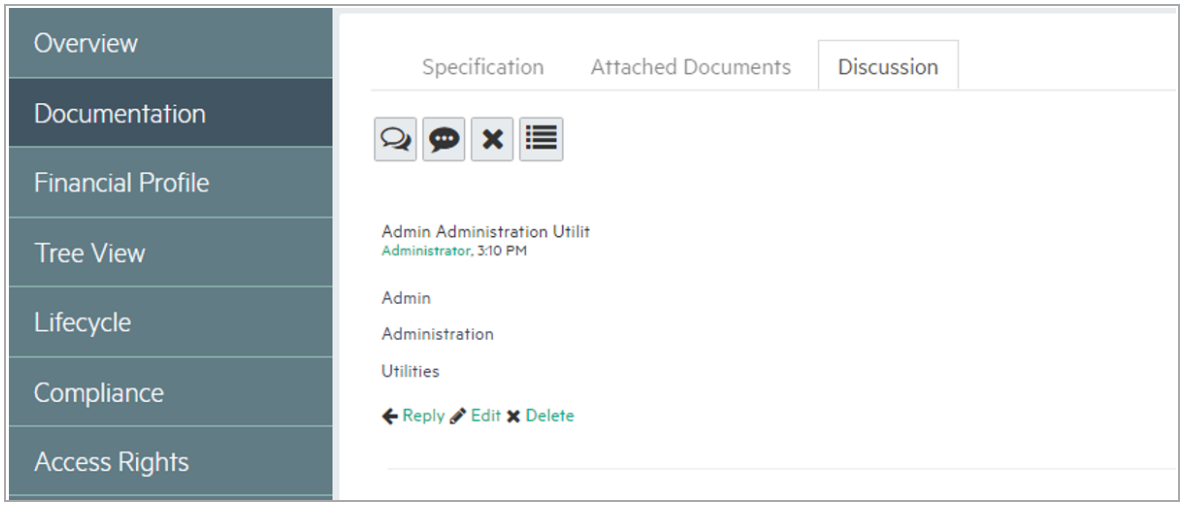


Specification Sub-tab Content

Content	Description
Detailed Description	Displays full description for the artifact.
Edit Specification	Changes the Detailed Description area to an input form with rich text and HTML support.

Discussion

This sub-tab provides a forum for users to comment and discuss the artifact.



Discussion Sub-tab Content

Content	Description
Discussion Threads	The main part of the page displays discussion threads and comments about the artifact with options to **Reply**, **Edit**, and **Delete** comments.
Context Actions	Displays a set of discussion context actions for the artifact. The available

Discussion Sub-tab Content, continued

Content	Description
	actions include the following: • **Show List / Threads** - Organize the discussion by comments or by threads. • **Sort** - In the list view, organize the comments by newest or oldest first. • **Add Comment** - Start a new discussion about the artifact. • **Delete All Comments** - Remove all comments and threads about the artifact (administrator only). • **Artifact Comments Feed** - Obtain a feed URL that you can use in a feed reader or in the Reports Tab. For details, see "How to Use Feeds" on page 127.

For details about using the Discussion features, see "How to Use Comments" on page 120.

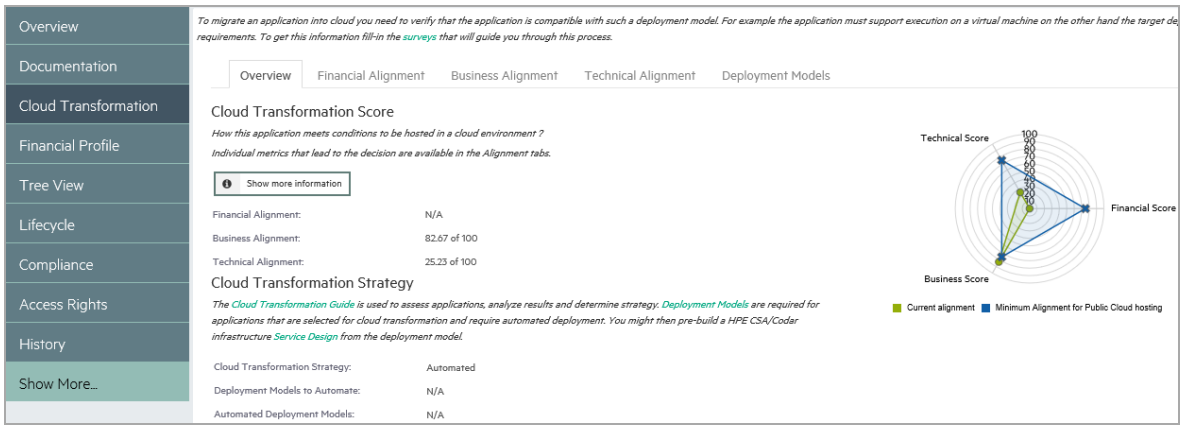
Cloud Transformation Tab

The Cloud Transformation tab provides the ability to start the survey for the application component, review available answers and assessment results. From the UI it allows you to publish the application to CSA as a deployable component using predefined templates (service designs or reference models).

This tab is available only for Application Component and its sub-artifacts. Description of different tabs within Cloud Transformation tab are as follows:

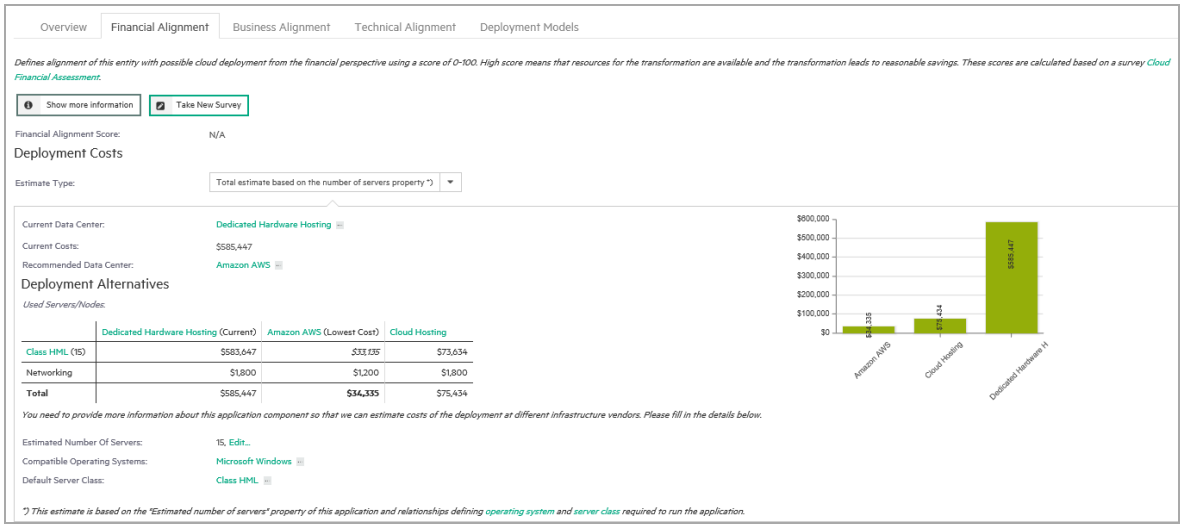
Overview sub-tab:

Provides an overview of the cloud transformation state including top-level scores, transformation strategy, deployment models and few other aspects.



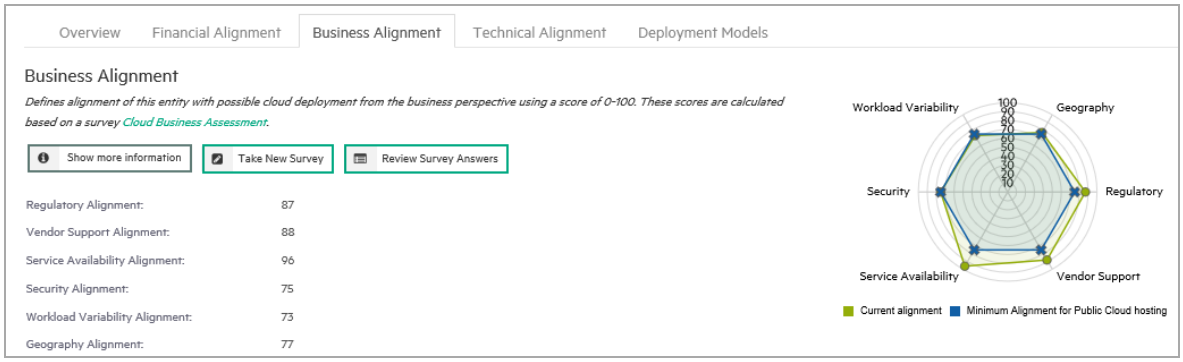
Financial Alignment sub-tab:

Assesses the viability of transformation from a financial perspective (rough and model-based estimated cost for deployment onto different data centers).



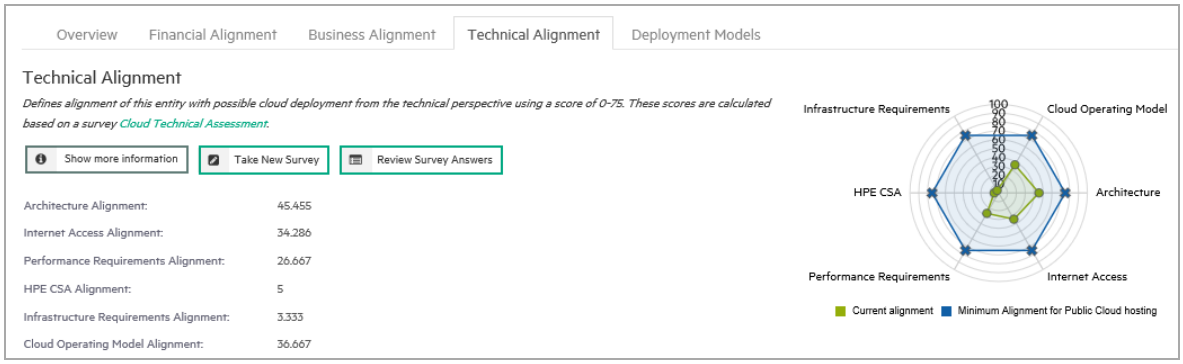
Business Alignment sub-tab:

Assesses the viability of transformation from a business perspective.



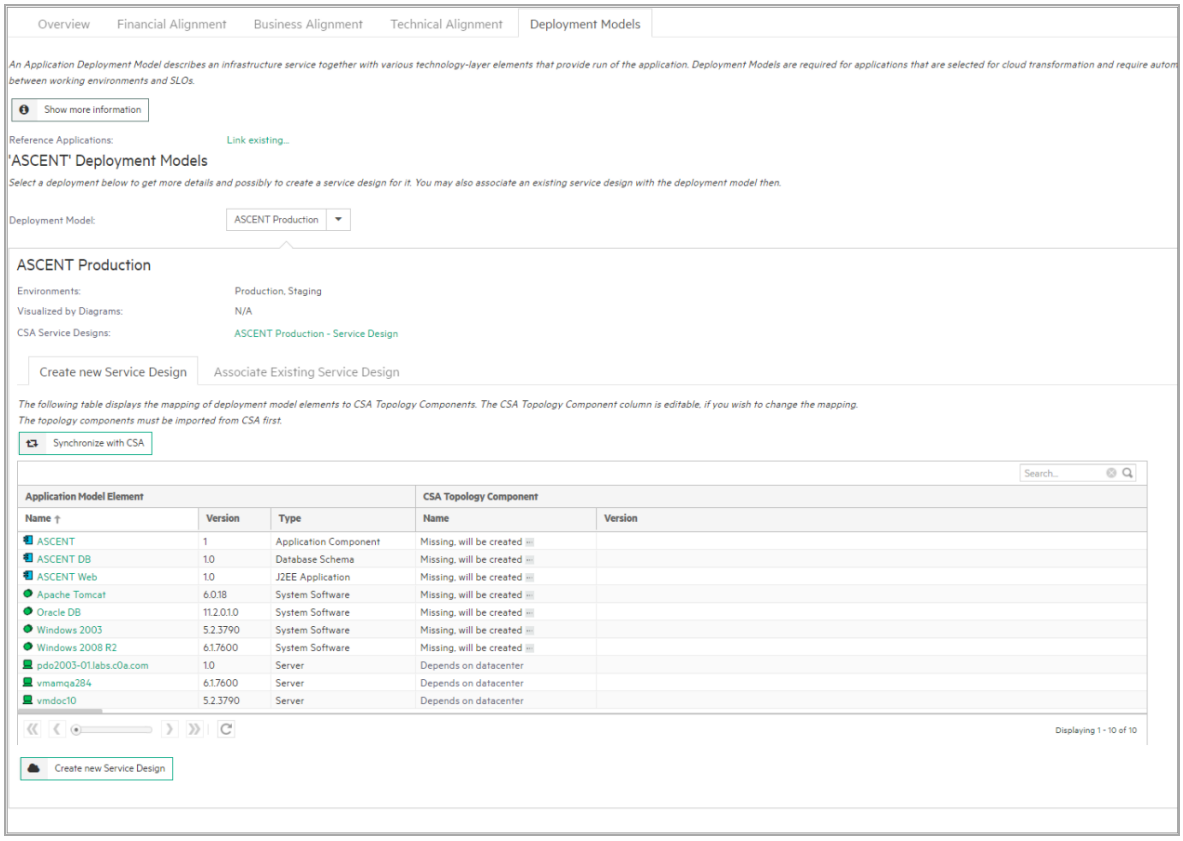
Technical Alignment sub-tab:

Assesses the viability of transformation from a technical perspective.



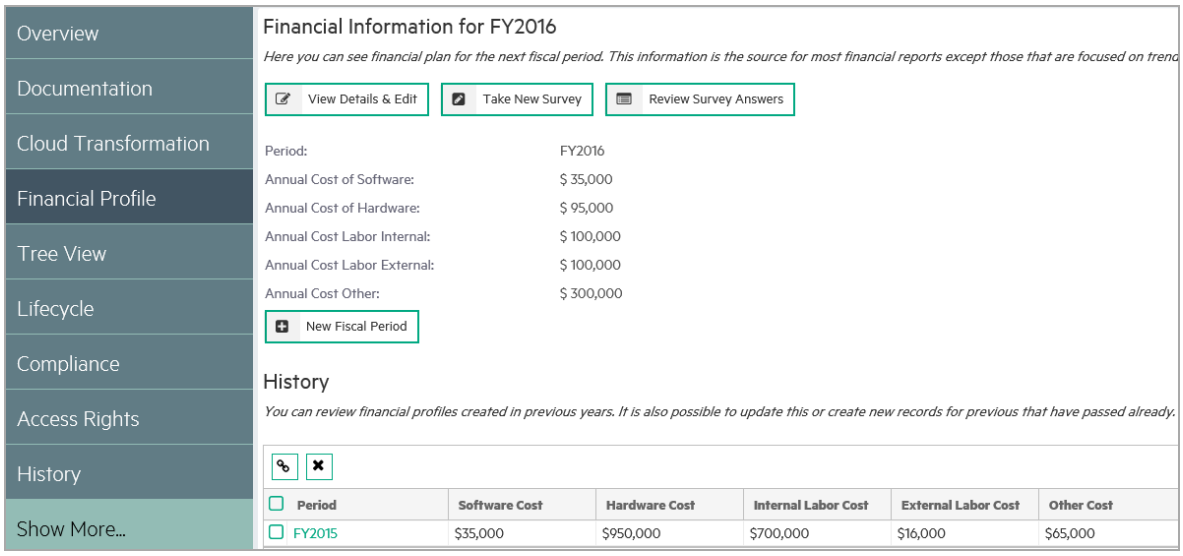
Deployment Models sub-tab

Deployment Models UI is entirely to manage the deployment models associated with this application and to build CSA service designs on top of these models.



Financial Profile Tab

The Financial Profile tab provides a place to view and manage the financial information associated with an Application Component or Project.



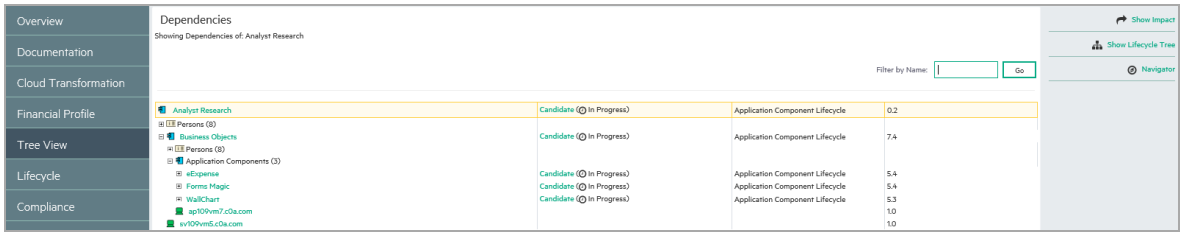
Artifact Financial Profile Tab Content

Content	Description
Financial Information	Shows the financial information associated with the current fiscal period.
New Fiscal Period	Click this button to create a new financial profile and set it as the current fiscal period. Once the new profile is created,the current profile automatically moves to the History table below. The financial profile created by clicking this button is named automatically after the current application component/project name and the current fiscal period. To disable this feature change the *enableAutoNamingFinancialProfile* to false (for details see, "System Configuration Properties" in the *Administration Guide*). You can create only one record for each fiscal period
View Details & Edit	Click this button to modify the financial profile of the current fiscal period.
Take New Survey	Click this button to conduct a financial cloud assessment survey for the application component.
Review Survey Answers	Click this button to go over or reassess the survey answers.
History	View a summary of all financial profiles created in the past.

Tree View Tab

The Tree View tab allows you to explore the impact and dependency effects of the current artifact.

The default Dependency view shows the tree of artifacts that the current artifact depends on.

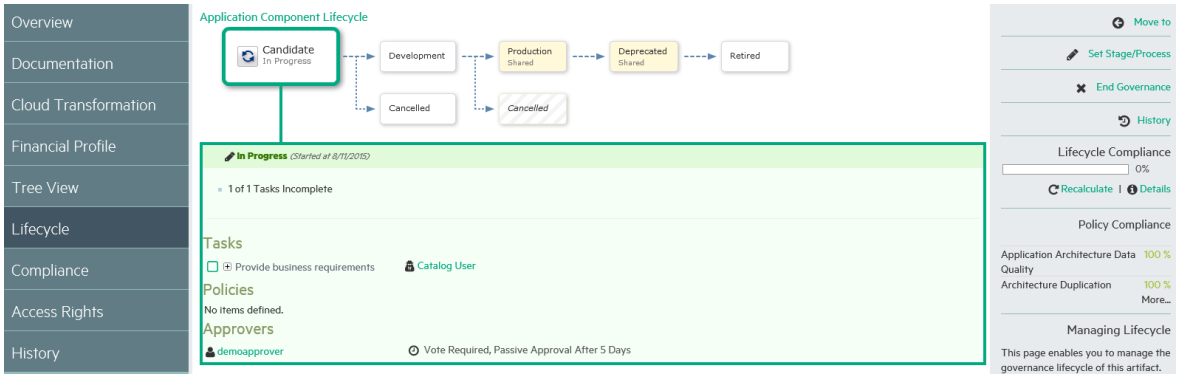


Tree View Tab Content

Content	Description
Filter	Use the filter to highlight specific artifacts from the tree.
Artifact Tree	The tree displays impacting artifacts in Dependency view or impacted artifacts in the Impact view, organized by artifact type. Expand groups of artifact types and click artifact names to view their details.
Show Impact	Click to see the impact the current artifact has on the tree of artifacts.
Show Lifecycle Tree	Click to switch over and view the tree of artifacts that follow the current artifact in the lifecycle process.
Navigator	Open the graphical navigator view for the artifact.

Lifecycle Tab

The Lifecycle tab provides a visualization of the life cycle process to which the artifact belongs, and the functionality required to participate in its life cycle.



Artifact Lifecycle Tab Content

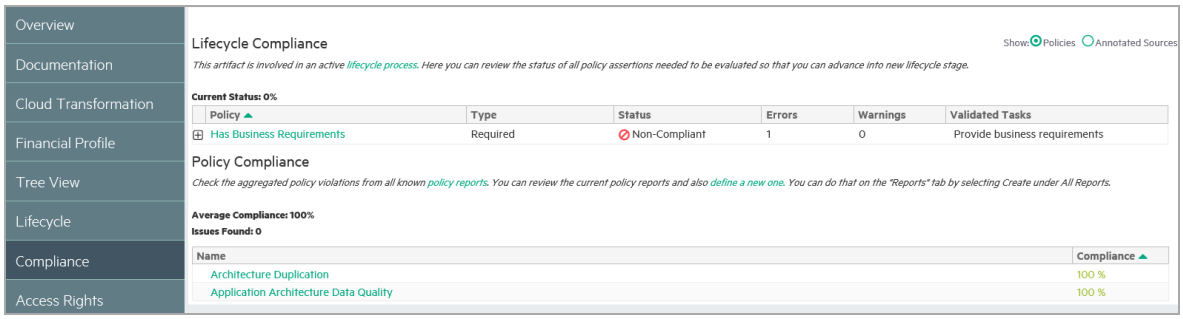
Content	Description
Lifecycle Process	The top part of the view displays the lifecycle stages for the lifecycle process

Artifact Lifecycle Tab Content, continued

Content	Description
	the artifact belongs to. The larger stage box is the current stage in progress and the box highlighted in green matches the stage detail information below. Click a stage to view its details and use the arrow controls to view stages that are off the page.
Stage Details	The large green box displays the stage details for the stage selected above. For the current stage, the details start with a summary of the current lifecycle status. For all stages the details box displays the tasks, policies, and stage approvers. As a participant in the lifecycle you can use the stage details box to mark lifecycle tasks as complete, to validate policies associated with the stage, and to approve or reject approval requests.
Context Actions	Displays a set of context actions for the artifact relevant to its current lifecycle status and your role. The available actions include the following: • **Start Governance** - Put a non-governed artifact into an appropriate lifecycle process. • **End Governance** - Remove the artifact from a lifecycle process. • **Set Stage/Process** - Change the current stage and lifecycle process for the artifact (administrator only). • **Request Approval** - Request approval for the current lifecycle stage for the artifact. • **Cancel Approval** - Cancel an approval request. • **Notify Approvers** - Send a notification email to the stage approvers. • **History** - View the lifecycle history for the artifact.
Compliance	Displays the current compliance status with an option to recalculate it.

Compliance Tab

The Compliance tab provides a detailed view of the policies that apply the current lifecycle stage that the artifact belongs to with an option to view the XML representation of the resources that the policies validate.

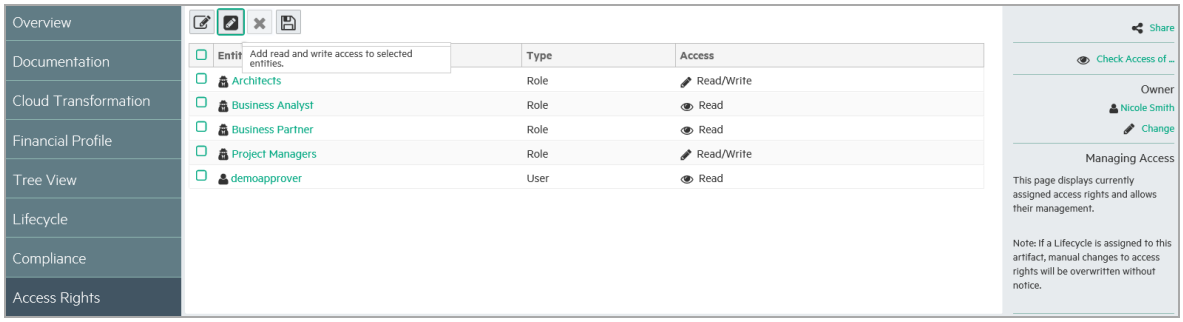


Compliance Tab Content

Content	Description
Show	Switch between the Policies view and the Annotated Sources view.
Policies	The table of currently applicable policies, their type, and current status.
Annotated Sources	Provides a detailed XML view of the relevant resources that the policies validate. This view is most useful to assertion and WSDL developers resolving validation errors.

Access Rights Tab

The Access Rights tab provides a detailed view of the users, groups, and roles with permissions for the artifact and access management actions for users with appropriate permissions.



Access Rights Tab Content

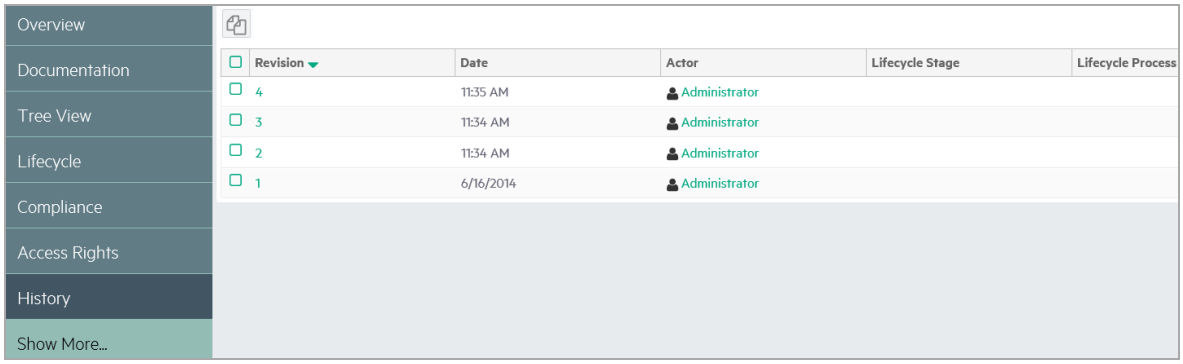
Content	Description
Access Rights Table	Displays the users, groups, and roles with permissions for the artifact and their rights. Users with appropriate permissions can manage the access rights using the table actions.
Context Actions	Displays a set of discussion context actions for the artifact depending on your role and artifact permissions. The available actions include the following:

Access Rights Tab Content, continued

Content	Description
	• **Share** - Make the artifact visible to all users by giving them all read permission. For details, see "How to Share Artifacts" on page 130. • **Check Access Of** - Verify the access rights for a particular user.
Owner	Displays the current user, group, or role ownership for the artifact with the option to change it for users with appropriate permissions.

History Tab

The History tab provides a detailed view of the revisions of the artifact with functionality to compare revisions.

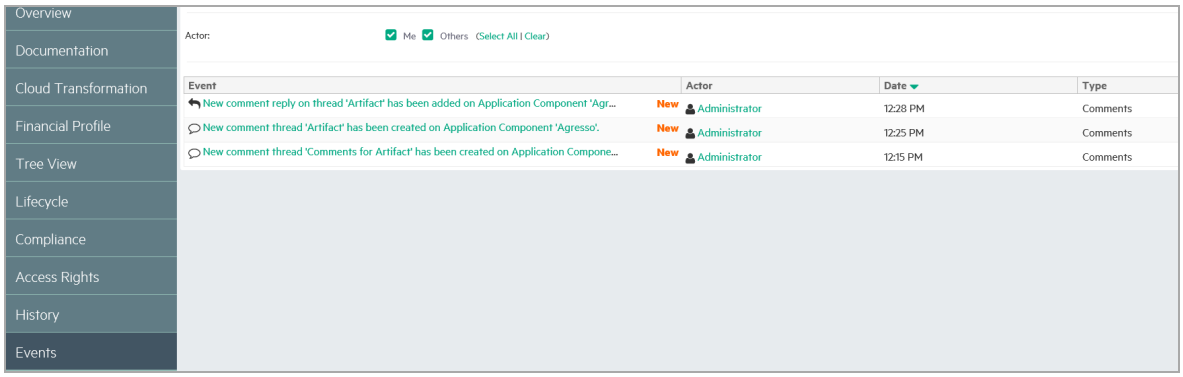


History Tab Content

Content	Description
Revisions Table	Displays a list of the revisions with details about the time of the change, who performed it, and lifecycle details. Click a revision number to view its details including options to revert to that revision or use the **Compare Revisions** action to examine the changes in detail.

Events Tab

The Events tab provides a detailed view of the actions performed on the artifact.

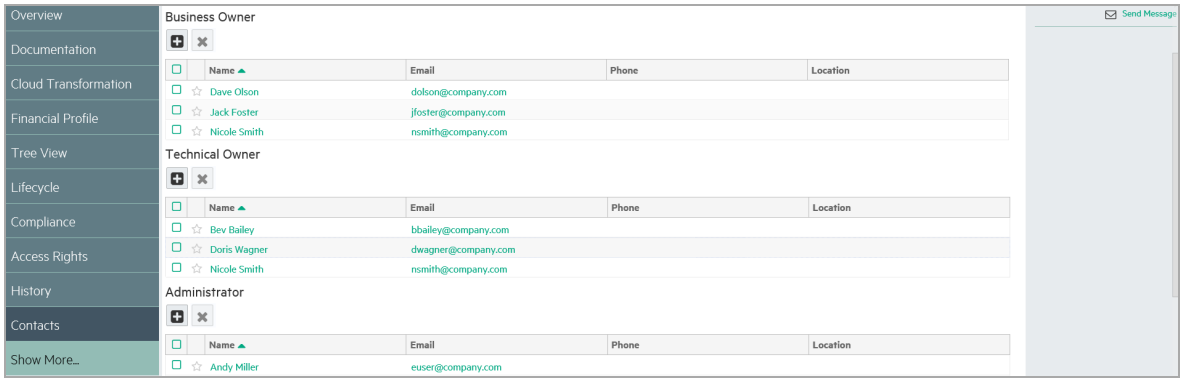


Events Tab Content

Content	Description
Events Table	Displays a list of the actions performed on the artifact with details about the time of the change, who performed it, and the type of action. Click an event to view the relevant artifact details or use the **Actor** filter to reduce the set of events to those you performed or those performed by other users.

Contacts Tab

The Contacts tab provides a detailed view and management options for contacts for the artifact organized by their contact type.

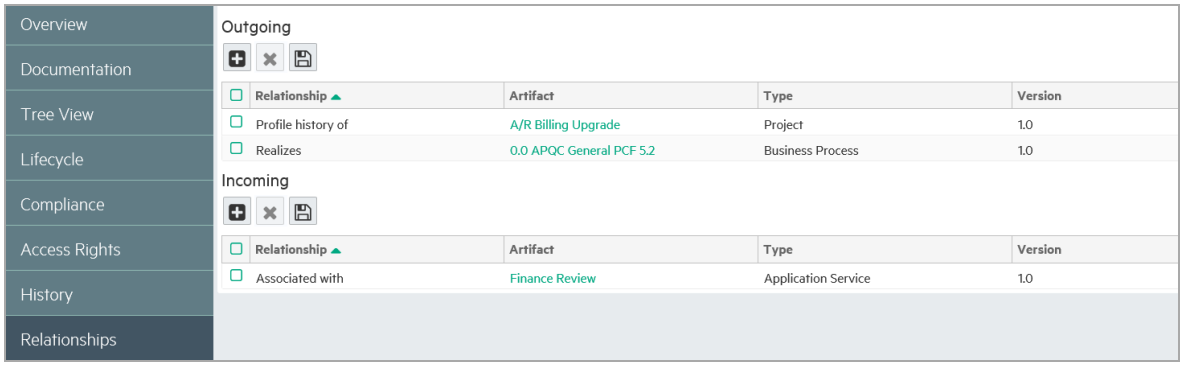


Contacts Tab Content

Content	Description
Contacts	The set of contacts for the artifact organized by contact role. Users with appropriate permissions can manage the contacts. .
Send Message	Send a notification email to selected users. For details, see "How to Use Notifications" on page 121.

Relationships Tab

The Relationships tab provides a detailed view of the related artifacts organized by outgoing and incoming relationships.



Relationships Tab Content

Content	Description
Relationship Tables	Displays the set of outgoing and incoming relationships with details of the related artifact, its type and version, and the relationship type.

Relationship Editor

The HPE EM relationship editor enables you to view and modify artifact relationships directly. Relationships can be those predefined within the ArchiMate model or you can add new relationships. Both ArchiMate and non-ArchiMate relationships are shown on the Overview tab view. You can add new or manage relationships by using the Relationship tab view.

This section covers the following topics:

- "Understanding Relationship Types" on the next page
- "Using Relationships Editor" on page 38
- "Adding an Artifact Relationship" on page 40
- "Removing an Artifact Relationship" on page 42
- "Adding and Removing a Shortcut" on page 44
- "Non-Compliant Relationships" on page 45

Understanding Relationship Types

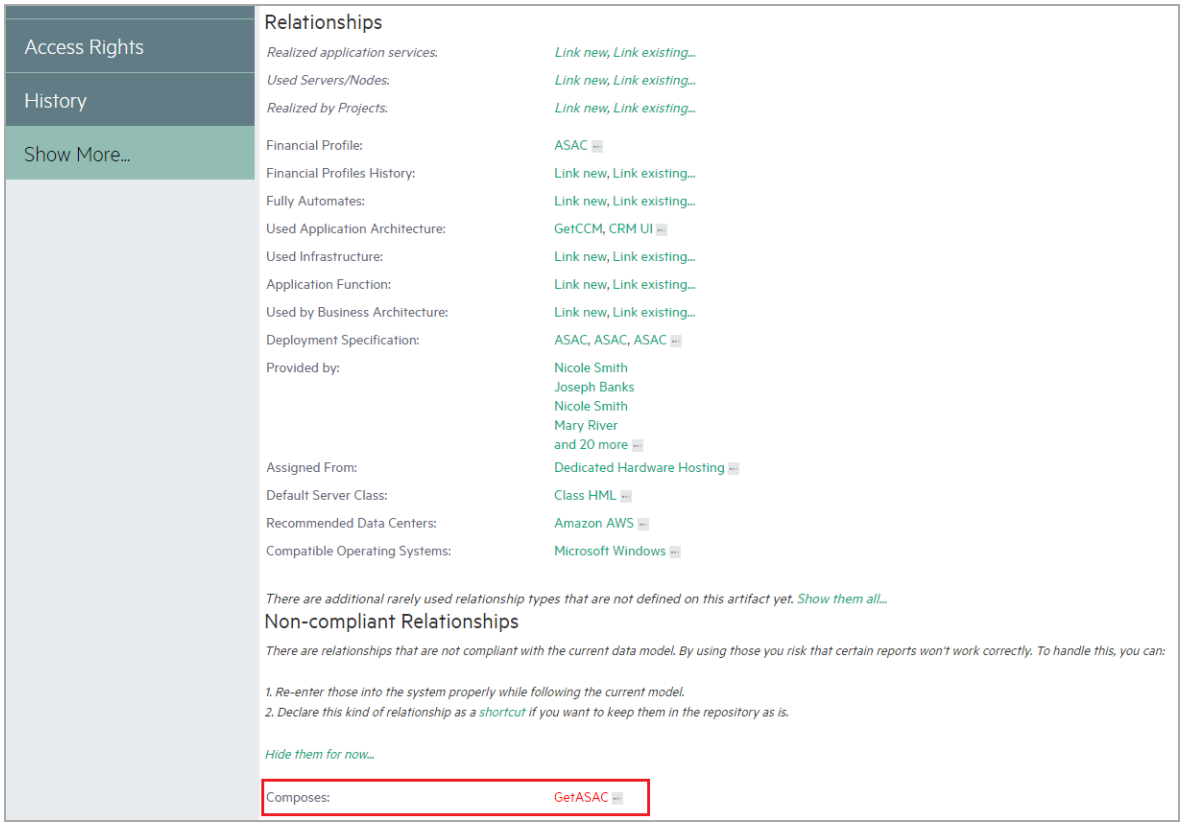
Relationships are created according to the HPE EM SDM which is based on Archimate® specification. HPE EM supports the following relationship types:

- *Direct relationship*: relationships between the artifacts that are defined as relationship properties in SDM.
- *Shortcut relationship*: relationships that are derived from a chain of direct relationships. For more details, see "Shortcut Relationship" in *Concepts Guide*.

Direct relationships are further divided into 2 sub types:

- *Compliant relationship*: relationships defined in Archimate® specification.
- *Non-compliant relationship*: relationships not defined in Archimate® specification. These relationships are either HPE EM system relationships (for example: documentation) or user-defined relationships.

Compliant relationships are shown in normal color while non-compliant ones are highlighted in red.



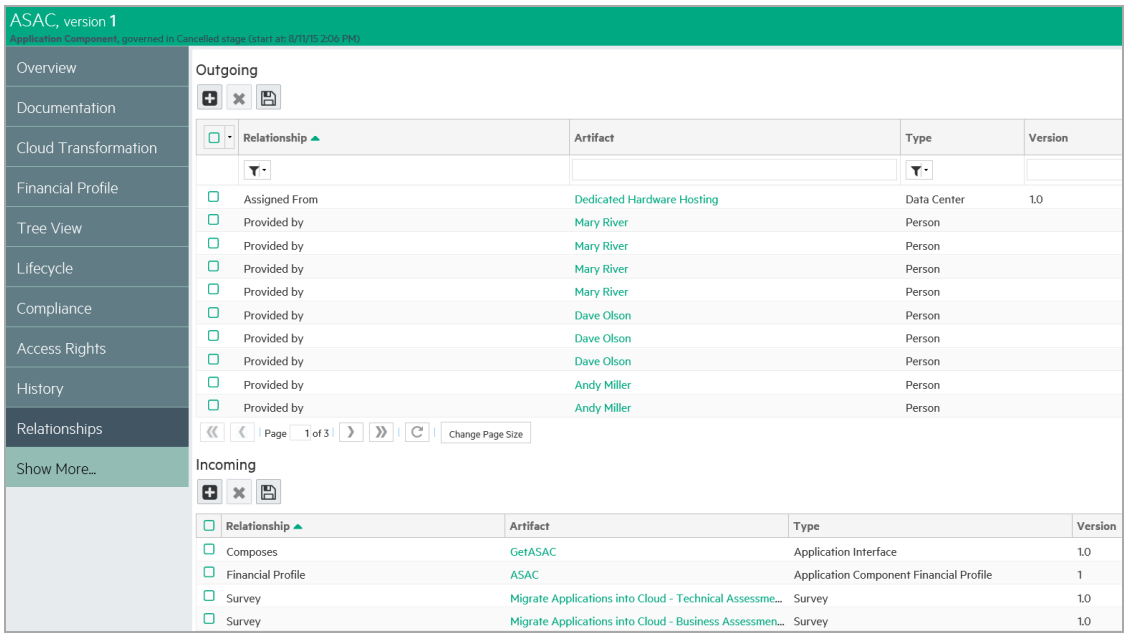
Each relationship that you create for an artifact has another paired artifact. Each member of the paired relation is assigned a unique name, representing the outgoing and incoming relation between the artifacts.

To explain better, an outgoing relation between artifacts A and B automatically implies the corresponding incoming relation between B and A. Outgoing relations are properties of source artifact (A), whereas incoming relations are projections of the outgoing relationships with target artifact (B).

You might want to assess the outgoing and incoming relationships listed for a selected artifact, so as to browse through the data and learn the relationship structure of the artifact.

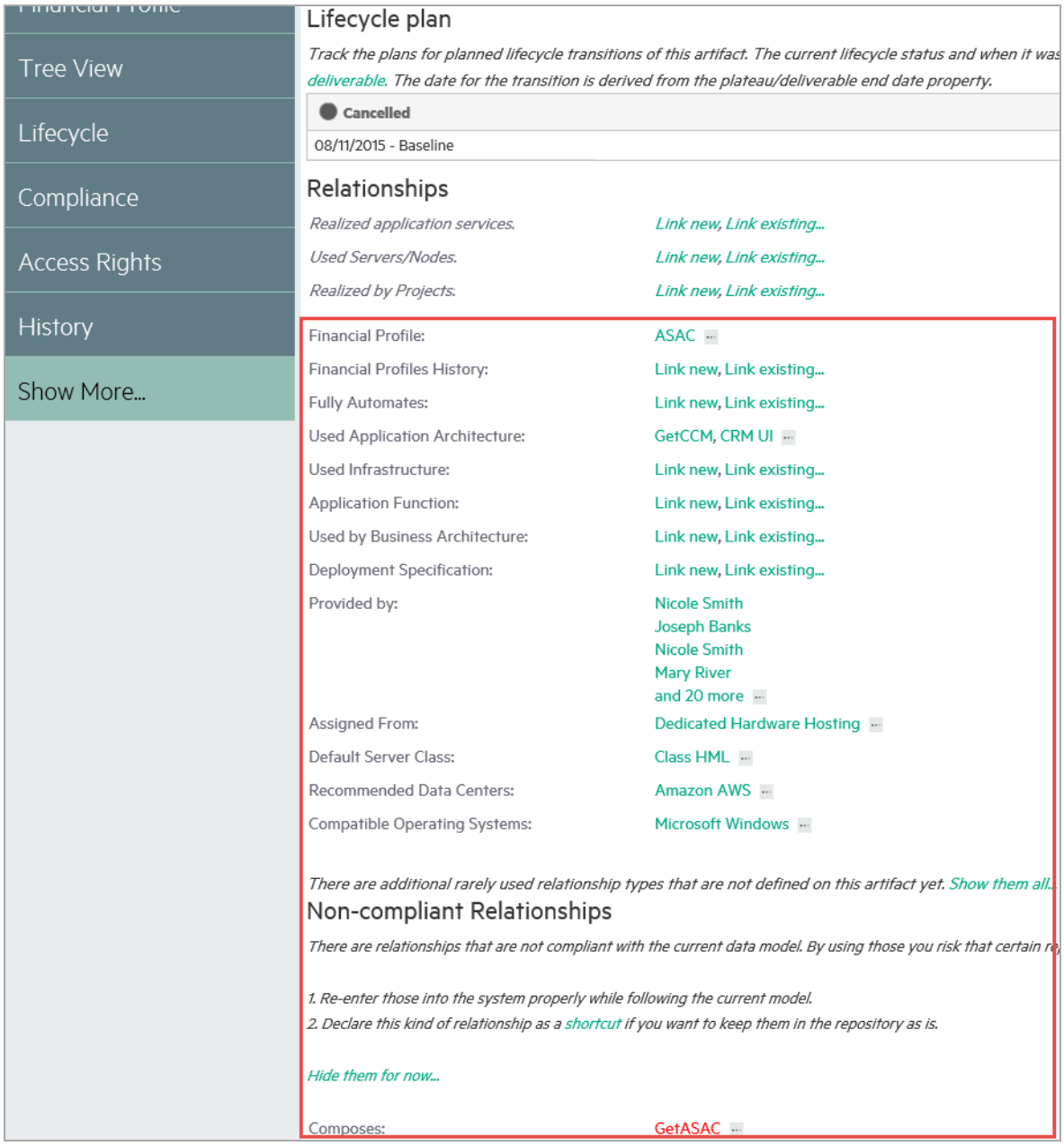
To view the outgoing and incoming relationships of a selected artifact:

1. Select the artifact in the Catalog Browser or in the Navigator, and then open the artifact.
2. Click the **Relationships** tab. The artifact's relationships are shown, grouped by direction.



Using Relationships Editor

The Overview tab shows all related artifacts of the current artifact under Relationships section. By default, only commonly used relationships are shown. However, you can click *Show them all...* to show all relationships that are Archimate® compliant for the current artifact.



If you have many related artifacts of a single relationship type, then by default only 4 most recently modified artifacts are visible. To view all related artifacts click the **More...** button that opens related artifacts in table view.

The quantity of related artifacts shown by default (4) can be customized by editing the value of system property `platform.ui.relationship.artifact.max`. For details, see "How to Manage System Properties" in *Administration Guide*.

Adding an Artifact Relationship

To add relationships to existing artifacts or create new artifacts to relate to:

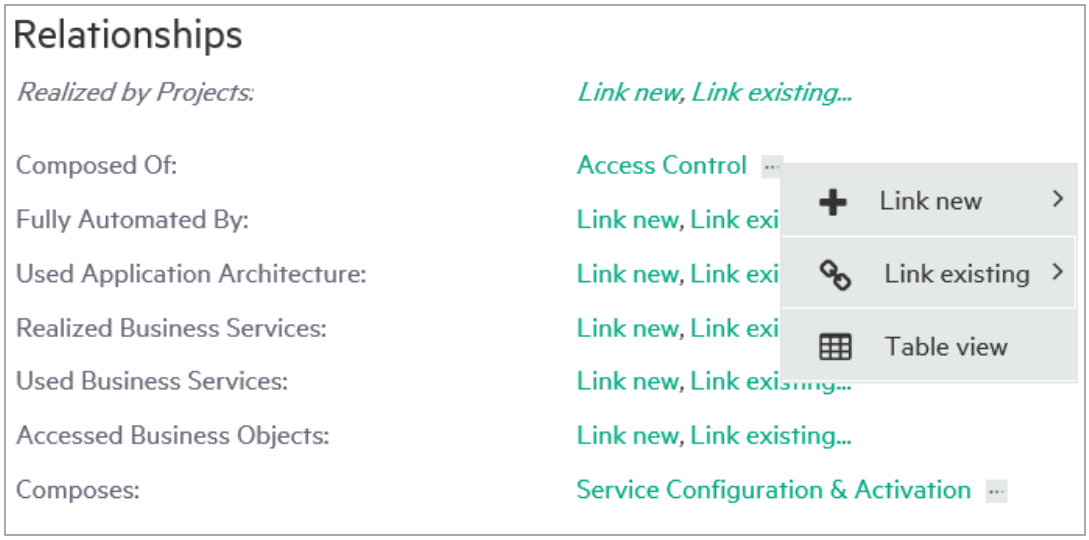
1. Select the artifact in the Catalog Browser or in the Navigator, and then open the artifact.
2. There are Link new and Link existing buttons available next to the relationship type that you can use to create a new artifact or link to existing artifacts.

3. When you click the Link new button, the available artifact types will appear in a menu. Only an applicable artifact type is visible when you click the Link new or Link existing buttons. After

establishing a relationship to one or more artifact(s), the menu is replaced with a list of the existing relationships.

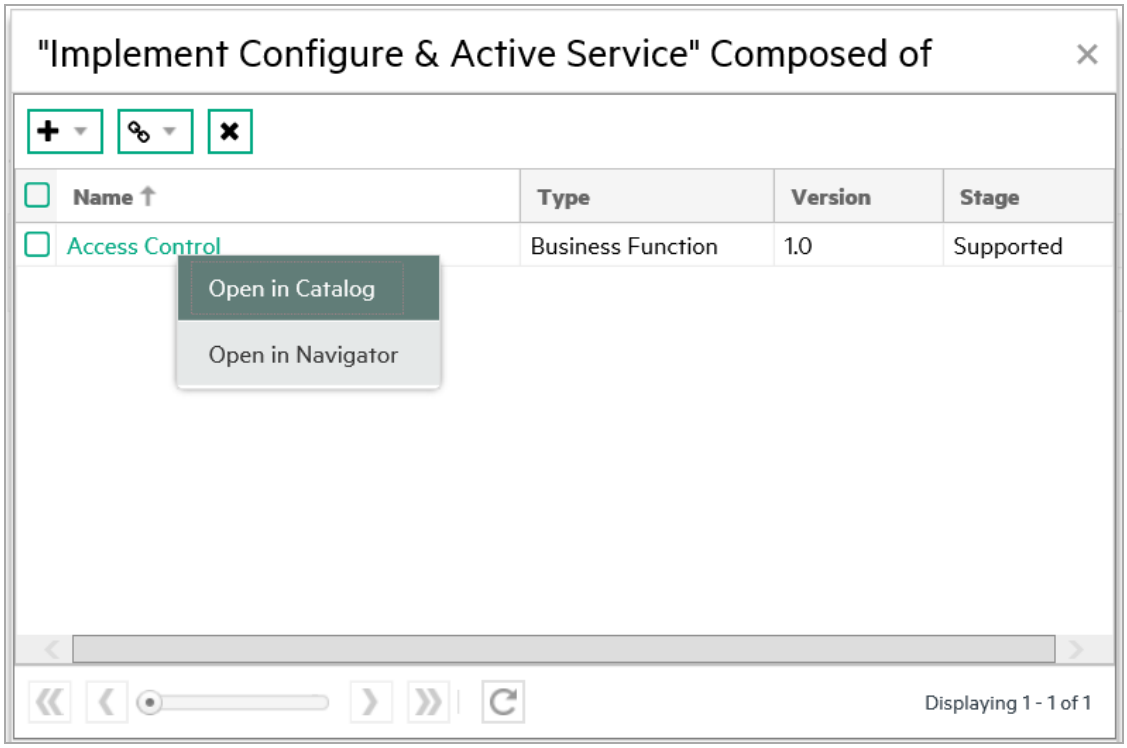
For example, when you click Link new in the Triggers relationship type, the menu displays the available artifact types.

4. For artifact types that already contain data, the Link new and Link existing buttons will be hidden from view. You can add more artifacts to this relationship type by clicking on the relationship type name. You will see a separate menu for managing the relationship, which includes the option to view the relationships in a table view:



5. If you choose to view in Table View, each row has a context menu to open an artifact in the

Catalog or Navigator:

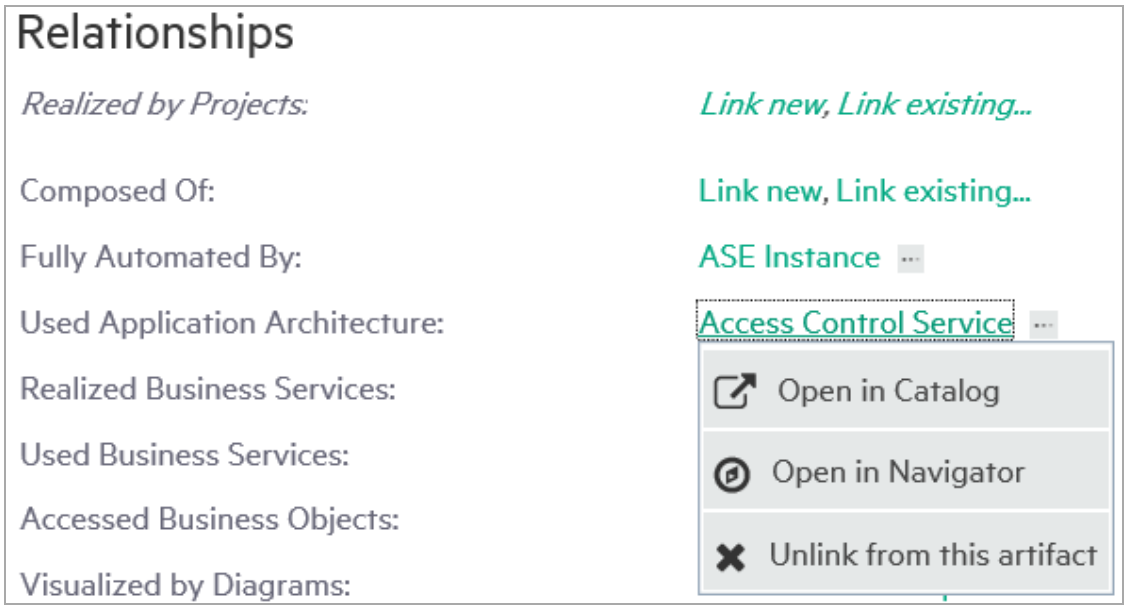


> **Note:** When you link more than 10 existing artifacts to a relationship, the operation is asynchronous, i.e., the relationship is not updated immediately after the page load, instead the progress is displayed. Once the asynchronous operation is complete, a summary information is displayed.
>
> Otherwise, the operation is synchronous, i.e., the relationship is updated immediately. Both synchronous and asynchronous operations are applicable for deleting artifacts from a relationship.

