System Architecture Extension

Disclaimer

The guidelines contained in this document are based on release 12.1 of Enterprise Architect (EA). Version 3.0 of the *System Architecture Extension* has been successfully tested for deployment with EA 12.1, 13.0, and 13.5.

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

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

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

Dependencies

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

- Interop.EA.dll (part of the standard Sparx installation files).
- Microsoft .Net Framework 4.5.

Limitations of the trial version.

The following limitations apply to the trial version:

- The software activation is granted for five (5) consecutive days only. After expiration the System Architecture MDG Technology will no longer be loaded into Enterprise Architect.

Installation

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

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

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

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

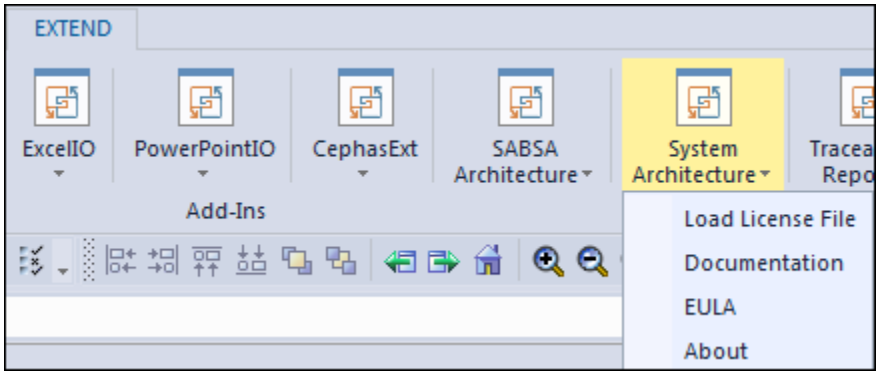
C:\Program Files (x86)\Sparx Systems\Addins.

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

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

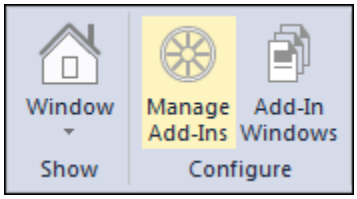
Verifying the installation

Bring up Enterprise Architect, without necessarily opening a repository, and verify that there is an System *Architecture* entry in the EXTEND ribbon:

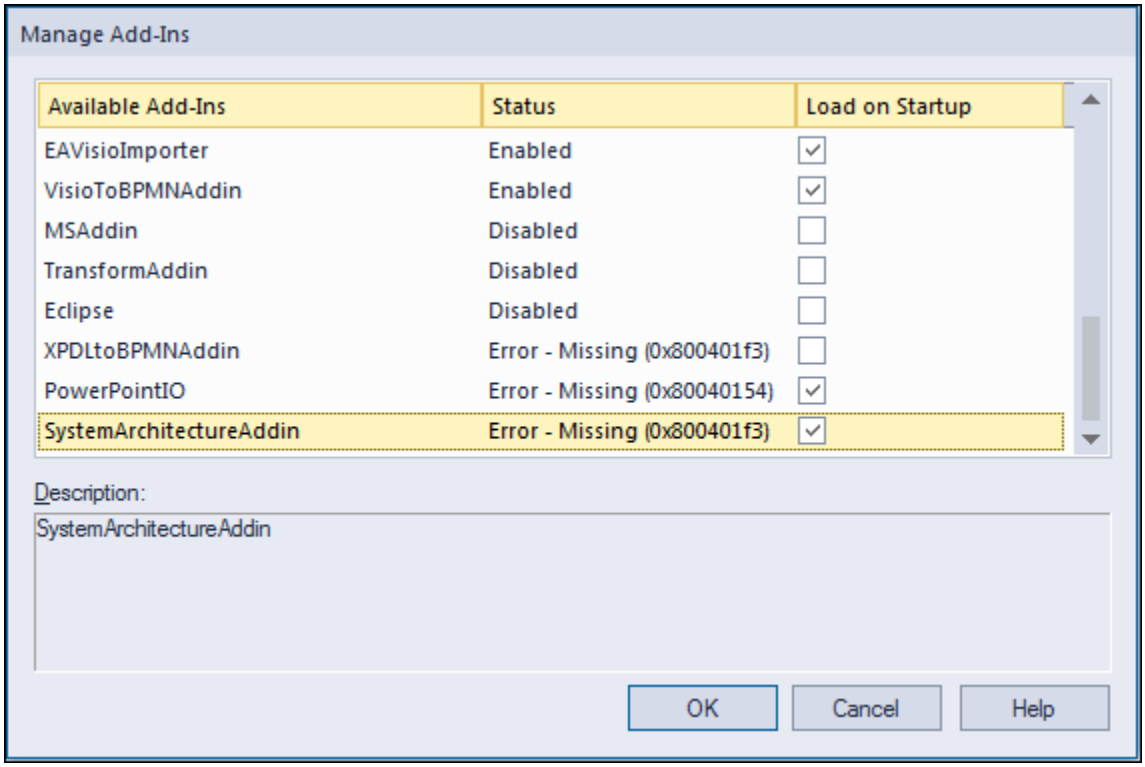


Note that additional extensions may or may not be present, depending on your Enterprise Architect version and configuration.

Should the menu entry not be present, select the "*Configure* → *Manage Add-Ins* item in the same ribbon:



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



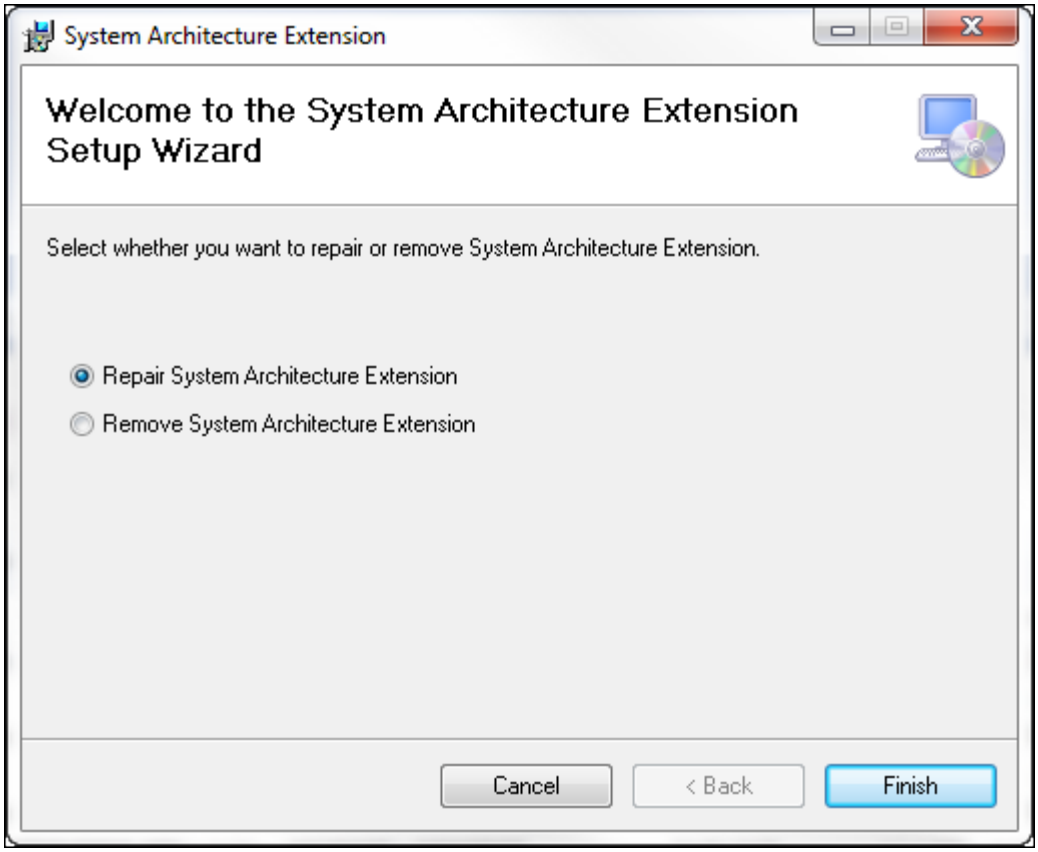
If an error status is shown, as in the example above, this typically means that either:

