



ENTERPRISE ARCHITECT

User Guide Series

Getting Started

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CREATED WITH  **ENTERPRISE
ARCHITECT**

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Getting Started



Welcome to Sparx Systems' Enterprise Architect, a desktop tool with a 20+ year proven track record of helping people and teams explore, develop and implement their personal or corporate vision. Enterprise Architect is a tool that is used to:

- Create rich and expressive business, systems and software models
- Model and work with "As-Is" and "To-Be" models
- Manage and track requirements
- Model with many industry standard languages such as UML, SysML and ArchiMate
- Model with many industry frameworks such as TOGAF, Zachman, UPDM, UAF
- Model with custom purpose built modeling languages for a domain
- Collaborate with colleagues, teams and customers
- Unite teams spread across multiple geographic locations
- Publish models in standard document formats or for the web
- Share content with other tools in standard industry formats
- Simulate business and systems processes
- Visualize, inspect and document complex software systems
- Engineer compelling visualizations
- Provide direction, information and certainty
- Generate a common understanding to both business and technical stakeholders.

Getting started with Enterprise Architect is easy. As your modeling practice becomes more advanced, it will have the power and rigor to support more advanced modeling, including working with multi-disciplinary teams and developing strategic, business, software, engineering, and database models.

This getting started section introduces you to everything you need to know to become productive with the tool and covers the essential features that you will use to deliver demonstrable value to your enterprise or project stakeholders.

Prerequisites

The only prerequisite for getting started is selecting a folder in your file system for your repository and a mind full of ideas and concepts that you want to model and some enthusiasm for sharing your ideas with others through the rich collaboration features built into the tool.

Why Enterprise Architect?



Welcome to Enterprise Architect, the ultimate collaborative platform for modeling, visualizing, constructing and managing Enterprise, Business, Engineering and Technology solutions. Harness the power of this leading tool to simplify the way you work, unify interdisciplinary teams, create models that perform work, leverage and reuse assets across programs and projects, and much more.

Key Benefits

These are just some of the benefits that Enterprise Architect can bring to your Enterprise, team and projects:

- Work together with teams from anywhere in the world using a range of devices such as laptops and smart phones, working through the phases of solution development with visibility for both business and technical audiences
- Integrate with a rich landscape of external tools to unify teams and enterprises, resulting in fantastic productivity gains
- Create models and solutions at lightning speed
- Work under the umbrella of support for a wide range of standards and specifications
- Unify the work of business and technical teams
- Enjoy the flexibility, extensibility and configurability of Enterprise Architect to meet your specific needs
- Accessible using the Enterprise Architect thick client software or by using the Cloud Server and WebEA from any device with a browser

For further details, see the *Key Benefits* Help topic.

Key Functional Areas

Sparx Systems Enterprise Architect is a comprehensive strategy, requirements, analysis, design, construction, testing and management tool that addresses all aspects of enterprise, business, systems and software modeling. It is a scalable, multi-user, visual platform with a rich feature set.

Enterprise Architect combines the power of UML and derivative modeling languages such as BPMN and SysML, with a high performance, intuitive interface, to bring an integrated and advanced toolset to the whole development team.

Enterprise Architect also includes detailed support for architectural frameworks such as TOGAF, UAF/UPDM, ArchiMate, Zachman Framework and others, providing seamless modeling and design capabilities.

For a breakdown of the functional areas of Enterprise Architect and the facilities they provide, see the *Key Functional Areas* Help topic.

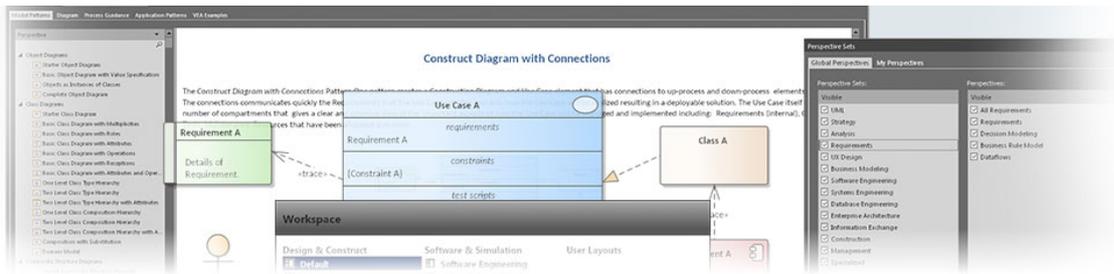
Key Usages

For over twenty years, Enterprise Architect has been the tool of choice for a wide range of project types and work areas, supporting most job roles and functions within those areas. Enterprise Architect is ideal for:

- Strategic Modeling
- Requirements Development and Management
- Business Process Modeling and Analysis
- Software Development
- Systems Engineering and Database Engineering
- Enterprise Architecture
- Testing and Debugging
- And much more

For further information on the usage of Enterprise Architect, see the *Key Usages* Help topic.

Key Benefits



Work together in small or large teams from anywhere in the world using Computers, Tablets and Smart Phones, specifying, analyzing, designing, simulating, testing, implementing, deploying and supporting solutions that will exceed the expectations of business and technical audiences alike.

Integrate with a rich landscape of external tools to unify teams and enterprises resulting in productivity gains that create truly astonishing results.

These are just some of the benefits that Enterprise Architect can bring to your Enterprise, team and projects:

- High productivity tool creating results in record time**
 Models and solutions can be created at lightning speed using a variety of features, including a Model Wizard, Transformation tools and Code Generation; see the [The Model Wizard](#) Help topic
- Standards and Specification Based**
 Enterprise Architect supports a formidable range of standards and specifications, ranging from Enterprise Architecture, Strategic and Business Modeling, Systems Engineering, Design and Construction through to Implementation, Testing and Deployment; see the [More Domain Models](#) Help topic
- A platform for business and technical users**
 With Enterprise Architect it is possible to bridge the divide between business and technical teams; executive stakeholders, line managers analysts, development and testing teams can work together using the tool features that apply to them but knowing that they are all contributing to a unified business and technology solution; see the [The Business Model](#) Help topic
- Flexible, Configurable and Extensible**
 The tool is highly flexible, allowing you to tailor the way you work with Perspectives and Workspaces, helping you to stay focused and resulting in great productivity; it also provides a range of mechanisms to extend the core features, from basic scripts to full-blown third party Add-Ins; see the [Model Perspectives](#), [Model Views](#), [Workspaces Portal](#), [Scripting](#) and [Add-ins & Scripting](#) Help topics
- Code Engineering and Visualization**
 The tool provides a vast set of code engineering features that not only allow the full management of source code but also provide unique facilities to visualize code in models and diagrams; code hot-spots and performance problems can be analyzed and resolved in record time; see the [Software Engineering](#) and [Execution Analysis](#) Help topics
- Simulation of Business and Technical Models**
 Models can be brought to life, with easy-to-use simulations of business models such as Business Process Diagrams, and technical models such as StateMachines; these work out of the box but can be extended to allow advanced analysis using tools such as BPSim, MATLAB and Modelica; see the [Model Simulation](#) and [BPSim Business Simulations](#) Help topics
- Extended Features**
 Beyond the core features for modeling, Enterprise Architect boasts an extraordinary number of facilities, from enterprise modeling right through to deployment and support; these include Kanban, Calendars, Mail, Discussions, Reviews, Model Library, Gantt Charts, Code analyzers, Simulation and much more; see the [Project Build & Deploy](#) Help topic
- Rigorous Metamodel Driven Technologies**
 Many of the technologies that underpin the specification are driven by metamodels, allowing robust and compliant models to be created and validated; see the [Model Validation](#) Help topic
- Collaboration Platform that Unifies Interdisciplinary Teams**
 Enterprise Architect was built from the ground up as a tool to support interdisciplinary teams, fostering collaboration

and team work to ensure that the solution is far more than the sum of its parts; see [Discussions](#), [The Model Library](#) and [The Modeling Team](#) Help topics

- **Secure, Scalable, Multi-User platform**

Any number of users can collaborate, accessing models securely, and the repositories can scale to support hundreds of projects in global enterprises; users can interact with the models in a variety of ways, such as using WebEA; see the [WebEA](#) Help topic

- **Formidable selection of supported Specifications and Standards**

Enterprise Architect has grown from being a UML tool to a platform that supports almost all modeling specifications, from Enterprise Architecture through to Code Engineering; see the [More Domain Models](#) Help topic

- **On-Premise and In-Cloud Deployment Models.**

There is a range of deployment options from local file based repositories, through on-premise repositories to full Cloud solutions; see the [The Model Repository](#) Help topic

- **Accessible from Computers, Tablets and Smart Phones**

Models can be created and edited using the Enterprise Architect thick client software or by using the Cloud Server and WebEA from any device with a browser, including Smart Phones and Tablets; see the [WebEA](#) Help topic

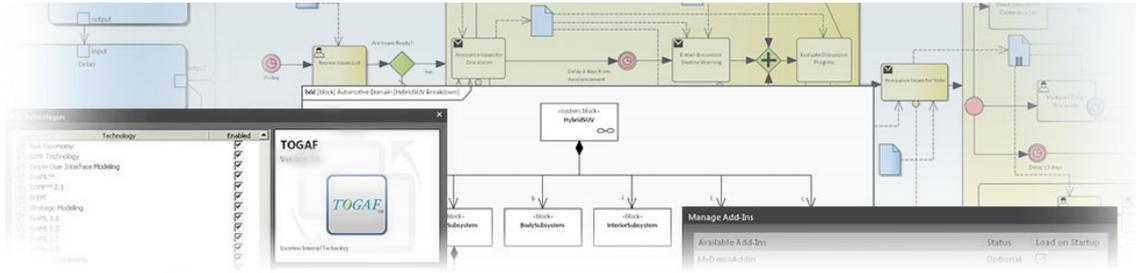
- **Dashboards, Simple and Advanced Publishing and Reporting**

Enterprise Architect can display expressive dashboards, with charts and graphs that allow model managers and others to visualize the model's key performance indicators; there is also a flexible and extensible report generator that can produce basic reports through to highly polished corporate publications; see the [Dashboard Diagrams](#) and [Model Publishing](#) Help topics

- **User Experience**

The user interface of the thick client is a highly polished ribbons-based interface which is a delight to use and provides simple and obvious access to the rich set of available features; see the [The Application Desktop](#) Help topic

Key Features



Enterprise Architect from Sparx Systems is a comprehensive strategy, requirements, analysis, design, construction, testing and management tool that addresses all aspects of enterprise, business, systems and software modeling. The tool can be used from the formulation and definition of strategy, requirements management through analysis, design, construction, build, debug, simulation, testing, change management and maintenance to implementation and support. The resulting integrated models include full traceability between all tasks, phases, domains, components and lifecycle management.

Enterprise Architect combines the power of the UML specification (and derivative modeling languages such as BPMN and SysML), with a high performance, intuitive interface, to bring an integrated and advanced toolset to the whole development team.

A scalable, multi-user, visual platform with a rich feature set, Enterprise Architect helps you to build and document robust, maintainable systems and processes. As a proven, highly popular tool for analysts, developers, consultants and managers in over 150 countries world-wide, it is used in the development of many kinds of applications, processes, workflows, database schema, knowledge bases, organizational architectures, systems and technology standards in a wide range of industries and domains.

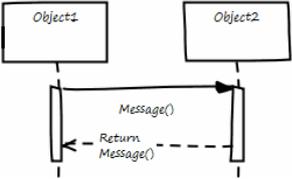
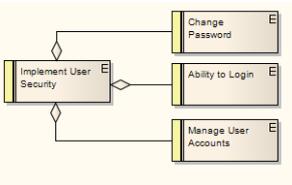
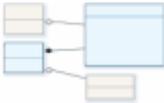
Sparx Systems' Enterprise Architect also includes detailed support for architectural frameworks such as TOGAF, UAF/UPDM, ArchiMate, Zachman Framework and others, providing seamless modeling and design capabilities from early strategic modeling right through requirements to application lifecycle management, impact analysis, architectural design and future state modeling.

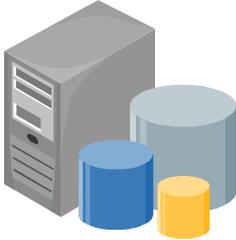
Industries supported include aerospace, banking, web development, engineering, finance, medicine, military, research, geospatial, academia, transport, retail, utilities and electrical engineering and many more. Enterprise Architect also has a long history of being used by standards organizations worldwide to structure and organize their domain specific knowledge, common models and message specifications.

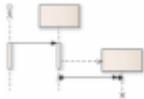
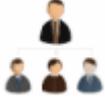
Enterprise Architect is supported by many partners, consultants, colleges and other organizations that provide training and consulting services based on the system. Details on partners and local trainers can be found at the Sparx Systems web site (sparxsystems.com).

Functional Areas

Feature Area	Description
 <p>Installation</p>	<p>Describes how to install and run Enterprise Architect, and provides a brief overview of capabilities. The section explains where to buy Enterprise Architect and includes legal and formal statements with respect to copyright and licensing.</p>
 <p>User Interface</p>	<p>A description of how to work and access material in Enterprise Architect, including how to tailor your Enterprise Architect environment. This section includes a detailed review of the user interface and the windows, ribbons and other devices that provide the rich and efficient toolset that has made Enterprise Architect a market leader in UML Based modeling and design. A short, simple tutorial is also provided, which goes over the basic modeling tasks such as building a Package</p>

	<p>structure, creating diagrams and adding elements to both the model and a diagram.</p>
<p>Repositories, Projects and Teams</p> 	<p>Learn about the modeling environment that accelerates and integrates Software, Business and Systems development. Review the basic types of repository that can be used to host models, from local files through to Cloud based solutions. Understand how teams can collaborate and share models and design tasks. This chapter also introduces the Re-usable Asset Service, which is a Cloud based service that provides access to re-usable components and technologies, and provides introductory material on Project Management within the Enterprise Architect platform, as well as topics on Testing and Maintenance.</p>
<p>Modeling Fundamentals</p> 	<p>Includes a wealth of information on the Enterprise Architect modeling environment and how best to express your design ideas. Introduces the basic concepts of models, Packages, elements, connectors and diagrams.</p>
<p>Navigating and Searching</p> 	<p>Learn about the tools and capabilities within Enterprise Architect for navigating within a model, searching a repository for specific information and tracing between various elements within the model.</p>
<p>UML Models</p> 	<p>A review of the basic UML modeling language, its elements and the main diagrams that are used to model and design solutions. UML is an industry standard modeling language that has a proven track record and many years of development and refinement in its history. As well as the core UML, Enterprise Architect also supports a number of derivative modeling languages that use UML to provide a rich and exact visual modeling tool suite. For example SysML and BPMN are realized in Enterprise Architect as official extensions to the core UML language.</p>
<p>Requirements Management</p> 	<p>Enterprise Architect is a multi-featured and effective Requirements Management tool that in addition to the common capabilities generally offered by such tools, includes more advanced options to provide complete traceability from strategic modeling to implementation, architectural definition, deployment and maintenance. Cloud based repositories, discussions, impact analysis tools, reporting and a host of other capabilities make Enterprise Architect the ideal platform for storing and working with requirements. The Specification Manager is a document-like interface that provides an easy and familiar environment for creating and editing requirements without needing to use diagramming or visual tools.</p>
<p>Business Modeling</p> 	<p>Effective tools for business modeling including BPMN, Simulation, BPEL, Requirements, Use Cases, Structured Scenarios and more.</p>
<p>Software Engineering</p> 	<p>Discover the comprehensive development toolset, integrated with the modeling environment for Software and Database designing and coding. Code engineering encompasses automated code generation, reverse engineering of source code and synchronization between the source code and model. Enterprise Architect supports code engineering for more than ten programming languages out of the box!</p>

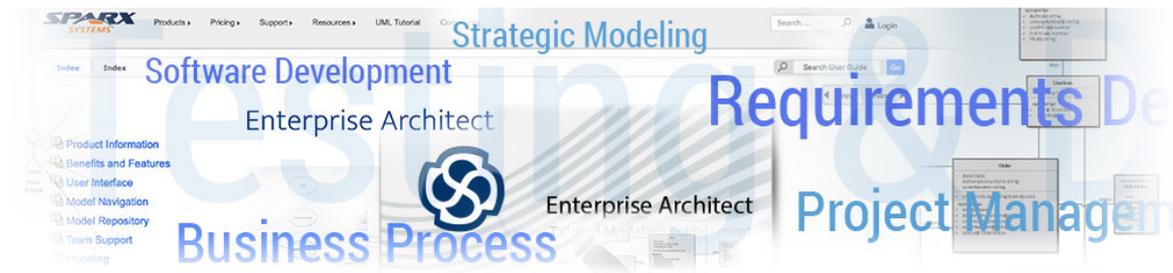
<p>Systems Engineering</p> 	<p>Integrating many high-end features for systems engineers, the Ultimate and Unified Editions of Enterprise Architect provide SysML modeling and parametric model simulation for an engineering analysis of critical system parameters, including the evaluation of key metrics such as performance, reliability and other physical characteristics, as well as executable code generation and model-to-code transformations for Hardware Description Languages (HDLs) and ADA 2012.</p>
<p>Enterprise Architecture</p> 	<p>Enterprise Architect supports industry-standard architectural frameworks to facilitate enterprise modeling. Framework implementations are based on the UML and its related specifications, which maximizes architectural rigor and allows users to exchange enterprise model information using standards such as XMI. Define your enterprise with built in tools and frameworks such as TOGAF, Zachman Framework, UAF/UPDM, ArchiMate and more.</p>
<p>Database Design and Construction</p> 	<p>Enterprise Architect includes a rich and effective database designer, a profile for working with database tables and schema, visual tools for modeling diagrams, and tools for importing database structures and comparing existing structures to models. Integrating data models into the overall enterprise model provides a rich set of information and meta data that can be linked and traced through various aspects of the model to show how change might impact remote systems or processes.</p>
<p>Schema Engineering</p> 	<p>Structural models in Enterprise Architect are frequently used to define the meta-models of domains of interest. An important part of realizing the benefit of these models is in the definition of schema (often XSD based). The Schema Composer in Enterprise Architect helps to make maximum advantage of such models by streamlining the conversion of model information into schemas that comply with the naming standards and format of a variety of popular industry meta-models. In addition to the new Schema Composer, Enterprise Architect also supports the modeling of XSD and WSDL definitions using UML Profiles that support explicit modeling of the relevant types. You can model and develop a complete Service Oriented Architecture in Enterprise Architect, using XSD or WSDL, or also SoAML and SOMF.</p> <p>Additional topics included in this section are devoted to MOF (the Meta Object Facility), ODM and NIEM - Enterprise Architect includes many features for modeling and working with NIEM domains and schema.</p>
<p>Geospatial Design</p> 	<p>As a standards-based modeling environment, Enterprise Architect empowers geospatial domain experts through the use of ArcGIS and GML tools and profiles. These tools and profiles allow you to visualize geospatial database design using UML, communicate designs to enterprise stakeholders, link geodatabase designs directly to enterprise and system models and requirements and trace from corporate strategy to realization by critical GIS components.</p>
<p>Model Transformation</p> 	<p>Model Driven Architecture (MDA) Transformations provide a fully configurable way of converting model elements and model fragments from one domain to another. This typically involves converting Platform-Independent Model (PIM) elements to Platform-Specific Model (PSM) elements. A single element from the PIM can be responsible for creating multiple PSM elements across multiple domains. Transform your elements with built-in transformations or write your own transformation templates.</p>
<p>Execution Analysis and</p>	<p>Understand your code base by visually analyzing running code and performing</p>

<p>Simulation</p> 	<p>simulations. Use test points, profiling, automated diagram generation.</p>
<p>Reporting</p> 	<p>Generate high quality documentation in PDF, RTF, DocX and HTML formats. With an extremely detailed template driven report generation capability, Enterprise Architect is the pre-eminent tool for producing quality documentation in a variety of formats that help to extend the reach and usefulness of models designed and built in Enterprise Architect.</p>
<p>Project Management</p> 	<p>Estimate project size, measure risk and effort. Connect the Project Manager and development team, allowing for up-to-the-minute reporting and assessment of how a project is developing. Assign resources and track to completion via views and charts. Assess the relative complexity of a software project.</p>
<p>Testing and Quality Assurance</p> 	<p>Define test specifications, execute tests and record results directly from model elements. Keeping model elements and testing documentation in one integrated model can significantly improve the communication between quality assurance teams, software developers, analysts and architects. Explore the facilities for testing and validating your model structure and content.</p>
<p>Maintenance</p> 	<p>Model validation, Testing, Maintenance, Changes and Issues.</p>
<p>Automation and Scripting</p> 	<p>Extend the power of Enterprise Architect to create your own domain specific Add-Ins, scripts and functionality.</p>
<p>Extending UML</p> 	<p>How Basic UML and open standards are extended in Enterprise Architect's support of other modeling languages, and how you can use UML Profiles, MDG Technologies and SDK to create your own modeling languages.</p>

Learn more

- The Open Management Group [UML Specifications](#)

Key Usages



For over twenty years, Sparx Systems has actively and continually developed Enterprise Architect based on the current UML (and related) standards. Over those years it has proven itself in a wide range of projects from small single user models to extremely large team based enterprise repositories. With nearly 1 million effective users in over 150 countries world wide, the power and effectiveness of Enterprise Architect has been convincingly demonstrated in many different areas. The Sparx Systems Community website provides a wealth of community support and information for new users.

Enterprise Architect is a proven, scalable, effective and affordable full-lifecycle development platform for:

- Strategic Modeling
- Business Analysis
- Requirements
- Software Design and Construction
- Software Profiling, Testing and Debugging
- Business Process Modeling and Simulation
- Systems Engineering
- Enterprise Architecture
- Database Engineering
- Development of XML Schemas and XSLT Transforms
- Development and Dissemination of Technologies such NIEM, CIM, UNCEFACT and many others.
- Project Management
- Testing and Maintenance
- Reporting
- And many other tasks

Enterprise Architect is optimized for:

- Creating, managing and working with a diverse set of Requirements
- Modeling, designing and constructing a wide range of software systems
- Business process modeling, business analysis, BPMN, strategic modeling and similar
- Systems modeling, systems architecture modeling, component design and simulation
- Modeling, constructing, comparing and updating database systems
- Defining and generating schema based on XSD and other standards
- Building and using domain specific modeling languages based on UML
- Visualizing a wide range of systems, processes, data, activities and structures
- Building, executing, debugging, profiling and testing a variety of software languages
- Simulating behavioral processes, StateMachines and interactions

- Generating and building executable code for StateMachines and supporting simulation of target executable
- Collaborating and sharing information and models
- Testing, quality control and end-to-end verification and trace-ability of complex systems
- Project managing developmental tasks, work and scheduling
- Team based collaboration using Cloud based repositories optimized for access over WAN networks

Editions & Licensing



This section of the Enterprise Architect User Guide contains a wealth of information to help project managers and other stakeholders understand what are the key benefits and features of the Enterprise Architect Tool Suite, what editions of Enterprise Architect are available and the facilities each provides; the Licensing Model for the product; how Help information is made available in different formats; how support is provided to the product users; and more.

For further information, see these topics:

- [Enterprise Architect Editions](#)
- [License Management](#)
- [Help and Support](#)

Enterprise Architect Editions

Enterprise Architect is available in a number of editions, each tailored to support a particular organization of work. The editions range from a free 'Lite' Edition through to four purchased editions, which start with the Professional edition and culminate in the Ultimate edition.



An organization is not restricted to using a single edition and commonly a mixture of licenses will provide the most flexibility. When floating licenses are purchased, access to a higher edition can be achieved on an as-needs basis, thus providing all users with access to the additional functionality available in the higher-level editions.

Principal Editions plus 'Trial' and 'Lite'

Aspect	Advantage
Professional, Corporate, Unified and Ultimate Editions	These are the principal editions that are available for purchase. An organization or team can purchase any number of each product to suit their own circumstances.
Trial of all Editions (time limited)	The time limited Trial Edition allows a user, team or organization to test the product before purchasing. An option is provided to launch the trial in any of the purchasable editions, allowing you to compare them.
The Lite Edition (read only - limited functionality)	The free read-only or 'Lite' edition allows interested parties within an organization or a team to view the full contents of a model. They are, however, unable to update the model or use features such as document generation, simulation and code generation.

Available Editions

Enterprise Architect is available for purchase in four Editions:

- Ultimate
- Unified
- Corporate
- Professional

The functionality for each Edition is described here; the features of and differences between the Editions are listed in the table provided on the Sparx Systems website.

To help you understand the differences between these Editions and the advantages and limitations of each, you can open and use the Trial Edition of Enterprise Architect to mimic any of the Editions.

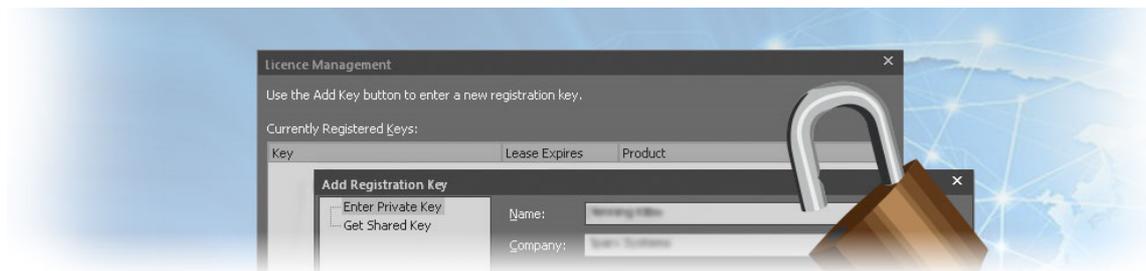
Edition Comparison

Ultimate Edition	<p>The Ultimate edition is designed for power users and those working across multiple domains, providing deep support for Business, for Software Engineering and for Systems Development, seamlessly integrated into a single development environment.</p> <p>It enables you to drill down to the lowest levels of systems design and construction, with SysML and executable code generation for standard and hardware description languages.</p> <p>Business users can leverage BPEL, the Rules Composer and executable UML, in addition to all the advanced features of the other editions of Enterprise Architect.</p> <p>Software developers can integrate their Eclipse and Visual Studio projects with their UML models and leverage the advanced executable code generators to target different domains.</p> <p>The Ultimate edition provides end-to-end traceability throughout a global vision of your enterprise - unifying strategy, business process, interfaces, software, rules, data and fine grained systems; advanced tools, domain-specific technologies, frameworks, integration platforms and a consistent, scalable, and robust interface work in unison to help you deliver on the promise of Model Driven Development.</p> <p>The Ultimate edition incorporates a number of MDG Technologies and Add-Ins; the Ultimate edition and the MDG Technologies are all available in either Fixed License or Floating License form.</p> <p>The Floating License arrangement is particularly useful for companies that manage a central store of license keys, which can be used by different employees over time, temporarily or permanently.</p> <p>The Ultimate edition provides:</p> <ul style="list-style-type: none"> • Executable Code Generation - support for generating functional source code for StateMachines, Interactions and Activities in C, C++, C#, Java and VB.NET • Full round trip support for Hardware Description Languages (Verilog, VHDL and SystemC) including support for generating StateMachine code • SysML Simulation Support - including support for simulating SysML 1.4 constraint models with results graphing capabilities • BPEL Generation – transform BPMN 1.1 and BPMN 2.0 Business process models down to BPEL 1.1 and BPEL 2.0 code respectively

	<ul style="list-style-type: none"> • Business Rules – trace from abstract business rules down to automatically generated behavioral code
Unified Edition	<p>The Unified edition is aimed at software development professionals, business modelers, architects, requirements experts, project managers and others involved in the design and construction of quality software and business services as well as systems engineers working on real-time, embedded and systems solutions.</p> <p>The Unified edition combines advanced features such as generation of executable code from UML models (including support for hardware languages such as Verilog and VHDL), Ada, SysML 1.5, executable SysML Parametric diagrams, BPEL, advanced scripting and a multi-purpose Rules Composer targeting executable code from Business Domain models.</p> <p>This edition bundles licenses for integration products and frameworks such as UAF (UPDM, DoDAF-MODAF), TOGAF and Zachman as well as SysML and DDS, to provide advanced model-driven construction tools to tightly bind your code development in Eclipse or Visual Studio with the UML/SysML models developed in Enterprise Architect.</p> <p>It provides additional features such as:</p> <ul style="list-style-type: none"> • SysML Parametrics, HDL, ADA • DDS, Linux satellite service • Math support in script library • BPSim Model Configuration, BPSim Execution Engine • BPEL, UAF, UPDM, Zachman, TOGAF, Visual Studio Integration • DMN execution and code generation • Executable StateMachines, Modelica simulation <p>The Unified edition incorporates a number of MDG Technologies and Add-Ins; the Unified edition and the MDG Technologies are all available in either Fixed License or Floating License form.</p> <p>The Floating License arrangement is particularly useful for companies that manage a central store of license keys, which can be used by different employees over time, temporarily or permanently.</p> <p>The Unified edition provides:</p> <ul style="list-style-type: none"> • Executable Code Generation - support for generating functional source code for StateMachines, Interactions and Activities in C, C++, C#, Java and VB.NET • Full round trip support for Hardware Description Languages, including Verilog, VHDL and SystemC, with support for generating StateMachine code • Generation of Behavioral Code from State, Sequence and Activity models, supporting standard programming languages such as Java and .NET • SysML Simulation Support - Includes support for simulating SysML 1.4 constraint models with results graphing capabilities • BPEL Generation from BPMN 1.1 and BPMN 2.0 models - including validation and WSDL support • A Business Rules Composer that enables you to build Business Domain models and generate code to implement complex business rules in standard programming languages • Advanced math functions within the scripting engine
Corporate Edition	<p>Aimed at larger development teams, the Corporate edition enables you to connect to these DBMS back-ends as the shared repository:</p> <ul style="list-style-type: none"> • MySQL

	<ul style="list-style-type: none"> • SQL Server • PostgreSQL • Access 2007 and • Oracle <p>This provides additional scalability and improved concurrency over the shared .eap/.eapx file approach to model sharing.</p> <p>User security, user logins, user groups and user level locking of elements, user/group based security (with locking at diagram and element levels) are also supported.</p> <p>Security comes in two modes: in the first mode, all elements are considered 'writeable' until explicitly locked by a user or group; in the second mode, all elements are considered locked until checked out with a user lock.</p> <p>The Corporate edition forms the base for the Unified and Ultimate editions; like those editions, it is available in either Fixed License or Floating License form.</p> <p>The Floating License arrangement is particularly useful for companies that manage a central store of license keys, which can be used by different employees over time, temporarily or permanently.</p>
Professional Edition	<p>Aimed at developers and engineers working alone or in small work groups, the Professional edition supports file-based model repositories, unsecured shared repositories and Firebird-based Cloud repositories.</p> <p>This Edition has an ActiveX interface for interrogating Enterprise Architect projects and extracting information.</p> <p>The Professional edition fully supports code import/export and synchronization of model elements with source code; it enables reverse engineering of SQL Server, MS Access, MySQL, PostgreSQL and Oracle databases.</p> <p>Support for MDG Technologies (sold separately) is included with the Professional edition.</p>

License Management



Each purchased version of Enterprise Architect requires a license, and tools to manage the licenses are available for the product. There are two types of license available - Private Licenses, which are allocated to a named user, and Shared Licenses, which essentially provide a pool of floating licenses. After a purchased copy of Enterprise Architect has been installed, you will be required to enter either the license key provided at the time of purchase or a temporary shared key obtained from a central Keystore.

Enterprise Architect provides a licence management dialog through which you enter, view and maintain licence information, including upgrading the version of Enterprise Architect and registering Add-Ins.

Access

Ribbon	<p>Start > Help > Help > Register and Manage Your License Key(s)</p> <p>Start > Help > Register</p>
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License Management Options

Option	Action
Key	<p>This column lists the registration keys that you are currently using.</p> <p>If the entry is an alphanumeric code, that is your private key that has been issued to you permanently. You register this key the first time you use the Sparx Systems product, using the Add Key button.</p> <p>If the entry is 'Shared Key', it indicates that you have temporarily been allocated a shared or 'floating' key from the key store. When you log on to Enterprise Architect, a key is automatically issued to you (if one is available) from the key store. When you have finished your work session, the key will be returned to the key store for issue to another user. (Note that the Key Store might not have been configured to manage keys automatically, in which case you manually obtain a key when you open Enterprise Architect and, if you prefer, manually release the key before the 'lease' expiry - see <i>Add Key</i> and <i>Release Key</i>.)</p>
Lease Expires	<p>This column indicates when the 'lease' on the registration key you are using expires.</p> <p>For a private key the value is 'Never', because the key has been permanently assigned to you and there is no 'leasing' involved.</p> <p>For a shared key, the value is generally the day after the key was automatically issued to you at the start of a work session, but the Key Store Manager can set a different expiry period. In practice, the key is usually returned earlier to the</p>

	keystore when you log out of the current work session.
Product	This column identifies the Sparx Systems product that the registered key gives you access to.
Add Key	Display the 'Add Registration Key' dialog, which you can use to: <ul style="list-style-type: none">• Register your new Enterprise Architect license key• Manually obtain a shared key from the Sparx Systems Key Store• Add a new key to update to a higher version of Enterprise Architect or to register an Add-In
Remove Key Release Key	(For a Private Key) Make the Add-In or current version of Enterprise Architect inoperable, such as when you are upgrading to a more complex edition of Enterprise Architect. (For a Shared Key) Release the key to the keystore; however, the Keystore Manager is normally configured to release keys automatically when you log off.
Copy button	Place the highlighted key into the clipboard.
Close button	Close the dialog.
Help button	Display this Help topic.

Finding Your License Information

You can find information on your Enterprise Architect license in the 'About Enterprise Architect' dialog, which shows, principally:

- The program version and build
- Your Registration Key
- The edition of Enterprise Architect you are registered to use
- Your licensed user ID on the system

Access

Ribbon	Start > Help > Help > About EA
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Adding License Keys

Two types of license key can be used in conjunction with Enterprise Architect: Private and Shared.

Private Keys

Private keys allow you to register, indefinitely, on the machine and user account that you are currently using:

- An Enterprise Architect license for the edition of Enterprise Architect you have purchased, or
- An Add-In product license

Shared Keys

Shared keys are obtained from a shared key store, allowing you to check out a key when necessary, and later check in the key so that it can be used by someone else.

Shared Keys require a shared license key store to be configured by your license administrator; the key store can be either file-based or network based (preferred). Only the Key Administrator is required to install the Sparx Enterprise Key Store application; end users simply connect to the configured key file - advised by the administrator - as described here. No additional software is required to be installed.

Access

Ribbon	<p>Start > Help > Help > Register and Manage Your License Key(s) > License Management : Add Key > Add Registration Key</p> <p>Start > Help > Register > License Management : Add Key > Add Registration Key</p>
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Add a Private Key

Step	Action
1	Click on the 'Enter Private Key' tab.
2	In the 'Name' and 'Company' fields, type your user name and company name.
3	In the 'Copy registration key into space below...' field, copy the registration key (including any parentheses around the key).
4	Click on the OK button to confirm the key selection.

Add a Shared Key

Step	Action
1	Click on the 'Get Shared Key' tab.
2	In the 'Name' and 'Company' fields, type your user name and company name.
3	In the 'Shared Keystore' field, click on the  button. The 'Shared Keystore Selection' dialog displays.
4	If your keystore is file-based: <ul style="list-style-type: none"> • Select the 'File Based Keystore' radio button • Click on the Browse button, and • Locate and select the keystore file Go to step 6.
5	If the keystore is network-based: <ol style="list-style-type: none"> 1. Click on the 'Sparx Keystore Server' radio button. 2. Select either 'ssks' or 'https' as the Protocol. 3. In the 'Server' field, type the server address of the keystore. 4. In the 'Port' field, type the server Port of the keystore. 5. If necessary type in the Username and Password (advised by your administrator), and/or click on the Test button to check that you have a connection to the keystore.
6	Click on the OK button to return to the 'Get Shared Key' tab. This now shows the name of the keystore in the 'Shared Keystore' field.
7	In the 'Select a Product' field, click on the appropriate product name.
8	Click on the OK button. The 'License Management' dialog redisplay, indicating that the shared key is registered for the selected product until the key expiry date.
9	Click on the Close button.

Notes

- Some license keys can override and remove others:
 - The key for a more advanced edition of Enterprise Architect replaces the key for a simpler edition
 - The key for MDG Integration for Visual Studio replaces the key for MDG Link for Visual Studio
 - Shared keys and Private keys have different formats and cannot be used interchangeably

Keystore Troubleshooting

The management of shared keys can be an onerous task, so Enterprise Architect provides the Keystore and its management interface to make the administration as easy as possible. Occasionally issues arise that prevent users from obtaining a license; these are typically due to the set up of the Keystore and can easily be rectified.

Error Messages and Handling

Message Displayed:	Explanation
<p>Error reading Key Store file: (Access is denied)</p>	<p>All users who are to use the shared key facility require Read, Write and Modify access to the sskeys.dat file containing the shared keys.</p> <p>Please verify that all required users have sufficient permissions to the file and try again.</p> <p>Review the effective permissions calculated at the location of the key file for the user account reporting the problem - you should closely examine the permissions for both the Network Share and the File System; it is possible that these permissions have been overwritten at some point.</p> <p>If the problem continues, contact Sparx Support.</p>
<p>Error reading Key Store file: (Key File has been moved)</p>	<p>In the key store, as a security measure the hard drive serial number is recorded when the file is created; the file then cannot be moved from the original location in which it was created.</p> <p>If the key store has to be re-located for any reason, the administrator should re-create the key store in the new location using the original license keys.</p> <p>This issue is commonly seen after a file server has undergone a hardware upgrade in which the physical hard drives have been replaced; problems could also occur if the drive used is part of a RAID configuration.</p> <p>The message can also appear where the key store exists on a Novell-based file system - when creating the key store, the administrator is prompted to confirm that the key store is to be located on a Novell Netware file server; if they click on the Yes button, the key store instead records the logical path used to create it, and all users must connect to the key store using this same path.</p> <p>The recorded path is case-sensitive and must be an exact match.</p>

Upgrade an Existing License

As you work with Enterprise Architect you might become aware of additional features contained in other Editions, which you could use on your projects. Fortunately, it is easy to upgrade the Edition you are using to a more advanced or specific Edition. For example, you might have been working alone creating a private model using the Professional Edition, and then at some point the project expands and a team of people need to contribute to and update the models, and the Project Manager decides to use security to encourage collaboration between the users. This would require an upgrade to the Corporate Edition, which contains the role-based security features.

It is a cost effective and easy procedure to upgrade to another Edition, but a new license key must be added to the product to make the upgrade effective. This should not be confused with license renewal, which is an extension of the license for the same Edition of Enterprise Architect and does not require a new key to be entered.

There are four Editions of Enterprise Architect; from simplest to most fully featured, these are:

- Professional
- Corporate
- Unified
- Ultimate

The Enterprise Architect installer provides the facilities of every Edition; your registration key gives you access to the facilities of the Edition you have purchased.

If you have purchased a lesser Edition, such as Professional, you can subsequently upgrade your license to a more complete Edition by purchasing a special upgrade key from Sparx Systems. Once you have received this key, use the procedure described here to gain access to the additional features.

This procedure is mainly applicable to users with private keys; if you are an end-user with a shared key, you would simply be allocated the relevant key next time you requested one. If, however, you want to upgrade while using a shared key on a long lease, you would simply click on the Release Key button and then the Add Key button on the 'License Management' dialog.

Access

Ribbon	Start > Help > Help > Register and Manage Your License Key(s) > License Management : Add Key Start > Help > Register > License Management : Add Key
--------	--

Upgrade from One Licensed Edition to Another

Step	Action
1	Make sure you have a valid upgrade key purchased from Sparx Systems; you typically receive this in an email or PDF format.
2	On the 'Add Registration Key' dialog, in the 'Name' and 'Company' fields, type your name and company name.
3	Copy the key you received for the upgraded edition of Enterprise Architect - including the { and } bracket characters - from the email.

4	Paste the key into the 'Copy registration key' field.
5	Click on the OK button. Enterprise Architect displays the message: <i>Registration succeeded – Thank you for purchasing Enterprise Architect xxxx Edition</i>
6	Click on the OK button, and then on the Close button to continue working in Enterprise Architect.
7	Select the 'Start > Help > Help > About EA' menu option. Copy the registration key shown and store it somewhere safe; this is a key to the full license of the edition you have upgraded to. If you ever have to reinstall Enterprise Architect, you can register it with this key, so you will not have to go through the upgrade process again.