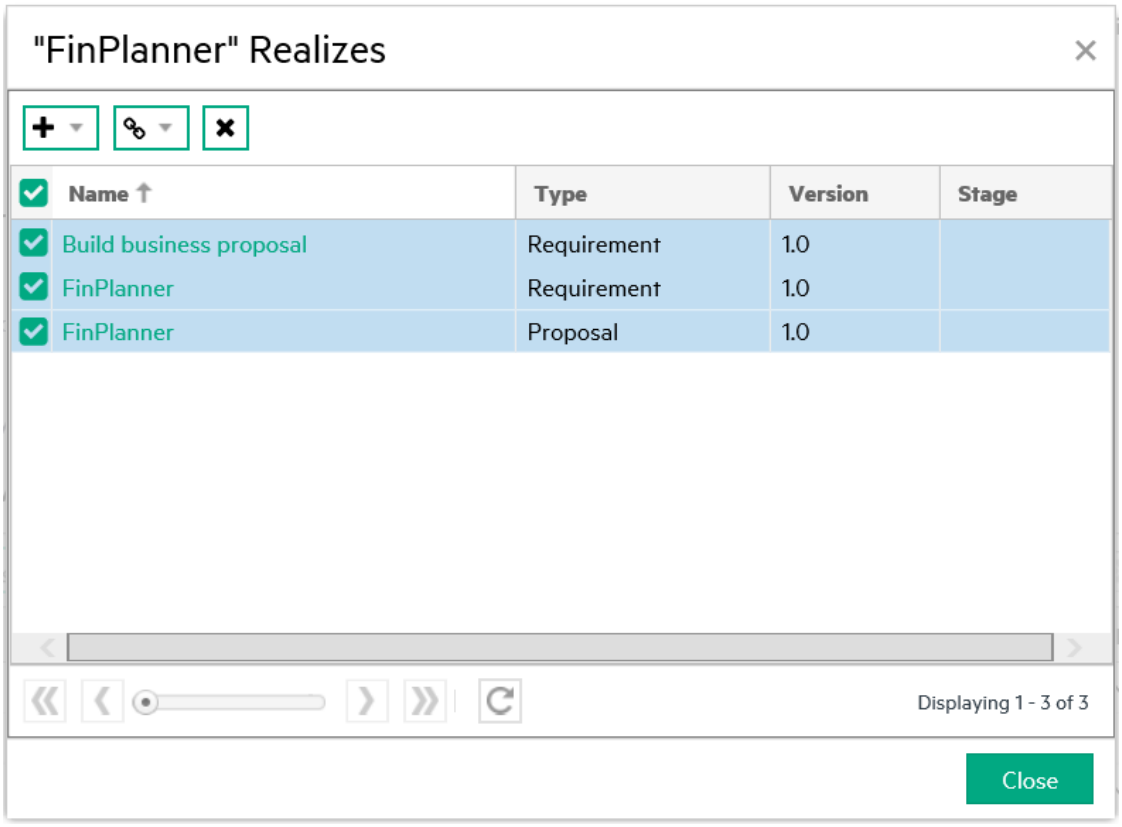
Removing an Artifact Relationship

To remove existing artifact relationships:

1. Select the artifact in the Catalog Browser or in the Navigator, and then open the artifact.
2. From the Overview tab, you are able to remove the link between the selected artifact and another artifact. For removing a specific artifact link from a current artifact, right-click on the artifact you want to remove, then remove it by selecting the ‘Unlink from this artifact’ option.



3. You can also remove a set of artifacts linked to a the selected artifact while in the Table view, simply by selecting each artifact you wish to remove from the list.

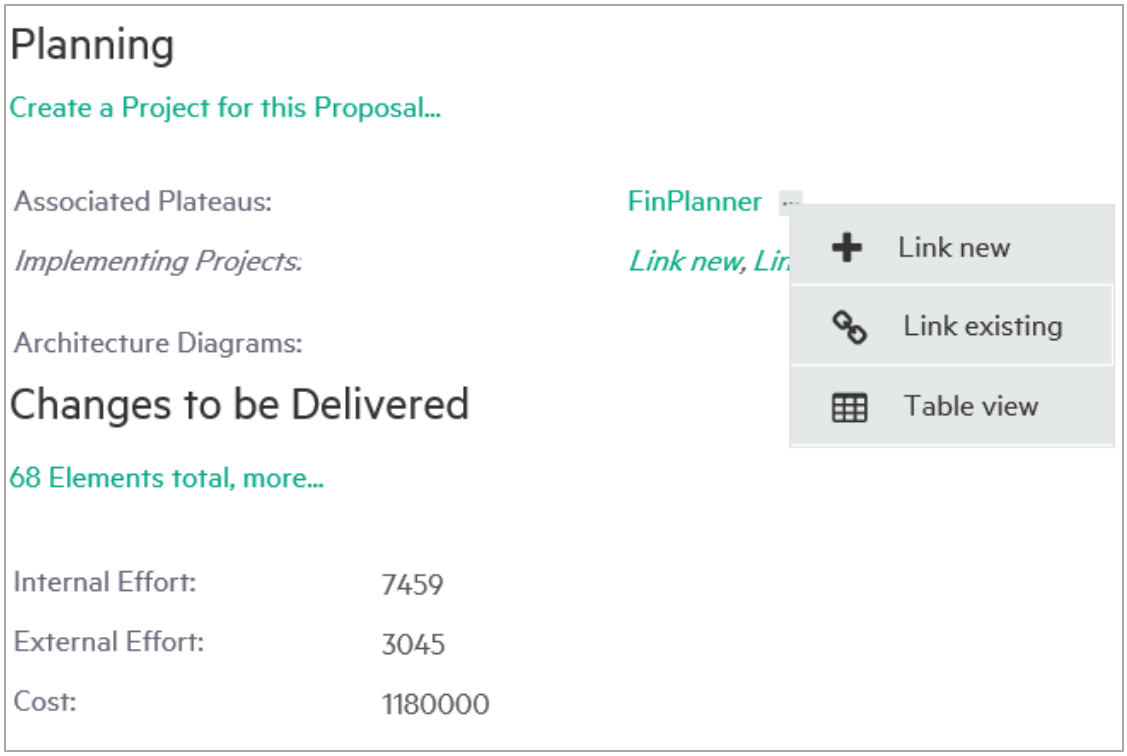


Adding and Removing a Shortcut

Shortcut can be created without using the Relationship Editor or Relationships tab of an artifact. Here is how:

> **Note:** Make sure that the `canBeEntered` attribute is set to *true* in the shortcut definition.

1. Open the Overview page of the source or target artifact in a shortcut.



2. There must be at least one shortcut created for this artifact. Click the ··· icon next to the shortcut.
3. Select the **Link new** to create a shortcut to a new artifact.
4. Select **Link existing** to create a shortcut to an existing artifact.

> **Note:** When opening the source artifact of a shortcut, Link new/Link existing creates a shortcut to the target artifact and vice versa.

Similar to removing an artifact relationship; to remove a shortcut:

- Right-click the target artifact and select *Unlink from this artifact*
- Alternatively, from relationship table view of shortcut relationship, select target artifact(s) and click ✖.

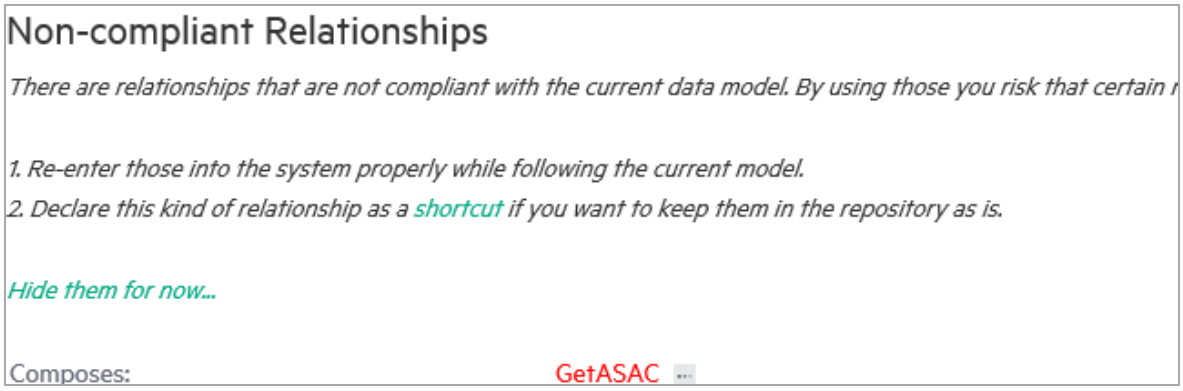
Note:

- Calculated shortcuts based on relationships with other artifacts cannot be removed.
- Shortcuts created by Shortcuts Consolidation Task cannot be removed. These shortcuts have at least one path which is resolved from shortcut definitions (declared in EM based on Archimate® specification).

Non-Compliant Relationships

HPE EM enables you to create non-compliant relationships (relationships between artifacts that are not as per Archimate® standards). For example: to have a Business Actor “use” an Application Component.

Non-compliant relationships can be created using Relationships tab only, and is displayed in red color, in Relationship Editor as follows:

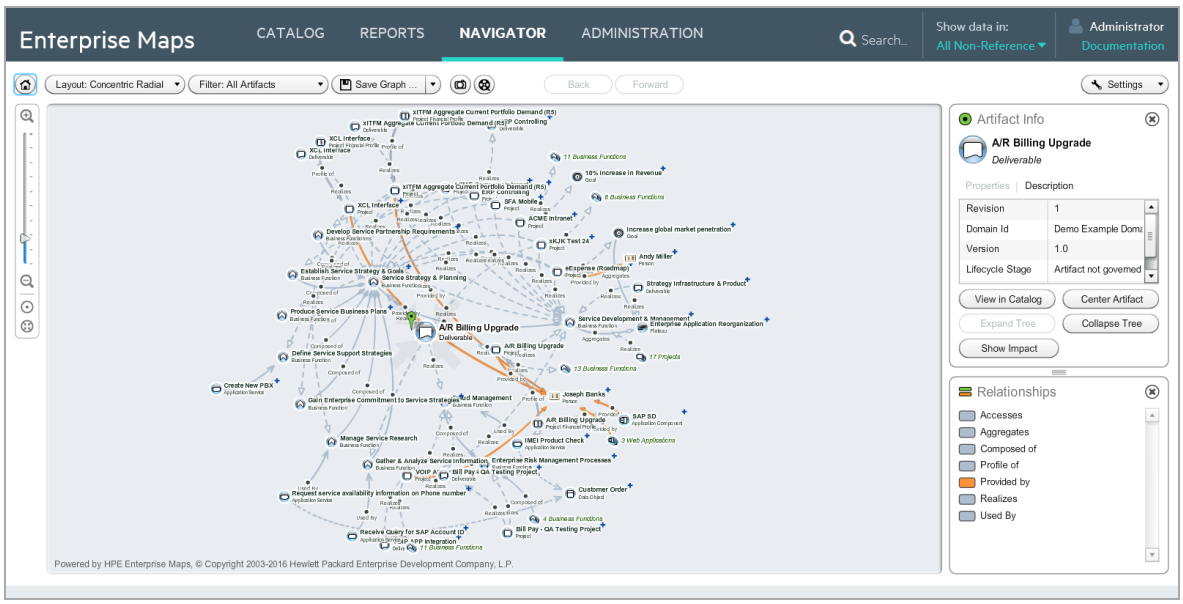


Note: HPE recommends using compliant relationships over non-compliant ones as they can be synchronized with Sparx EA without requiring modification.

Chapter 3: Navigator

The Navigator tab graphically represents the content of a catalog. The objective is to bring about and showcase the structure and dependencies of the Archimate® concepts in the Catalog, rather than simply focusing on a single artifact.

Navigator primarily provides for an alternative view, equipped with the capability to explore, browse, and traverse across the Catalog content along a pictorial view.



The main features of the Graphical Navigator are:

- **Catalog Browsing**

  Allows you to browse the content of the Catalog in an easy and quick manner.

- **Layouts**

  Enables you to view artifact graphs by selecting different layouts. You can organize the artifacts into various structures to view a particular aspect of their relationship. There is also the option to create customized layouts if you wish to focus on specific relationship structures.

- **Filters**

  Provides a set of filters focusing on artifacts of interest to each architectural layer, as well as the option to create custom filters.

- **Save Graphs**

  Allows you to save a particular graph with the selected layout, which means you can return to the saved graph at a later time.The graph is interactive and lets you move or expand it, or collapse nodes to change the appearance.

- **Impact Highlights**

  Enables you to view the impact of change to an artifact (impact analysis).

- **Screenshots**

  Enables you to create an image file copy of the graph layouts.

Chapter 4: Reports

HPE EM provides many reports that you can run based on the artifacts in your enterprise architecture data model. On the Reports tab, you can access many artifact, policy, heatmap, structure map, and custom reports. You can also view Architecture reports such as Archimate Compliance and Installed Software as well as Transformation reports such as Roadmaps, Investments, Project by Cost, and Applications by Cost. Maintenance reports such as Application Costs are also available, and you can also customize the reports that appear on your dashboard.

The report type that you choose depends on the results, data format, and granularity that you require. The following are the report types to choose from:

- "Report Dashboard" below
- "Artifact Reports" on page 53
- "Policy Reports" on page 56
- "Heat Map Reports" on page 60
- "Structure Map Reports" on page 60
- "Custom BIRT Reports" on page 61
- "Project Roadmap Reports" on page 62
- "Lifecycle Plan Roadmap Report" on page 63
- "Cloud Transformation Reports" on page 64

Reports are customizable. Administrators can therefore create and deploy new reports without having to restart Enterprise Maps. For more details, see "Report Creation" in *Customization Guide* or contact HPE sales representative for assistance.

Report Dashboard

Report dashboard is a collection of reports created for a purpose. For example: Governance Dashboard gives you an overview of the compliance level percentage as a result of the Enterprise Maps policy reports.

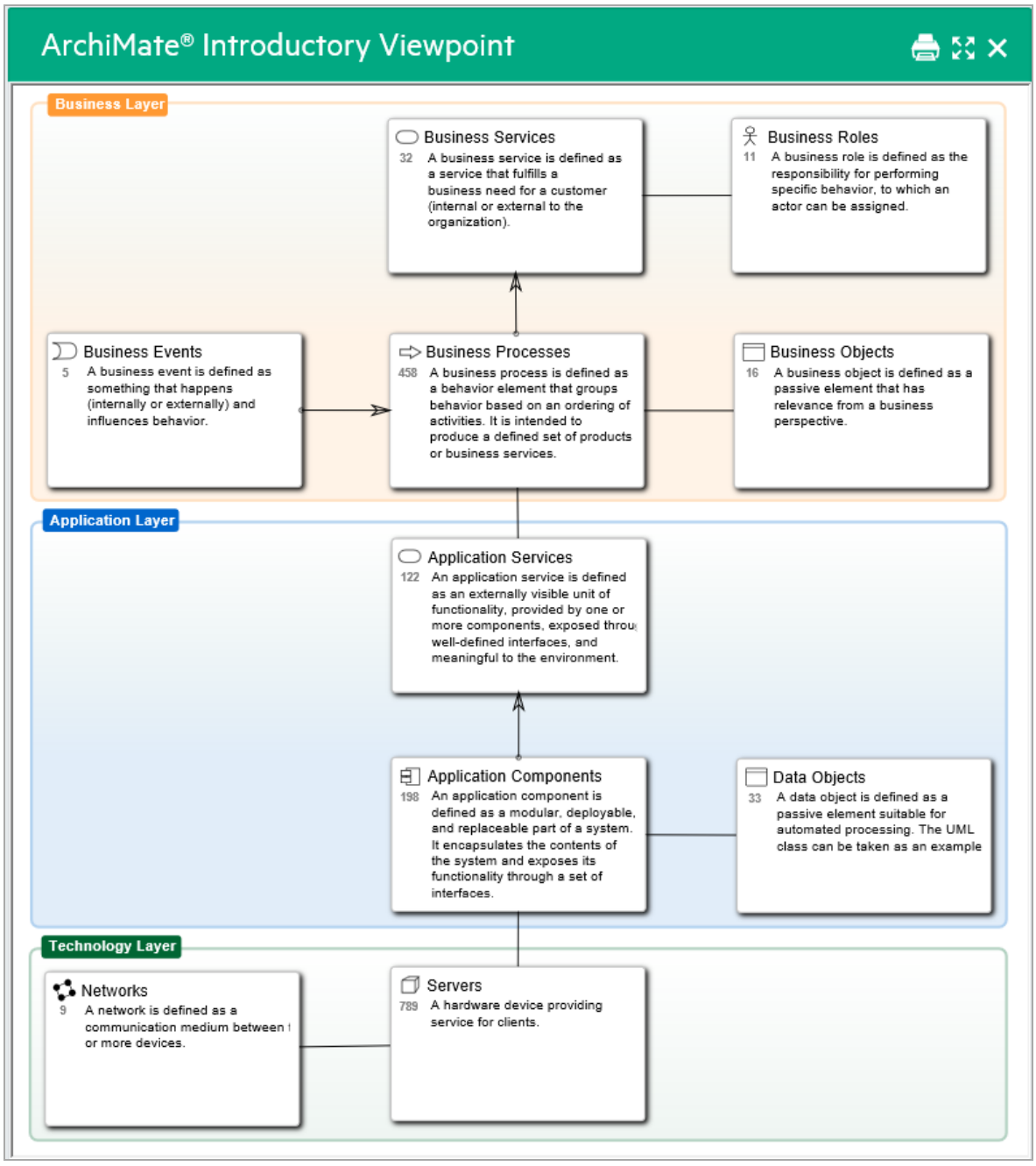
Report dashboard can be customized by the users as per their requirement, or can be reset back to the default installation. Users can also create new report dashboards for their own use.

- "Archimate Introductory Viewpoint " below
- "Policy Radar Report" on the next page
- "Adding a Portlet to Your Dashboard " on page 51
- "Printing Portlet Content" on page 52

Archimate Introductory Viewpoint

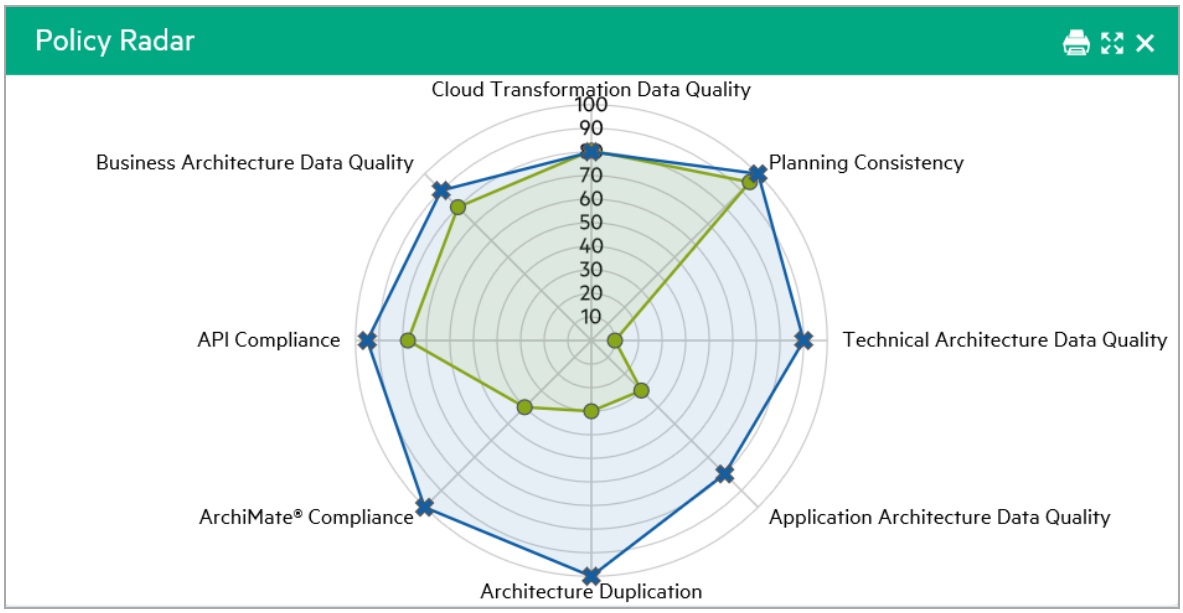
The HPE EM data model is based on Archimate® modeling language specification and similar to that it consists of artifacts grouped on the basis of type of artifacts belonging to different layers, and also artifact properties and relationships.

The Archimate® Introductory Viewpoint displays common artifact types and their relationships in 3 basic layers. This viewpoint supports the impact analysis of its artifacts.



Policy Radar Report

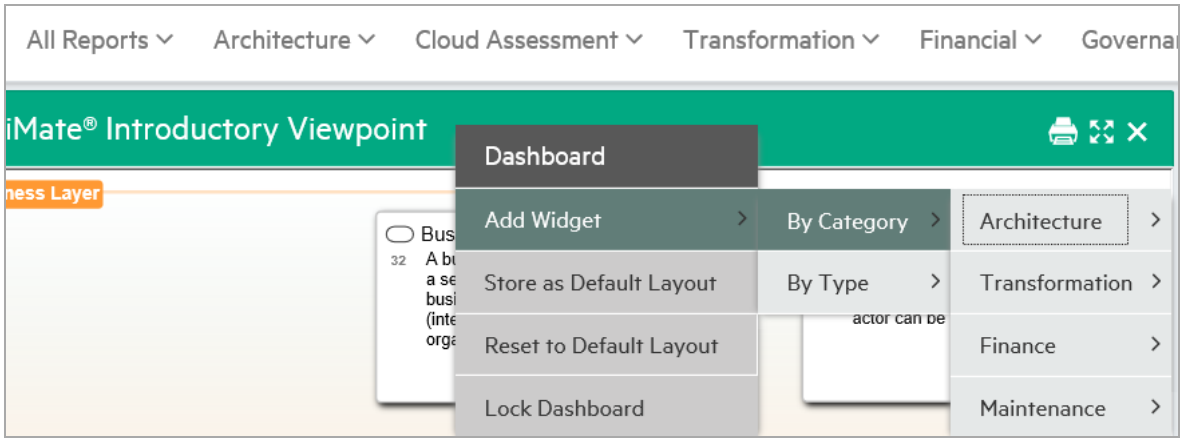
HPE EM policy radar reporting is a web UI portlet that displays a radar chart showing the difference between the policy report's actual and target compliance. By default, the policy radar displays all policy reports available HPE EM. The layout and contents of the radar can be customized using a managed server-side script.



Adding a Portlet to Your Dashboard

To add a Portlet to your dashboard:

1. In the Reports page right-click to open the Dashboard menu as shown in the image below.
2. Select the portlet to add to your dashboard.



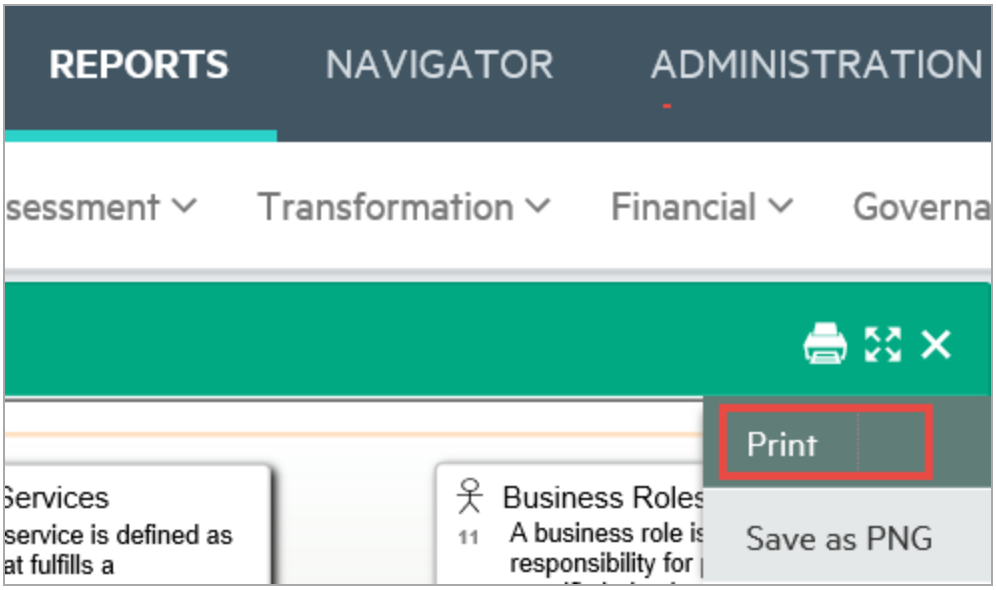
Printing Portlet Content

HPE EM provides the option to print dashboard portlet contents from the Reports tab. This is useful as you can convert the report to PDF for instance.

As of now, this option is available for Viewpoint Model, Artifact Statistic and Policy Radar on the Reports home page. Other reports that can be printed are Structure map Reports, Heatmap Reports, Data Matrix Reports and Rating Reports under drop-down for different sub-menu options.

To print, the instructions are as follows:

1. Select the report you wish to print.
2. Click the print icon to preview and print the report.



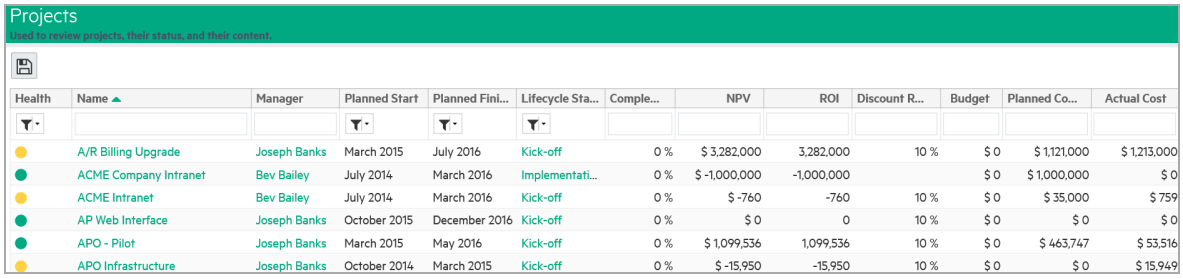
3. For each browser the print instruction may differ, follow the steps and then click **OK**.
4. Select **Shrink To Fit** on Print dialog or Printing Preferences to print the entire portlet content on a single page.

> **Note:** For print preview in IE, click **Internet Options > Security > Custom level**. Scroll down for the option **Initialize and script ActiveX controls not marked as safe for scripting** and select **Prompt**. Restart your machine and click the print icon to see the print preview.
>
> For Chrome the print preview shows automatically upon clicking the print icon. Firefox does not support print preview.

5. For good print results, set the following in your browser Page Setup or Preview page:
   a. Mode: Landscape
   b. Paper size: A3 or larger
   c. Background graphics / Print Background (colors & images): must be selected

Artifact Reports

HPE EM artifact reports provide table views of the artifact data contained in the HPE EM repository. The report is designed and used directly in the HPE EM web UI. The artifact table represents the result of a DQL query that is part of the report definition. Artifact reports are re-calculated every time the user accesses the report's web UI page.


Projects

Used to review projects, their status, and their content.

Health	Name	Manager	Planned Start	Planned Fini...	Lifecycle Sta...	Comple...	NPV	ROI	Discount R...	Budget	Planned Co...	Actual Cost
	A/R Billing Upgrade	Joseph Banks	March 2015	July 2016	Kick-off	0 %	$ 3,282,000	3,282,000	10 %	$ 0	$ 1,121,000	$ 1,213,000
	ACME Company Intranet	Bev Bailey	July 2014	March 2016	Implementati...	0 %	$ -1,000,000	-1,000,000		$ 0	$ 1,000,000	$ 0
	ACME Intranet	Bev Bailey	July 2014	March 2016	Kick-off	0 %	$ -760	-760	10 %	$ 0	$ 35,000	$ 759
	AP Web Interface	Joseph Banks	October 2015	December 2016	Kick-off	0 %	$ 0	0	10 %	$ 0	$ 0	$ 0
	APO - Pilot	Joseph Banks	March 2015	May 2016	Kick-off	0 %	$ 1,099,536	1,099,536	10 %	$ 0	$ 463,747	$ 53,516
	APO Infrastructure	Joseph Banks	October 2014	March 2015	Kick-off	0 %	$ -15,950	-15,950	10 %	$ 0	$ 0	$ 15,949

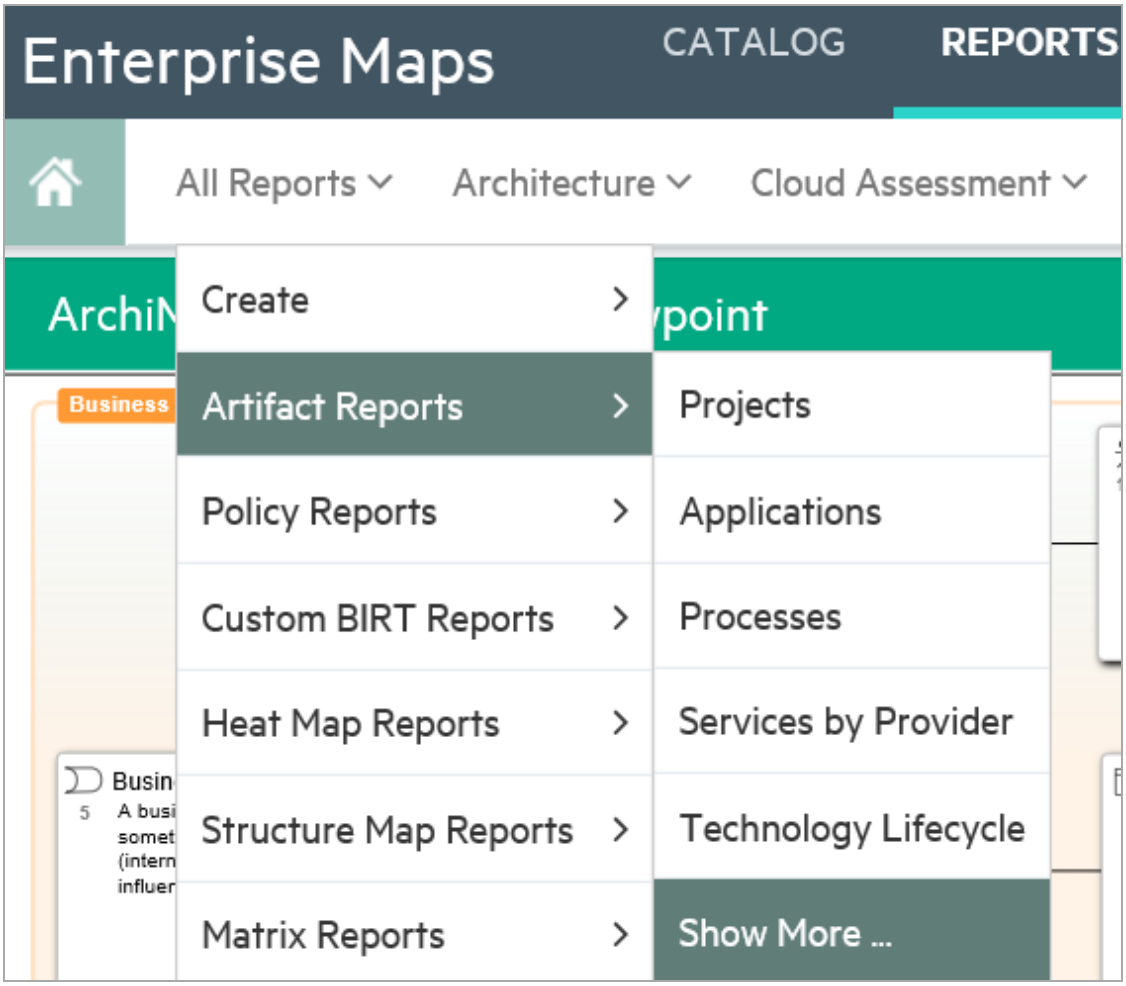
Make any modifications that you want. Column headers contain text fields or list boxes that allow you to perform additional filtering. A column's context menu appears when you click the right side of the column header. The menu lets you choose the sort order or make columns visible or invisible. The columns can be re-sized by moving the line between them. You can also reorder the columns by dragging them.

Viewing Artifact Reports

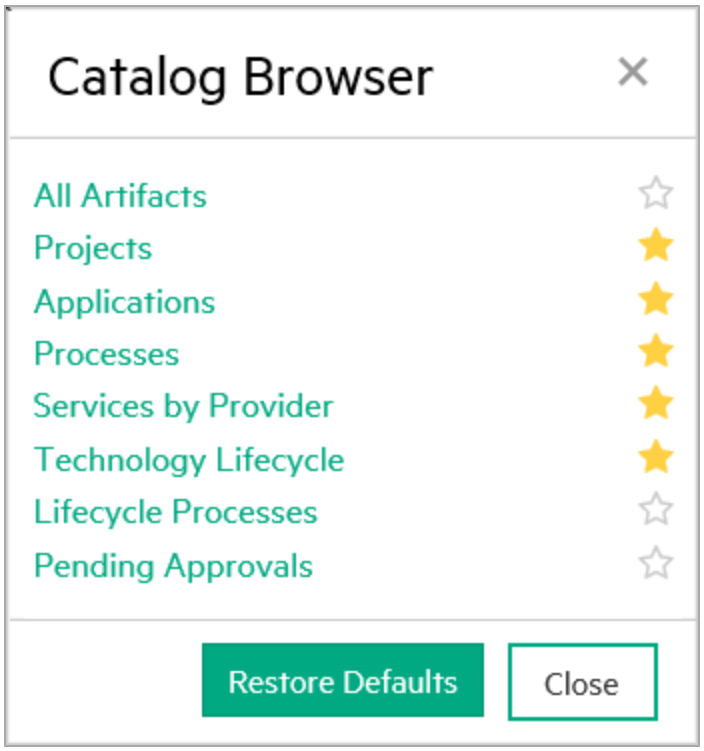
To view artifact reports:

1. Log in to HPE EM and select the Reports tab.
2. Select the **All Reports** > **Artifact Reports** menu, which shows any favorite reports as well as a

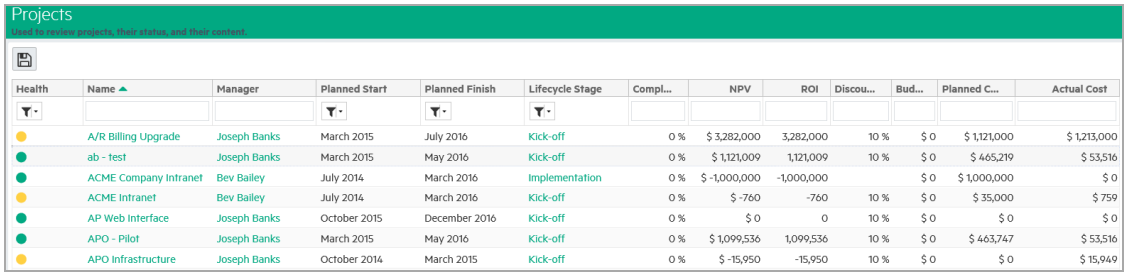
Show More link.



3. Click Show More to open the catalog browser. The catalog browser lists all reports and also allows you to pin or unpin a particular report as a favorite onto the Artifact Reports menu.



4. Click Projects to view the artifact report called Projects, which is used to review projects and their status and content data. The Projects report is a table with columns that were defined by associated DQL queries as depicted in previous topic.

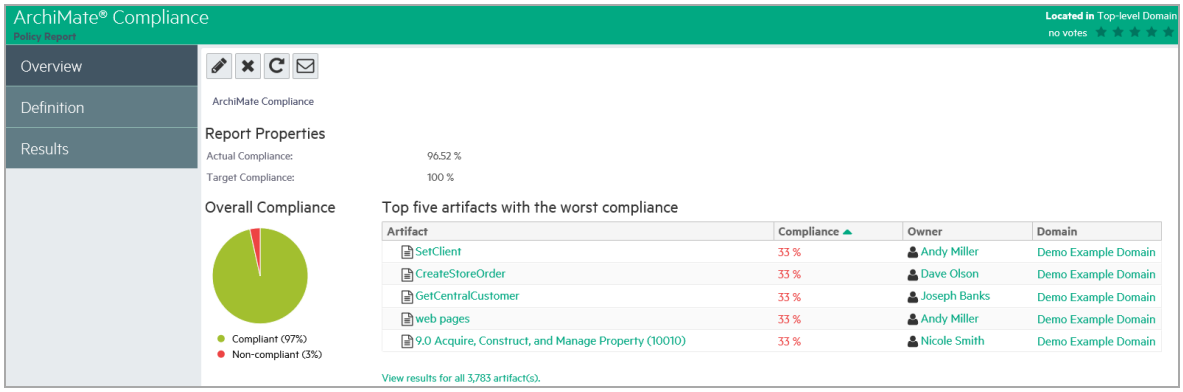


Health	Name	Manager	Planned Start	Planned Finish	Lifecycle Stage	Compl...	NPV	ROI	Discou...	Bud...	Planned C...	Actual Cost
	A/R Billing Upgrade	Joseph Banks	March 2015	July 2016	Kick-off	0 %	$ 3,282,000	3,282,000	10 %	$ 0	$ 1,121,000	$ 1,213,000
	ab - test	Joseph Banks	March 2015	May 2016	Kick-off	0 %	$ 1,121,009	1,121,009	10 %	$ 0	$ 465,219	$ 53,516
	ACME Company Intranet	Bev Bailey	July 2014	March 2016	Implementation	0 %	$ -1,000,000	-1,000,000		$ 0	$ 1,000,000	$ 0
	ACME Intranet	Bev Bailey	July 2014	March 2016	Kick-off	0 %	$ -760	-760	10 %	$ 0	$ 35,000	$ 759
	AP Web Interface	Joseph Banks	October 2015	December 2016	Kick-off	0 %	$ 0	0	10 %	$ 0	$ 0	$ 0
	APO - Pilot	Joseph Banks	March 2015	May 2016	Kick-off	0 %	$ 1,099,536	1,099,536	10 %	$ 0	$ 463,747	$ 53,516
	APO Infrastructure	Joseph Banks	October 2014	March 2015	Kick-off	0 %	$ -15,950	-15,950	10 %	$ 0	$ 0	$ 15,949

5. Make any modifications that you want. Column headers contain text fields or list boxes that allow you to perform additional filtering. A column's context menu appears when you click the right side of the column header. The menu lets you choose the sort order or make columns visible or invisible. The columns can be resized by moving the line between them. You can also reorder the columns by dragging them.

Policy Reports

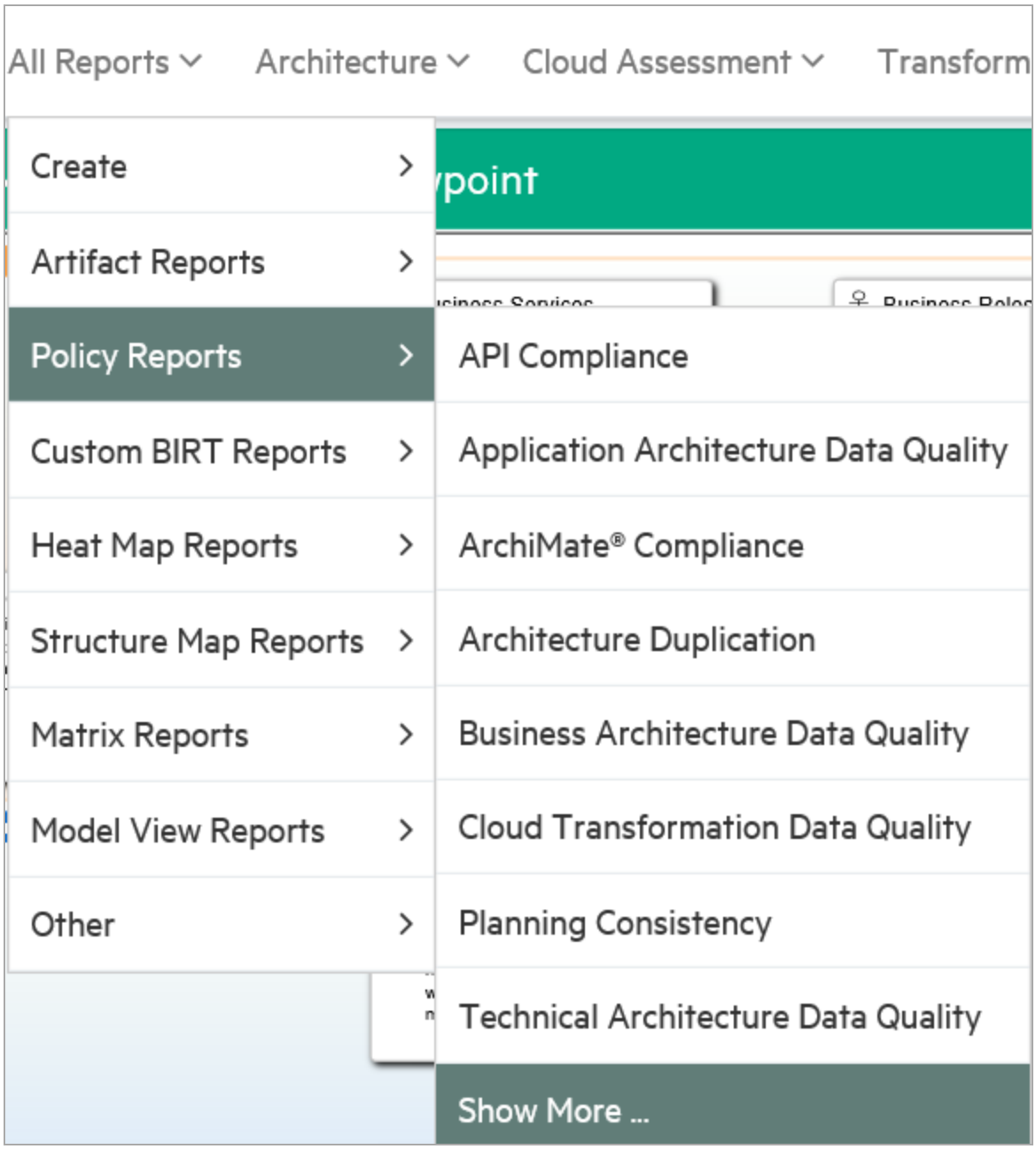
HPE EM policy reports are used to report the levels of policy compliance of the artifacts in HPE EM repository. The report is designed and used directly in the HPE EM web UI. You can select the policies to validate as well as the filter that specifies what artifacts and data to include in the validation directly in the web UI when you define the report. The report's results are cached in the HPE EM repository. Users always view results from the most recent calculation of the report.



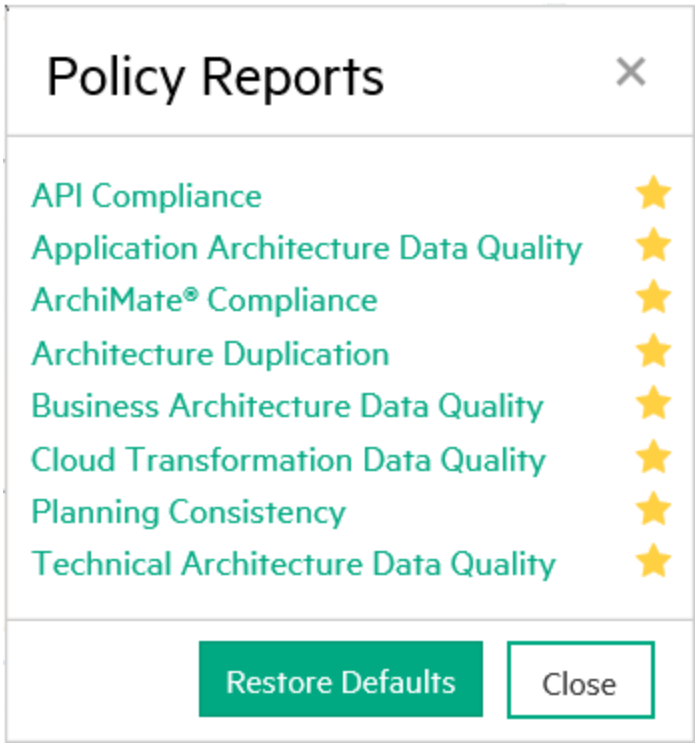
Viewing Policy Reports

To view policy reports:

1. Log in to HPE EM and select the Reports tab.
2. Select the **All Reports** > **Policy Reports** menu, which shows any favorite reports as well as a Show More link.



3. Click **Show More** to open the catalog browser. The catalog browser lists all reports and also allows you to pin or unpin a particular report as a favorite onto the Policy Reports menu.

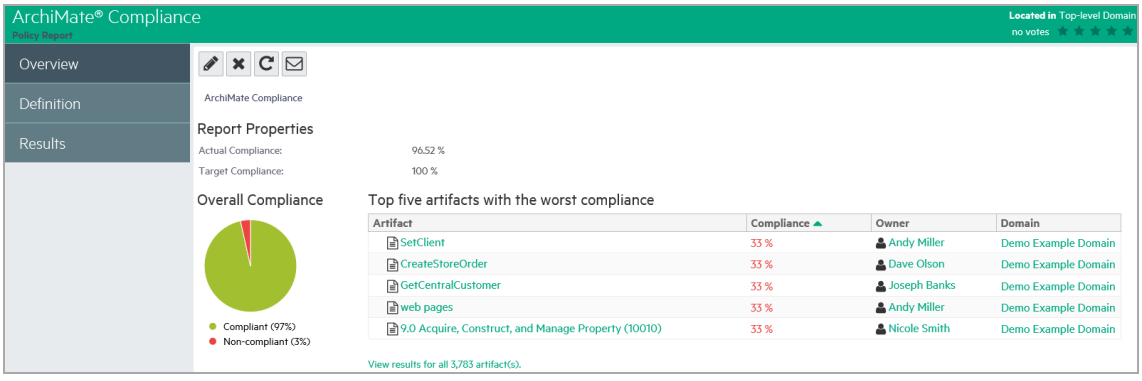


4. Select **Archimate Compliance** to view the policy report called Archimate Compliance.

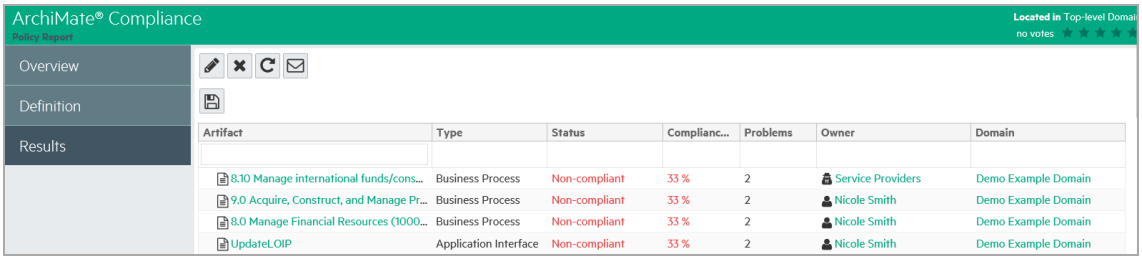
Archimate Compliance Report Structure

The Archimate Compliance policy report consists of three sub-reports:

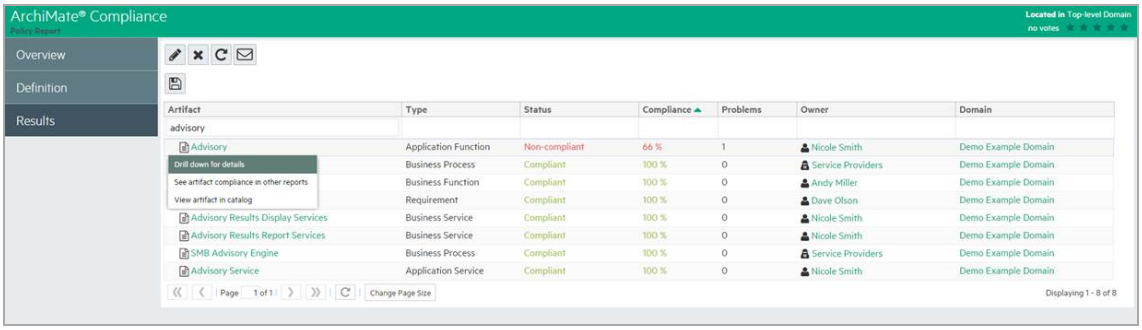
- **Overview**: shows the percentage of compliant and non-compliant artifacts in a pie chart as well as a list of the top 5 artifacts with the worst compliance level. It is accessible when you click the Overview on the left side of the report page.

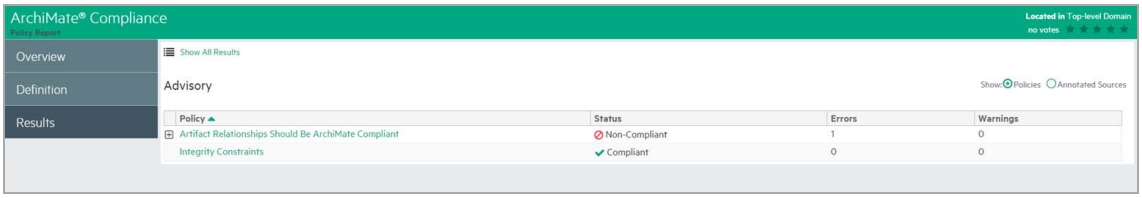


- **Results**: shows an index table with columns containing clickable artifact names, artifact types, compliance status (Compliant/Non-Compliant), artifact compliance (0 – 100 percent), number of problems found, and a link to details about policy calculations. It is accessible when you click the Results tab on the left side of the report page.

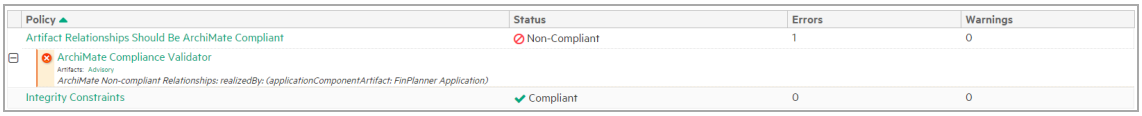


- **Artifact Results**: shows a table with policy calculation details by artifact. Each row of the table represents a technical policy included in the report definition. It contains a clickable name, compliance status, and the number of errors and warnings. It is accessible when you click on the View Report link in any Results row or the Overview sub-report.





Non compliant artifacts have a plus (+) symbol. Click to expand and see full textual description of all errors and warnings.