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

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

To fix an incorrect installation:

- Exit out of all instances of Enterprise Architect.
- Launch the setup process again. The installer will automatically provide a repair option:



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

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

Name	Type	Size
Cephas_Software_EULA.pdf	Adobe Acrobat D...	60 KB
Cephas_Software_EULA.rtf	Rich Text Format	126 KB
EA.TLB	TLB File	215 KB
Interop.EA.dll	Application extens...	296 KB
register_SystemArchitectureAddin.bat	Windows Batch File	1 KB
SystemArchitectureAddin.dll	Application extens...	1,168 KB
SystemArchitectureExtension.pdf	Adobe Acrobat D...	559 KB
Unregister_SystemArchitectureAddin.bat	Windows Batch File	1 KB

Installing the license key file

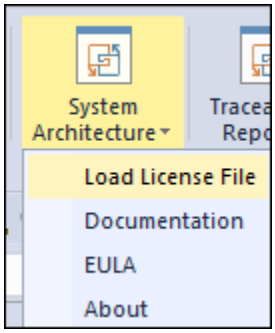
Trial version

The software installation automatically loads the trial version license key. Skip to the Adding the User license Key section.

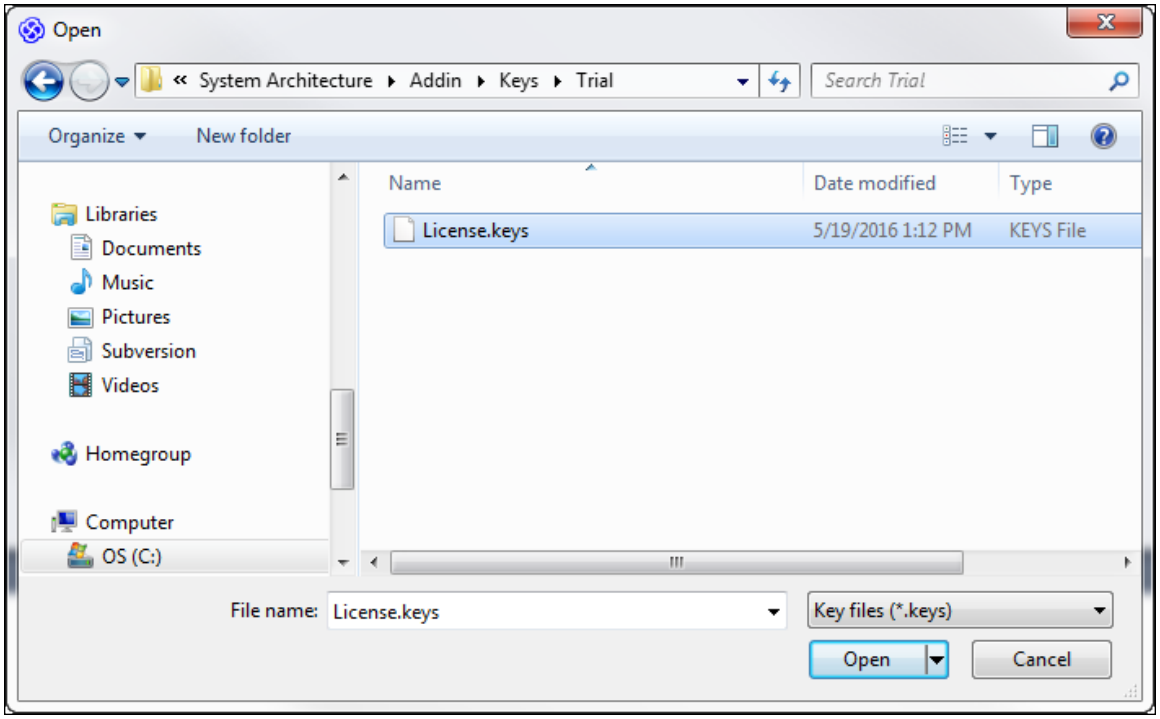
Licensed version

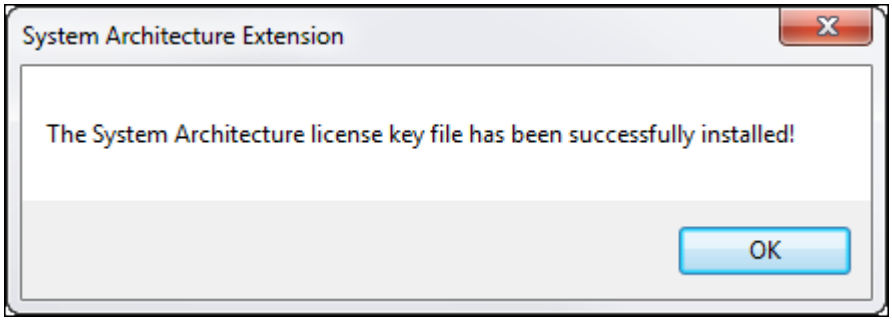
Once the full version of the product has been purchased, a *License.keys* file will be provided by Cephas Consulting which needs to be installed **by each User of the software**, even if a site license key is acquired.

To install the license key file, open Enterprise Architect and in the EXTEND ribbon select:



Next, select the provided file from the folder in which you copied it. For example:



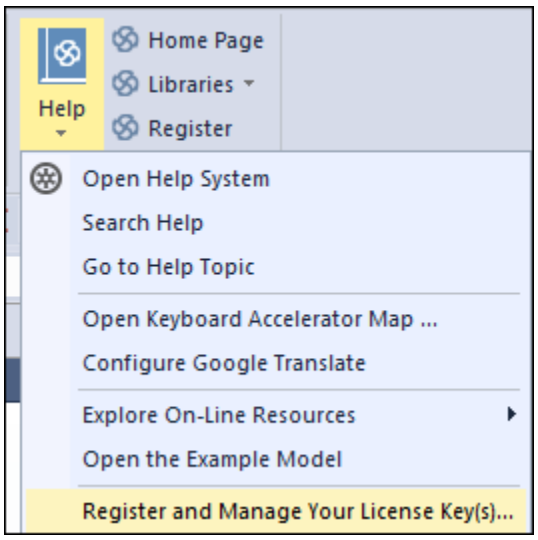


After installing the license key file, continue with the next section.