Notes

- The Lite Edition and the Trial Edition cannot be registered or upgraded; if you have used either of these editions and then purchased Enterprise Architect, you must download the registered edition from:
sparxsystems.com/securedownloads/easetupfull.msi
Then you can enter your registration key

Register Add-In

Apart from registering Enterprise Architect, you must also register any Add-Ins you purchase to use with the application. You can register either a private key as explained here, or a shared Add-In key as explained in the *Add An Add-In Key* topic.

Access

Ribbon	Start > Help > Help > Register and Manage Your License Key(s) Start > Help > Register
--------	--

Register Add-Ins for Enterprise Architect

Step	Action
1	Purchase one or more licenses for the Add-In from your Add-In provider. Once you have paid for a licensed version of the Add-In, you receive (via email or other suitable means) a license key for the product.
2	Save the license key and the latest full version of the Add-In.
3	Run the Add-In's set up program to install the Add-In.
4	In Enterprise Architect, select 'Start > Help > Register'. The 'License Management' dialog displays.
5	Click on the Add Key button. The 'Add Registration Key' dialog displays, showing the 'Enter Private Key' tab.
6	Type or copy-and-paste in the key you received with the Add-In, including the { and } characters.
7	Click on the OK button.
8	When the Add-In has been added successfully, close down Enterprise Architect and restart it to apply the integration changes imposed by the Add-In.

Add an Add-In Key

When your organization is using a Keystore to distribute keys you can retrieve a key for a third party Add-In in the same way as you would for a key for any Sparx Systems product.

Access

Ribbon	<p>Start > Help > Help > Register and Manage Your License Key(s) > License Management : Add Key > Get Shared Key</p> <p>Start > Help > Register > License Management : Add Key > Get Shared Key</p>
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Add a Shared Add-In Key

Step	Action
1	In the 'Name' and 'Company' fields, type your user name and company name.
2	In the 'Shared Keystore' field, click on the  button. The 'Shared Keystore Selection' dialog displays.
3	Click on the 'Sparx Keystore Server' radio button, and in the 'Server Address' field type the server address of the keystore.
4	If necessary, in the 'Password' field type the password (advised by your administrator) and/or click on the Test button to check the connection to the keystore.
5	Click on the OK button to return to the 'Get Shared Keystore' tab, which now shows the name of the keystore in the 'Shared Keystore' field.
6	In the 'Select a Product' field, look for the appropriate product name and click on it.
7	Click on the OK button. The 'License Management' dialog redisplay with the shared Add-In key in the 'Currently Registered Keys' list.
8	Click on the Close button.

Notes

- Shared Add-In keys require Enterprise Architect version 11 or higher

Ordering and Installation



Enterprise Architect is available for download from Sparx Systems in a free Trial Edition format. You can explore this trial in all edition configurations and then, once you have decided which edition to purchase, you have a number of options as detailed in the *Order Enterprise Architect* Help topic.

Feedback

We value any suggestions, feedback and comments you might have regarding this product, documentation or install process.

You can provide your feedback using one of the online forms:

Bug Report - sparxsystems.com/bug_report.htm

Feature Request - sparxsystems.com/feature_request.htm

or contact us via email at:

support@sparxsystems.com

Order Enterprise Architect

Enterprise Architect is designed, built and published by Sparx Systems, and available through the Sparx Systems website.

- You can download a free, 30-day Trial Edition of the product
- On purchase of a suitable license or licenses, you can download the registered purchase edition that provides the facilities of the edition you require, as unlocked by the license keys provided by Sparx Systems
- The Trial Edition of Enterprise Architect is identical to the registered edition, except that all diagrams are output to files with an embedded watermark
- The trial software stops working after the trial period has elapsed; however, you can extend the evaluation period by asking Sparx Systems for an extension key
- The latest information on pricing and purchasing is available on the 'Purchase' page of the Sparx Systems website, and from Sparx Sales

Purchase Options

- On-line using a secure credit-card transaction
- Fax
- Check or equivalent
- Bank transfer

Installation

Enterprise Architect is distributed as a Windows installer (*.msi) file that will check and update previous installations of Enterprise Architect.

- After you install Enterprise Architect, you can immediately begin to create projects as .gea files
- The latest evaluation and registered versions of Enterprise Architect are always available from the Sparx Systems website
- The registered version is available through the 'Registered User' area of the web site, which requires a username and password to access; these are provided upon purchase of a license

Installation

Aspect	Detail
System Requirements	The system requirements for installing Enterprise Architect are defined on the 'Enterprise Architect System Requirements' page of the Sparx Systems website.
Installation on Linux and MacOS	If you intend to run Enterprise Architect on Linux, refer to the <i>Installing Enterprise Architect inside Wine</i> Help topic. Under Linux, Formatted Notes text on diagrams might not display correctly.
Install Enterprise Architect	Execute the Enterprise Architect .msi file to run the Enterprise Architect set up program. Generally, you can accept all the default options without change. To place Enterprise Architect in a directory other than the default, enter the name of the destination when prompted. You might be prompted to restart your computer when the installation completes; although this is not always necessary (if you already have the components Enterprise Architect requires installed on your computer), you should restart just to be certain.
Install Local Help	When you select to display Help in Enterprise Architect, by default it opens the appropriate topic in the Help on the Sparx Systems website. You can, however, download the EAUserGuide.msi file from the 'Resources' page of the website, to install the HTML Help files on your local machine so that you can display Help information without accessing the Internet. Enterprise Architect should be restarted after installing the local HTML Help files.
Using a Third Party DBMS as Model Repository	If you plan to use SQL Server, MySQL, PostgreSQL, Access 2007, or Oracle as a model repository, then you must use the Corporate, Unified or Ultimate Editions of Enterprise Architect. You also require additional files and supplementary installation processes; please note that installation and maintenance of these database management systems is not included under the support agreement. Users planning to use SQL Server, MySQL, PostgreSQL, Access 2007 or Oracle as their model repository can access scripts that create the required data structures for the choice of DBMS, from the Sparx Systems website.
Zero Config Client Support	Enterprise Architect can be used on client machines without having to be installed on those machines. This can ease deployment in a corporate environment, by running the system from a read-only shared folder. This enables a System Administrator to install Enterprise Architect once for all users rather than once on

	each computer.
Version Activation	From version 14.0 onwards, Enterprise Architect requires that you 'activate' the Software Version you have installed.

Installing Enterprise Architect Under Linux or macOS

Using Wine, it is possible to install and run Enterprise Architect on Debian-based Linux systems, such as Ubuntu and Linux Mint, as well as on macOS systems.

Information relating to installation and use of specific products on different platforms can be found in the topics listed in the *Learn More* section.

Installing Enterprise Architect under Linux

This page describes how to install and upgrade Enterprise Architect on Linux environments using Wine. Instructions are also provided for installing and configuring Add-Ins, as well as configuring Enterprise Architect's Visual Execution Analyzer and Pro Cloud Server for use in non-Windows environments.

Installing Enterprise Architect using Wine

The example commands used here relate to Debian-based Linux systems, such as Ubuntu and Linux Mint, although you can follow the same basic procedures for other Linux distributions.

Step	Action
1	Follow the instructions provided on this WineHQ web page: https://wiki.winehq.org/Ubuntu
2	We recommend installing the Carlito font, so that text in diagrams appears as it does in a native Windows installation. This also prevents the diagram from resizing unnecessarily. Issue this command to install the Carlito font: <ul style="list-style-type: none"> • <code>sudo apt-get install fonts-crosextra-carlito</code>
3	Install the MSXML and MDAC components by running these commands: <ul style="list-style-type: none"> • <code>winetricks msxml3</code> • <code>winetricks msxml4</code> • <code>winetricks mdac28</code> If prompted to do so, download the <code>msxml.msi</code> file and place it in the directory: <code>~/.cache/winetricks/msxml3</code> . Note: When Wine updates are applied to your system, often they interfere with the <code>mdac28</code> module, preventing it from running. To avoid any issues, it is good practice after installing Wine updates, to run this command: <ul style="list-style-type: none"> • <code>winetricks --force mdac28</code>
4	Run <code>winecfg</code> , and in the libraries tab add: <code>"*msado15"</code> Set this to Native,Builtin. Click on the OK button.
5	Download the latest Enterprise Architect installer: <ul style="list-style-type: none"> • Registered (paid) Enterprise Architect edition • Trial Enterprise Architect edition
6	Install Enterprise Architect by running one of these commands, which relate to the registered and trial installations respectively: <ul style="list-style-type: none"> • <code>wine msiexec /i esetupfull.msi</code> • <code>wine msiexec /i esetup.msi</code>

Install Jet 4.0 Database Engine

To install 'jet40', we will use 'Winetricks'.

Step	Action
1	Open a Terminal window and run the command: <ul style="list-style-type: none"> • winetricks jet40

Install ODBC Drivers (Optional)

To connect directly to an Enterprise Architect project hosted on a third party DBMS, you will need to use an ODBC driver appropriate for the DB type.

To install an ODBC driver, first download the relevant installer, then run the installer using Wine.

Once the ODBC driver is installed, you can configure the connection from the Enterprise Architect ribbon 'Settings > User Tools > ODBC Data Sources'.

Note: For improved performance when accessing a remote DBMS over a WAN connection, you should consider using Sparx System's Cloud Server.

Step	Action
1	Open a Terminal window, then run the installer by issuing a command similar to one of those provided here, substituting the name of the ODBC Driver installer that you want to run. For .msi files, use: <ul style="list-style-type: none"> • wine msiexec /i <odbc-driver_name>.msi For .exe files, use: <ul style="list-style-type: none"> • wine <odbc-driver_name>.exe

Upgrading Enterprise Architect Using Wine

To upgrade Enterprise Architect to a new version, you must first uninstall your current version, before installing the new version.

Step	Action
1	Download the latest Enterprise Architect installer.
2	Run this command in a terminal: <ul style="list-style-type: none"> • wine uninstaller
3	Uninstall the existing version of Enterprise Architect. <ul style="list-style-type: none"> • Select 'Enterprise Architect' from the 'Applications' list • Click on the Remove button • Follow the prompts to uninstall Enterprise Architect
4	Install the new version of Enterprise Architect, by running this command in a terminal:

- | | |
|--|---|
| | <ul style="list-style-type: none">• <code>wine msiexec /i esetupfull.msi</code> |
|--|---|

Installing Enterprise Architect under macOS

This page describes how to install and upgrade Enterprise Architect on macOS environments using Wine. This applies for Mac OS 10.8 - 10.14.

For installation on macOS 10.15 and later, see the *Installing Enterprise Architect using CrossOver (macOS)* Help topic.

Download and Install Wine

Go to the WineHQ website, <https://www.winehq.org>, and download the latest version of Wine that is available for the version of macOS that you are running. We recommend using a 'stable' version of Wine rather a 'development' version. Follow the instructions provided on the WineHQ website for installing Wine.

Download 'Winetricks'

Winetricks is a helper script that assists with the installation of a number of run-time libraries required by Enterprise Architect.

The web page <https://wiki.winehq.org/Winetricks> provides a link to the 'winetricks' file, which is currently:

<https://raw.githubusercontent.com/Winetricks/winetricks/master/src/winetricks>

Note: The 'Winetricks' web page can also be located by searching for 'winetricks' on the WineHQ website.

Step	Action
1	Using an Internet browser, navigate to the web page: https://wiki.winehq.org/Winetricks
2	Locate the file link https://raw.githubusercontent.com/Winetricks/winetricks/master/src/winetricks Right-click on the file link and save the file locally as '/Applications/winetricks'.
3	If the file is saved as 'winetricks.txt', rename it as 'winetricks'. In a Terminal window, issue the command: <ul style="list-style-type: none"> • <code>mv /Applications/winetricks.txt /Applications/winetricks</code>
4	Change the permissions of 'winetricks' to make it executable. In a Terminal window, issue the command: <ul style="list-style-type: none"> • <code>chmod +x /Applications/winetricks</code>

Use 'Winetricks' to Install Run-Time Libraries

Use the helper script 'winetricks' to install the run-time libraries MDAC28, MSXML3 and MSXML4, which are required by Enterprise Architect.

Step	Action
1	On your Mac, use 'Finder' to open the 'Applications' folder.
2	Double-click on 'Wine' (or 'Wine Stable') to open a Terminal window that is configured to use the Wine environment.

3	<p>In the Terminal window, issue these commands:</p> <ul style="list-style-type: none"> • <code>/Applications/winetricks msxml3</code> • <code>/Applications/winetricks msxml4</code> • <code>/Applications/winetricks mdac28</code> <p>Note: If or when you apply Wine updates to your system at some later date, they might interfere with the mdac28 module, preventing it from running. To avoid any issues, it is good practice after installing Wine updates, to run this command:</p> <ul style="list-style-type: none"> • <code>winetricks --force mdac28</code>
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Install Jet 4.0 Database Engine

By using the Jet 4.0 database engine, Enterprise Architect can access database files that employ Unicode character encoding.

To install 'jet40', we will use 'Winetricks'. However, we must first install 'Homebrew' - which is a Package Manager for macOS - and 'cabextract' - which is software for extracting files from Microsoft cabinet files.

Step	Action
1	<p>Install 'Homebrew'</p> <p>'Homebrew' is an unofficial Package Manager for macOS.</p> <p>To install 'Homebrew', open a Terminal window and issue this command:</p> <pre>ruby -e "\$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)" < /dev/null 2> /dev/null</pre> <p>Note: It will take a few minutes to download and install all of the required components.</p>
2	<p>Install 'cabextract'</p> <p>The 'cabextract' application is software that is employed by 'Winetricks' to extract files from Microsoft cabinet files.</p> <p>To install 'cabextract', open a Terminal window and issue the command:</p> <ul style="list-style-type: none"> • <code>brew install cabextract</code>
3	<p>Install Jet 4.0 Database Engine</p> <p>Using 'Finder', display the Applications folder.</p> <p>Double-click on 'Wine' (or 'Wine Stable') to open a Terminal window configured to use the Wine environment.</p> <p>In the Terminal window, issue the command:</p> <ul style="list-style-type: none"> • <code>/Applications/winetricks jet40</code>

Installing ODBC Drivers (Optional)

To connect directly to an Enterprise Architect project hosted on a third party DBMS, you will need to use an ODBC driver appropriate for the DB type. To install an ODBC driver, first download the relevant installer, then run the installer using Wine.

Once the ODBC driver is installed, you can configure the connection from the Enterprise Architect ribbon: 'Settings > User Tools > ODBC Data Sources'.

Note: For improved performance when accessing a remote DBMS over a WAN connection, you should consider using Sparx System's Cloud Server.

Step	Action
1	Use 'Finder' to open the 'Applications' folder, then double-click on 'Wine' (or 'Wine Stable') to open a Terminal window configured to use the Wine environment.
2	Run the installer by issuing a command similar to one of those provided here, substituting the name of the ODBC Driver installer that you want to run. For .msi files, use: <ul style="list-style-type: none"> • <code>wine msiexec /i Downloads/<odbc-driver_name>.msi</code> For .exe files, use: <ul style="list-style-type: none"> • <code>wine Downloads/<odbc-driver_name>.exe</code>

Install Enterprise Architect Inside Wine

When you install applications using Wine, the applications will be installed in the '.wine' folder, within your home directory.

For Enterprise Architect, the default installation folder will be '.wine\drive_c\Program Files\Sparx Systems\EA'.

(If you chose to include support for 64 bit systems when you installed Wine, then 'Program Files (x86)' will be used instead of 'Program Files'.)

Step	Action
1	Download the latest Enterprise Architect installer. <ul style="list-style-type: none"> • Registered (paid) Enterprise Architect edition • Trial Enterprise Architect edition
2	Open a Terminal window configured to use the Wine environment. (This is where you will run the installation commands.) <ul style="list-style-type: none"> • Using 'Finder', double-click on 'Wine' (or 'Wine Stable') in the Applications folder
3	Install Enterprise Architect by issuing one of these commands, which relate to the registered and trial installations respectively: <ul style="list-style-type: none"> • <code>wine msiexec /i Downloads/easetupfull.msi</code> • <code>wine msiexec /i Downloads/easetup.msi</code>

Install Carlito Font

We recommend installing the Carlito font, so that text in diagrams appears as it does in a native Windows installation. This also prevents the diagram from resizing unnecessarily.

By default, Enterprise Architect uses Microsoft's Calibri font, but this font is not available under macOS (or under Wine) unless you have previously installed a Microsoft product such as MS Office.

Step	Action

1	<p>Download the Carlito font files.</p> <p>- Carlito font can be downloaded from: 'https://fontlibrary.org/en/font/carlito'</p> <p>Note: The web page contains advertisements; to download the font files, click on the DOWNLOAD CARLITO button.</p>
2	The font files are packaged into ZIP files. Extract the font files from the ZIP archive.
3	<p>Use 'Font Book' to install the fonts, which will make them available for use in all applications.</p> <ul style="list-style-type: none"> • Using 'Finder', double-click on 'Font Book' in the Applications folder to launch that application • Choose 'File Add Fonts...' from the Font Book main menu to open the file selection window • Navigate to and select all of the Carlito font files • Click on 'Open'

Create an Alias On Your Desktop to Run Enterprise Architect

Step	Action
1	Using 'Finder', open your 'home' folder.
2	From the Finder menu, choose 'Go Go to Folder...', then enter '.wine' in the dialog that opens. (Notice the 'dot' prefix in this folder name.)
3	Navigate to 'drive_c\Program Files\Sparx Systems\EA'. (If you chose to include support for 64 bit systems when you installed Wine, then navigate to 'drive_c\Program Files (x86)\Sparx Systems\EA' instead.)
4	Within this folder, locate the file 'EA.exe'. Right-click on 'EA.exe' and choose 'Make Alias'. Rename the alias as 'Enterprise Architect', then drag the alias onto your Desktop. Alternatively, drag 'EA.exe' onto the Dock.
5	Launch Enterprise Architect by double-clicking the shortcut on the Desktop, or by clicking the shortcut in the Dock.

Upgrading Enterprise Architect Using Wine

To upgrade Enterprise Architect to a new version, you must first uninstall your current version, before installing the new version.

Step	Action
1	Download the latest Enterprise Architect installer.
2	<p>Open a Terminal window configured to use the Wine environment, then launch the Wine 'Uninstaller'.</p> <ul style="list-style-type: none"> • Using 'Finder', double-click on 'Wine' (or 'Wine Stable') in the Applications folder • Issue the command 'wine uninstaller'; the Wine 'Add/Remove Programs' window is displayed

3	<p>Uninstall the existing version of Enterprise Architect.</p> <ul style="list-style-type: none">• Select Enterprise Architect from the Applications list• Click on the Remove button• Follow the prompts to uninstall Enterprise Architect
4	<p>Install the new version of Enterprise Architect.</p> <ul style="list-style-type: none">• Using 'Finder', double-click on 'Wine' (or 'Wine Stable') in the Applications folder• Issue the command 'wine msiexec /i Downloads/easetupfull.msi'• Follow the prompts to install Enterprise Architect

Installing Enterprise Architect using CrossOver (macOS)

This page describes the process of installing Enterprise Architect using CrossOver under macOS. It is assumed that you already have CrossOver installed on your machine and that you have already downloaded the latest installer for Enterprise Architect.

Prerequisites

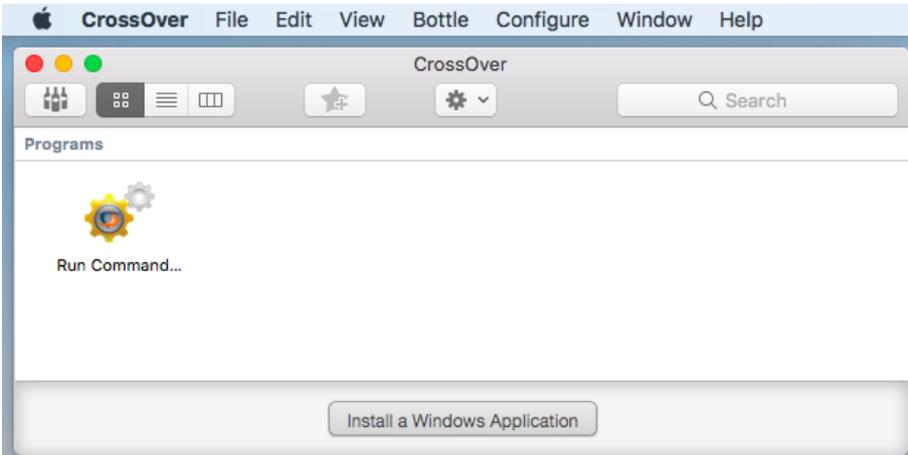
Installation of macOS 10.15 or later requires:

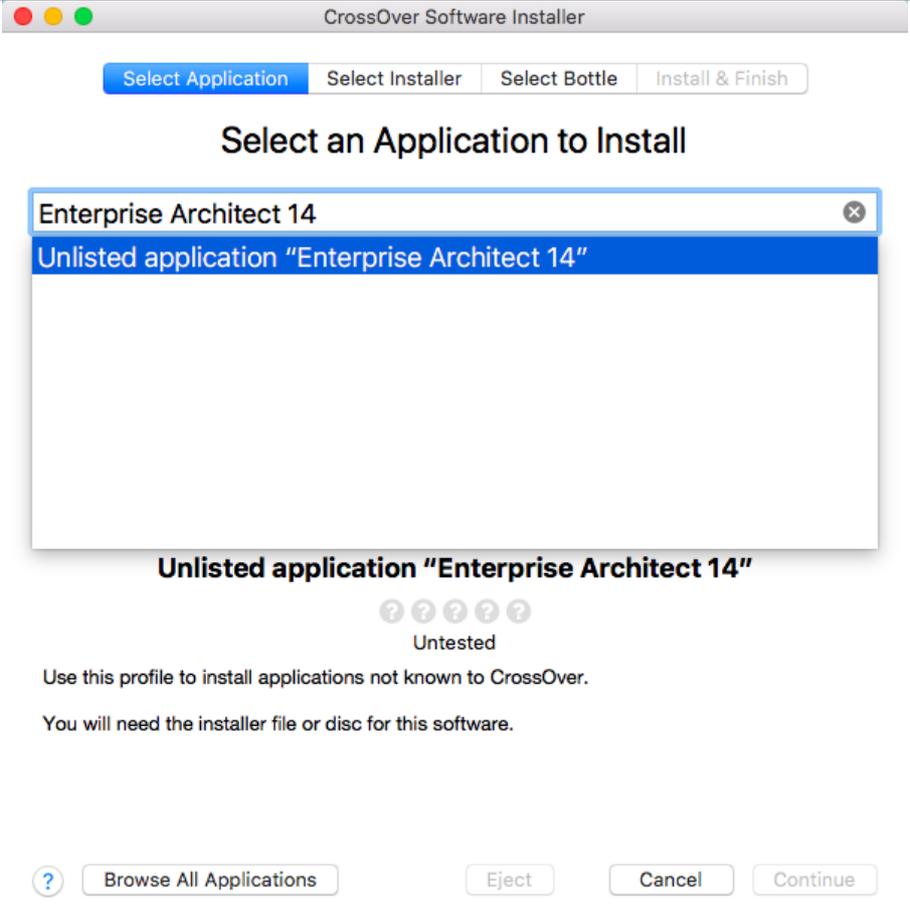
- Intel® based processor or Apple M1 processor with Rosetta2 installed
- CrossOver Mac 20, or later.

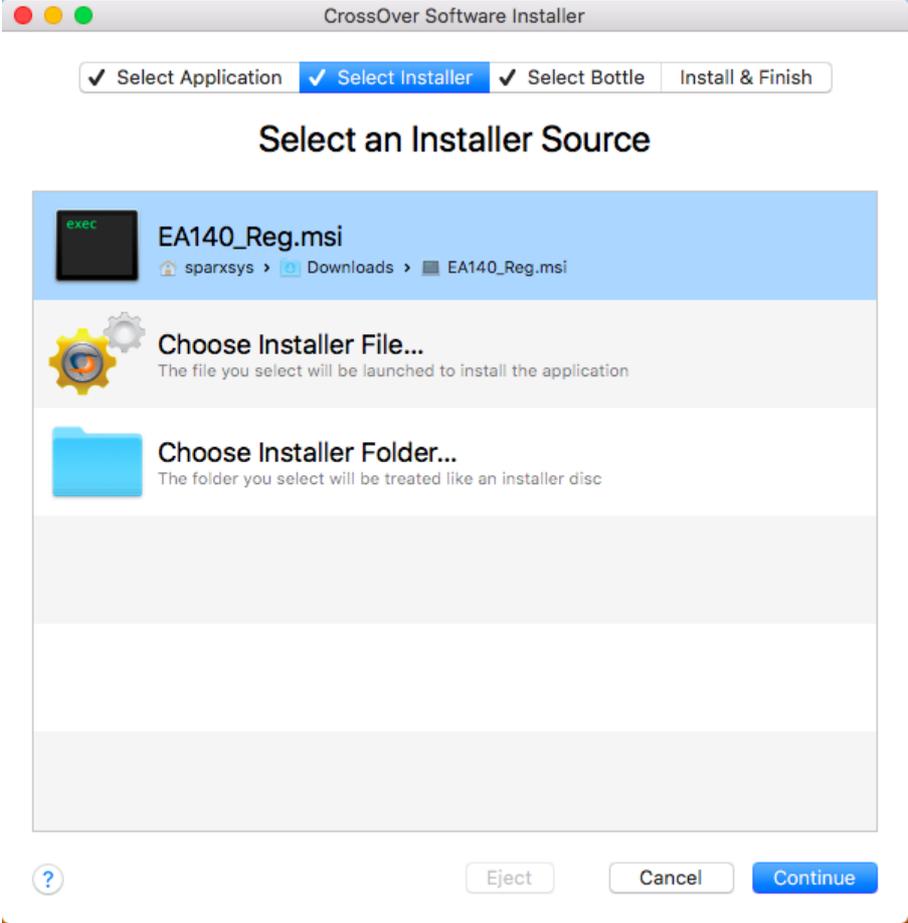
Using CrossOver to install Enterprise Architect.

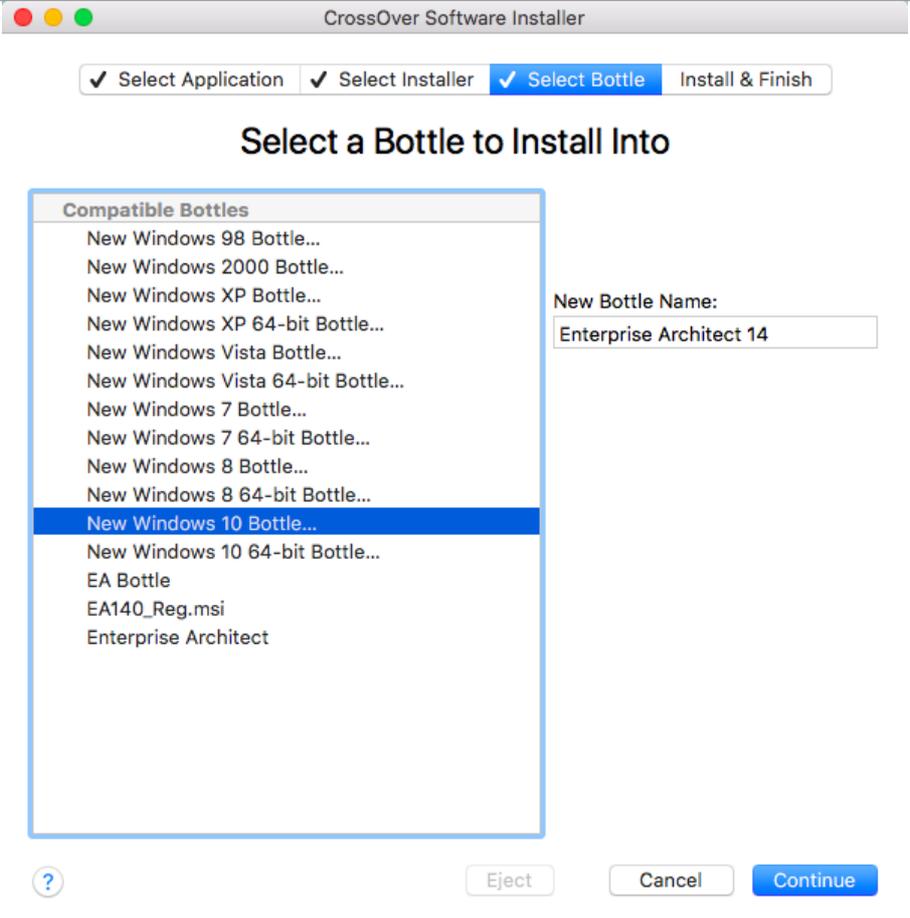
Installing a Windows application using CrossOver is quite straightforward. First you launch CrossOver, then launch the 'CrossOver Software Installer'. The 'CrossOver Software Installer' consists of a window with four separate tabs or pages, where each tab handles a specific part of the installation process.

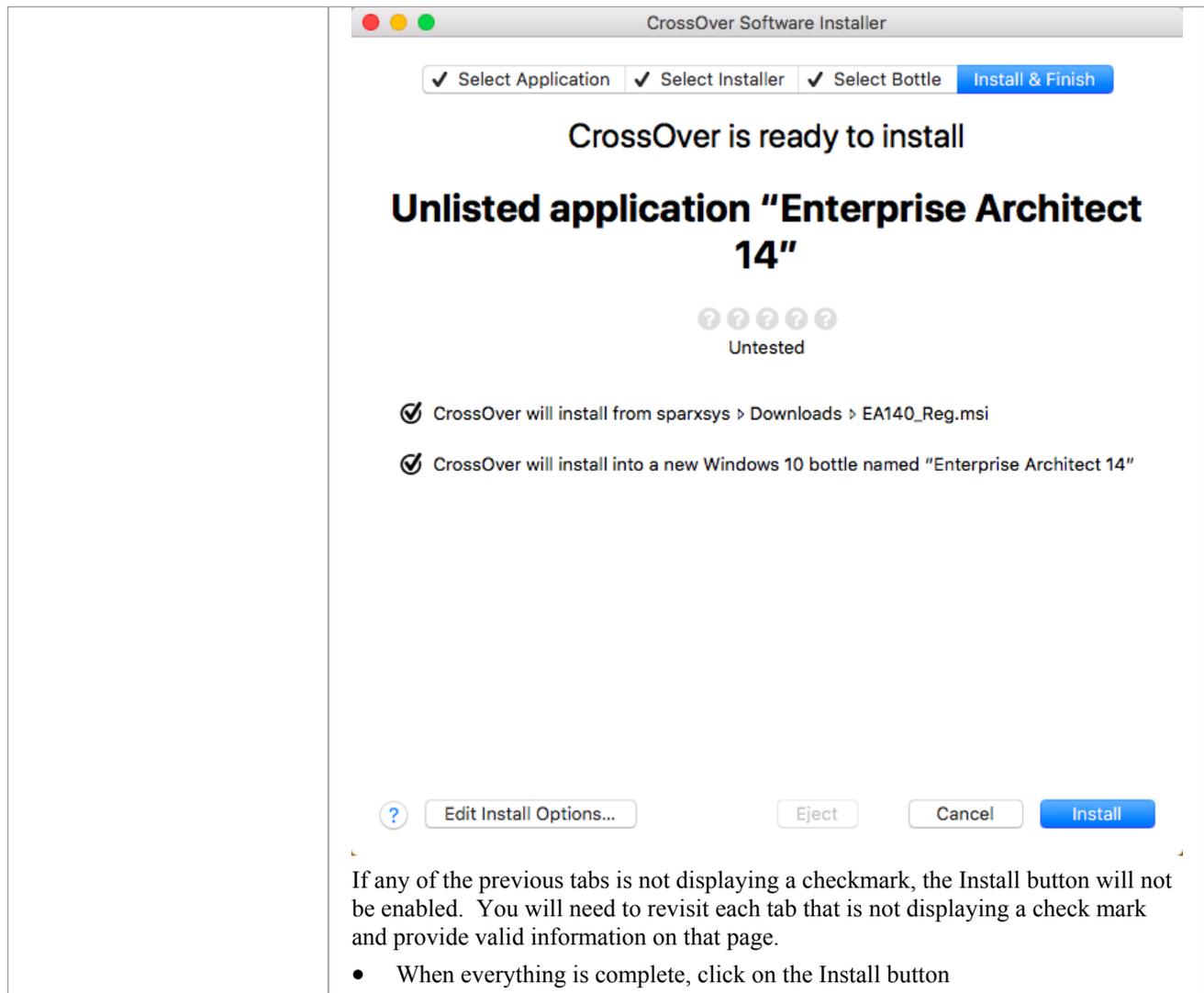
Detailed steps for each part of the process are provided here, to guide you through the installation of Enterprise Architect.

Task	Detailed Steps
<p>Start CrossOver and Launch the 'CrossOver Software Installer'</p>	 <p>Start CrossOver, then either:</p> <ul style="list-style-type: none"> • Click on the button 'Install a Windows Application', or • From the CrossOver main menu, choose 'Configure Install Software' <p>The 'CrossOver Software Installer' window is displayed.</p>
<p>Select the Application to Install</p>	<p>The first tab 'Select Application' should be selected by default. If it isn't, click on it now.</p> <p>CrossOver comes pre-configured with a list of applications, from which you can select one to install. Unfortunately, the list does not contain the latest release of Enterprise Architect.</p>

	 <ul style="list-style-type: none"> • In the 'Edit' field, type 'Enterprise Architect nn' (substitute the version number of the installer you have downloaded) <p>As you type, an entry is created in the drop-down list below the field you are typing in.</p> <ul style="list-style-type: none"> • Click on the entry 'Unlisted application 'Enterprise Architect nn'' • Click on the Continue button
<p>Select the Installer to Use</p>	<p>The second tab 'Select Installer' should now be selected. If it isn't, select it now.</p>

	 <ul style="list-style-type: none"> • Click on the option 'Choose Installer File...' • In the file chooser window, navigate to and select the Enterprise Architect installer you have downloaded, then click on 'Use this installer' • In the 'CrossOver Software Installer' window, select (highlight) the installer you chose, then click on 'Continue'
Select a Bottle to Use	The third tab 'Select Bottle' should now be selected. If it isn't, select it now.

	 <p>Unless you have previously created a Wine Bottle to use for Enterprise Architect, you will need to create a new Bottle now.</p> <ul style="list-style-type: none"> • Select the version of Windows that you want to use; in this example, we chose 'New Windows 10 Bottle...' • Type a name in the field 'New Bottle Name:' that describes the Bottle. For example, 'Enterprise Architect 15' • Click on 'Continue'
<p>Proceed with Installation</p>	<p>At this point, the first three tabs should all be displaying checkmarks against their names and the fourth and final tab should now be displayed.</p>



Run Enterprise Architect

After successfully completing these steps, Enterprise Architect should be installed and ready to run.

To start Enterprise Architect, first start CrossOver, then simply double-click on the Enterprise Architect shortcut.

Upgrading Enterprise Architect Using Crossover

When you upgrade Enterprise Architect to a new version, you must first uninstall your current version before installing the new version.

Step	
1	Click on the Bottle and select the 'Run Command' option.
2	Type the command: uninstaller.
3	Select 'Enterprise Architect' from the list, then click on the Remove button.

4	Again click on the Bottle and select the 'Run Command' option.
5	Browse for the new installer file, and click on the Run button.

Installing the Jet 4.0 Database Engine Using Wine

By using the Jet 4.0 database engine, Enterprise Architect can access database files that employ Unicode character encoding.

Install Jet 4.0 Under Linux

To install 'jet40', we will use 'Winetricks'.

Step	Action
1	Open a Terminal window and run the command: <ul style="list-style-type: none"> • <code>winetricks jet40</code>

Install Jet 4.0 Under macOS

To install 'jet40', we will use 'Winetricks'. However, we must first install 'Homebrew' - which is a Package Manager for macOS - and 'cabextract' - which is software for extracting files from Microsoft cabinet files.

Step	Action
1	<p>Install 'Homebrew'</p> <p>'Homebrew' is an 'unofficial' Package manager for macOS.</p> <p>To install 'Homebrew', open a Terminal window and issue the command:</p> <ul style="list-style-type: none"> • <code>ruby -e "\$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)" < /dev/null 2> /dev/null</code> <p>Note: It will take a few minutes to download and install all of the required components.</p>
2	<p>Install 'cabextract'</p> <p>The 'cabextract' application is software that is employed by 'Winetricks' to extract files from Microsoft cabinet files.</p> <p>To install 'cabextract', open a Terminal window and issue the command:</p> <ul style="list-style-type: none"> • <code>brew install cabextract</code>
3	<p>Install Jet 4.0 Database Engine</p> <p>Using 'Finder', display the Applications folder.</p> <p>Double-click on 'Wine' (or 'Wine Stable') to open a Terminal window configured to use the Wine environment.</p> <p>In the Terminal window, issue the command:</p> <ul style="list-style-type: none"> • <code>/Applications/winetricks jet40</code>

Installing ODBC Drivers Using Wine

To connect directly to an Enterprise Architect project hosted on a third party DBMS, you will need to use an ODBC driver appropriate for the database type. To install an ODBC driver, first download the relevant installer, then run the installer using Wine.

Once the ODBC driver is installed, you can configure the connection from the Enterprise Architect ribbon 'Settings > User Tools > ODBC Data Sources'.

Note: For improved performance when accessing a remote DBMS over a WAN connection, you should consider using Sparx System's Cloud Server.