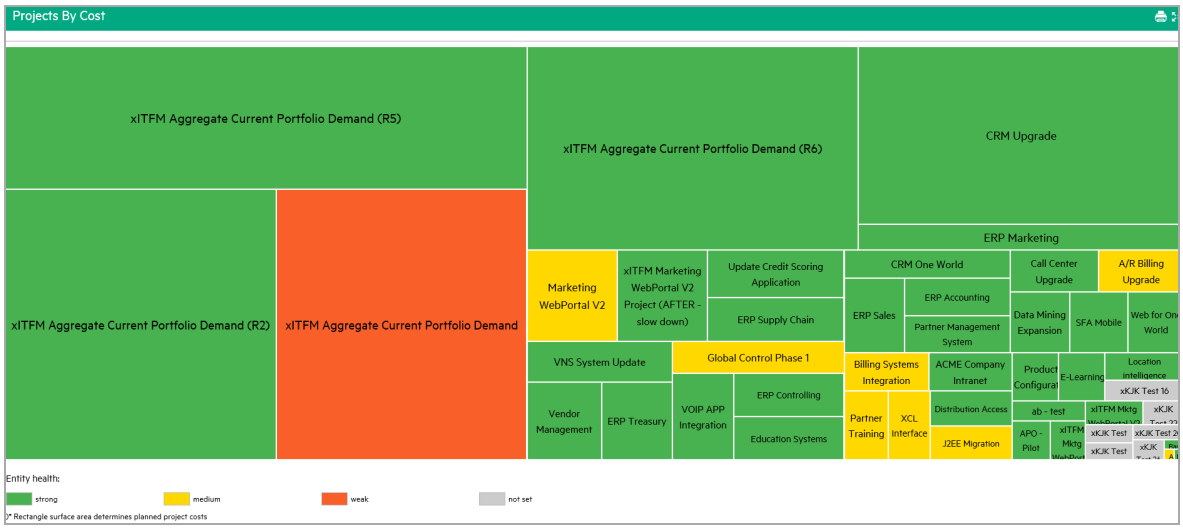


Heat Map Reports

You can use the HPE EM heatmap portlet to create graphs of your data where individual values contained in a matrix are represented as colors. Planned cost is shown by the relative size of the rectangular areas and project health is shown by the color shading of the rectangles. Heatmap reports are updated immediately when there is a change in the data reported. HPE EM provides three Heatmap reports out of the box:

- Applications by Cost report -- shows the Annual Cost Total(s) of selected projects.
- Projects by Cost report -- shows Planned Cost of selected projects (shown).
- Installed Software report -- shows Lifecycle Stage of selected System Softwares.

A Heat Map is defined in the web UI using a managed server-side script that specifies how the data and its two dimensions (that is, planned cost and project health) are calculated and visualized. The Heat Map is also shown directly in the web UI, either as a portlet (an area of the HPE EM home page) or as a standalone report. Heat Map reports are recalculated every time the user accesses the report's web UI page.

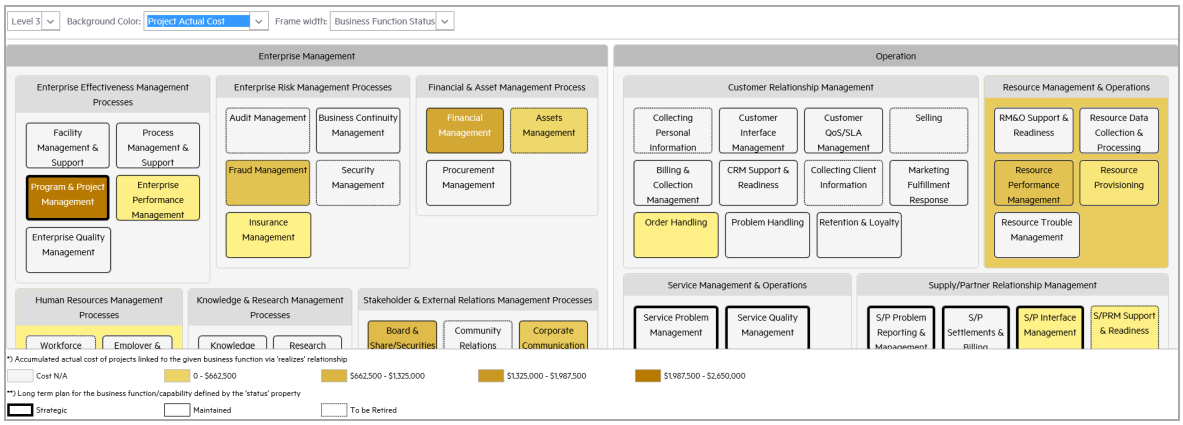


Structure Map Reports

As an HPE EM administrator, you can use HPE EM to create a structure map of artifacts by business function, which allows you to view the relationships between artifacts and the status of each artifact. Users can group artifacts by defining DQL queries and colors, and can modify the way that artifacts are displayed by using a color renderer and legend renderer.

Another way to characterize structure map reporting is as a boxed visualization of a data tree structure. You can use a structure map to model business capabilities, but the visualization itself is not restricted to business capabilities. Each rectangular area contains boxes that can be nested several levels. Boxes can be decorated to show dimensions of input data by using background colors or border lines of varying widths. Unlike the heap map report, the area size of a box is calculated to fit. Several levels of boxes are shown at the same time.

For example, an out-of-box Capabilities to project mapping structure map report shows business functions as nested boxes. The box's background color represents the cost of the projects allocated to a business function. The box's bold frame indicates that the function is going to retire.



A structure map is defined in the web UI using a managed server-side script that specifies how the data and its dimensions are calculated and visualized. The structure map is shown directly in the web UI, either as a portlet (an area of the HPE EM home page) or as a standalone report. Structure map reports are recalculated every time the user accesses the report's web UI page.

Custom BIRT Reports

You can use the HPE EM Workbench to design custom reports. The reports are defined and executed using Eclipse's BIRT, which is a very powerful reporting system that includes the reporting features such as report layout, data access, and scripting. For more information, see http://www.eclipse.org/birt/ where you can find details about the technology used and a few report examples.

BIRT report definitions can be deployed and used in HPE EM. The BIRT execution engine is part of HPE EM and the report definitions are executed to create a custom report. Custom reports are cached in HPE EM and you can access them directly in the HPE EM web UI. Unlike other reports, custom reports are provided as standalone documents (PDF or HTML) that can be easily downloaded from HPE EM.

Project Roadmap Reports

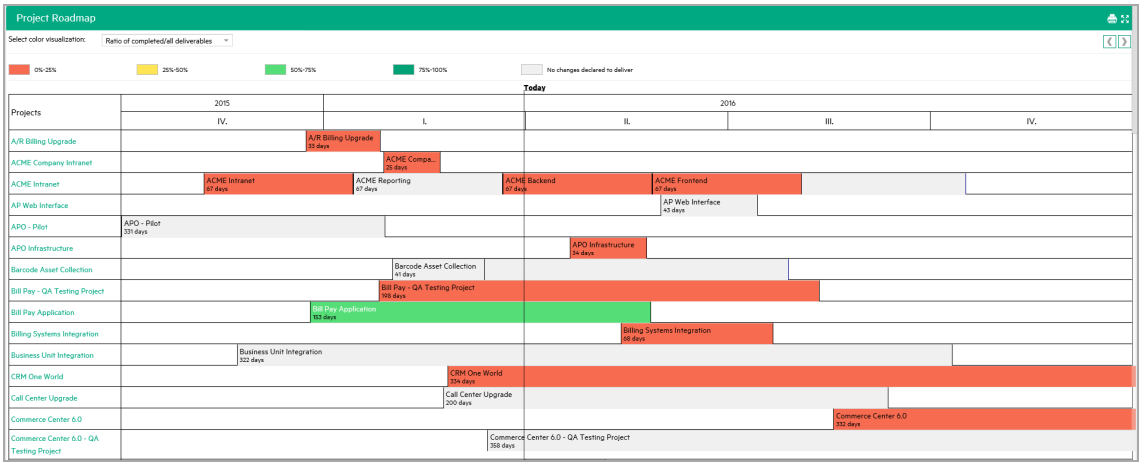
HPE EM Roadmap reports provide quarter wise view of the projects and their deliverables over a period of one year. The report gives a quick snapshot of the project status; the project links help navigate to the project/deliverable page directly. The number of days along below the deliverable on the report represents the time it took for the deliverable to get completed.

Hover over the deliverable box to see the following :

- Start Date and End date based on which the number of days are calculated and displayed with the artifact.
- Number of prerequisites required by the deliverables.
- Number of delivered architecture changes for the deliverable.

Select any of the following options from the **Select color visualization** drop down to change the visualization of the deliverables:

- Ratio of completed/all deliverables: displays percentage of completed architecture changes.
- Ratio of completed/all prerequisites: displays percentage of completed prerequisite architecture changes.
- Project health: displays overall health of the project associated with the deliverable.

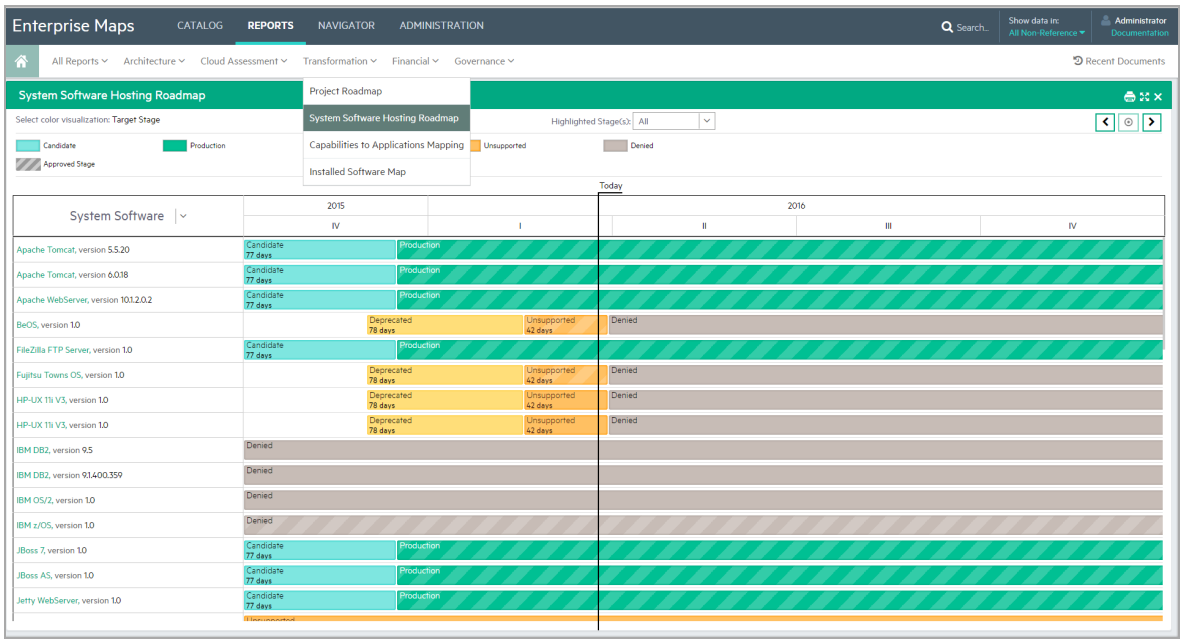


Lifecycle Plan Roadmap Report

HPE EM Lifecycle Plan Roadmap reports provide quarterly wise view of the architecture changes over a period of one year. These reports are built on top of the respective lifecycle plan changes to give a quick snapshot of planned or ongoing changes.

The lifecycle plan for each change is visualized by individual stages on the report. The stages show the number of days it took for the changes to get done (this number is not available on the last stage). Hover over a stage to see more information, such as the plateau where the stage is planned, and start and end dates of the stage.

Lifecycle Plan Roadmap report for System Software is available by default in EM. This report is designed in such a way that it can be used to build similar roadmap reports for other artifact types such as Application Component etc.



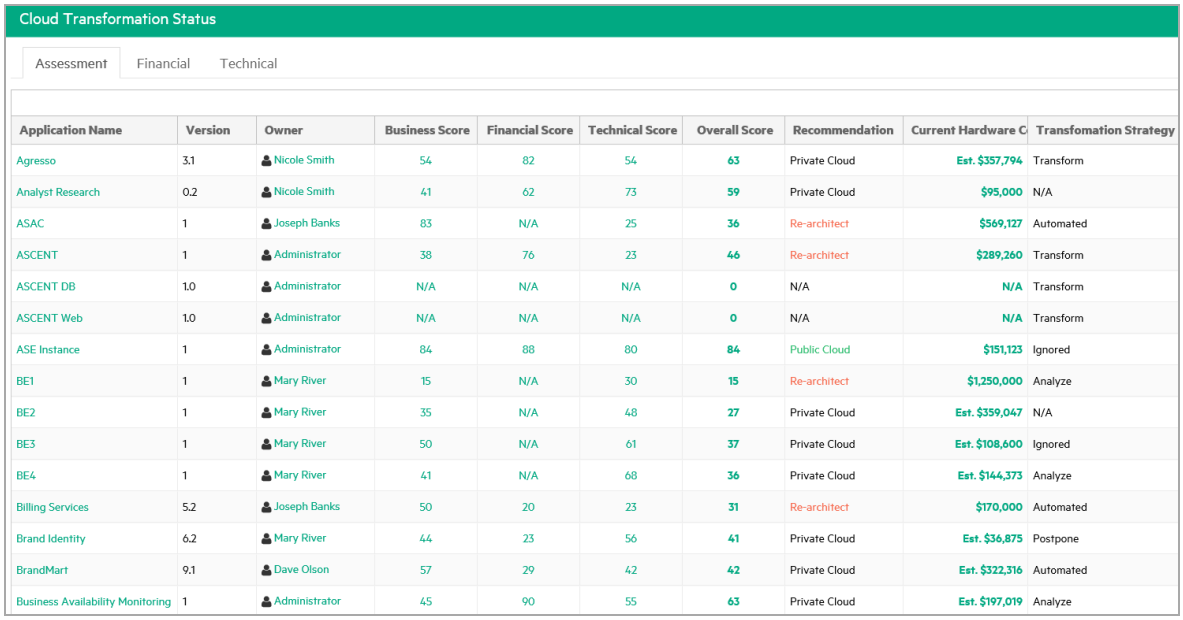
Cloud Transformation Reports

Cloud Transformation provides the following reports:

- "Cloud Transformation Status" on the next page
- "Cloud Transformation Map" on page 66
- "Cloud Transformation Data Quality" on page 67

Cloud Transformation Status

This report provides an overview of cloud assessment based on the scores.



Cloud Transformation Status

Assessment | Financial | Technical

Application Name	Version	Owner	Business Score	Financial Score	Technical Score	Overall Score	Recommendation	Current Hardware C	Transfomation Strategy
Agresso	3.1	Nicole Smith	54	82	54	63	Private Cloud	Est. $357,794	Transform
Analyst Research	0.2	Nicole Smith	41	62	73	59	Private Cloud	$95,000	N/A
ASAC	1	Joseph Banks	83	N/A	25	36	Re-architect	$569,127	Automated
ASCENT	1	Administrator	38	76	23	46	Re-architect	$289,260	Transform
ASCENT DB	1.0	Administrator	N/A	N/A	N/A	0	N/A	N/A	Transform
ASCENT Web	1.0	Administrator	N/A	N/A	N/A	0	N/A	N/A	Transform
ASE Instance	1	Administrator	84	88	80	84	Public Cloud	$151,123	Ignored
BE1	1	Mary River	15	N/A	30	15	Re-architect	$1,250,000	Analyze
BE2	1	Mary River	35	N/A	48	27	Private Cloud	Est. $359,047	N/A
BE3	1	Mary River	50	N/A	61	37	Private Cloud	Est. $108,600	Ignored
BE4	1	Mary River	41	N/A	68	36	Private Cloud	Est. $144,373	Analyze
Billing Services	5.2	Joseph Banks	50	20	23	31	Re-architect	$170,000	Automated
Brand Identity	6.2	Mary River	44	23	56	41	Private Cloud	Est. $36,875	Postpone
BrandMart	9.1	Dave Olson	57	29	42	42	Private Cloud	Est. $322,316	Automated
Business Availability Monitoring	1	Administrator	45	90	55	63	Private Cloud	Est. $197,019	Analyze

In this report:

- **Minimum Estimated Hardware Cost**

  The lowest cost amongst those offered by data centers. For a specific deployment, the cost is calculated on Total estimate for all deployments (infrastructure services) of the application component. If there is no cost for this estimate type (for example: when the application component has no associated deployment or the deployment has no specified server class), the estimated cost from the number of servers property and server class relationship is used. For more details, see "How cost estimation works" on page 83.

  The calculation algorithm is the same as in Financial Alignment of the application component in the Cloud Transformation tab .

- **Current Hardware Cost Estimate**

  Sum of the costs of deployment for all deployments (infrastructure services) into the current data center. Again if no infrastructure services are available, estimate from number of servers property and server class is used. For more details, see "How cost estimation works" on page 83.

- **Current Hardware Cost**

  Annual Hardware Cost from current financial profile. If not available, this column displays Current Hardware Cost Estimate (prefixed with ‘Est.’).

- **Savings Opportunity**

  The amount an organization saves by running the application on the lowest cost data center on an annual basis.

  Calculated as follows:

  Savings Opportunity = Current Hardware Cost - Minimum Estimated Hardware Cost

  If the savings opportunity is negative, this column displays $0 instead.

- **ROI (5 years)**

  Ratio of cost saved over transformation cost invested for a period of 5 years. A result of 100% or above indicates a worthy investment while less than 100% indicates unworthy investment.

  Calculated as follows:

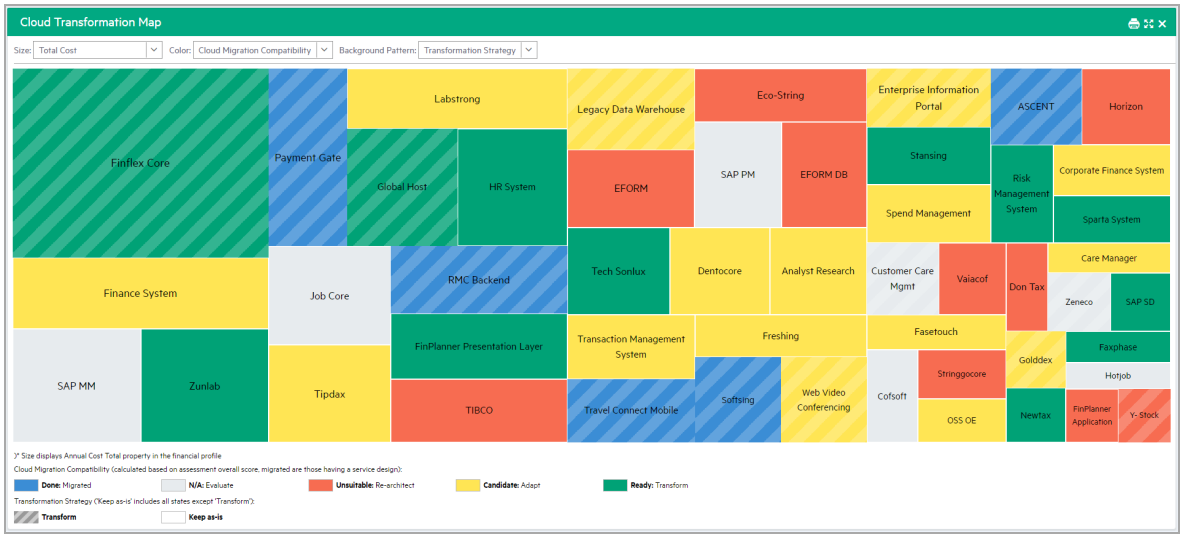
  ROI (5 years) = 100 * [(5*Savings Opportunity) - Transformation Cost] / Transformation Cost

- **Transformation Strategy**

  Transformational strategies associated with the applications as a result of cloud assessment. Changing a value in this column, also changes the property's value in the application component.

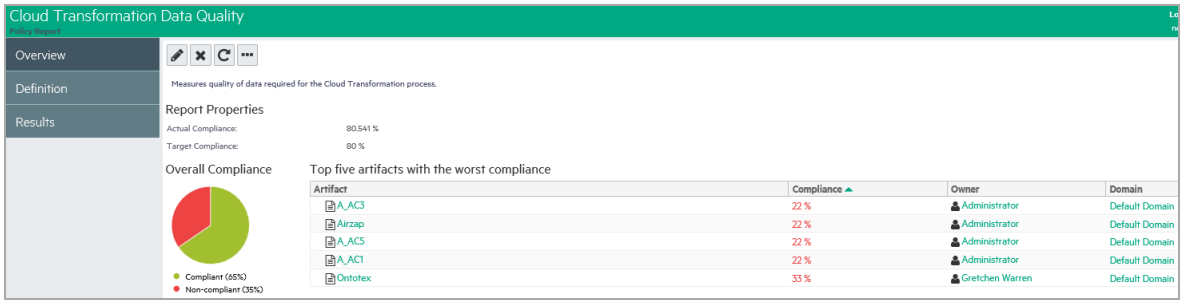
Cloud Transformation Map

This report visualizes applications suitable for cloud transformation in heat map style.



Cloud Transformation Data Quality

This report provides the level of data quality as policy compliance.



Chapter 5: Enterprise Architecture

In HPE EM you can create an architecture from a proposal which enables you to not only manage the demands of the users but at the same time be able to exercise better control over the project's progress.

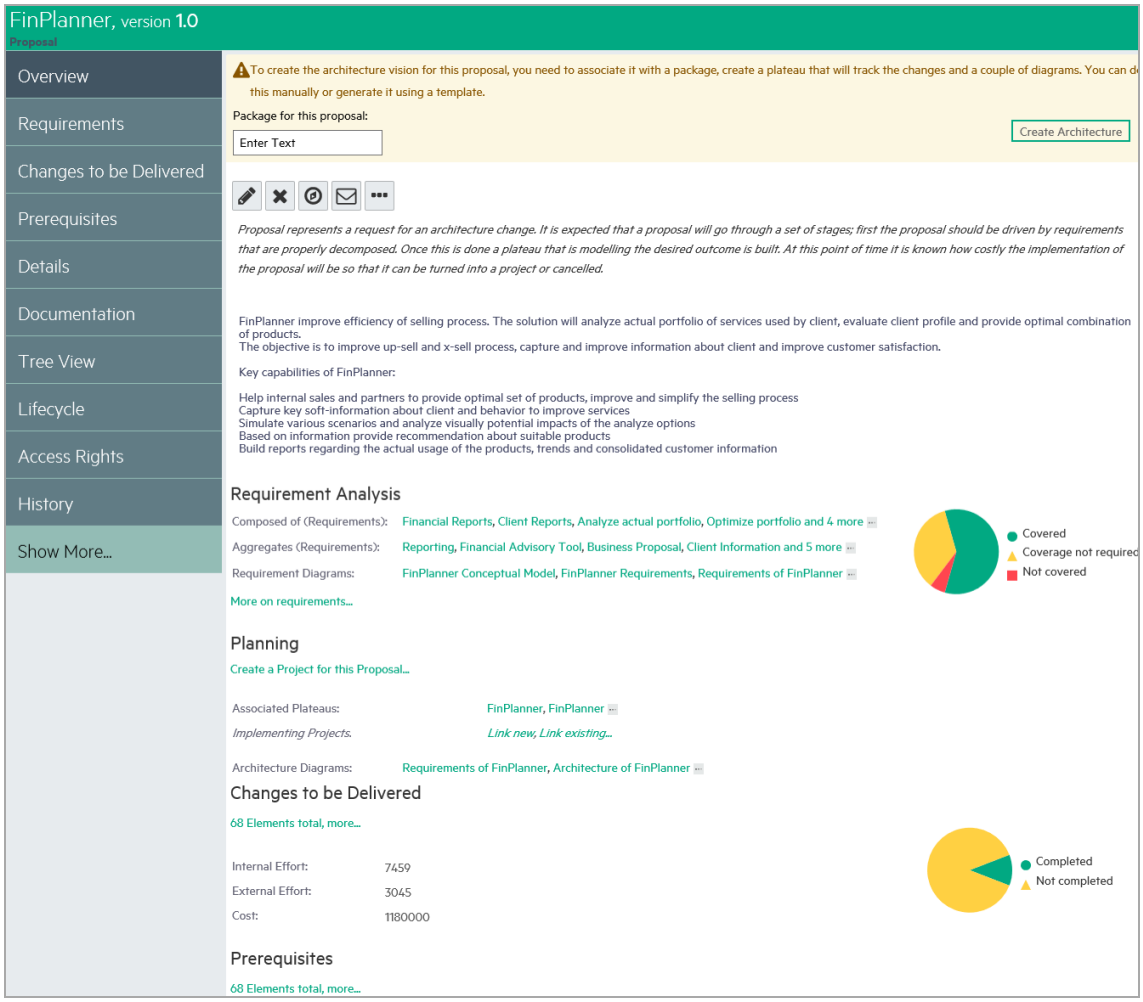
Proposal

Proposal is created as an integral part of architecture management to capture and cover the organizational demands of the users more effectively. In doing so, proposal offers a comprehensive solution which clearly defines the project, and provides a definite and logical course of action with a clear structure. This comprises of work breakdown structure involving: initiating plans, setting milestones and executing projects. Proposal is split across requirements for better manageability. The proposal architecture can be created manually or auto generated through a defined template.

The proposal architecture essentially consists of the following elements:

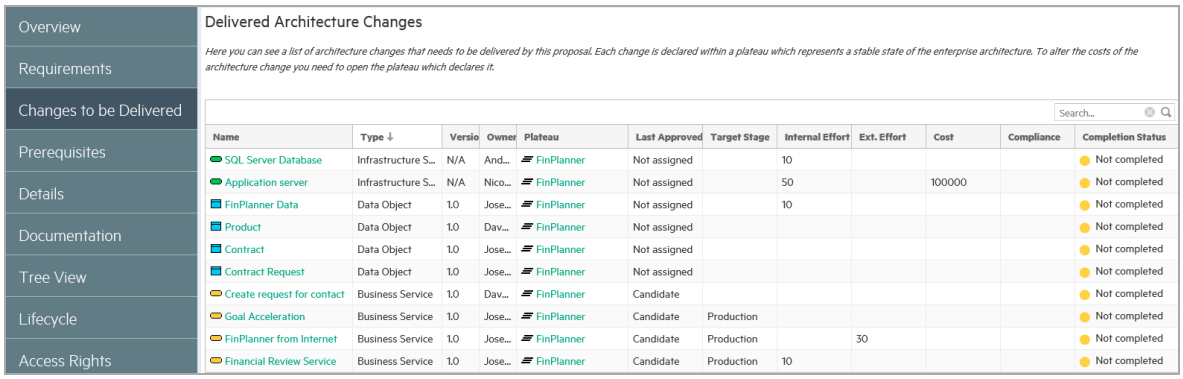
- Package: created to deliver clear business value, linked to the proposal representing a program, project, milestone or task. This package can be auto generated with links to diagrams and plateaus.
- Diagrams: created to describe the proposal architecture state, modeled as diagrams showing the baseline and to-be architectures.
- Plateaus: created to show the aggregate of elements marked with financial data expressing cost and effort. The elements of plateau are mapped to the requirements so the information of how a requirement is fulfilled is traceable in the architecture. It includes *Changes to be Delivered* which

are the goals or objectives in terms of the task or project.



Once the architecture is created user can build upon it further by adding *Target Architecture Changes* (in case of plateau), and *Delivered Architecture Changes* (in case of deliverable). Alternatively, the changes can be modeled in Sparx EA in the following manner:

1. Import data from HPE EM
2. Model the target architecture in Sparx EA
3. Export data back to HPE EM



Name	Type	Versio	Owner	Plateau	Last Approved	Target Stage	Internal Effort	Ext. Effort	Cost	Compliance	Completion Status
SQL Server Database	Infrastructure S...	N/A	And...	FinPlanner	Not assigned		10				Not completed
Application server	Infrastructure S...	N/A	Nico...	FinPlanner	Not assigned		50		100000		Not completed
FinPlanner Data	Data Object	1.0	Jose...	FinPlanner	Not assigned		10				Not completed
Product	Data Object	1.0	Dav...	FinPlanner	Not assigned						Not completed
Contract	Data Object	1.0	Jose...	FinPlanner	Not assigned						Not completed
Contract Request	Data Object	1.0	Jose...	FinPlanner	Not assigned						Not completed
Create request for contact	Business Service	1.0	Dav...	FinPlanner	Candidate						Not completed
Goal Acceleration	Business Service	1.0	Jose...	FinPlanner	Candidate	Production					Not completed
FinPlanner from Internet	Business Service	1.0	Jose...	FinPlanner	Candidate	Production		30			Not completed
Financial Review Service	Business Service	1.0	Jose...	FinPlanner	Candidate	Production	10				Not completed

From proposal high level managers get an overall view on the following aspects:

- Requirement structure and other elements of the proposal on a single page.
- Project health of the proposal by reviewing the completion status.
- Planned architecture devised by other proposals or projects.
- Architecture changes to be delivered.
- Compliance status of architecture changes based on policies.
- Total cost, efforts of architecture changes and their details.

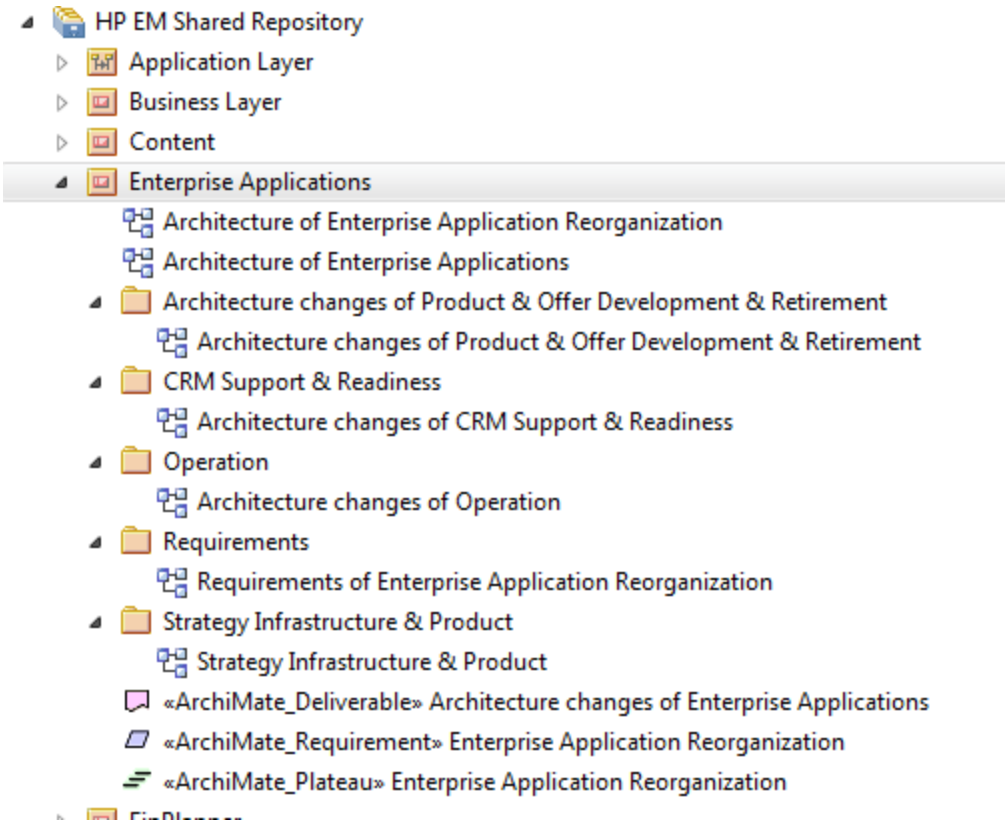
In HPE EM, the to-be architecture can be created and monitored automatically using HPE best practices. For details, refer to following topics:

- "Creating Proposal" on the next page
- "Creating Project from Proposal" on page 74
- "Setting Target Architecture" on page 75
- "Setting Efforts of Architecture Changes" on page 77
- "Monitoring Architecture Changes" on page 77

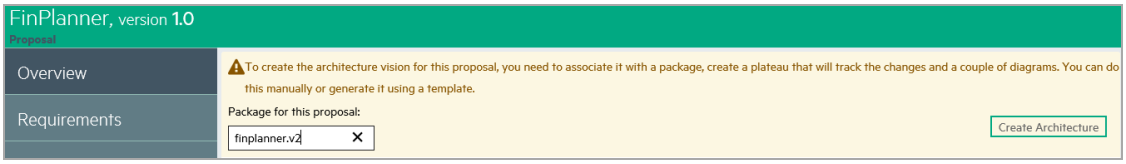
Creating Proposal

An enterprise architect helps build an architecture vision in the following manner:

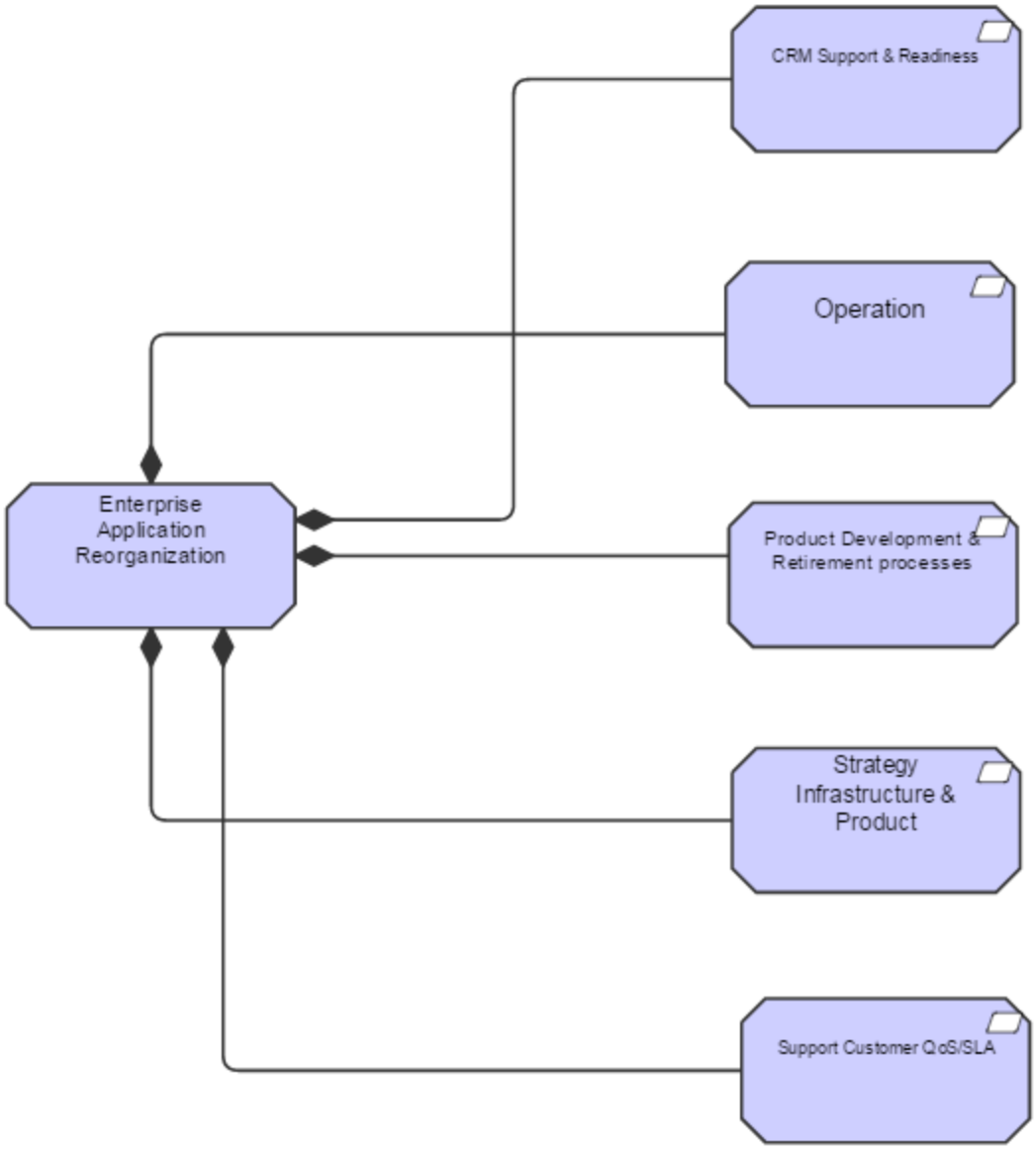
1. Generates a basic proposal document structure, which includes a requirement structure diagram, and a solution plateau together with a diagram that is visualizing the plateau.



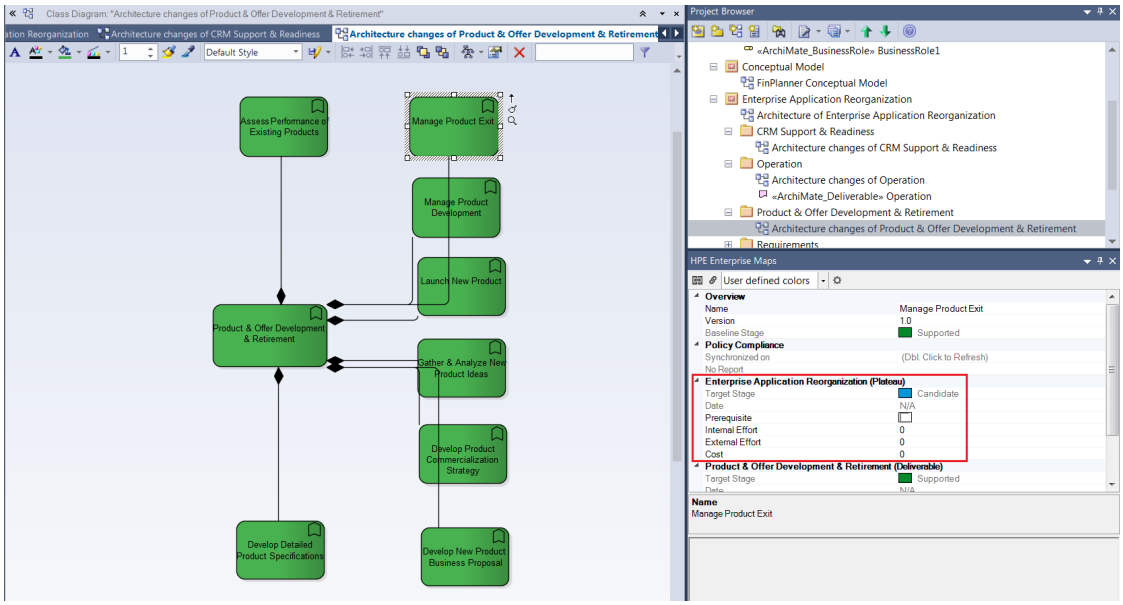
2. You can start by defining a package that is used as a container for data related to the proposal. The package is also represented as a package folder in the **Extension for Sparx Systems EA** later on.



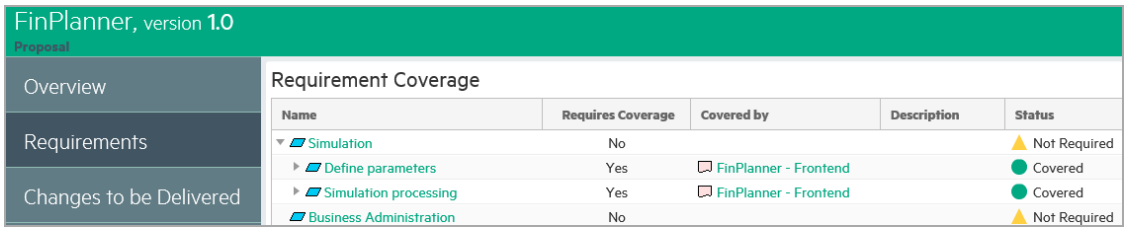
3. Once the proposal has the structure defined, the architect or the proposal owner is using the "Extension for Sparx Systems EA " on page 144 to decompose the requirements. You can see that the aggregation/composition relationship is used for the decomposition.



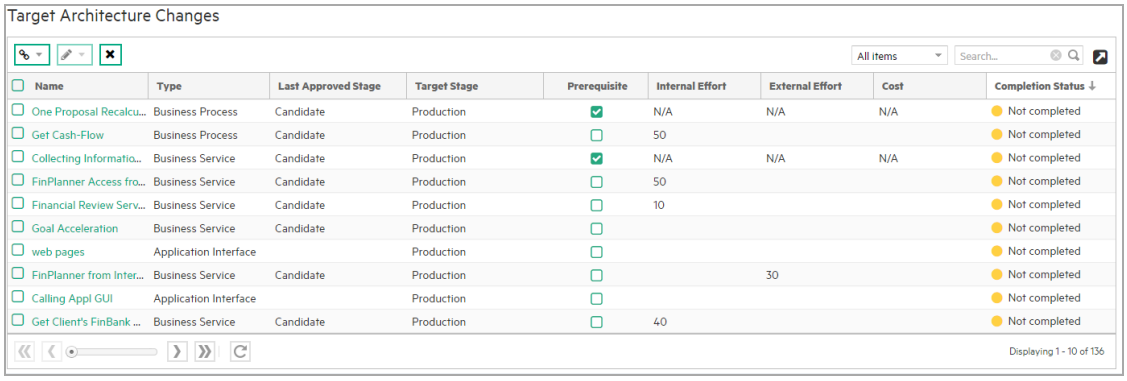
4. Then, the architect defines the solution plateau using the **Extension for Sparx Systems EA**. While doing so you can assign the values for the estimates on the effort needed to build the solution.



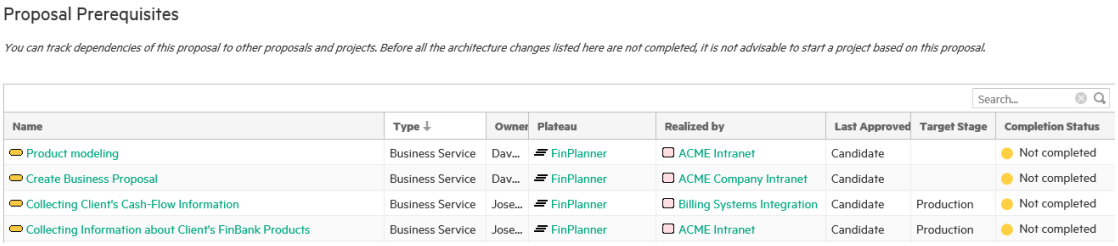
5. The architect links the solution components to the requirements created in step 3 above. Once this is done it is possible to monitor the requirement coverage on the **Requirements** tab of the proposal.



6. In HPE EM, for each element in the plateau (on plateau catalog page) it is possible to assign a lifecycle stage that is reached when the proposal is implemented. For example: if the element is about to be removed, the target is shown as the **retired** lifecycle stage. But if the target is a new element, it will probably be shown as the **production** stage.



7. Also, on the same page certain plateau elements can be marked as **prerequisites**. These elements are handled by projects other than the current proposal or projects created on behalf of it. This ensures dependencies on other proposals / projects, visible on the **Prerequisites** tab of the proposal.

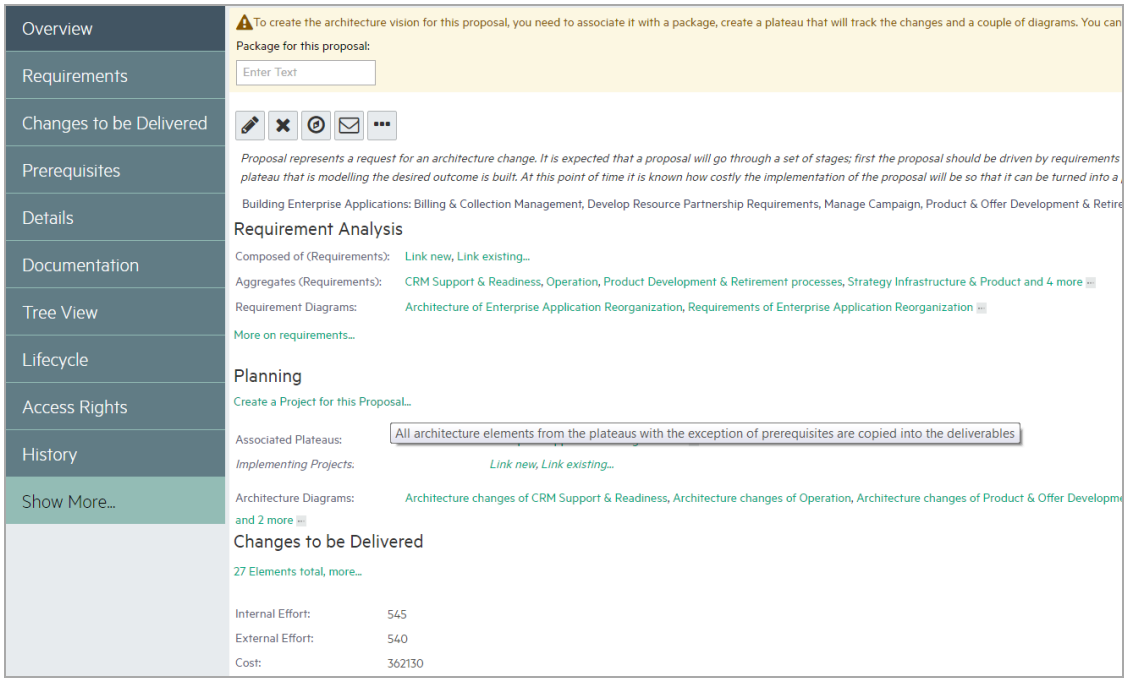


Creating Project from Proposal

The HPE EM proposal page allows you to automatically create a project and the associated deliverables.

To achieve this, perform the following steps:

1. Open the proposal and in the Overview tab click the link '**You can create a project for this proposal…**'. This link is available only for an empty proposal; it does not have association with any project as such.



2. Enter the project name, start date and end date.

This action creates a project linking it with the current proposal and for each plateau associated with the current proposal, a realizing deliverable. All elements aggregated in a plateau of proposal, are also aggregated by the corresponding deliverable of the project created.

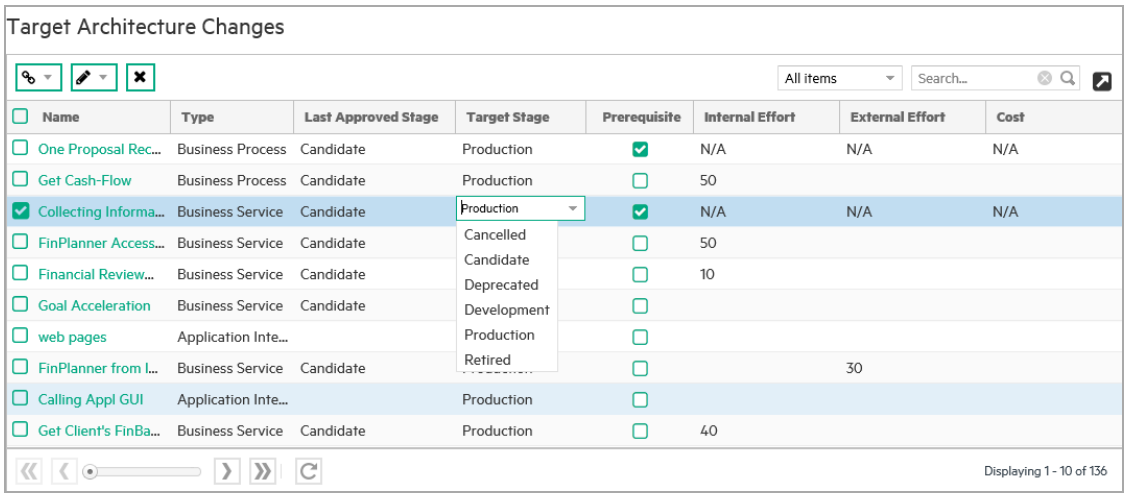
Setting Target Architecture

HPE EM makes it possible to manage architecture changes which are going to be delivered or have been delivered for a Plateau or a Deliverable respectively.

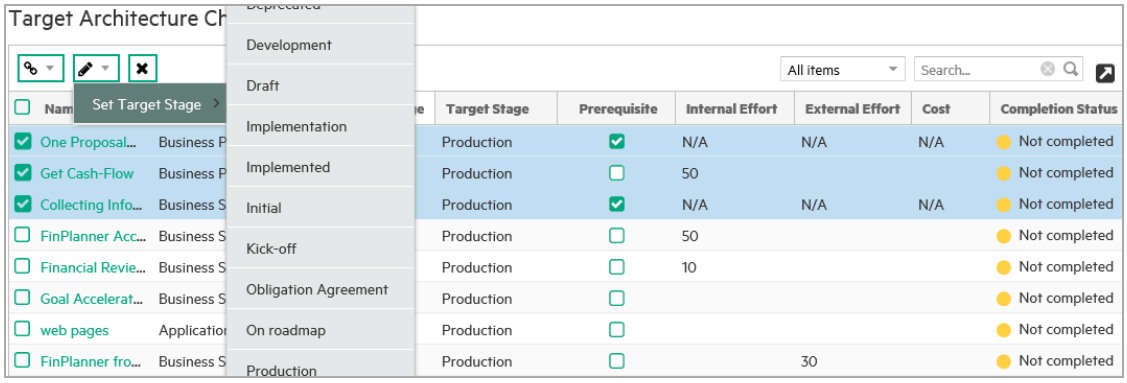
Setting Target Stage

1. In the Overview page of a plateau or deliverable, scroll down to see Target Architecture Changes or Delivered Architecture Changes.

   To make changes for a specific artifact, double-click the target stage of the artifact you wish to modify and select the desired target stage.



2. To make changes to multiple artifacts at once; select the artifacts, click **Set Target Stage** icon and select the desired target.

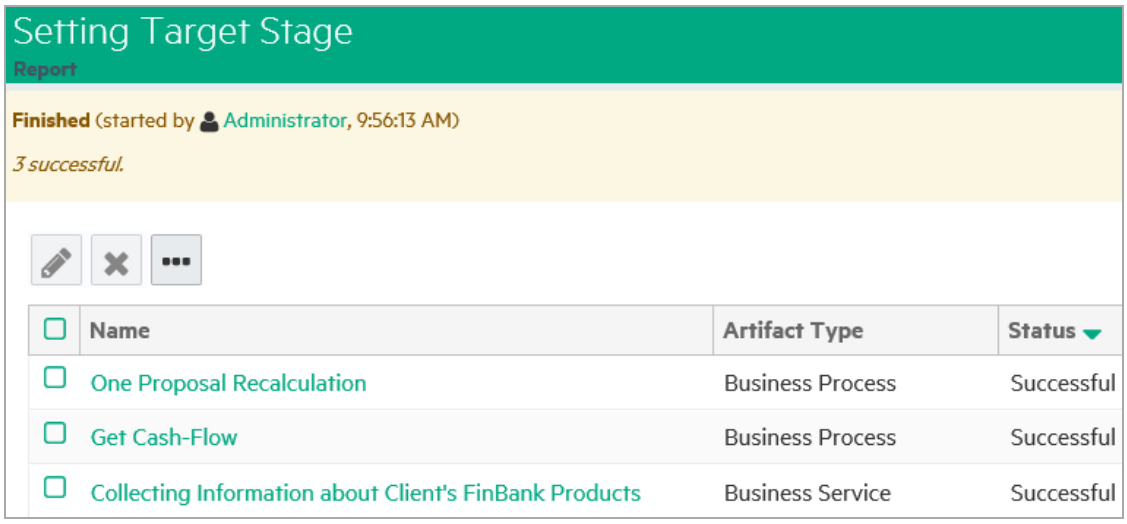


> **Note:** The list of target stages is extracted from all the lifecycle processes which are currently being published. Some of them may not be applicable to the artifacts you have selected, in which case you will get a notification in the report once the operation is finished.