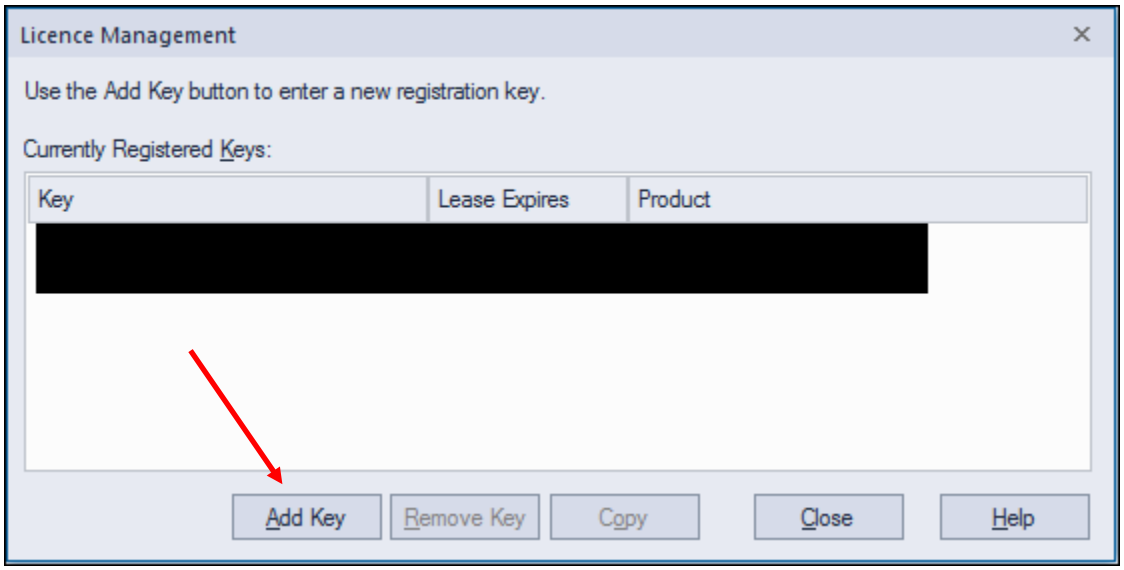
Adding the User license key

The following step is required for both the trial and the full version of the product, in order to make Enterprise Architect verify the software license.

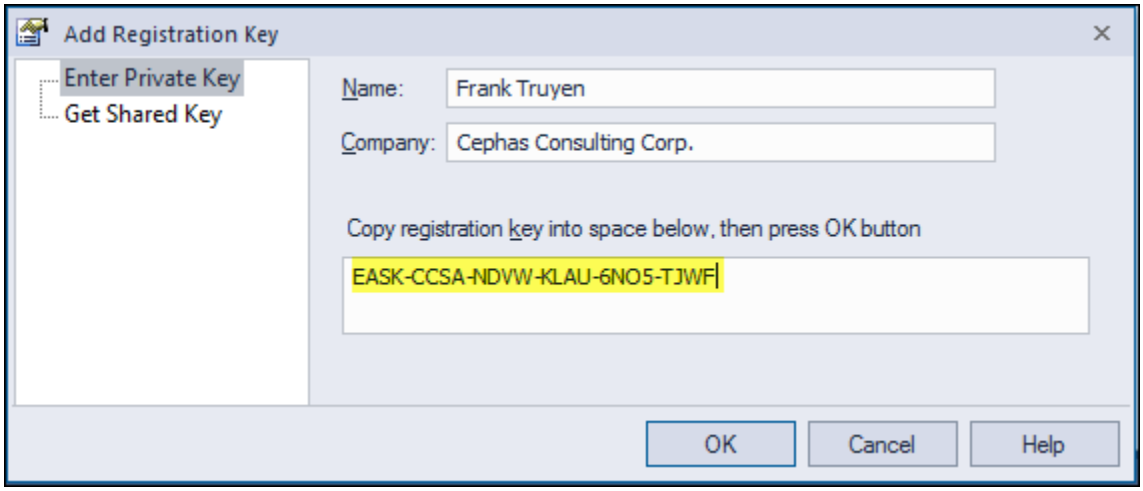
Under the Help panel of the START ribbon, select:



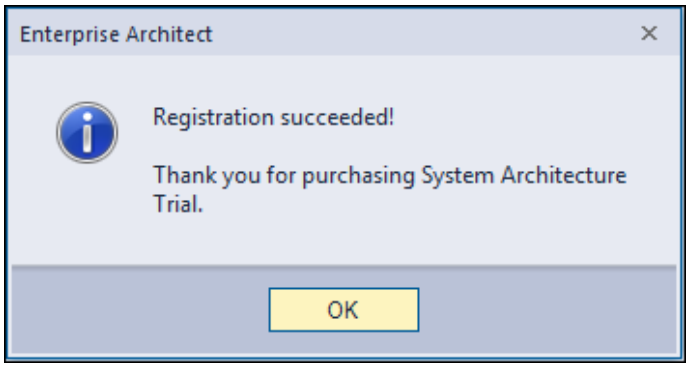
Next, click “Add Key”:



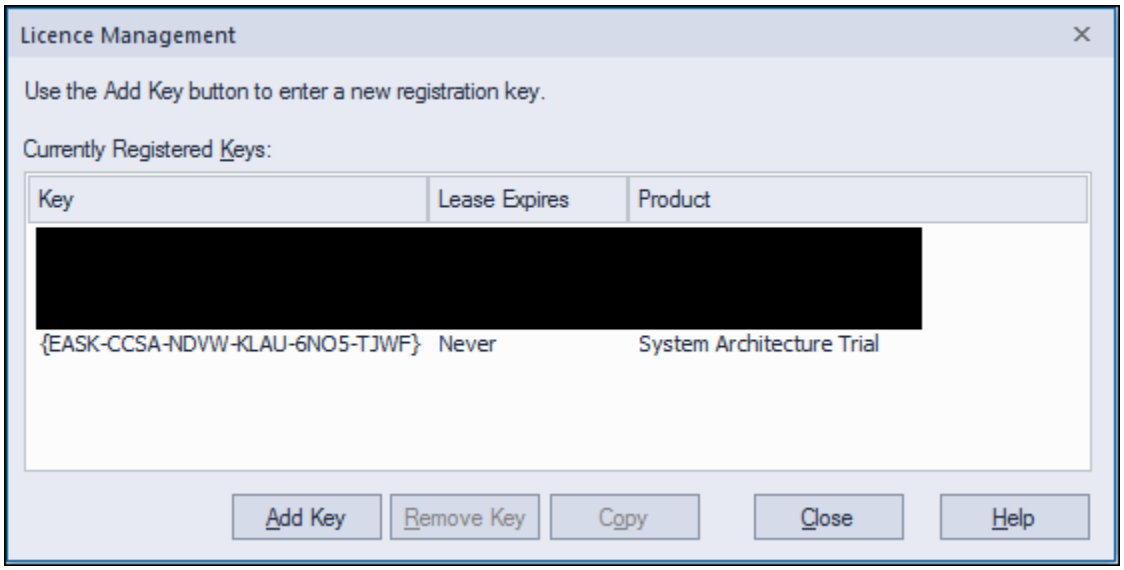
Enter or copy/paste, either the trial key (shown below), or one the full version keys provided as part of the software purchase:



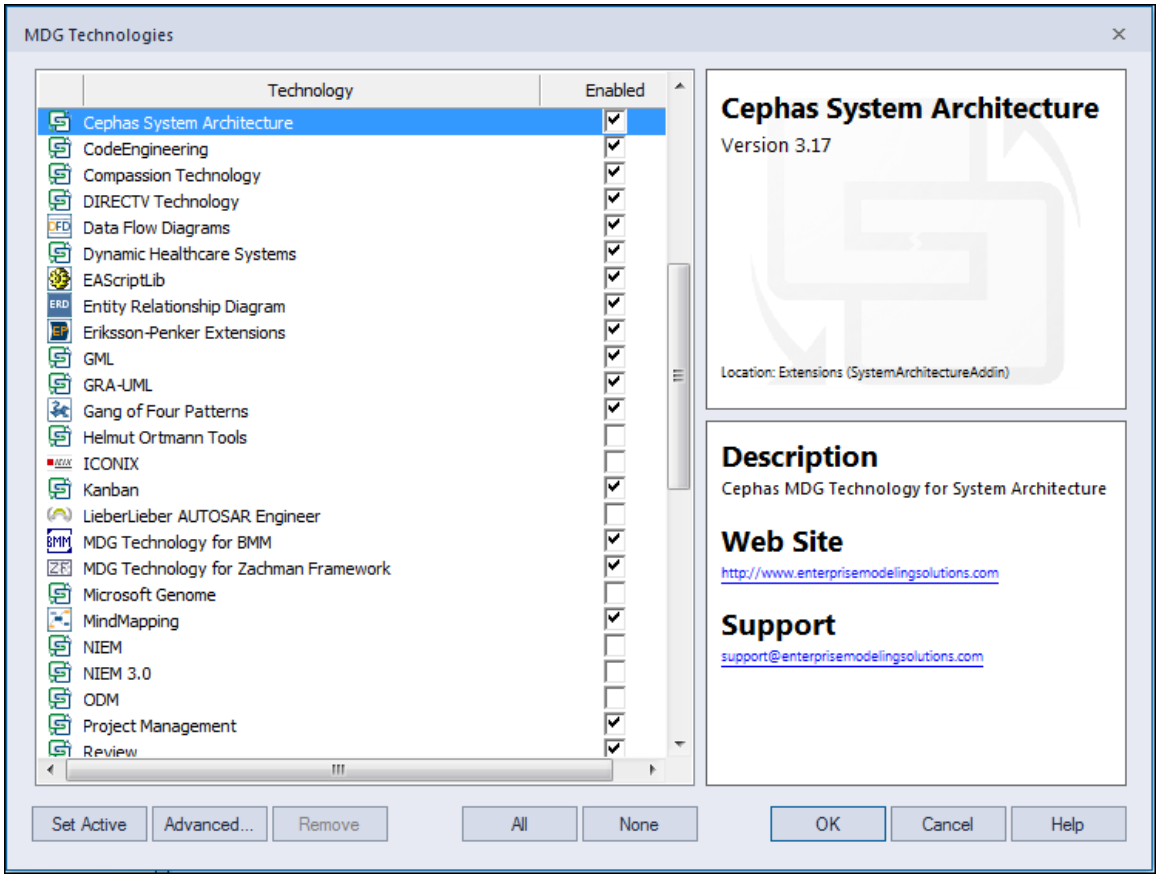
Enterprise Architect will confirm the successful addition of a key:



The license is now added to the registered keys:

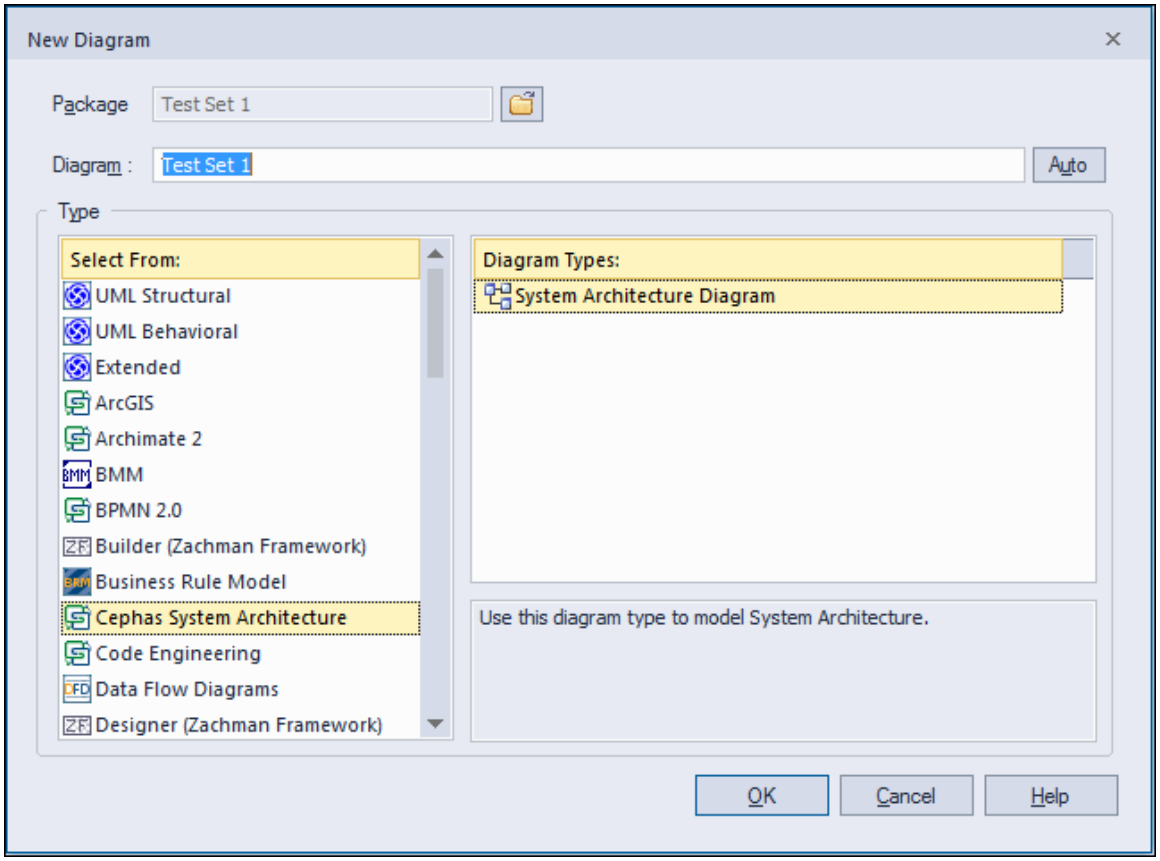


Next **exit the Enterprise Architect tool** and **restart it** in order to load the MDG Technology for System Architecture. You can verify its status from the *CONFIGURE* → *Technology* ribbon panel:

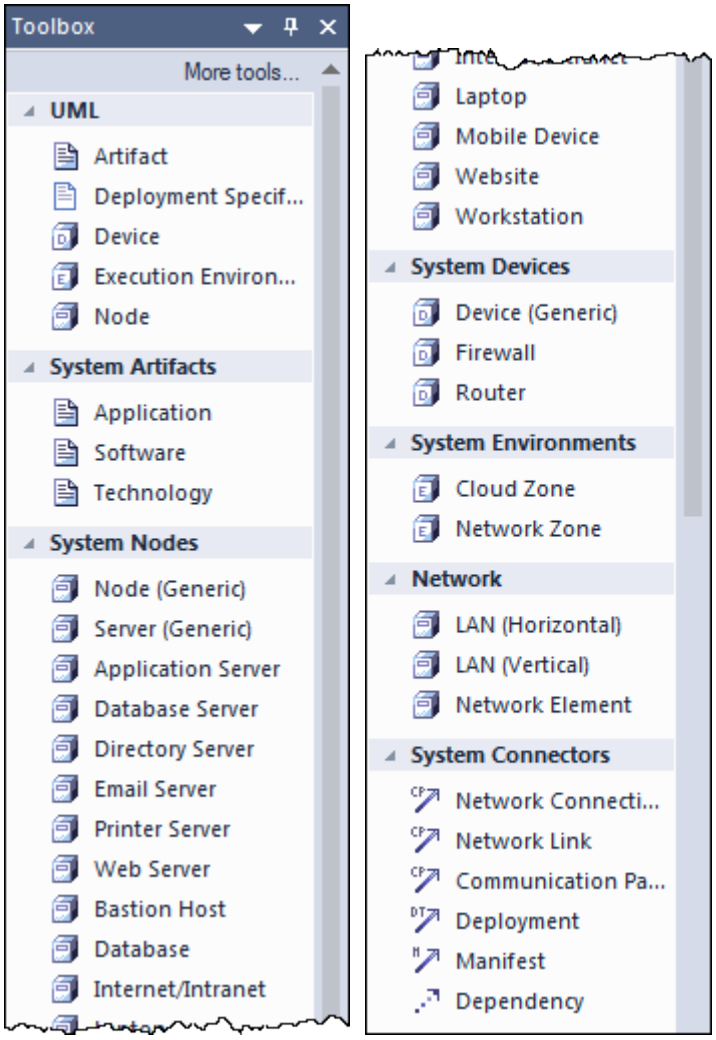


Using the MDG Technology

Once the Technology is loaded you can create System Architecture diagrams:



The toolbox/stencil associated with this diagram provides the following items:



In the top section labeled “UML”, the metatypes most commonly used in a UML Deployment diagram are included for modeling convenience. Standard UML elements can be mixed with the types defined by the System Architecture extension.