To Install under Linux

Step	Action
1	<p>Open a Terminal window, then run the installer by issuing a command similar to one of those provided here, substituting the name of the ODBC Driver installer that you want to run.</p> <p>For .msi files, use:</p> <ul style="list-style-type: none">• <code>wine msiexec /i Downloads/<odbc-driver_name>.msi</code> <p>For .exe files, use:</p> <ul style="list-style-type: none">• <code>wine Downloads/<odbc-driver_name>.exe</code>

To Install under macOS

Step	Action
1	<p>Open a Terminal window configured to use the Wine environment.</p> <ul style="list-style-type: none">• Use 'Finder' to open the 'Applications' folder, then double-click on 'Wine' (or 'Wine Stable')
2	<p>Run the installer by issuing a command similar to one of those provided here, substituting the name of the ODBC Driver installer that you want to run.</p> <p>For .msi files, use:</p> <ul style="list-style-type: none">• <code>wine msiexec /i Downloads/<odbc-driver_name>.msi</code> <p>For .exe files, use:</p> <ul style="list-style-type: none">• <code>wine Downloads/<odbc-driver_name>.exe</code>

Using Enterprise Architect's Visual Execution Analyzer (VEA) With Wine

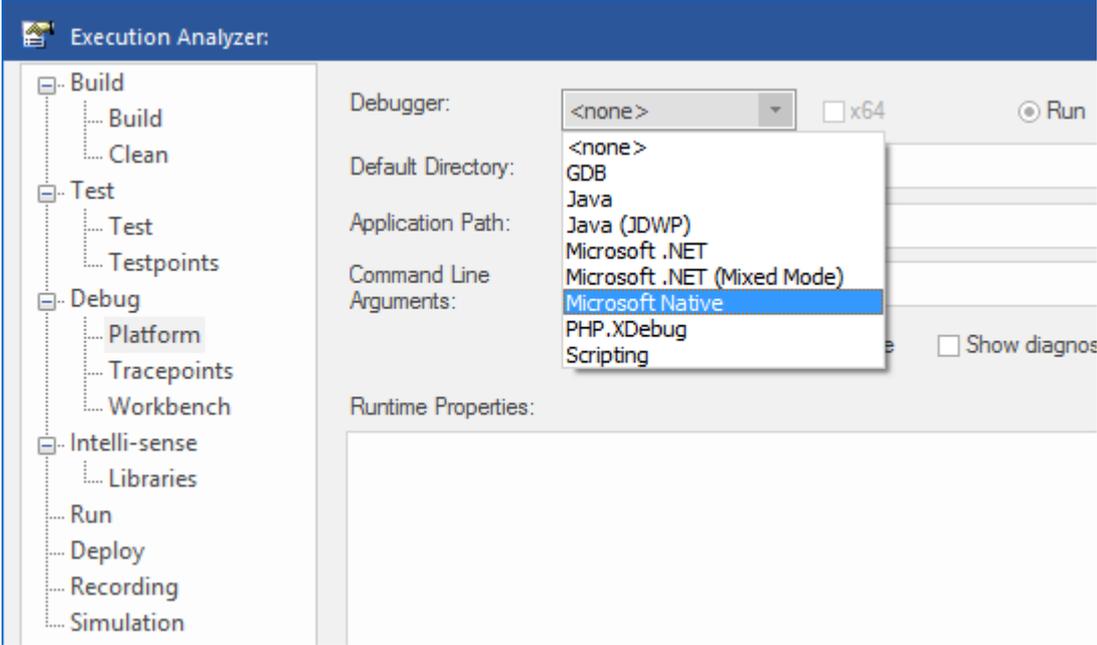
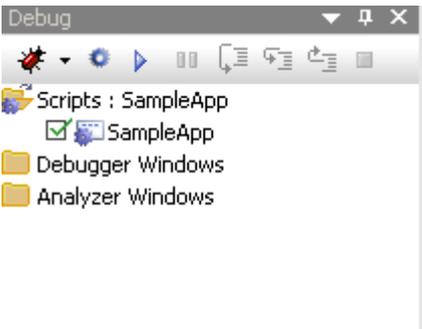
Note these points before attempting to analyze your application with Enterprise Architect running under Wine:

- These instructions only apply to native code (C/C++), when running under Wine
- These instructions assume your application is installed successfully into the Wine environment, and all dependencies are met; for example, you have installed msxml6 if your application requires it and it is not deployed as part of your installer
- These instructions assume you have built your program in Visual Studio as Debug or Release with PDB support
- If you are using a Debug executable file, you might have to copy the MFC/ATL Debug SXS from your Windows machine to your Wine environment; so the folder C:\windows\WinSxS would map to `~/.wine/drive_c/windows/winsxs`
- For every EXE/DLL that you want to debug or profile using the VEA, you must have the PDB for that file

Using the Visual Execution Analyzer

Deploy and analyze your application with Enterprise Architect's VEA using these steps:

1	<p>Copy all of your source files from your development machine to the Wine environment. The path must match exactly. For example, if your source code was compiled in C:\source\yourApp, then you must copy the source code files to <code>~/.wine/drive_c/source/yourApp</code>.</p> <p>This means that if you build your code on a separate machine, you might first have to use 'winecfg' to map a drive, in order to get the correct path.</p>
2	<p>Run your application manually via the command line using a command of the form:</p> <ul style="list-style-type: none"> • <code>wine PATH_TO_APPLICATION</code>
3	<p>If the application runs, proceed to the next step. Otherwise, check the console for Wine output and install any DLLs to resolve missing dependencies. Once you are certain that there are no missing dependencies and that the crash is due to something else, proceed to the next step.</p> <p>Tip: If a huge amount of output is generated by WINE, pipe the output to a file using a command of the form:</p> <ul style="list-style-type: none"> • <code>wine PATH_TO_APPLICATION >& output.txt</code>
4	<p>Import your source code. This is optional - you don't have to import your code into Enterprise Architect, but it does help when you want to set breakpoints within your code.</p>
5	<p>Set up Enterprise Architect Build Scripts using these steps:</p> <ul style="list-style-type: none"> • Add a build script to a Package; for details, see the Help topic Analyzer Script Editor • Configure the Run command • Configure the Debug command • Set the Debugger value to 'Microsoft Native'

	
6	Open the Debug window or use the Execution Analysis - Debug workspace (preferred).
7	Select the Build Script you created in the previous step.
8	<p>Click on the Play button.</p> 

Notes

- Check that the breakpoint is bound - if it is bound, it will stay red; if it has a question mark, it is not bound
- If your breakpoint didn't bind, then check carefully that the source path matches exactly
- Ensure that the PDB file(s) is in the same directory as your EXE file(s)
- Ensure that EXE and PDB files match; that is, that they are from the same compilation

Configuring Subversion for Enterprise Architect using Wine

To set up and use Subversion with Enterprise Architect under Wine, the process is almost identical to the process for setting up and using the systems under Windows. When using Subversion with Enterprise Architect under Wine, you still use a Windows-based Subversion command line client.

The differences are in the way you prepare the Subversion working environment. Specifically, in the way you install your Subversion client and the way you check out a working copy folder from the Subversion repository.

For further information, please refer to the Help topic [Preparing a Subversion Environment Under Wine](#).

Installing Enterprise Architect Add-Ins Using Wine

Installing Add-Ins

To install Enterprise Architect Add-Ins using Wine, follow these steps:

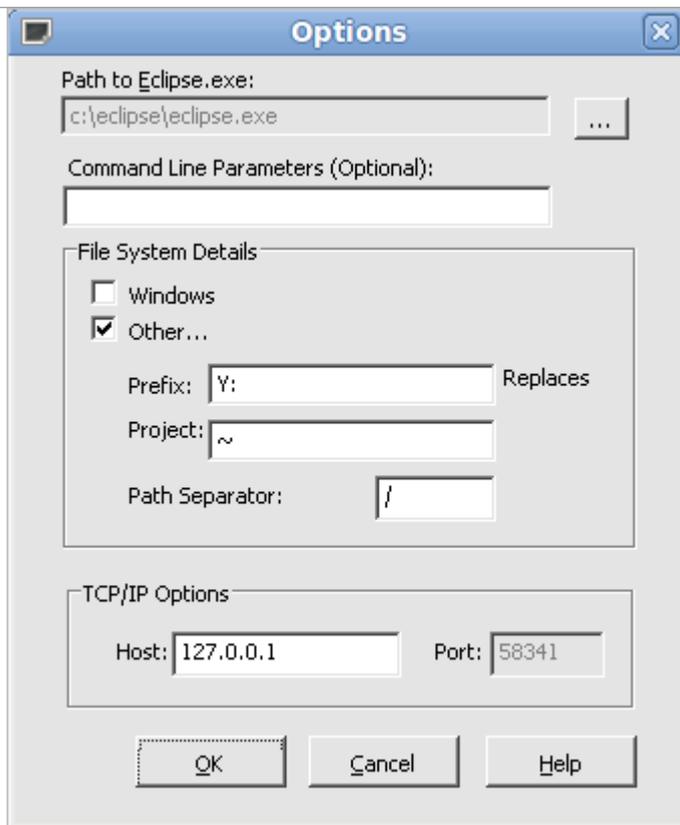
Step	Action
1	Download the Add-In of interest. Add-Ins are usually distributed as executable installers. A list of Enterprise Architect Add-Ins developed by Sparx Systems can be found at: https://sparxsystems.com/products
2	<p>If your Add-In depends on .NET, you need to install .NET first. Although .NET-based Add-Ins for Enterprise Architect have not been tested under Wine, you can run one of the commands listed here to install the .NET runtime.</p> <p>Open a Terminal window</p> <p>[Under macOS, to open a Terminal window configured to use the Wine environment:</p> <ul style="list-style-type: none">• Using 'Finder', double-click on 'Wine' (or 'WINE STABLE') in the Applications folder]<p>Now run one of these commands:</p><ul style="list-style-type: none">• <code>winetricks Downloads/dotnet20</code>• <code>winetricks Downloads/dotnet30</code>• <code>winetricks Downloads/dotnet35</code>• <code>winetricks Downloads/dotnet40</code><p>Note: Installing a higher .NET runtime will install the previous versions as well.</p>
3	Run this command, replacing the name of the installer file with the one you downloaded. <ul style="list-style-type: none">• <code>wine EAZachman.exe</code>
4	Follow the installer's prompts to complete installation.

Configuring the MDG Link for Eclipse Add-In using Wine

The MDG Link for Eclipse Add-In is now distributed and installed automatically with the Enterprise Architect installer (as of Enterprise Architect version 12). When running under Wine, MDG Link for Eclipse allows you to link to an instance of Eclipse running natively on the Linux/macOS host. These instructions assume that Eclipse has been set up within the native Linux/macOS environment.

Configure the MDG Link for Eclipse Add-In

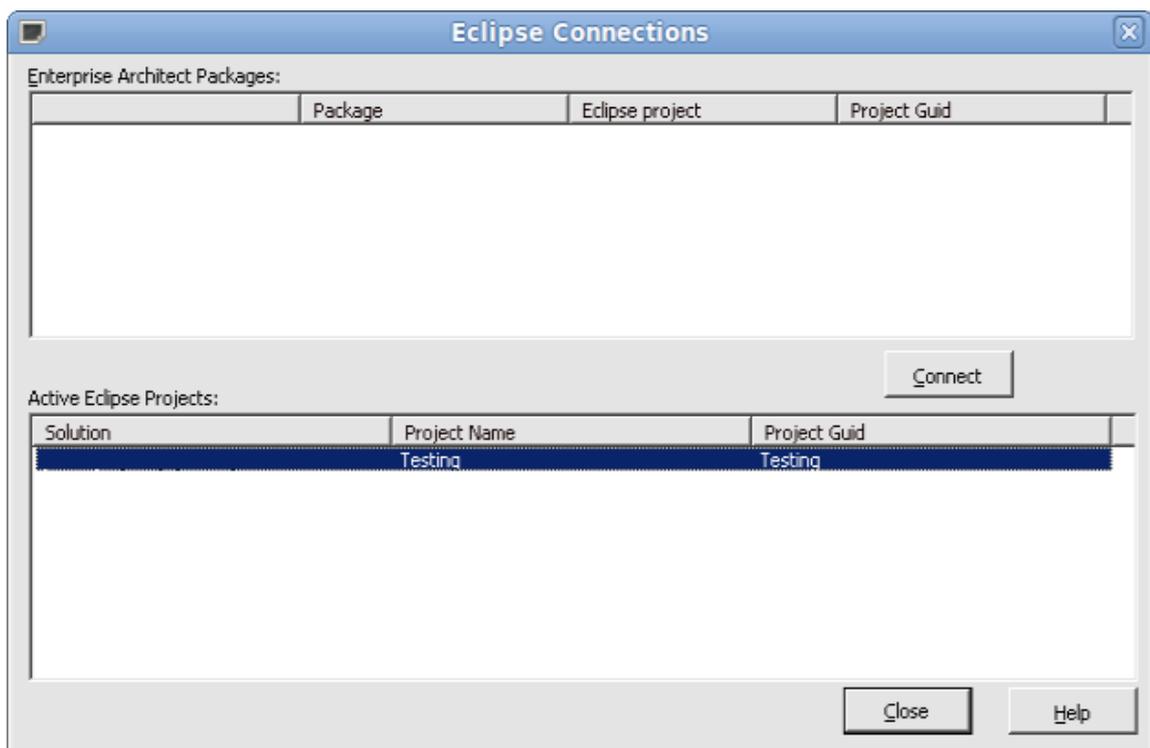
Step	Action
1	<p>To run MDG Link for Eclipse in the native version of Eclipse, Enterprise Architect's Plug-in jar files must be copied to the Plug-ins directory of the Eclipse installation. Copy the necessary jar files from your Enterprise Architect installation under Wine to your Eclipse installation.</p> <p>Two sample copy commands are shown here, with the jar file paths corresponding to 64 bit and 32 bit Wine installations respectively. You can copy one of these samples and replace the 'PATH_TO_ECLIPSE_DIR' text with your Eclipse installation path.</p> <ul style="list-style-type: none"> • <code>cp ~/.wine/drive_c/Program\ Files/Sparx\ Systems/EA/* .jar PATH_TO_ECLIPSE_DIR/plugins</code> • <code>cp ~/.wine/drive_c/Program\ Files\ (x86)/Sparx\ Systems/EA/* .jar PATH_TO_ECLIPSE_DIR/plugins</code>
2	<p>Start Eclipse and load the project to link to Enterprise Architect.</p> <p>Note: We recommend running Eclipse natively due to potential compatibility issues between Java and Wine that can manifest when running Eclipse via Wine</p>
3	<p>Start Enterprise Architect (via Wine) and open a project.</p>
4	<p>Configure the MDG Link for Eclipse connection options by invoking Enterprise Architect's 'Eclipse Options' dialog.</p> <p>From the ribbon choose: 'Specialize > Add-Ins > Eclipse > Options'.</p>
5	<p>Since Windows paths differ from Linux/macOS paths, you need to specify how file paths are handled in the 'Options' dialog, as illustrated.</p>



Replace 'Y:' with the path you use in Wine.

6 To link to an Eclipse project:

- Select a Package in Enterprise Architect's Browser window
- From the ribbon, choose 'Specialize > Add-Ins > Eclipse > Connect External Project'



Select the project you opened in Eclipse using the 'Connections' dialog.

Configuring Enterprise Architect's Pro Cloud Server Using Wine

Enterprise Architect's Pro Cloud Server can be installed and run on Linux using Wine. To configure the Pro Cloud Server using Wine, you need to consider the guidelines in the Help topic *Pro Cloud Server Configuration* and pay particular attention to the points regarding privileged ports on Linux and the commands for running the Pro Cloud Server in standalone mode.

Zero Config Client Support

Enterprise Architect can be used on client machines without having to be installed on those machines. This can ease deployment in a corporate environment, by running the system from a read-only shared folder. This enables a System Administrator to install Enterprise Architect once for all users rather than once on each computer.

- The ea.ini file will be read if it exists in the same directory as ea.exe
- To add settings, copy the value lines from a registry export of defined Enterprise Architect options
- It is recommended that you specify JET 4 support using the line "JET4"=dword:00000001
- You specify a keystore and the keys to checkout using the values 'SKT', 'SharedKeyFolder', 'SSKSAddress', 'SSKSPassword' and 'AutoCheckoutEx'
- Use the Cloud Service to deploy shared models without requiring additional database drivers and other software

Note: It is still preferable to install locally where possible. Without a local installation these restrictions apply:

- The Automation Interface and Scripting will not be available (without running the object registration as part of the install)
- Firebird models (with the extension .feap) cannot be loaded (without registering the ODBC driver as part of the install)
- JET 3.5 is no longer installed by default on Windows systems, and JET 3 drivers are unlikely to be available, so you will need to enable JET 4
- No file extensions will be automatically registered in this scenario; users can still manually configure their computers to use Enterprise Architect to open .eap files
- The file handler allowing Enterprise Architect to open source files and documents directly from the file system will not be available

The system administrator must first follow this process:

1. Install Enterprise Architect.
2. Open the application.
3. Connect to a keystore containing the key(s) everyone should use.
4. Select the 'Start > Application > Preferences > Preferences' ribbon option to display the Preferences window, click on the 'General' page and select the 'Use JET 4.0' checkbox.
5. Click on the Close button and then close down Enterprise Architect.
6. Open your registry editor and export HKEY_CURRENT_USER\Software\Sparx Systems\EA400\EA\Options.
7. Create an ea.ini file in the directory to be shared.
8. Copy these keys into the ea.ini file from the exported registry: JET4, SKT, SSKSAddress, SSKSPassword, and AutoCheckoutEx.
9. Copy the Enterprise Architect install files from 'Program Files' to a network share or USB device.
10. Optionally, mark the target directory as read-only.

Note:

- If the appropriate values for the ea.ini file are already known, steps 2-5 can be skipped
- Defaults can be configured by placing them after a registry key of the form "INIFILE_VERSION"=dword:00000043; these will only be executed when the existing value for this user is not the same value as the one in the file

Example - Checkout an Ultimate Key

This example sets JET 4 and configures a keystore. Using a configuration file to specify the settings for all users means that the users can select a key without having to connect to a keystore, as shown here. The first time this example is run it

checks out an Ultimate key, but allows the user to request a different key on subsequent logins.

```
"JET4"=dword:00000001
```

```
"SKT"=dword:00000001
```

```
"SSKSAAddress"="ssks://licenseserver"
```

```
"SSKSPassword"=""
```

```
"INIFILE_VERSION"=dword:00000043
```

```
"AutoCheckoutEx"=hex:1a,00,00,00
```

An Enterprise Architect user will just need to run the system from the network drive or USB device.

Version Activation

From release 14.0 onwards, Enterprise Architect requires that you 'activate' the software version you have installed by entering a simple four-letter code to confirm your right to use that specific version of Enterprise Architect. When you first run Enterprise Architect a Version Activation window will automatically display, prompting you to activate the software version you have installed.

Details:

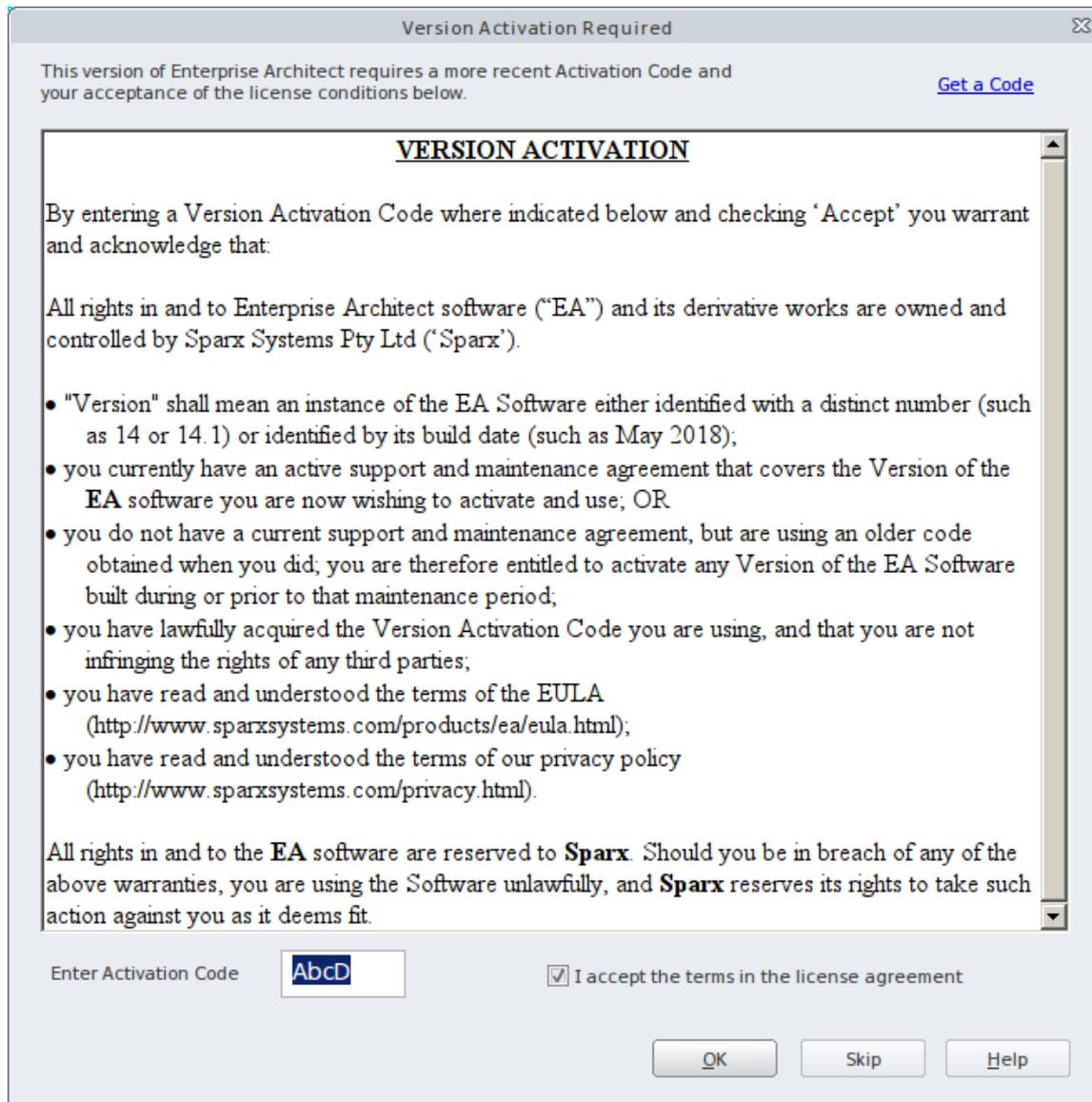
- 'Software Version' means an instance of the Enterprise Architect software, either identified by a distinct number (such as 14.1 or 15.0) or by its build date (such as March 2020)
- 'Software Version' is independent of and unrelated to the Edition of Enterprise Architect (such as Corporate or Ultimate)
- Version Activation does **not** involve or require a connection to the Internet
- Registered users with an active support and maintenance agreement can obtain a new activation code by logging in to the 'Registered Users' page of the Sparx Systems web site
- The Version Activation Code is prominently displayed on the 'Registered Users' page
- The Version Activation Code is also delivered with your New License or Renewal Details email
- You can also obtain a Version Activation Code by clicking the 'Get a Code' link on the Version Activation window and logging in using your registered user ID and password
- Your Version Activation Code will activate all versions of the software built and released prior to and during the period of your support and maintenance agreement (either from a Renewal or a New License)
- New versions of the software released after the expiry of your support and maintenance agreement will require a new Activation Code; when you renew your support and maintenance agreement you will be entitled to download newer versions of Enterprise Architect and will be given a new Version Activation Code

How To Activate:

- Enter your Activation Code in the appropriate field*
- Tick the checkbox to acknowledge acceptance of terms of the licence agreement
- Click on the OK button **

* *Please note that the code is not case sensitive.*

** *An internet connection is NOT required or used for activation*



Register a Full License

The free Trial Edition of Enterprise Architect available for download is an evaluation version only. For the full version you must first purchase one or more licenses.

The license key supplied determines which Enterprise Architect Edition (Professional, Corporate, Unified or Ultimate) is activated after installation.

The Corporate, Unified and Ultimate Editions can be activated by either a private license key or a shared (floating) license key. Shared license keys, for a user population that includes temporary users, are checked out of and in to a Sparx Systems key store.

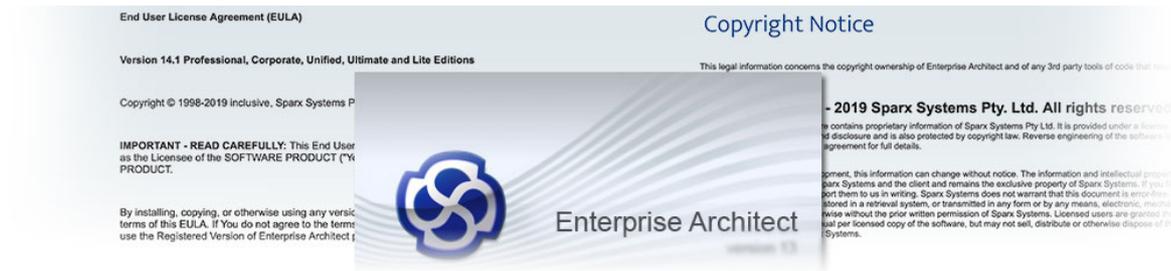
Obtain and activate the registered version of Enterprise Architect

Step	Action
1	<p>Purchase one or more licenses.</p> <p>Once you have paid for a licensed version of Enterprise Architect, you receive (via email or other suitable means):</p> <ul style="list-style-type: none"> • A license key or keys • A web site address from which to download the full version • (If you have purchased a Sparx Systems key store) a web site address from which to download the key store
2	Save the license key(s) and download the latest installation package from the address supplied.
3	Run the set up program to install the full version.
4	<p>Open Enterprise Architect from the 'Start Menu' or desktop icon.</p> <p>The 'License Management' dialog displays.</p>
5	<p>Click on the Add Key button.</p> <p>The 'Add Registration Key' dialog displays; register your key.</p>
6	<p>Click on the OK button.</p> <p>The full version is now activated on your PC, and Enterprise Architect displays the message:</p> <p><i>Registration succeeded! Thank you for purchasing Enterprise Architect <type> Edition</i></p>

Notes

- Private license keys and shared license keys have different formats, so you cannot use one in place of the other

Formal Statements



Please take the time to read these legal statements concerning Sparx Systems Enterprise Architect.

Legal Notes

Sparx Systems would like to gratefully [Acknowledge](#) to the development of Enterprise Architect.

Statement
Software Copyright Notice
Enterprise Architect End User Licensing Agreement
Acknowledgement of Trademarks

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Scintilla and SciTE

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Sparx Systems Enterprise Architect Modelling Tool

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Version 16.0 Professional, Corporate, Unified and Ultimate Editions

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- "SPARX support engineers" means employees of SPARX who provide on-line support services;
- "Trial Edition of Enterprise Architect" means the edition of the SOFTWARE PRODUCT which is available free of

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- "EA LITE" means the LITE edition of Enterprise Architect that is distributed free of charge as a read-only viewer of .eap files.
- "Zero Config" means running the SOFTWARE PRODUCT instance locally on an end user machine, as per the terms of this license, where the binary executables and associated files are stored and accessed from a network file server instead of being installed locally on the end user machine.
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Upon payment of the license fee, YOU will be sent details on where to download the Registered Edition of Enterprise Architect and will be provided with a suitable software 'key' by email.

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- ◆ Sub-licensing Enterprise Architect by 3rd Parties to end users is not permitted;
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	Registered Trademarks: Zachman® Zachman International®
The Object Management Group (OMG)	AML™ BPMN™ Business Process Model and Notation™ CORBAfacilities™ CORBAmed™ CORBAnet™ CORBAservices™ CWM™ DDS™ Executable UML™ IDL™ MARTE™ Model Driven Architecture™ MOF™ Object Management Group™ Object Request Broker™ OMG™ OMG Interface Definition Language™ OMGL™ OMG MDA™ OMG Model Driven Architecture™ OMG SysML™ ORB™ The CORBA Academy design The CORBA logo Unified Modeling Language™ Registered Trademarks: CORBA® CORBA Academy® IIOP® MDA® SoaML® SysML® The OMG Object Management Group logo The Information Brokerage® The UML Cube logo UML® XMI®

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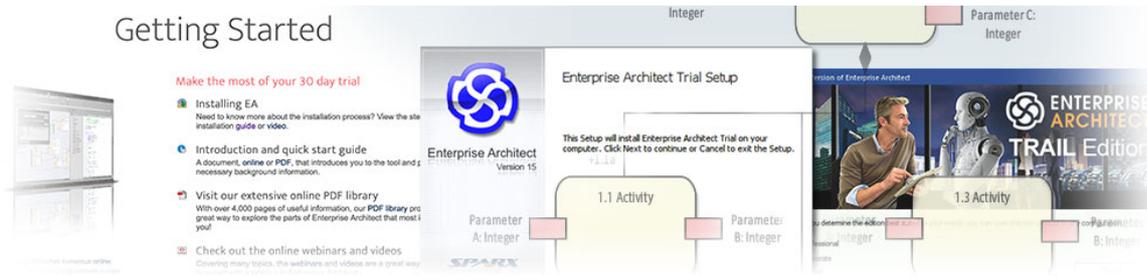
Acknowledgements

Some parts of this application include code originally written by various authors and modified for use in Enterprise Architect.

Contributors

Name	Detail
Mike Marquet	Print listview contents
Davide Pizzolato	CXImage Library © 7-Aug-2001
Neil Hodgson	Scintilla editor © 1998-2003
Others	Many thanks to all those who have made suggestions, reported bugs, offered feedback and helped with the beta-testing of Enterprise Architect. Your help has been invaluable.

The Trial Edition



The fully functional 30 day Trial Edition of Enterprise Architect is available free of charge on the [Sparx Systems website](https://sparxsystems.com/products/ea/trial/request.html) (<https://sparxsystems.com/products/ea/trial/request.html>). The Trial Edition is identical to the registered edition except that all diagrams are output to files with an embedded watermark, and certain features are read-only.

Trial Details

Option	Detail
<p>Try Out Editions</p>	<p>You can use the Trial Edition to explore and evaluate Enterprise Architect, checking the edition you are interested in and trying out other editions for comparison.</p> <p>When you start up the Enterprise Architect Trial Edition, the 'Select Trial Version' prompt displays; select the mode to trial.</p> <p>If necessary, you can close down Enterprise Architect and restart it in another mode for comparison.</p> <p>The prompt also directs you to useful information such as a walkthrough of the Enterprise Architect facilities, and options to select one of several workspace layouts.</p>
<p>Trial Period</p>	<p>As you are evaluating the Enterprise Architect Trial Edition, note that the software operates for a limited period, and denies access after the trial period has elapsed.</p> <p>To continue using Enterprise Architect when the trial period expires, you can either:</p> <ul style="list-style-type: none"> • Apply to extend the trial period, or • Purchase and register a full license; on purchase of a suitable license or licenses, the registered edition is made available for download <p>The latest information on pricing and purchasing is available on the Sparx Systems website; for more information, contact Sparx Systems by email.</p> <p>When you order and pay for an edition of Enterprise Architect, you receive installation instructions and the location of the executable files for download.</p>
<p>Extend Trial Period</p>	<p>If you are testing the Trial Edition and require more than 30 days to evaluate it, you can apply to Sparx Systems Sales for an extension of the trial period.</p> <p>The trial period must expire before you can enter the extension key.</p>

Extend the Trial Period After Receipt of Extension Key

Step	Action
1	<p>Open the Enterprise Architect Trial Edition.</p> <p>The 'Evaluation Version of Enterprise Architect' dialog displays; once the trial period has expired, you cannot proceed beyond this dialog without extending the trial period.</p>
2	<p>Press Ctrl whilst you click on the Continue Trial button.</p> <p>The 'Upgrade Key' dialog displays.</p>
3	<p>In the 'Upgrade Key' field, type or copy-and-paste the extension key you received from Sparx Systems Sales.</p>
4	<p>Click on the OK button.</p> <p>Enterprise Architect confirms that your trial period has been extended.</p> <p>Your trial period is extended by the period of days stated in the email from Sparx Systems Sales; you can now restart and continue to use the Trial Edition of Enterprise Architect.</p> <p>The trial extension displays an error if you enter anything other than a valid trial extension key; it does not accept registration keys for purchased editions of Enterprise Architect - you must download the correct installer for your purchased edition, from the Sparx Systems website.</p>

Install the Trial Edition

This topic briefly describes how to install the Enterprise Architect Trial Edition, a free, fully-functional application that enables you to explore the user interface and facilities of Enterprise Architect for a 30 day period, in the configuration of whichever editions of the registered software you want to try out. You can - on application to Sparx Sales - extend the trial period for an additional 30 or even 60 days.

The installation procedure described here is generic. For system requirements and information relevant to particular operating systems, see the Enterprise Architect Help topic *Installation* (Product Information > Ordering and Installation > [Installation](#)).

Installation Procedure

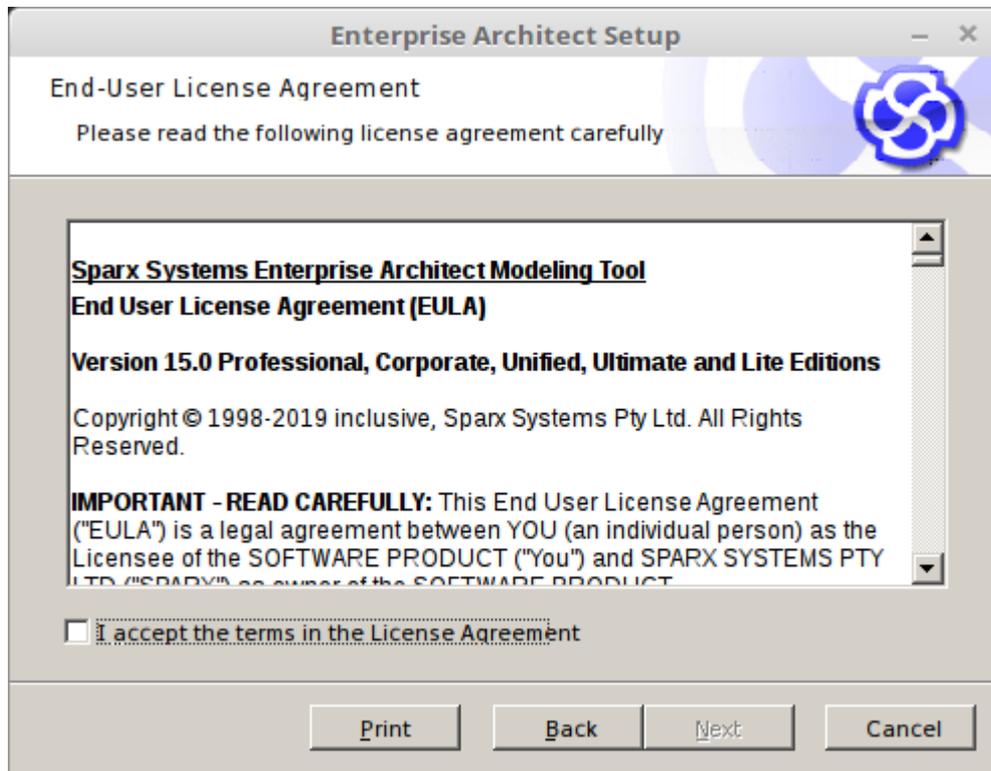
Download the latest installer for the Trial Edition from the Sparx Systems web site.

[Download the Trial Version](http://sparxsystems.com/products/ea/trial/request.html) (<http://sparxsystems.com/products/ea/trial/request.html>)

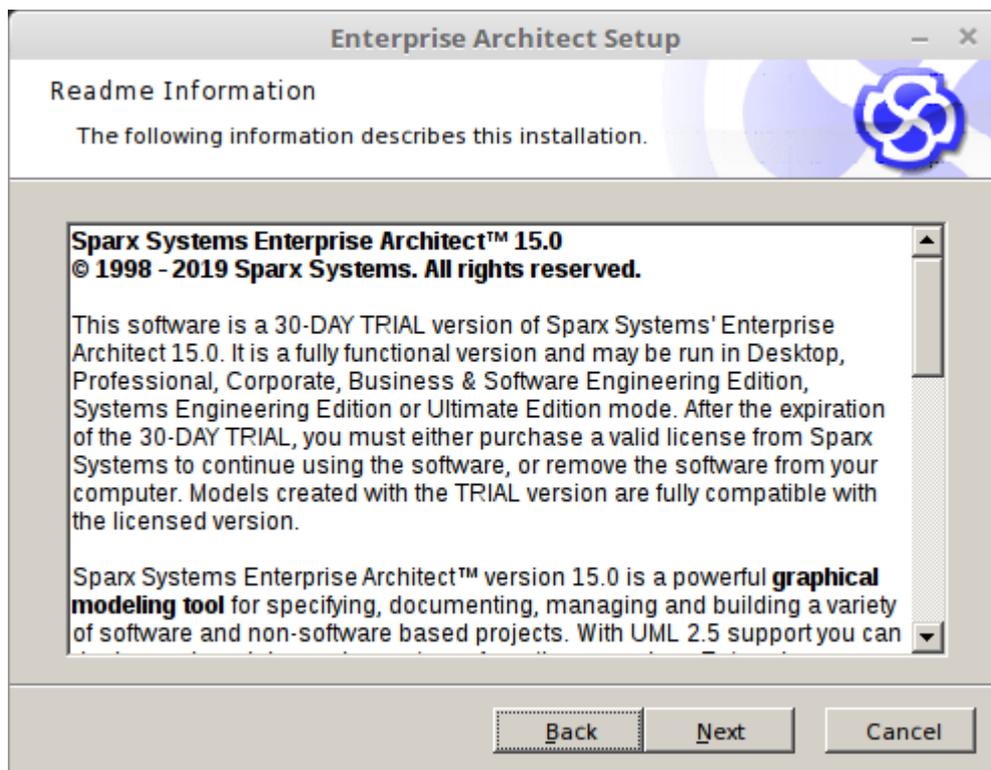
When the download is complete, double-click on the installer file to begin the installation. The installer will guide you through the installation process.



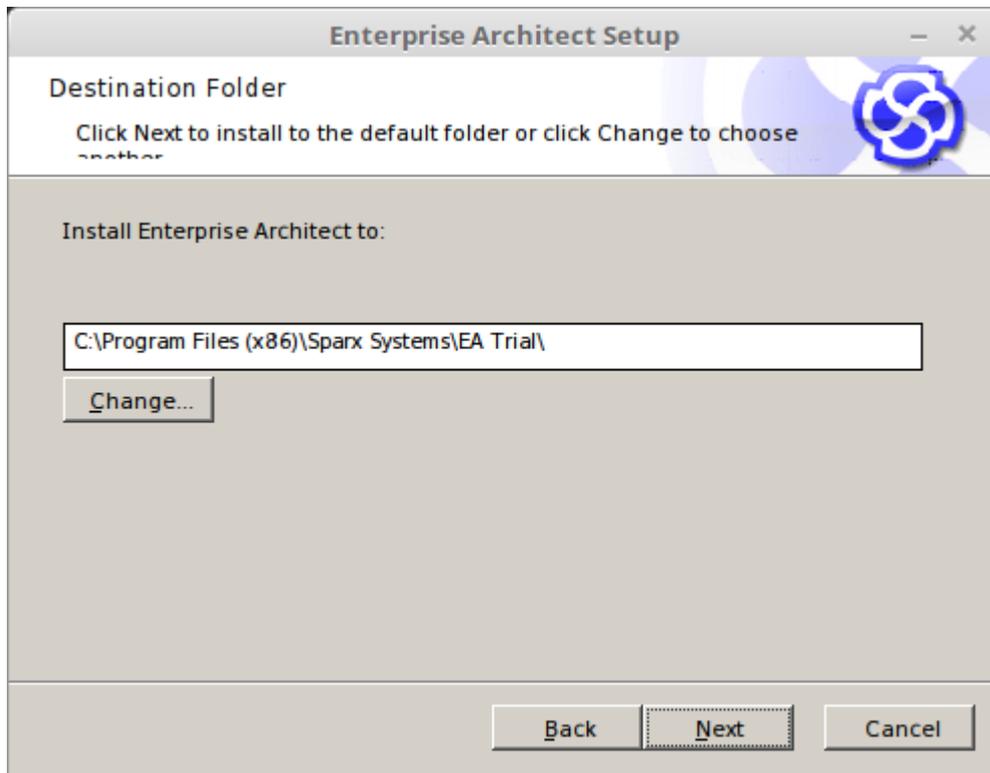
Click on the Next button.



Read the License Agreement, click on the 'I accept the terms in the License Agreement' checkbox and click on the Next button.

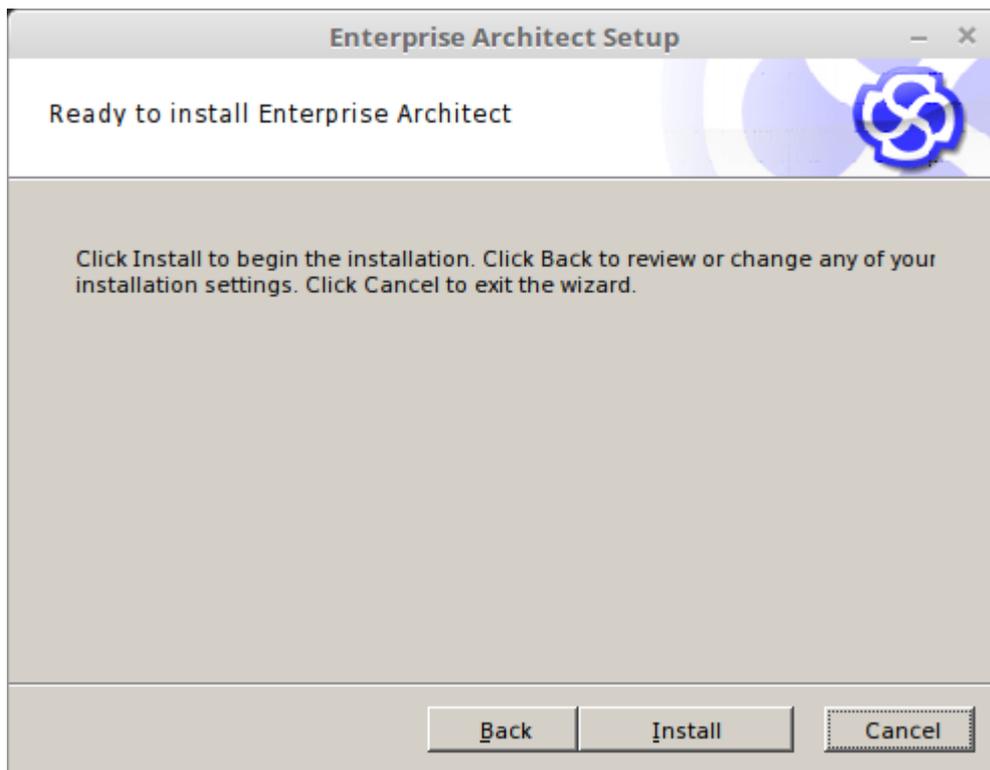


Read the 'Readme Information' and click on the Next button.