3. You will see a summary of the status which shows the stage as successfully set and/or skipped.

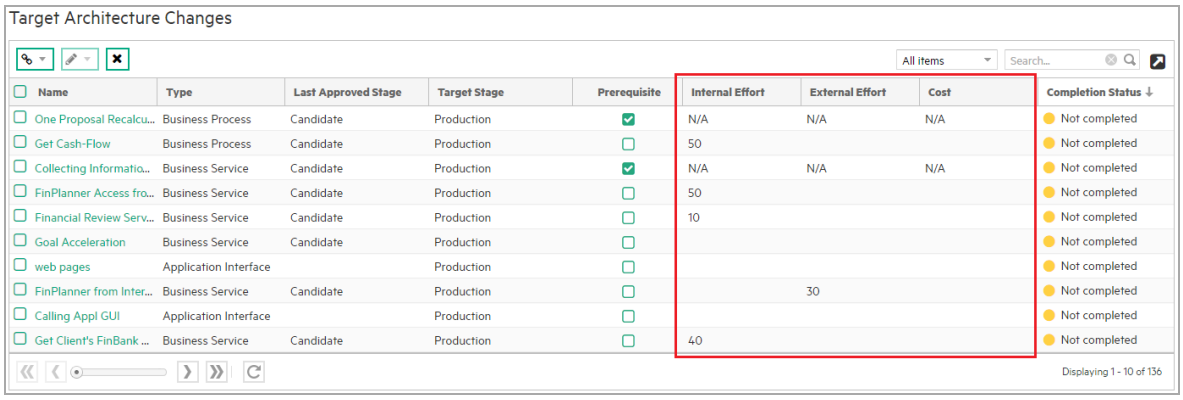
The stages which are not applicable for certain artifacts are automatically skipped; these are those artifacts which are not under governance. There are other artifacts which are under governance but the governing process does not contain the selected stage, those also, are skipped.

4. Click to see detailed report of the artifacts with the status.



Setting Efforts of Architecture Changes

HPE EM allows users to manage costs, and internal and external effort of the architecture changes. To do this, open the respective plateaus which define the architecture changes and then enter the data. This helps speed up the evaluation process and assists stakeholders make some key decisions.

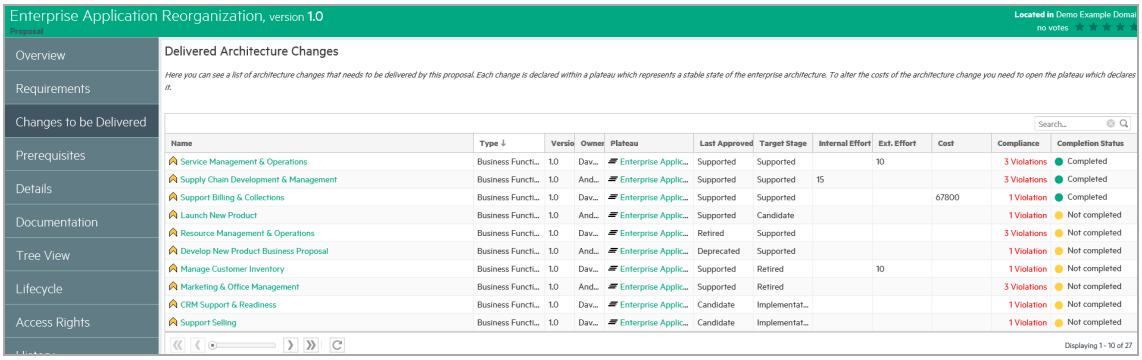


Monitoring Architecture Changes

The proposal owner can monitor the following aspects:

- The overall aggregated cost and effort required to implement the proposal

- The progress of the process:
  - This is possible if a link is setup from PPM to EM ().
  - Monitoring compliance of the solution to company policies.



Chapter 6: Cloud Transformation

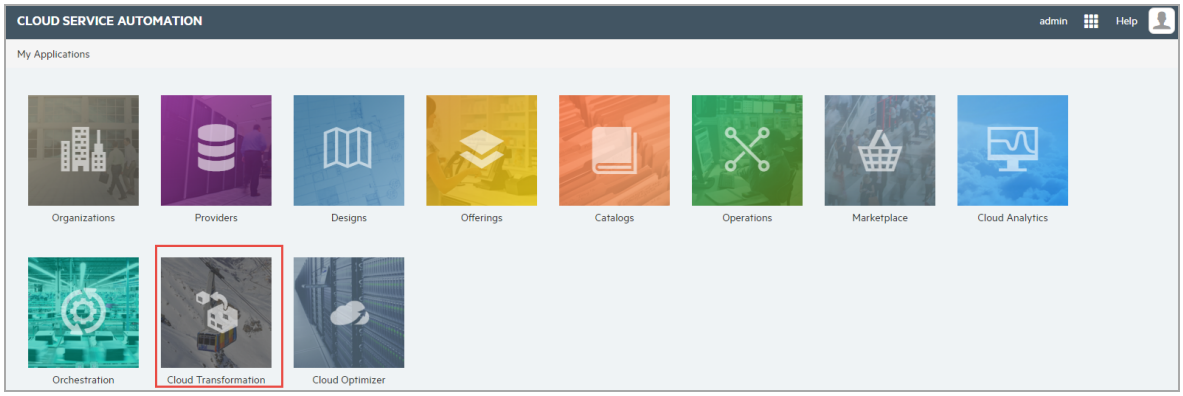
For a detailed overview of this topic refer to "Cloud Transformation" in the *Concepts Guide*.

This section covers the following 4 topics:

- "Accessing from HPE Cloud Service Automation" below
- "Cloud Transformation Guide" below
- "Estimating Cost of Deployment" on page 81
- "Service Design Publishing" on page 86

Accessing from HPE Cloud Service Automation

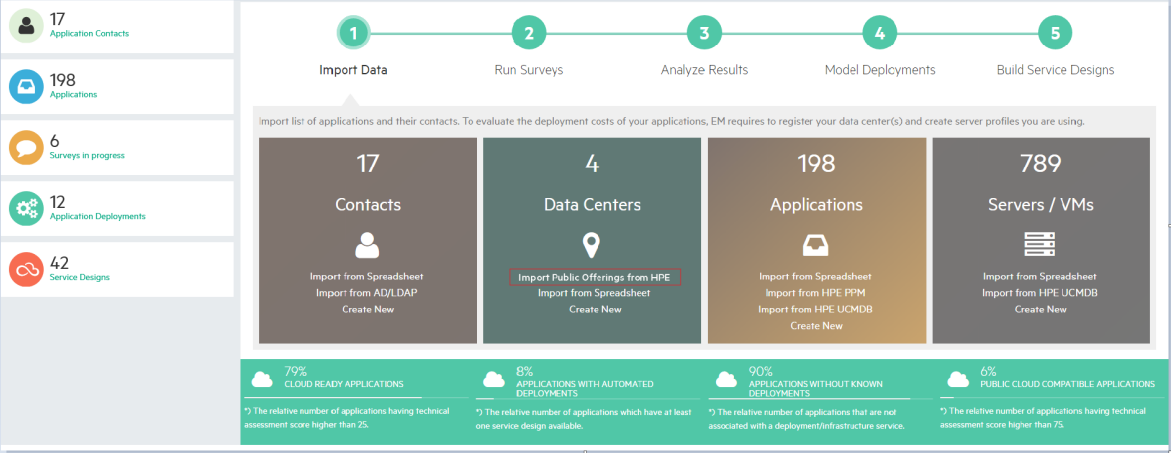
HPE Enterprise Maps (HPE EM) manages centralized Business Model that links with HPE CSA and HPE CODAR products. In the HPE CSA/CODAR homepage, navigate to **Cloud Transformation** tile to access **Cloud Transformation Guide** and **Cloud Transformation Reports**.



Cloud Transformation Guide

The Enterprise Maps Cloud Transformation Guide functions like a wizard and comprises of 3 separate panels. The wizard runs you through the cloud transformation process. This process helps provide

insights into status of IT infrastructure.



The 3 panels of the guide are:

- Left panel: statistics of applications and associated deployments
- Middle panel: wizard to build up reference models and service designs
- Bottom panel: recommended Cloud platforms based on KPIs

Left Panel

Concept	Description
Application Contacts	All contacts.
Applications	All application components.
Surveys in-progress	Surveys currently open.
Application Deployments	Infrastructure services representing deployments of applications.
Service Designs	Infrastructure services representing CSA service designs (in CSA Service Designs domain).

Middle Panel

Step	Description
Import Data	Publish data through Catalog UI or from CSV, PPM and UCMDB.
Run Surveys	Start surveys for applications. Each survey generates scores relevant to the survey perspective.
Analyze Results	View Cloud Transformation Status and Cloud Heat Map reports.
Model	Build up deployments from Sparx Systems EA or import them from

Middle Panel, continued

Deployments	Spreadsheets.
Build Service Designs	Create topology service designs in CSA.

Bottom Panel

Concept	Description
Cloud Ready	Application components having Technical Alignment above 25%. This default value can be customized. The technical alignment score is generated after respondents fill in Cloud Technical Survey.
Automated Deployments	Application components having a service design associated.
Without Known Deployments	Application components with no deployments associated.
Public Cloud	Application components having Technical Alignment above 75%. This default value can be customized. The technical alignment score is generated after respondents fill in Cloud Technical Survey.

Estimating Cost of Deployment

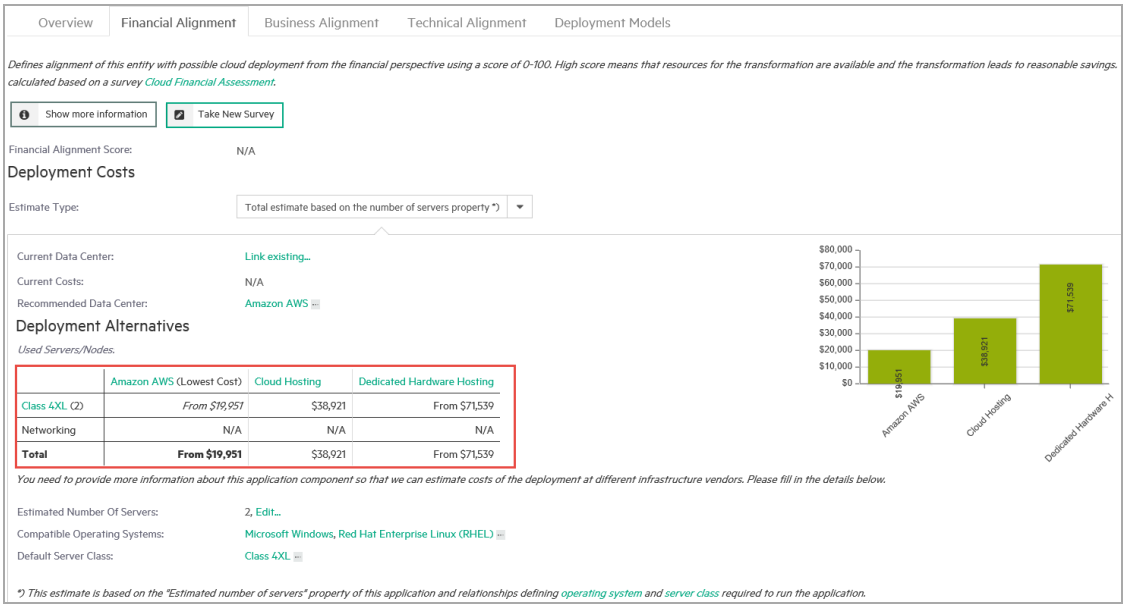
Cloud Transformation UI provides 2 types of estimation for deployment cost:

1. Rough: based on required Server Class and estimated number of servers.
2. Detailed: based on deployment model.

For rough estimation:

1. Open the Application Component.
2. Go to Cloud Transformation tab and click **Financial Alignment** sub tab.
3. In **Estimated Number Of Servers** field click **Edit** and enter a number here.
4. In the **Compatible Operating Systems** field select the Operating System required. If no selection is made, the estimation assumes that the application component can run under any operating system.
5. In **Default Server Class** field click **Link Existing** and select a Server Class.

6. Once all the details are entered, the UI refreshes to show the estimated cost.



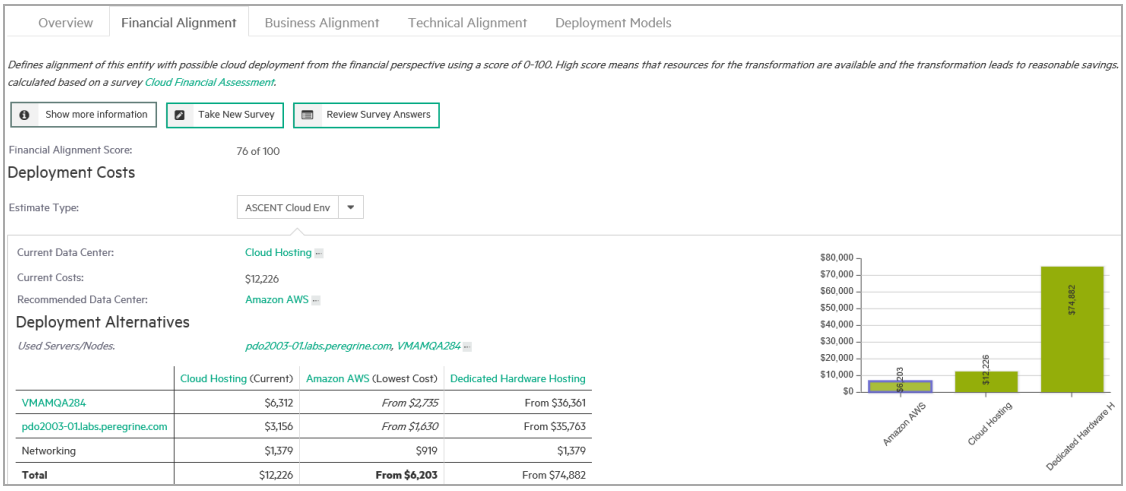
> **Note:** Most applications in EM demo data contain a rough estimation. See one of the examples such as ASAC.

For detailed estimation:

1. Follow "Building Reference Model for Cloud Transformation" on page 159 to create a reference model.
2. Go to Cloud Transformation tab of the application component and click **Financial Alignment** sub tab.
3. In **Estimate Type** field, from the drop down, select a reference model (deployment) from the drop down. The UI refreshes to show estimated cost for this reference model.

   For example: the following screen shot shows the estimated cost of *ASCENT* application

component using *ASCENT Cloud Env* reference model (deployment).



Note: Some applications in EM demo data contain a detailed estimation based on one or more deployment models. Refer to any one of the below for example:

- ASCENT
- CCM Core
- Softsing
- HR System
- Payment Gate
- RMC Backend
- TLS
- Travel Connect Mobile

How cost estimation works

In both estimation types, a Server Class must be specified; for each Server in deployment model (in case of detailed estimation) and for the application component (in case of rough estimation). The specified Server Class is used to find Server Profiles provided by data centers (listed as columns).

In case a data center provides only a single matched server profile (mostly in cases when no Operating System is specified), a single cost value is returned as the estimate for that data center. Else, the lowest cost is returned with 'From' as a prefix.

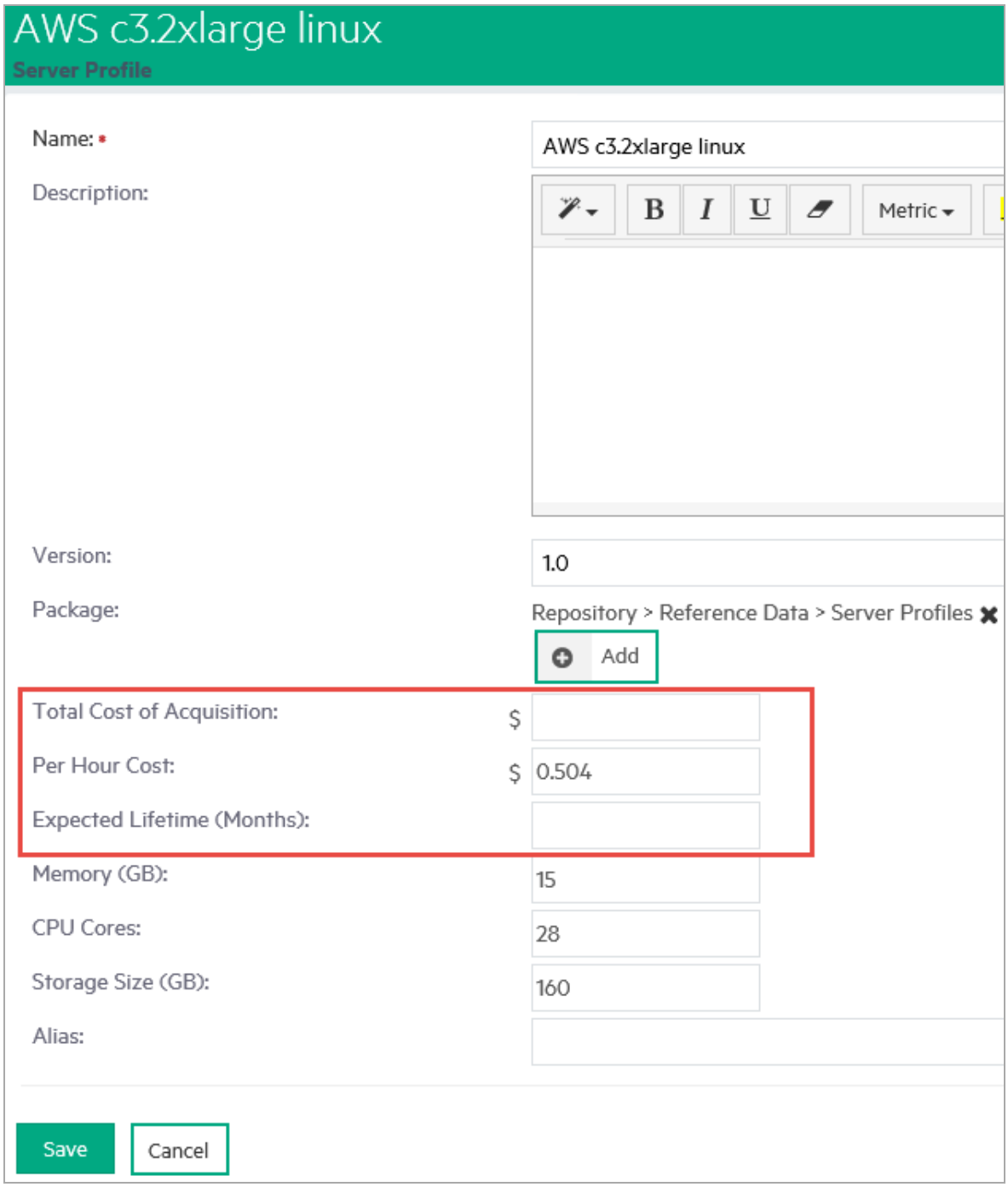
Server profiles provided by a data center have *Assigned* from relationship with that data center. Optionally, a data center may have a default server profile (‘Default Server Profile’ relationship). This default server profile is used for estimation in case no Server Class is specified.

Cost per Server (yearly) is calculated from its specialized Server Profile following the formula below:

```
Server Yearly Cost = [Total Cost of Acquisition / (Expected Lifetime / 12)] + [Cost Per Hour * 24 * 365.25]
```

> **Note:** If Total Cost of Acquisition and Expected Lifetime are not entered (as in below image), the default values are 0 and 48 respectively.

Also, refer to "Domain Visualization" on page 15.



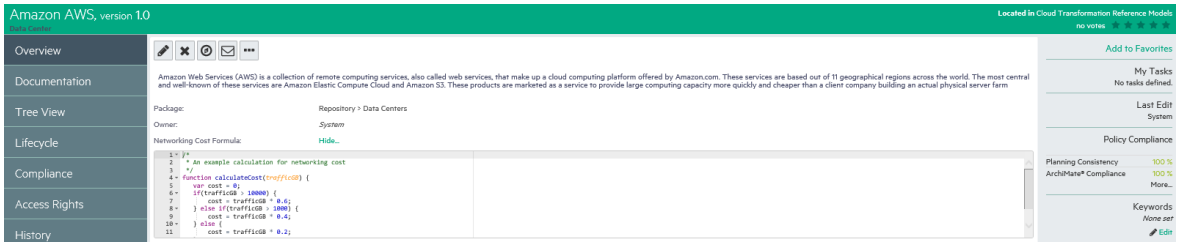
How to Refresh Pricing Information

Pricing information of Amazon Web Service is available and up-to-date as of the release of Enterprise Maps. To get the latest pricing information follow the steps in *EM_HOME/demos/cloud-pricing-import/README* file.

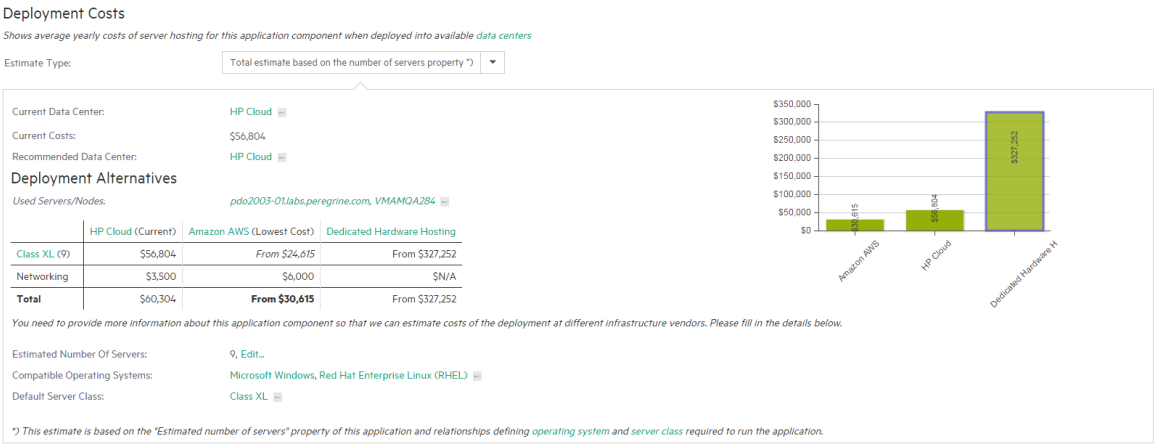
Networking Cost

Networking cost is specific to each data center and built on the monthly network traffic consumed by the application component itself.

A data center calculates the networking cost of any application deployed on it, using a formula defined by the Networking Cost Formula property. This formula is a Javascript function that generates the cost based on the monthly network traffic of the current application component.



The networking cost is then accumulated into the total deployment cost (either based on rough or detailed estimation) of an application component.



The cost is not available for an undefined or malfunctioning formula (syntactically invalid), or if the network traffic is not available for the application component.

Service Design Publishing

A topology service design in CSA is modeled by an Infrastructure Service in Enterprise Maps. This service along with other model elements such as servers, application components, system software etc. can be then published to CSA as a real service design.

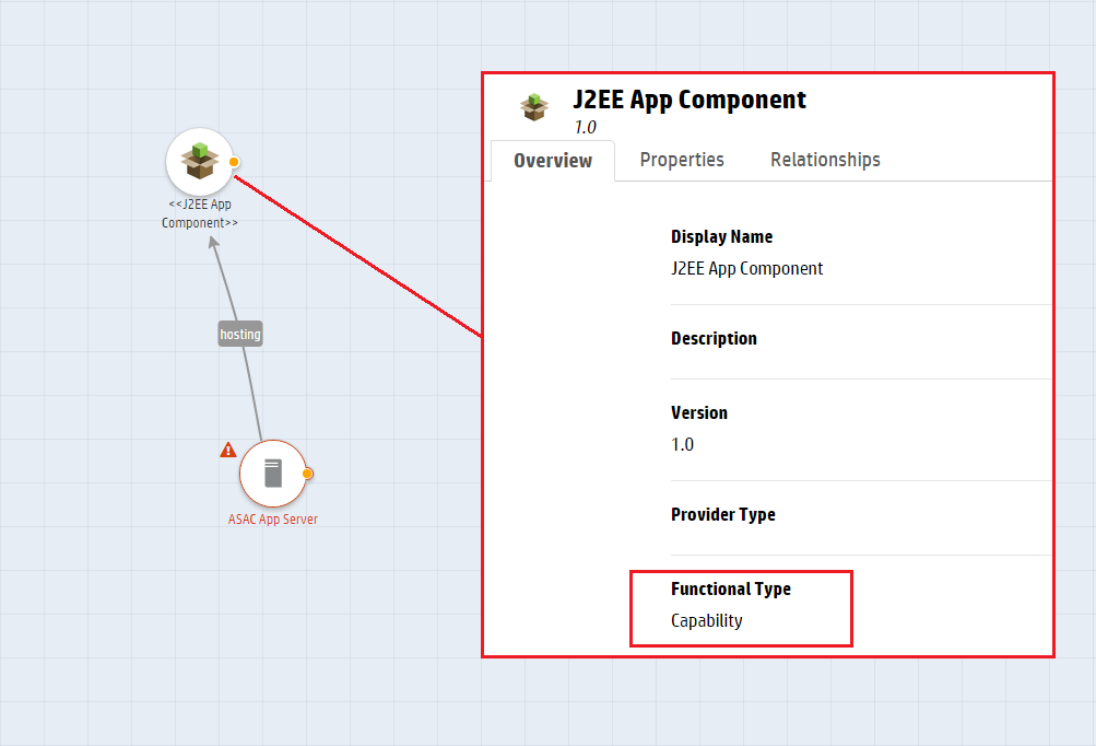
An infrastructure service can be published in 2 ways: either from a CSA reference service design or from a deployment model.

Publishing from a CSA Reference Service Design:

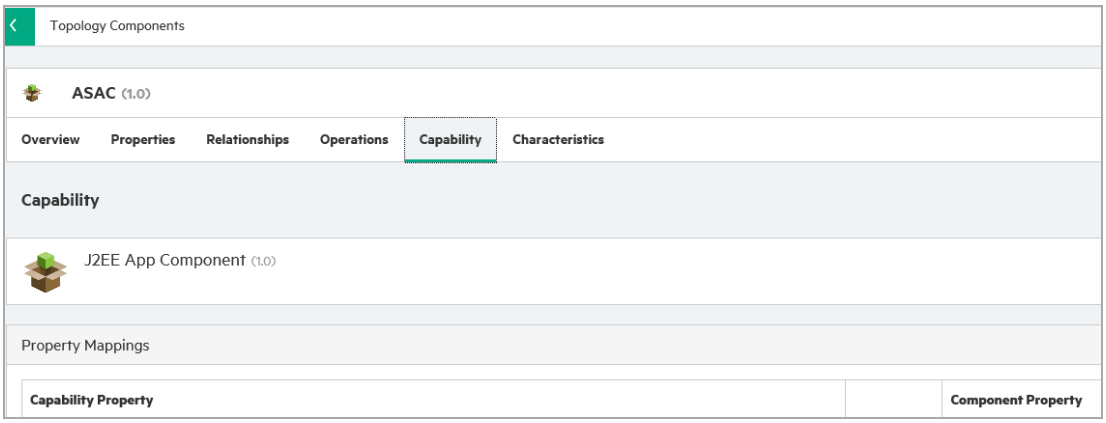
This approach requires a service design which is created in CSA and then imported into EM as a reference model. The reference model is then used to publish the actual model back into CSA.

The reference service design must contain a component with functional type of Capability. This component acts as a reference component; a place holder which is then replaced by a more concrete one during publishing.

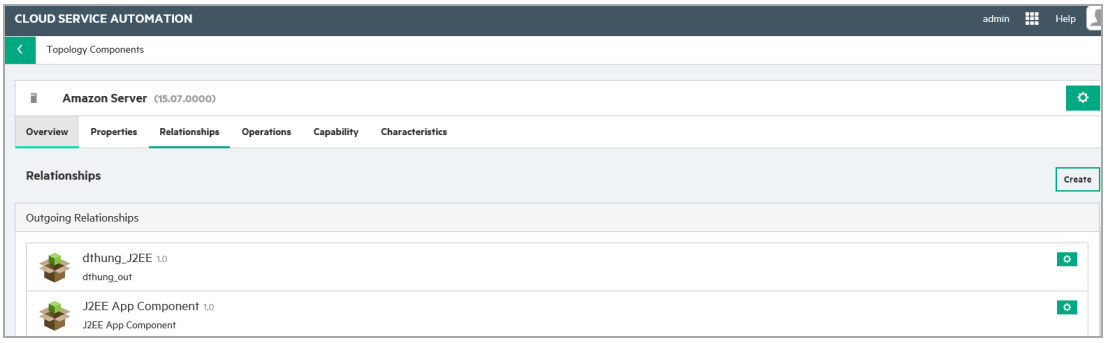
- **How to Publish**
  - In CSA, create a reference service design as below:



  - Create a component called ASAC; the functional type for which is Concrete.
  - Create another component called J2EE App Component; the functional type for which is Capability.
  - Define J2EE App Component as the supported capability of ASAC.

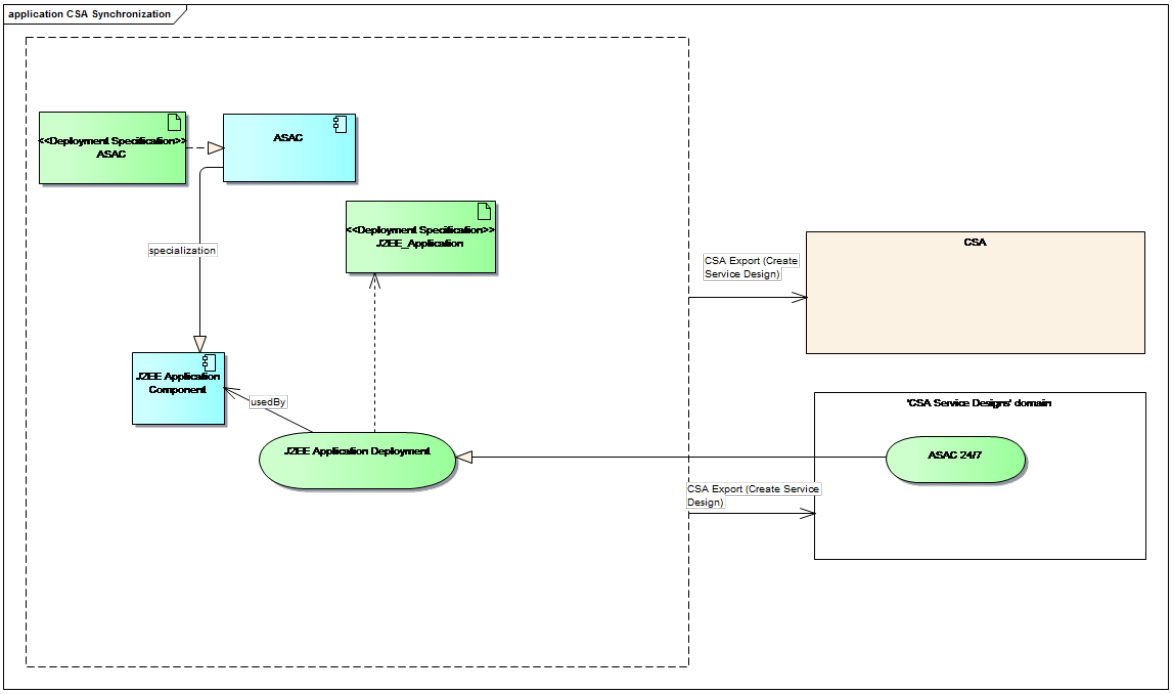


- Define **outgoing** relationships from other components. For example: servers to J2EE Application Component. These relationships are inherited by ASAC by default.



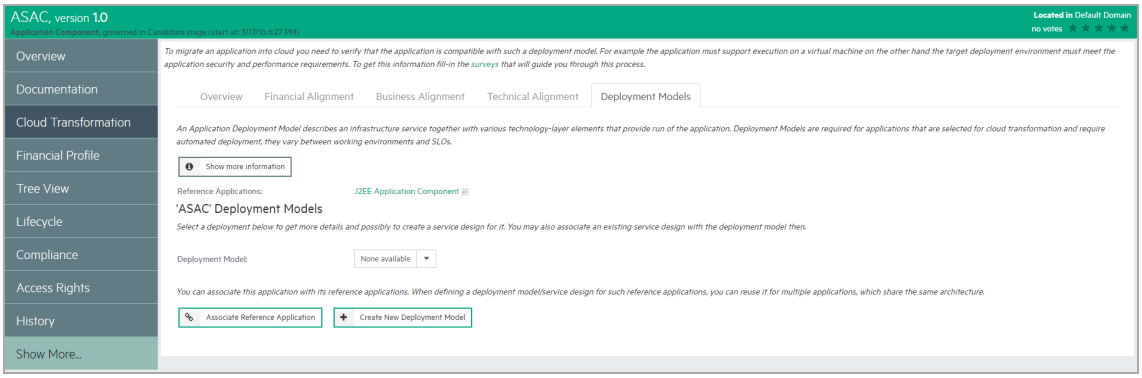
- Create the service design with J2EE App Component and other relevant components such as servers.

In EM, with regard to below example model prepare as per steps given ahead:

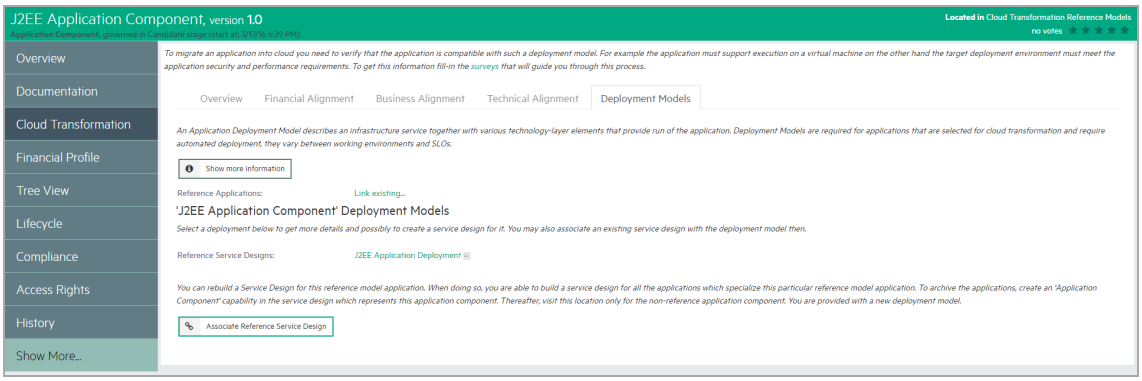


- Create an application component: ASAC.
- Create a reference application component (application in a Reference Model domain): J2EE Application Component.
- Import the components and service designs from CSA (For details see, "Importing Data from Integration Server" in *Administration Guide*).
- Run the **Deployment Specification Association Update** Task to link the imported deployment specification (representing components in CSA) to the existing application components - system software. This is required to publish application components and system software into CSA.

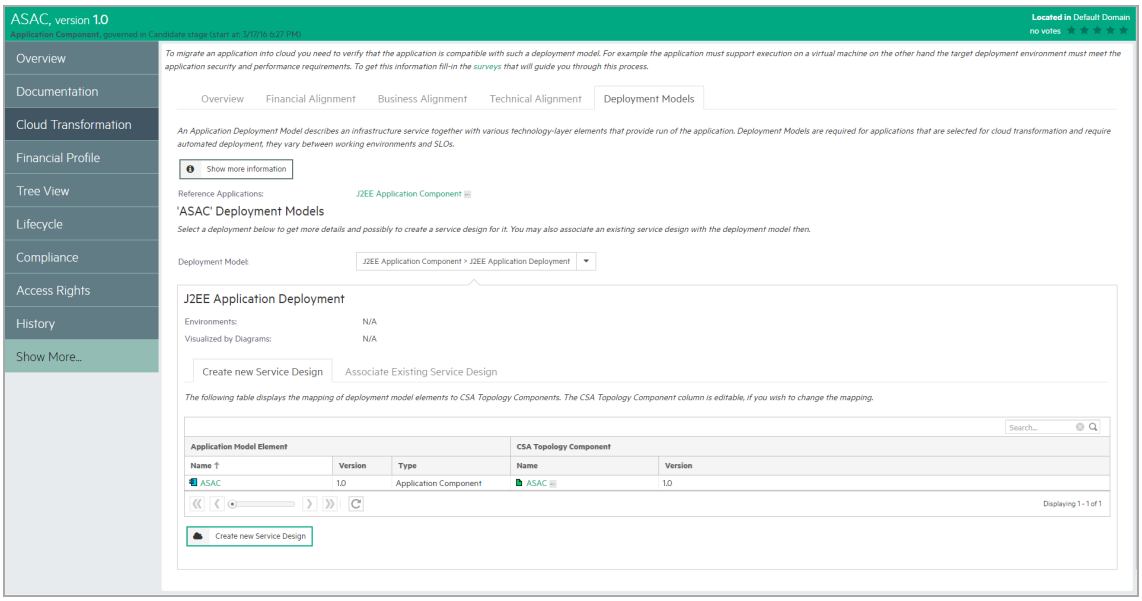
- Make J2EE Application Component a reference application of ASAC.



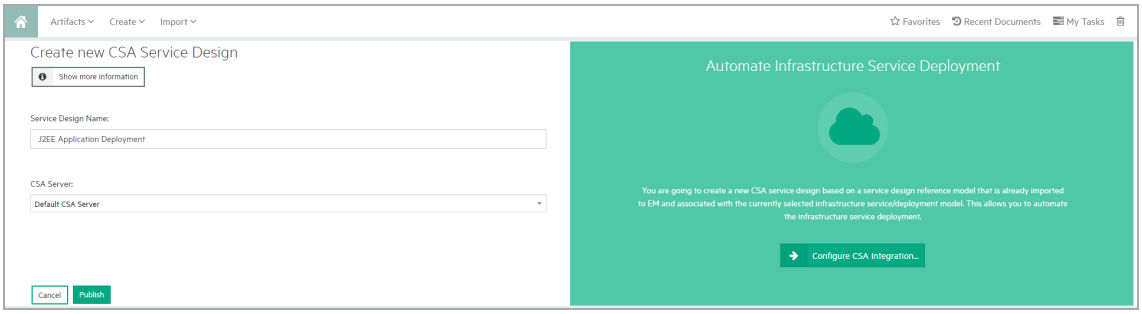
- Link J2EE Application Component to the imported infrastructure service (reference service design).



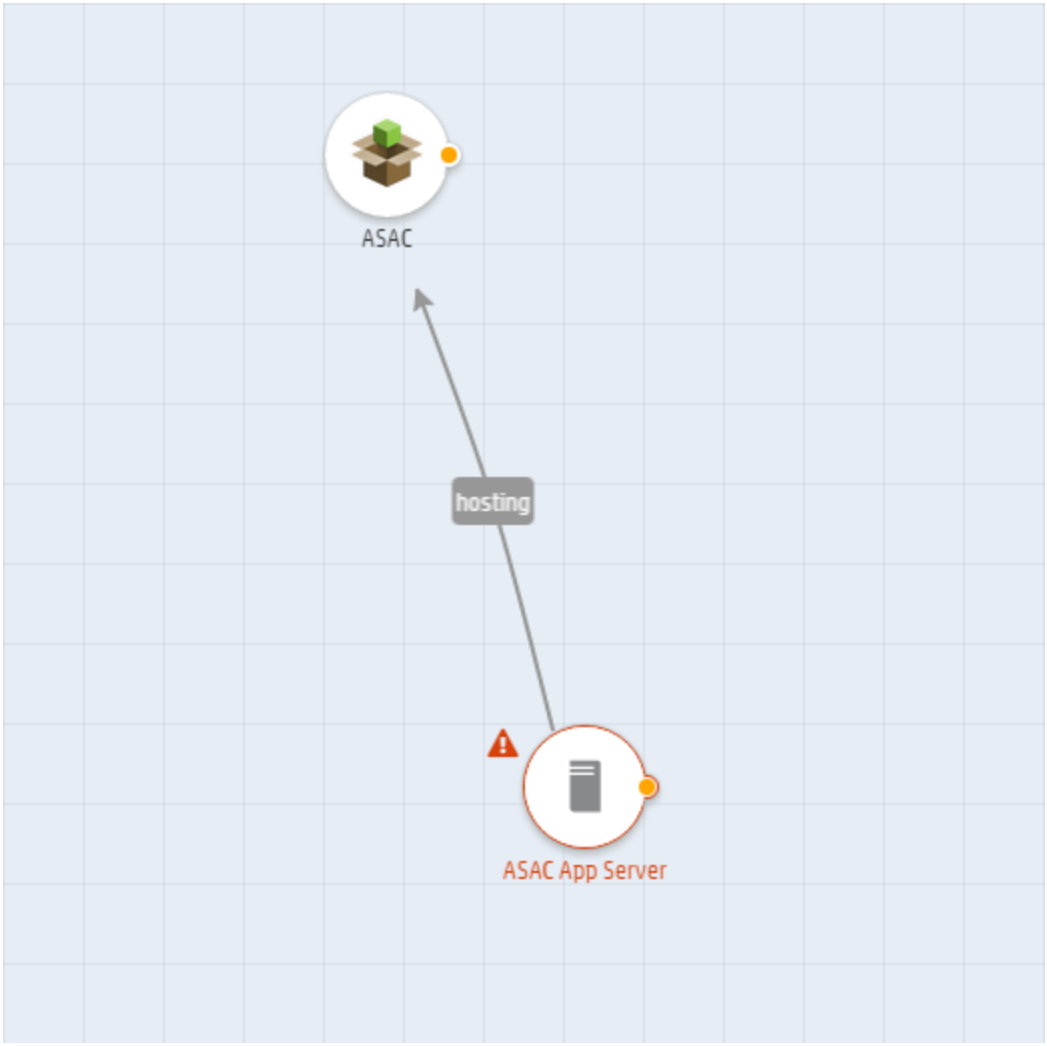
- Ensure that infrastructure service is linked to a deployment specification which contains JSON data of the reference service design.
- Go to **Cloud Transformation > Deployment Models** tab of ASAC application component. Select the deployment model to be published from the drop-down list, review its mapping to CSA topology components and click **Create new Service Design** button.



- Provide the service design name and a CSA integration server for publishing and then click **Publish**.



- The published service design looks as in the below image:

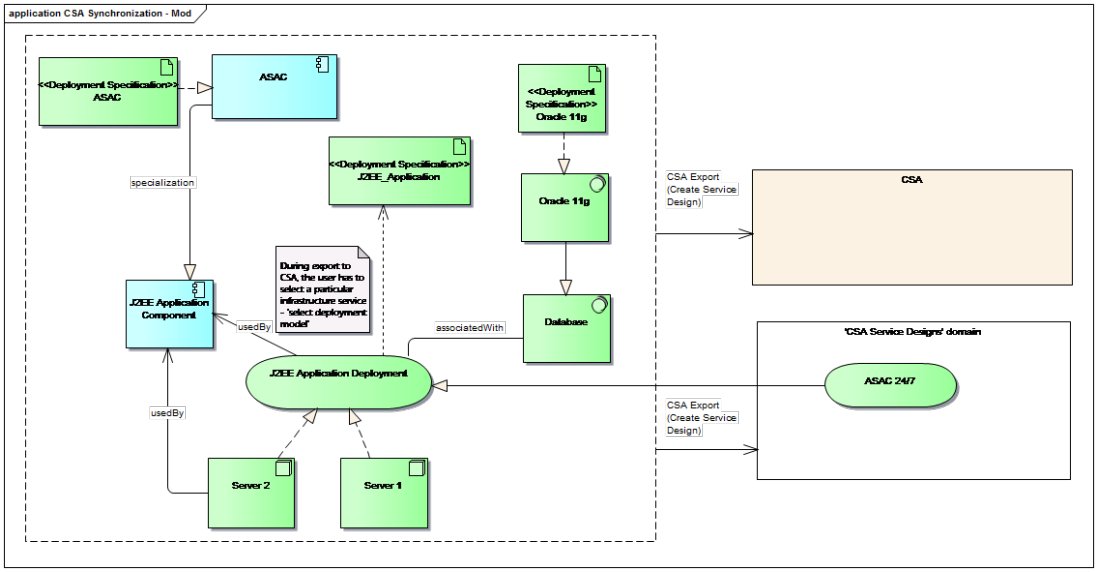


Publishing from a Deployment Model:

This type of publishing relies upon the artifacts (model elements) associated with an infrastructure service. Together, they form a complete deployment model to be published into CSA.

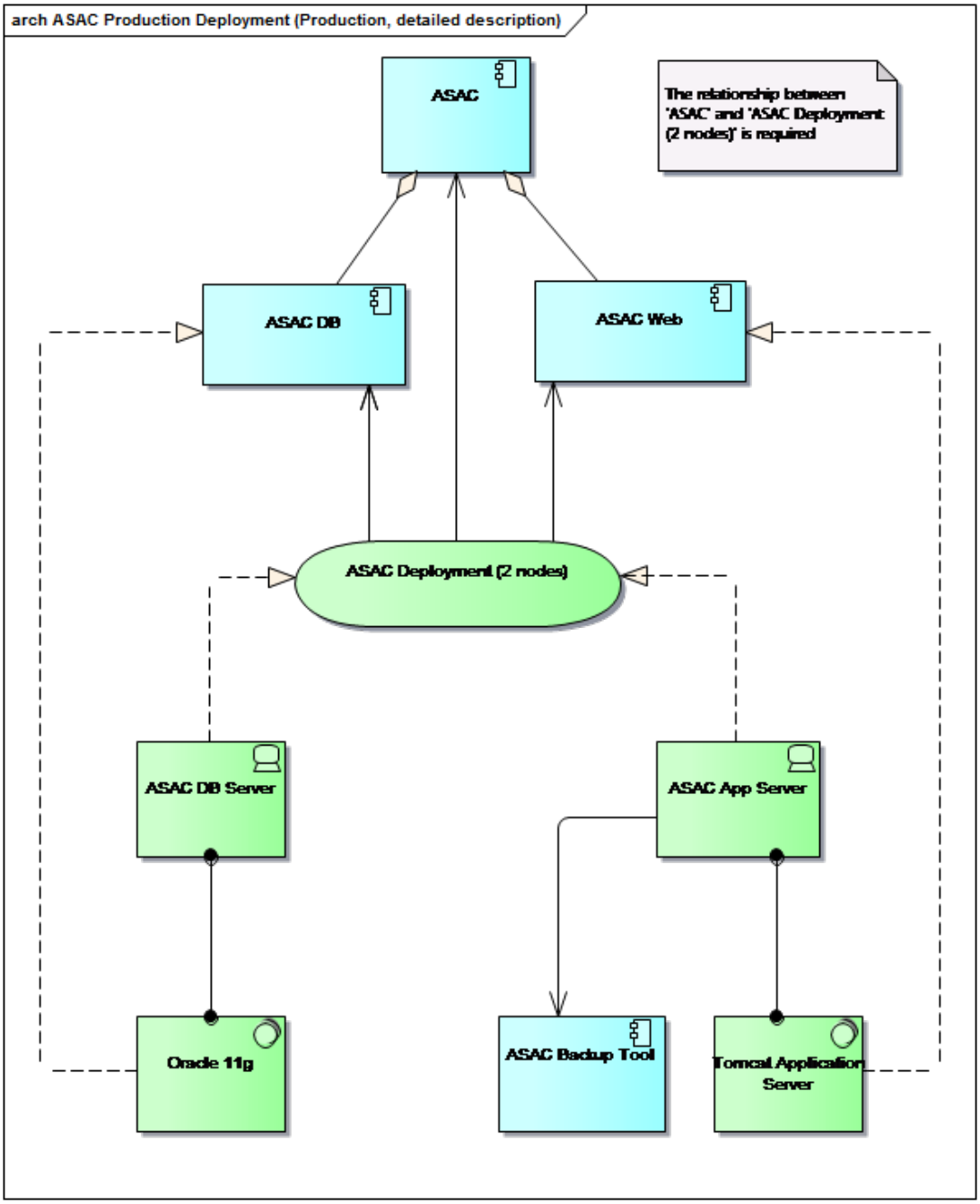
- **Supported Models:**
  - **Archimate Compliant Model**

    This model demonstrates a simple deployment model compliant with Archimate. It just provides an overview of the model without any details of which server the application is deployed on.



- **In-Depth Model**

  In addition to the Archimate compliant model, EM also supports a model with a higher level of granularity which provides further details on how the application components are deployed onto servers or decomposed into sub-components.