Likewise, in the bottom section, a number of standard UML connector types are made available.

The next section describes each of the extension specific toolbox elements in detail.

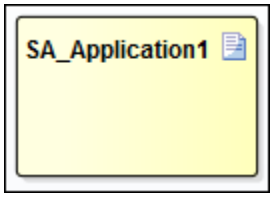
System Architecture Elements and Connectors

Application

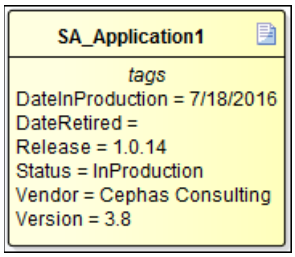
Properties

Name	Description
Base type	UML Artifact. This allows an Application to act as a *Manifestation* of a logical UML Component, as well as being *Deployed* on a UML Node.
Tagged Values	
DateInProduction	The calendar date when the Application entered production.
DateRetired	The calendar date when the Application was retired from production.
Release	The current release number [text string].
Status	One of: InProduction InDevelopment Retired ScheduledForRetirement Default: blank.
Vendor	Vendor name [text string].
Version	Version number [text string].

Graphical Representation



To make the tagged values visible in the diagram, use the tool's default *Feature and Compartment Visibility* option (or the corresponding option in the diagram properties):

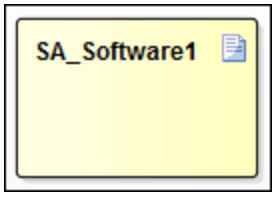


Software

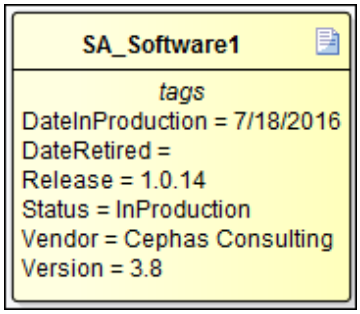
Properties

Name	Description
Base type	UML Artifact. This allows the Software to act as a *Manifestation* of a logical UML Component, as well as being *Deployed* on a UML Node.
Tagged Values	
DateInProduction	The calendar date when the Software entered production.
DateRetired	The calendar date when the Software was retired from production.
Release	The current release number [text string].
Status	One of: InProduction InDevelopment Retired ScheduledForRetirement Default: blank.
Vendor	Vendor name [text string].
Version	Version number [text string].

Graphical Representation



To make the tagged values visible in the diagram, use the tool's default *Feature and Compartment Visibility* option (or the corresponding option in the diagram properties):

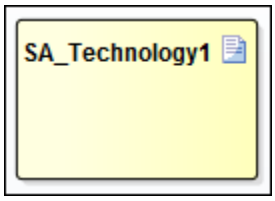


Technology

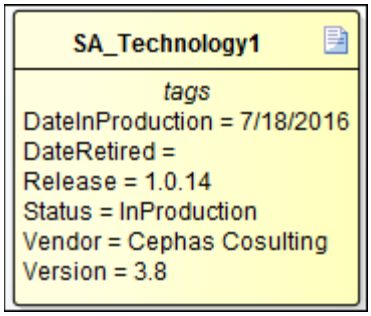
Properties

Name	Description
Base type	UML Artifact. This allows the Technology to act as a *Manifestation* of a logical UML Component, as well as being *Deployed* on a UML Node.
Tagged Values	
DateInProduction	The calendar date when the Technology entered production.
DateRetired	The calendar date when the Technology was retired from production.
Release	The current release number [text string].
Status	One of: InProduction InDevelopment Retired ScheduledForRetirement Default: blank.
Vendor	Vendor name [text string].
Version	Version number [text string].

Graphical Representation



To make the tagged values visible in the diagram, use the tool's default *Feature and Compartment Visibility* option (or the corresponding option in the diagram properties):

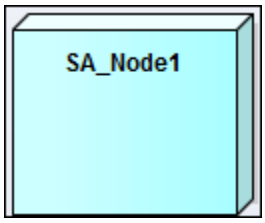


Node (Generic)

Properties

Name	Description
Base type	UML Node. This allows Application, Software, and Technology artifacts to be *Deployed* on a generic Node.
Tagged Values	None predefined. This allows the User to define System Architecture Nodes with their own custom properties and/or graphical representation.

Default Graphical Representation

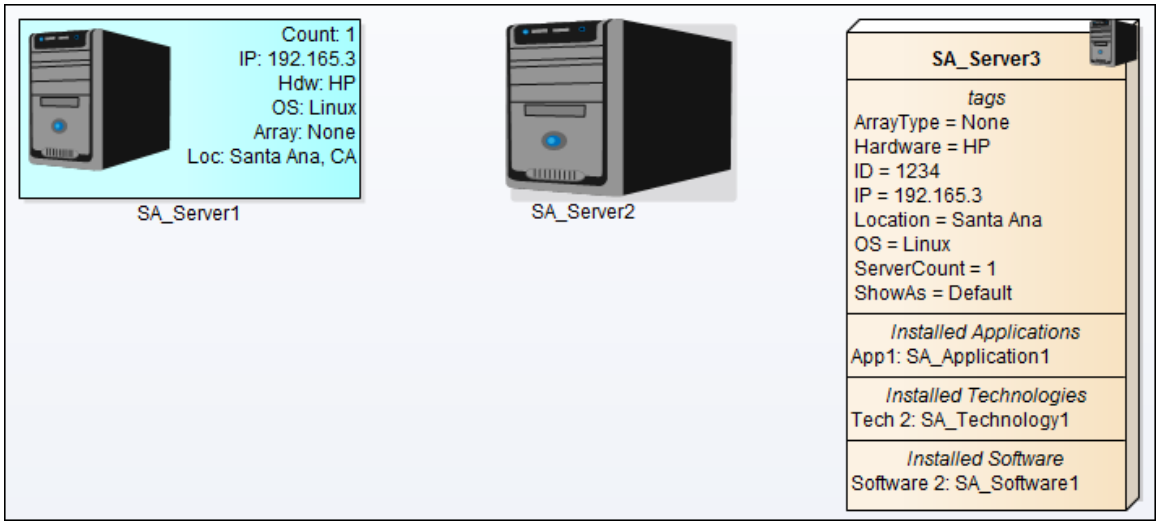


Server (Generic)

Properties

Name	Description
Base type	UML Node. This allows Application, Software, and Technology artifacts to be *Deployed* on a Server.
Tagged Values	
ArrayType	One of: None Single Clustered Pooled Default: None.
Hardware	Hardware manufacturer [text string].
ID	User defined identifier [text string].
IP	IP Address [text string].
Location	Physical location of the Server/s [text string].
OS	Operating System of the Server/s [text string].
ServerCount	The number of Servers in case the element refers to a pool or cluster [numeric value]. Defaults to 1.
ShowAs	• Default: default UML representation, with compartments visible. • Image: an image representation. • Mix: a combination of image and assigned properties (tagged values). See examples below.
Vendor	Vendor name [text string].

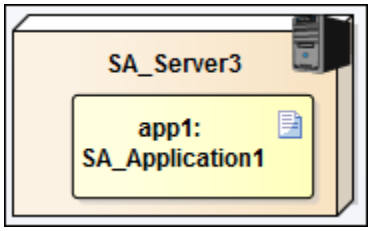
Graphical Representations



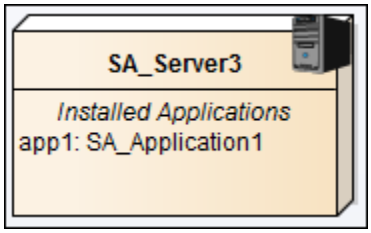
Deploying Artifacts

The default graphical representation (see image on the right) includes three (optional) compartments showing any Applications, Technologies or Software elements which have been added as children of the Server, either as Artifacts or instances of Artifacts.