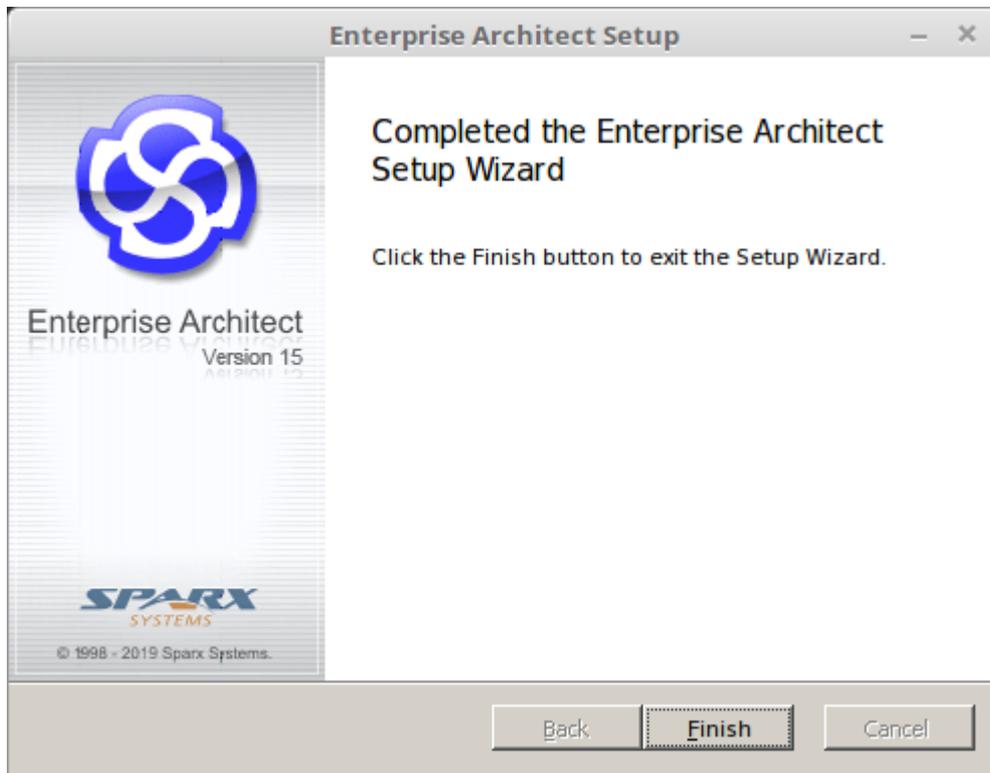


Click on the Next button to install the Trial Edition to the default location.

If you need to install to a special location, click on the Change button and provide a different path, click on the OK button and then on the Next button.



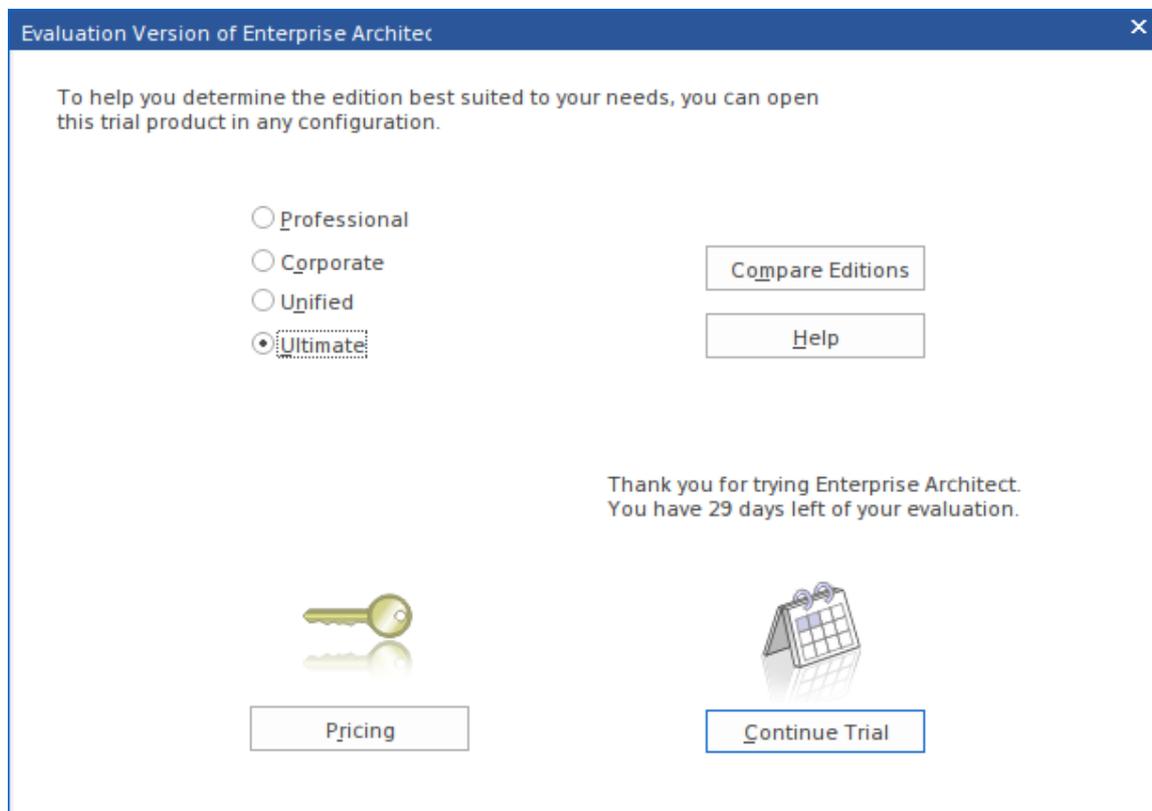
Click on the Install button, and observe the 'Status' bar indicate the progress of the Enterprise Architect installation. The dialog changes automatically.



Click on the Finish button and check that the Enterprise Architect icon is displayed on your workstation desktop.



You have installed the Enterprise Architect Trial Edition. Double-click on the icon to open the product. The Enterprise Architect workspace displays, overlaid by the 'Trial Version' screen.

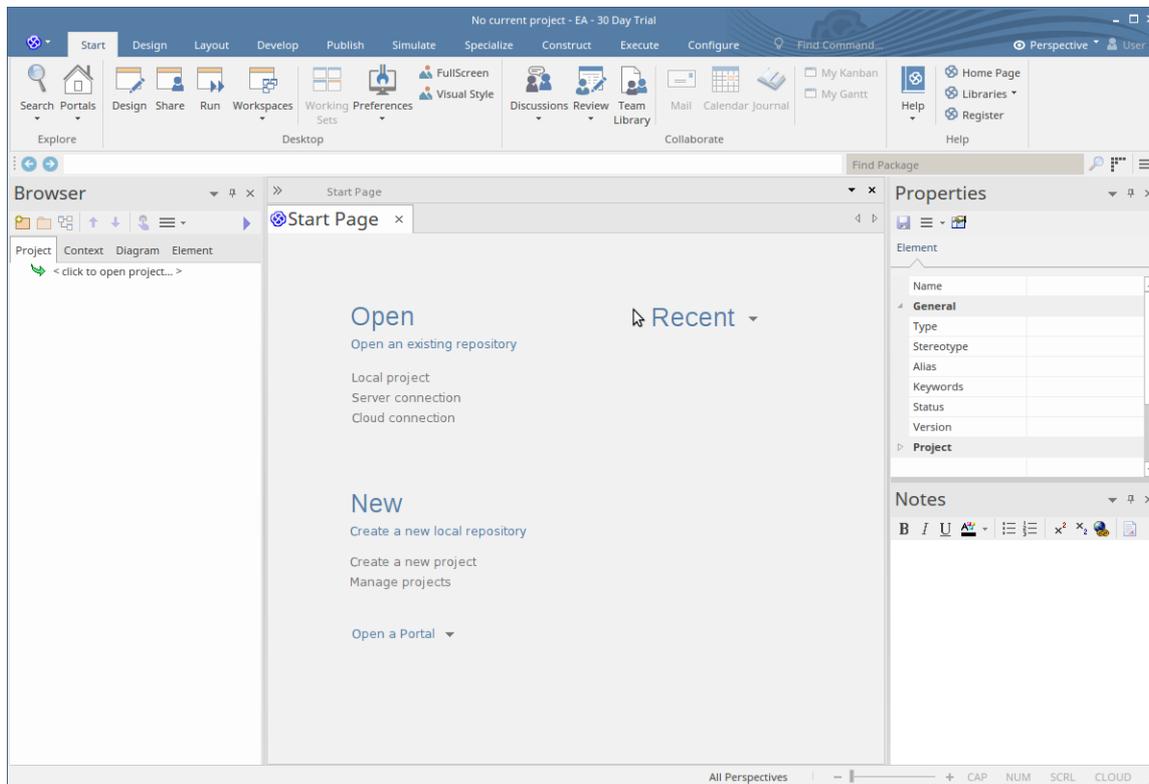


Over time, the dialog shows a count-down of the days left in the trial period. During the trial period, read the Help topic on [The Trial Edition](#) (Product Information > The Trial Edition), which explains how to extend the trial period.

The screen also displays a radio button for each of the editions of Enterprise Architect that you can try out. This screen displays whenever you open the Trial Edition, so you can explore different editions as many times as you want within the trial period.

Click on the radio button for any edition (for the purposes of this guide, it does not matter which) and click on the Continue Trial button.

The Enterprise Architect workspace displays.



We provide a simple guide - [Guide to the Trial Edition](#) - to help you learn about the user interface and how to start modeling with Enterprise Architect. Refer to that guide now.

Notes

- You cannot 'convert' the Trial Edition into the purchased registered product; you uninstall the Trial Edition before installing a registered edition
- The Trial Edition is available from an 'open' web page, whilst the registered editions are downloaded from a registered user web page, which you can access only by entering user credentials; these credentials are provided to you when you purchase the registered product

Guide to the Trial Edition

Thank you for downloading the Trial Edition of Enterprise Architect and taking this time to become acquainted with what the tool suite has to offer. We hope this short Guide will prove helpful in showing you how to get started and understand some of the crucial modeling concepts underlying the tool.

Over the next 30 days you will have the opportunity to test-drive Enterprise Architect in all its different editions and find out for yourself how it can help visualize, examine, verify and enhance your understanding of complex solution domains across the Business, Software, Systems and Architecture areas.

This Guide is intended to supplement and support your initial contact with Enterprise Architect, and covers the more important concepts and behaviors that are critical to getting the most out of the tool.

Here is an overview of the Guide and its intended purpose:

- Part 1 is a brief introduction to some important concepts concerning the tool, its repository based modeling and the general function of the user interface
- Part 2 will step you through starting up Enterprise Architect, finding the most common and necessary controls and windows, and learning how to customize the user interface
- Part 3 will walk through creating a new model, setting a Perspective and using pattern-based model fragments to fast track model construction
- Part 4 is a collection of 'where to next' suggested links to other material that will enhance and enrich your Trial experience, depending on your personal requirements

Please take the time to read through this document if you are a newcomer to Enterprise Architect, as it covers some of the most fundamental concepts and tools you will be using during this trial period. Enterprise Architect is an incredibly rich and extremely effective modeling and design tool that implements many technologies, frameworks and tools. Walking through this Guide will help you find the right tools and right modeling language(s) for your needs.

Thanks once again for taking the time to try out Enterprise Architect. If you have any problems with installation or getting started, please contact the Sparx Systems Trial support team, at trial-assist@sparxsystems.com.

Part 1 - Concepts

More than a Drawing Tool

One of the most important concepts underlying Enterprise Architect is that it is far more than a simple drawing tool. Unlike many of the simple drawing tools that sometimes present themselves as modeling tools, in Enterprise Architect all models are stored in and built on very detailed and rich repositories. Some important results of this approach are:

- A diagram in Enterprise Architect is a view of some part of the underlying model
- Model elements can appear in multiple diagrams
- Updating an element in one diagram will update it in all other diagrams it appears in
- Connections between elements are first-level model elements, not just visual representations
- The Browser window (a UI window you will learn about later) is the doorway into the model itself
- The Diagram Toolbox has a palette of appropriate elements for the current diagram type and modeling language
- Elements from modeling languages have special properties, characteristics and linkage restrictions

Repository Based Modeling

A model Repository in Enterprise Architect can be implemented in a number of ways, depending on need. Regardless of the type it is important to note that you must create or open a repository before you can do any modeling.

Some typical repository types include:

- A single file (.eap/.eapx/.fdb/.feap) which is typically used by a single developer
- A DBMS (Oracle, SQL Server, MySQL ...) based repository used by workgroups and larger teams
- An internal LAN based Sparx Cloud-Server repository (with .FDB or DBMS back end) for simplified deployment, efficiency and other benefits
- A web facing Sparx Cloud-Server repository for globally distributed development, stakeholder access, optimization and more

The kind of modeling you will do usually determines the kind of repository you will need. For the purposes of your Trial, the single file approach will be the easiest to start with, unless you have access to some pre-existing larger repositories. This guide will assume a single file as the simplest solution to get started with. But remember, your single file model can always be scaled up later into a full DBMS or Cloud based repository if required!

Technologies, Perspectives & Frameworks

Another term you will come across a lot in learning about Enterprise Architect is 'Technology'. In this special case, what is meant is a collection of domain-related modeling elements that together form a unique modeling language. For example, UML 2.5 is an open standard modeling language supported by Enterprise Architect; it is commonly referred to as the 'UML Technology' or 'UML Perspective'.

Technologies

- A Technology is a collection of related modeling elements forming a modeling language
- A Technology in Enterprise Architect can also include scripts, shapes, document templates, patterns and other useful artifacts
- Technologies can be turned on and off as required in a model repository

Patterns

- Patterns are collections of re-usable modeled content, for example a basic Use Case Model or simple Class Model
- Patterns are used to kick start modeling and speed up the creation of common modeling solutions
- Enterprise Architect includes a collection of over 1000 patterns with detailed explanations, in many different modeling languages

Perspectives

- A Perspective is a constraint placed upon the user interface to only show a particular technology or set of technologies
- A Perspective is used to reduce complexity and help you focus on your task

Frameworks

- A Framework is a collection of patterns, modeling languages and other material that together support a modeling approach
- Frameworks can aggregate different modeling languages and often help determine model structure

As you work through your 30 day Trial, you will become very familiar with these terms and see how each contributes to your modeling expressiveness and effectiveness.

Things you can do with a Model

Because an Enterprise Architect model is repository based with a rich set of connections, meta-information and other material supporting the visual aspect, it is possible to take the model and create a wide range of new material from the model itself. Some possibilities include:

- Documents in rich text or PDF format that expose underlying aspects of the model as well as the visual representations
- Code generation from Class models and from behavioral models
- Model interchange material in XMI and other formats so that your model can be read and acted on by other tools
- Simulations of behavioral models in a variety of formats such as BPSim, DMN, State Models, Activity Graphs and more
- Applying a range of mathematical simulation tools to Systems simulation and Dynamic simulation
- SysML simulation with OpenModelica or MATLAB
- Conduct reviews of model content
- Make models accessible online with WebEA and ProCloud Server

Once you move your model in a DBMS or Cloud based repository you might also implement model security to control who can modify the model and control locking on individual elements. In the Ultimate Edition you might also implement Row Level Security and control which users can see what parts of the model.

For the ambitious it is also possible to access the underlying model using the automation (Active-X) interface of Enterprise Architect using scripts and Plug-ins, or if accessing a Sparx Pro-Cloud Server, via the OSLC interface - a RESTful API for exploring and modifying the model using standard web based calls.

Next Step

Having installed the Enterprise Architect Trial Edition, you can now start it up and explore it. Please refer to the next section 'Part 2.0 - First Contact'.

Part 2 - First Contact

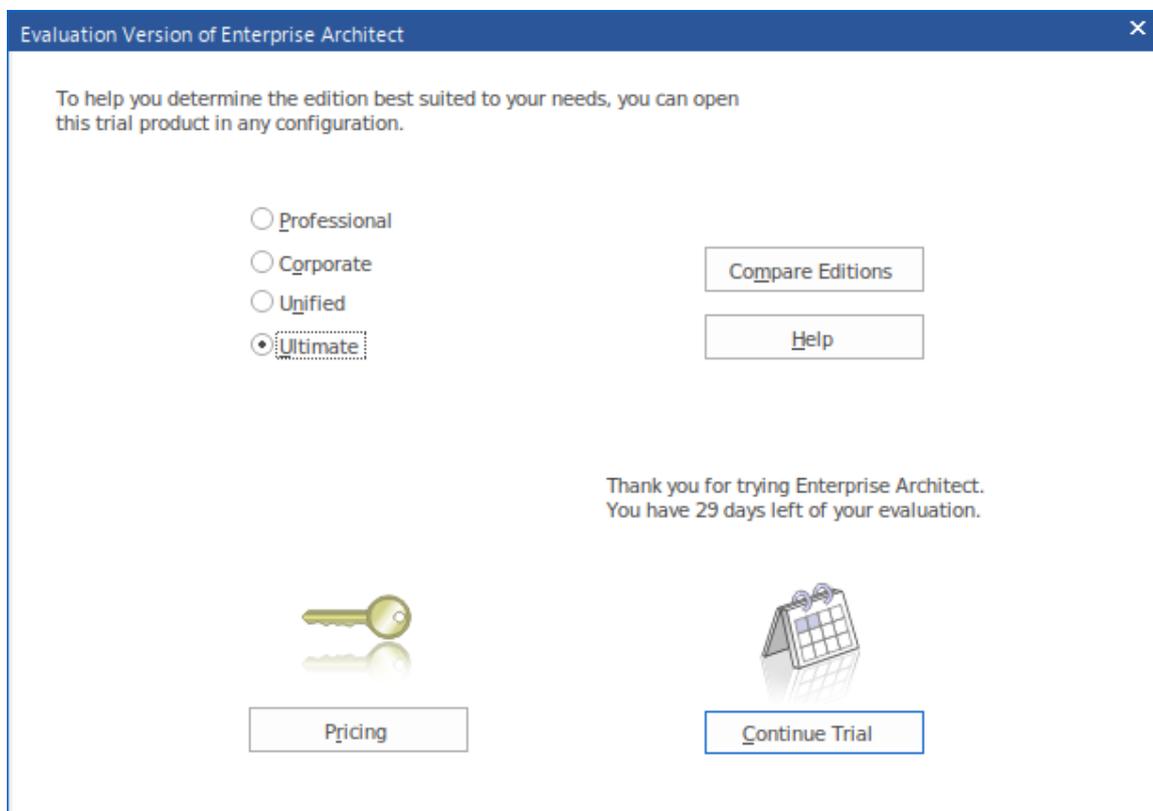
Starting Enterprise Architect

We hope you are now familiar with the concepts presented in Part 1 of this Guide. It's now time to start up Enterprise Architect and find your way around the user interface. Along the way you will make a few choices to help tailor the Trial Edition to your purpose. Note that any decisions you make are not final and can be changed by restarting Enterprise Architect or using the various preference tools to customize your experience.

Assuming you have installed Enterprise Architect you can now click on the desktop icon (if available) or find the shortcut in the Start Menu if preferred. Presuming everything is in place we are now on our way.

Some House-keeping

During the process of opening the Trial, a dialog will pop up.

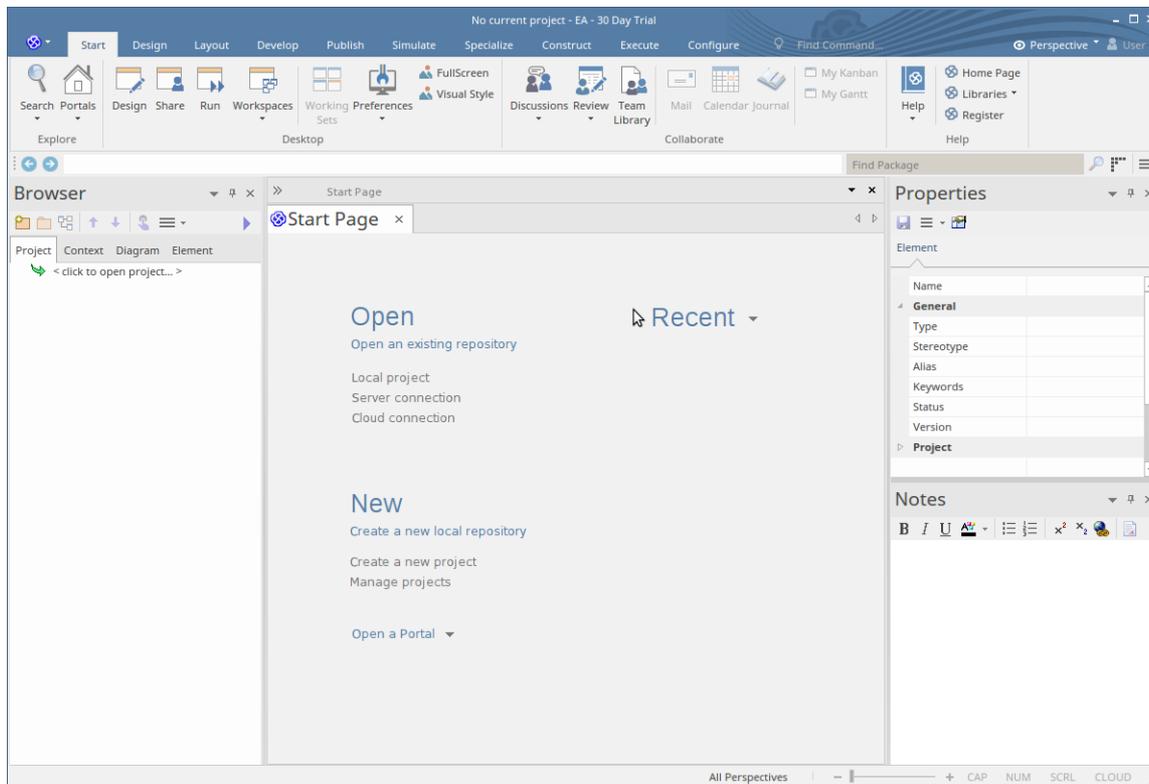


This dialog confirms that you have started using the Trial Edition for the 30-day trial period, and provides an option for accessing the web site to review pricing and purchase options for the product. Also displayed is set of radio buttons from which you select the edition of Enterprise Architect that you want to try out. Information about what each of the different editions includes and does is available from the website by clicking on the Compare Editions button.

This dialog will display whenever you open the Trial Edition, so you can explore and compare different editions as many times as necessary within your trial period.

As shown, the dialog also displays a count-down of the days left in your Trial period.

Click on the radio button for any edition (for the purposes of this topic, it does not matter which) and click on the Continue Trial button; the main Enterprise Architect workspace displays.



You can tailor this workspace to have a different layout, content and appearance to support your work tasks; we will show you how in a later topic.

First Steps

Very (very) important!

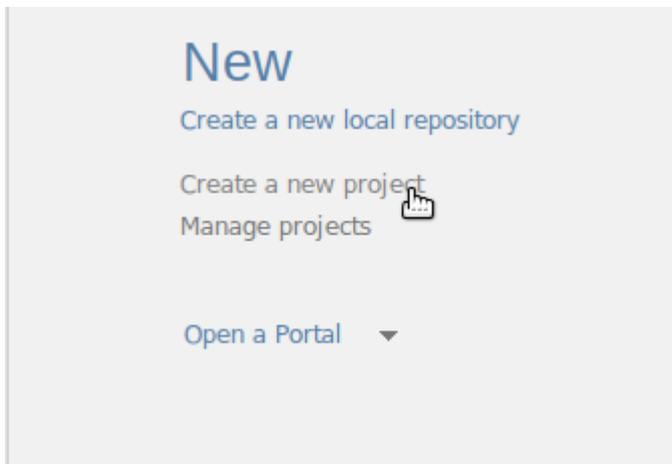
When Enterprise Architect starts up there is **no current repository** selected. Before you can start modeling and creating diagrams you will need to either open an existing model or create a new one. If this is your first time working with Enterprise Architect and you don't have any existing models to use, you should create a new file based repository that you can experiment and play in while you learn about modeling and using Enterprise Architect.

Let's create a new Repository file now.

Press Ctrl+N which is the hot key to create a new file based repository

-or-

In the 'New' section on the Enterprise Architect Start Page, click on the 'Create a new project' option

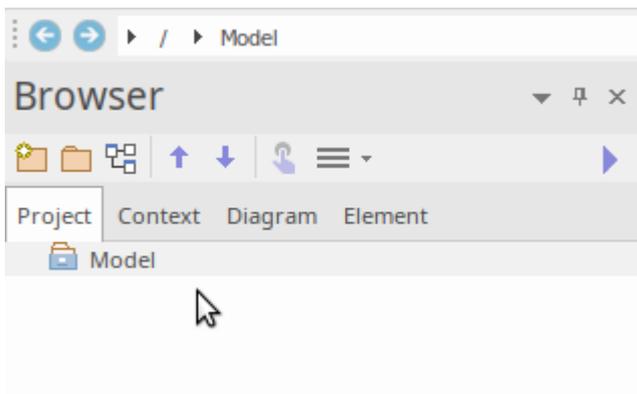


Select a filename and location for your repository

You will be prompted to select a file name and location for your new repository. Once you have chosen a name and location, click on the OK button and Enterprise Architect will create a new empty model for you to begin working with.

What has changed?

Although not much will appear to have changed, you now have a working repository into which you can start adding new elements and diagrams. The main thing to note is that the Browser window now has a new root element called 'Model' which is the starting point from which you will build your own individual repository.



Where are we now?

By now we have started up the Trial Edition, created a new repository and loaded that repository into the Enterprise Architect workspace. Next up we will create some new model elements and diagrams, before moving on to a brief overview of the user interface.

Part 3 - Building a Model

First Steps

Now that we have a new model created and loaded into the workspace (from Part 2), our new goal is to **add some content** to the model.

There are many ways to add content, but for this first example we will take a convenient shortcut and add model content using a model pattern. To do this you will:

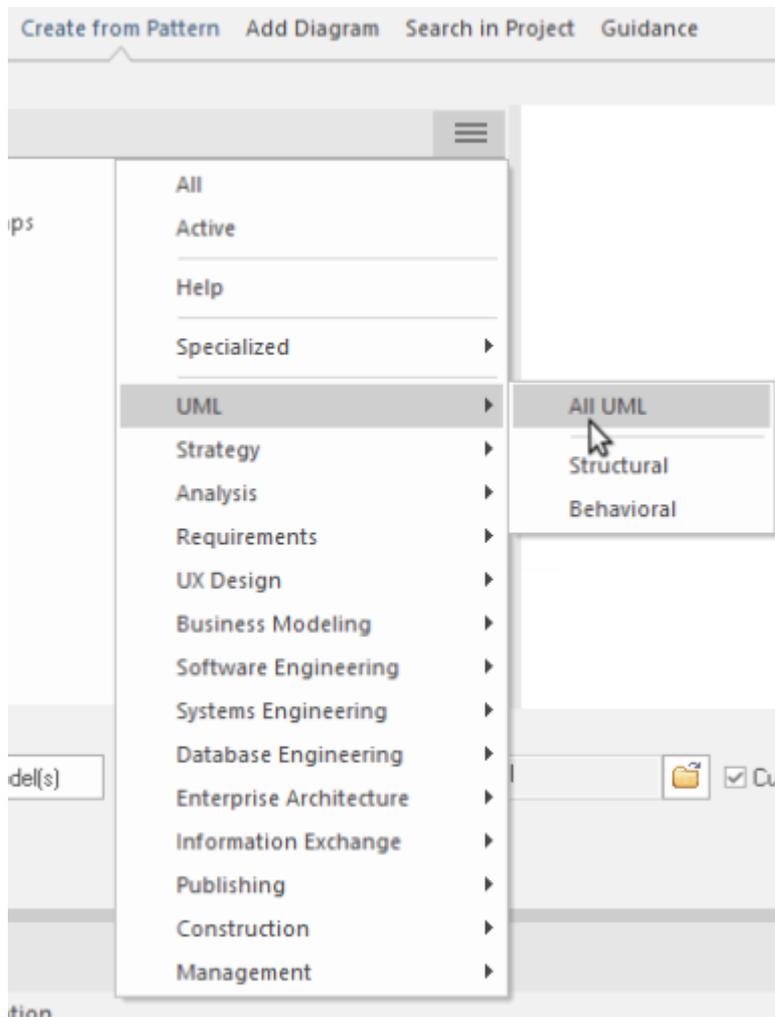
- Select an appropriate Perspective
- Select a model pattern
- Familiarize yourself with the pattern content
- Add the pattern content to your repository
- Find the new content in the Browser window and explore any new diagrams

So let's get started ...

Selecting a Perspective

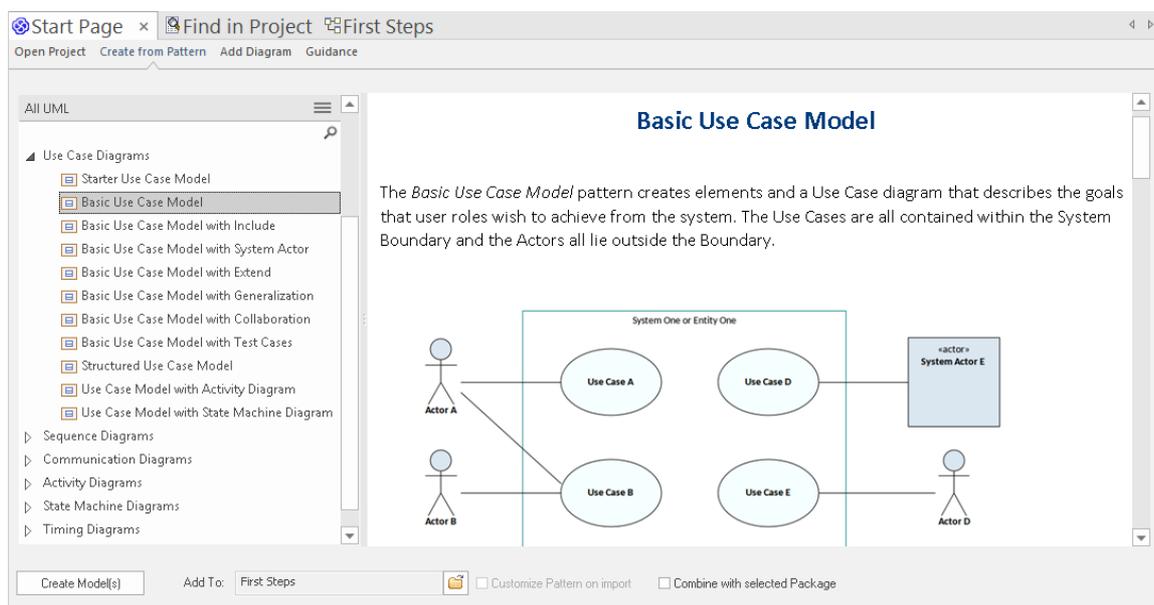
As we mentioned earlier, a Perspective is a constraint placed on the workspace to only show a limited set of Technologies. We can select a Perspective in a number of ways, but for this walk through we will use the drop menu in the 'Create from Pattern' tab of the Start Page. Our goal will be to create a simple Use Case model that we can later extend and customize.

Once you have found the 'Create from Pattern' (Model Wizard) tab, click on the  icon above the left-hand panel and select 'UML | All UML' as shown here.



Using a Pattern

Doing this will cause the Model Wizard to show all the UML Model Patterns (and there are quite a few!) Scroll down until you find the 'Use Case' section and select the 'Basic Use Case Model'. You should now be looking at something resembling this image:

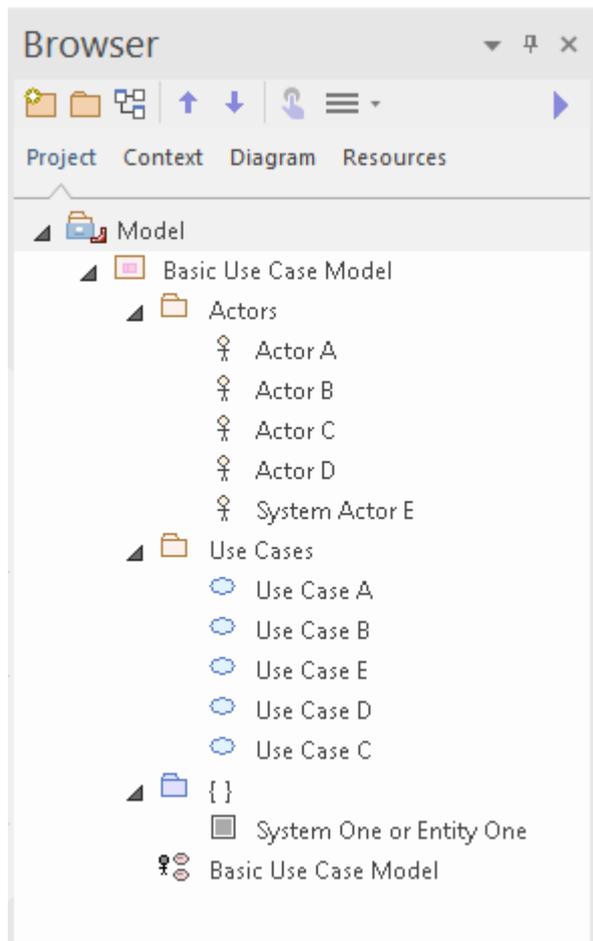


Note that the right hand side has some very useful information about the pattern, including an image to show what you will get, a discussion of when you should use this pattern, additional references and other material. While some of the terms and references might be unfamiliar at this stage, it would be a good idea to do a quick read through to become aware of what we are adding to the new model.

When you have finished reading, click on the Create Model(s) button located in the lower left corner of the Model Wizard. Enterprise Architect will now create new model elements, diagrams and Packages as required to make a copy of this pattern for you to customize and play with.

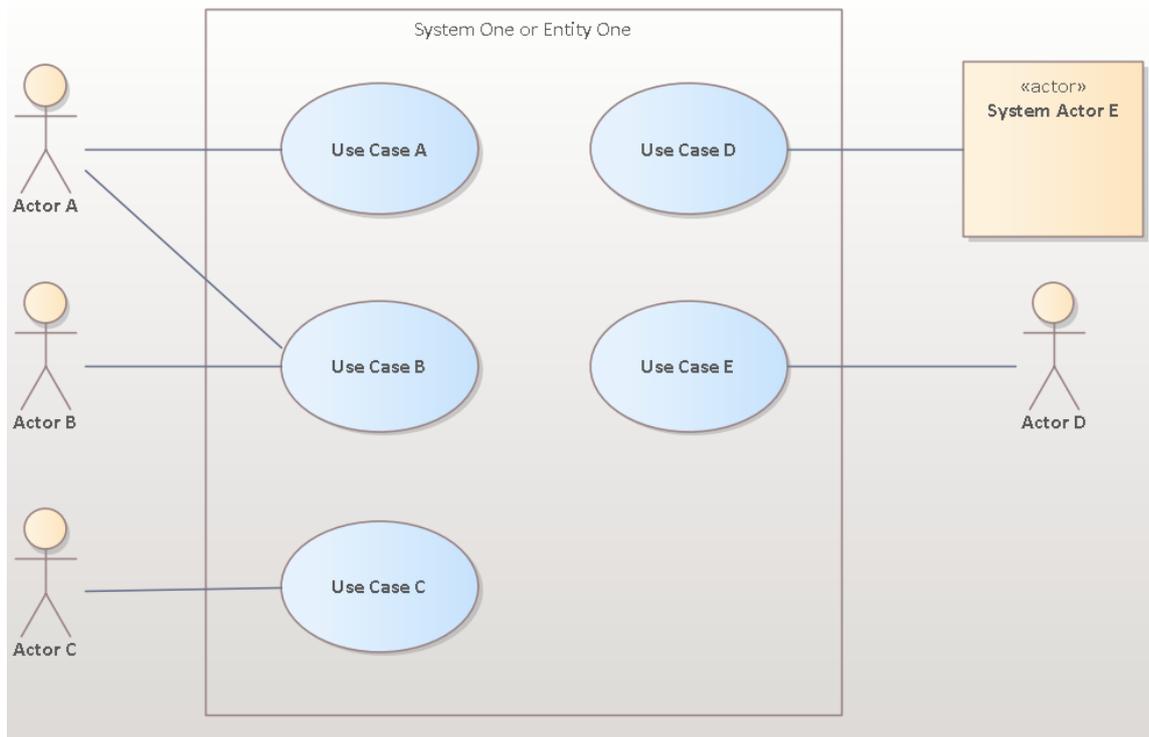
Lets look at the Browser window

Ok, now that we have created our first model content, let's take a look at what we have added. To do this, take a look at the Browser window.

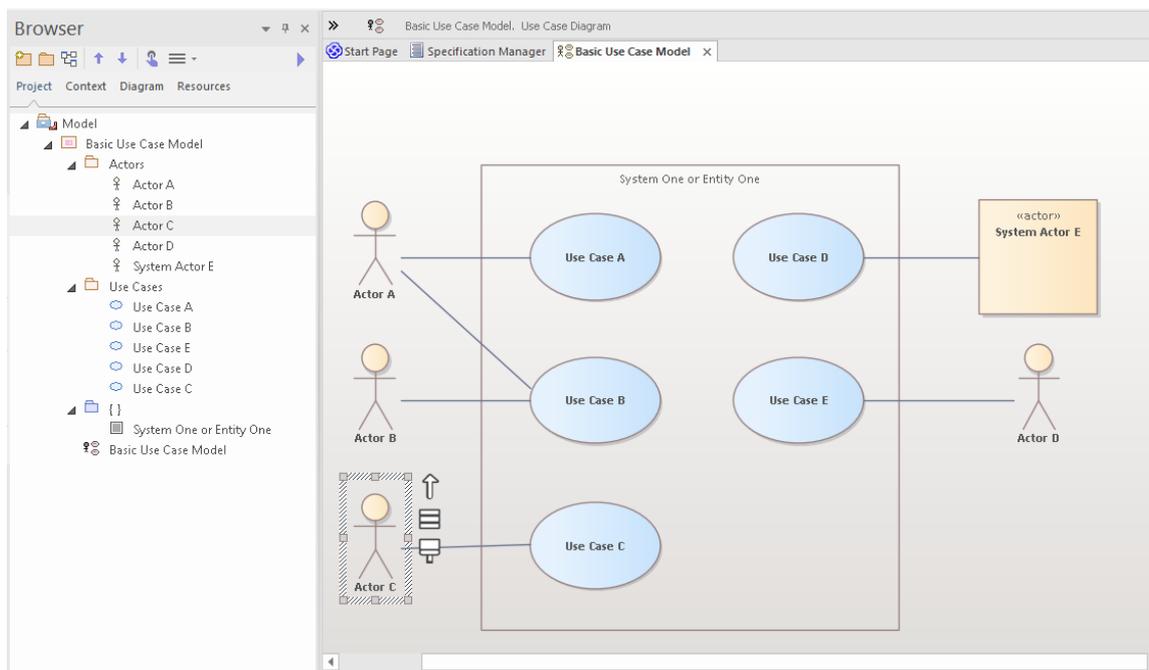


As you can see from this image, there is new content that has been added to the model. This includes a top level Package and diagram, and some Actors and Use cases (within the 'Actors' and 'Use Cases' Packages). Let's take a look at this in detail.

Double-click on the 'Basic Use Case Model' diagram link to show the graphical view of what we have. You should see this diagram:



In this diagram you can see several Actors and Use Cases. If you click on one of the Actors and then press Alt+G, or right-click and choose 'Find | In Project Browser' from the context menu, the 'Actors' Package is expanded and the element selected in the diagram will be selected in the Browser window, as shown here.



As you can see, there is an underlying model-level element in the Browser window that has a graphical representation in a diagram. Note that you can place a single model element in as many diagrams as you like, and that changing the name or notes or other element properties will be reflected immediately in all diagrams in which the element has been placed.