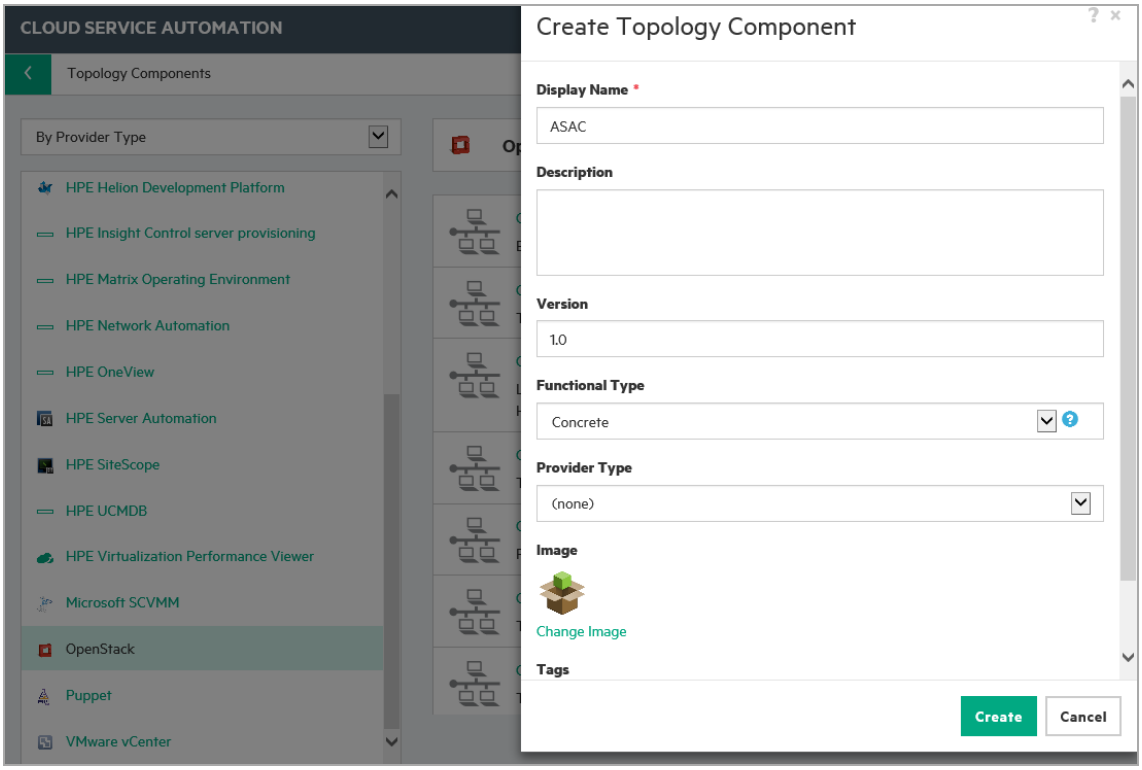


How to Publish

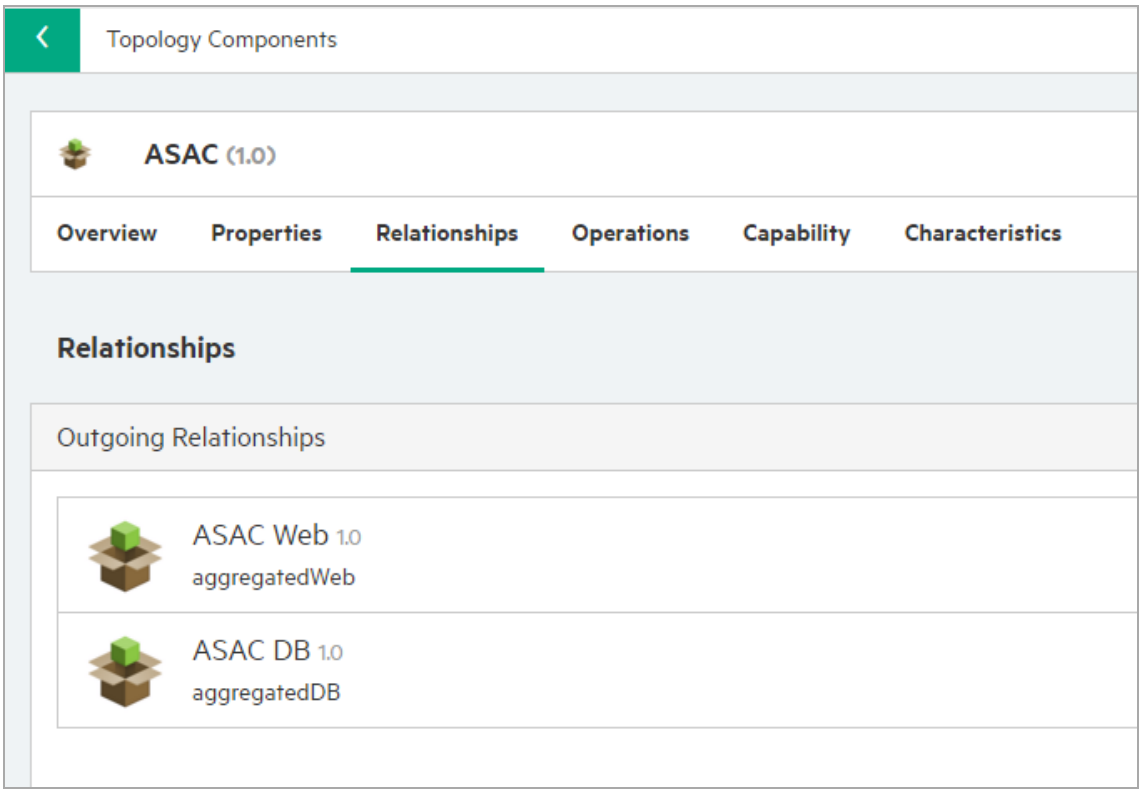
In CSA

- Create relevant components with the same names, which represent the application components, system software to be published to CSA. For example: ASAC, Oracle 11g, etc. It is not required to

create a component for an application component or system software which is *specialized* by another one as these are not published into CSA at all.



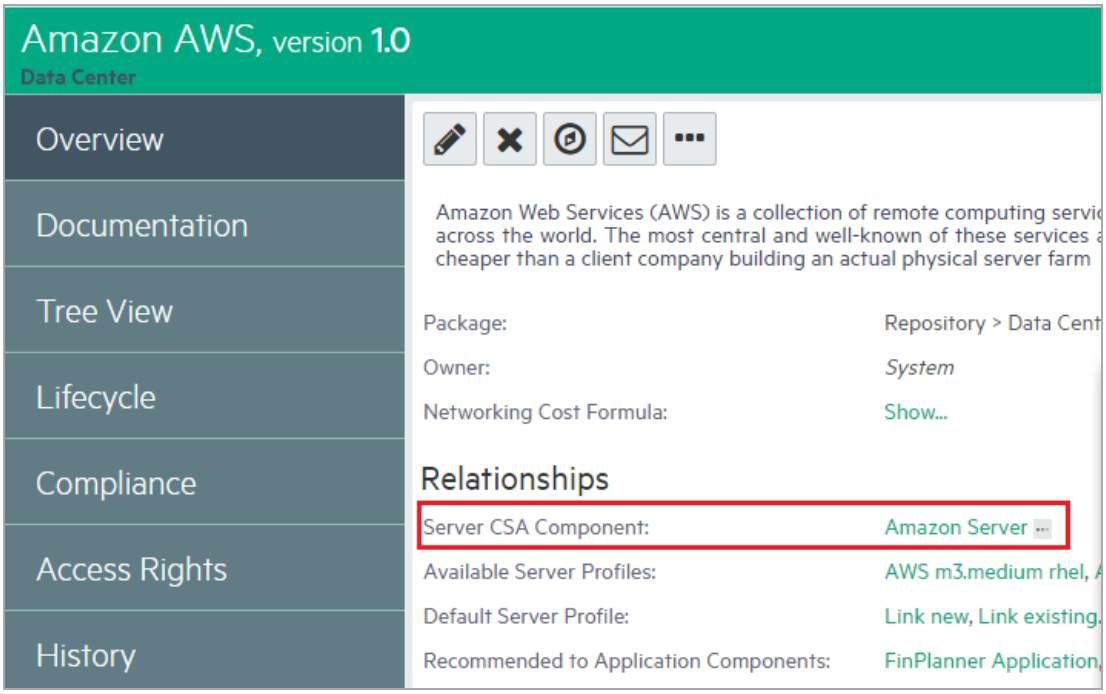
- Define the ***outgoing*** relationships amongst the components created, based on how they are visualized in the models. However, the relationship names can be defined arbitrarily as they do not rely upon EM relationship names. These relationships, if defined correctly, are used to visualize how components are connected in the service design.



In EM

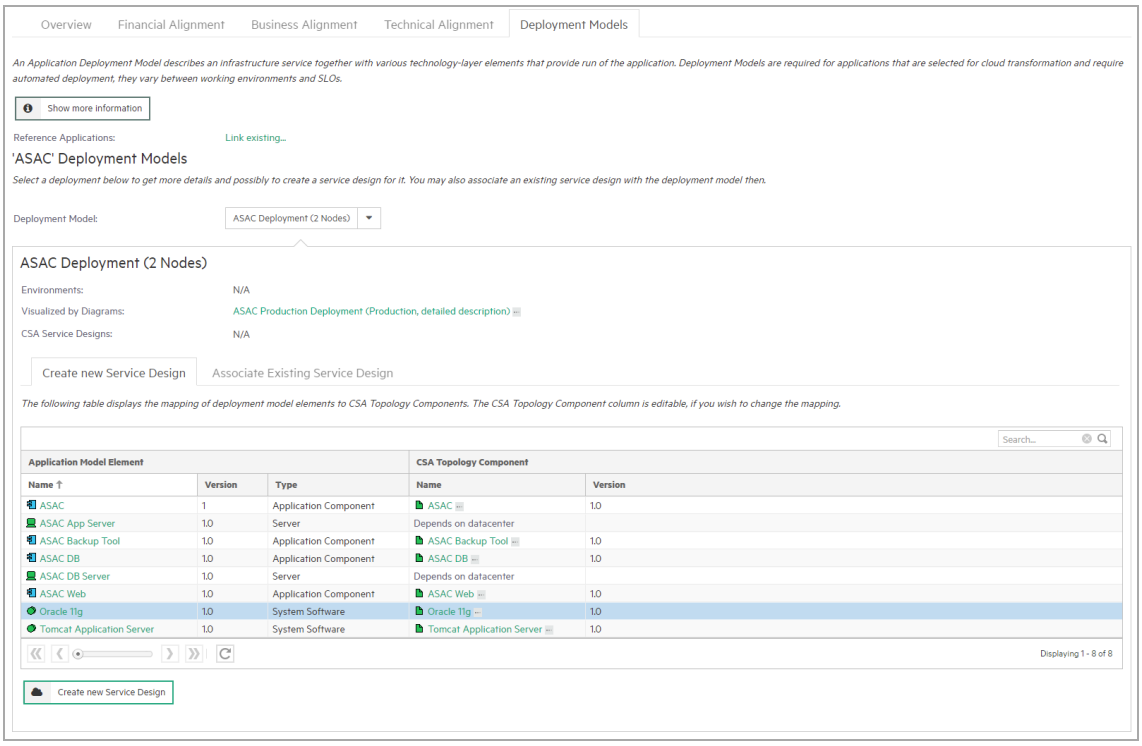
- Prepare a model as illustrated above (it is recommended that the model is developed by a modeling tool such as Sparx EA), with the following prerequisites/practices:
  - The infrastructure service can be used by one or more application components.
  - An application component can use multiple infrastructure services. User must select which one is required for publishing.
  - Application components and system software might be *specialized* by other components and system software. These components and system software are not published, since they are regarded as reference artifacts in the model.
  - Application components and system software (which are not specialized by others) must be *realized* by deployment specifications imported from CSA (For details see, "Importing Data from Integration Server" in *Administration Guide*). These deployment specifications contain the CSA component information which is required to publish an application component and system software to a CSA service design.
  - The data center is required to create the components which represent servers in a CSA service design. Use the “Server CSA Component” relationship on the Data Center view page to specify

which server component is to be used for publishing. The components must be imported from CSA first.

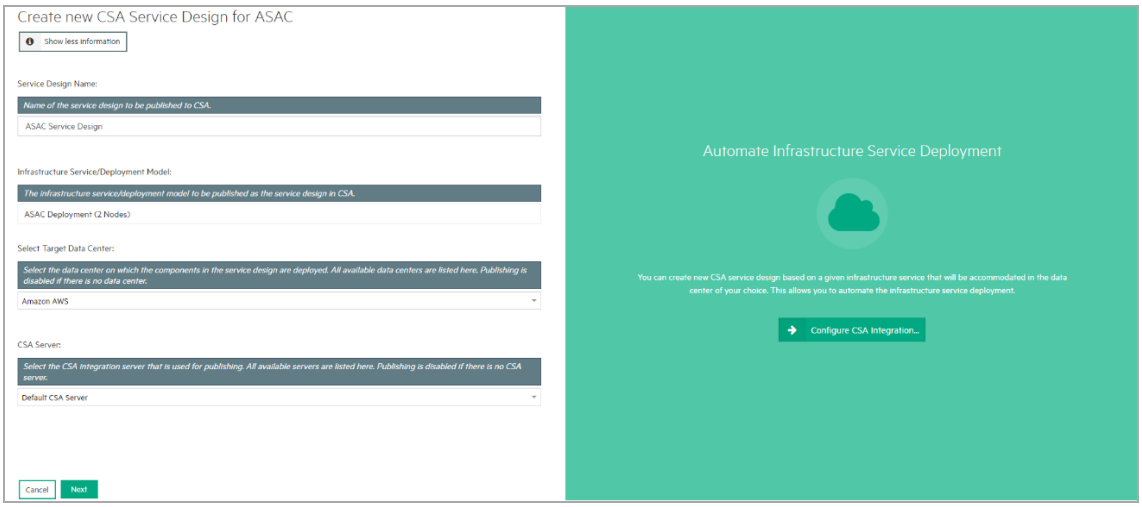


If this relationship does not exist, the server component is retrieved from the default configuration (`CSATopologyDesignTemplate.ftl script`). Current supported data centers are: “Amazon AWS” and “VMware vCenter”. The data center artifacts must be named accordingly.

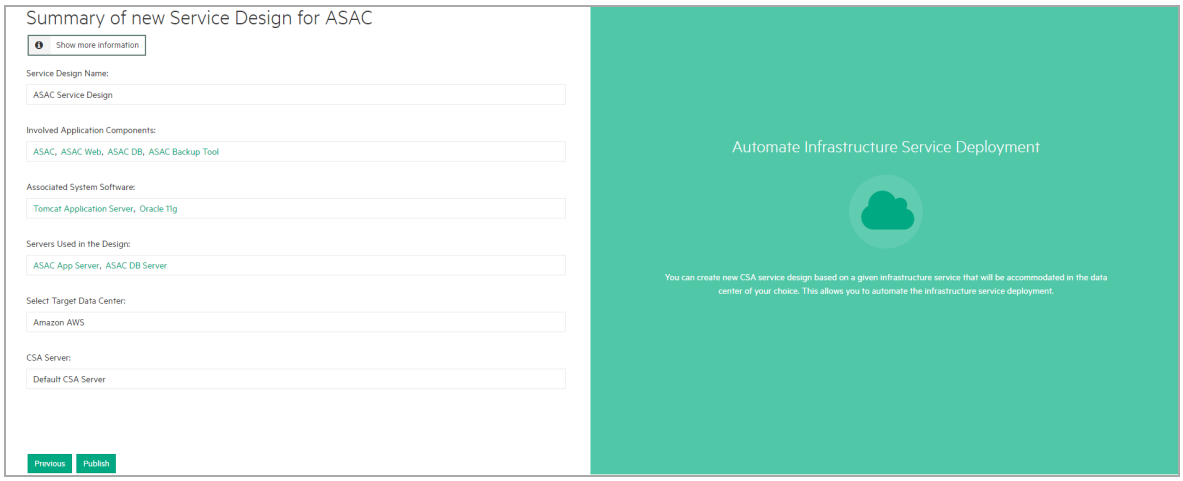
- Open an application component in the model which is not *specialized* by any other. For example: ASAC application component.
- Go to **Cloud Transformation > Deployment Models** tab, select the deployment model to be published from the drop-down list, review its mapping to CSA topology components and click **Create new Service Design** button.



- Provide further inputs for publishing, as in the below image. Click **Show more information** button to display the help texts.



- Publishing is disabled if no data centers or CSA integration servers are available in Enterprise Maps.
- The second step of the wizard provides a summary of the service design to be created in CSA.

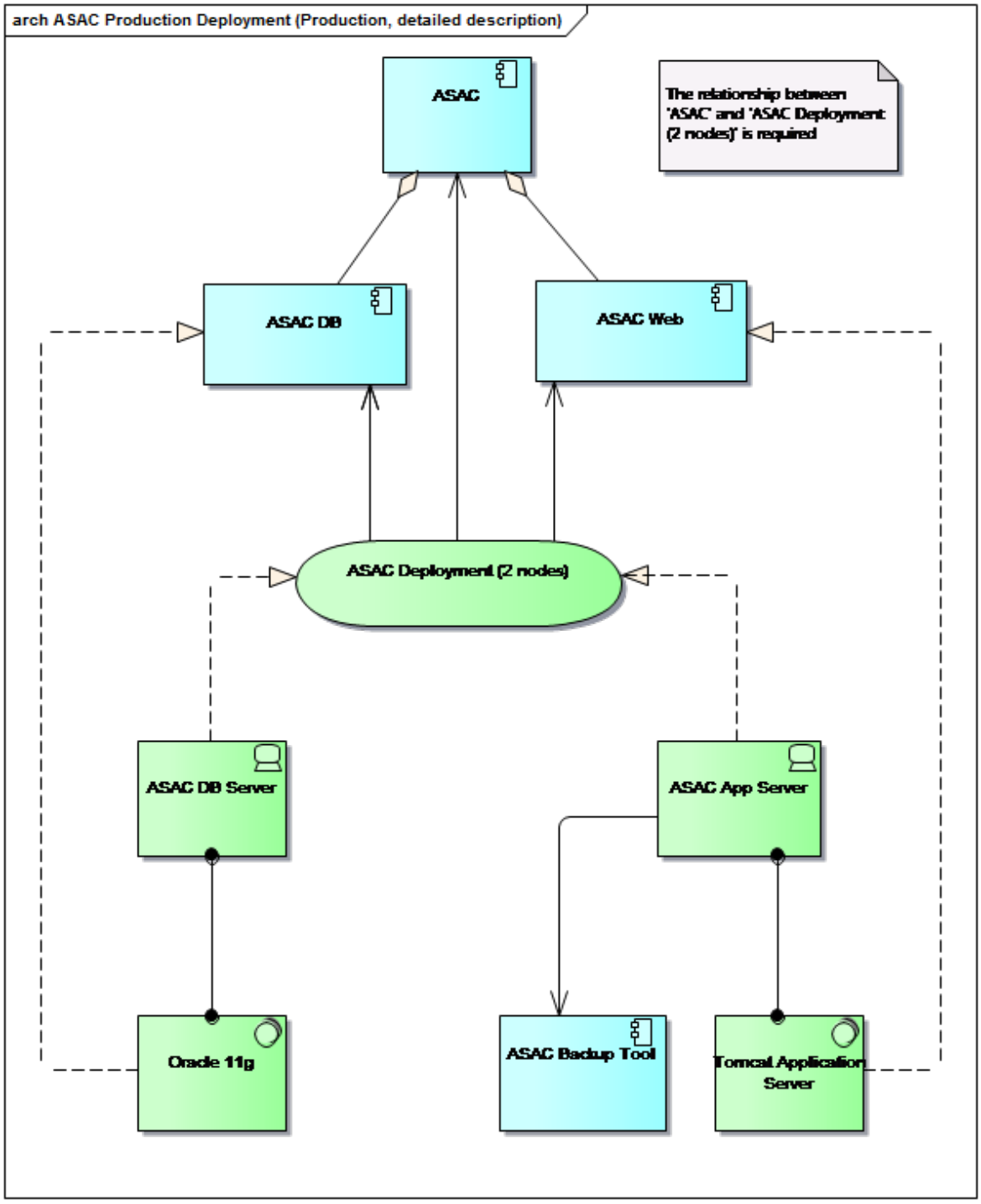


> **Note:** The current user publishing the infrastructure service must have the "Read" access rights for all artifacts involved in the model. Else, either the publishing is disabled or the published service design is incomplete.
>
> If the model elements are not mapped to relevant topology components, then these components (along with their relationships) get created on CSA during publishing. The elements are also mapped to the created components.

Publishing Example Diagrams

EM provides some example service designs which are modeled by the diagrams in Sparx EA. Examples of these diagrams can be found in `[EM installation folder]\demos\service-design-publishing\publish-csa-sample.eap`.

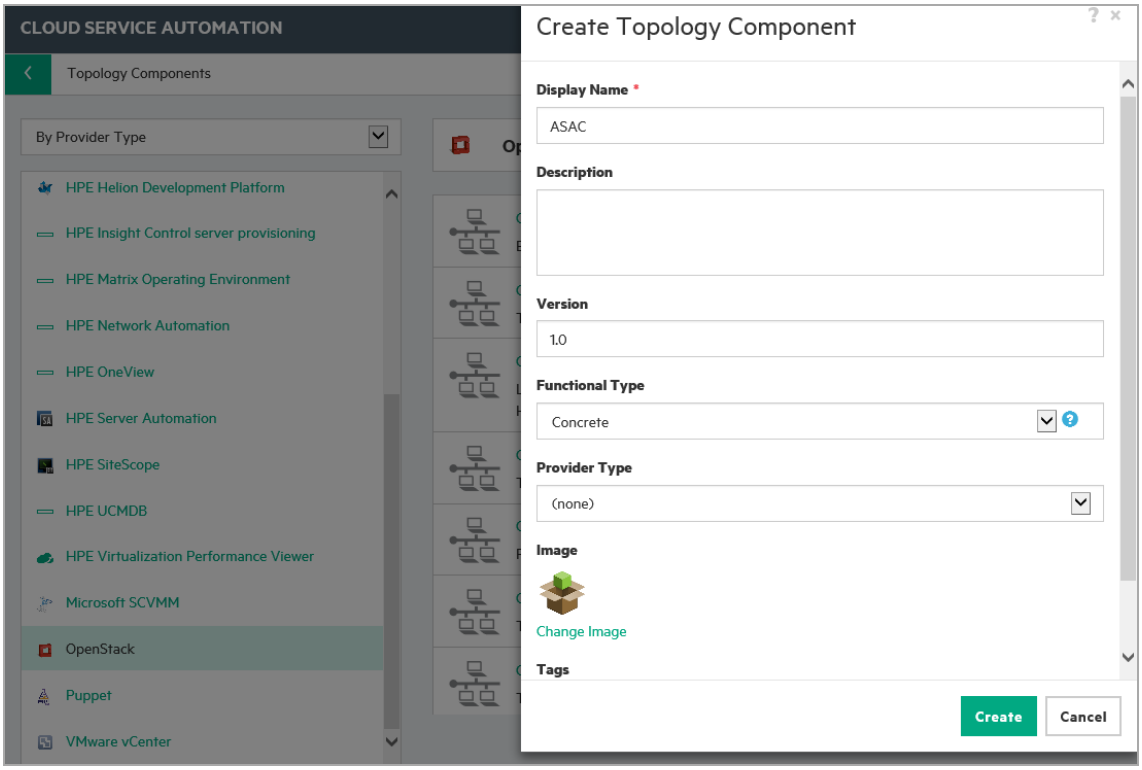
This topic provides step-by-step instructions on how to publish one of these supported design models to CSA as a service design.



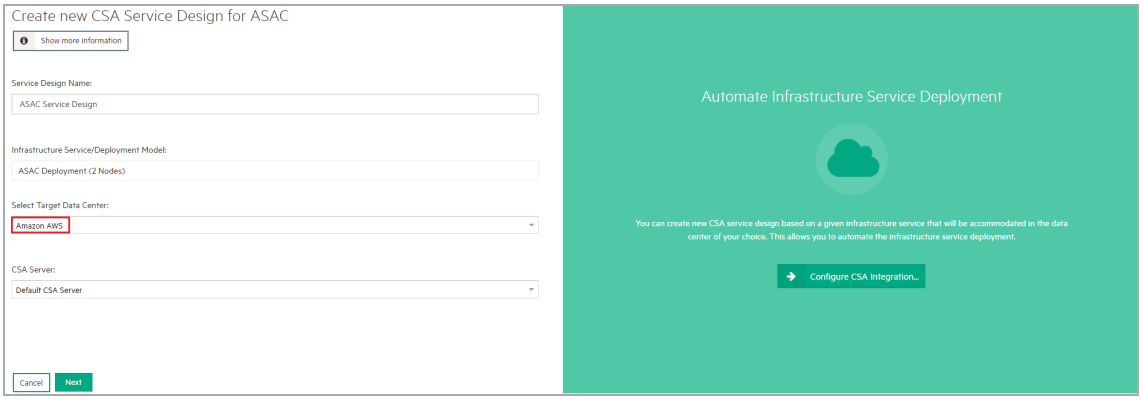
In CSA:

- Create relevant components which represent the application components and system software to be published to CSA. For example: ASAC, ASAC DB, ASAC Web, Oracle 11g, ASAC Backup

Tool and Tomcat Application Server.



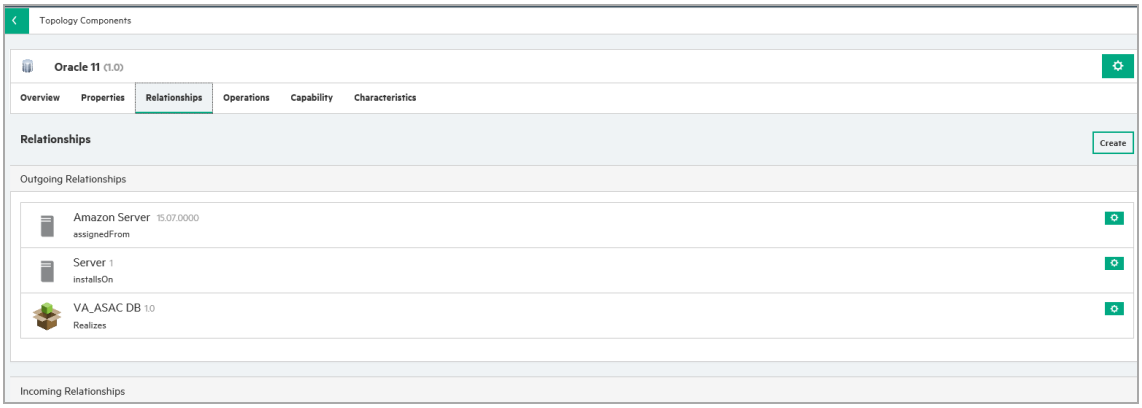
- EM supports default server components in CSA such as Amazon Server, vCenter Server and OpenStack Server. These servers are used for publishing depending on the data center chosen as highlighted in the image below. Hence, it is not required to create components for ASAC DB Server and ASAC App Server, unless you wish to use your own-defined servers.



> **Note:** Currently, OpenStack Server is being used for HPE Helion.

- Define the relevant relationships between CSA components to visualize how application components, system software and servers are related to each other. That is to create:

- Outgoing relationship from ASAC to ASAC DB and ASAC Web
- Outgoing relationships from Oracle 11g to ASAC DB and ASAC DB Server
- Outgoing relationships from Tomcat Application Server to ASAC Web and ASAC App Server
- Outgoing relationship from ASAC App Server to ASAC Backup Tool

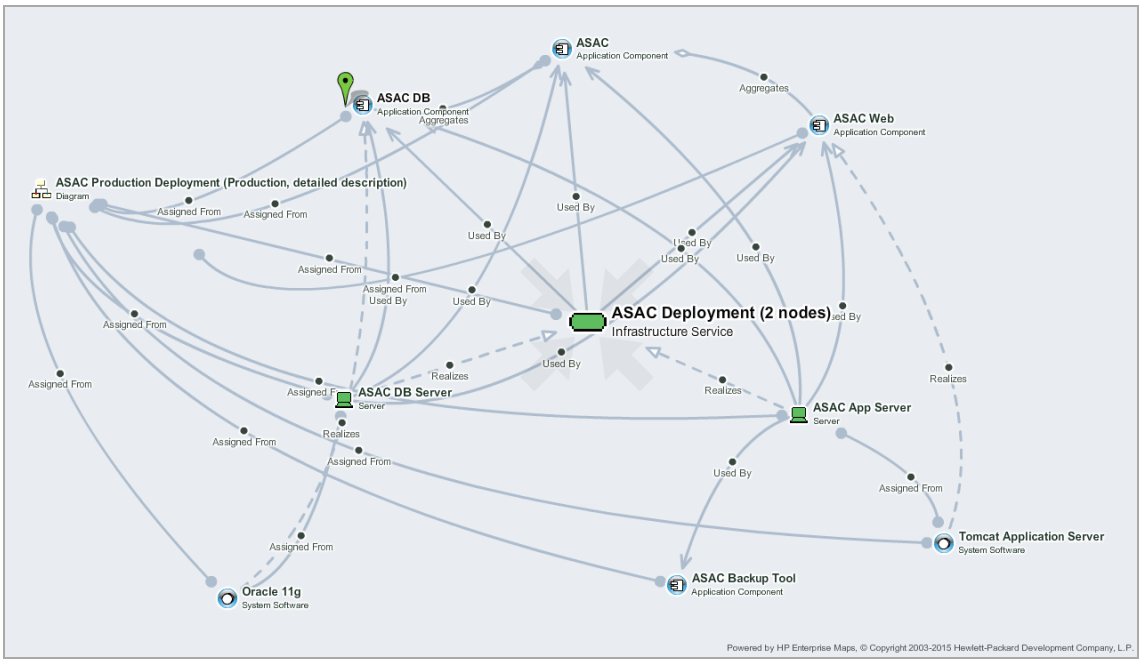


In Sparx EA

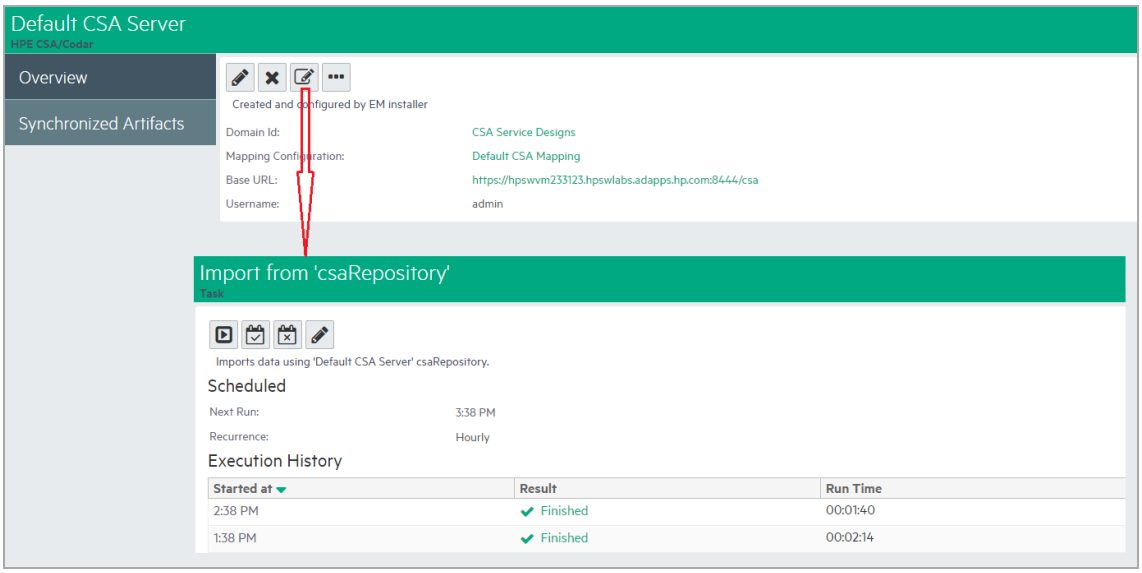
- Open the ASAC Production Deployment (production, detailed description) diagram in the project
- Sync to EM

In EM

- Verify that artifacts and their relationships are created accordingly. To do so, open the diagram that was synced to EM or open one of the artifacts in the Navigator as illustrated below:

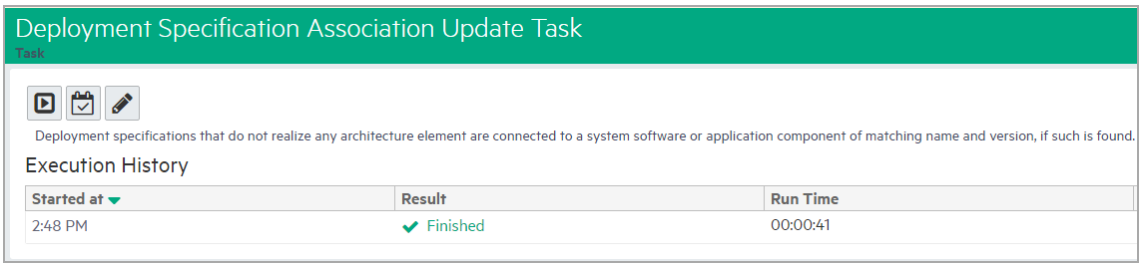


- Create a CSA repository and then execute the associated sync task to import the components from CSA.

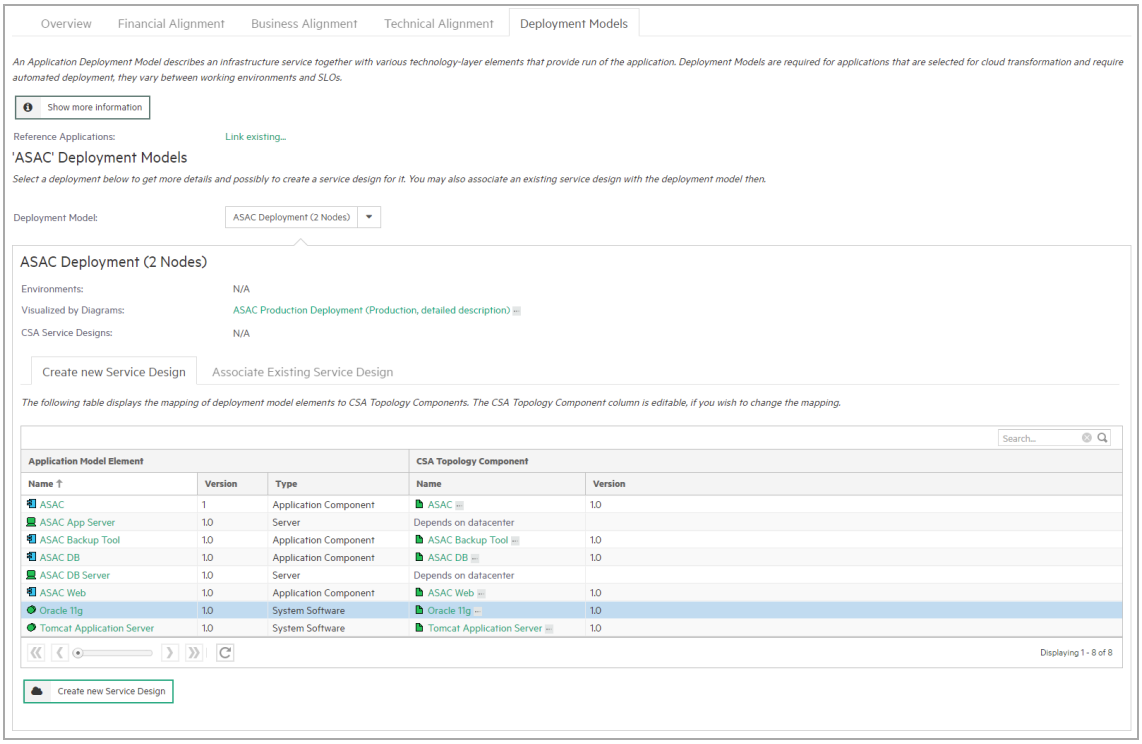


> **Note:** Components are imported to EM as Deployment Specification artifacts.

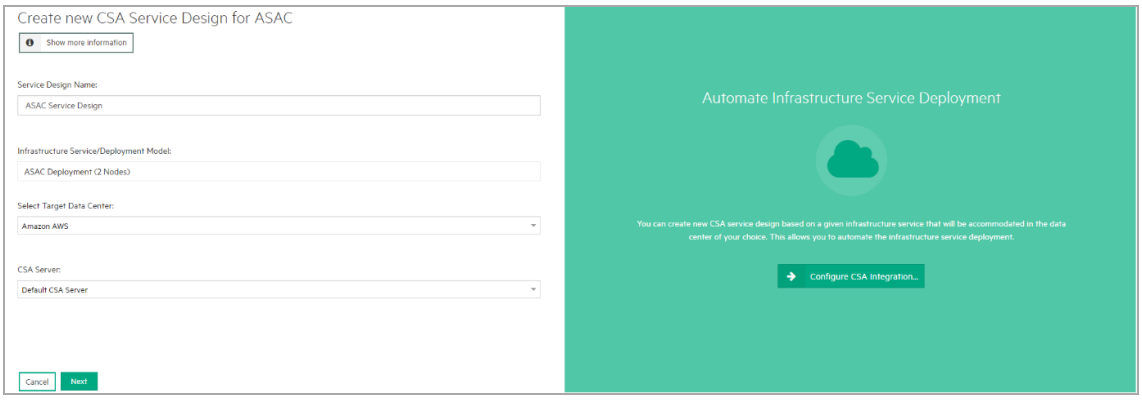
- Run the **Deployment Specification Association Update Task** to associate the application components and system software to the ones imported from CSA.



- Go to **Cloud Transformation > Deployment Models** tab of ASAC, select the deployment model to be published from the drop-down list, review its mapping to CSA topology components and click **Create new Service Design** button.

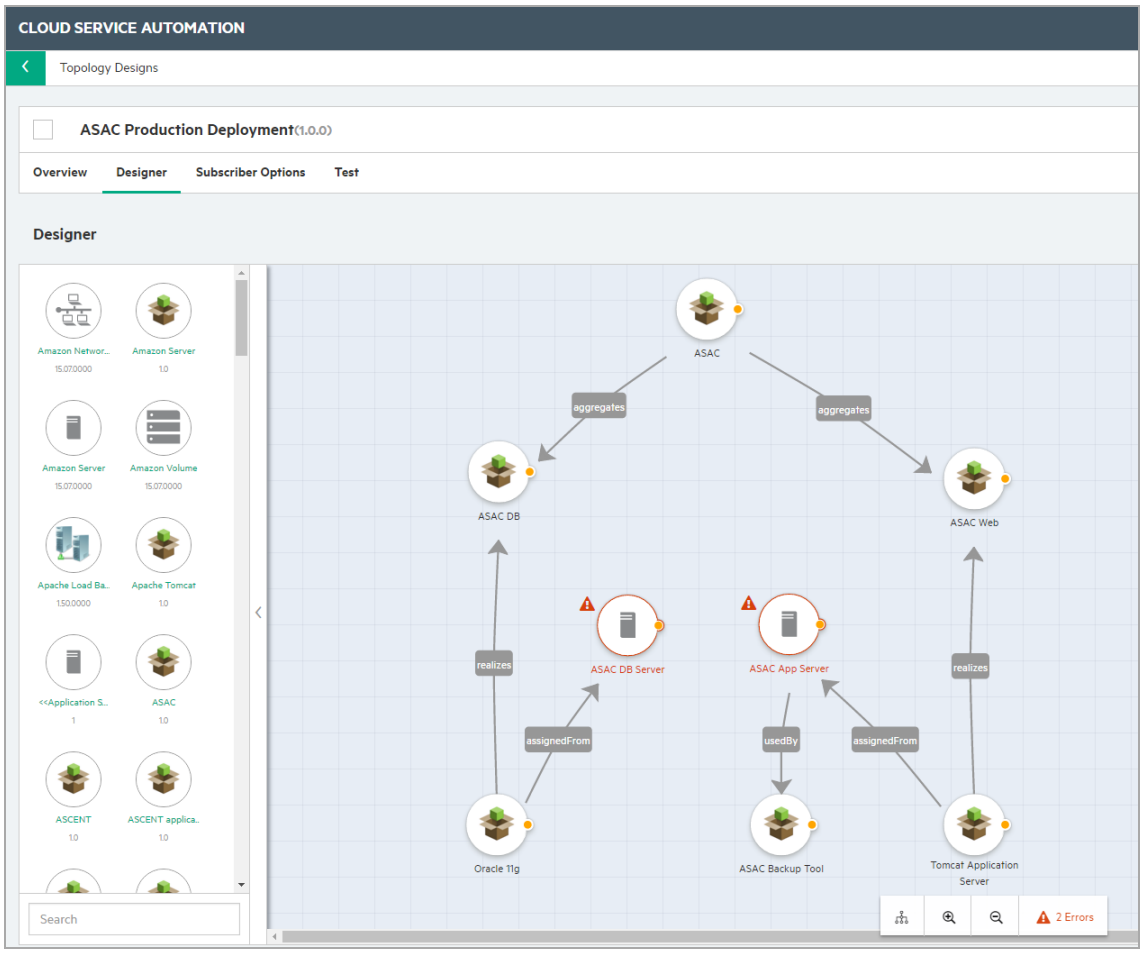


- Provide more information such as service design name, target data center which decides what server component is used to create the server components, etc. in the first step of the publishing wizard.



- Thereafter, in the summary step, verify the data to be published to CSA.

- Once the publishing is finished successfully, you can check the service design created in CSA.



Note: The relationship names and component icons are defined arbitrarily by CSA users. Therefore, the published service design could look slightly different from the one above.

Chapter 7: Surveys

This section covers the following topics :

- "Understanding Survey Definition" below
- "Starting New Survey" on the next page
- "Undertaking the Survey" on page 110
- "Keeping Track of Survey" on page 112
- "Reviewing Answers" on page 113
- "Taking a Self-Assessment Survey" on page 115
- "Monitoring and Managing Survey" on page 117

Understanding Survey Definition

A Survey Definition In Enterprise Maps consists of the questions in a survey . This Survey Definition artifact contains out-of-the-box survey definitions designed to help assess the possibility of migrating Application Components into Cloud.

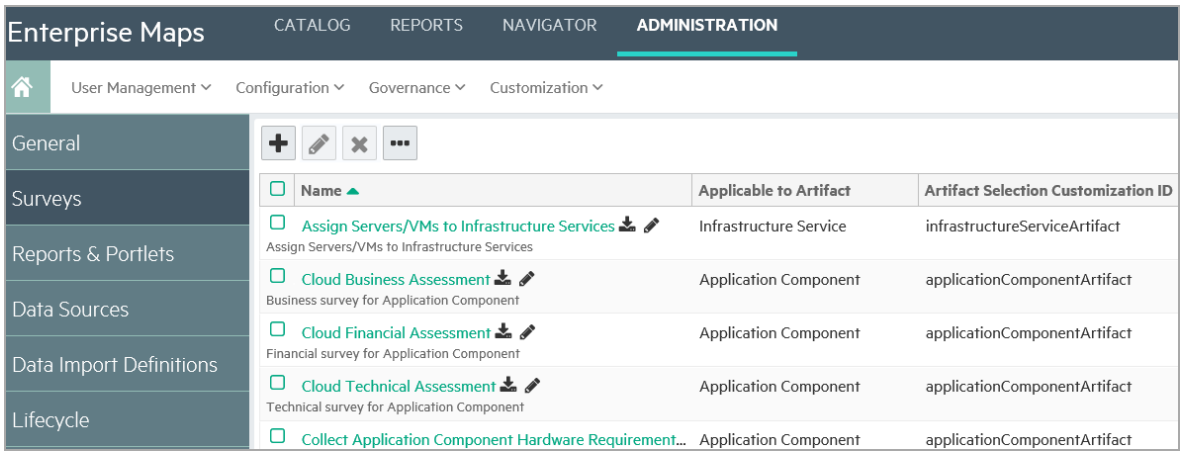
- **Cloud Business Assessment**

  Survey for assessing the possibility of cloud migration from business perspective.

- **Cloud Technical Assessment**

  Survey for assessing the possibility of cloud migration from technical perspective.

> **Note:** Only Administrator role can create or edit survey definitions. Survey Definitions can be accessed both from **Survey Definition** in Catalog UI and **Manage Scripts** in Administration UI.



Starting New Survey

Once a survey is defined (i.e. Survey Definition artifact is created and previewed), a Survey Manager or Administrator can invite the owner or contacts of the artifacts to fill out the survey (Survey artifact).

A survey comprises of a list of artifacts, respondents and their responses.

> **Note:** Only Survey Manager or Administrator can start a survey.

To start a survey, login as a user with Survey Manager role/credentials and follow the steps below:

1. Open Catalog Browser and click **Survey Definitions** under Content tab.

2. Select a survey definition to start the survey.

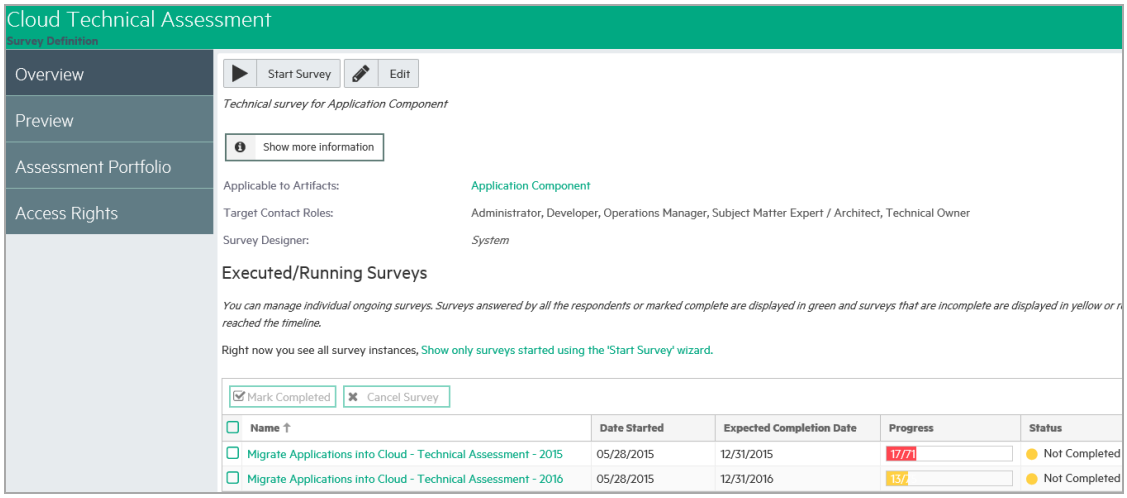
a. If you are the Administrator, you may click **Edit** to change the following fields in the survey definition:

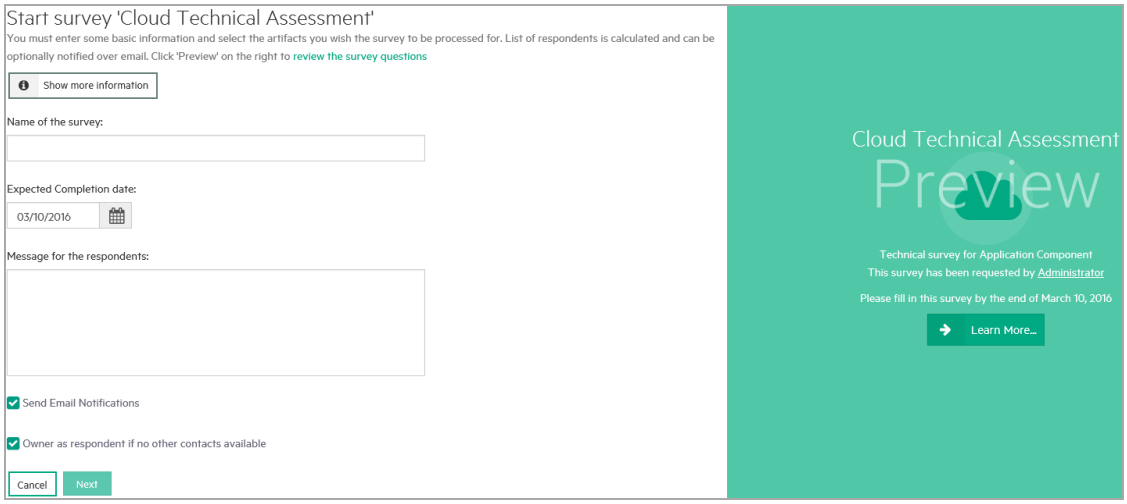
a. Applicable to Artifacts: artifact types this survey applies to.

b. Target Contact Roles: contacts under the survey artifacts who will be invited to take the survey. By default, all contacts of the survey artifacts are invited.

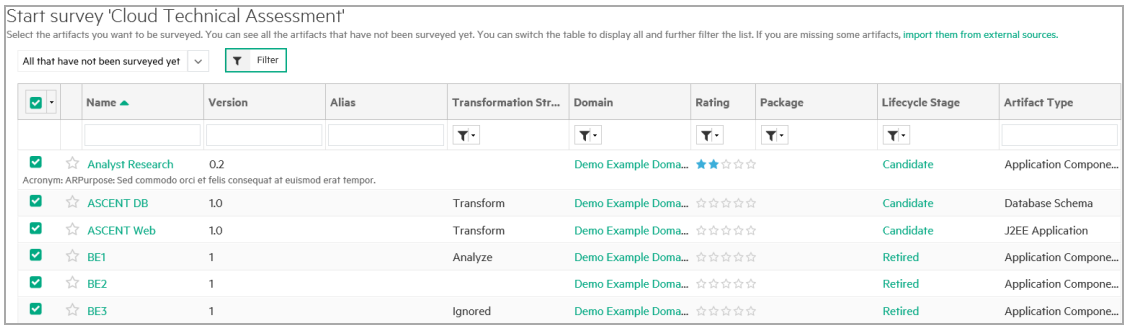
> **Note:** Survey Manager is not allowed to access **Edit** function.

3. Click **Start Survey** and fill in the required information to begin with survey.





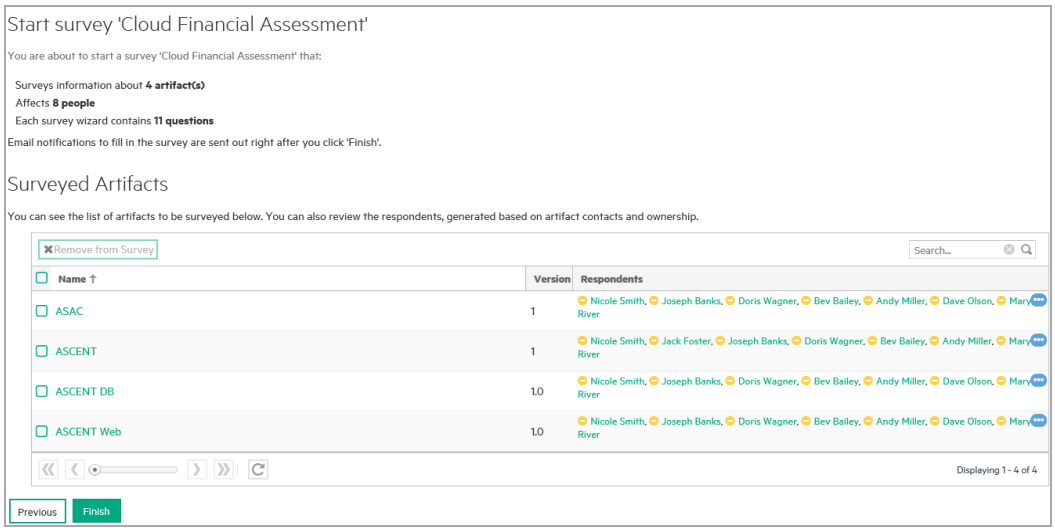
4. Enter the name and click **Next**. Select the artifacts to be included in this survey.



> **Note:** The filter **All that haven't been surveyed yet** is selected by default. You can select **All** to view artifacts that have been surveyed earlier.

5. Verify the counts of artifacts and respondents and if they are as expected. You can do the following if required:
   - Remove unwanted artifacts from the survey
   - Add or remove respondents

   Click the **Finish** button visible at the bottom of the list.