When adding the Artifact to the Server, ensure it is graphically fully contained inside the Server, and hence becomes a child of it in the Project Browser structure. For example:

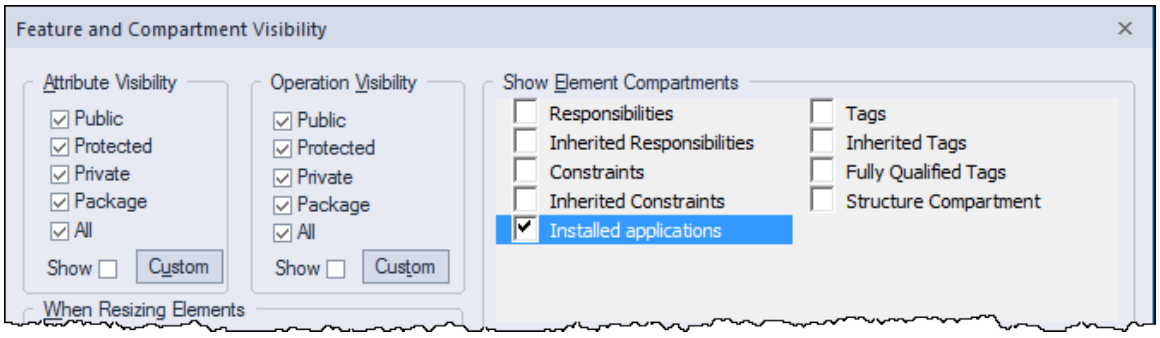


To instead show the Artifact inside the Server in a compartment, simply remove its graphical representation (delete from the diagram, not the model!):



Feature and compartment visibility

Tagged Values and compartment visibility can be toggled through the *Feature and Compartment Visibility* interface:



Application Server

Properties

Name	Description
Base type	Server.
Tagged Values	Inherited form Server.

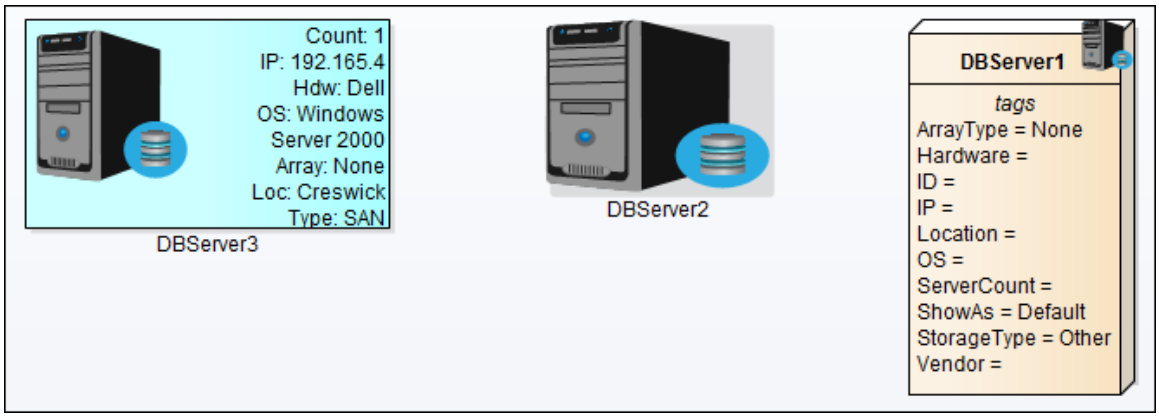
Graphical Representations

Database Server

Properties

Name	Description
Base type	Server.
Tagged Values	Inherited form Server.
StorageType	One of: Other Cloud SAN NAS RAID Default: Other.

Graphical Representations



Directory Server

Properties

Name	Description
Base type	Server.
Tagged Values	Inherited form Server.

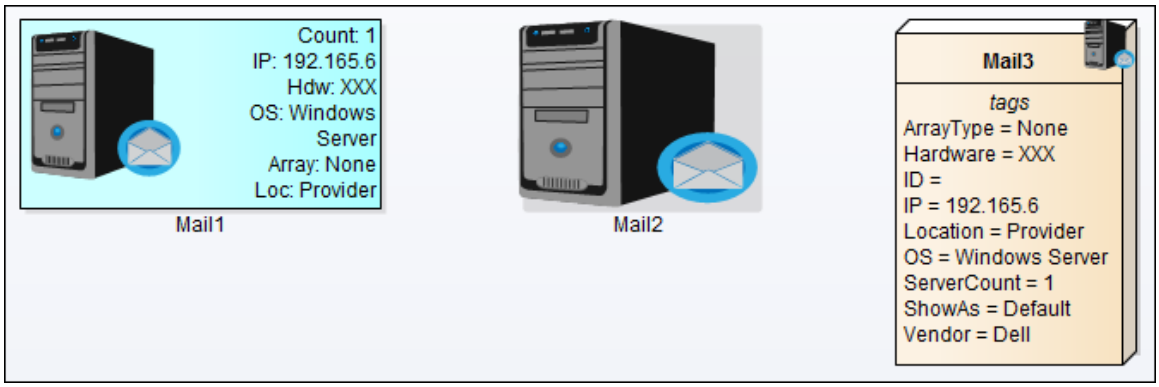
Graphical Representations

Email Server

Properties

Name	Description
Base type	Server.
Tagged Values	Inherited form Server.

Graphical Representations



Printer Server

Properties

Name	Description
Base type	Server.
Tagged Values	Inherited form Server.

Graphical Representations

Web Server

Properties

Name	Description
Base type	Server.
Tagged Values	Inherited form Server.

Graphical Representations

Bastion Host

Properties

Name	Description
Base type	UML Node. This allows Application, Software, and Technology artifacts to be *Deployed* on a Bastion Host.
Tagged Values	
Dual-Homed	True/false [boolean].
Type	One of: DNS Server FTP Server Mail Server VPN Web Server Default: <blank>.
Other Type	Other type of bastion host not predefined in the above list [text string].

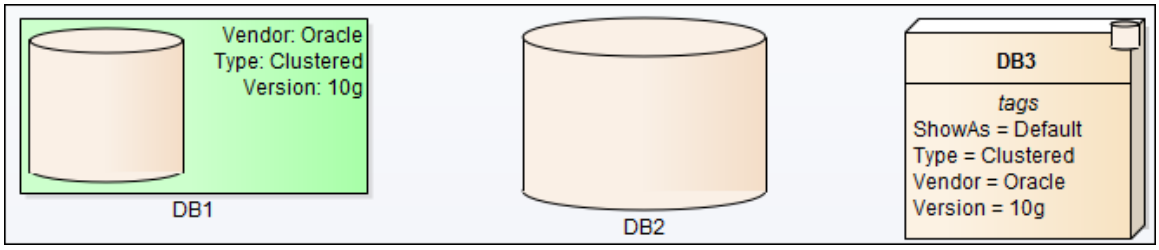
Graphical Representations

Database

Properties

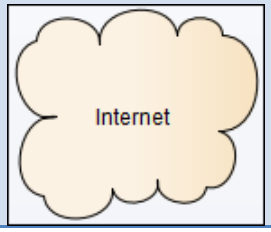
Name	Description
Base type	UML Node. This allows Application, Software, and Technology artifacts to be *Deployed* on a Database.
Tagged Values	
Type	Kind of database (e.g. RDBMS) [text string].
Vendor	Vendor name [text string].
Version	Version number [text string].