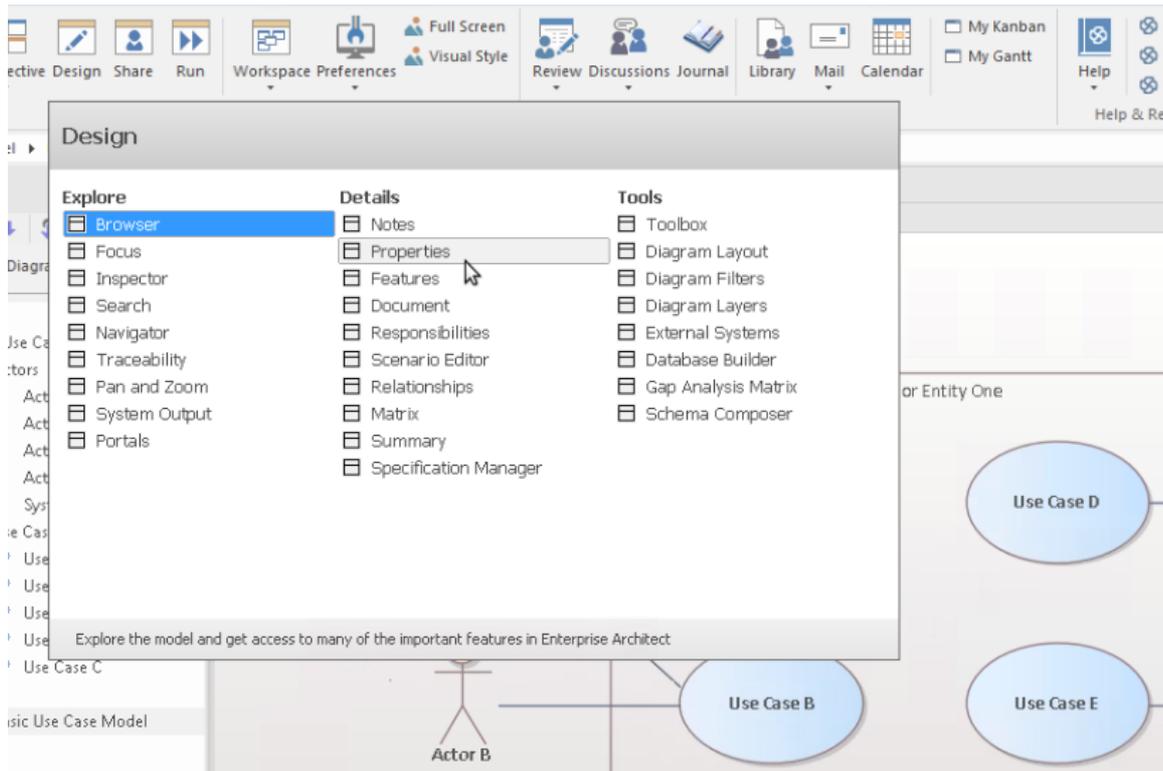
Working with Properties

Let's take a closer look at one of the elements and see what kind of information you can add to describe in detail what a

particular element's purpose and behavior can be.

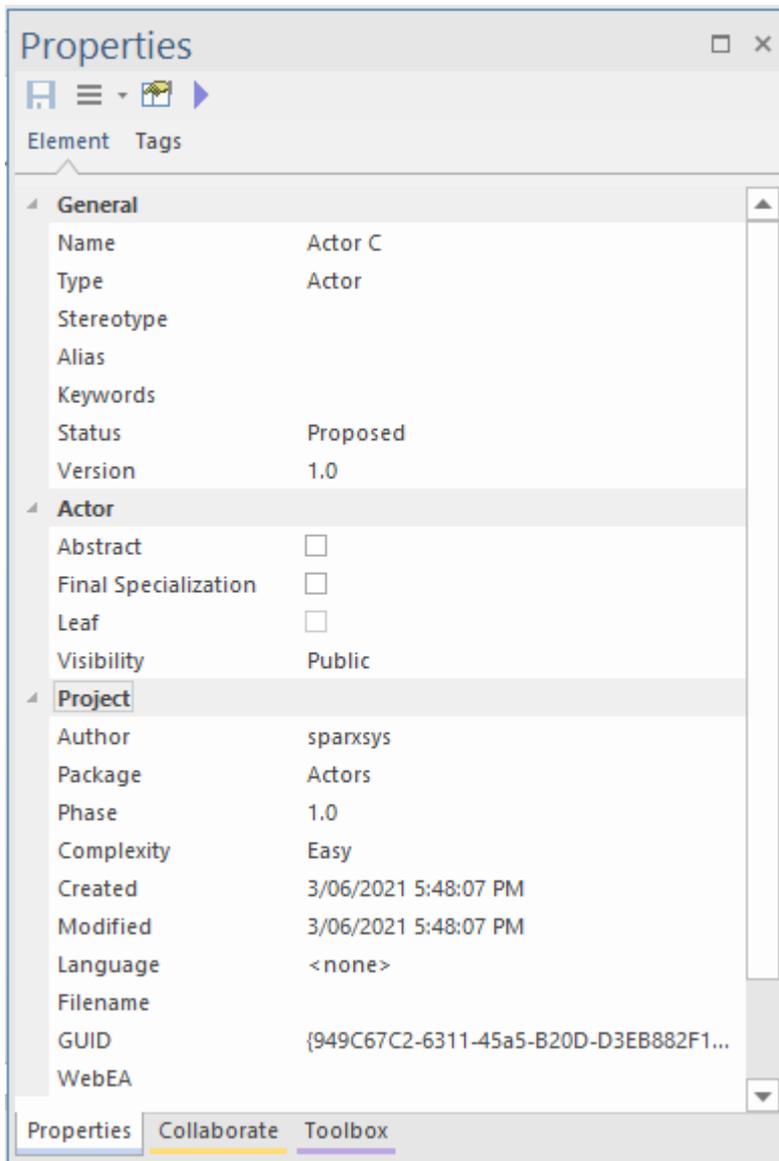
There are many property windows in Enterprise Architect, and for this walk-through we will look at a few of the most important. There are many shortcuts and keystrokes to bring up different property sheets, but for now it is simplest to access them from the main ribbon:

Start > All Windows > Properties > General > Properties



The Properties Window

Let's start with a look at the main Properties window. Select the 'Properties' item from the 'Start > All Windows > Properties > General > Properties' ribbon menu.



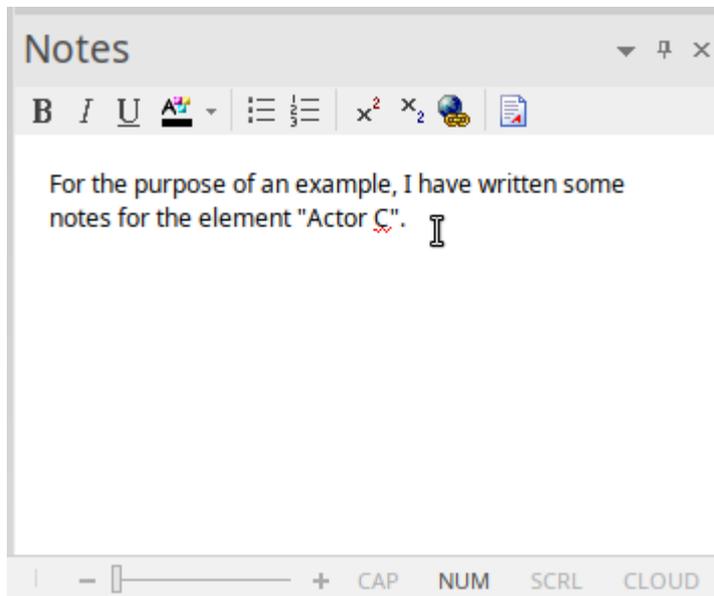
As you select items on the diagram or in the Browser window, you can see the Properties window change to reflect the appropriate settings and content for the current selection. If you click on an Actor, you will see the Actor's name and many other settings. If you select a relationship between a Use Case and an Actor, you will see the Properties window change to reflect this new type of thing (connector). If you click on blank space on the diagram, the diagram itself will become the current selection and the appropriate properties will be available in the Properties window.

Note that when you select an element in a diagram and then switch to the same element in the Browser window, the properties do not change as the two visual elements are actually representations of the same single element.

You can change some element properties by editing the selected item in the Properties window. Try changing an Actor's name, Alias, Keywords or Status.

The Notes Window

A second very important window to become familiar with is the Notes window. This window is where you will type your descriptive text about an object's purpose and any other relevant information necessary to fully and completely describe that object. This is one of the most important windows because when it comes to other people reading and understanding your model, the Notes and descriptive text are one of the major determinants of how useful and expressive your model actually is.



Select the 'Notes' item from the 'Start > All Windows > Design > Create > Notes' ribbon option.

(Shortcut key is Ctrl+3)

Try entering some notes for different elements.

The Responsibility Window

Another major window you should learn to use is the Responsibility window. This has several tabs, each of which provides important modeling detail.

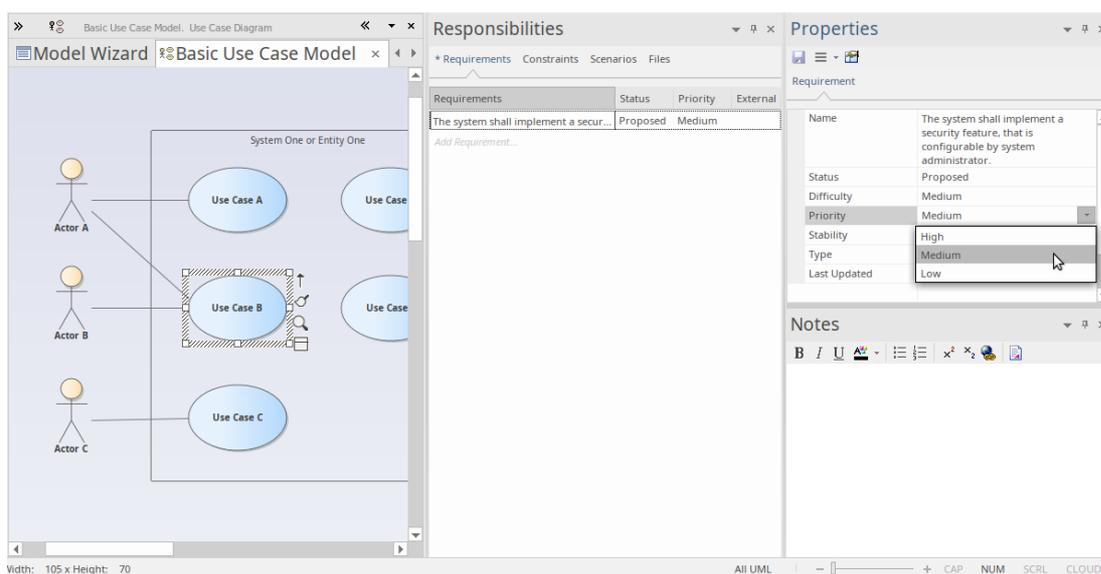
You can access the Responsibility window using the ribbon option: 'Start > All Windows > Properties > Responsibilities > Responsibilities'.

On the window select from the tabs: 'Requirements' or 'Constraints' or 'Scenarios' or 'Files'.

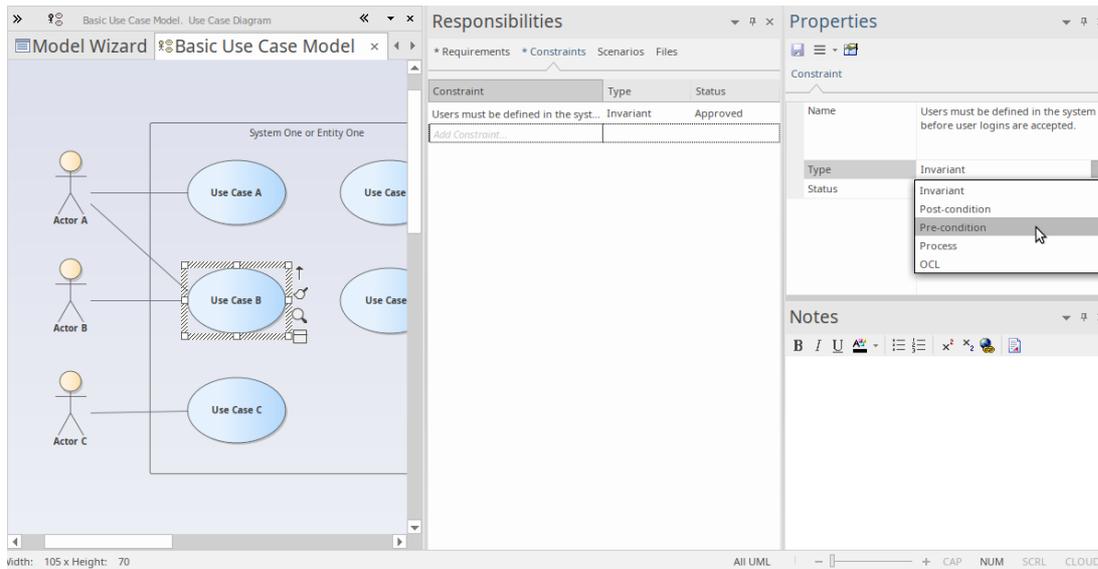
(Shortcut key Ctrl+4)

Let's look at each in detail:

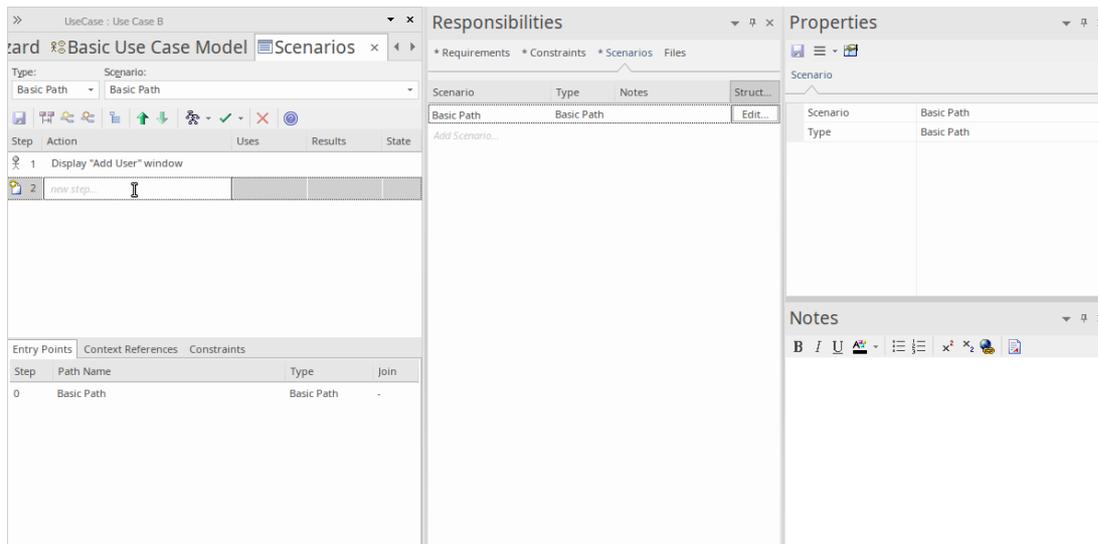
1. Firstly there is the 'Requirements' tab. This tab lets you add Requirements for an element that represent responsibilities that particular element must satisfy. These are sometimes referred to as 'Internal Requirements' to distinguish them from the more general System Requirements that can involve multiple elements.



- Secondly there is the 'Constraints' tab. This tab lets you enter restrictions and constraints on an element's behavior, capability or structure. Many advanced behavioral models use the 'Constraints' tab to specify, in detail, how a system will function.



- The third tab is the 'Scenarios' tab. This tab lets you either enter simple text or (when you click on the Edit button for a Scenario) use the Structured Scenario editor to build detailed descriptions of how an element will behave in a certain situation. Scenarios are most frequently used with Use Cases, but can be used with any element type where appropriate, to explain some aspect of model behavior.



- The final tab is the 'Files' tab, which simply lists any external files that have been associated with the element. You can easily add files to the list, by right-clicking on it and selecting the 'Add New' option on the menu, and specifying the file path. You open a file by selecting the 'Launch File' option on the same menu. Files you might associate and access here could include a Statement of Requirements spreadsheet or a User Story document.

There are many (many) more property windows in Enterprise Architect that are used to describe and edit element specifications. We have seen a few of these now, and as you become more familiar with the tool, you should experiment with others as the occasion arises.

Getting Help

In general, pressing F1 while the focus is in a Properties window will activate the Help for that window and you can read about the window's purpose and general usage.

Working with Diagrams

Diagrams are the visual representation of the model and provide one or more windows into the model's structure and behavior. Learning to work with diagrams is an essential part of modeling with Enterprise Architect. We will look at some of the most fundamental aspects of using diagrams to view and build models.

Basic Skills

Open a Diagram

If you want to view or work with an existing diagram, you can open it by double-clicking on its icon in the Browser window. For this short introduction, you should locate the Basic Use Case Model diagram we created earlier and double-click on its icon to open it. If it is already open it will be selected and become the focus window.

Selecting and moving elements

Now that we have our diagram open, try clicking on elements to select them. Once selected you can click and drag to move, right-click to select actions from a context menu, observe or work with an element's properties in the various property windows and/or modify an element's appearance and other visual characteristics. Note that you can also click on connecting relationships between elements and likewise edit and view properties, appearance and positioning.

The Layout Ribbon

The third Ribbon category is 'Layout' and it is the main ribbon category devoted to manipulating the appearance of diagrams. There are commands to change diagram themes, set element appearance, align and format elements, layout diagrams and filter diagram content. Many of these tools are described in detail in the Help, so take the time to read up on the tools and actions available so you can make the most of your diagrams.

Basic Editing

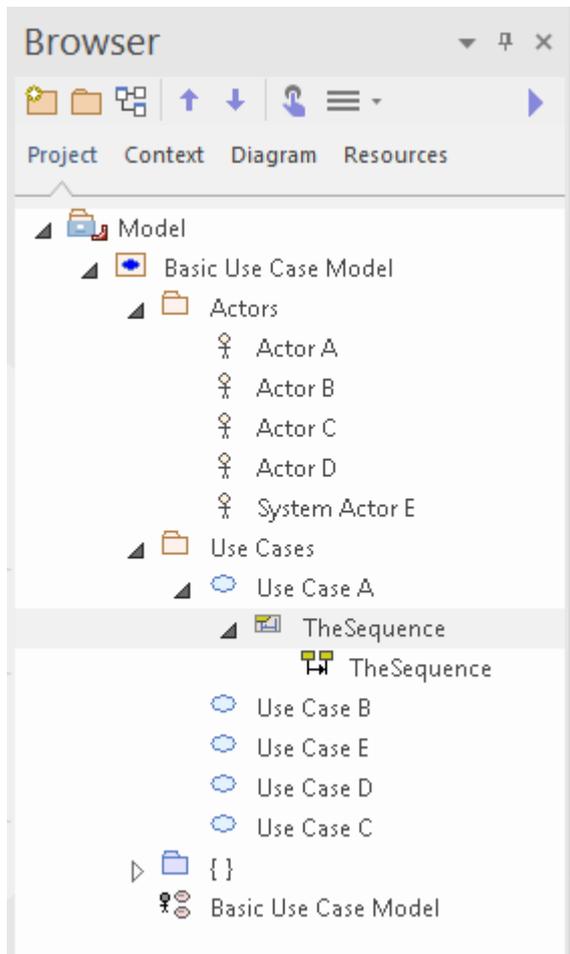
Adding a Scenario diagram to a Use Case

Now that we have some familiarity with diagrams, let's add a new one and build up a simple Sequence diagram indicating the flow of actions and responses between an Actor and a Use Case. First we will need to select a Use Case in the Browser window that will contain the new Sequence diagram (or Interaction).

Create the Diagram

To begin with, click on 'Use Case A' in the Browser window to select it. Now, right-click on it to display a context menu and select 'Add | Interaction | with Sequence Diagram'. Give the new Interaction a name and click on the OK button.

You should now have something similar to this image in your Browser window.



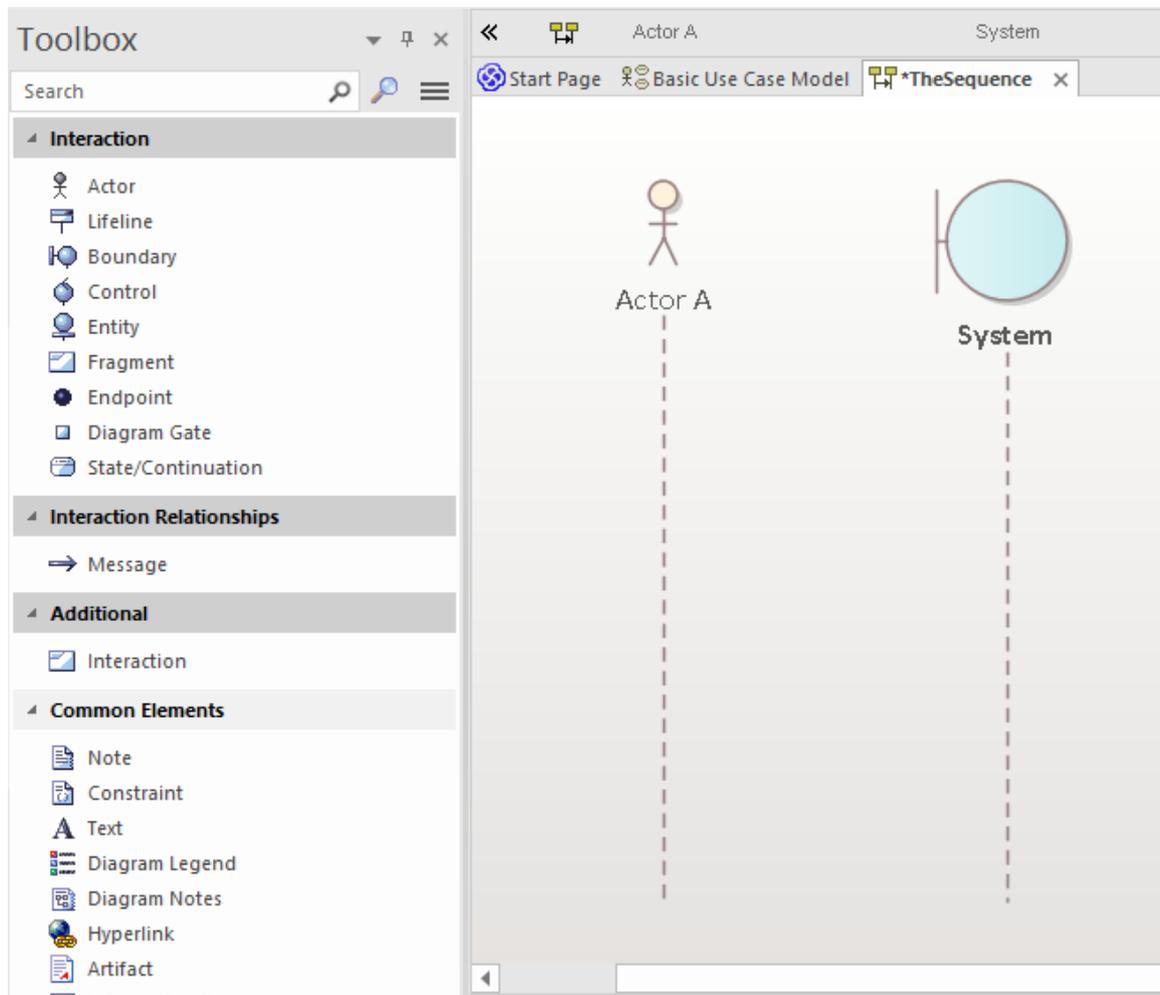
Note that there is a new Interaction container with an empty Sequence diagram. Double-click on the Sequence diagram icon to make it the new default workspace. Now you will have a blank diagram workspace. Click on the double-arrows icon at the left end of the diagram title bar to open the Diagram Toolbox. The Toolbox changes to show elements that are appropriate to the current diagram. In this case it shows elements commonly used in Sequence diagrams. Firstly though, we will make use of our model and place a link to the relevant Actor onto our diagram.

In our original diagram, Use Case A had a relationship to Actor A, so let's find Actor A in the Browser window and drag and drop it onto the new diagram.

In the dialog that pops up, select 'Link' as the type of placement required and click on the OK button.

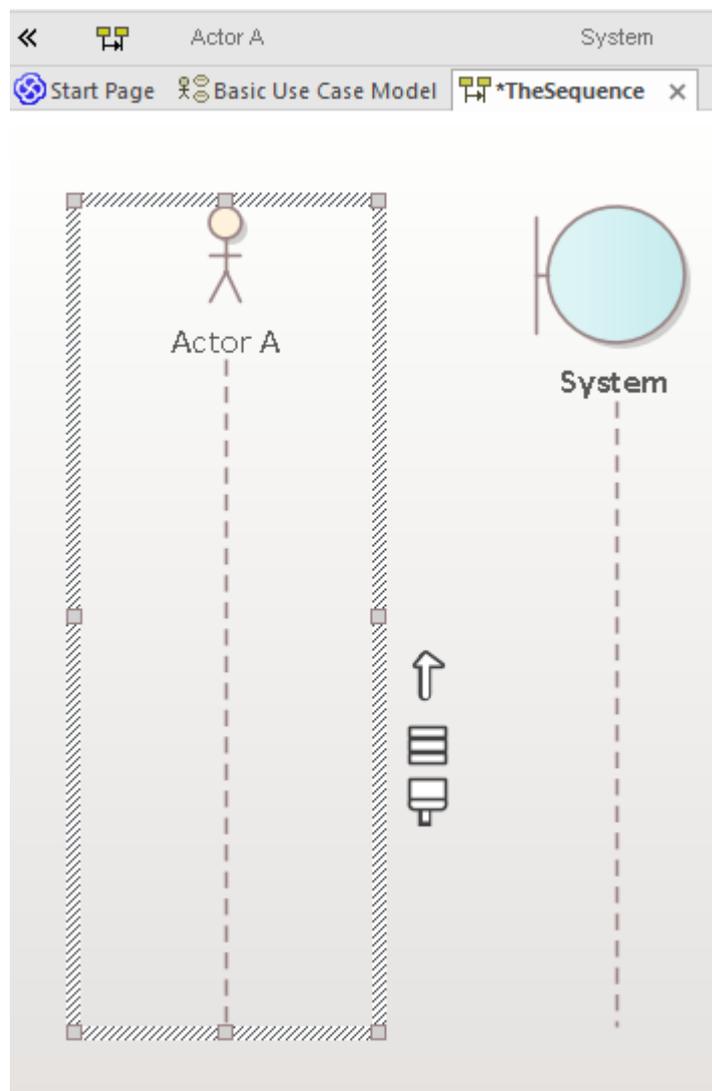
A new visual representation of Actor A is now created and placed onto the Sequence diagram as a Lifeline.

Next, we need to add a Boundary element to represent the system being modeled and how it will interact with our Actor. From the toolbox, click on the Boundary icon and then click to the right of the Actor lifeline. Use the Properties window to rename the Boundary element as 'System'. You should now have a diagram that resembles this image:

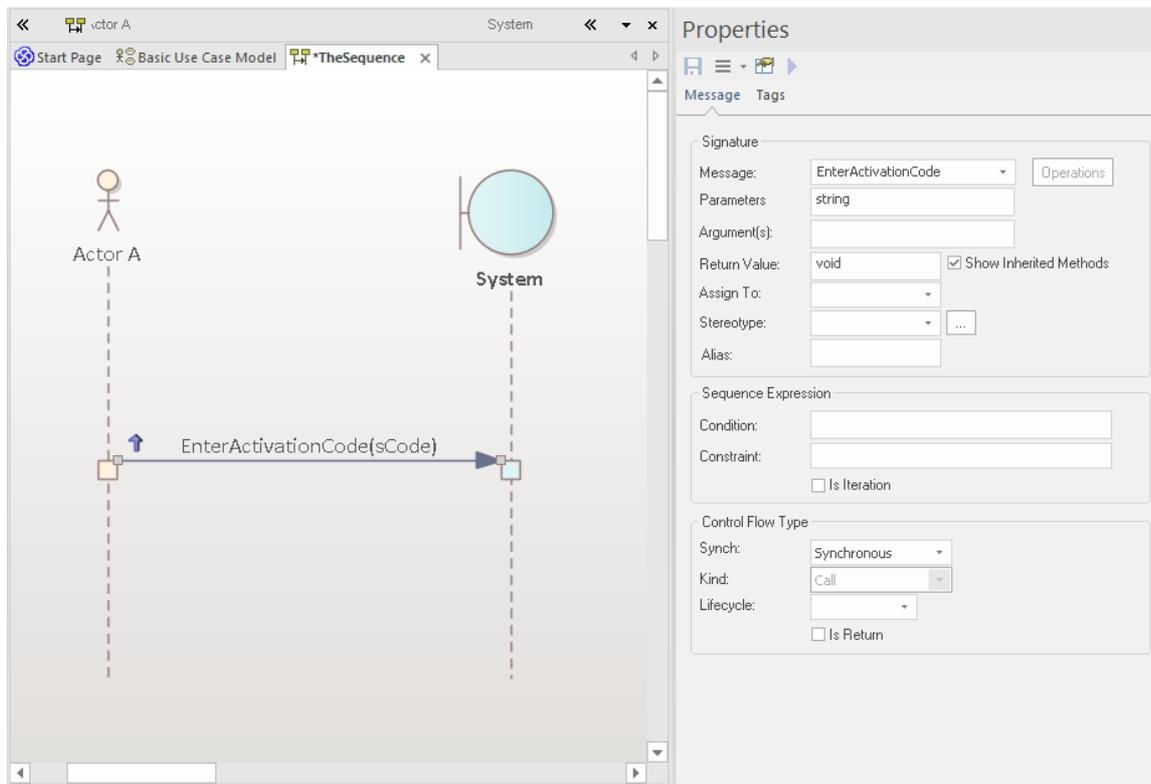


OK - we now have an Actor and a System and we want to represent the flow of Action and Response between the two entities. We can model this using messages between the two.

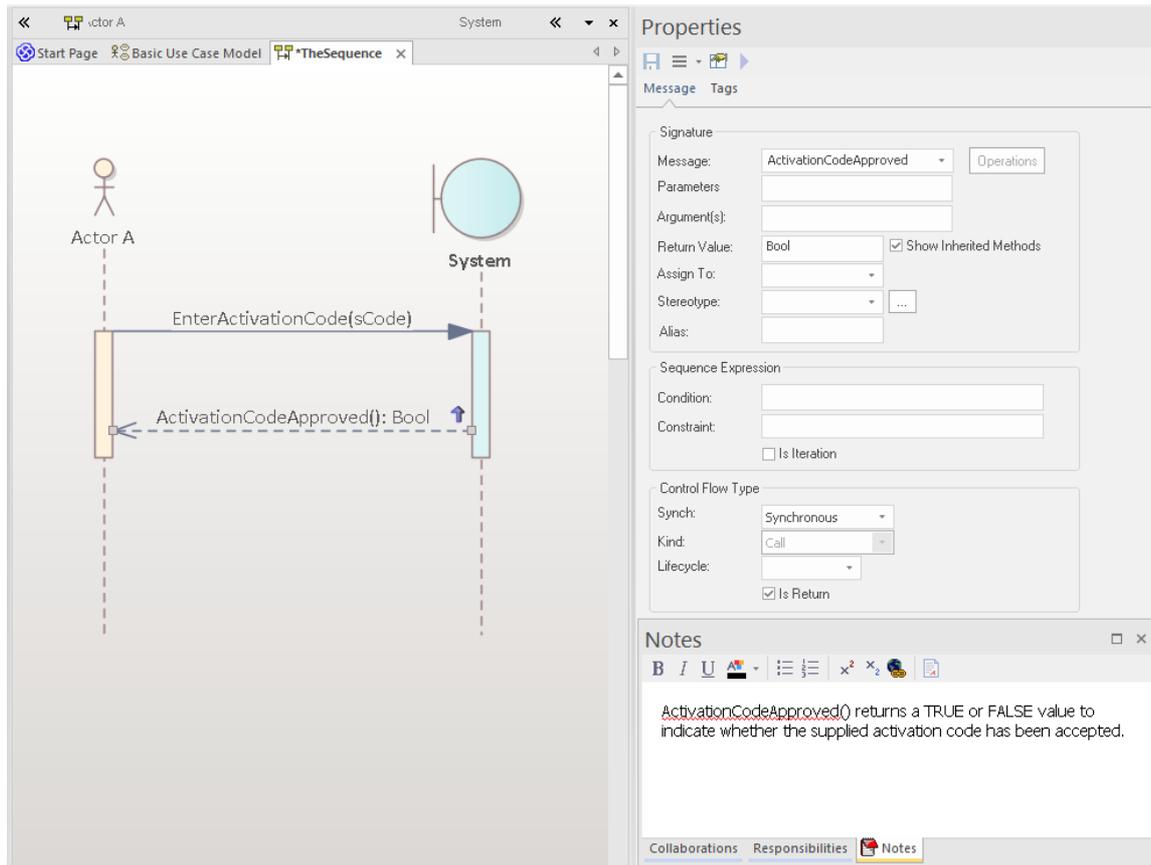
Click back on the Actor Lifeline and look for the Quicklink button - this is a small 'up arrow' located just at the right edge of the selected element, and is only visible when the element is selected.



Now, click-and-hold on the Quicklink button, then drag across to the System Lifeline and release. This creates a new message in our model, between Actor A and System. Select the new message on the diagram and note that the Properties window updates to show the properties of the new connector, allowing you to edit the details. After entering a few details for the message and clicking the Save button, your diagram workspace should resemble this image:



A return message can be created in similar fashion, by clicking on System, then dragging its Quicklink button across to the Actor. Select the new message on the diagram and fill in the details in the Connector Properties window. In the 'Control Flow Type' section of the Properties window, select the option 'Is Return'. Your diagram should now display the return message, similar to this image:



Building the Model

1. Basic Skills

The Design Ribbon

The Design ribbon groups together commands that are used for creating and modifying model items, such as elements, diagrams and Packages.

It provides access to a number of windows, such as the Properties window, Features window and Responsibility window, as well as commands for viewing Package content and diagram content as lists or Gantt charts.

Take a few moments now to explore the different menus and sub-menus presented by the Design ribbon.

We will now use the Design ribbon to perform some basic modeling tasks, such as creating a new Package and creating a new diagram within the Package, before creating some new elements and connectors on the diagram. In this example, we will create a simple Class model.

Create a Package

We will create a new Package under the Model Root node, so click on this node in the 'Project' tab of the Browser window then, from the Design ribbon 'Model' panel, choose 'Add > Package'. The 'New Package' dialog will open. Here, you can enter a name for your new Package and you can choose to create a Package only, create a Package with a diagram, or choose a model pattern to insert into the new Package.

For this walk-through, choose 'Package Only', enter a name for the Package, such as 'My Class Model', then click on the OK button. You should see the new Package in the 'Project' tab of the Browser window, as a child of the Model Root node.

Create a Diagram

Now, we will create a Class diagram within the new Package.

Click on the Package in the 'Project' tab of the Browser window then, from the Design ribbon 'Diagram' panel, choose 'Add'. The 'New Diagram' dialog will appear.

The default name for a diagram is the same name as its parent Package; leave this as it is.

In the 'Type' section, select from 'UML Structural', and choose the diagram type 'Class'. Click on the OK button.

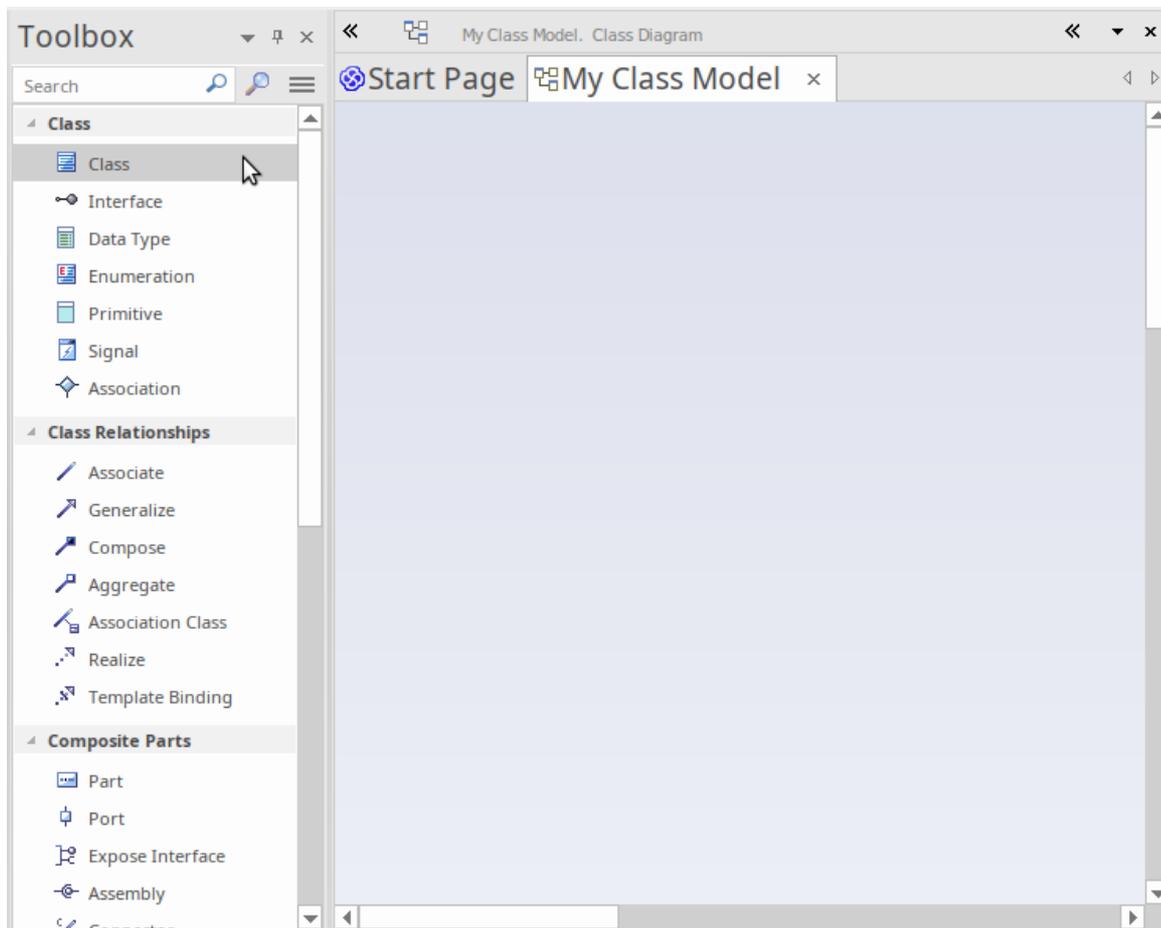
The new Class diagram will appear in the 'Project' tab of the Browser window and it will open in the main diagram workspace.

Diagram Toolbox

The Diagram Toolbox pages provide a palette of elements and connectors that can be selected and dropped onto the currently open diagram. Doing so creates a new element or connector of the selected type within your model and displays it on the diagram where you dropped it. The Toolbox pages display a set of elements and connectors that are commonly used with the current diagram type; this set changes as you open diagrams of different types.

Open the Diagram Toolbox now by clicking the 'Toolbox' icon in the 'Diagram' panel of the Design ribbon. The Toolbox is displayed on the left side of the diagram workspace.

This image shows the new, empty Class diagram and, beside it, the Diagram Toolbox pages showing the elements and connectors appropriate for working with Class diagrams.

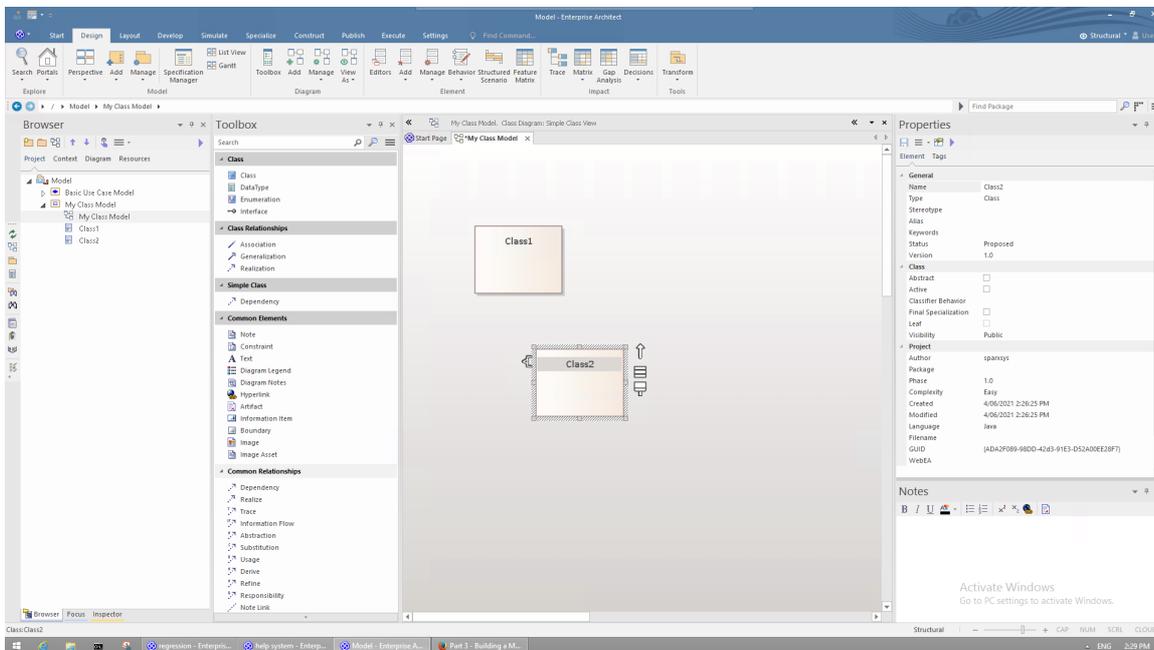


Add elements to the diagram

Let's now use the Diagram Toolbox to add some elements to our Class diagram.