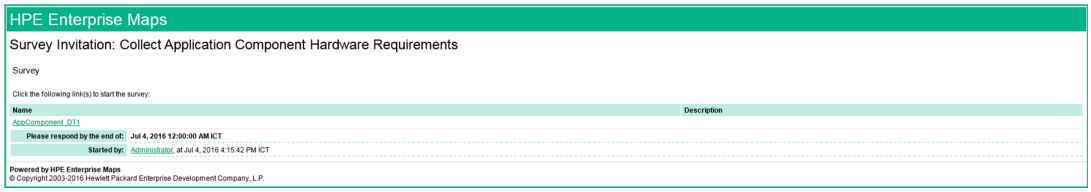


Undertaking the Survey

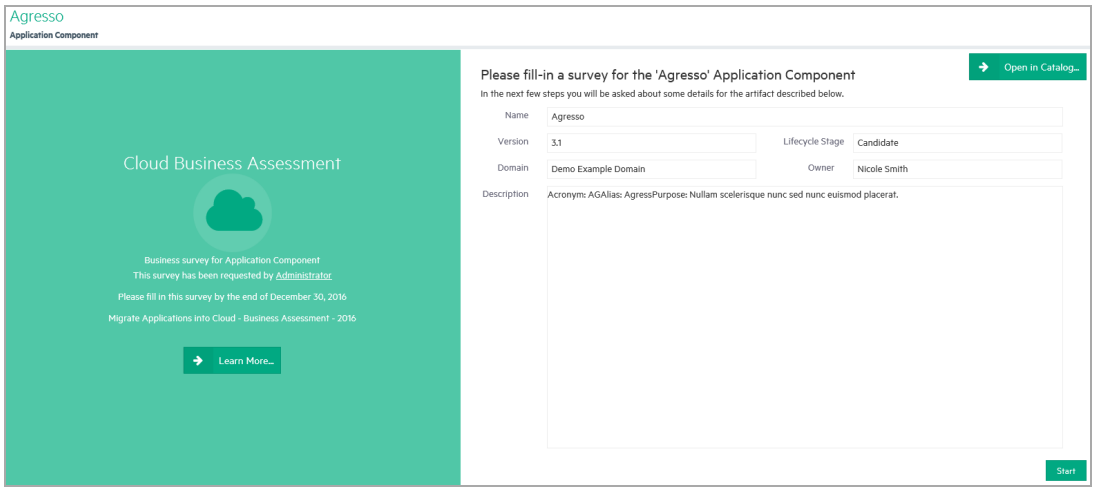
You can respond to the survey in the following 2 ways:

- **Via Notification Email:** respond to an invite for survey through email by Survey Manager as given below:

a. Open your Inbox and look out for an email with the subject title “Survey Invitation: …” sent by Enterprise Maps.



b. Open the link corresponding to the artifact name (for example : Agresso). The survey opens in a new window. You need to login to Enterprise Maps in order to fill in the survey.



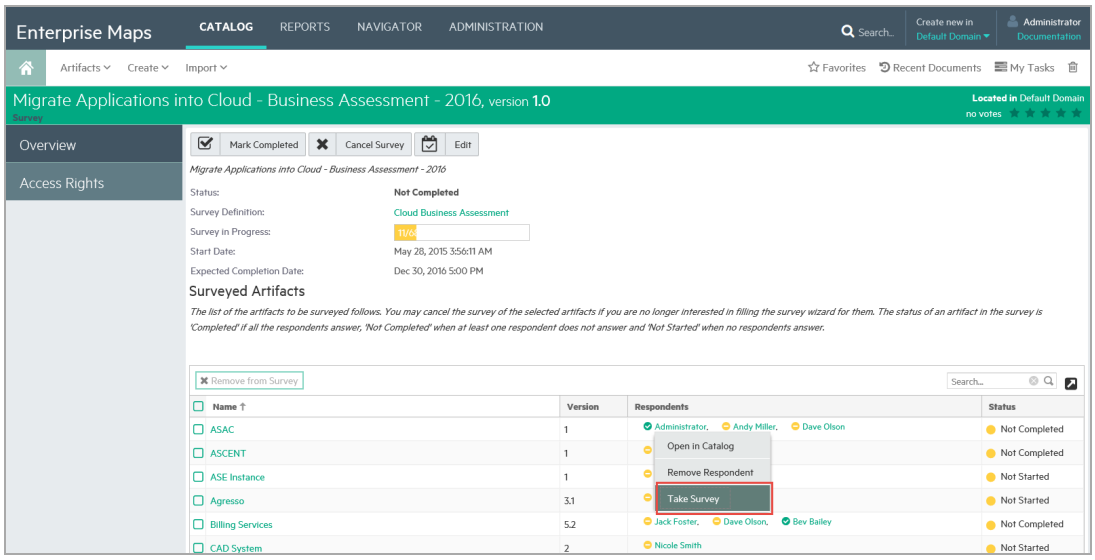
> **Note:** Your account must at least have the READ permission for the survey artifact, else you will just see an error message in the open window. If this happens contact your administrator.

c. Answer the survey questions, then click **Finish** to complete the survey for that artifact.

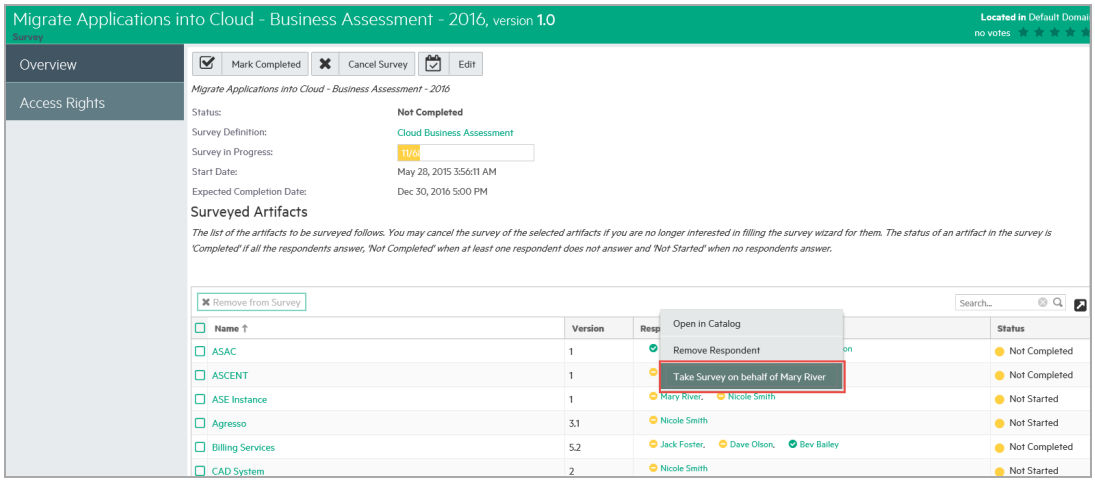
d. Repeat steps 1-3 to complete survey for other artifacts.

- **Via a Survey Instance:** respond to a survey directly on EM UI as given below:

a. Open the survey artifact you wish to undertake. Look for the surveyed artifacts you would like to respond to. Click your name in the respondents list to start filling out the survey.



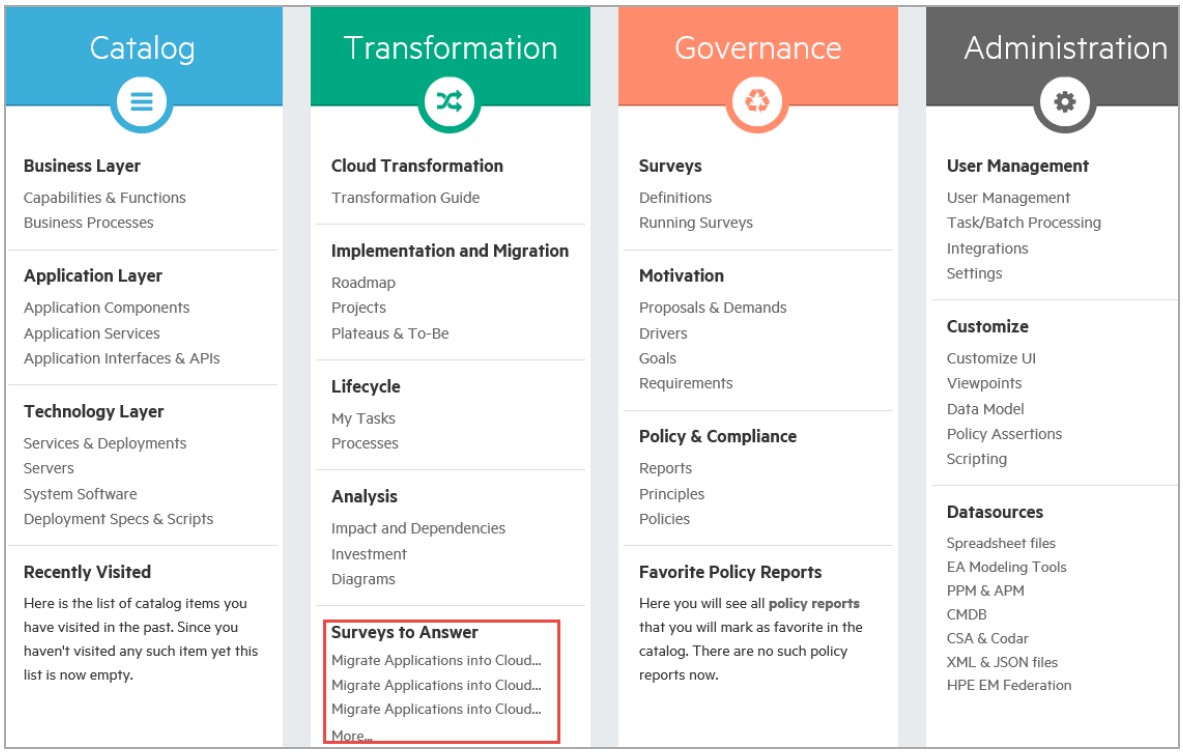
b. A Survey Manager or a user with 'write' permission for the current survey can also undertake the survey on behalf of other respondents. Simply, click the particular respondent's name and select the option **Take Survey on behalf of [respondent name]**.



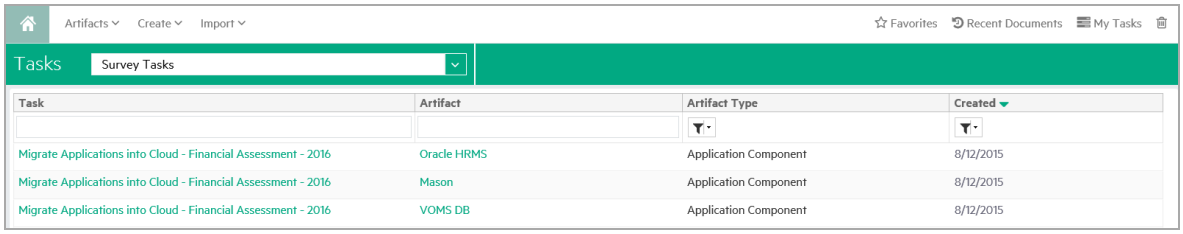
Keeping Track of Survey

As a survey respondent and user you can keep track of the surveys that require your response via Survey Tasks. These tasks are created for each respondent in a survey right after the survey is started, or when a user is added into that survey as a respondent. The task is removed once a respondent finishes the survey or is removed from the survey.

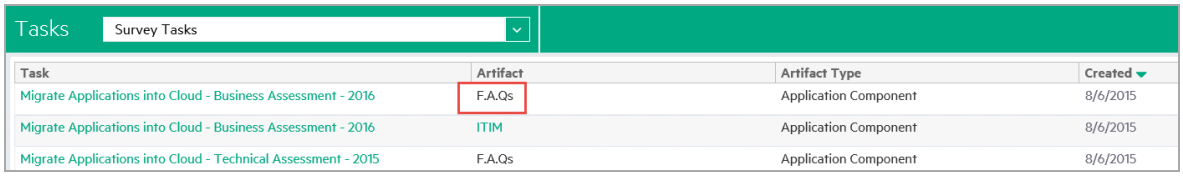
Survey respondents can follow their tasks to complete the surveys. The survey tasks are available right on Catalog page and Task page.



Tasks page



> **Note:** If a particular user does not have 'Read' permission to the survey artifact, the link to that artifact will not be available. See image below.

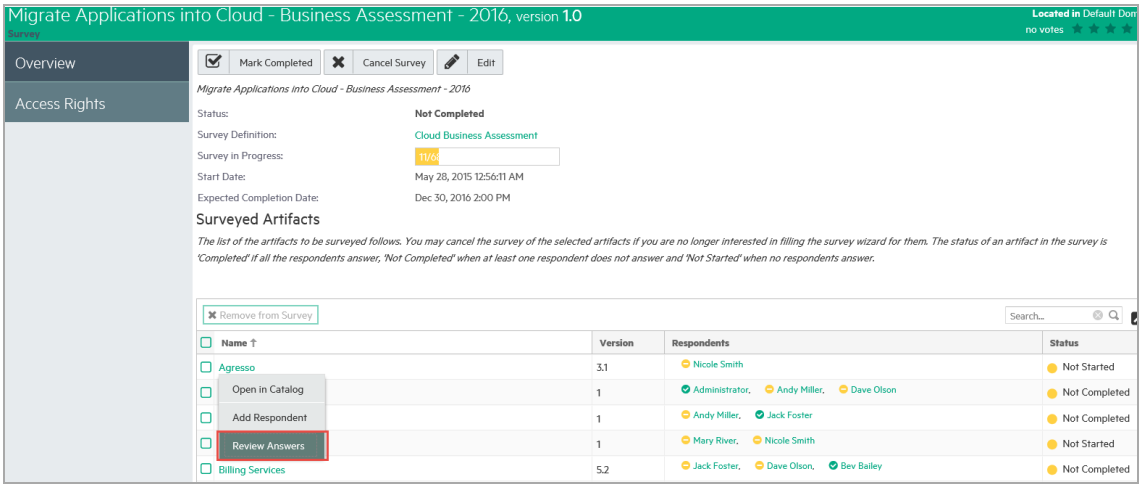


Reviewing Answers

Once you complete a survey, you can review your answers and even redo the survey.

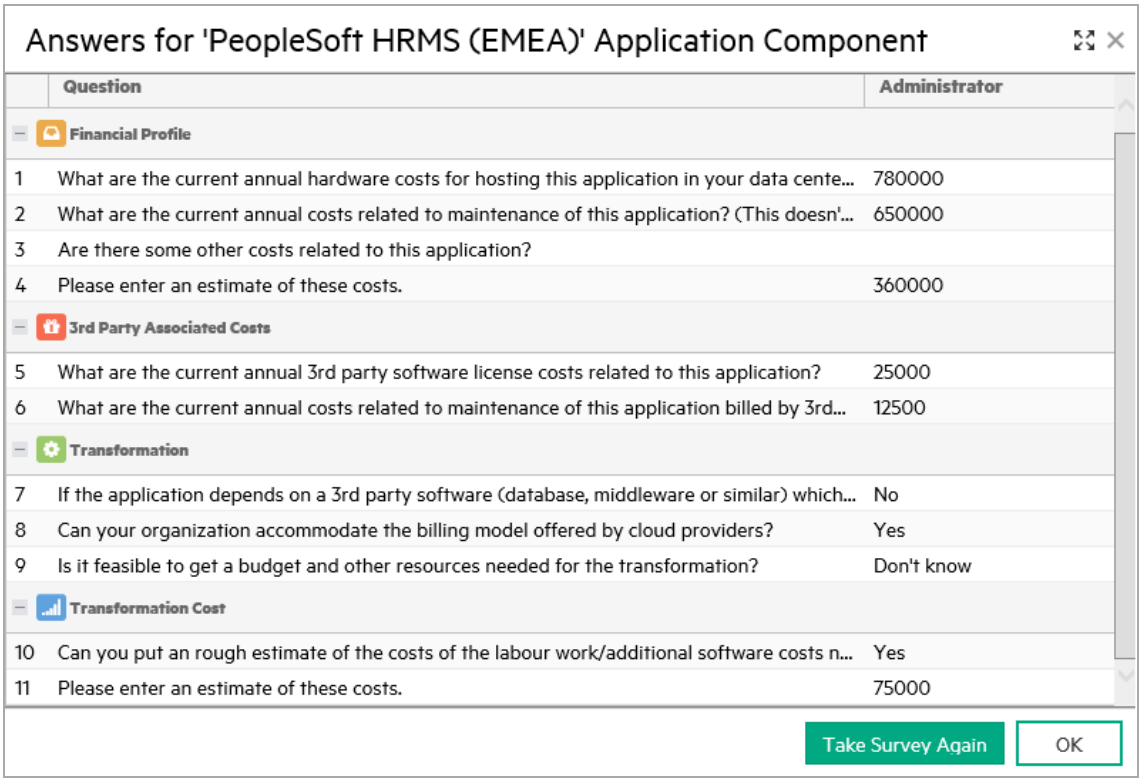
Review Survey:

- Open the survey instance
- Click the surveyed artifact you wish to review the answers for
- Select **Review Answers**



Redo the Survey:

- As one of the respondents, it is possible for you to redo the entire survey (assuming you have responded before) in the review dialog. Click **Take Survey Again**.



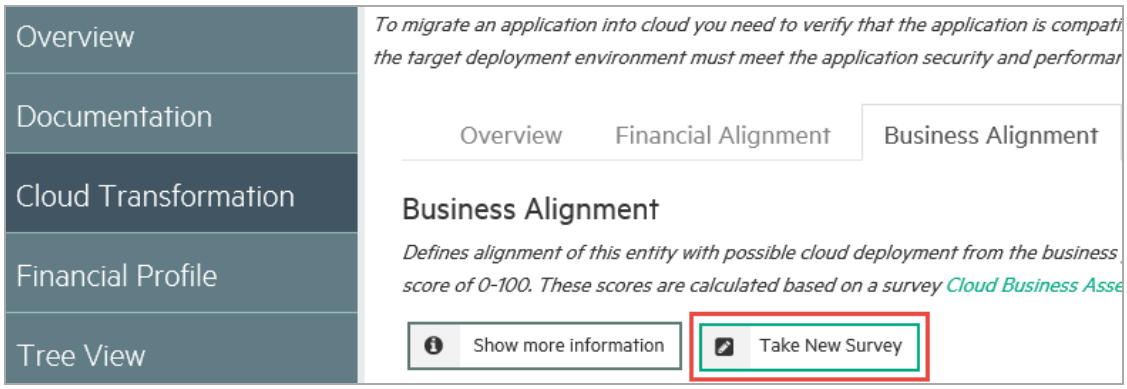
Taking a Self-Assessment Survey

Alternatively, as an artifact owner or contact, you can also fill out the survey for that artifact without having to wait for a Survey Manager to initiate it for you. There are two surveys designed out-of-the-box for self-assessment by Application Component's owner and contact.

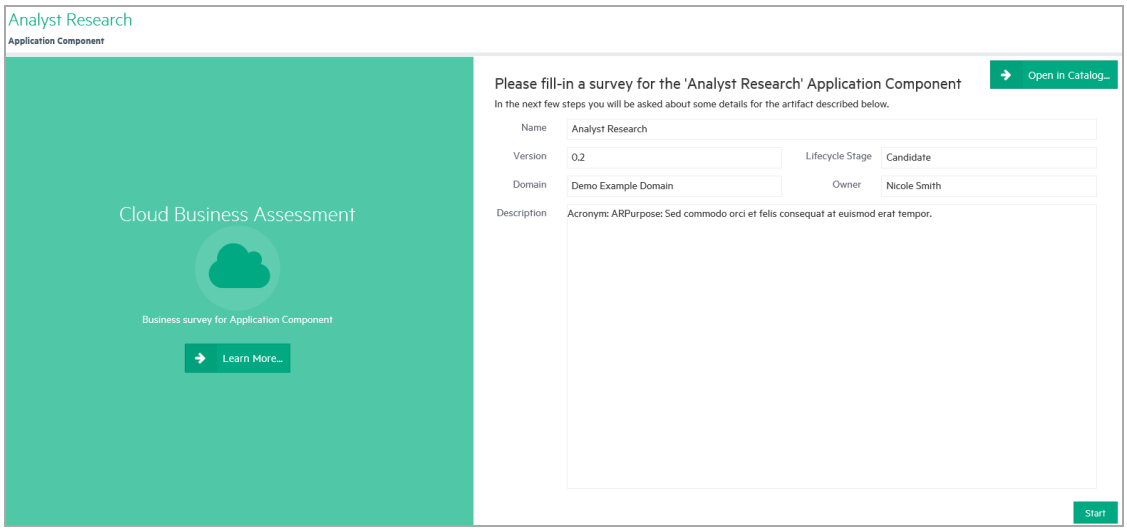
- In Business Alignment UI: survey 'Cloud Business Assessment'
- In Technical Alignment UI: survey 'Cloud Technical Assessment'

To fill out a self-assessment survey:

1. Open the Application Component view page.
2. Click the **Cloud Transformation** tab.
3. Navigate to **Business Alignment** or **Technical Alignment** tab.
4. Click **Take New Survey** button.



5. The survey opens in a new window. Click **Start** to begin answering the survey questions in the wizard.

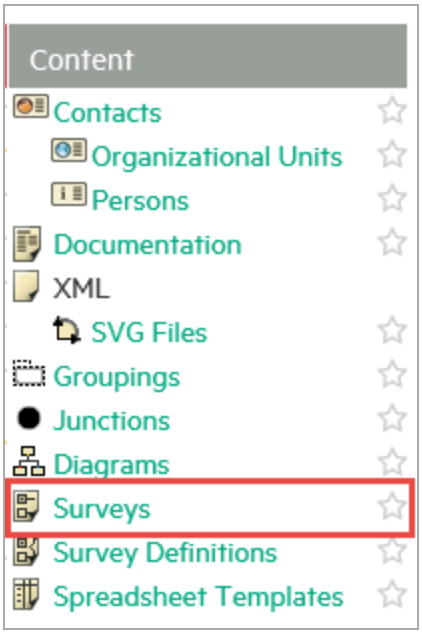


6. Click **Finish** to complete the survey.

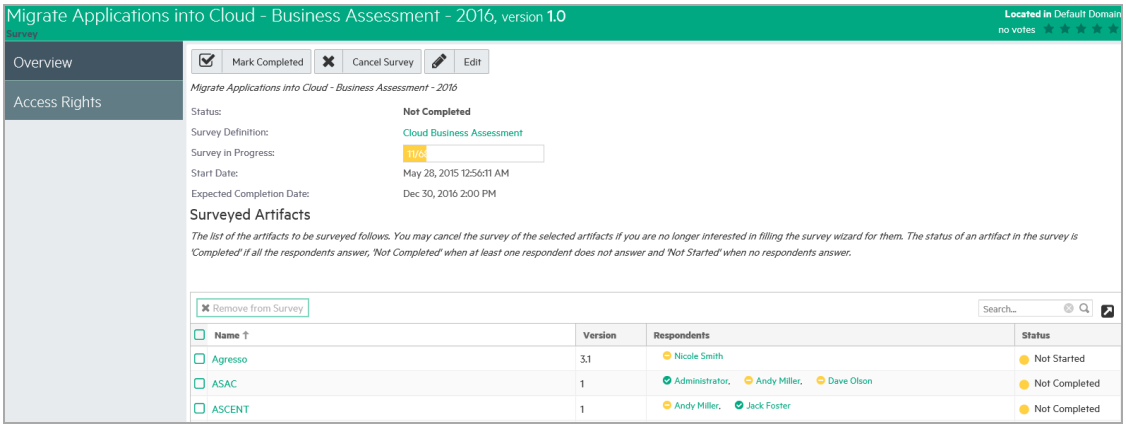
Monitoring and Managing Survey

To monitor or manage surveys :

1. Open Catalog Browser and click **Surveys** under Content tab.



2. Select a Survey to monitor or manage. The Survey view page opens as follows:



3. As per your role, you can execute all or some functions in the Survey view page. For instance :
   - Catalog User can only view the status and progress of the survey.
   - Survey Manager and Administrator can additionally :

- Mark the survey as Completed.
- Cancel the survey.
- Remove artifacts from the survey if not completed.
- Edit survey information such as Description and Expected Completion Date.
- Add or Remove respondent to and from the survey.

Chapter 8: Collaboration

HPE EM is a collaborative platform enabling you to actively participate and provide information to other users throughout the service lifecycle.

This part contains the following topics:

Tasks

- "How to Use Comments" on the next page
- "How to Use Notifications" on page 121
- "How to Use Events" on page 123
- "How to Use Tasks" on page 125
- "How to Use Ratings" on page 126
- "How to Use Feeds" on page 127
- "How to Share Artifacts" on page 130

HPE EM provides the following collaboration features:

- **Comments**

  The Artifact View page provides a Discussion area where you can start threads and respond to other comments. For details, see "How to Use Comments" on the next page.

- **Notifications**

  You can send e-mail notifications about an artifact to specified stakeholders. For details, see "How to Use Notifications" on page 121.

- **Events**

  Events keep you up-to-date with changes to artifacts that you are a stakeholder in and user actions that may impact you. For details, see "How to Use Events" on page 123.

- **Tasks**

  Tasks provide you with updates for lifecycle and contract tasks assigned to you. For details, see "How to Use Tasks" on page 125.

- **Ratings**

You can apply an individual rating to an artifact, contributing to an overall rating that enables other users to select the best artifacts. For details, see "How to Use Ratings" on page 126.

- **Feeds**

  HPE EM provides artifact and search feeds that enable you to track changes and discussions about artifacts in your feed readers and in the Reports tab. For details, see "How to Use Feeds" on page 127.

- **Sharing**

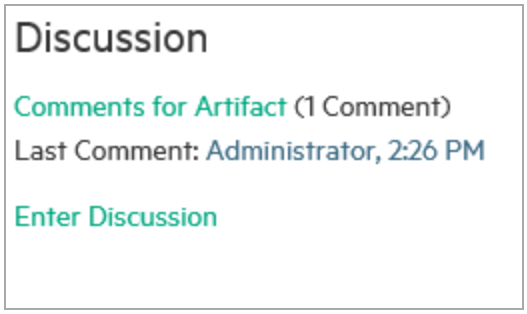
  HPE EM provides a simple action to provide all users with read access to an artifact, making it visible across the whole user-base. For details, see "How to Share Artifacts" on page 130.

HPE EM is also a collaborative platform in combination with your development environments. HPE Software provides plug-ins for widely used IDEs that enable your developers to collaborate using the discovery and publishing features of HPE EM directly from their IDE.

How to Use Comments

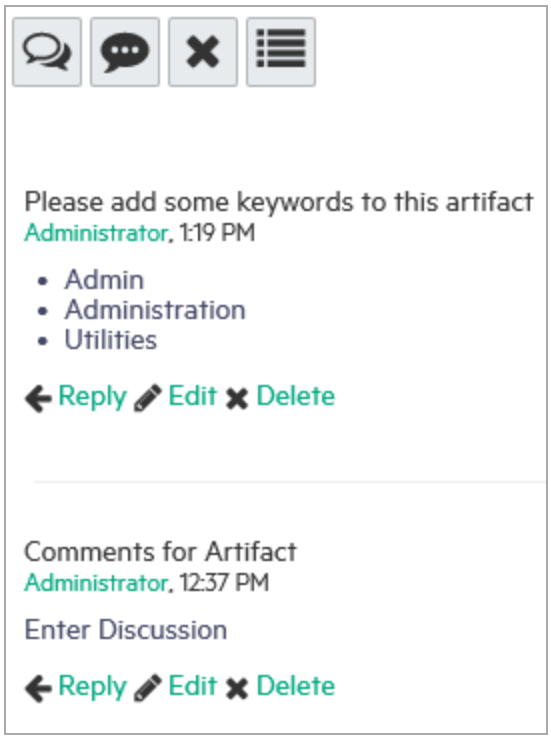
HPE EM provides an artifact discussion forum where you can make comments about particular artifacts.

The Artifact Overview page includes a Discussion component right at the bottom showing the last few comments.



Click a thread title to enter that discussion or click *Enter Discussion* to open the **Documentation > Discussion** sub-tab to see all the comments

You can browse all comments in the Artifact Details Discussion sub-tab.



You can organize the Artifact View Discussion sub-tab using **Show Thread** and **Show List** with an option to sort the list view by oldest or newest comment first.

Start a new discussion thread using **Add Comment**.

> **Tip:** In the Add Comment dialog, click + to provide a reference link to another artifact in your comment.

Respond to a particular comment using by clicking **Reply** for that comment.

If these are no replies to your thread or comment, you can **Edit** and **Delete** your comments.

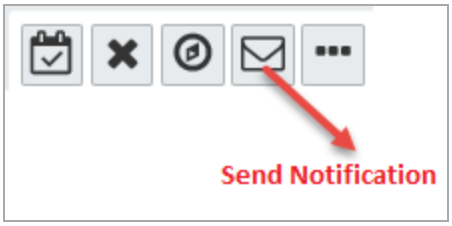
The Artifact Comments Feed context action provides a URL that you can use in feed readers or in the Reports Tab to keep up-to-date with any new comments about the artifact. For details, see "How to Use Feeds" on page 127.

How to Use Notifications

HPE EM enables you to send e-mail notifications to artifact stakeholders.

To Send Manual Notifications:

1. In the Artifact Details page Overview tab, click the **Send Message** context action for the artifact you want to send the notification for, to open the Send a Message page.



2. Select the recipients to notify.

Notification Recipients

Recipient	Description
Owner	The user, group, or role that owns the artifact. "How to Edit Artifact ownership" in the UG.
Maintainers	Users, groups, and roles groups with write permission for the artifact. For details, see "How to Edit Access Rights in the UG.
Contacts	Users and organizational units associated with the artifact by the contact relationship or listed in the artifact stakeholder property. For details, see "How to Manage Contacts" in the UG. The Contacts recipient group can be refined into selectable contact roles.
Other Recipients	Click **Add Other Recipients** and use the user, group, and role search feature to add any other required recipients.
Previous Stakeholders	Expand **Show Advanced Options** and select **Include Recipients from Previous Versions** to notify stakeholders from previous versions of the artifact about changes to a newer version. The stakeholders notified by this option match those for the current artifact version. For example, if **Consumers** is selected, then the consumers of previous versions are notified.

> **Note:** The recipient options vary depending on the status of the artifact.

3. *Optional*: Change the subject for the mail if required.
4. *Optional*: Check **Lifecycle Status** to include a section containing current lifecycle status in the mail.
5. Enter the message text for the mail.
6. Click **Preview** to view a draft of the mail message.
7. Click **Send** to send the notification to the selected recipients.

The administrator can set up automatic notifications as part of the lifecycle process. For details, see "How to Define Automatic Actions" in the *Administration Guide*.

How to Use Events

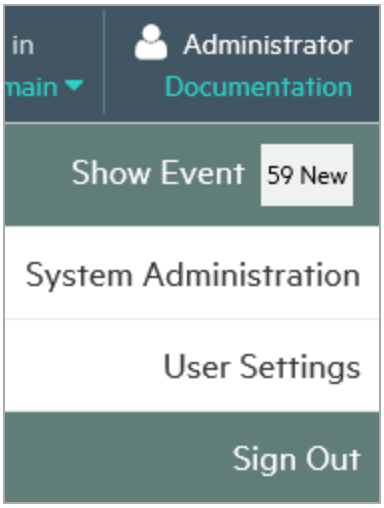
HPE EM keeps you up-to-date with all actions on artifacts that are relevant to you. Actions may appear in the Events lists because you performed them, or because they affect artifacts that you are a stakeholder for.

Events checker is disabled by default to keep up the server speed. However, the administrator can enable this checker by changing the value of `platform.ui.userevent.notificationsEnabled` system property to TRUE.

> **Caution:** Enabling `platform.ui.userevent.notificationsEnabled` system property can result in slow performance.

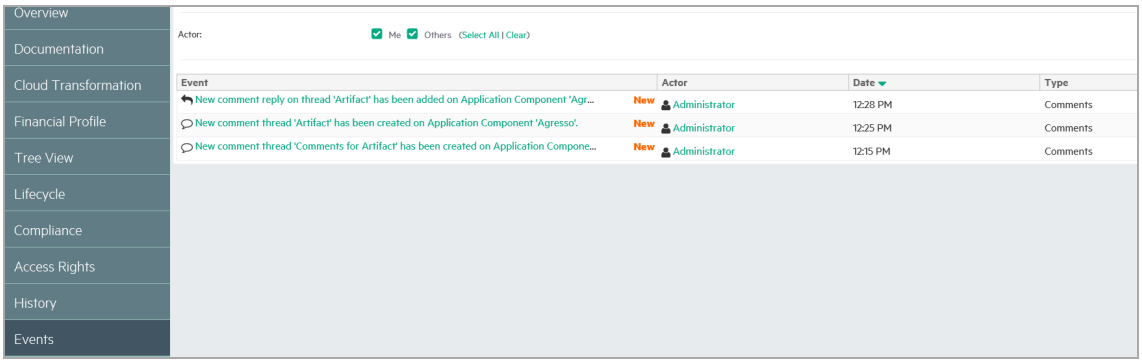
After enabling the event checker, events information appears in the following places in the UI:

- New Events notification in the Profile Status section of all pages.

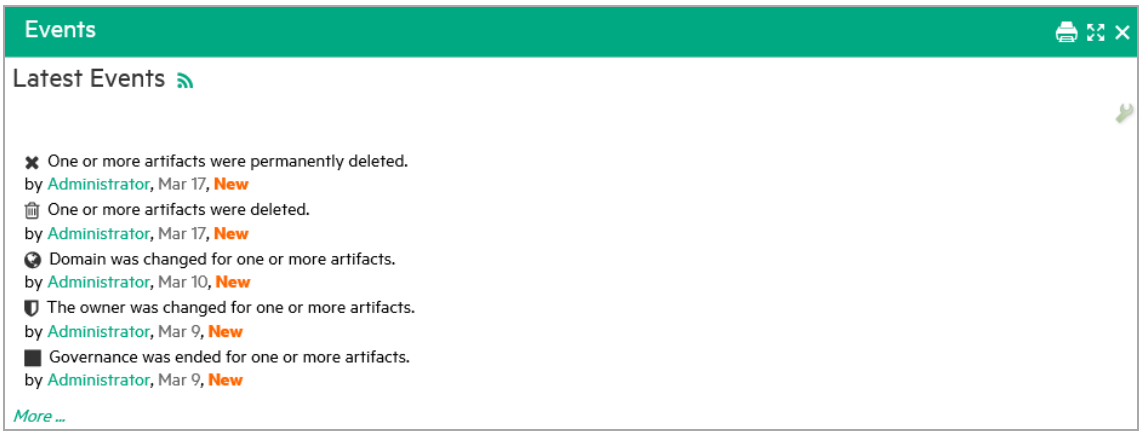


- Actions on individual artifacts displayed in the Artifact Details page Events tab.

  The Events components in the Artifact Detail page Overview tab display the latest actions performed in HPE EM that are relevant to the user.



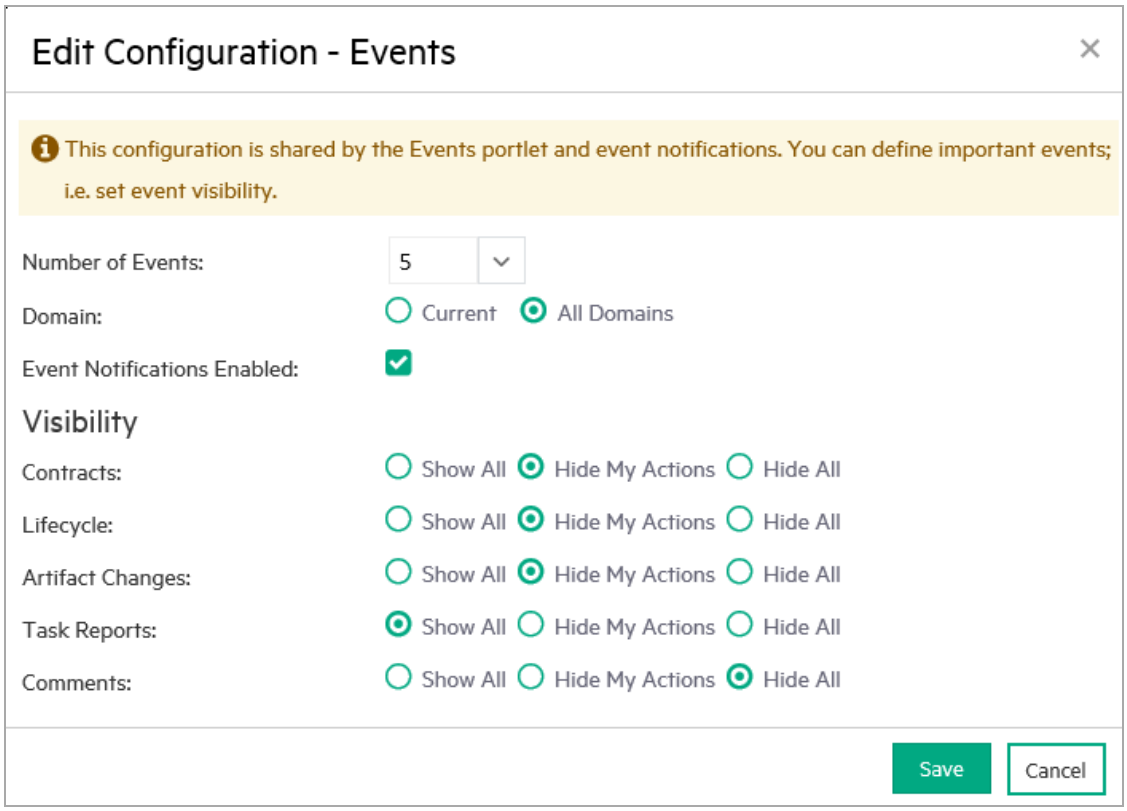
- Here, events component displays actions performed on the artifact with a **More...** link to the latest events under main menu Reports tab.



You can customize the information the Events component displays.

To Customize the Events Component:

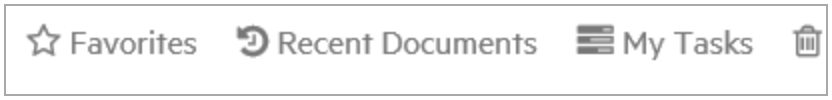
1. Click the tool icon in the Events component on the home page to open the Edit Configuration - Events dialog box.
2. Customize the following events parameters:



3. Click **Save** to apply your changes.

How to Use Tasks

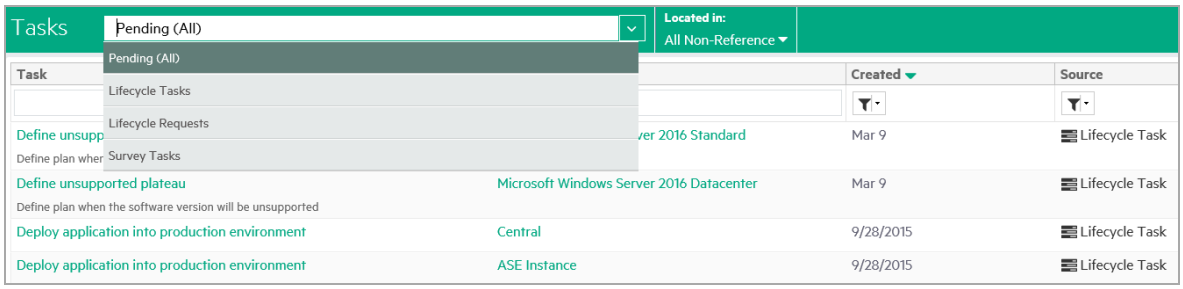
As a user in HPE EM you may be required to perform actions related to contracts and the lifecycle of artifacts. Tasks may be assigned to you as an individual, a member of a group, as a user in a particular role, or because you are the owner of an artifact. The My Tasks component in the Catalog Homepage updates you with your latest tasks assignments.



Catalog Homepage My Tasks Component

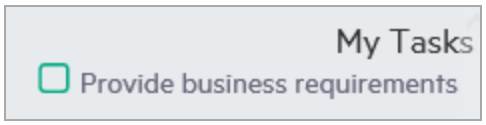
Task assignments come from lifecycle or as a result of a contract request. Click the task name to open the relevant page to view the lifecycle.

To view all your outstanding tasks, click **My Tasks** to open the Tasks page.



The Tasks page shows more details about each tasks and enables you to sort them by type or filter to find a particular task or artifact.

In addition to viewing all tasks assigned to you, Artifact Details pages contains task information specific to the artifact in the My Tasks component.



The My Tasks component enables you to complete a lifecycle task to view its details.

For all these task displays, clicking the task opens the appropriate page to perform the required actions depending on the task type.

- **Lifecycle Tasks**

  Perform a task assigned to you, your group, or your role as part of a lifecycle process.

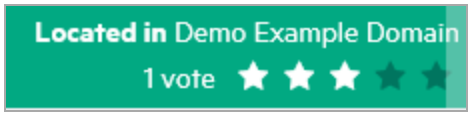
- **Lifecycle Requests**

  Process requests for approval of the completion of a lifecycle stage for artifacts.

How to Use Ratings

HPE EM enables you to apply a rating score to artifacts. You can apply a rating to each artifact once and change your rating at any time.

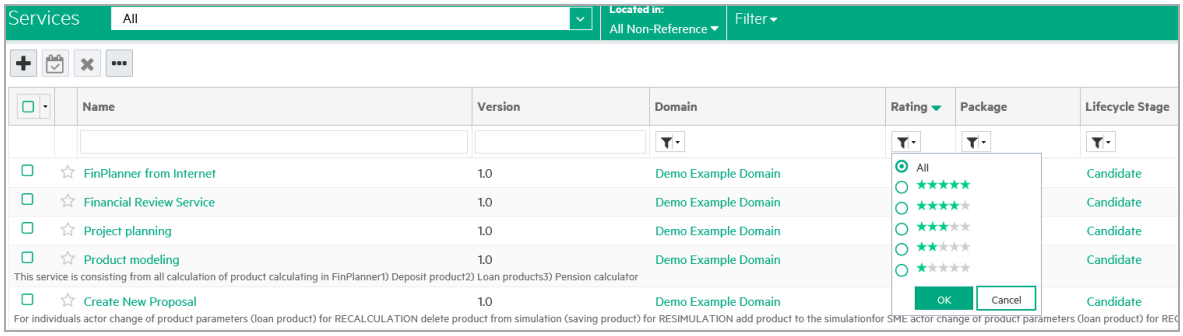
The average rating is available in Artifact Detail pages and in tables of artifacts, enabling you to choose services based on their collective rating.



To Rate an Artifact:

1. Open the Artifact Details page.
2. Move the cursor over the stars and click a star to set your rating. The status next to the rating stars indicates the current status and indicates if you have previously rated the service.

Average ratings are available to filter and sort tables of artifacts. For details, see "Tables in the User Interface".



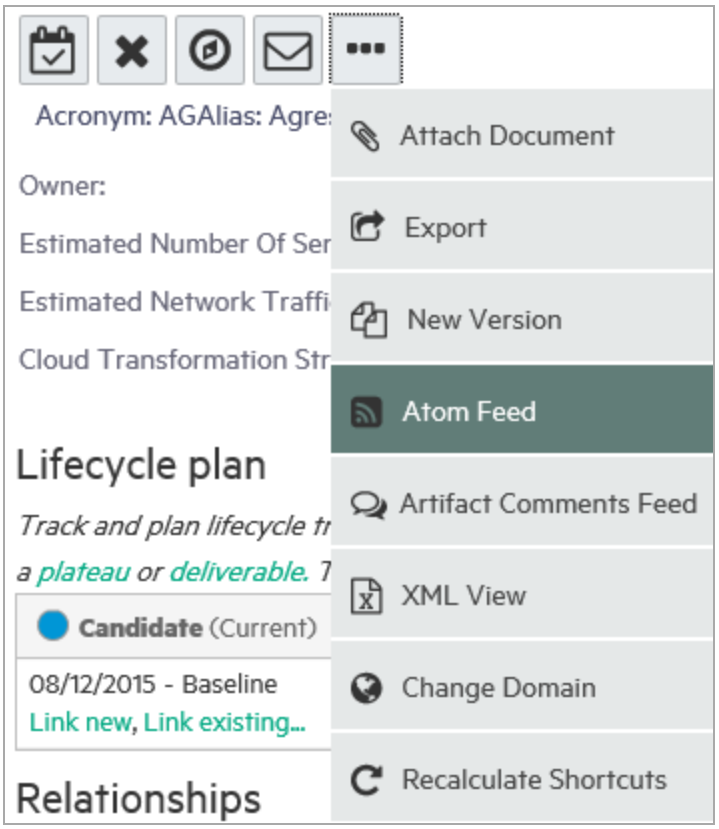
How to Use Feeds

HPE EM provides Atom feed support to enable you to track changes either with your own feed reader or using the Content Feed feature of the Reports Tab.

You can access the following feeds:

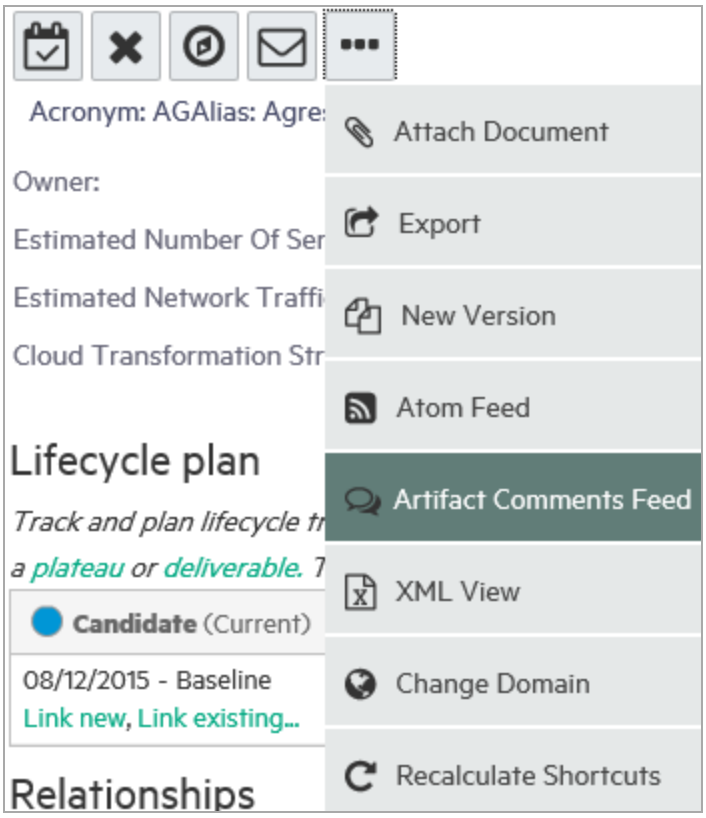
- **Individual Artifact Feeds**

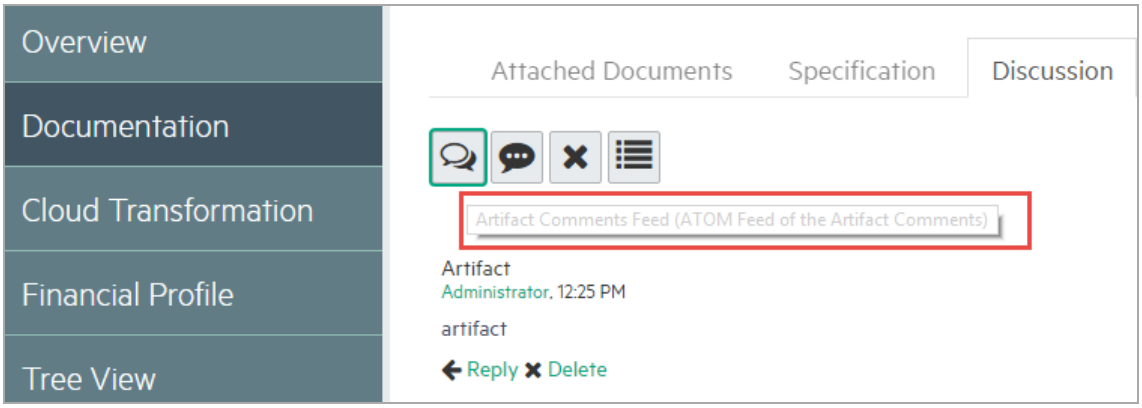
  Track changes to a specific artifact. Use the **Atom Feed** context action from the Artifact Details page Overview or Details tabs to obtain the URL for the feed.



- **Individual Artifact Comment Feeds**

  Track the discussion about a particular artifact. Use the **Artifact Comments Feed** context action from the Artifact Details page Overview or Details tabs or the **Artifact Comments Feed** context action from the Artifact Details page Discussion section of the Documentation tab to obtain the URL for the feed.





- **Search Result Feeds**

  Use the Search URL provided with saved searches to create a custom search feed. A typical example would be to create a search feed for all services. This feed would then notify you about the creation of new services.

How to Share Artifacts

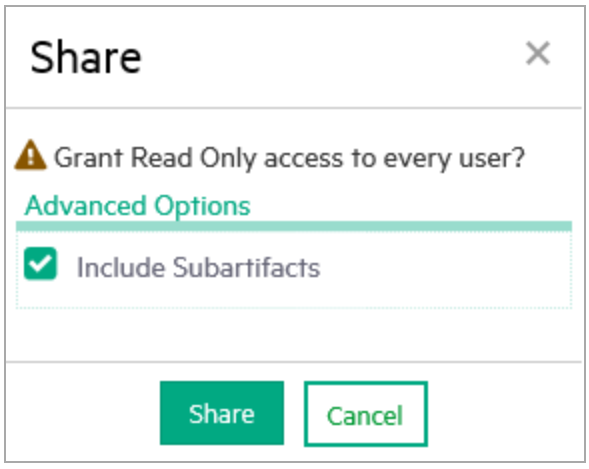
By default, the separation of the Catalog into domains and default security mean that artifacts are only visible to users who need to see them. However, there are situations where you want to make an artifact visible to all users, for example, when a service goes into Production.

HPE EM provides a simple share mechanism which enables the administrator or the owner of an artifact gives all users read access to an artifact, making it visible to everyone. Share may be performed on an individual artifact or in bulk.

> **Note:** The default functionality of sharing uses the `system#registered` group which represents all users who access HPE EM. The administrator can change the users that can access shared artifacts. For details, see "How to Change the Sharing Principal" in the *Administration Guide*.

To Share an Artifact:

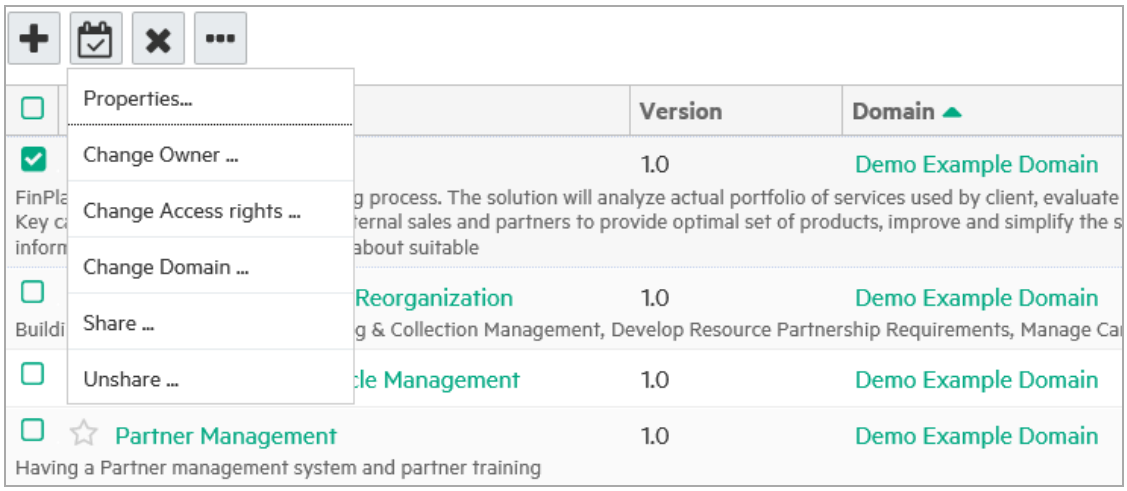
1. Open the Artifact Details page for the artifact and select the Access Rights tab.
2. Click the **Share** context action to open the Share dialog box.
3. *Optional*: Expand **Advanced Options** and select **Include Subartifacts** to also share sub-artifacts in the artifact aggregate.