Graphical Representations



Internet/Intranet

Properties

Name	Description
Base type	UML Node.
Tagged Values	None.
Graphical representation	

Laptop

Properties

Name	Description
Base type	UML Node.
Tagged Values	None.
Graphical representation	

Mobile Device

Properties

Name	Description
Base type	UML Node.
Tagged Values	None.
Graphical representation	

Website

Properties

Name	Description
Base type	UML Node. This allows Application, Software, and Technology artifacts to be *Deployed* on a Website.
Tagged Values	
Location	Physical location of the site [text string].
URL	Site URL [text string].
Version	Version number [text string].

Graphical Representations

Workstation

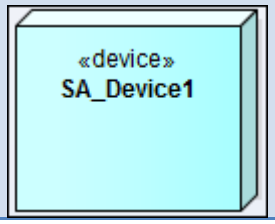
Properties

Name	Description
Base type	UML Node. This allows Application, Software, and Technology artifacts to be *Deployed* on a Workstation.
Tagged Values	
Type	The kind of workstation [text string].
Vendor	Vendor name [text string].
Version	Version number [text string].

Graphical Representations

Device (Generic)

Properties

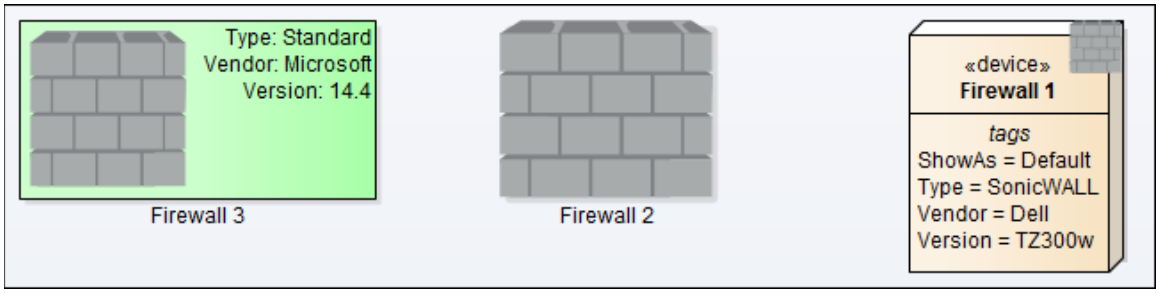
Name	Description
Base type	UML Device.
Tagged Values	None predefined. This allows the User to define System Architecture Devices with their own custom properties and/or graphical representation.
Graphical representation	

Firewall

Properties

Name	Description
Base type	UML Device.
Tagged Values	
Type	The kind of firewall [text string].
Vendor	Vendor name [text string].
Version	Version number [text string].

Graphical Representations

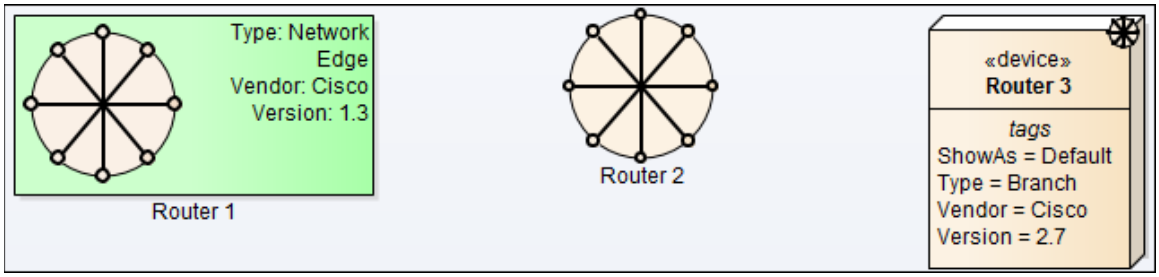


Router

Properties

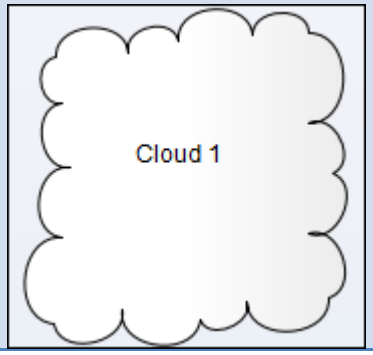
Name	Description
Base type	UML Device.
Tagged Values	
Type	The kind of router [text string].
Vendor	Vendor name [text string].
Version	Version number [text string].

Graphical Representations

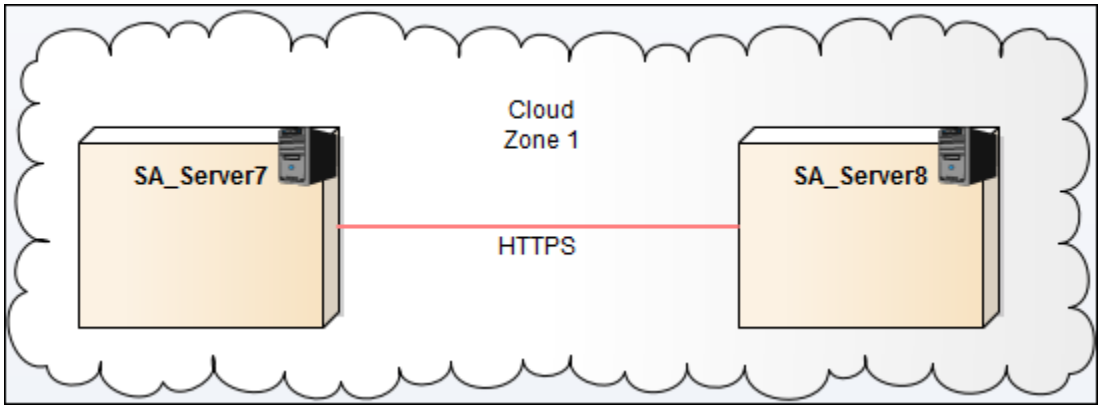


Cloud Zone

Properties

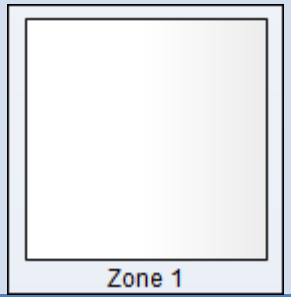
Name	Description
Base type	UML Execution Environment. Optionally other elements, such as Servers, can be placed inside the Cloud Zone.
Tagged Values	None.
Graphical representation	

Example:

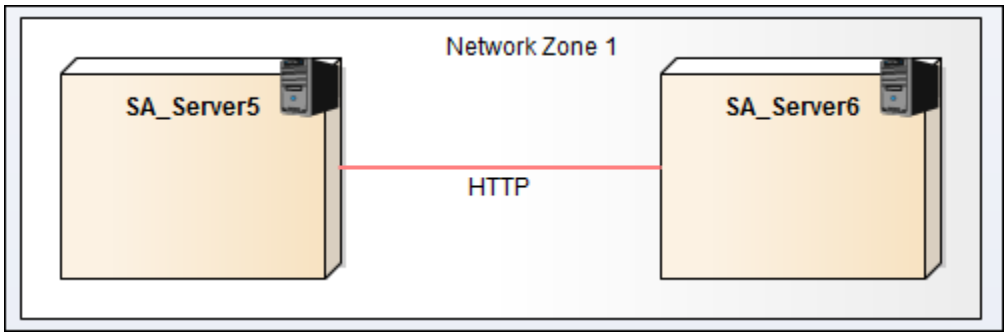


Network Zone

Properties

Name	Description
Base type	UML Execution Environment. Optionally other elements, such as Servers, can be placed inside the Network Zone.
Tagged Values	None.
Graphical representation	

Example:

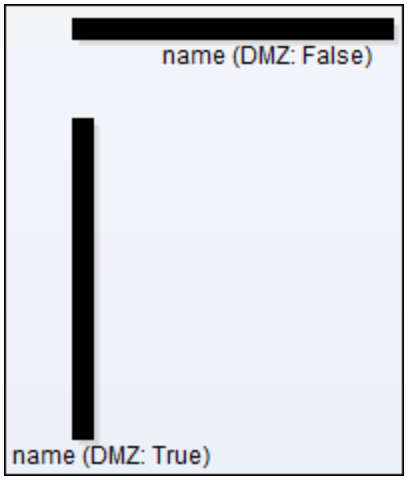


LAN (Local Area Network) – Horizontal or Vertical

Properties

Name	Description
Base type	UML Node. Allows a LAN to be represented as an element in the model, instead of (or in addition to) a connector.
Tagged Values	
Bandwidth	Network bandwidth [text string].
DMZ	True/false [boolean].