Select the Class element in the Toolbox, then click on the empty diagram. A new Class named 'Class1' is created in your model and placed onto the open diagram. The Class name 'Class1' is applied by default. You can type a new name into the Class on the diagram, or you can change the name later using the Properties window. Create a second Class on the diagram by again selecting 'Class' in the Toolbox and dragging it onto the diagram.

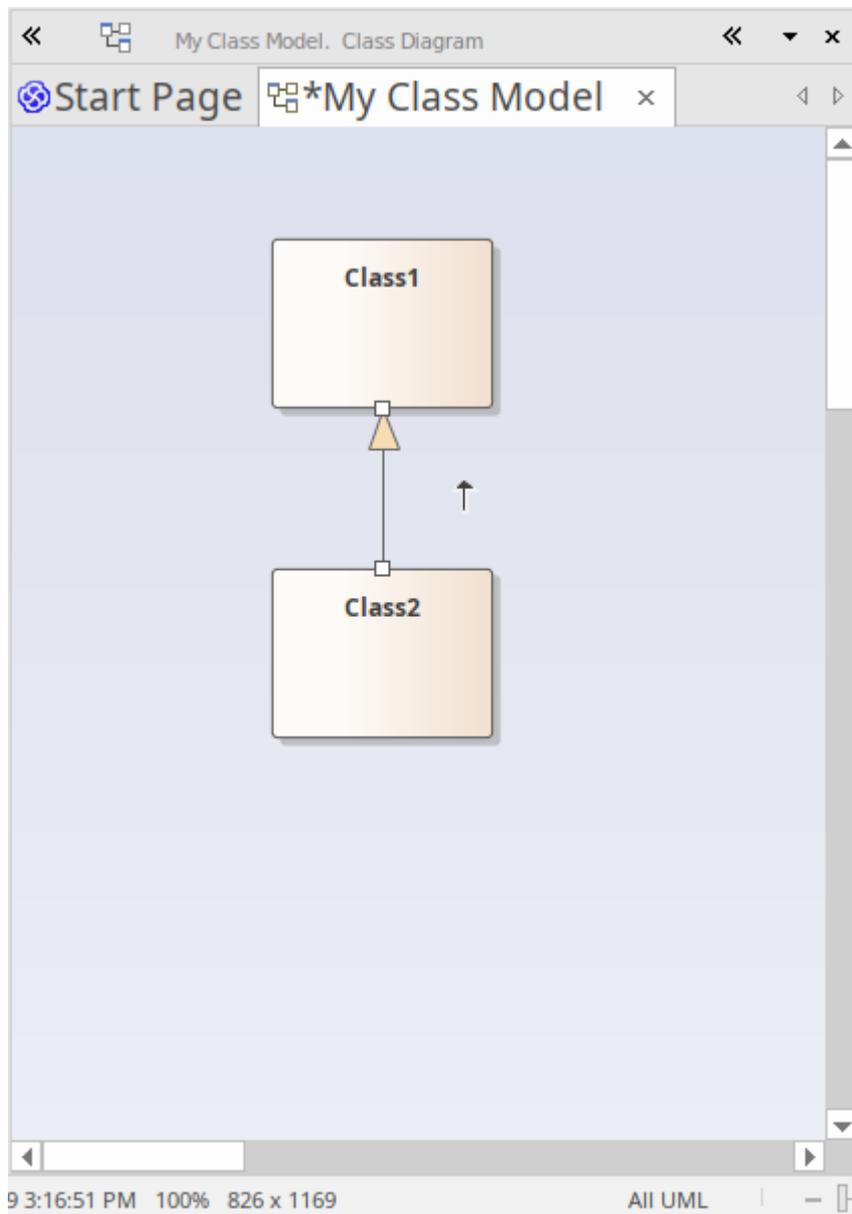
Your workspace should now resemble this image:



To create a relationship between two elements on a diagram, simply select a relationship type in the Diagram Toolbox, then drag a line from one element on the diagram to another. Most relationships are directional, so dragging a link from Class1 to Class2 is different to dragging a link from Class2 to Class1.

Click on the Generalize relationship in the Diagram Toolbox then, on the diagram, drag a line from Class2 to Class1.

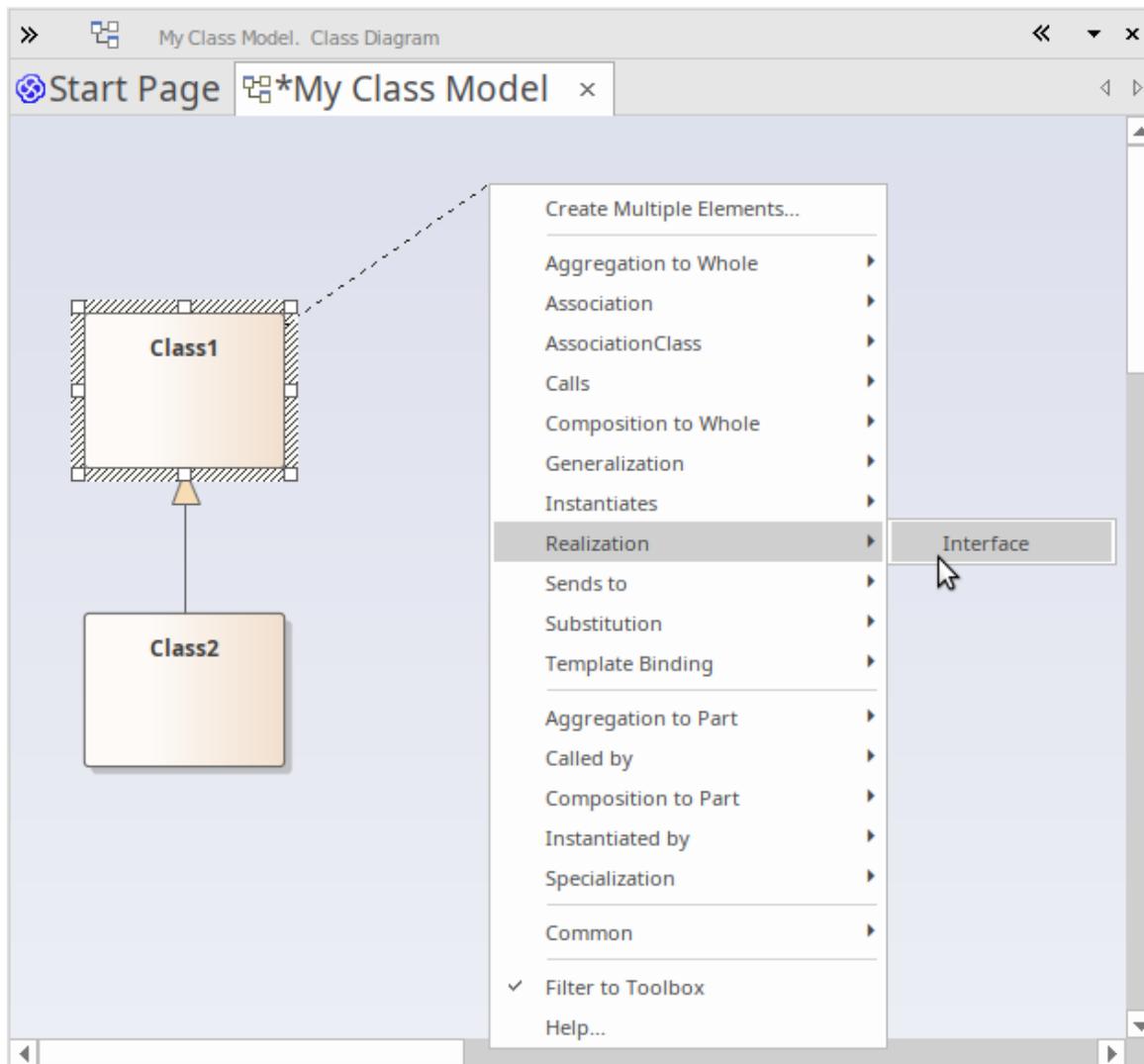
The relationship that is created indicates that Class1 is a generalization of Class2.



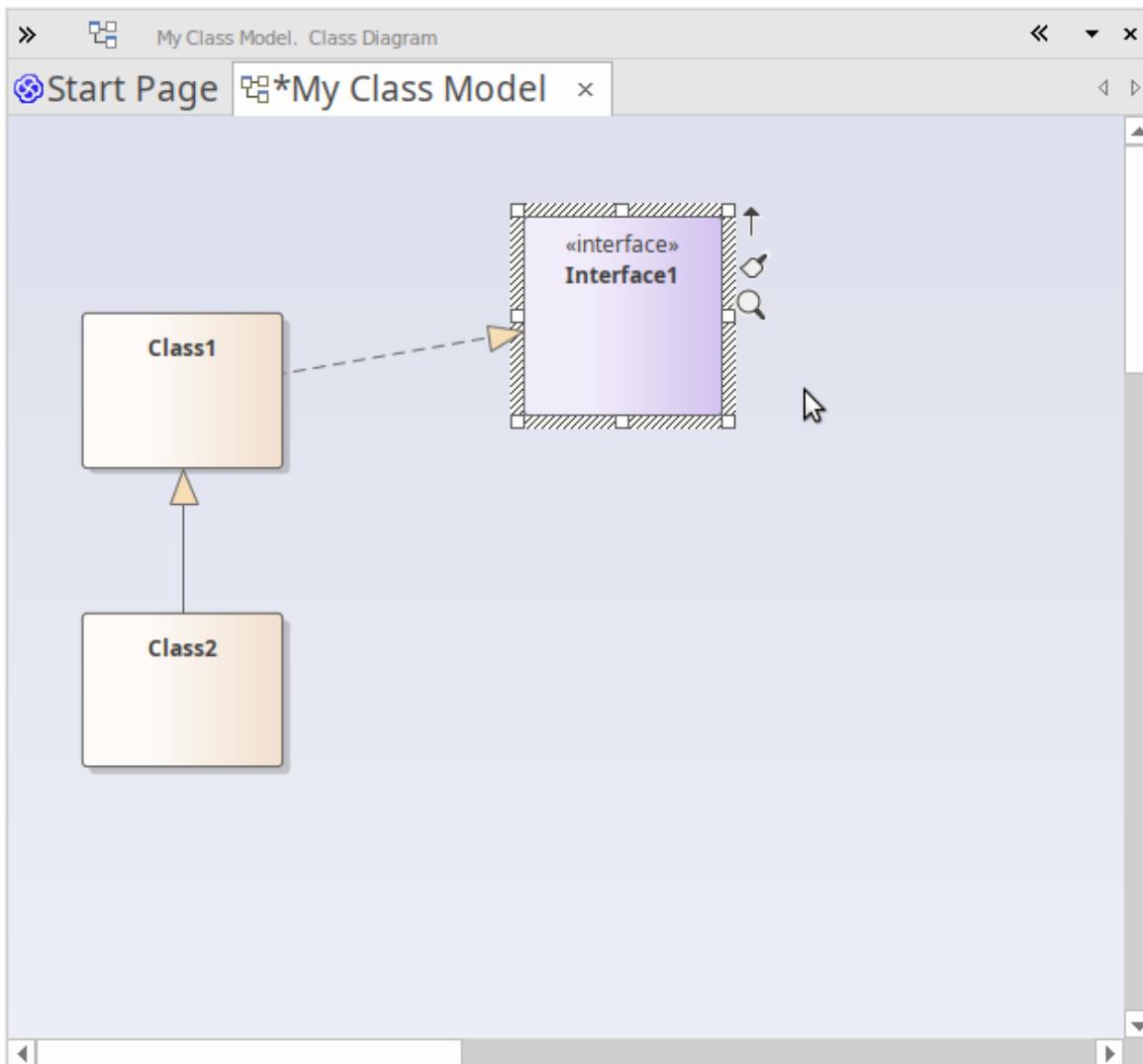
Add Elements Using Quick Linker

We briefly looked at the Quick Linker in *Working with Diagrams*, where we created links between two elements in the form of Interaction messages. Now we are going to use the Quick Linker to create a new element at the same time as creating a new relationship from an existing element.

In the diagram 'My Class Model', click on Class1 to select it. The Quick Linker arrow should be visible beside the top-right corner of Class1. Click and drag the Quick Linker arrow to the right, releasing the mouse button in empty space on the diagram. This action displays a pop-up menu that prompts you to choose a relationship type, then an element type. From the menu, choose 'Realization | Interface'.



The resulting connector and element are shown here:

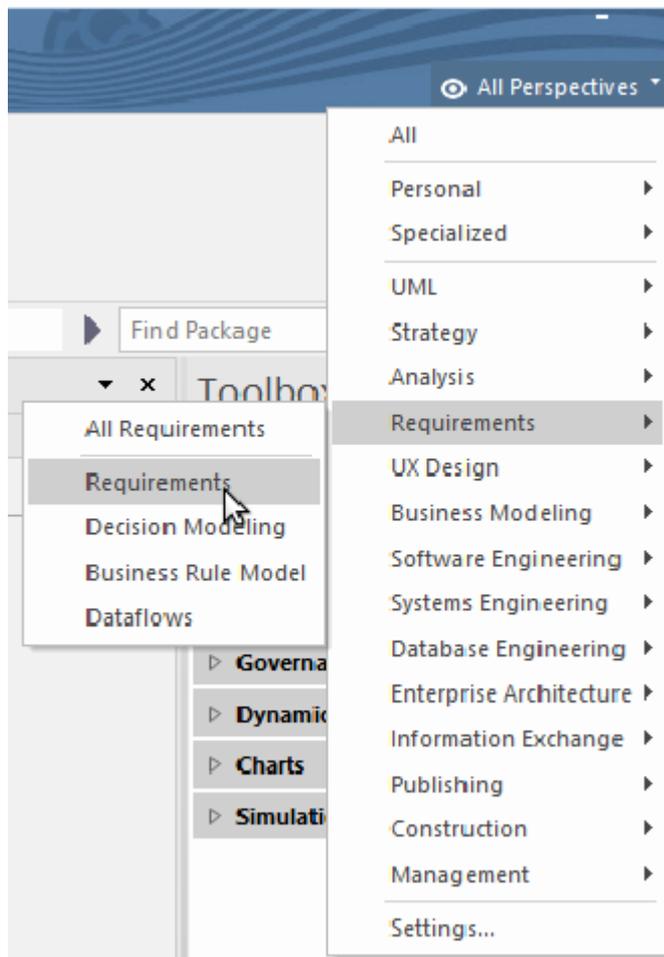


2. Using Perspectives and Model Patterns

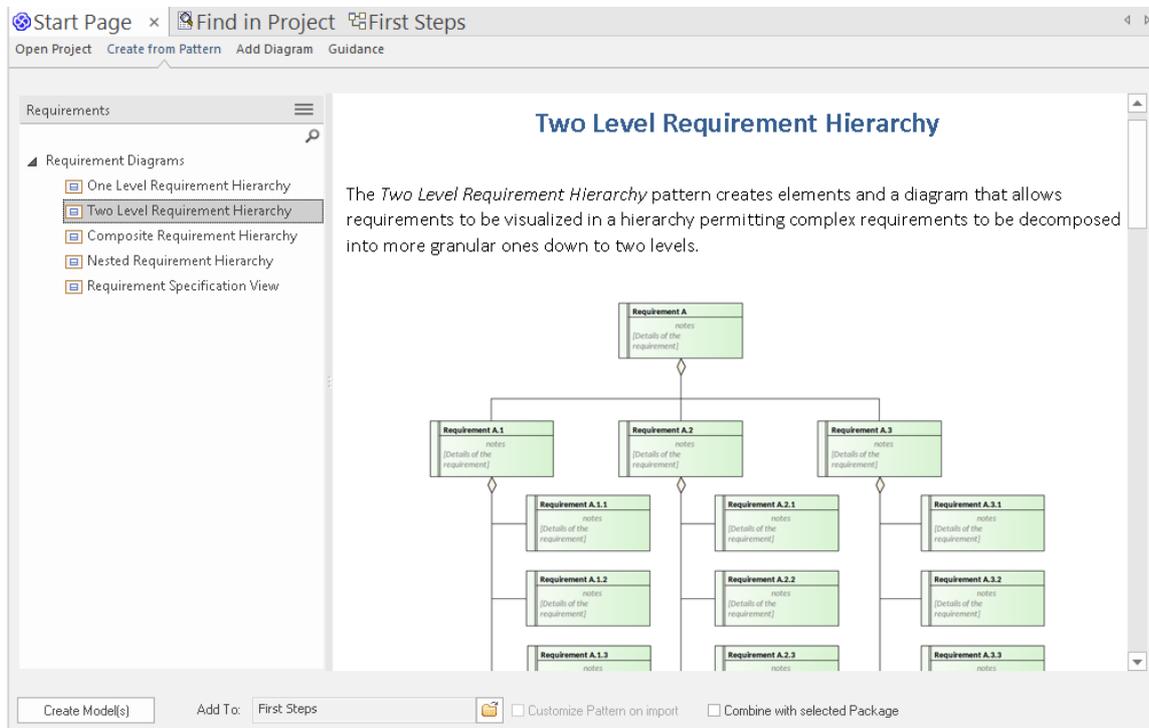
Enterprise Architect offers a wide range of different Perspectives that cater to the many different kinds of modeling you can perform. As mentioned earlier, a Perspective is a constraint placed upon the user interface to only show a particular technology or set of technologies. It is used to reduce complexity and help you focus on your task.

Add a Requirements Model

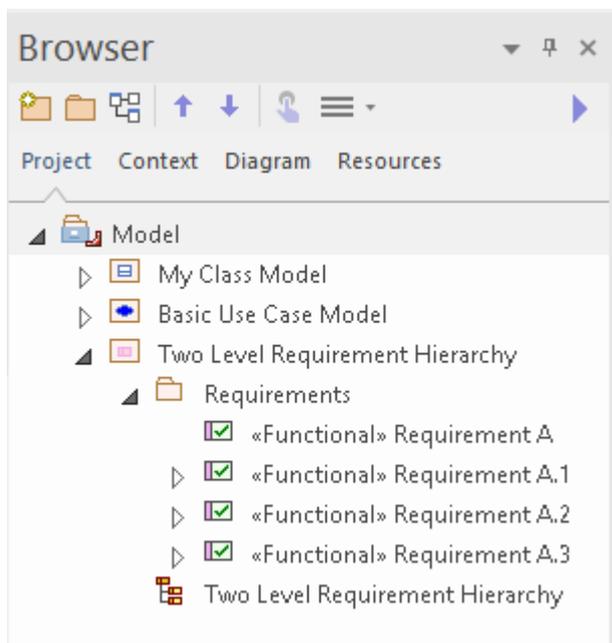
We will now build a simple Requirements Model in our project. Firstly, let's select one of the Requirements Perspectives. From the 'Perspectives' menu, choose 'Requirements | Requirements'.



After we select the Requirements Perspective, the 'Create from Pattern' tab (the Model Wizard) of the Start Page is displayed in the main workspace area, offering just a selection of basic Requirement model patterns. Firstly, we should choose where in the model this new content will be added. Click on the folder icon beside the 'Add To:' field at the bottom of the Model Wizard page, then choose the Model root node and click on the OK button. Now, let's select the pattern 'Two Level Requirement Hierarchy' and click on the Create Model(s) button.



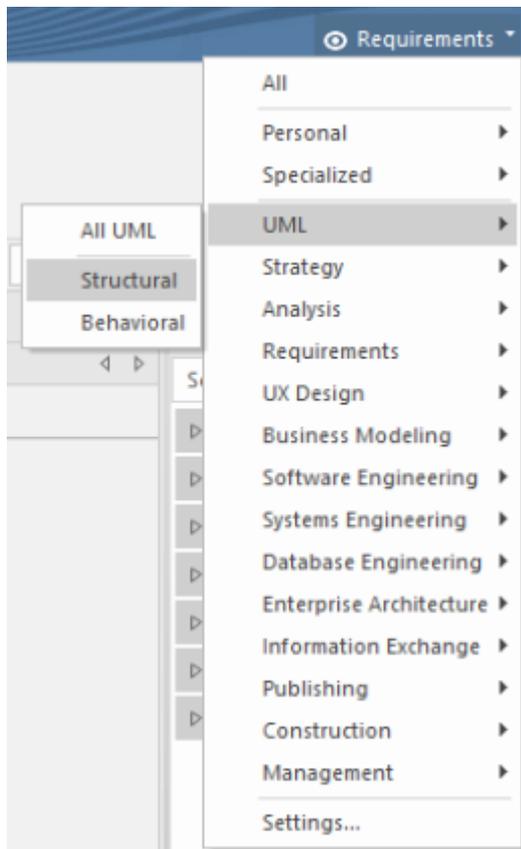
The selected model pattern is added to our model under the Model root node.



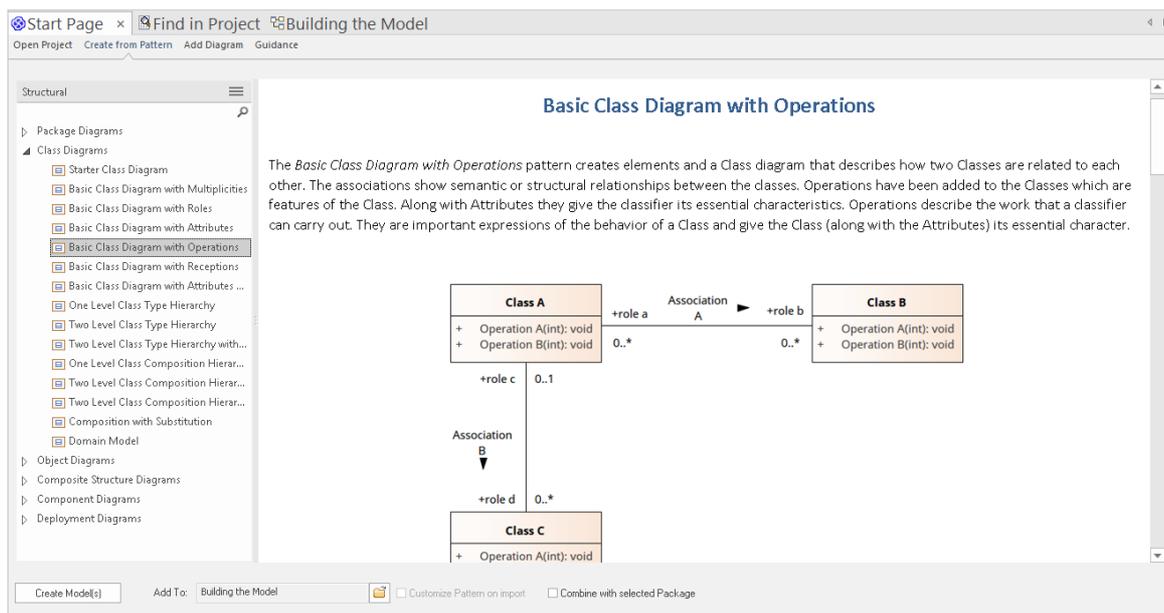
Double-click on the diagram link in the 'Project' tab of the Browser window to open the diagram in the main diagram workspace. You can then select elements on the diagram (or in the 'Project' tab) and use the Properties window to tailor them to your own use, by renaming them, entering descriptions in the Notes window or setting other properties as required.

Add a Class Model

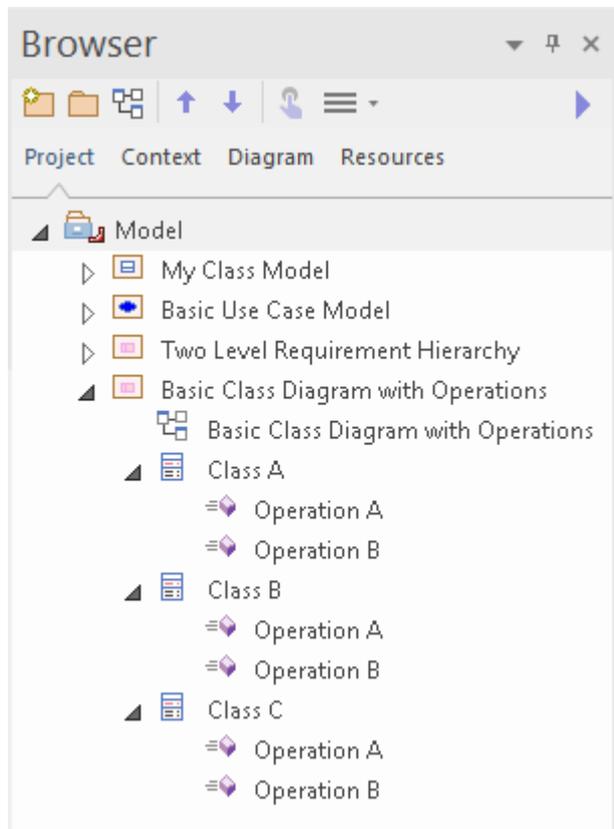
We will now add a simple Class Model to our project, following a procedure similar to the one we have just used. From the Perspectives menu, choose 'UML | Structural'.



The 'Create from Pattern' tab (the Model Wizard) of the Start Page is displayed, showing the Structural Perspective. Scroll through the list to find the Class diagrams, then click on 'Basic Class Diagram with Operations'. Click the folder icon beside the 'Add To:' field and choose the Model Root node as the location in which to add the new model content. Finally, click on the Create Model(s) button to add the new model content to your project.



The selected model pattern is added to your project; the Packages, diagram and elements are shown in the 'Project' tab of the Browser window.



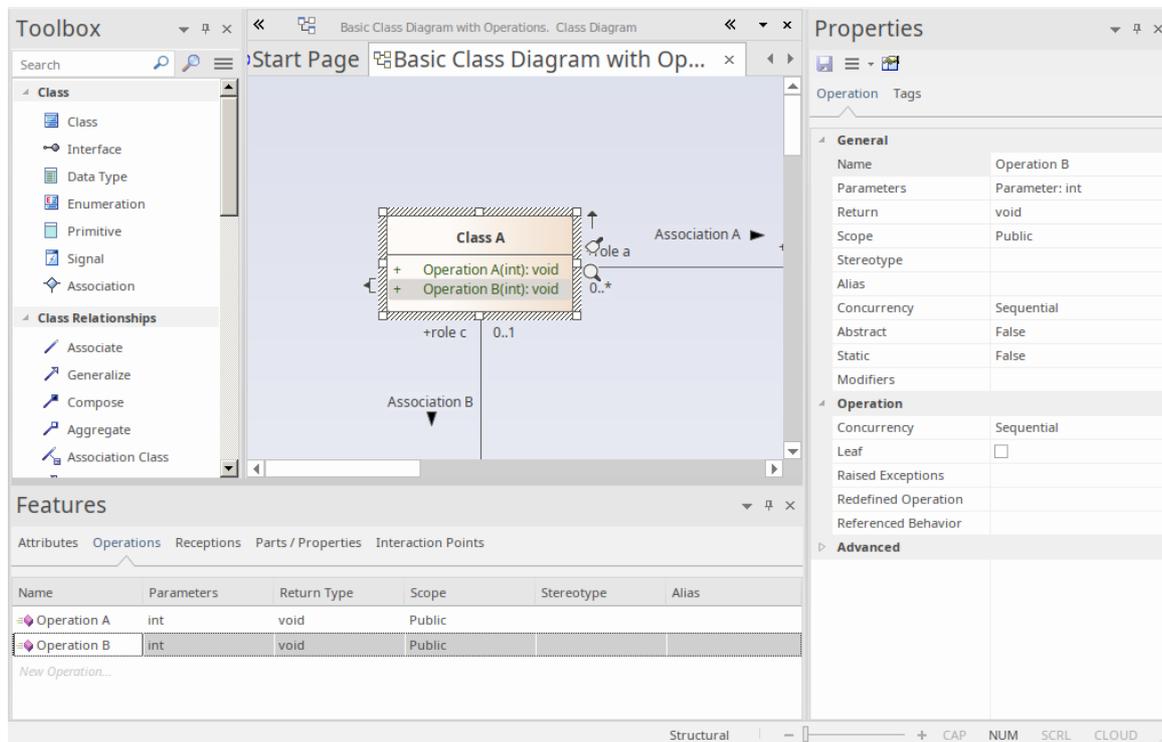
Double-click on the diagram link 'Basic Class Diagram with Operation' in the Browser window. This opens the diagram in the main workspace. Now, we will use the Features window to view the operations of Class A.

From the 'Explore' panel of the Start ribbon, choose the menu item 'Properties > Features'. The Features window is displayed; select the 'Operations' tab of this window.

Now click on Class A in the diagram (or in the 'Project' tab of the Browser window). You will notice that as soon as Class A is selected, the details of its operations are displayed in the Features window. Here you can modify an existing operation, by changing its name, its return type or even its parameter list. When you select an operation in this list, the Properties window switches to Operation Properties, and displays details of the selected operation.

You can also use the Features window to define new operations, by simply typing a name into the list where it says "New Operation...".

This image shows the Features window when Class A is selected on the diagram and the Operation Properties window when Operation B is selected in the Features window.



We have walked you through some simple modeling operations to give you a basic understanding of how you might use Perspectives and Model Patterns to create model structures that you can use as a starting point for creating your own models.

We have also demonstrated using the 'Project' tab of the Browser window to navigate through the model, using the Diagram Toolbox to add new content to your model via the diagram and using various Properties windows to inspect and modify the properties of various model elements.

Part 4 - Where to Now?

Having created a model in a repository, you might now like to see how your work can be further supported by tailoring the Enterprise Architect work area to your requirements. You can also re-visit the tools you have used, and learn a little more about them and about other tools and facilities that are equally valuable in helping you develop and manage your models.

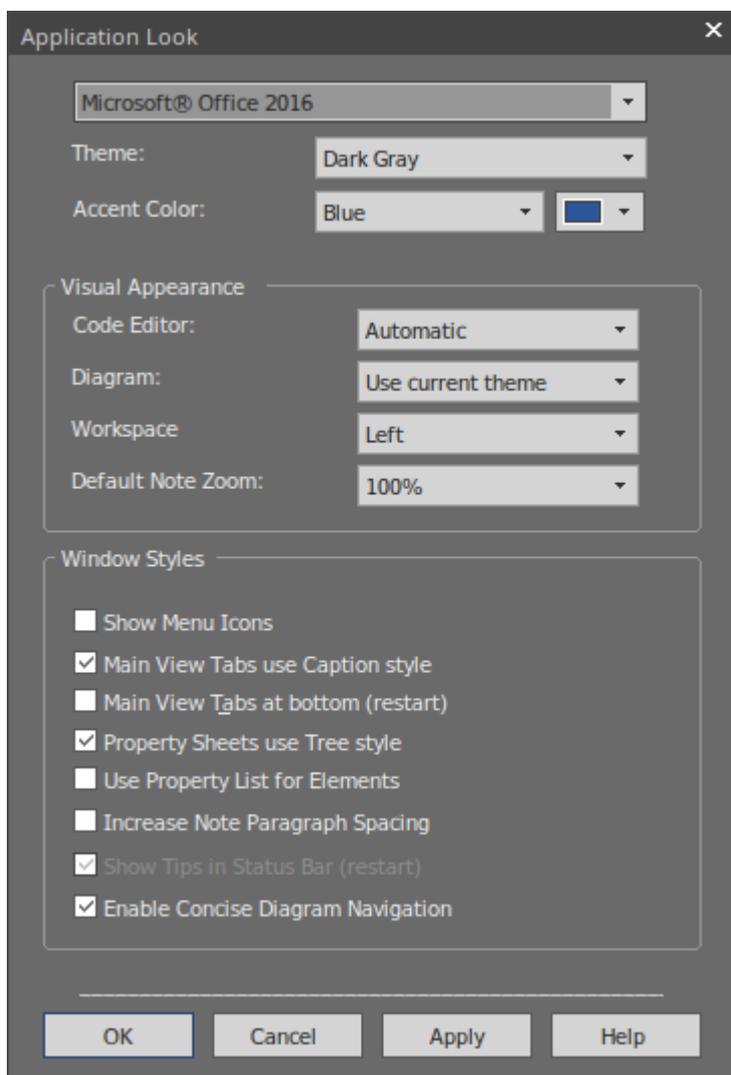
Customize the Workspace

When you first open Enterprise Architect, you see the default layout of the user interface. You can change the layout and appearance of the interface in many, many ways, hiding windows you don't need, organizing the dialogs you do need in the most convenient configuration, changing the display colors and texts, and much more, to suit your personal preference, the area of work you are responsible for and the tasks you perform.

The sections here show you where you can perform this customization.

Change Visual Style

The illustrations of the user interface you have seen in the Guide have a particular color and appearance - or **visual style**. You can change this style to one of several alternatives, using the 'Application Look' dialog (select the 'Start > Appearance > Visual Style' ribbon option).

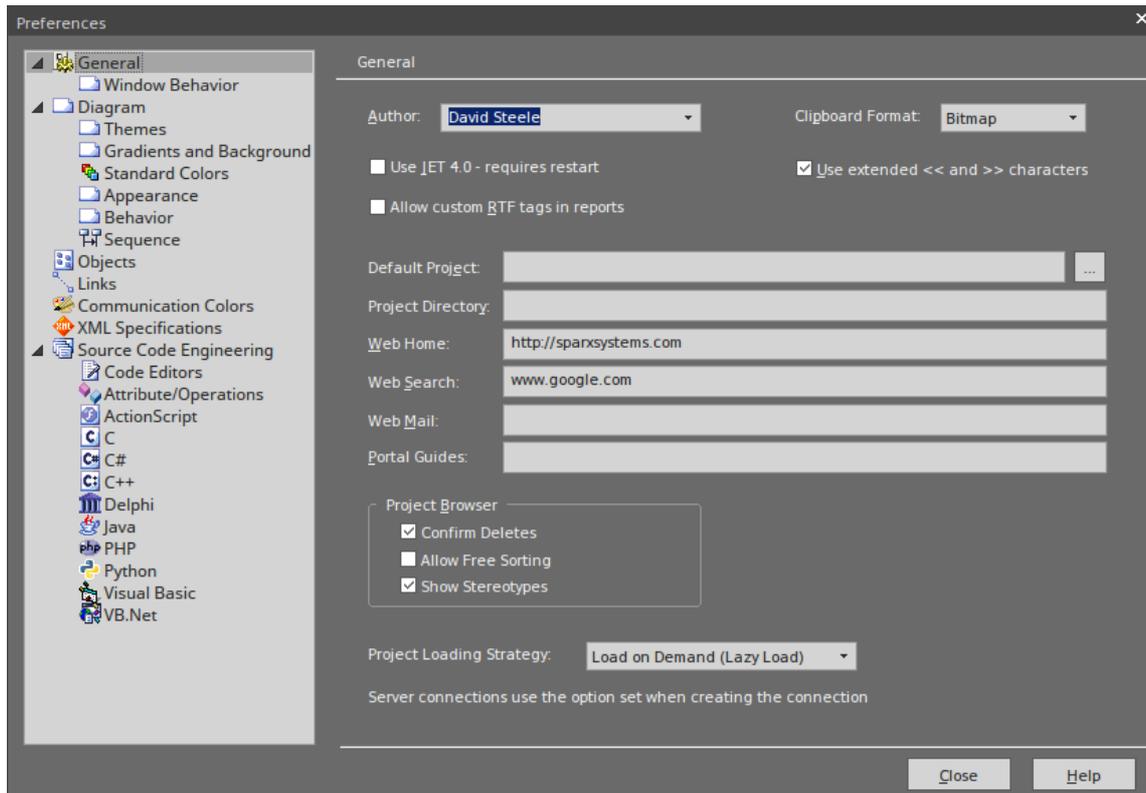


The first three fields on the dialog have the greatest visual impact. Try experimenting with changing the values; you can click on the Apply button and see the effect without having to close the dialog. Note that for some of the permutations you do not need to have values in all three fields.

Set Some Major Preferences

Preferences are aspects of the system that you personalize so that every project you open in Enterprise Architect, on your workstation and under your user ID, looks and behaves in the same way - the way you want them to! Each user might see the same project differently, according to their own preferences.

You start by displaying the 'Preferences' dialog (select the 'Start > Appearance > Preferences > Preferences' ribbon option).

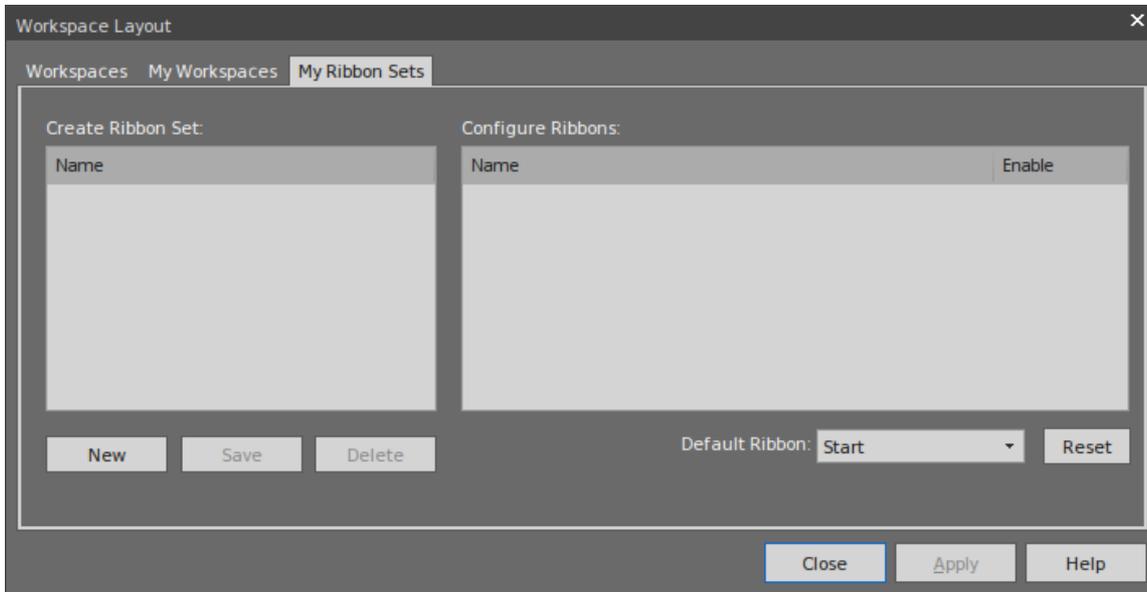


As you can see there are many pages of options you can set, although not all options will be important to you. Click on the page names on the left of the dialog to review the options that are available. If you want an explanation of a setting, click on the Help button to display a description of every setting on the page.

The most visible preferences are the object colors on diagrams. Open a diagram and then change the settings on the 'Diagram > Standard Colors' page of the dialog. Every setting has an option to revert to the default color, so you can try all sorts of combinations without losing the standard settings.

Customize Ribbon Categories

The ribbons at the top of the work area together provide access to almost every tool and facility of Enterprise Architect, but as you are unlikely to use every tool and facility you might consider tailoring the ribbons to exclude things you do not need. You first display the 'My Ribbon Sets' tab of the 'Workspace Layout' dialog (select the 'Start > All Windows > Workspace > Workspace Tools > My Ribbon Sets' option).



Click on the New button and type in a name for your custom ribbon display. You will see that all the ribbons are now listed in the 'Configure Ribbons' panel, and if you expand a ribbon name the sections of that ribbon are also shown. For every ribbon and section that you don't need, you clear the selected checkbox so that the ribbon or section will be excluded from the ribbon bar.

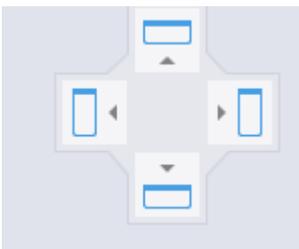
Click on the Apply button to update the ribbon display. If you want to reinstate the default full ribbon set, click on the background of the 'Create Ribbon Set' panel and click on the Reset button.

Putting Things in their Place

When you open Enterprise Architect for the first time, the various windows are in position around the display. These windows - and others that you open - do not have to stay in those positions, you can simply click on the window name and drag the window to a more convenient spot on the display.

Alternatively, you can **dock** a window exactly where you put it, so it stays there, open, across many work sessions.

As you move a window, a 'compass' icon displays in the center of the screen and a 'compass point' icon displays on each edge.