4. Click **Share** to make the artifact visible to all users.

To Share a Set of Artifacts:

1. From a table of artifacts, select the artifacts to change, open the **Edit** context menu, and select **Share** to open the Share dialog box.



2. *Optional*: Expand **Advanced Options** and select **Include Subartifacts** to also share sub-artifacts in the artifact aggregates as in step 3 above.
3. Click **Share** to make the selected artifacts visible to all users.

Chapter 9: Excel/CSV File Export and Import

Enterprise Maps provides the capability to export and import data in spreadsheet formats. This is useful if you want to transfer spreadsheets or relational databases data from other systems to HPE EM. You can also edit multiple data sets efficiently in spreadsheet format in offline mode and upload the data back to Enterprise Maps in one step.

The following operations are supported by Spreadsheet Import UI:

- Export an artifact collection to a CSV file
- Export multiple artifact collections to a ZIP file (which contains CSV files and each of them contains a collection of artifacts)
- Import an artifact collection from a CSV file
- Import multiple artifact collections from an XLS or XLSX file

> **Note:** Some operations are not available for Spreadsheet Import Command Line. For more details, see "CSV Import and Export Tools" in *Customization Guide*.

To populate a simple collection from a spreadsheet file, a good practice to begin with is to create one artifact in the HPE EM collection by using the Catalog, open the collection list, select it, and then use the *Save as CSV* function to access the CSV file from HPE EM. You can then open the result in a spreadsheet editor such as Excel, add more data in the specified form as per the first record, and then use the *Excel/CSV import* to publish all the data inside HPE EM.

You can also store successfully imported spreadsheet files as templates for future use. For more information, go through below mentioned topics:

- "Exporting CSV Files" on the next page
- "Importing Spreadsheet Files" on page 135
- "Managing Template" on page 138
- "Spreadsheet Template Options" on page 141

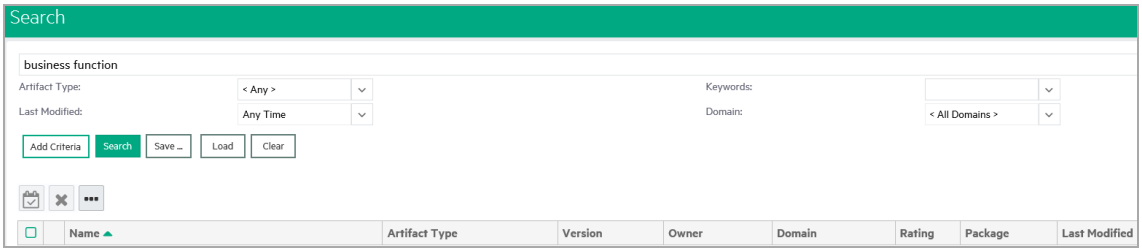
Exporting CSV Files

To export CSV data from HPE EM:

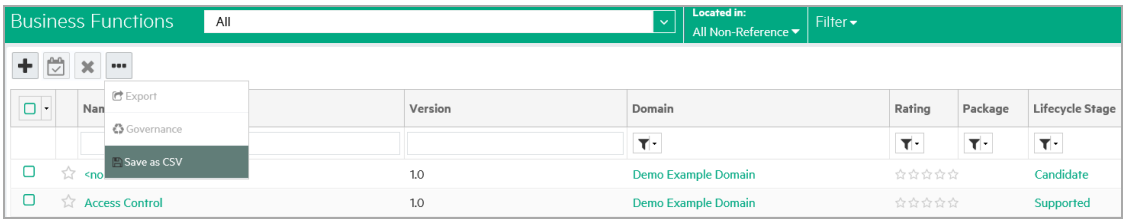
1. Open the Catalog in a browser.
2. If the collection you are interested in is empty, create the first artifact so that the exported CSV file contains an example data row.
3. Open the collection you are interested in either by searching for it in the Search box or by opening the collection from the Catalog panel. For example, to open the Business Function collection, select *Capabilities & Functions* from the Catalog panel list and perform your search by clicking the Filter menu to open the Search page. Then you can the Business Function value from the Artifact Type selector and click Search.

- *Option A: Using the Menu Bar Search Field*

- *Option B: Using the Catalog Search Page*

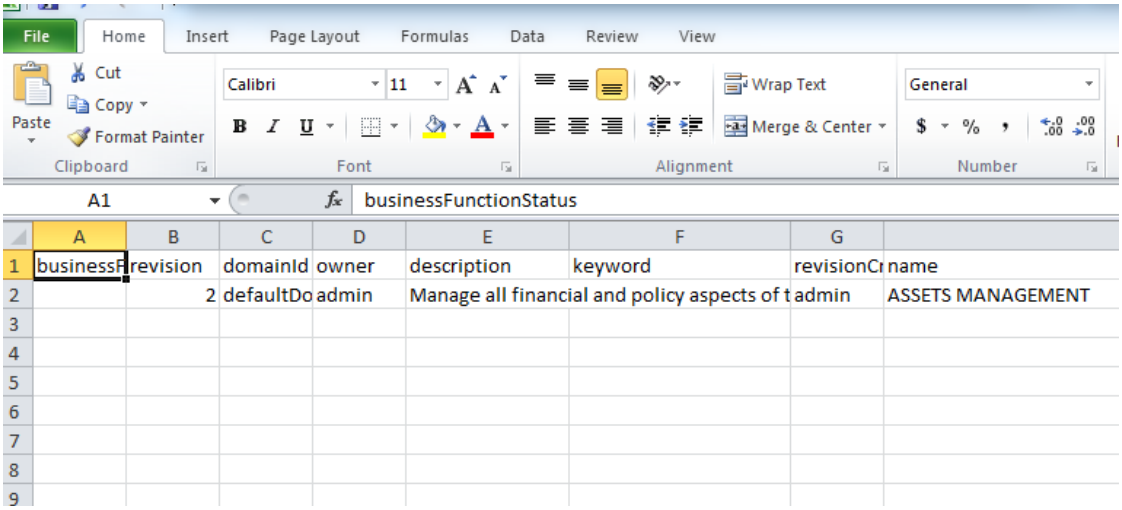


4. After you have located and opened the collection you are interested in exporting, click the More Actions button (e.g., the button with three dots next to the Edit and Delete buttons), and click Save as CSV. This will start the download of data in CSV format from the table to your local computer.

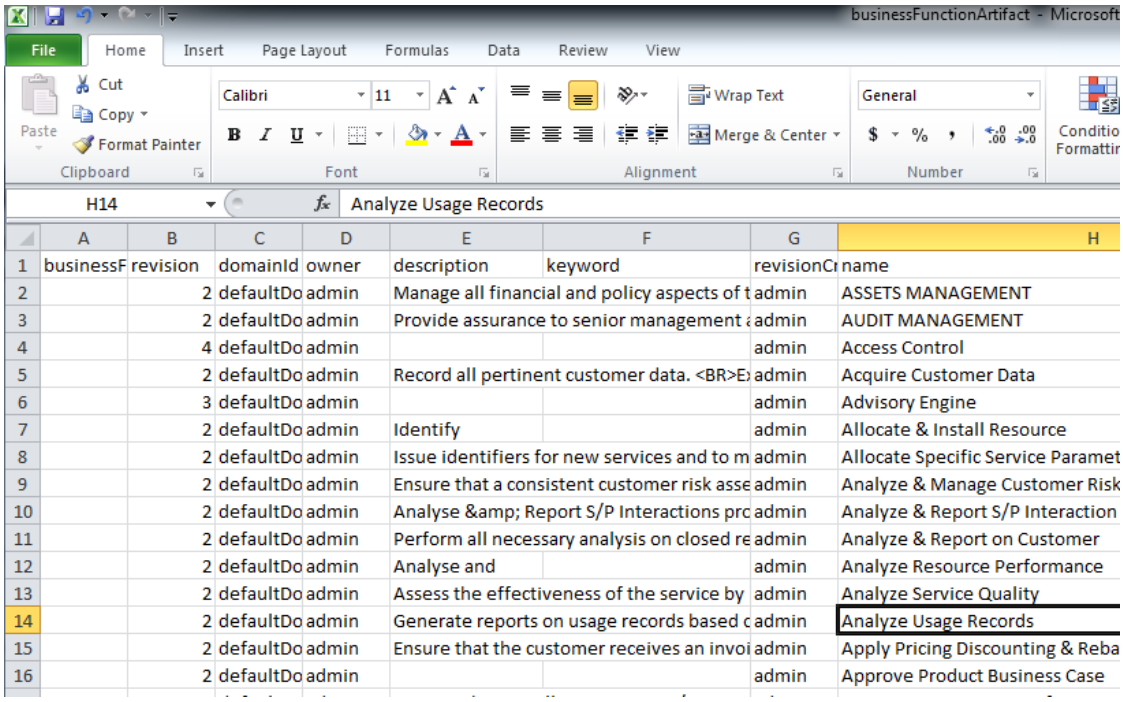


5. Open the downloaded CSV file in a spreadsheet editor, such as Excel. The first row is a header that specifies the mapping of data in HPE EM. It helps you to learn how to link the data in specific

columns to properties, relationships, etc.



6. Remove unnecessary and redundant headers. For example: delete all columns but keep the following headers: businessFunctionStatus, revision, domainId, owner, description, keyword, revisionCreator, name. Add new data to complete the collection in spreadsheet, and when you are finished, make sure to Save as CSV. Once you do this, you are ready to Import back into HPE EM.



Importing Spreadsheet Files

To import spreadsheet files, first decide what type of information and relationship data you want to import and also how you would like to view the results of your import mapped into HPE EM repository.

Preparing Spreadsheet Files

To import the spreadsheet files successfully, you must follow the HPE EM spreadsheet syntax. Do one of the following to obtain a valid spreadsheet file and then start adding data into it:

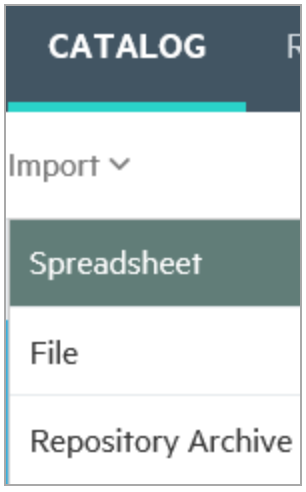
- Use *Download Template to Get Started* to download from a spreadsheet artifact. For more details, see the section *To download Excel/CSV Import Template* in "Managing Template" .
- Use *Save as CSV*. For more details see, "Exporting CSV Files".
- See `EM_HOME/client/demo/import` folder to refer to examples of CSV and XLS/XLSX files. For example: for XLS/XLSX spreadsheet syntax, follow the path `EM_HOME/client/demo/import/excel/from-ui/*.xlsx`.

Using UI

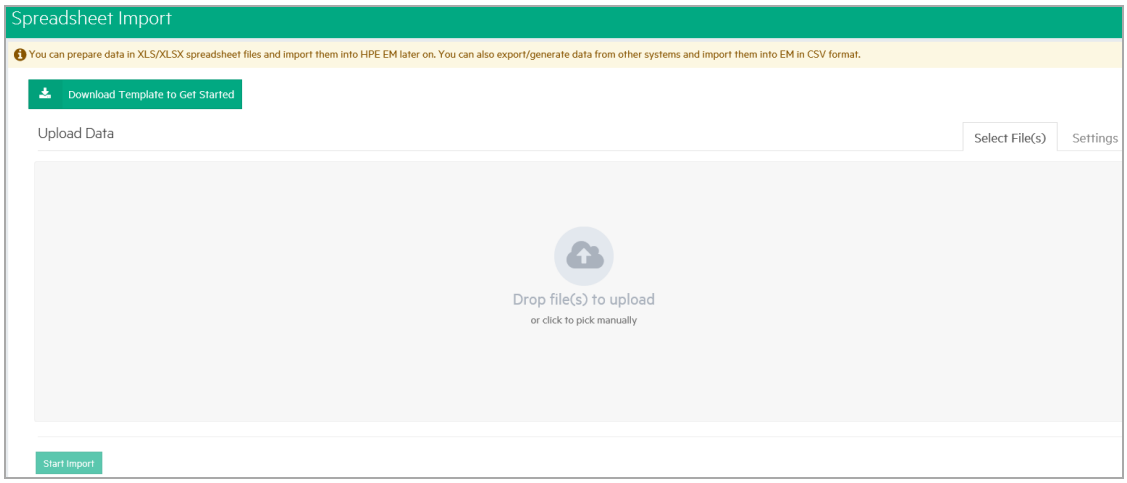
HPE EM provides the option to directly import the Excel/CSV file from the Catalog UI.

To do so, follow the instructions given below:

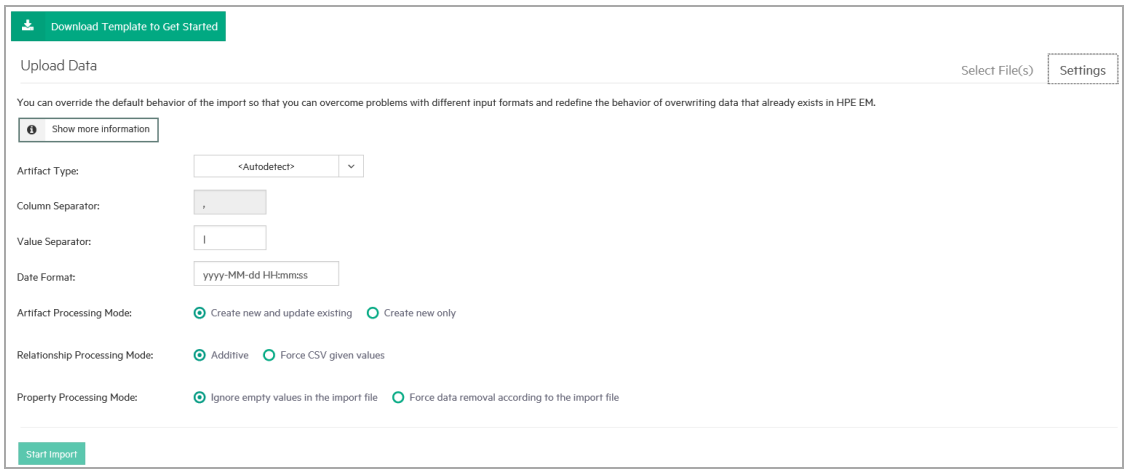
1. Go to the Catalog home page. Click the Import menu and select **Spreadsheet**.



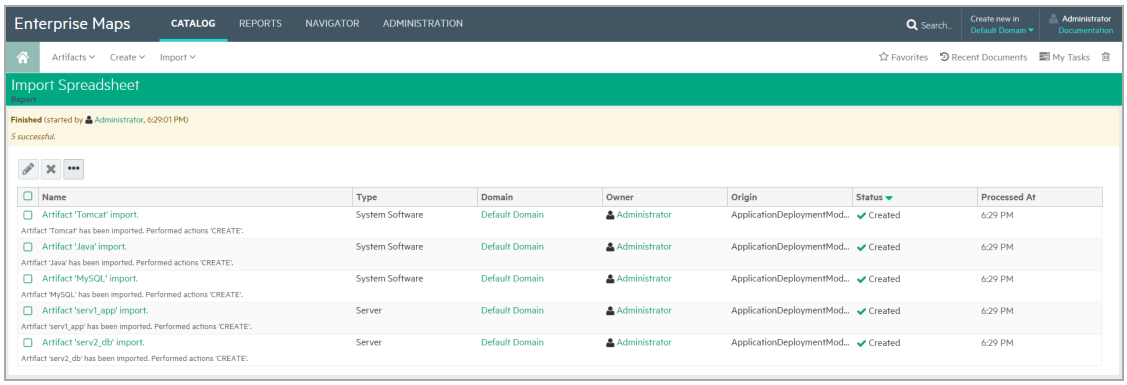
2. In the Spreadsheet Import page select the CSV/XLS/XLSX file to drag and drop from your local folder. Alternatively, click anywhere in the box to manually upload.



3. Click **Settings** to view more options and **Show More Information** button to view their usage.



4. Select the Artifact Type from the drop down list. If artifact type is <Autodetect>, the artifact type will be determined by CSV file names or Excel sheet names as follows:
   a. Matches artifact type in SDM. For example: *applicationComponentArtifact*
   b. Starts with artifact type in SDM and a dash (-). For example: *applicationComponentArtifact-sample*
5. Click **Start Import**.The Import Spreadsheet report appears.



Using Command Line

If you are an administrator or have administrator role privileges you will find the CSV Importer command line tool in the EM_HOME\client directory. If you are not an administrator, you can ask your administrator to archive the tool and share it with you so that you can access it.

To get the CSV Importer command line tool and be able to run it:

1. Unzip the archive and open a command-line shell and change to the client/bin directory. The tool depends on java 1.8, so make sure you have access to the java command at the PATH variable.
2. Call `csvimport.bat` or `csvimport.sh` to get help messages displaying the command-line options.
3. Type the command with at least host, user, password, sdmName and file parameters to your environment. For example: "`csvimport -host http://hpedemo/em -user admin -password changeit -file businessFunctions.csv –sdmName businessFunctionArtifact`"
4. The CSV import of Business Functions from CSV file starts. The tool will log all events related to the progress and status of the import.
5. When you refresh your browser, you can view the results imported into the HPE EM collection.

> **Note:** Importing a huge spreadsheet file may fail because of Out Of Memory error. To overcome this problem, increase the heap memory as below:
>
> - 2MB excel file - 100MB heap
> - 10MB excel file - 1.5GB heap

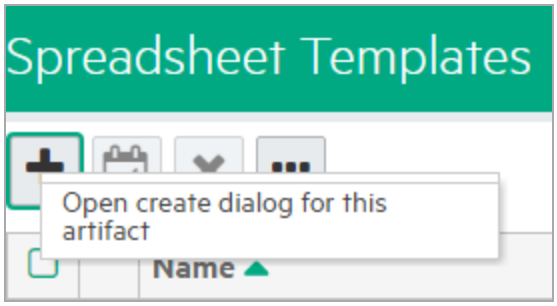
For more details, see "CSV Import Tool" in the *Administration Guide*.

Managing Template

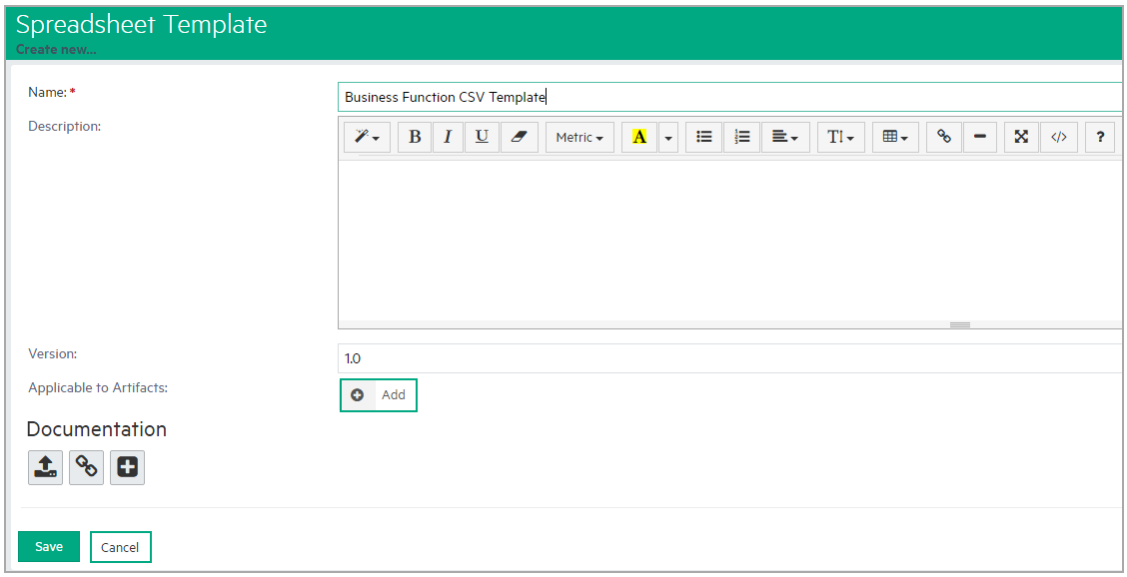
The Spreadsheet Templates provide the initial structure for data to be imported using Import Excel/CSV function. As a Catalog user, you can create such templates for your own usage or share with others. Administrator can change access rights for Excel/CSV Import Templates as with other artifacts.

To create a new Excel/CSV Import Template:

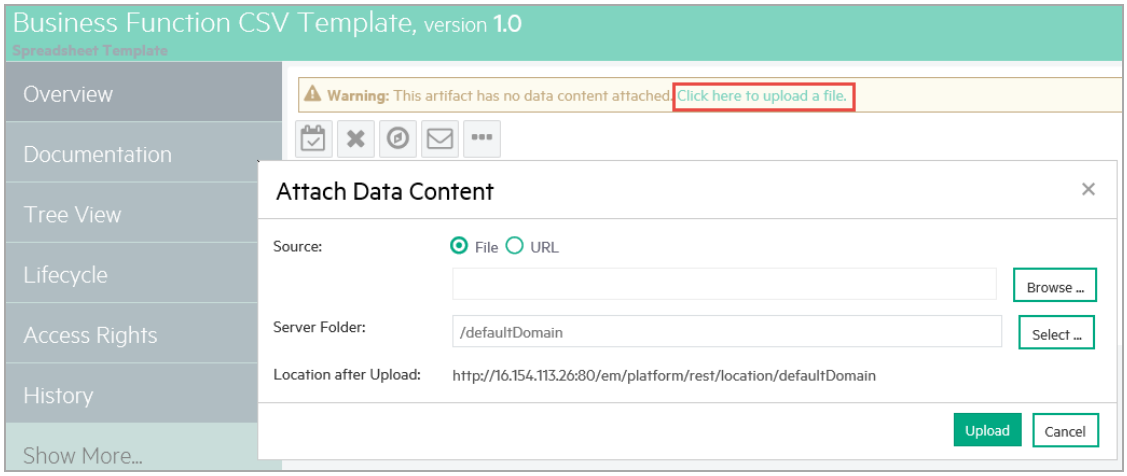
1. Open the Catalog Browser and then click **Spreadsheet Templates**. In the next screen click **Open create dialog for this artifact**.



2. Enter the name of the template and select the artifact types this template applies to in **Applicable to Artifacts** section and click **Save**.

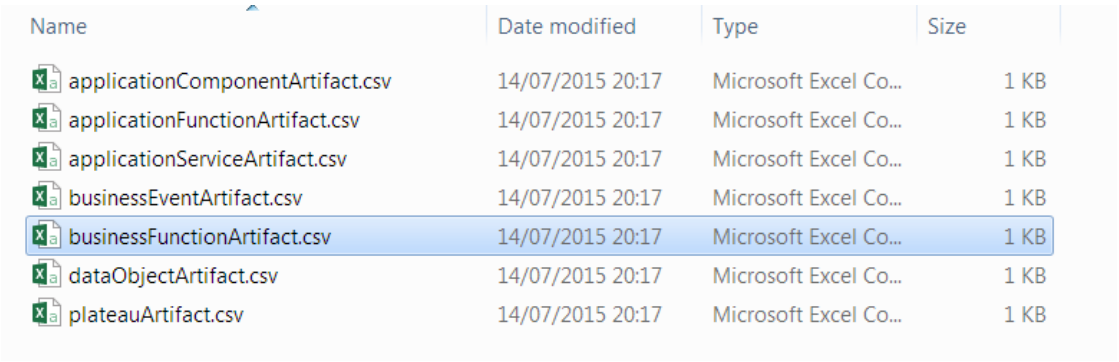


3. In the template view page, click the **Click here to upload a file** link to add the Excel/CSV file for this template.

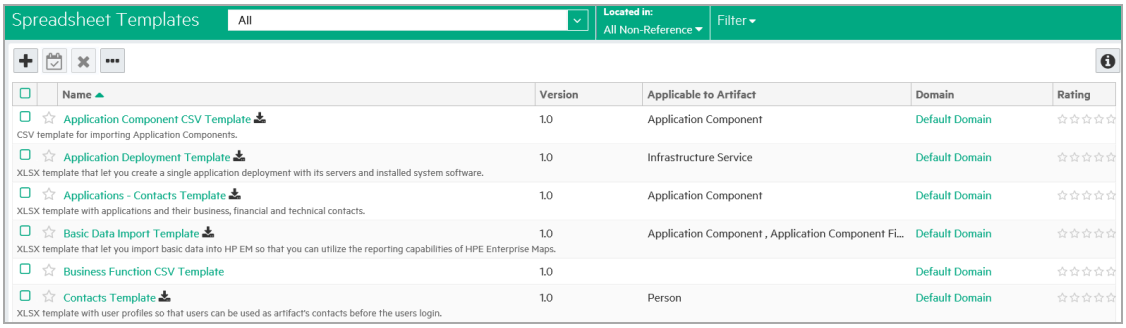


4. Click **Browse** and select the Excel or CSV template file and then click **Upload**.

> **Note:**
>
> - You can use 'Save as CSV' function in artifact collection or search pages to produce CSV files and use them as CSV templates. For details, see "Exporting CSV Files" on page 133.
> - To create Excel/CSV template manually (for example: using Microsoft Excel), refer to "CSV Import Tool" in *Customization Guide* to get help on syntax for Excel/CSV files.



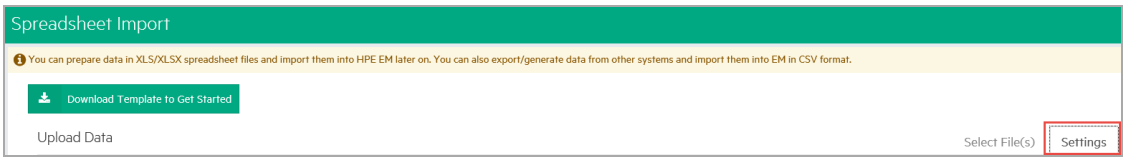
5. To verify the template created, open ‘Spreadsheet Templates’ collection.



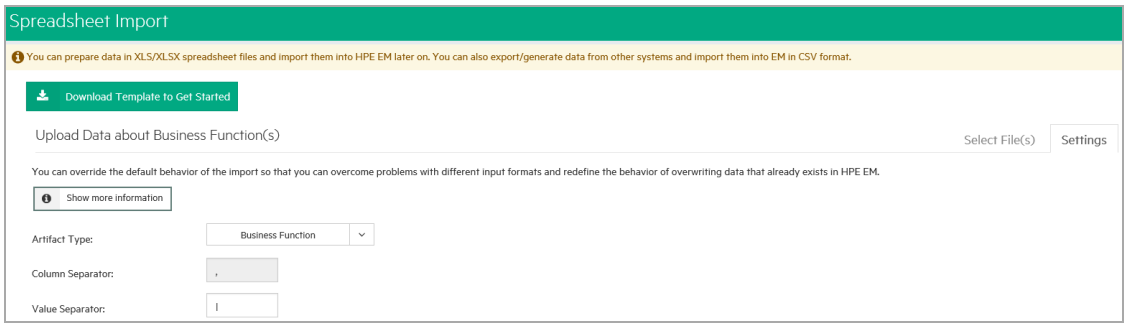
The Spreadsheet Import UI provides a convenient way to download the template of a specific artifact type.

To download Excel/CSV Import Template:

1. Go to **Import** tab, click **Spreadsheet** and then click the **Settings** tab.



2. Select an artifact type. The **Upload Data** is automatically changed to **Upload Data about…** to inform the selected artifact type for downloading template or uploading data.



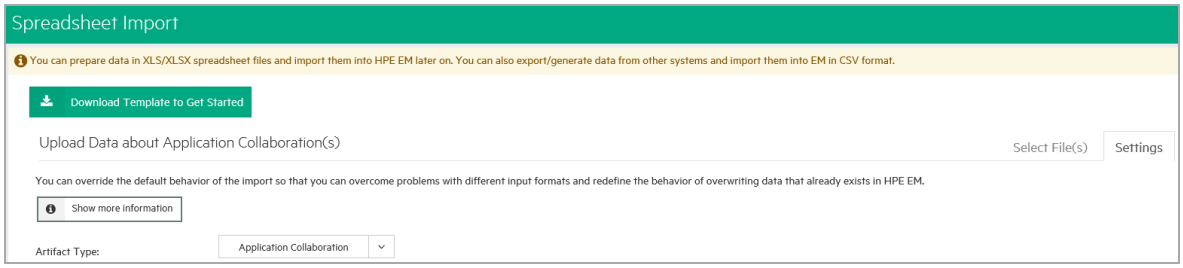
3. Click **Download Template to Get Started**. You can then add data into the saved template and import the Excel/CSV file back to Enterprise Maps to publish data.

Note:

- If such a template is not available, the template of higher-level artifact type, if exists, is used instead. An example of template hierarchy is as below:

  Artifact **>** Application Layer **>** Application Component **>** J2EE Application.

- If the template for J2EE Application does not exist, then template for Application Component is used and so on.
- In the case of no available templates, users are prompted to download a default template for Application Component (as in the image below).



Spreadsheet Template Options

While working with Excel templates, you may enter data which is non-importable. You can ignore such meta data by specifying instructions in the spreadsheet import function.

Add the following options at the beginning of the excel sheet:

Column 1 Keyword	Option Name	Option Parameters	Option Parameters	Description

Option	*ignore*			Ignore this sheet
Option	*sdmName*	<Artifact type in SDM>		Import data as this artifact type
Option	*skipRowWhenEmptyFirstCell*			Skip data row if first column is empty
Option	*constantColumn*	<Property in SDM>	<Property value>	Add this property for all imported artifacts
Option	*calculateFormula*	auto/true/false		auto - recalculates a cell value that is defined by a formula. If the formula is not supported, use the cell's last value. This is the default value. true - fails if unable to calculate formula false - uses only the cell's last value **Note:** Data referenced by formula must be in the same spreadsheet file. Referencing data in a different spreadsheet file is not supported.

Ignored rows

- Rows before the header and the first column starting with capitalized text is ignored (except above 'Option' rows).

- Rows after the header and the first column that is empty are ignored if *Option skipRowWhenEmptyFirstCell* is set.

Ignored columns

- Columns with empty header are ignored.

	A	B	C	D
1	Option	sdmName	applicationComponentArtifact	
2	Option	constantColumn	description	Imported from spreadsheet
3	Option	skipRowWhenEmptyFirstCell		
4	Option	calculateFormula	auto	
5	**Component Name**	**Version**	**Ignored**	**Subcomponents**
6	name|key=true	version		composedOf|target=applicationComponentArtifact|property=name
7	Demo Component 1	1		
8	Demo Component 2	3		
9		This line is ignored because of the skipRowWhenEmptyFirstCell Option		
10	Demo Composed Component	3		Demo Component 1|Demo Component 2
11				

Chapter 10: Extension for Sparx Systems EA

HPE EM integrates with the widely used Sparx Systems Enterprise Architect data modeling tool via extension module. The Sparx Systems EA is a fully integrated data modeling environment for you to use with HPE EM. The HPE EM user is able to synchronize data models bi-directionally using the extension.

Installing Extension for Sparx Systems EA

You can install the HPE EM Extension for Sparx Systems EA to extend your local installation of Sparx Systems EA to synchronize models with the HPE EM server.

You must already have Sparx Systems EA installed. For more details of supported Sparx Systems EA versions, see "Supported Product Integrations" in *Installation and Configuration Guide*.

To install the HPE EM Extension for Sparx Systems EA:

1. Close Sparx Systems EA if it is running.
2. Run the installer `hpe-em-sparx-3.20.msi`.
3. Click **Next** until the final wizard panel appears, and then click **Finish**.

WARNING: Extension for Sparx Systems EA stores the HPE EM user password(s) using a Triple DES password encryption method. User passwords are stored outside the HPE EM server, thus bypassing HPE security policies. This could cause security issues such as decryption or corruption.

> **Note:** To avoid error when installing Sparx Systems EA into a Windows system folder, disable User Access Control (UAC) in Windows Control Panel.

To configure proxy in HPE EM Sparx Add-In:

Change the default setting of HPE EM Sparx Extension, to connect to HPE EM server from Sparx client via proxy.

1. Close Sparx Systems EA if it is running.
2. Go to HPE EM Extension data folder on your local machine: *C:\Users\{USER}\AppData\Roaming\HPE EM Extension for Sparx EA*.
3. Open the file `settings.xml`.
4. Edit this file by adding proxy setting element under the "<repositories>" node:

   ```
   <proxy proxyEnabled="True" proxyUrl="http://127.0.0.1:12000"
   requiresAuth="True" username="username" password="password" />
   ```

   Add your proxy URL instead, and the required authentication if you have.

5. Save the changes.

Supported Archimate® version

HPE EM Sparx Systems EA mapping configuration supports only synchronization elements having Archimate® 2.0 stereotypes. Both Archimate® 1.0 and 2.0 stereotypes are available in Sparx Systems EA. Make sure you choose the correct Archimate® stereotypes in your architecture.

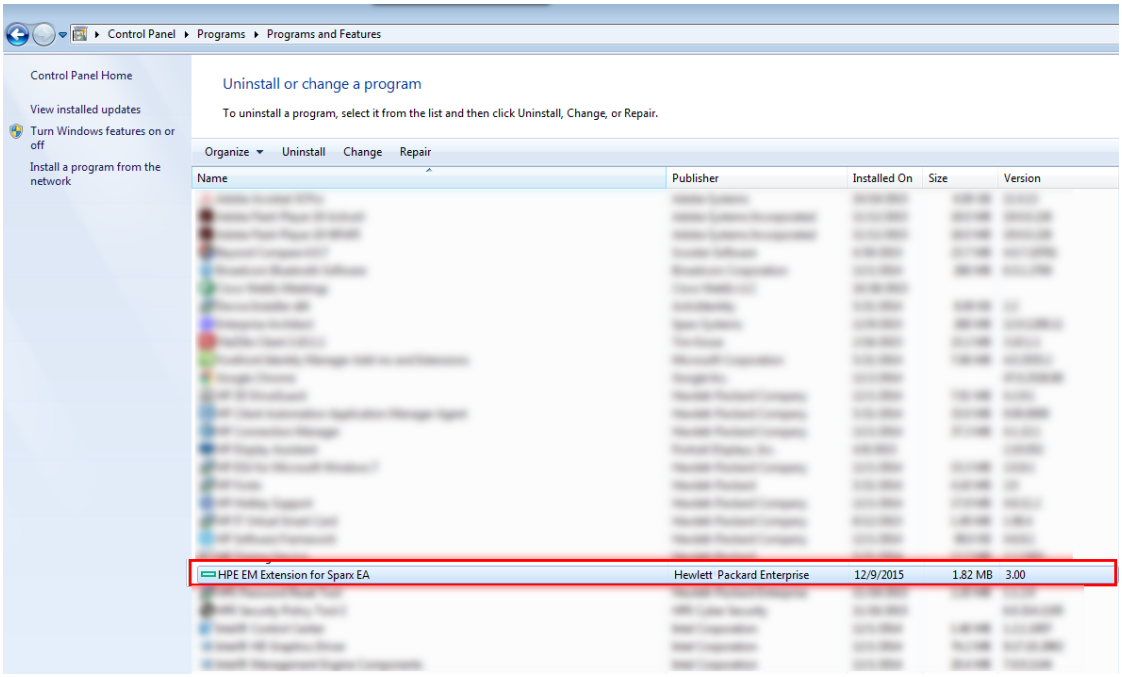
Uninstalling Extension for Sparx Systems EA

Before you install a new version of the HPE EM Extension Sparx Systems EA, it is helpful to uninstall any existing version on your system.

To uninstall follow the steps mentioned below:

1. Close Sparx Systems EA if it is running.
2. Open the **Control Panel > Programs > Programs and Features**.

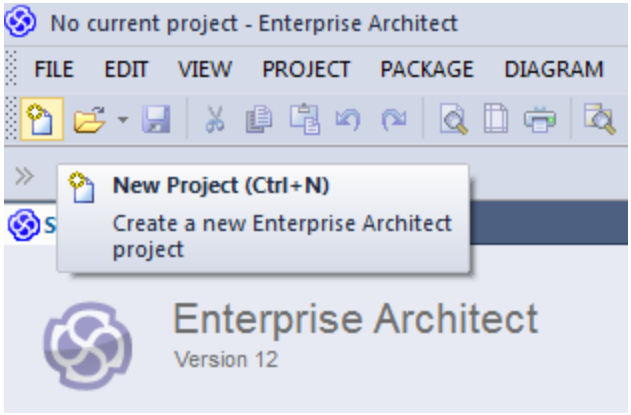
3. Select the program from the list, and then click **Uninstall**.



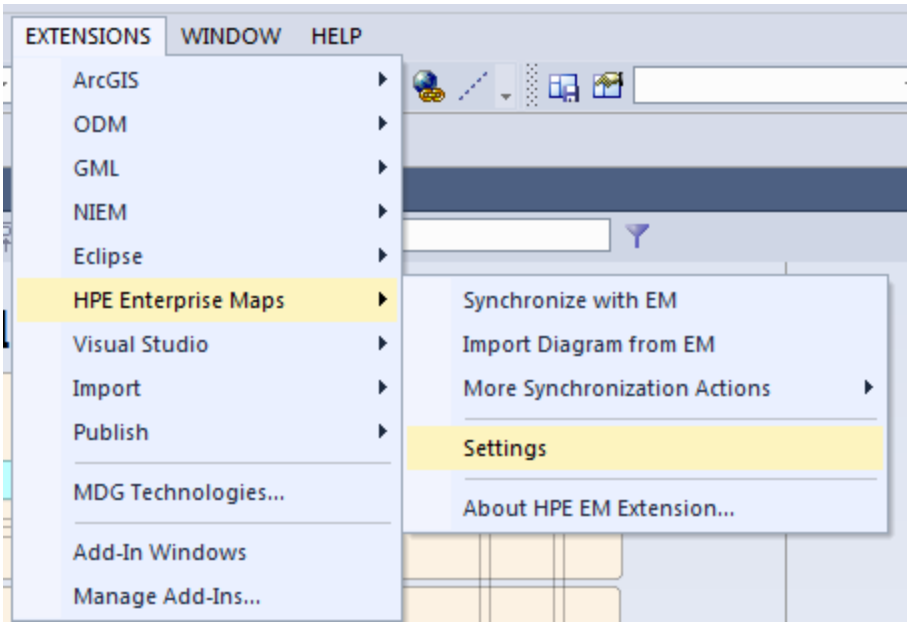
Connecting Extension for Sparx Systems EA to EM

Once the installation for HPE EM Extension for Sparx Systems EA is complete, you can connect to Enterprise Maps in the following manner :

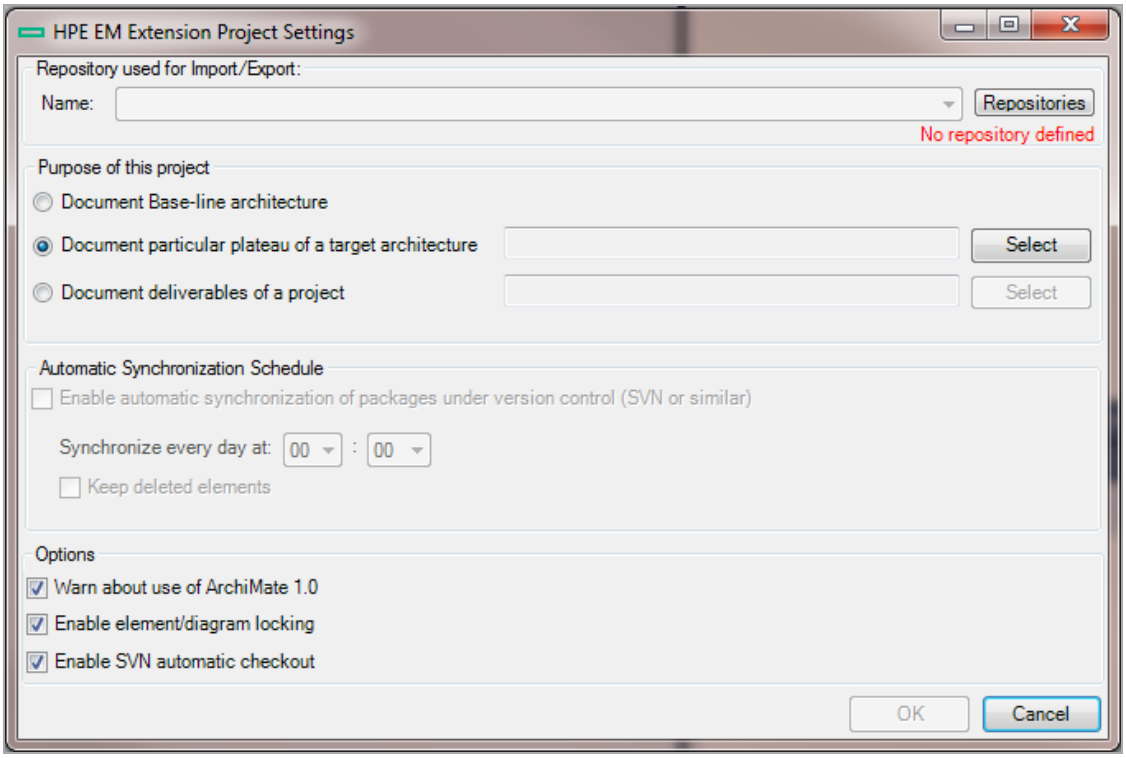
1. Create or open a project in Sparx Systems EA.



2. From the main menu, click **Extensions > HPE Enterprise Maps > Settings**.

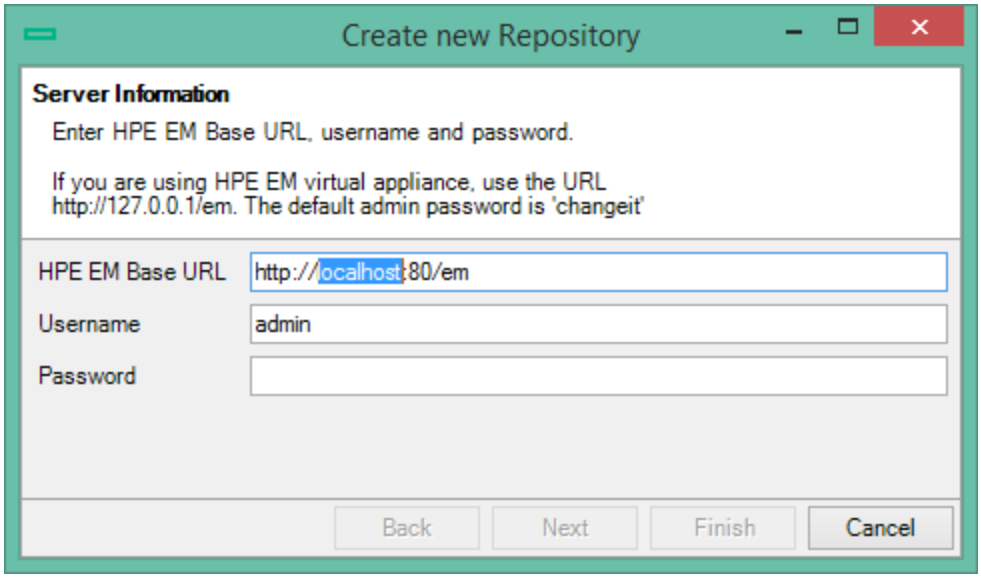


The HPE Enterprise Maps Settings window appears as below.

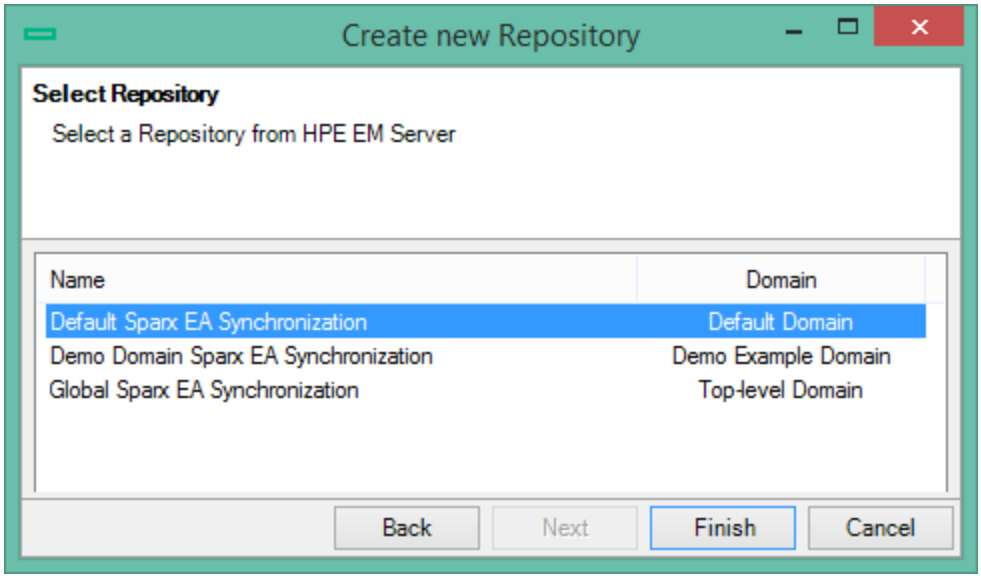


3. Click the Repositories button to define a repository. The Create new Repository window appears

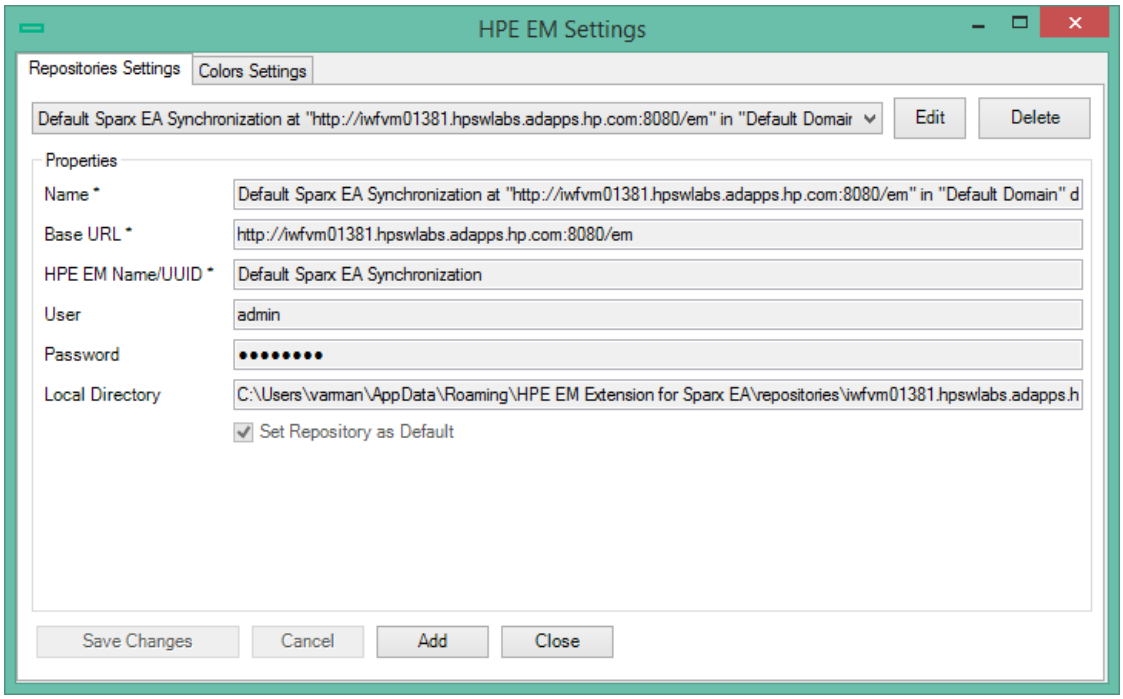
as below.



4. Enter HPE Enterprise Maps URL with the credentials and click **Next**. A list of the available Sparx EA repositories on the Enterprise Maps server is generated. Select a repository in the domain where you would like Sparx EA to be synchronized, and click **Finish**.



5. The newly added repository is automatically set as the default repository for all the import, export and synchronization actions.



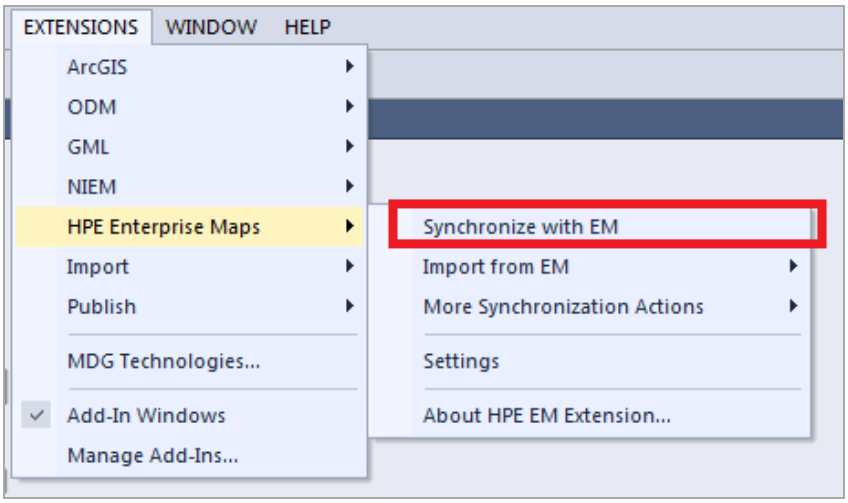
Click **Close** to exit Settings window.

Synchronize Data Between SparX Systems EA and EM

HPE EM SparX add-in supports synchronization of data between SparX project and Enterprise Maps repository server. The following are the functions to synchronize data:

1. Synchronize with EM

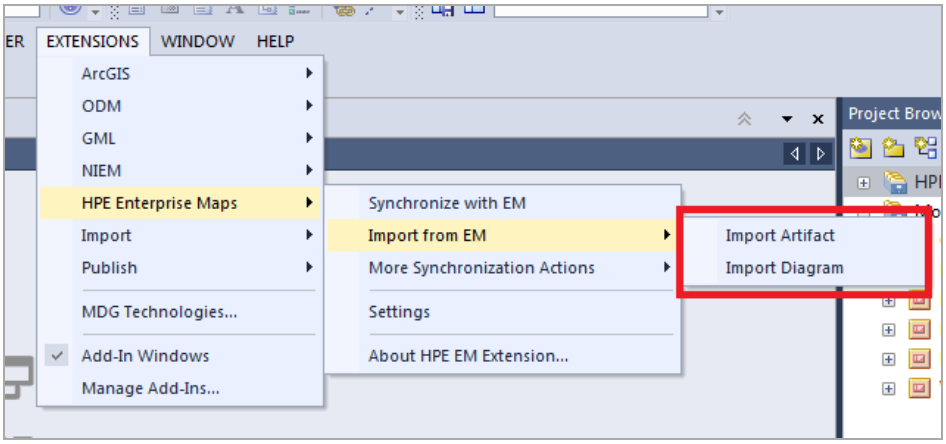
   This function exports all the changes from SparX project to HPE EM and also imports the changes of existing elements on SparX project from HPE EM.