Graphical Representations

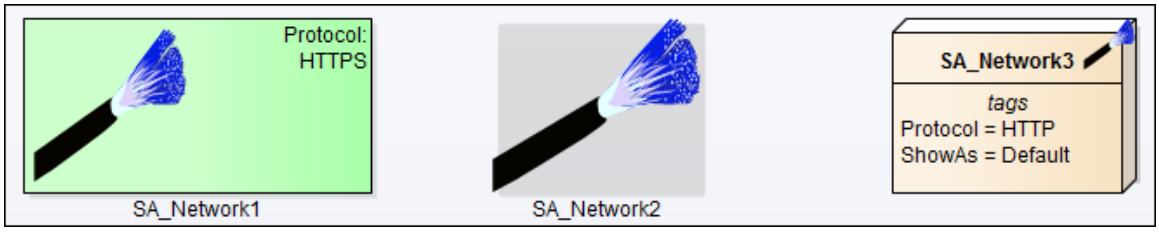


Network Element

Properties

Name	Description
Base type	UML Node. This allows Application, Software, and Technology artifacts to be *Deployed* on a Network. Allows a network to be represented as an element in the model, instead of (or in addition to) a connector.
Tagged Values	
Protocol	One of: FTP FTPs HTTP HTTPS HTTPS/SOAP TCP-IP SOAP SSH SSL Default: HTTP.

Graphical Representations



Network Connection

Properties

Name	Description
Base type	UML Communication Path.
Tagged Values	None predefined. This allows the User to define network connections with their own custom properties.

Graphical Representation

Network Link

Properties

Name	Description
Base type	UML Communication Path.
Tagged Values	
Protocol	One of: FTP FTPs HTTP HTTPS HTTPS/SOAP TCP-IP SOAP SSH SSL Default: HTTP.

Graphical Representation

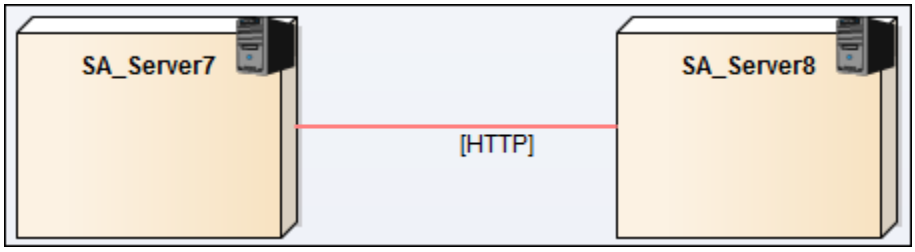
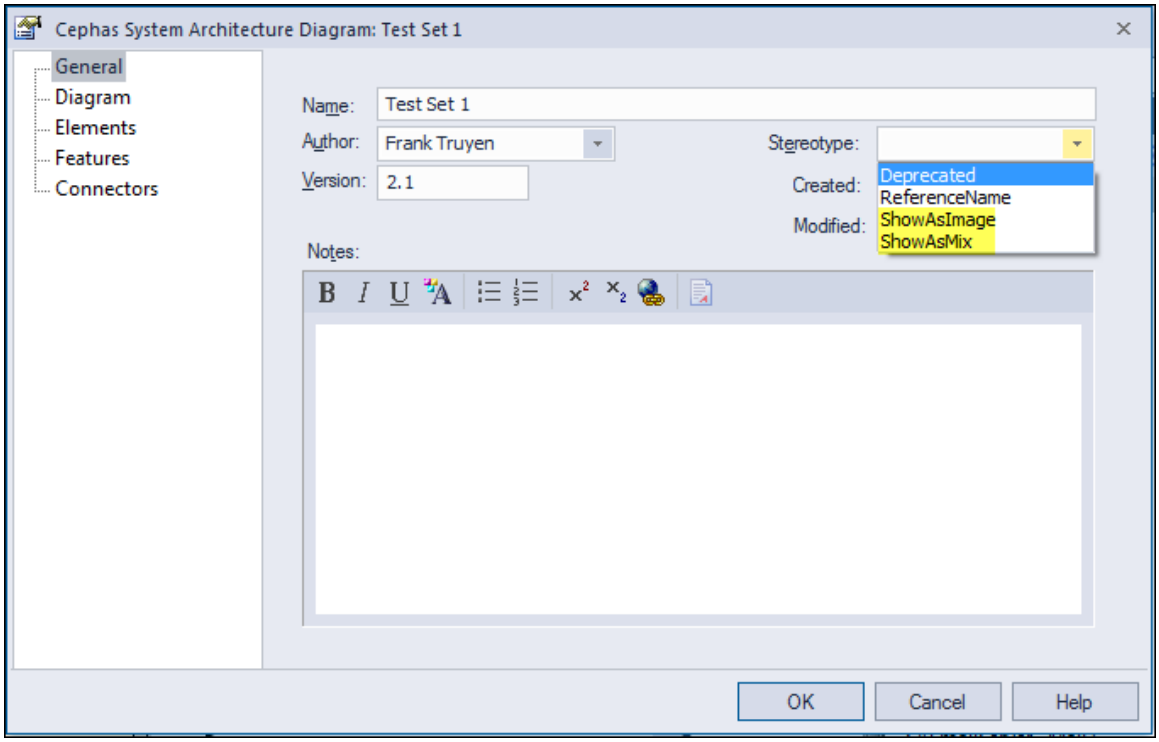


Diagram Stereotypes

Two diagram level stereotypes are provided which can be used to switch the graphical representation of all the Service Architecture elements that support such an option (i.e. any of the elements documented above with a “Show As” tagged value):

1. *ShowAsImage*: change all elements on the diagram to an image representation.
2. *ShowAsMix*: change all elements on the diagram to the mixed image and properties representation.



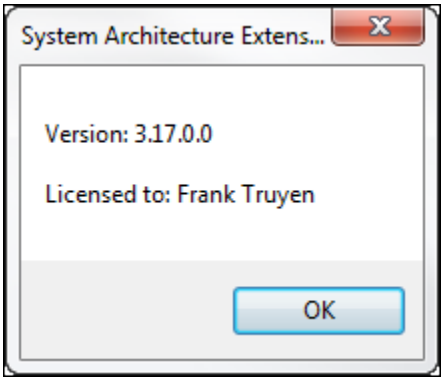
Setting the diagram level stereotype overrides any “Show As” property value set at the element level.

To return to the representation as specified at the element level, simply clear the diagram stereotype value.

Troubleshooting

If any error is encountered while installing or using this extension, please follow this procedure:

- Take a screenshot of the error message or error condition.
- Provide the version of the System Architecture extension (using the *About* menu item). For example:



- Supply the version of Enterprise Architect being used.
- Include your operating system and any other execution environment information that may be relevant.

Support and contact information

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

Feature requests or suggestions for improvement are always welcome!

Contact: Frank Truyen

Email: support@enterprisemodelingsolutions.com

Phone : 714-573-7112.