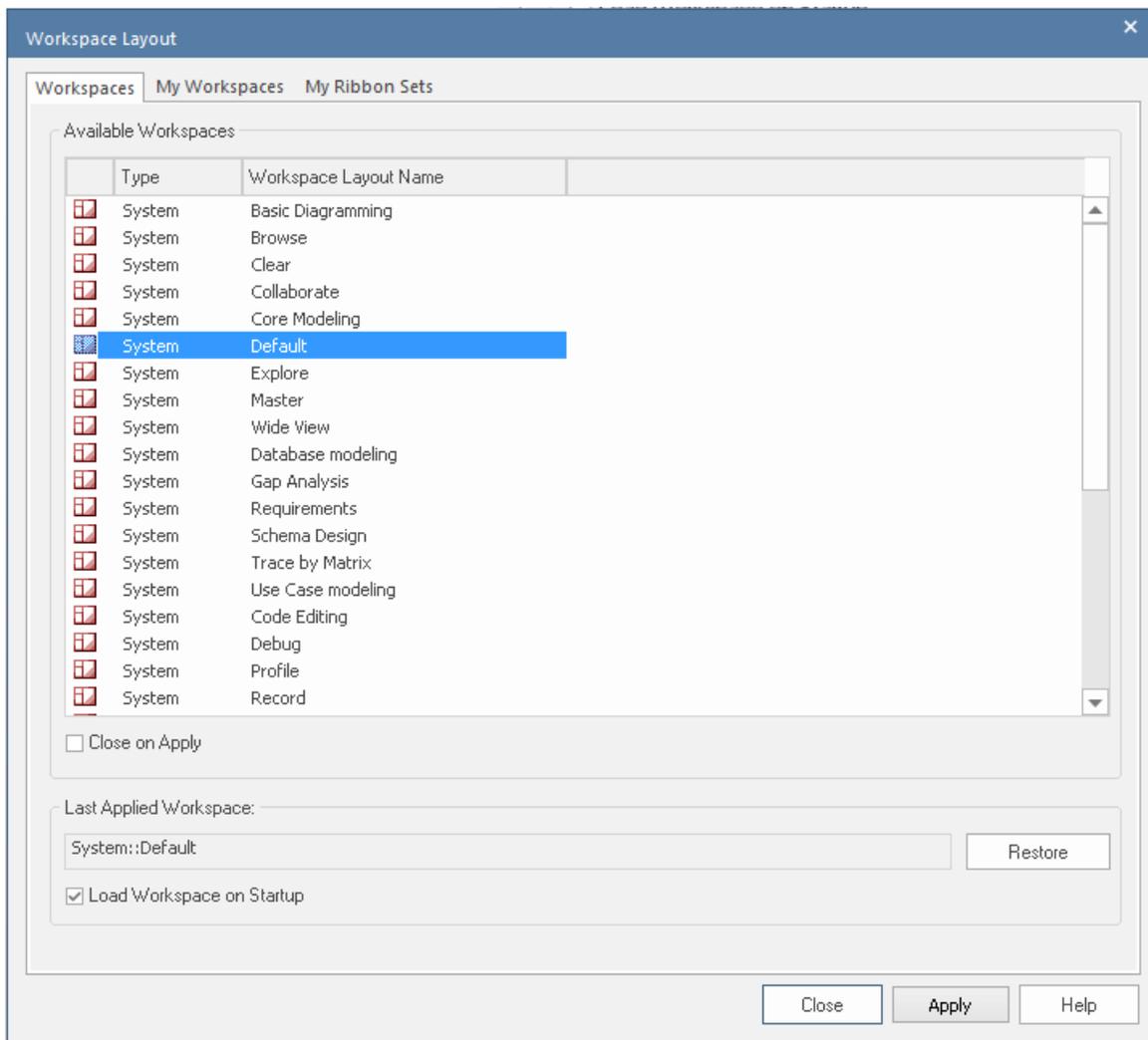


When you move the window over a compass point, an area of the display turns blue. This is the area that the window will occupy when you drop and dock it. You can then adjust the window borders to suit.

If there is another window in the docking area another compass displays there, with a square in the middle. The compass points dock the dragged window above, below, or to the side of the other current window, whilst the square makes it a tab of the same frame as that window.

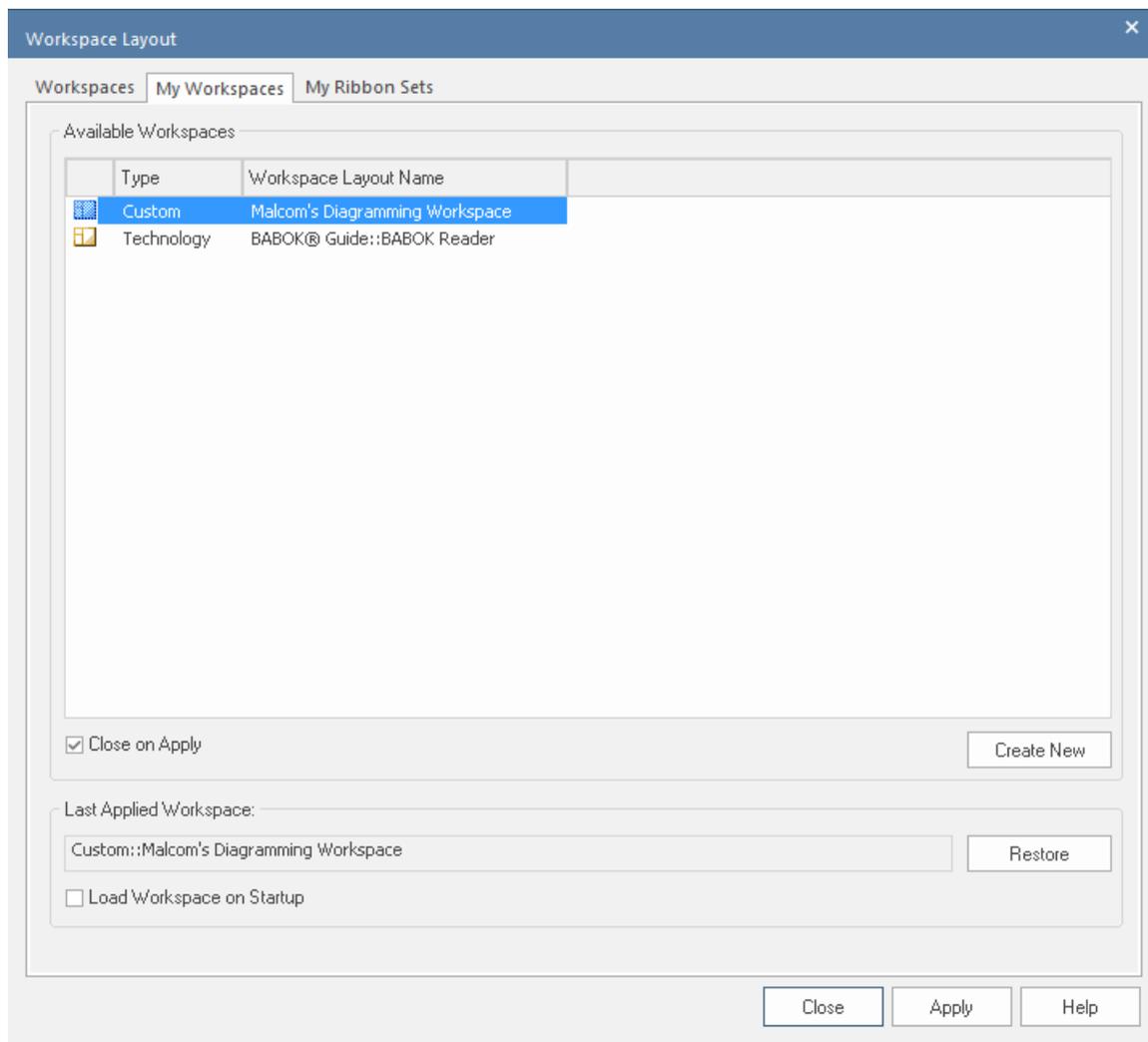
Using the Workspace facilities

Docking a window puts one window in position at a time, but many of the windows can be used in combination, so to save you from working out, building and positioning those combinations, the system provides them for you and gives you the tools to quickly apply them! These tools form the Workspace facility (select the 'Start > All Windows > Workspace > Workspace Tools > Workspaces' ribbon option).



Before you try out some layouts, clear the 'Close on Apply' checkbox, so that you can try different layouts without having to re-open the dialog. Select a layout (such as 'Debug') and click on the Apply button.

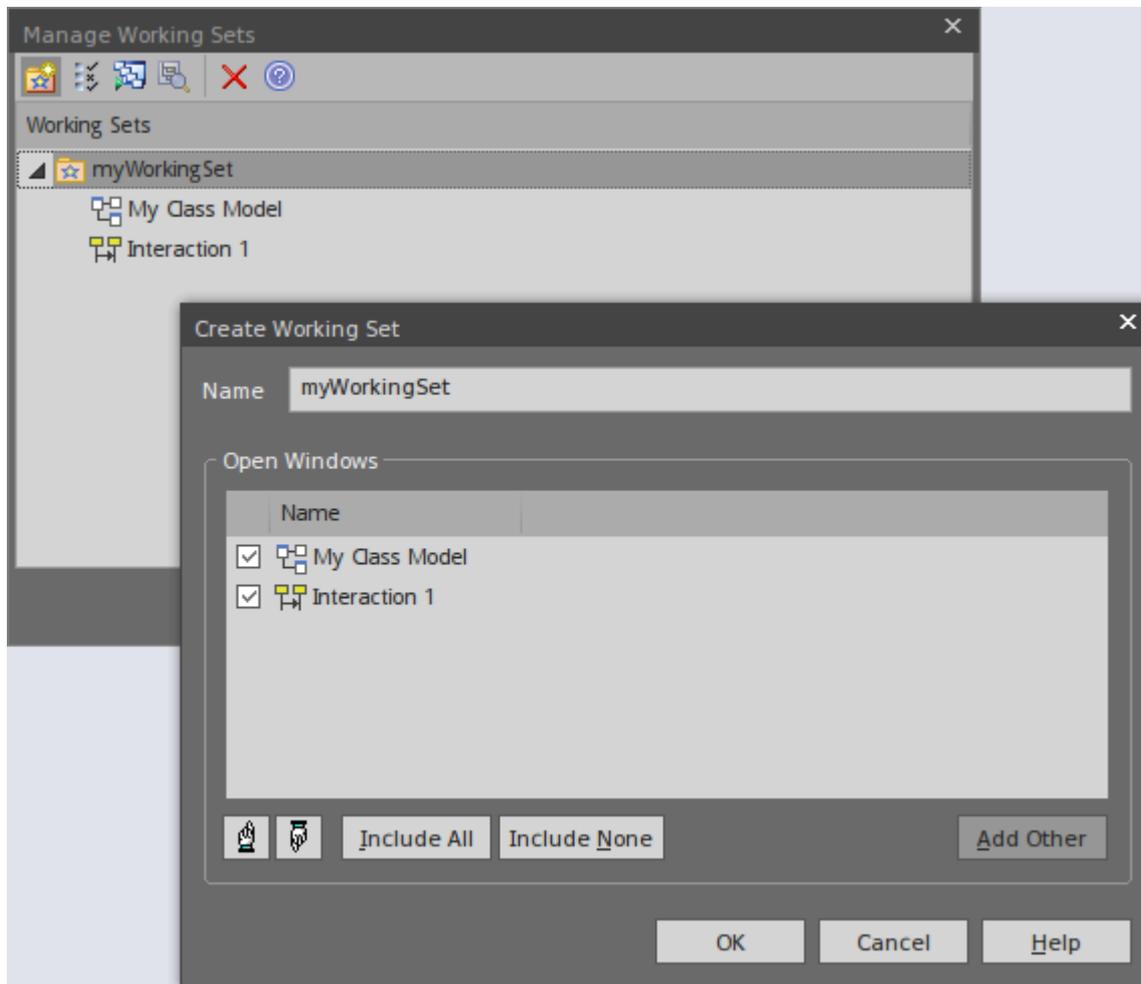
You can set a system-defined layout and then move individual windows, or otherwise create a layout that better suits you. Having done that, you can save it as a personal layout by selecting the 'Start > All Windows > Workspace > Workspace Tools > Save Workspace' ribbon option, which prompts you to give your layout a name. If you use some other layout you can come back to yours by selecting it on the 'My Workspaces' tab of the 'Workspace Layout' dialog.



Going Back to Work

You do a lot of work using windows such as the Diagram View (with several diagrams as tabs, perhaps), Relationship Matrix and Model Search.

Having reached the end of a work session, you might want to start your next work session by picking up where you left off. You can capture your current work status using the Working Sets window (select the 'Start > All Windows > Workspace > Manage Working Sets' ribbon option).

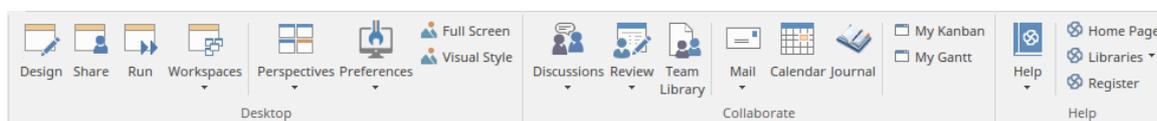


You right-click on the central panel of the 'Manage Working Sets' dialog and select the 'Store Main Tab View History' option, which captures the views that you have open as you close down your work station. If you also select the 'Apply When Model Opens' option, the system will automatically open those views when you open your model in the next work session. Alternatively, you could use the 'Open Working Set' option when you are ready to resume that work, if you need to do something else first.

Quick Reference

Ribbons in Brief

Ribbons, shown at the top of the work area, provide access to almost every tool and facility in Enterprise Architect. Each ribbon supports a domain of work - such as designing the model components and structure - and is divided into segments to group the tools and facilities according to the structure or function the tools support.

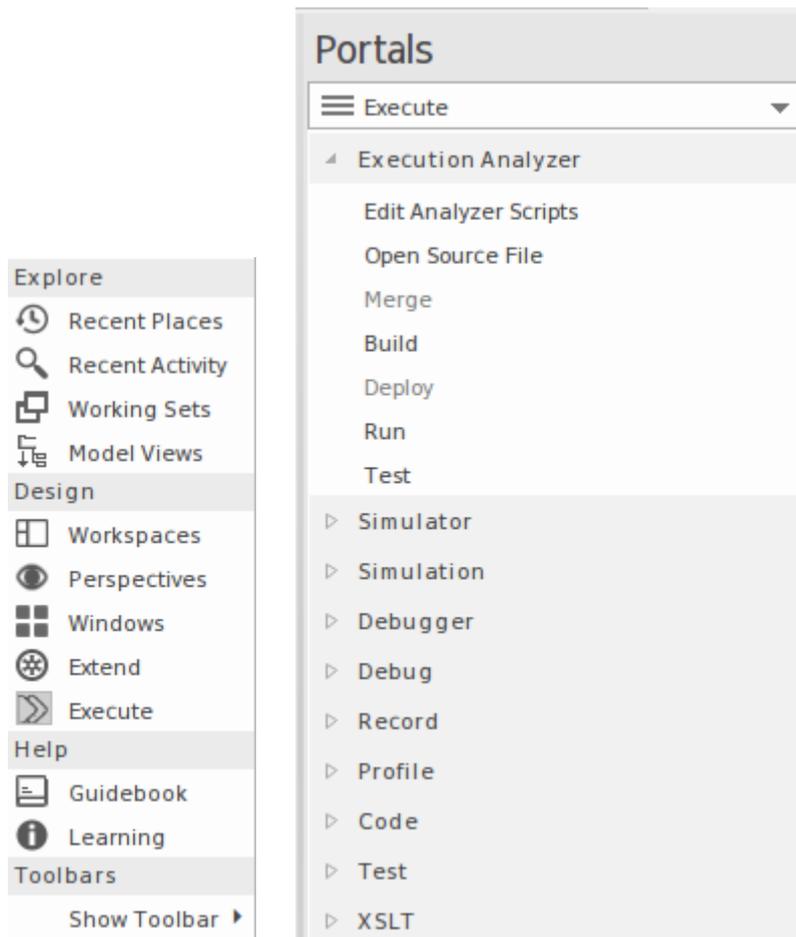


This example is the Start ribbon, which provides access to tools for organizing your work and your work area. In particular, look at the options in the 'Application' panel, which provides the tools for seeing what is in your model and where particular objects are. These tools include:

- Browsers - such as the 'Project' tab of the Browser window
- Properties displays - such as the Properties window itself and windows showing Notes, related Documents, Features and Constraints
- The Trace facilities for examining and tracing relationships between pairs of elements and sequences of elements

Portals Window

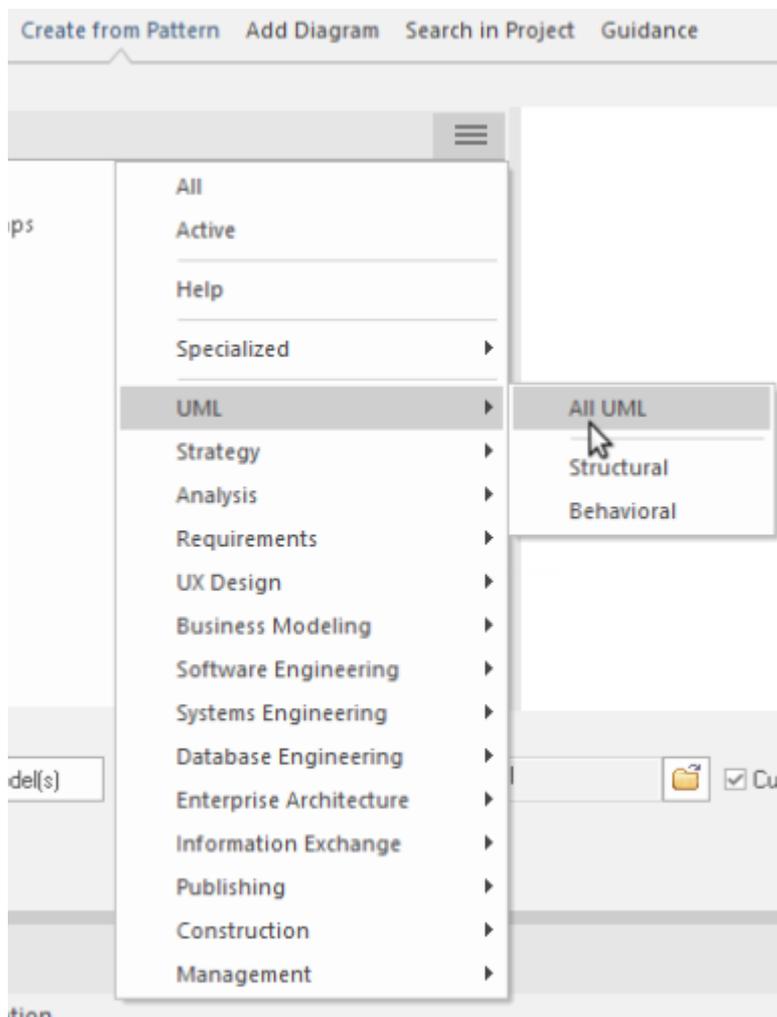
The Portals Window displays one of eleven Portals, and provides the facility for switching to a different Portal. The Portals identify tasks in particular areas of work, and provide links to the window or dialog for performing each task. The Guidebook and Learning Portals provide links to online information that describes a feature of Enterprise Architect and how to work with it. You display the Portals window by selecting the 'Explore > Portals' option at the left end of the ribbon bar.



Perspectives

Perspectives refine the model development facilities in Enterprise Architect to support a particular technology or domain. The most visible effects of setting a Perspective are that the contents of the Diagram Toolbox are restricted to those element and connector sets used in the domain, and the model Patterns are tailored to generate diagram and/or model structures of exactly the type for modeling in your selected area.

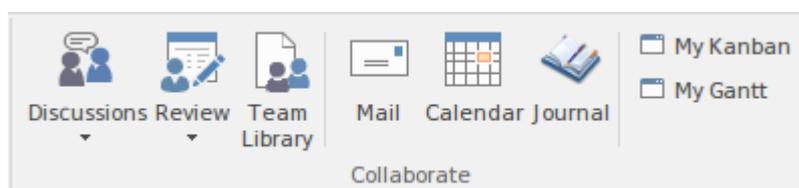
You can list and select the Perspectives from the 'Perspective' drop-down list in the top right of the display.



Collaboration

If you are working as a member of a team, you will need to contact colleagues with anything from a quick question to a list of formal review comments. Whichever type of message you want to send, Enterprise Architect has a facility to create and deliver that message.

You can access the facilities through the 'Start > Collaborate' ribbon segment, selecting the 'Discussions', 'Review' or 'Mail' options. The Discussions option gives you a Chat facility too.



(Note that the Mail and Chat facilities operate on user IDs, which cannot be set in the Trial Edition. The windows display, but you cannot send a message.)

Shortcut Keys

Many of the facilities and operations in Enterprise Architect can be selected by pressing keyboard keys as well as by selecting ribbon or menu options.

For a list of the keyboard shortcuts you can use, access the Learning Portal (select the 'Explore > Portals > Learning' ribbon option) and look at the *Keyboard Shortcuts* and *Diagram Shortcuts* topics under the 'Quick Reference' heading.

Resources You Can Use

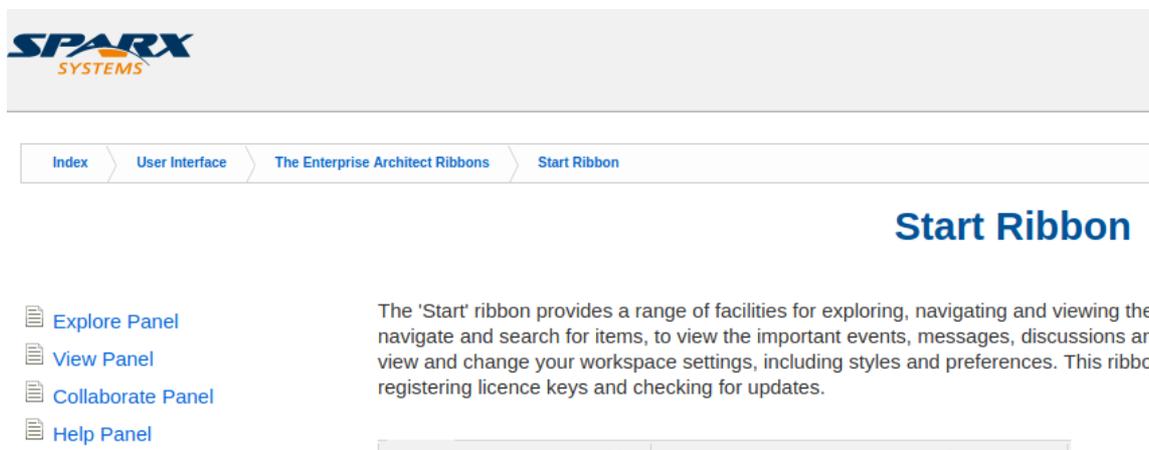
Help

At any time, if you want information on the purpose of a screen or how to complete it, you can select one of these options to display the Help topic describing that screen:

- Press F1
- Click on the  icon in the screen header, or
- Click on the Help button at the bottom of the screen

Or you can access the Help by selecting the 'Start > Help > Help > Open Help System' ribbon option.

Each Help topic displays as a web page. You can click on the list of topics on the left of the page to explore related and/or more detailed topics, or click on a point in the 'breadcrumb' trail above the topic to access more conceptual topics or Help on a different subject area.

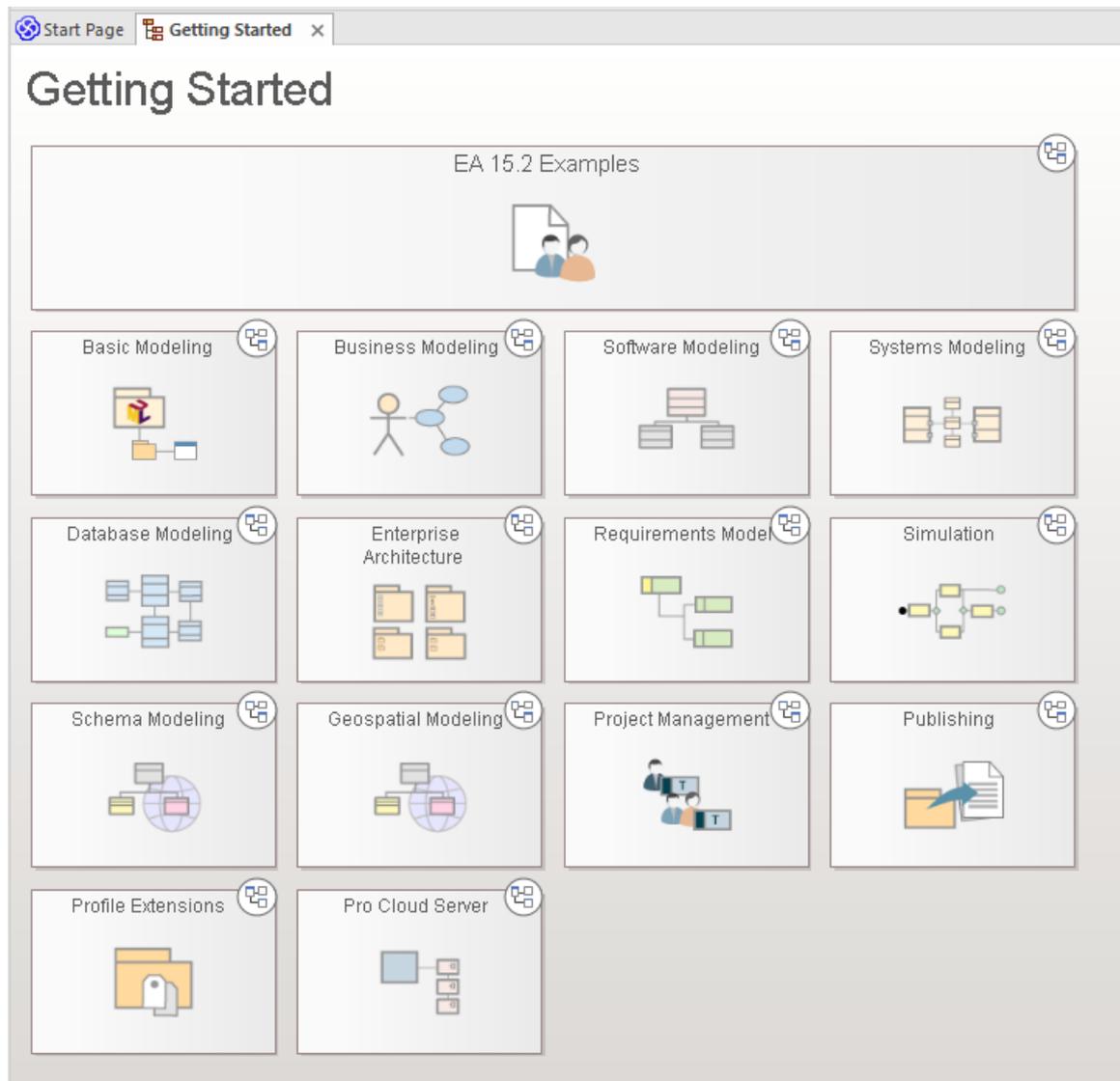


The Example Model (EAExample)

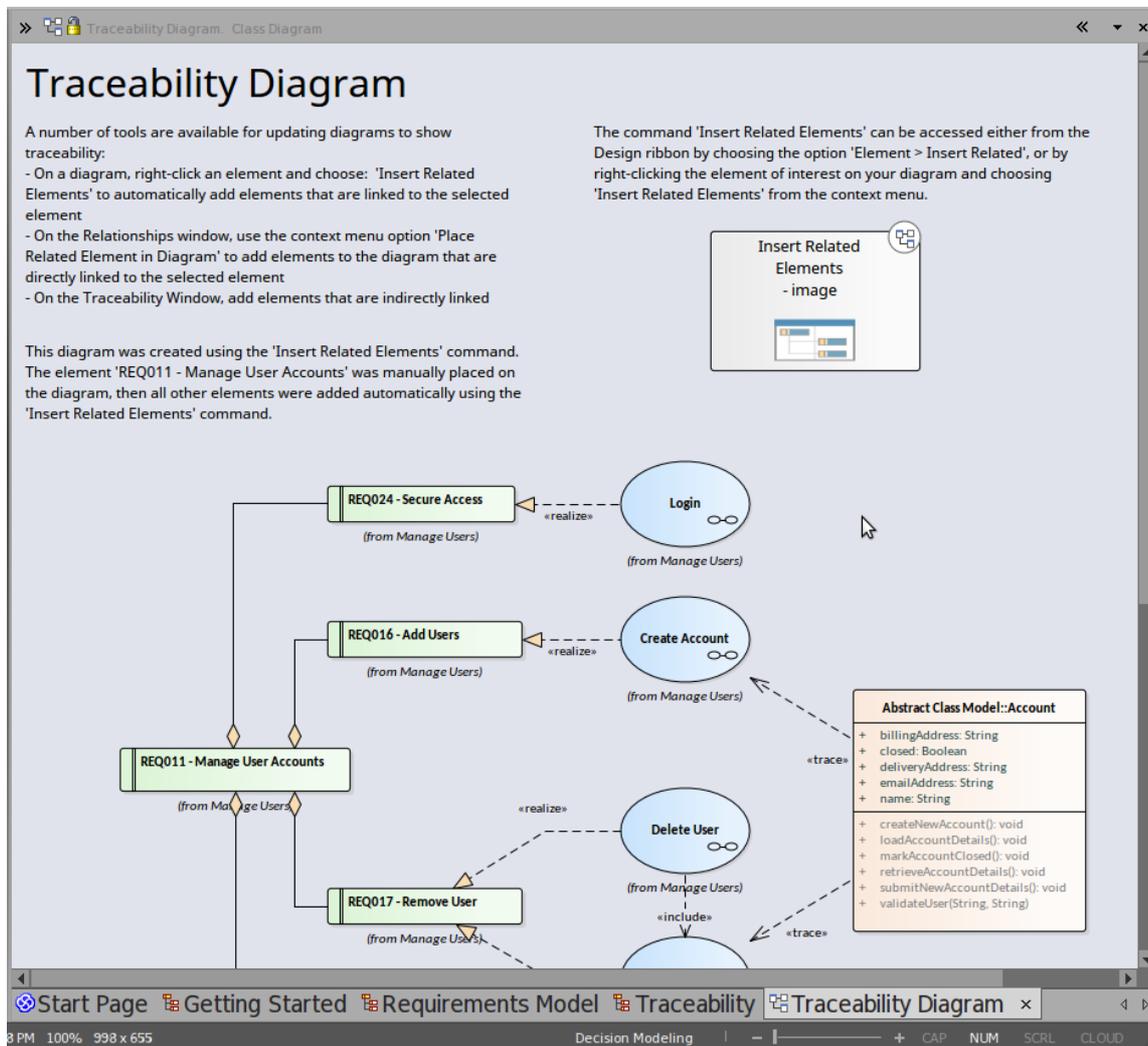
The Example model is a collection of model fragments, brought together into a single model, to illustrate the many different ways to use Enterprise Architect across a broad range of model domains. The Example model does not represent a model of a working system, instead it provides samples from many disparate systems.

The example model is provided as part of the Enterprise Architect product installation and you can open it from the 'Help' panel of the 'Start' ribbon, selecting 'Help | Open the Example Model'.

When you load the EAExample model, its default diagram 'Getting Started' is loaded. The 'Getting Started' diagram contains a series of links to other diagrams that relate to different modeling domains, such as Business Modeling or Systems Modeling, as well as some of the tasks you might want to perform in Enterprise Architect, such as Project Management and Publishing. Double-clicking on a diagram link will open the diagram. The next level of diagrams typically contain a description and some instructions on how to access related features in Enterprise Architect, and further links to model examples for that area of interest.



As an example, try double-clicking on 'Requirements Model' in the 'Getting Started' diagram, then 'Tracing Requirements' on the next diagram, and finally 'Traceability Diagrams' on the diagram with the heading 'Traceability'. This will bring you to an example of a Traceability Diagram.



You will find a description of what is on the Traceability Diagram, why it is useful and how to create one for yourself. You can right-click on the diagram itself - or its elements - and 'Find' them in the Browser window to see where the elements come from and how they relate to each other.

Webinars and Video Resources

Sparx Systems has published a number of web seminars, tutorials and video demonstrations of the use of Enterprise Architect tools and facilities, on our website. These recordings are often quite short and all are easy to watch.

You can access the recordings through the Learning Portal (select the 'Explore > Portals > Learning' ribbon option) by clicking on the 'Resources' option under the 'About' heading. This displays the 'Resources & Tutorials' web page, which provides three separate icons for the webinars, demonstration videos and tutorials.

Guidebooks

For a more in-depth discussion of Enterprise Architect's support for an area of work, you can read one of the many PDF Guidebooks held in the Sparx Systems online library. You can access these through the Guidebook Portal.

You can either read a guidebook online or print it.

The 'Lite' Edition



Enterprise Architect Lite is a free, read-only edition of Enterprise Architect that people such as project sponsors can use to review the project without making any changes.

The Read-Only Lite Edition

Facility	Detail
Further Access	<p>Users of Enterprise Architect Lite also have wider access to:</p> <ul style="list-style-type: none"> • The Model Library, where readers can create and read documents and discussions concerning specific elements • The Discussions facility, through which readers can make direct comments on a specific element • The Source Code Editor, where readers can open and edit external source code files, debug code, and configure and run Analyzer scripts • The 'File' icon , where readers can copy the project or create a shortcut to access it • The Relationship Matrix, where readers can export the matrix contents to a CSV file to be opened in a spreadsheet application • The 'Default Hours' tab to review project metrics <p>You can download the Enterprise Architect Lite Edition (as the Enterprise Architect Viewer) from the Sparx Systems website.</p>
Other Read-Only Options	<p>You can also make your model available to others in a read-only format by:</p> <ul style="list-style-type: none"> • Generating an HTML report on the model, which can be published on the web with read-only access

Release Notes

As of Enterprise Architect Release 15.2, this section of the Help presents the Release Notes identifying the changes made to the product in each release.

Where a change has been described or illustrated in the Enterprise Architect User Guide, a link is provided to the appropriate topic.

Click on the number of the release you want to check, to display the Release Notes for that release.

Release 15.2

[Release 15.2](#), released August 2020.

Also see the [Enterprise Architect 15.2](#) page of the Sparx Systems website.

- [Release 15.2, Build 1555](#)
- [Release 15.2 Build 1556](#)
- [Release 15.2, Build 1557](#)
- [Release 15.2, Build 1558](#)
- [Release 15.2 Build 1559](#)
- [Release 15.2 Build 1560](#)

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Release 16.0

[Release 16.0](#) released April 2022.

Also see the [Enterprise Architect 16.0](#) page of the Sparx Systems website.

- [Release 16.0 Build 1605](#)

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Release 15.2

Scroll through these sections to review the changes that have been made in Enterprise Architect for this released build.

Where a change has been described or illustrated in the Enterprise Architect User Guide, a link is provided to the appropriate topic.

For an overview of the features of Release 15.2, also refer to the [Enterprise Architect 15.2](#) page of the Sparx Systems website.

Element Formal Review

Element Review Approvers - For each element in a review, you can assign one or more Approvers who can sign-off on any discussion topics in the review of that element. You can:

- Quickly message one or more of the other Approvers using the context menu of a Discussion in the 'Reviews' main view
- Automatically message all other Approvers for an element when changing the Discussion status

The 'Reviews' main view has also been adjusted to provide a more streamlined interface for managing your Reviews:

- You can filter the list of reviews to show only the statuses that you need
- The Review list now shows a much cleaner view, leaving more room in the window for performing the review
- Review details now show the Approvers and Discussions for each element under review

Review Status Lock - It is now possible to set up a list of element status values that lock the formal review of an element so that no further review comments can be posted against it. The lock is applied automatically when the element assumes a defined status. This helps to preserve the decision making process for future reference.

Reviews view updates:

- When review of an element is locked because of the element status, the element icon now displays a '!' indicator
- When review of an element is locked because of the element status, but the review of that element is not approved by all Approvers, the item now include an additional message indicating the discrepancy

An Active Review is linked to your security user ID and can be set to persist between work sessions on the same machine or between parallel work sessions on different machines.

See the [Model Reviews](#) Help topic and the [Review Status Locks Page](#) Help topic.

The new Collaborations window (see *New Collaborations Window* item later in this section) now provides a quick overview of the recent Review history:

- Filter by timeframe or element status
- Show a preview of the Discussion within the history list
- Easily open a selected review to open the editor and contribute

On the 'Review' tab of the Collaborations window, you can filter the list of Review items according to:

- Whether Approvers have been assigned to the elements under review
- Which Approvers they are, and
- What Approval state they have set

See the [Discuss & Review - History Window](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Lists of Approvers are sorted by name
- Review topics are sorted to display the most recent first
- The Reviews view updates when the properties of a reviewed element are changed

- Creating an Approver for a Review is fully functional on Firebird databases
- The Reviews view can be included in Working Sets

Collaborate Window - Chat Tab

You can now conduct a Chat with another individual user (defined in User Security) in the model.

The notification system for monitored Chats has been improved, with additional options.

Chat messages posted in a conversation with a specific user have alternating colored backgrounds, to help separate the messages posted by yourself and by the other user. The layout of the tab has also been improved to allow a more compact view.

Consecutive messages posted by the same user, with no response between them, are bundled together in chronological order with the most recent first. If the messages span multiple days, the posting date is also shown against each message.

Colored text pasted into a Chat message will be changed to the default text color for the current Theme, to ensure it remains visible.

An additional 'visibility filter' has been added - 'Today +', to show messages posted today and the last 20 messages posted prior to today.

The new Collaborations window (see *New Collaborations Window* item later in this topic) now provides a quick overview of the recent Chat history:

- Filters quickly by timeframe
- Shows a list of contributions by each user in the specified timeframe
- Incoming messages (sent to you) are identified by a red arrow, and outgoing messages (sent by you) by a green arrow

The 'Chat' history tab defaults to Summary mode, which shows:

- The last message posted in each Chat group you have communicated with
- Chat groups grouped according to the time period of the last posted message

See the [Model Chat](#) Help topic.

Collaborations Support on Diagrams

Enterprise Architect offers a new centralized function for managing interactions with diversely separated teams.

A new diagram setting called 'Support Collaboration' is provided on the 'Element' tab of the diagram 'Properties' dialog. If an element on the diagram is being monitored for new Chat or Discussion posts, the option displays an icon next to the element when a message is posted but not yet read.

The facility integrates with the Model Chat when using Actors with their 'Alias' set to the security user login field:

- While the 'Chat' tab is visible, the diagram selection and active chat are synchronized
- If a 'New Chat' notification is visible the window will also be opened, taking you directly to that conversation

The facility provides a notification icon next to elements based on interactions available including:

- Monitored element discussions
- Unread Chat messages with a linked user

You can initiate a new Chat directly with a user.

See the [Collaboration Support in Diagrams](#) Help topic.

A new set of options has been added to the Hamburger icon context menu of elements on a diagram. These options provide access to various tabs of the Chat & Mail window, displaying posts and messages concerning the selected element and enabling you to send messages yourself.

See the [The Context Buttons](#) Help topic.

Collaborate Window - Comments Tab

A new 'Comments' tab has been added to the Collaborate window to help model users record ad hoc notes and comments as a daily log on the currently selected element, separate from the Notes window content. It has the same facilities as the 'Journal' tab, but can be updated by any model user.

You can define the number of comments listed, in chronological order starting from Today.

The 'Comment' tab also allows the selected comment to be pinned to the currently selected element (and subsequently unpinned).

See the [The Journal Window](#) Help topic.

The new Collaborations window (see *New Collaborations Window* item later in this topic) provides a quick list of recently-posted element comments, including a 'Modified' column showing the date and time at which an existing comment was modified. The window allows you to edit the current comment in the 'Preview' pane.

The column layout of the display is preserved across work sessions.

See the [Discuss & Review - History Window](#) Help topic.

Discussion and Review Postings

Postings in Discussions and Reviews are now listed with the most recent Discussion at the top. Within a Discussion, replies are listed with the most recent reply at the end.

An additional 'visibility filter' has been added - 'Today +', to show discussions posted today and the last 20 discussions or responses posted prior to today.

See the [Model Discussions](#) Help topic.

New Collaborations Window based on Discussion History/Review History Window

The Discussions History window has been renamed as the Collaborations window, with separate tabs to identify elements against which Review, Discussion, Chat and Comment topics have been posted. The window also contains the Model Mail inbox - see the *Model Mail* section later in this topic.