> **Note:** This function does not import new artifacts in EM.

2. Import from EM

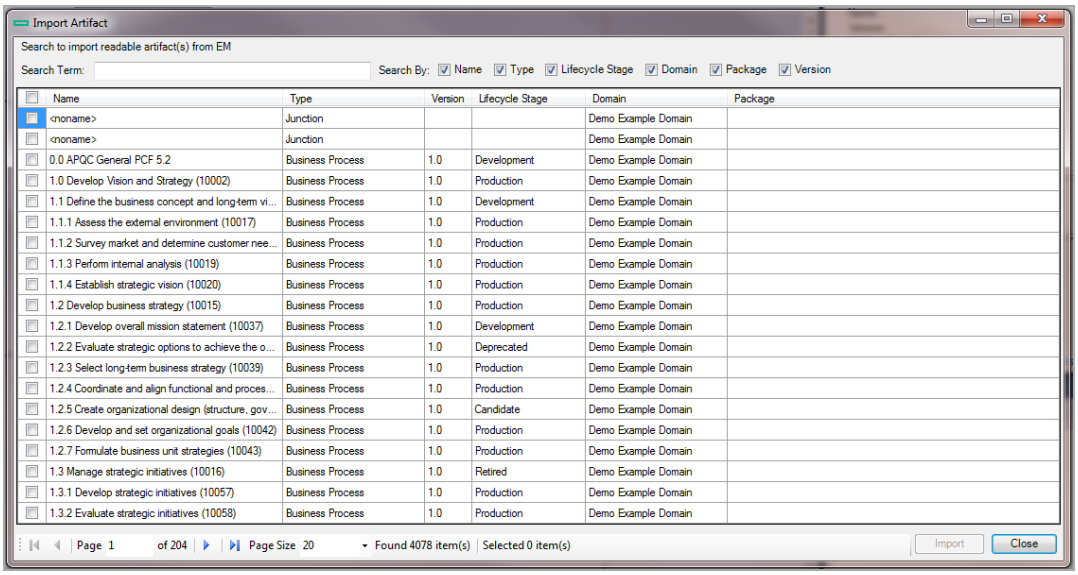
   This function allows you to import selective individual artifact from EM to SparX Project.



   a. Import Diagram - imports the selected diagram and all its artifacts to SparX project.

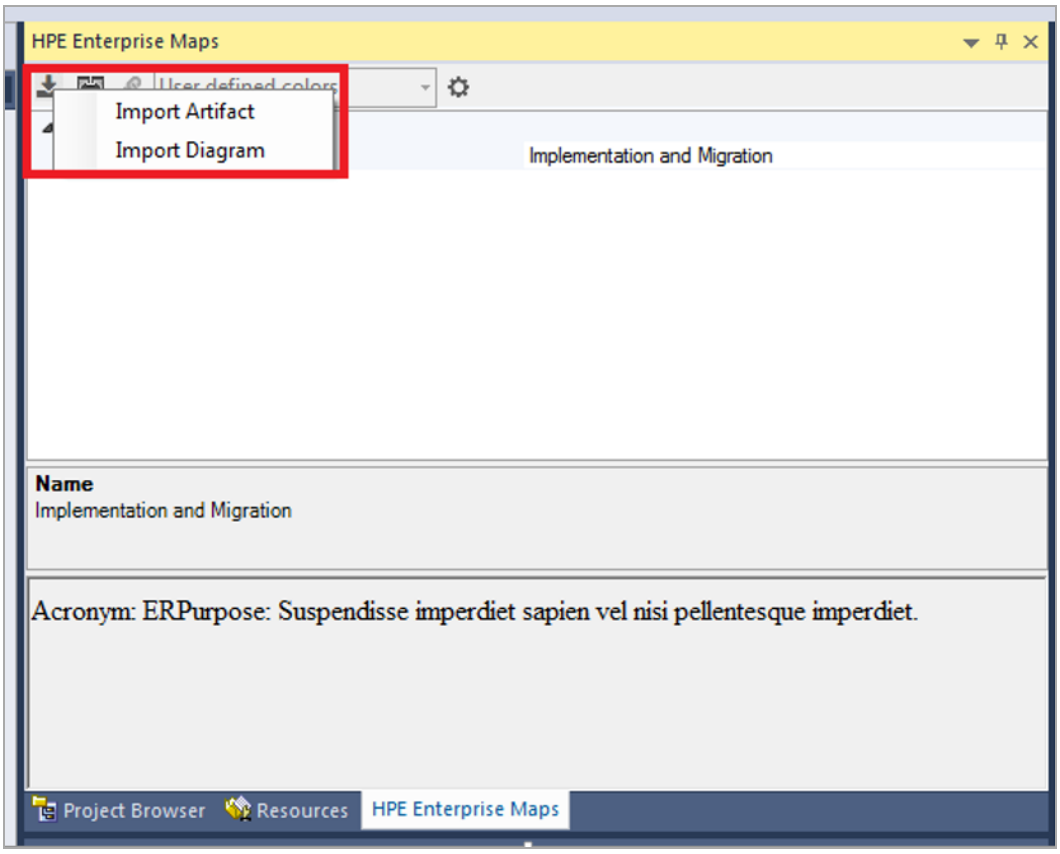
      > **Note:** You must ensure to configure the repository to import the selected diagram and its artifacts.

   b. Import Artifact - searches the artifacts directly from HPE EM and then imports the selected artifact to SparX project.

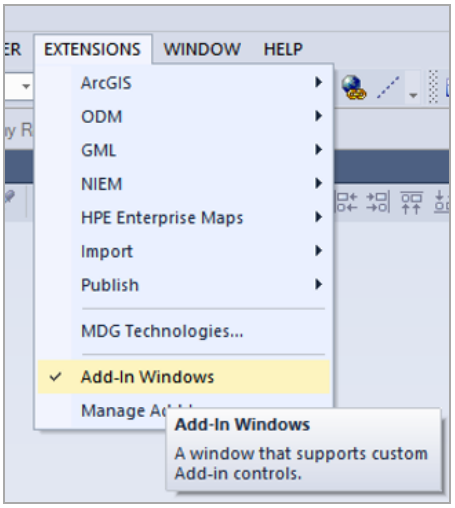


You can search the available artifacts by Name, Version, Lifecycle Stage, Artifact Type, Artifact Domain and Package. Use the Page Size to specify the number of artifacts to be displayed in a single page for a search result. You can then use the pagination buttons at the bottom of the window to navigate through the pages of search result.

You can also import your diagrams and artifacts from HPE EM add-in window.

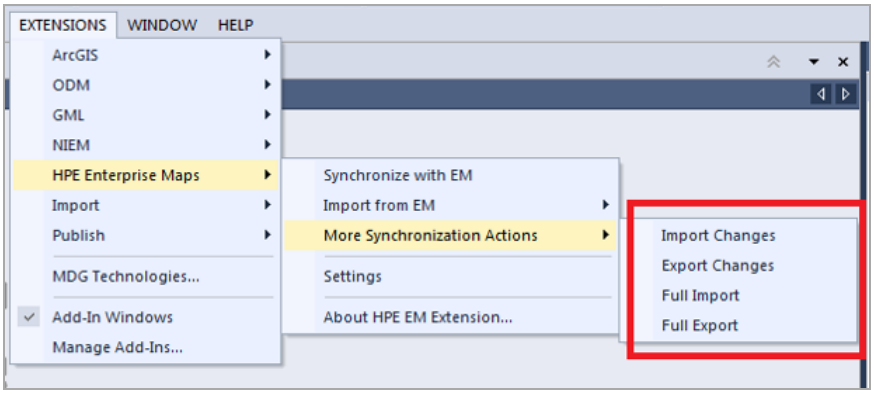


To enable the HPE EM add-in window, check the **Add-In Windows** option from the **EXTENSIONS** (**EXTENSIONS > Add-In Windows**).



3. More Synchronization Actions

This function allows you to export/import only the changed artifacts or full export/import of the artifacts.



The following are the options:

a. Import Changes - imports all the changes of existing artifacts in SparX Project from EM repository (excludes new artifacts from EM).

b. Export Changes - exports all the changes from SparX Project to EM repository (includes new elements in SparX Project).

c. Full Import - imports all shared artifacts from EM repository to SparX Project.

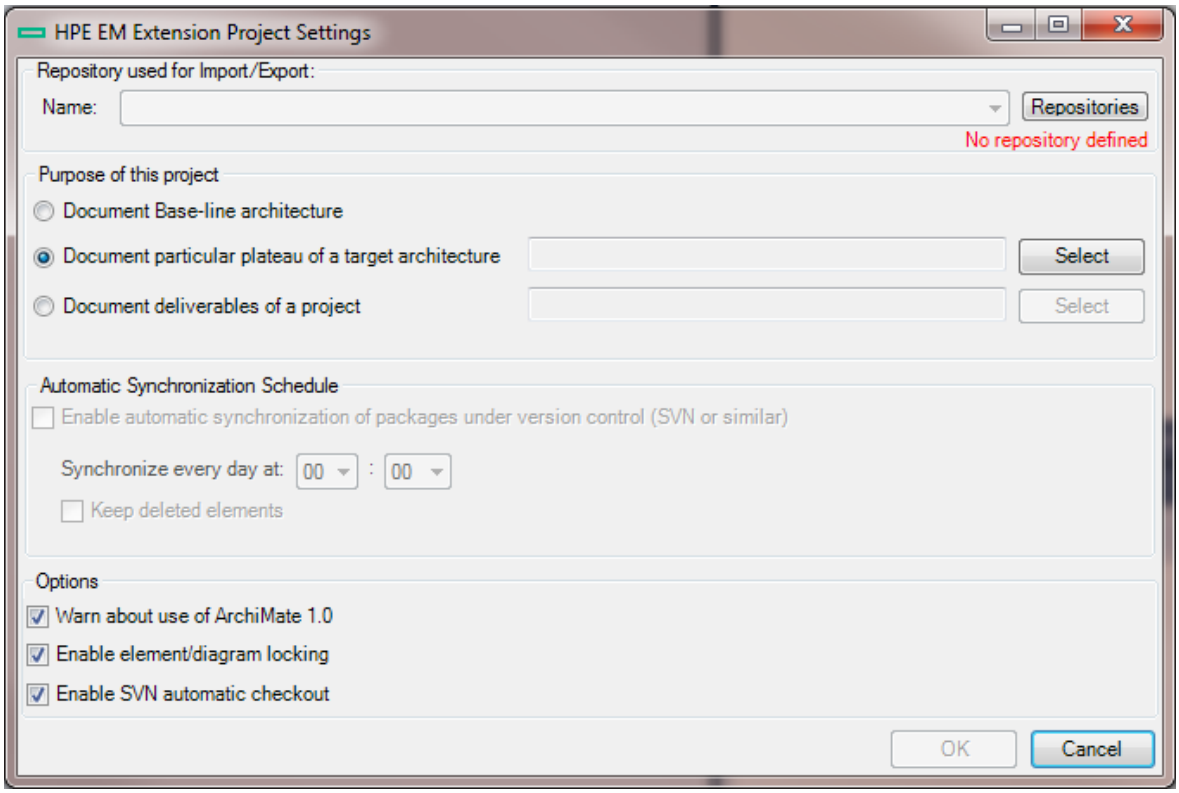
d. Full Export - exports all elements on SparX Project to EM repository.

4. Automatic Synchronization Schedule

   HPE EM SparX add-in allows you to schedule the synchronization with EM repository. Each time the scheduler is run, all the changes in EM repository and SparX project are synchronized. For more information, see "Scheduling Automatic Synchronization" below.

Scheduling Automatic Synchronization

You can configure a Sparx EA project to synchronize with EM on daily basis at a fixed time. To enable automatic synchronization, configure an EM repository and then set the Automatic Synchronization Schedule as represented below.



Once the synchronization is over, a log file is created in the following path *%AppData%\HPE EM Extensions for Sparx EA\log* (prefixed with 'autosync').

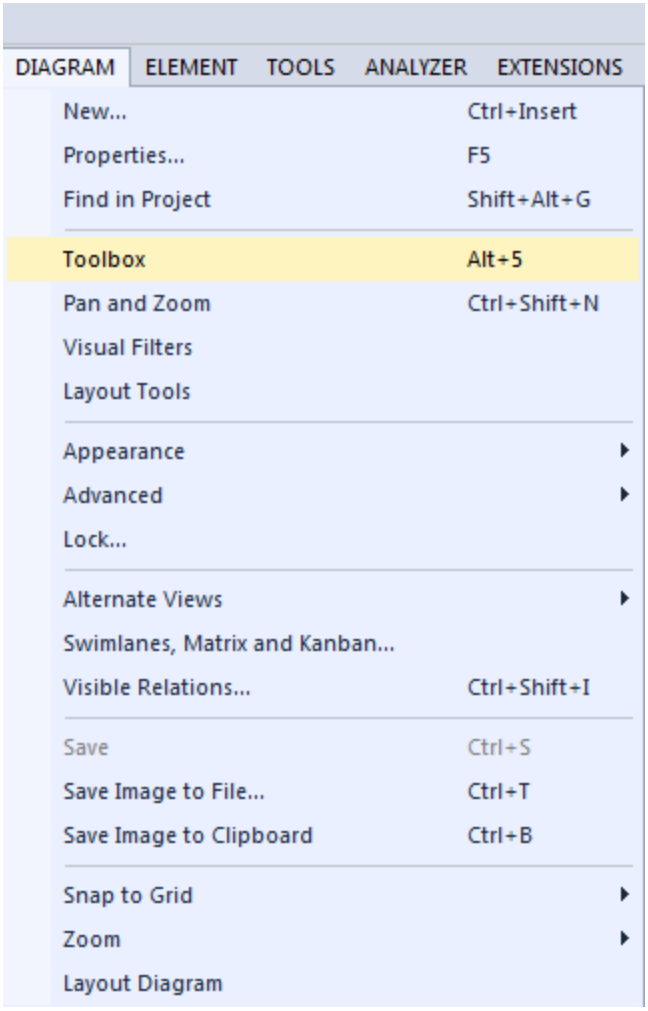
> **Note:** For automatic synchronization to work, the Sparx EA project must be open at the scheduled time and user intervention must be avoided.

> **Note:** HPE EM SparX add-in allows you to enable/disable SVN automatic checkout in setting window.

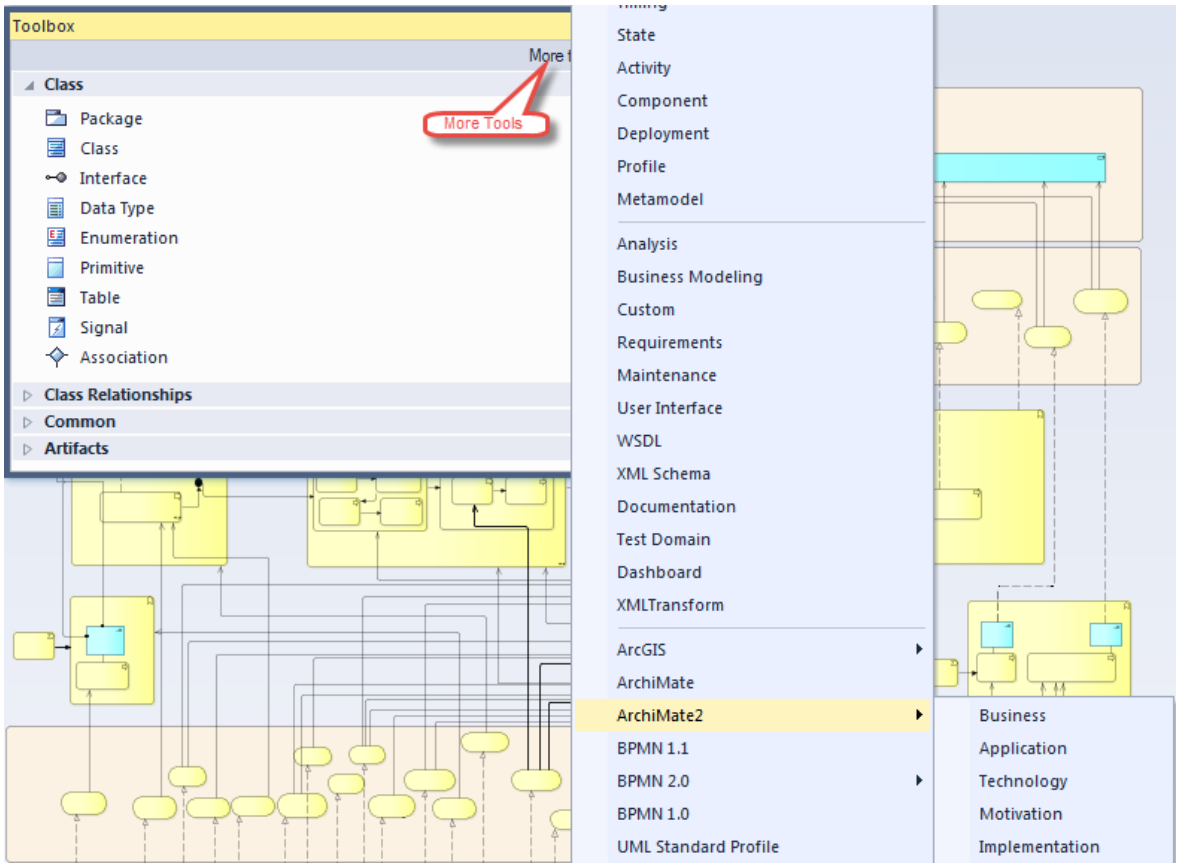
Basic Modeling with Sparx Systems EA

When building data models in HPE EM, Sparx Systems EA users can access Archimate 2.0 elements using the following steps:

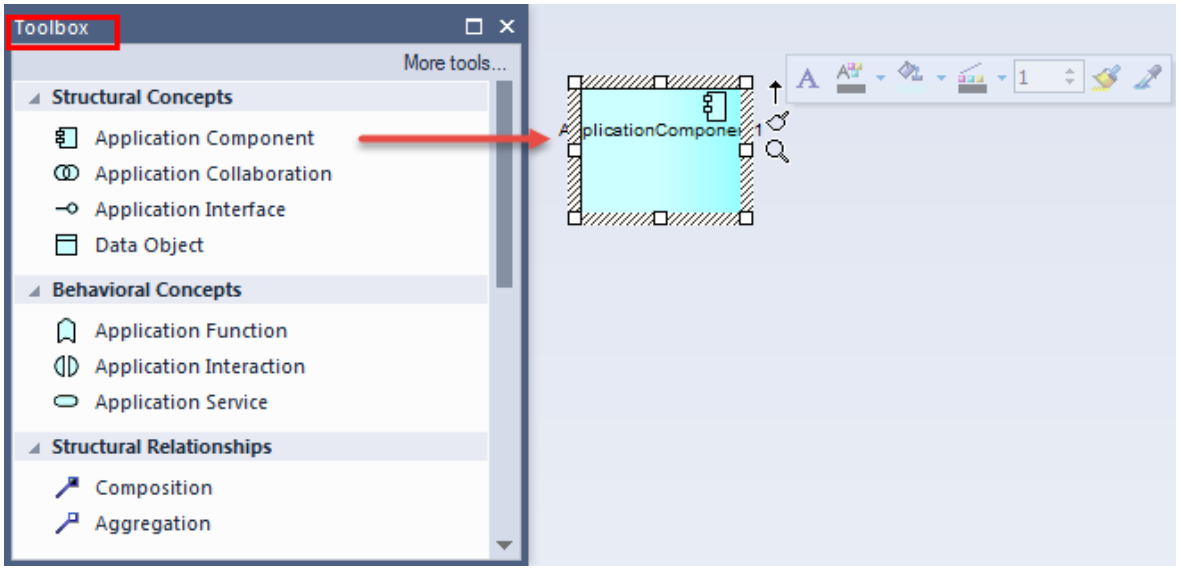
1. In the main menu click **Diagram > Toolbox** to display the diagram toolbox.



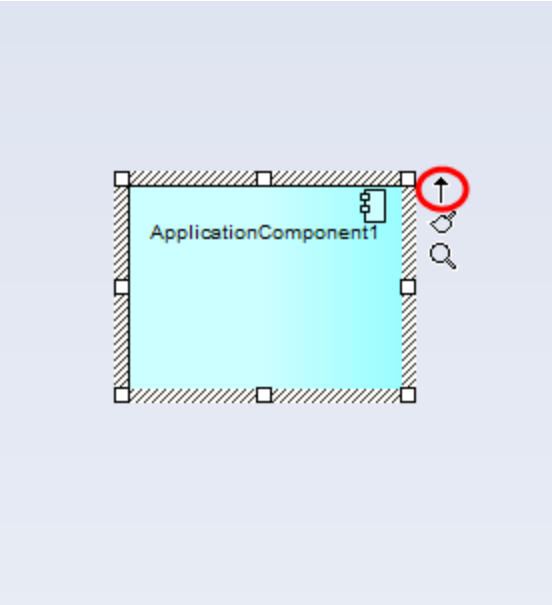
2. To display elements of Archimate 2.0 layer click **More tools**, and then select the layer for your model.



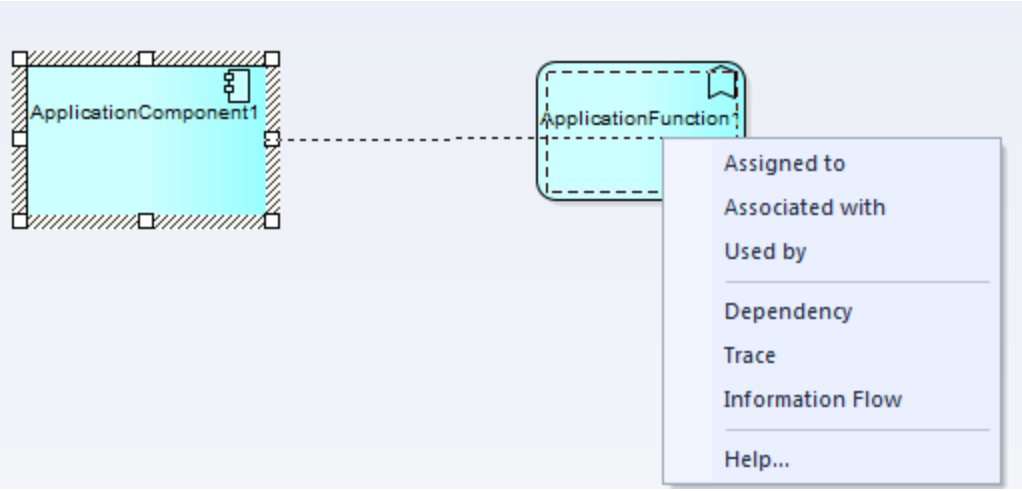
3. You can create new elements by dragging them from the Toolbox to a working diagram.



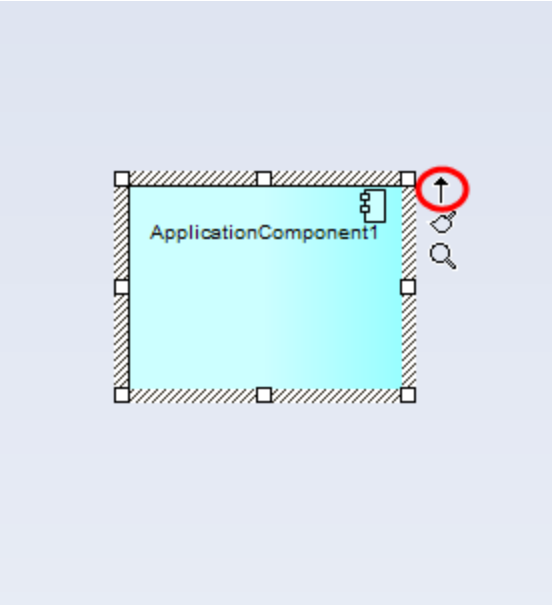
4. In a working diagram, you can create a link between elements by dragging the arrow (quick linker) from a selected element to another element.



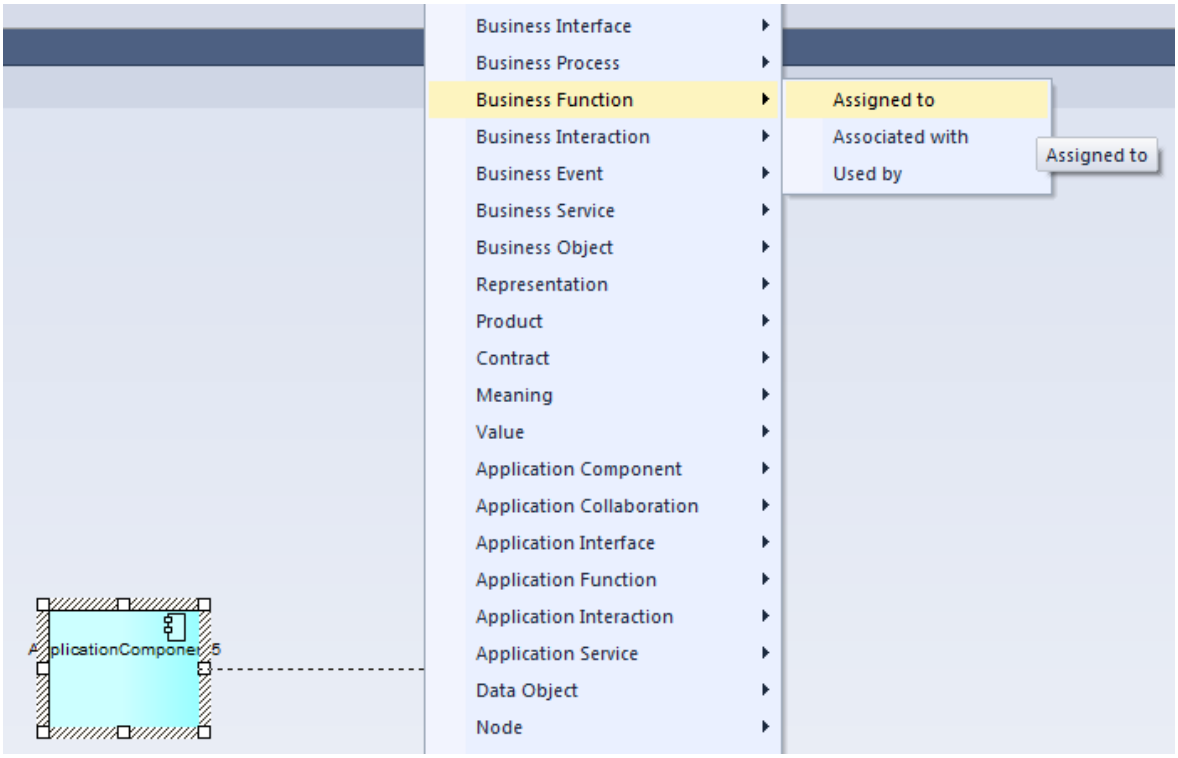
5. After linking elements, Sparx Systems EA will ask for a link type. Define the relationship between elements using the link type menu.



6. You can create a new element together with a link by dragging the arrow from a selected element to an empty area of your diagram.



7. Sparx Systems EA prompts you for a target element type and link type after you stop dragging the arrow.



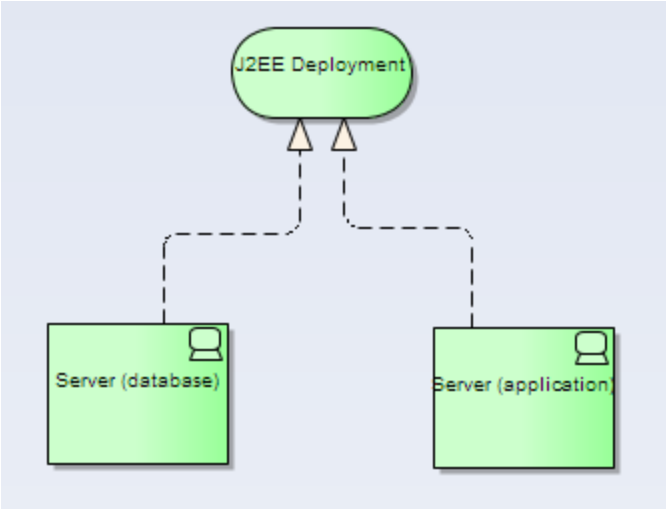
8. Sparx Systems EA opens a dialog that allows you to specify element properties. After you click **OK**, the element is created along with the link.

Building Reference Model for Cloud Transformation

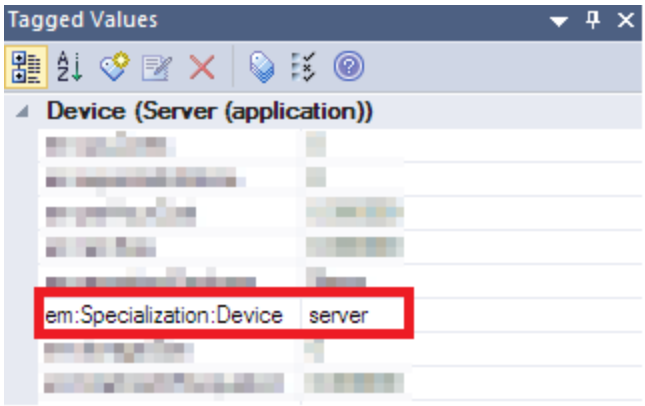
Reference model (or deployment model) in Enterprise Maps represents the required infrastructure of an application to be deployed on to different platforms. A reference model can be abstract and suitable for any platform, or can be specific to a particular platform (for example: Cloud). A reference model can also be further fine-tuned to a specific Cloud such as HP Cloud or Amazon AWS.

To build a reference model follow the steps mentioned below:

1. Create an Infrastructure Service and link the required Devices using *Realizes* relationship.



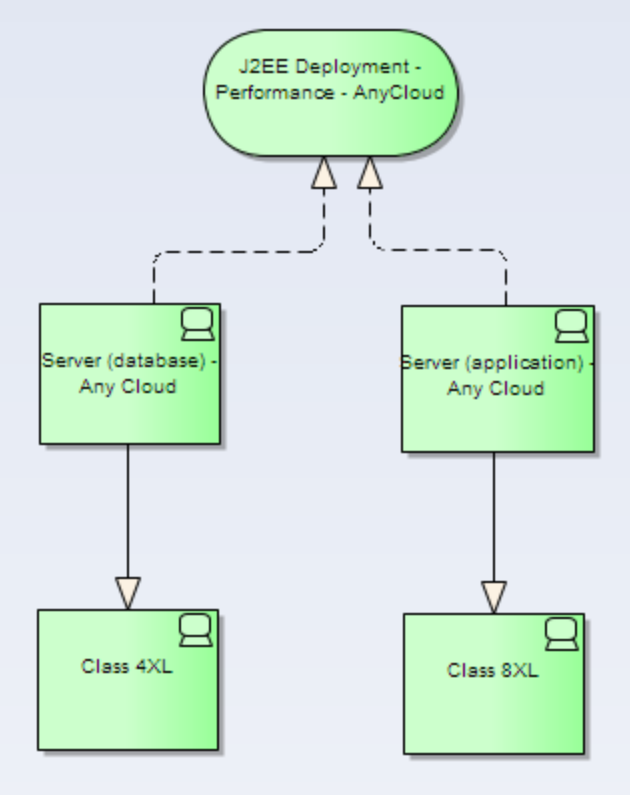
2. In **Tagged Values** window of Device, select **server** in the Specialization field for all Devices. This synchronizes the Devices as Servers into Enterprise Maps.



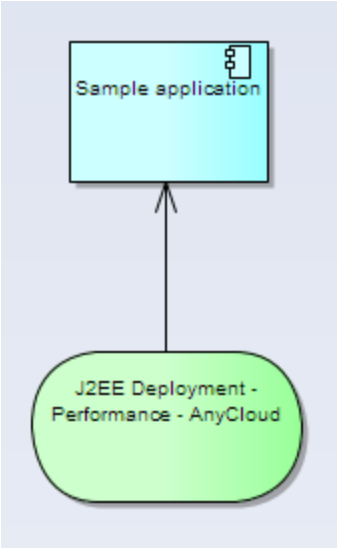
3. Additionally, define preferred Server Class(es) for each Server in the reference model using

Specializes relationship.

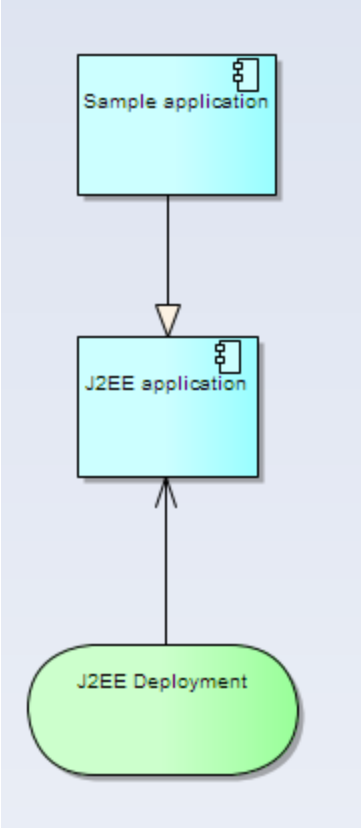
> **Note:**
>
> - You can also define Server Class required by the application later in its overview page in Enterprise Maps.
> - Server Classes already available in EM can be imported from Enterprise Maps.



4. Define usage of this reference model by the application component linking through *Uses* relationship.



Or, making the application component *Specializes* another application that *Uses* this reference model.



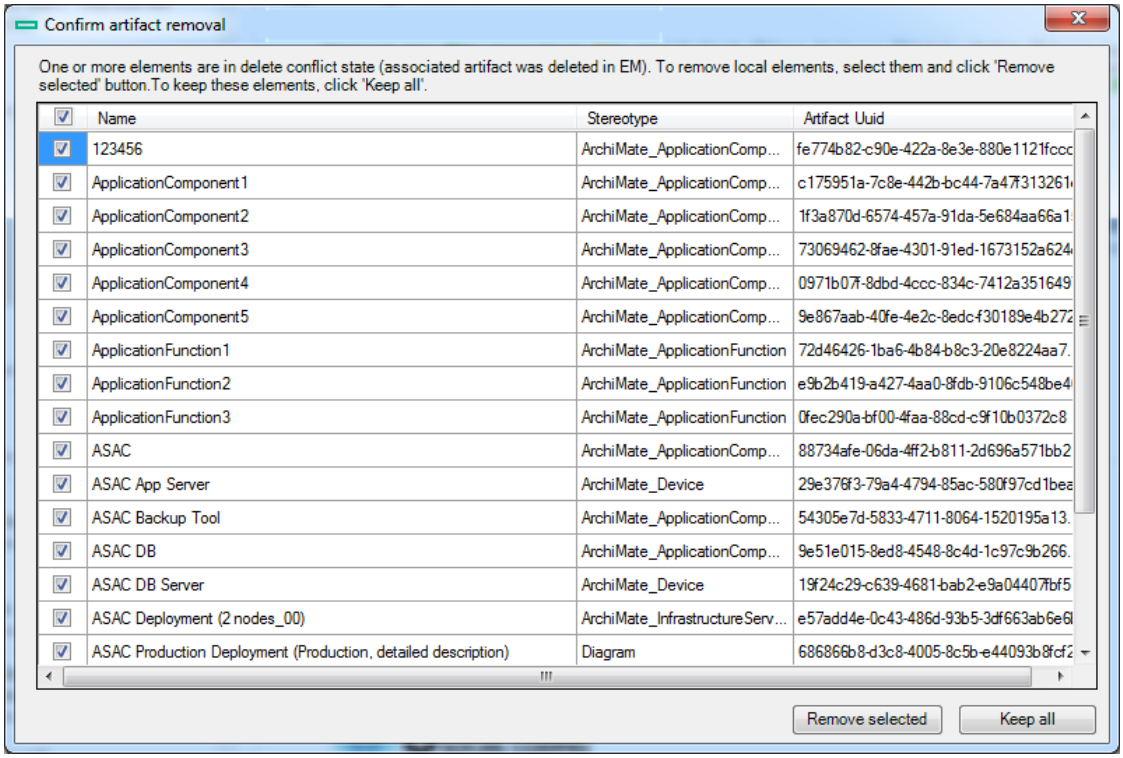
5. Export these reference models to Enterprise Maps.

Synchronizing Deleted Artifacts

Over a period of time, administrators might delete some of the artifacts in EM. The problem arises, when a Sparx EA project containing deleted artifacts is synchronized with EM. The synchronization can detect this inconsistency and show the below message prompting the user to take action on deleted artifacts.

1. Artifact(s) that is/are deleted in EM but existing in SparX Project.

   The following **Confirm Artifact removal** window shows a list of artifacts that were deleted in EM but are existing in SparX project.

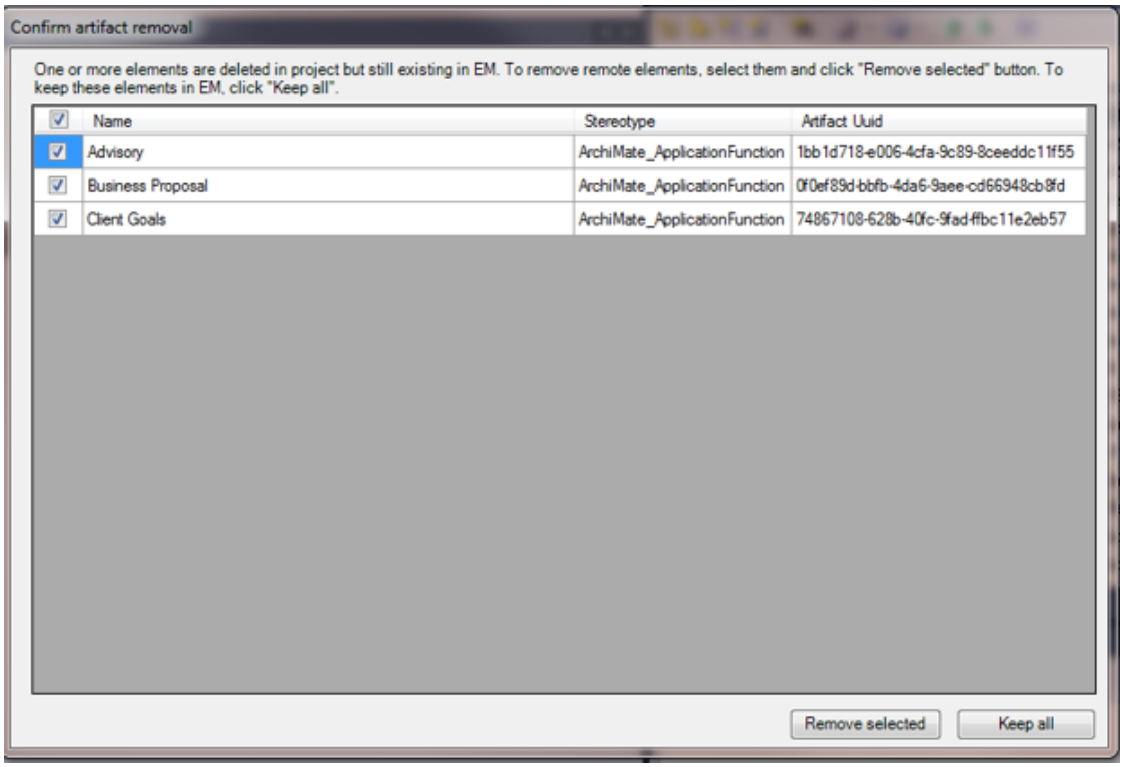


   The following options are available for the user:

   - **Remove Selected:** removes artifacts from Sparx EA project also.
   - **Keep All:** keep artifacts in Sparx EA project and restore them in EM.

2. Artifact(s) that is/are existing in EM but deleted in SparX Project.

   The following **Confirm artifact removal** window shows a list of artifacts that were deleted in SparX Project but are existing in EM.



The following options are available for the user:

- **Remove Selected**: removes artifacts in EM also.
- **Keep All**: keep artifacts in EM.

Element/Diagram Locking

HPE EM Extension for Sparx Systems EA provides a locking mechanism to assist Sparx EA users who work concurrently on the same elements/diagrams, either within Sparx EA or HPE EM.

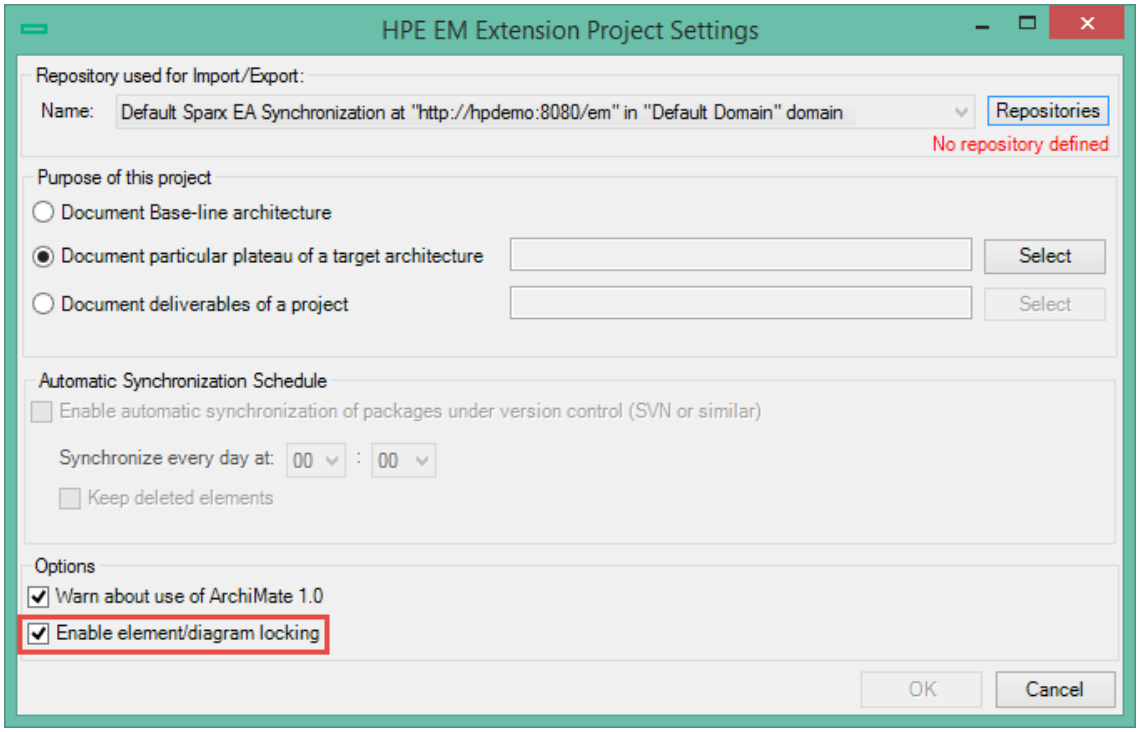
Locking does cause certain intermittent interruptions for the user. However, the benefit is far more utilitarian, in terms of protecting data integrity.

Prerequisites

In order to take advantage of the locking, please ensure the following:

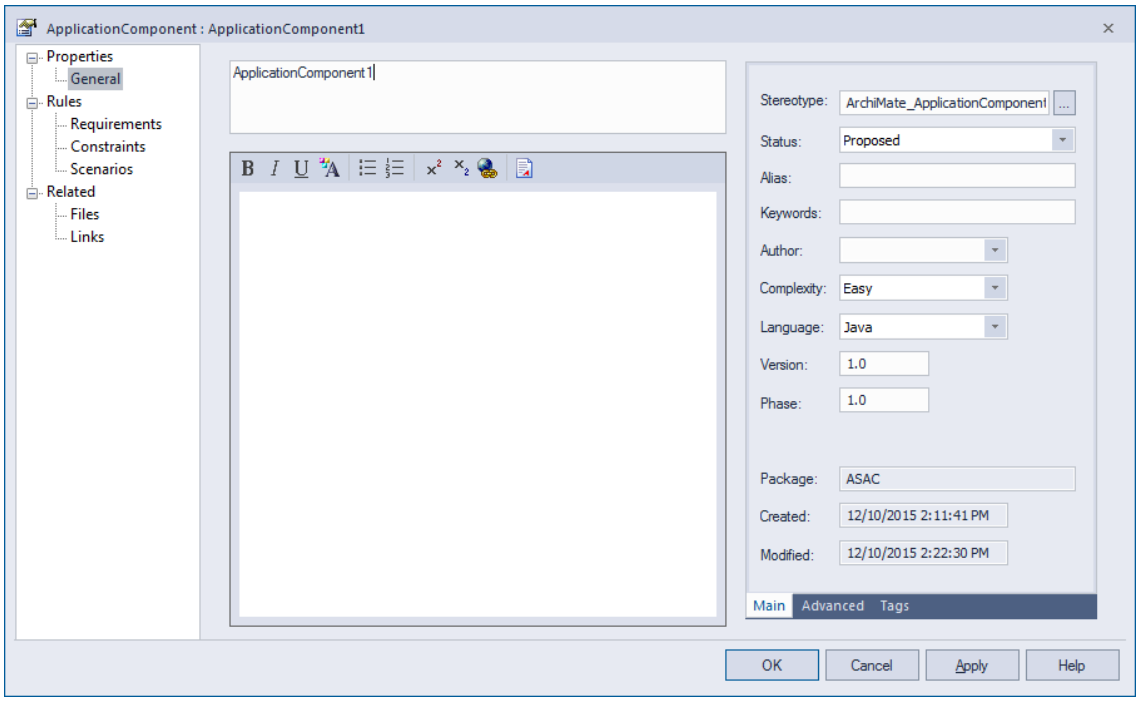
- Locking must be enabled in project settings.
- Elements, diagrams or the entire project must be synced to the same EM server, using the same

Sparx EA repository.

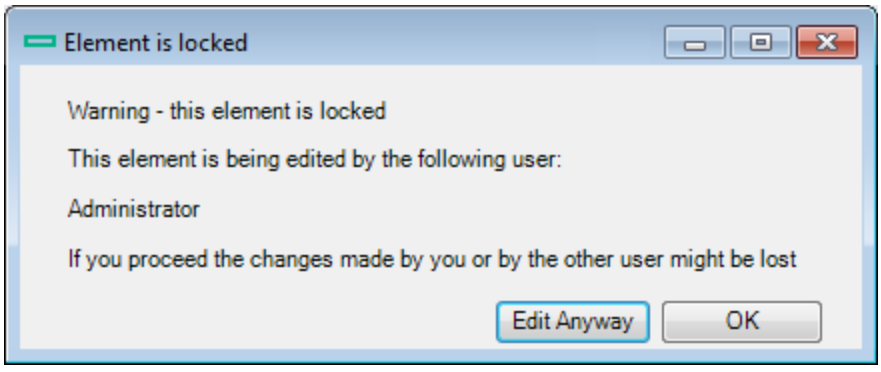


How it works

- When you open a diagram or edit an element using properties window or project browser, the lock is triggered for that particular element/diagram.



- You can then release the lock after you complete your work by syncing the edited element/diagram to EM again. This propagates the changes made by you and allows other users to begin their work on the same element/diagram.
- In case the edited element/diagram is not synced with EM, other users receive the below warning message when they attempt to open the diagram or while they edit the element during the locking period.



  - If you choose **Edit Anyway**, the changes for this element/diagram become indeterminable. The last user, who syncs the changes with EM, overwrites the changes done by previous users.
  - If you click **OK**, you are unable to edit the element/diagram until the lock is released. However, data integrity is assured.

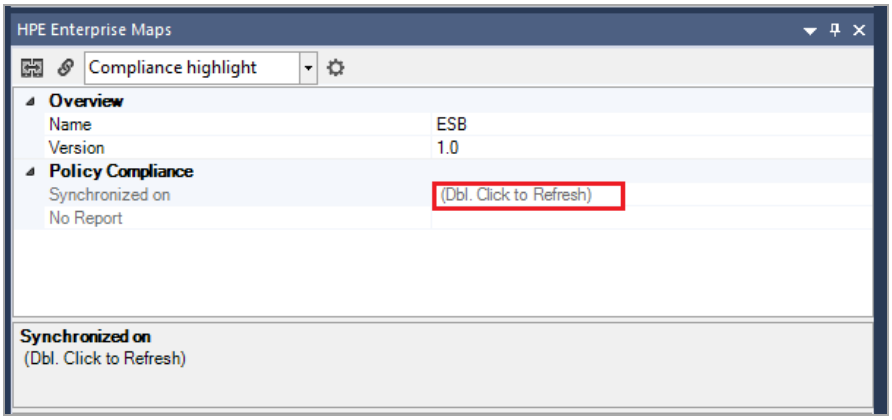
- The lock is auto released after a lapse of 30 minutes, if there is no further editing from the user who triggered the lock. The other users can then start their work on the same element/diagram.

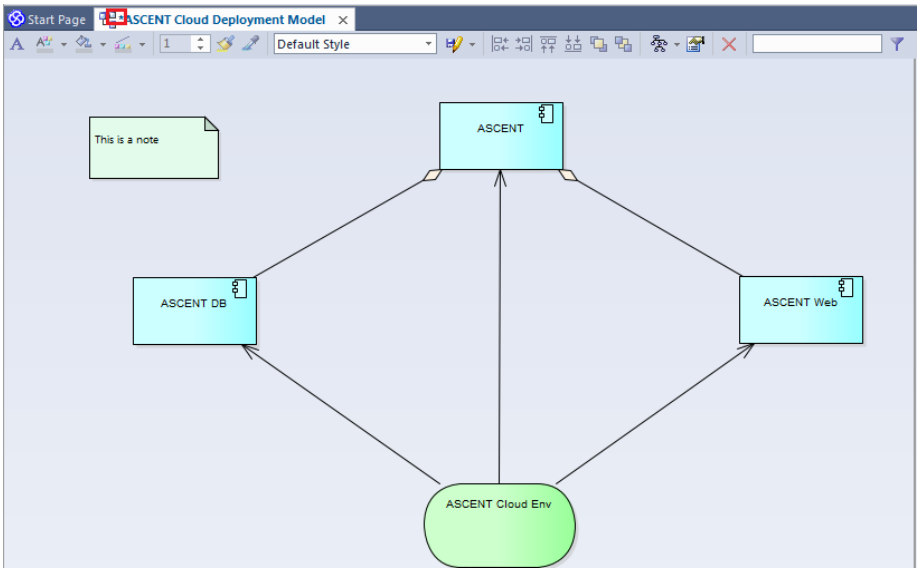
Diagram Synchronization

HPE EM Extension for Sparx Systems EA uses different techniques to detect the changes made to a diagram. During the synchronization between EM and Sparx EA, only that diagram is synced with EM. However, there are some unsupported cases when the extension cannot detect the changes made to a diagrams. In such cases, ensure to sync the modified diagrams manually.

The following are the unsupported cases:

1. **Policy compliance update**: a diagram is not treated as modified when you update the compliance status of an artifact belonging to that diagram.



2. **Changes that do not trigger the unsaved state of a diagram**: any changes on the diagram that do not turn it into the unsaved state (see image below). For example, editing a note or modifying an

element properties are not considered as modified diagram.