Additional context menu options have been included in the window to filter the types of posting and the number of days past during which the messages were posted.

You can open the Collaborations window using the Ctrl+Alt+9 keyboard shortcut, and refresh the window by pressing F5.

If you double-click on an item in the Collaborations window, it opens the appropriate tab of the Collaborate window with that item in focus.

See the [Discuss & Review - History Window](#) Help topic.

Model Mail

The Model Mail Inbox is now a tab of the Collaborations window, with these changes to improve usability:

- Options are selected through the context menu, not through Toolbar icons
- Sent Mail is displayed on a tab of the main work area
- Message display and composition is through a tab of the main work area, but you can switch to the previous method of using the 'Model Message' dialog if you prefer

- The list of mail messages can be filtered to show only those received during the last 30, 60 or 90 days
- See the [Model Mail](#) and [Create a Message](#) Help topics.

Dashboard Diagrams

A new 'Dashboard' style has been added for diagrams, to automatically lay out Chart elements so that they fill the entire diagram display area in one of a number of different layouts. You can select a continuous style for a scrollable view that shows a larger number of elements.

See the [Using Dashboard Styles](#) Help topic.

Focus Window

A new Focus window has been added to provide access to:

- The Model Views facility (which has been moved from the Portals window)
- A 'Working Sets' tab to create and apply combinations of open diagrams and facilities that you have just been working in and/or intend to use over a period of time (moved from the Working Sets Portal)
- A 'Quick Find' search tab for elements and diagrams
- A 'Revisit' tab listing diagrams, documents, windows and files that you have recently opened (moved from the Recent Places Portal)

The 'Recent Activity' Portal tab has become the 'Recent' folder of the Model Views tree.

If you double-click on a Package in the Model Views tree, that Package is highlighted and selected in the Browser window.

See the [The Focus Window](#) Help topic.

Inspector Window

The 'Element' and 'External Element' tabs of the Browser window have been moved to the new Inspector window, which enables you to review the characteristics of a selected element.

The 'Element' tab has been renamed as the 'Details' tab.

A 'Trace' tab (a synchronized instance of the Traceability window) and a 'Summary' tab (a synchronized instance of the Summary window) have also been added to the Inspector window.

See the [The Inspector Window](#) Help topic.

The Resources Window

The Resources window has become the 'Resources' tab in the Browser window. This includes a number of changes to folder names and positions - several subfolders, such as Linked Documents, have become top-level folders.

The MDG Technologies folder now shows all System, Model, User and Add-in technologies and allows expansion to show the contents of each technology.

See the [Browser - Resources](#) Help topic.

Dynamic Charts

In the Automation Interface, a JavaScript Chart library of new classes and functions has been provided to describe Chart types, data, and styling.

See the [Chart Package](#) Help topic.

This library can be called by a Dynamic Chart Artifact element with the *SSDynamicChart* stereotype, to generate a Chart that is filled via a script. The Behavior view (Alt+7) can be used to view and edit the script, which will run automatically during diagram load to display the Chart.

You can also use the Dynamic Charts technology Toolbox page to quickly create a Dynamic Chart definition.

See the [Dynamic Charts](#) Help topic.

You can generate Charts as displays of the persistent results of your simulations:

- Allowing the graphical results to be included in reports
- Sharing friendly results with stakeholders without additional simulation tools

External Simulation Integration

Enterprise Architect now supports the OMG SysPhS Profile, which provides:

- A visual approach to setting up a simulation
- An easier, model-based method for sharing simulations
- The automatic addition of compartments on SysML Blocks on diagrams, showing any variables and constants defined as stereotyped Properties (Parts) in the Properties window
- Library references containing Properties using vector and matrix types
- PhSVariable properties that specify an initial value, displayed in an *initial values* compartment

See the [SysPhS Simulation](#) Help topic.

Enterprise Architect also supports use of MATLAB Simulink, which enables you to:

- Export a SysML model to Simulink to simulate directed messages between Blocks
- Via the MATLAB Simscape extension, translate SysML Internal Block diagrams into a Simulink model, allowing simulation of physical systems described by your model
- Via the MATLAB Stateflow extension, translate StateMachine diagrams into a Stateflow model
- In each case, run a simulation and see the results as Charts

See the [Simulink Integration](#) Help topic.

MATLAB integration provides an explicit option for the MATLAB path to override automatic detection.

See the [MATLAB Solver](#) Help topic

There have been no updates to the Help in respect to these changes:

- The SysPhS Technology has been updated with a model library, patterns, and references to existing library blocks
- Simulink libraries referenced with a SimulinkBlock stereotype will now default to the Block name if the 'Name' Tagged Value is empty
- StateMachine export to Simulink and Stateflow has been improved
- Simscape components now handle a multi-line notes/description entry
- Simulink simulation scripts correctly register the start time
- Simscape simulations now specify 'time' constraints as unit-less; this will change 'time' to (time/{1,'s'})
- Simulink simulations still run after generated files are modified by another application
- Readability has been improved for Simulink models generated from models in which an IBD is not supplied:
 - Port sizes are reduced
 - Ports are now laid out around the required borders

- Simscape Library Block references have been improved
 - Initial Values corrected
 - Built-in references now match the Simscape settings
 - Improvements in behavior when multiple Simscape connectors are connected to the same physical node
- Modelica now provides support for StateMachine guided simulation; run the simulation and see charts of the results
- Modelica integration now uses a default output of 'mat' instead of 'plt' for compatibility with OpenModelica
- In SysML Simulation, custom library references are checked for both Modelica and MATLAB Simulink
- Where an element name is the same as a Modelica or Simulink keyword, the invalid characters are encoded with hex code to avoid name clashes
- Systems will no longer experience memory leaks after running SysML simulations
- The 'Open Simulation Directory' command allows selection of all relevant files - Modelica, Simulink, C++ and so on
- Library references containing properties with multiple stereotypes now write the initial value consistently
- Primitive Types can now be assigned to properties
- Datasets can now be configured to involve nested parts
- Binding Connector direction is now ignored during generation from Parametric diagrams
- StateMachines have been updated to include support for nested Substates and History States
- The Plot window in the SysML Simulation configuration has been modified to use a tree style, with expandable elements listing their Parts and Ports
- The Simulation Plot window no longer includes the extra level found in some models
- Modelica libraries are automatically imported for referenced Blocks
- ModelicaBlock reference dataset values are improved
- Modelica type reference naming improved
- Added additional logging, error checking and pre-validation in Simulation Configuration:
 - Pre-validation is optional as it will stop the simulation for going ahead if there are errors
- Support added for non-core Simulink Blocks:
 - The library name to use for Blocks outside of the main 'Simulink' branch can be found in the Simulink Help for the Block
- Simulink log output is now linked to elements, allowing double-clicking an error in the System Output to go to the element responsible
- Simulation changes are now automatically saved

Simulation Solvers

The 'Solver' Class allows you to use the functionality of external tools to perform complex tasks within your simulation. Each Class integrates with an external tool to allow easy use of the functionality within that tool and easily interchange variables with JavaScript.

Two Solver tools are currently supported:

- MATLAB Solver - Integrate directly with the MATLAB API to use any of its calculation or charting functions; it supports passing arrays to and from MATLAB, and passes strings as 'character vectors', instead of 'string scalars' as these are more compatible
- Octave - Integrates with an Octave interpreter to use any Octave functions

The Solver Class also provides informative error and warning text.

Solvers can be launched from the new Solver Console.

See the [Solver Consoles](#) Help topic, the [MATLAB Solver](#) Help topic and the [GNU Octave Solver](#) Help topic.

Extended Math Functions in Simulation

The built-in JavaScript library has been extended to provide access to the industry-standard Cephys library of math functions. It is now much easier to use complex mathematical functions within your simulations.

See the [JavaScript Math Library](#) Help topic.

DMN

To meet the DMN 1.2 Specification, Figure 8.9 - 8.11, *Rule as Crosstab* orientation is now available for all Decision Tables. During simulation a Crosstab-oriented Decision Table will highlight related Input Entry and Output Entry cells.

The Decision Table display now uses a consistent column width when changing orientations.

Merging Input Entry cells in Decision Tables has been improved:

- You can now perform in-place editing of a merged Input Entry item
- During simulation merged Input Entry items are now highlighted
- Context menu options are now consistent with other cells

See the [Toolbar for Decision Table Editor](#) Help topic.

The DMN Expression window now shows a horizontal scrollbar when the total width of the content exceeds the current window size. You can also resize individual columns.

See the [Decision Table](#) Help topic.

There have been no updates to the Help in respect to these changes:

- In a Decision Table, re-ordering of the rows using Ctrl+Up or Ctrl+Down has been improved:
 - You can now move multiple selected rows
 - You can now move rows containing merged cells
 - Flickering while any re-ordering is in progress has been reduced
- The behavior of the DMN Expression window when you are selecting new elements has been improved:
 - When you select a DMN element, the style and contents of the window will update to match the element
 - When you select a non-DMN element, the window fields will be cleared
- A <<Decision>> element property is refreshed when its invoked <<BusinessKnowledgeModel>> element name is changed

Diagramming

MDG Technology for Microsoft Azure added, with a new Image library to assist in developing diagrams that describe Microsoft Azure deployments.

See the [Microsoft Azure](#) Help topic.

The AWS Image library has been updated to the latest icon set provided by Amazon, and you can now apply the Light and Dark theme option to AWS diagrams. Model Wizard patterns for AWS have been updated.

See the [Amazon Web Services \(AWS\)](#) Help topic.

The Google Cloud Platform (GCP) Image library has been updated to the latest icon set provided by Google. Model Wizard patterns for GCP have been updated.

See the [Google Cloud Platform \(GCP\) Icons](#) Help topic.

If an element is dropped or copied onto a diagram as a link (reference), any related Note, Text or Boundary element is duplicated on the target diagram.

See the [Drop Elements from Browser Window](#) Help topic.

The Pop-up Image Viewer has been extended to display the images linked to Image Assets.

See the [Image Assets](#) Help topic.

When using Diagram Layers:

- And clicking into and out of a diagram, any selected Diagram Layers are preserved
- On a diagram, objects contained in hidden layers will no longer be selectable
- The 'Layers' tab of the 'Filters & Layers' dialog has a 'Layers' checkbox that selects or deselects all the defined layers in the list; when the checkbox is cleared, you can select individual layers to apply to the diagram

See the [Diagram Layers](#) Help topic.

Diagram Filters - initial display of the 'Filters' tab of the 'Filters & Layers' dialog shows the Filter groups collapsed.

See the [Diagram Filters](#) Help topic.

The floating 'Helper' buttons to the right of a selected element have been redesigned and now show context menus to provide increased functionality.

See the [The Context Buttons](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Diagrams modified by another user while you are viewing them can now be reloaded directly from the prompt 'This diagram has been modified by another user'
- The behavior of resizing, adding and removing edge-mounted elements on SysML diagram frames has been improved
- SysML Ports and Parts obey the 'Show Property Type' option
- When moving between multiple visible diagrams, the diagram tooltips are now displayed without you having to click inside each diagram
- Diagram Tooltip widths are now scaled with DPI
- The compartments on a SysML Block element will now be automatically updated when switching a relationship between Aggregation and Composition
- BPMN diagrams with flow direction set will no longer move Pools off the edge of the diagram
- Connector 'Change Direction' commands are now enabled and disabled in accordance with the Security setting 'Apply Locks to Connectors'
- When dropping embedded elements onto a diagram in 'paste as a new element', locks on the new parent are now propagated to the child embedded elements as well
- 'Paste as new' also checks the locks on the target diagram and its owner Package or element, and is blocked from operating if the owner is locked
- The Keyboard Shortcut for 'Snap To Grid' (I) has been discontinued
- Moving attributes and operations between elements will now also update linked connectors
- Deleting attributes and operations will now move any linked connectors to the owning element
- The displayed name of an ActionPin with an empty name will show empty if it doesn't bind an ActivityParameter
- Strict Connector Syntax and the Quick Linker now:
 - Allow Control Flow for Call Actions and Events
 - Have improved behavior for UML Deployment, SysML Allocate, and SysML Requirement connectors
- Strict connector Syntax now:
 - Allows any element to be attached to an unstereotyped Note or Constraint (so Boundary elements are now valid targets for NoteLink and Dependency connectors)
 - Validates new links to ArchiMate Junctions against the elements on the opposite side of the Junction, reflecting the understanding that Junctions are effectively a way to say that, conceptually, the relationship has multiple sources and/or multiple targets
- ArchiMate connectors linking to other connectors can be created with the Quick Linker
- In ArchiMate diagrams, Aggregation and Composition connectors are not created with an arrowhead

- Package Contents now display the correct icon for Packaging Components
- UAF Exhibits connector rules have been updated to ensure all valid source elements are allowed
- UAF ServiceSpecification now inherits the SysML Block rule for Generalizations
- UAF Capability no longer restricts Dependency targets to other Capabilities
- The Feature Linker can now be enabled on diagrams where it has previously been disabled
- New Diagram Themes have been added - 'Enterprise Architect 15.2' (the current default), 'The Deep' and 'Ocean Depths'

Code Engineering

C++ Code Engineering now supports round-tripping the C++ 14 *constexpr* specifier on a variable or function.

See the [C++ Conventions](#) Help topic.

There have been no updates to the Help in respect to these changes:

Reverse Engineering of:

- C# now:
 - Supports C# 8.0, with correct handling of Indices and Ranges, Null-coalescing assignment, and Interpolated verbatim strings
 - Imports documentation comments into the corresponding 'Note' fields
- C++ now allows:
 - The import of C++11 *noexcept* functions
 - The import of C++11 *final* classes
 - Use of a decltype specifier return type (including C++14 *decltype(auto)*)
- Python now:
 - Incorporates *type* hints and *parameter type*

The Source Code Editor no longer displays a Class for variables initialized using a namespace.

Code Generation Templates have been updated to support supplying arguments to a list macro:

- Arguments are supplied by adding `@arguments=(<values>)`
- In the called template you can reference them using variables named `$parameter<n>`
- For the call `%list="Operation" @separator="\n" @indent="\t" @arguments=("test")%`, `$parameter1` will receive the value "test"

Code Generation Templates now include inherited Operations when using a custom operation list.

Behavioral code generation has been updated to generate an *else* block if the connector constraint is 'else'.

VHDL import has been updated to handle variable definitions with a range constraint.

XMI Import and Export

There have been no updates to the Help in respect to these changes:

- Discussions on Packages, elements and diagrams can now be round tripped using XMI 1.1, XMI 2.1 and Native XML
- Baseline Comparison has been extended to support the comparison of Discussions
- The 'Baselines' dialog now displays a newly-created Baseline when it was created using a Cloud Connection
- The 'Publish XMI' dialog now offers UML 2.5.1 (XMI 2.5.1)
- Native XML Import will not report 'System resources exceeded' errors when importing connectors into a .EAP file

- Native XML Import with Strip GUIDs will no longer change the target of existing diagram hyperlinks
- Native XML Project Transfer now automatically updates Firebird Index Statistics
- ArchiMate Model Exchange File Format 3.1 support is now available
- ArchiMate 3 Model Exchange File import over Cloud connection no longer causes database errors
- XMI 1.1 and XMI 2.1 updated to support round trip of Element and Diagram Comments
- Import of SysML diagrams from Magic Draw into Enterprise Architect updated to ensure Enterprise Architect uses a matching diagram type
- Import of SysML into Magic Draw now imports Parts from the containing Classifier's ownedAttributes

User Interface

A JavaScript Console has been created to display in the main work area:

- With a large text entry area for new commands
- With two new ribbon commands to create a console, with a Solver object created by default

See the [Solver Consoles](#) Help topic, and the [JavaScript Console](#) Help topic.

Constraint elements are now named elements that are listed in the Browser window and can be shown on several diagrams. They have a standard 'Properties' dialog, allowing you to assign properties through the dialog as well as through the Properties window.

See the [Constraint](#) Help topic.

Dropping multiple Packages from the Browser window onto a diagram now prompts you to define the drop type only once.

See the [Drop Package From Browser Window](#) Help topic.

You can now paste copied elements directly under another element in the Browser window.

See the [Copy Elements](#) Help topic.

Model Views (the 'Model Views' tab of the Focus window) display views provided by all technologies regardless of the selected Perspective.

See the [Model Views](#) Help topic.

The 'Legend Properties' dialog now supports:

- Assigning a format to all connectors regardless of type (the <All> option)
- Assigning a format to Information Flow connectors
- Formatting based on a profile Tagged Value, as listed under the 'Global Tagged Values' option

See the [Legend Key](#) Help topic.

Docked list windows now support drag and drop of a selected item onto a diagram object to move that item. This applies to these windows:

- Maintenance (see the [Move Maintenance Items Between Elements](#) Help topic)
- Project Management (See the [Move Decisions/Events Between Elements](#) Help topic)
- Testing (see the [Move Tests Between Elements](#) Help topic)
- Responsibilities (see the [Responsibilities](#) Help topic)

The 'Application Look' dialog offers an 'Internal Tab style' option to select one of a range of styles in which to display the internal tabs of docked windows.

See the [Visual Styles](#) Help topic.

The docked Properties window toolbar has an icon to display the appropriate dialog for any special actions the object might have.

See the [The Properties Window](#) Help topic.

The Start Page now includes a 'Custom' item within the 'Open' section, which allows you to enter a connection string to directly access a project.

See the [The Start Page](#) Help topic.

Rich Text Note Editors are now scaled to 110% by default for readability - this scale can be adjusted through the 'Default Note Zoom' option on the 'Visual Style' dialog.

See the [Visual Styles](#) Help topic.

In the Features window, for Structural Elements (Parts, Properties, Ports, Interaction Points) the element Type can be defined both on the relevant tab and in the 'New Embedded Element' dialog.

See the [Manage Structural Elements](#) Help topic.

The user options and keyboard accelerator to show a web browser inside Enterprise Architect have been removed.

The Help content documenting these options has been removed.

There have been no updates to the Help in respect to these changes:

- The Browser window vertical scrollbar will no longer draw too large
- The behavior of the 'Specialize' ribbon has been improved when opening and closing models
- The 'Change Management' and 'Project Management' docked lists no longer display a date when none has been set
- On the Properties window for Messages, changing the setting of the 'Start new Group' checkbox will enable the Save icon in the toolbar
- The docked Properties window now allows setting an Activity Parameter as 'Control Type'
- The docked Properties window now allows setting 'Type' for Object Node-related types
- The State Chart editor now allows you to rename a State or Trigger element by pressing F2
- On the 'Generate Documentation' and 'Generate HTML' dialogs, the label sizes have been improved
- Display of RefGUID and RefGUIDList Tagged Values in these windows now includes the names of the referenced elements:
 - Diagram List View
 - Specification View
 - Baseline Compare
- The scroll behavior of the Traceability window has been improved
- The 'CSV File Specification' dialog now keeps the currently-selected item visible when reordering items
- When you are creating an Exposed Interface, the 'Exposed Interface' dialog is initialized with the correct interface type (required or provided)
- In the Model Views tab of the Focus window, Model Library connections are loaded as needed, when you click on the 'Database' icon for a connection
- The Element Behavior (Code) editor structure tree now includes nested behaviors
- The Element Behavior (Code) editor now provides additional options in the context menu:
 - Edit Behavior
 - Edit Internal Code
 - Edit/View Source Code
- The Element Behavior (Code) editor now provides code hinting for Model Add-ins:
 - Includes built-in JavaScript functions for Map, Array, String, Object, JSON objects
 - Includes members of the current Class
- The docked Maintenance window in-place Create now leaves the 'Resolved By' and 'Resolved On' fields blank
- The docked Maintenance window will now be updated when new Maintenance items are added in other locations
- The 'Working Sets' dialog now displays user working sets
- The Scenario editor no longer prevents merging of some steps

Stereotypes/Tagged Values

There have been no updates to the Help in respect to these changes:

- If a stereotype defined in the 'Stereotype' dialog has no description, it can be removed from the dialog
- Stereotype field and property groups are now available in:
 - Association End properties
 - Database modeling column properties
- You can now change column stereotypes and see the properties defined by custom stereotypes in the property lists for those columns

Model Add-Ins

There have been no updates to the Help in respect to these changes:

- The Element Behavior editor no longer shows unused Operation Behavior and Class Imports code fields for Model Add-Ins
- The Element Behavior editor now allows reloading an active Model Add-In
- Model Add-Ins now receive the EA_Connect broadcast during initialization, to allow for creating Workflow Add-Ins

Other

#Branch# substitution in a Custom SQL Search no longer performs a full load of the specified Browser branch (Package). Instead it has parameters to specify *how* the Package is loaded:

- #Branch# - Expands to all child Package IDs of the currently-selected Package
- #Branch=GUID# or #Branch=ID# - Expands to all child Packages of the specified Package
- #Branch=ID, ID, ID# - Expands to all child Packages of the specified set of Packages

See the [Create Search Definitions](#) Help topic.

In the Code Behavior view, editing the JavaScript code in behavioral models such as StateMachines and Activity diagrams allows all the behaviors to be edited on a single screen. The code editor includes a structure tree through which you can navigate to and edit any child element behavior. This is particularly useful for running systems engineering simulations.

See the [Editing Source Code](#) Help topic.

A Publishing Perspective has been added, including the technologies for creating documentation, charts and dashboards.

See the [Types of Perspective](#) Help topic.

There have been no updates to the Help in respect to these changes:

- ArchiMate 3 Model Wizard Patterns improved
- Error handling for SQL errors over direct DBMS connections improved
- The Relationship Matrix context menu for elements no longer generates errors when accessing the Quick Linker
- External model Collaboration information is no longer loaded when the user ID is different between models
- The docked Properties window now can now save updated initial values on nested properties
Note: If you have been impacted by this you will need to run a Project Integrity check to remove duplicate 'CustomProperties'.
- Editing of personal Journal entries has been restored
- Workflow Events received by Add-Ins will now include the element type and stereotype information in the Info

object

- When autonumbering is being applied to a Package and its child objects are tested for locking status, they are correctly checked for lock type rather than just the presence or absence of a lock
- A project integrity check will no longer fail when a connector end object is missing
- Direct database connections without saved credentials will now allow entering a password
- SQL errors arising when pasting diagram-owned elements to a new diagram have been corrected
- Error handling when saving Tagged Value text that exceeds the database field length has been improved
- Behavior that could prevent structured Tagged Values being updated from the docked Properties window has been corrected
- Project Transfer to MySQL will copy Relationship Matrix profiles with no name
- Metamodel constraints now allow you to restrict valid owners for profiled attributes and operations using the `umlRoles` ownedAttribute, ownedOperation, and owner
- Metamodel constraints referencing Decision, Synch(H) and Synch(V) will now be exported with an appropriate name
- Metamodel constraints on classifier and type are now applied when editing from the docked Properties window
- The Model Glossary editor now allows you to change the case of a defined term
- The API 'LockPackage' functions (`Package.ApplyUserLock`, `Package.ApplyGroupLock` and `Package.ReleaseLock`) also apply locks to Boundaries and other elements not visible in the Browser window
- The 'Unknown user or password' message no longer displays when loading a model after inspecting a watched model
- Adding elements within the Browser window will copy the definition in the Template Package
- Duplicating a Version Controlled Package in the Browser window will remove Version Control settings from the duplicated Package
- The Execution Analyzer context menu can now be navigated using the keyboard
- The Features window no longer causes a delay when selecting States
- For Oracle casts use ten 9s with the `TO_NUMBER()` function when comparing table counters
- SQL Server backend support now corrects type coercion errors
- In SQL repositories, changing between RequiredInterface and ProvidedInterface no longer fails
- Reusable Asset Server Package registration no longer reports an error on case sensitive database types
- Selecting and de-selecting embedded elements on the 'Interaction Points' and 'Parts/Properties' tabs of the Features window will no longer update the currently-open diagram when:
 - The diagram is locked
 - The current selection is not on the diagram
- Glossary report generation no longer fails
- The `Attribute.Update` API call no longer results in additional broadcasts for changing context

Release 15.2, Build 1555

Scroll through these sections to review the changes that have been made in Enterprise Architect for this released build.

Where a change has been described or illustrated in the Enterprise Architect User Guide, a link is provided to the appropriate topic.

Element Formal Reviews

These changes have been made to the management of Review elements (Start > Collaborate > Review > Manage Reviews):

- The Reviews View now includes a 'Priority' column for review topics
- The Reviews View no longer displays the Review element status and review duration below the element name
- The 'Set : General Items' label has been changed to 'General' in the Reviews View window
- Review diagrams are no longer added automatically when a Review element is created
- The 'Review' tab of the Collaborate window no longer shows the text '0 of 0 Approvers' when no Approvers are defined
- In the 'Review' tab of the Collaborate window, the 'Create Review Topic' context menu option is now 'Create Review'
- The properties of the Review element are now displayed in the Properties window

See the [Model Reviews](#) Help topic.

Collaboration

- Members of the 'Administrators' security group can now join any security Chat group and get Chat notifications
See the [Model Chat](#) Help topic
- In the Discuss & Review window, the context menu in the 'Journal' tab now offers these extra font options for a selected text string:
 - Set a specific font face
 - Remove character formatting
 - Restore the default font to the selected text
- When operating in local files, the 'Check for Update Every' context menu option on the Discuss & Review window 'Journal' tab now provides the 'Enabled' option to refresh the tab (or, if not selected, not update the tab with new comments)
See the [Discuss & Review - History Window](#) Help topic
- Collaboration diagrams will now display 'Chat' icons for elements in different Packages
See the [Collaboration Support in Diagrams](#) Help topic

There have been no updates to the Help in respect to these changes:

- The 'Comments' tab of the Collaborations window does not now reload multiple times when updated
- On the Collaborations window, the 'Preview' pane for the 'Reviews' tab and the 'Discussions' tab now maintains selection during automatic refresh

External Simulation Integration

There have been no updates to the Help in respect to these changes:

- Validation of ConstraintBlocks before simulation now allows ConstraintBlocks composed of other ConstraintBlocks
- Generation for Modelica Simulation now allows generation of initial value for nested properties
- Generation of a Simulink Simulation now uses the correct name for existing Reference Blocks
- Simulation updated to ensure that any log messages generated are always displayed

Simulation Solvers

There have been no updates to the Help in respect to this change:

- The Solver Class is now automatically configured to use MATLAB or Octave under either Wine or Linux

Diagramming

- Diagram References now provide an easy mechanism to move elements between Packages and diagrams:
 - By default when you drop an element onto a reference you are now prompted to move the element to the Diagram, Package or Both or to create a link on the target diagram
 - The Diagram Frame context menu allows you to select a different default behaviorSee the [Diagram Frame](#) Help topic.
- The layout of Nested Ports has been improved to:
 - Ensure that child Ports are always bound to an edge of the parent during a move
 - Ensure that child Ports will maintain the same edge during a resize or moveSee the [Nested Ports in SysML](#) Help topic.
- Shape Scripts will now print the name of the referenced element when printing a RefGUID Tagged Value
See the [Predefined Structured Types](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Dropping an Operation from the Browser onto a classified ActivityPartition will now create a CallOperationAction
- Validation of State Transitions to Terminate nodes has been improved
- State Transition properties now allow you to change between two Signals with the same name
- Classifier Selection now allows the selection of StateMachine and Interaction elements as Classifiers
- Disabling of Custom compartments for a diagram will now be set correctly
- Metamodel constraints no longer:
 - Add Sequence Messages to the suggested Quicklinker items on non-Sequence diagrams
 - Provide the option of creating a new Lifeline on non-Sequence diagrams
 - Provide the option of creating a new instance using a non-instance type

Kanban

- Kanban lanes can now be marked as 'Not-bound', which means that adding an element to that lane will not change the bound property for that element
- Default Kanban lanes no longer assign the bound property to the column title
- Moving an element to a bound Kanban lane now shows a menu allowing you to confirm the change
- The 'Unbound' option for Kanban lanes has been renamed to 'Bind to Left' to better reflect what the option does
- Kanban binding can now be set as read-only, which results in an easy overview of the binding without un-intended changes being made

See the [Kanban Options](#) Help topic.

There have been no updates to the Help in respect to these changes:

- The Kanban dialog has been improved:
 - Keyboard-only navigation and editing is now possible
 - If changes are made to the Kanban diagram through the Kanban dialog, and the dialog is canceled, the diagram is returned to its original state
 - The dialog no longer marks the diagram as changed when it is opened
 - The Search filters list control is now consistent with the list controls in other places
- The Kanban dialog is now available from the Diagram context menu in the Browser window
- Diagrams bound to a Tagged Value now update the docked Properties window automatically
- Newly added elements from Kanban search are now sized to include the displayed Tagged Values

XMI Import and Export

There have been no updates to the Help in respect to these changes:

- XMI Import with Strip GUIDs now keeps synchronization between connector properties and elements.
- Diagram Images generated during XMI Export will now render Diagram Frames correctly.
- The Native/XMI import speed for QEAX models has been improved.
- Import of EMX files including diagrams has been updated to prevent issues.
- The import of MDZIP files has been improved:
 - Initial and ShallowHistory PseudoState elements now import correctly instead of becoming a Synchronization
 - State Regions are now correctly mapped with the contained elements referencing that region
 - State Transitions are now imported complete with the referenced Trigger and Signal
 - Association Roles are no longer imported as a Part
 - RequiredInterface and ProvidedInterface elements on a Port can now be imported
 - The InterfaceRealization connector can now be imported
 - Imported SysML and UAFP elements and connectors are correctly linked to Enterprise Architect's Profile

Other

- Importing User IDs from Windows Active Directory has a new dialog option - 'Allow non-domain users (insecure)'; this allows users outside the domain to be auto-logged on
See the [Import User IDs From Active Directory](#) Help topic
- JavaScript Simulation now truncates strings that exceed the maximum length of a Trace message
See the [Dynamic Simulation with JavaScript](#) Help topic

There have been no updates to the Help in respect to these changes:

- Active Directory integration improved:
 - Importing Active Directory Users now uses 'User Principal Name'
 - Auto login will now attempt to match both 'User Principal Name' and legacy NetBIOS\SAMUsername formats
- Changes to Structured Tagged Values made in the Properties window are now saved
- JavaScript Simulation now handles string values correctly regardless of the case of the type
- Visibility Levels on SQL Server models no longer cause deadlock during Native XML import and Browser copy and paste
- The Professional Edition no longer shows menu items for these features, which are disabled in the edition:
 - Dynamic Charts
 - JavaScript Console
 - Custom Drawing Style

- Collaborate Links

Release 15.2 Build 1556

Scroll through these sections to review the changes that have been made in Enterprise Architect for this released build. There have been no updates to the Help in respect to these changes.

Diagramming

- Corrected display of the ActionPin property type for CallBehaviorActions
- Non edge-mounted child elements will now not move further than expected when moving the parent element
- Setting a 'Structural Feature' in a ReadStructuralFeature action no longer fails in some situations
- Corrected a display issue for a Call Behavior ActionPin when it represents an ActivityParameter and the Parameter Type is changed
 - Also prevented overriding the Type directly on the ActionPin in this situation, to conform with the UML 2.5.1 specification

Kanban

- Restored the 'Default' Kanban lane behavior so that it updates the property specified in the 'Bind Kanban' field, unless the 'Not-Bound' option is enabled
- Clicking the Apply button on the Kanban 'Properties' dialog will correctly persist Kanban Search Filters
- Corrected the Kanban option 'Read-only Bind' to avoid an element moved to a 'Not bound' lane potentially moving back under specific circumstances

User Interface

- The modal 'Properties' dialog for an attribute will correctly persist changing the type to a classifier with the same name
- Improved the stability for the modal 'Properties' dialog for an operation when adding Tagged Values to an operation parameter
- Prevented unintentional scrolling in the docked Properties window when updating values
- Removed the duplicate 'Concurrency' property from the docked Properties window for an operation
- The Browser window menu option 'Add as Favorite to' corrected to ensure available groups are consistently displayed
- Improved the In-place edit behavior in the Tagged Values tabs where certain actions could cause an application error

User Security and Login

- When using Windows Active Directory groups in the Floating License Server you can now leave the username and password blank in the Keystore configuration screen
 - Secure Windows authentication will take place automatically
- The web browser will no longer automatically close after OpenID authentication, to avoid issues experienced across some browsers
- Support unicode characters in the user information (such as username or group names) returned by the OpenID provider

- OpenID group claims will now use a case-insensitive match
- Improved stability when displaying results of an OpenID test
- Security User login names will now truncate to the database field length rather than a fixed value, to accommodate users extending the field in the Database

External Data Integration

- Local models using an SBPI connection will now connect to the providers in the Integration window
- Corrected handling of menu items with special characters

Other

- Round-trip using XMI 1.1 with DTD no longer reports a validation error
- Improvements have been made in adjusting variables through the Simulation Console during simulation of an Activity diagram, to avoid potential failures

Release 15.2, Build 1557

Scroll through these items to review the changes that have been made in Enterprise Architect for this released build.

There have been no updates to the Help in respect to these changes:

- Improved conformance with the UML Specification for some Action types
- Restored the previous behavior for showing types and compartments for SysML diagrams, to prevent layout changes
- Corrected the issues when closing the Operations or Receptions pages of the Features dialog from a Sequence Message
- User Login length is now detected correctly during Project Transfers
- Updated the default EA Schema to support longer Login Names
- Corrected the drawing of exposed interfaces where, under specific situations, they might appear detached from the parent element when the parent is not a Port

Release 15.2, Build 1558

Scroll through these items to review the changes that have been made in Enterprise Architect for this released build.

There have been no updates to the Help in respect to these changes:

- Database error handling has been updated to include more useful error messages
- Create User and Project Transfer now allow the database to handle restrictions on user-name lengths
- XMI export with 'Generate Diagram Images' enabled now draws Chart elements in saved images
- The automatic insertion of diagram frames for diagrams edited in releases prior to 14.1 no longer fails when the parent element is locked
- Database schema version 1558 and future versions, when applied, will have the version number visible in the 'About' dialog and DB transfer log
- The system will prevent a potential application error under the rare circumstances of saving a diagram when the element style exceeds the database field length

Release 15.2 Build 1559

Scroll through these items to review the changes that have been made in Enterprise Architect for this released build.

Where a change has been described or illustrated in the *Enterprise Architect User Guide*, a link is provided to the appropriate topic.

Integration Plug-Ins (SBPI)

Support has been provided for RESTful API notifications from a client Enterprise Architect to PCS-based Integrations; notification is sent to Custom Integrations when an Enterprise Architect element is linked, unlinked or updated. This requires PCS 4.6 build 65.

See the [ISBPIIntegrationPlugin interface](#) Help topic.

Allow Custom Integrations to pass log messages to Enterprise Architect; they will be displayed in the System Output window.

Allow different icons for different menu levels and item types.

See the [Custom SBPI Services](#) Help topic.

The Timeout duration when communicating with an Integration Plug-in can now be customized from PCS. This requires PCS 4.6 build 65.

See the [Add/Edit Data Provider](#) and [WebConfig - Add or Edit an Integration Data Provider](#) Help topics.

There have been no updates to the Help in respect to these changes:

- When selecting to create a local element using the Trial edition, a pop-up notification will now display to indicate this feature is not available in this edition
- Handling of unresponsive external providers has been improved
- The active External Data window will now recognize any modification to Field Mappings for an Integration Plug-in
- Better messaging has been provided for when no results are returned by an Integration Provider, to help distinguish between failure and a valid result:
 - When no sub-menu items are returned, a message is displayed in the System Output window
 - When no results are returned for a menu item, a message is displayed in the External Data window
- Increased security has been applied to the External Data 'Remember Me' option; note that existing remembered credentials will be lost and must be re-entered
- The display of different icons in the External Data window is supported for each breadcrumb menu level and for any item type
- The display of icons on high DPI screens has been corrected
- The behavior has been corrected when selecting 'All Items Linked to Model' and a time period is not chosen
- The ability for custom integrations to support threaded discussion has been added; this is also supported now in the Polarion integration
- Custom Integrations are now listed under their 'Group' as defined in Pro Cloud Server configuration; this requires PCS 4.6 build 65
- Unicode characters are handled correctly when making queries to External Data Providers
- Duplicates in the External Data Type Mapping configuration list are now prevented
- The External Data window breadcrumb menu has been corrected, by removing 'Custom Services'
- Fixed the crash in CAuthorisationManager

Other

The timeout duration in Enterprise Architect when communicating with a Pro Cloud Server can now be configured from the 'Manage Model Options' dialog.

See the [Cloud Page](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Hovering over a Glossary item will no longer display its meaning with escaped extended ASCII characters
- Import/Export of CSV data has been updated to correctly handle escaped extended ASCII characters
- Corrected saving Structured Tagged Values when contained under another level of grouping
- Corrected a potential application error when a connector is moved to a new Port created via the docked Features window
- The MagicDraw import has been corrected to prevent a Trigger being lost when using a Change Event on a StateMachine Transition
- Amazon Web Service icons have now been updated to Release 7
- The Project Integrity Check now detects Package Baselines that have been set aside during an XMI import and not restored, or where no matching Package exists
- Corrected a potential integrity issue when restoring a Baseline from a model connected via the PCS when Auditing is enabled
- The modal 'Features' dialog closes correctly, when opened from the docked Sequence Message window
- Included a new option 'Copy Selected Rows to Clipboard' when displaying a Package or diagram as a list
- Corrected the list of Event Types displayed from the docked Project Events window
- Changing the stereotype for an attribute or operation will now load the defined properties into the docked Properties window
- Corrected the 'Auto Spell Checking' behavior in Rich Text documents to avoid a potential application error when parsing the Table of Contents
- Prevented a potential application error when running a Script that includes an extremely long line of code
- Improved detection of changes to Version Controlled Package files, to prevent unnecessary imports
- Cached Diagram Images, Image Maps and HTML for Linked Documents will be updated when importing Native XML
- The display of Linked documents in WebEA and Prolaborate now supports displaying the text background color
- A Visual Studio Solution import will correctly choose the selected projects when the list is sorted
- Added support for importing Visual Paradigm diagrams from XMI 2.1
- Allow saving model-based Add-In scripts when using a Postgres model
- Multiple improvements to Executable StateMachine Code Generation
 - Transition Effects will now generate the selected operation with parentheses and a semicolon
 - Corrected the compile issue for generated C code when an operation is referenced in a State's behavior and a Transition's Effect
 - Removed unhelpful comments in the template for `send_event` and `broadcast_event`
- Improved support when using wine 6.0 or greater

Release 15.2 Build 1560

Scroll through these items to review the changes that have been made in Enterprise Architect for this released build.

Where a change has been described or illustrated in the *Enterprise Architect User Guide*, a link is provided to the appropriate topic.

Others

- The XML Import now provides the option to either merge or restore Discussions from XML into the model
See the [Model Options](#) Help topic and the [Import from XMI](#) Help topic
- The Collaboration Chat History now reflects discussions across all Chat groups for users within the 'admin' group, when using the Summary filter
See the [Discuss & Review - History Window](#) Help topic

There have been no updates to the Help in respect to these changes:

- The UML:Package section in XMI 1.1 will no longer contain the GUIDs of Features that are classified by the Package
- An Action will no longer lose its Trigger reference when copy-and-pasting in the Browser window
- A Trigger will no longer lose its Signal reference when copy-and-pasting in the Browser window
- Elements containing child objects will be correctly copy-and-pasted in the Browser window
- The Kanban Search will be correctly duplicated when copy-and-pasting a diagram in the Browser window
- The potential crash when opening multiple Cloud models has been fixed
- Support for round-tripping the Diagram Kanban Search via XMI 1.1, XMI 2.1 and Native XML has been added
- The way Collaboration diagrams interact with a new Chat Msg Notification has been improved, to ensure diagram selection is correctly synchronized
- A rare scenario has been corrected, where changing the active Chat could result in the loss of newly added text in the docked Notes window
- Drag and drop has been disabled while writing a new Discussion post, to avoid a potential application error; also:
 - There is better handling of pasted text in a new Discussion item, to ensure the row height matches the pasted content
 - When editing large Comments or long Discussion items, the window correctly scrolls when the cursor is moved
- Reviews, Discussions and Comments in the Collaboration window have been corrected so that they no longer use the external model connection, if defined
- Scrollbars for the Code Editor will now correctly sync to the position in the document when finding text
- The 'Usage' dialog is now prevented from potentially showing non-related entries when running 'Find in Diagrams' on an element hyperlink
- Text will not be stripped when copy/pasting from a Source Code editor to a Document editor
- Importing the Amazon Web Services Images (Release 5) model pattern over PCS will no longer throw time-out errors
- The Tagged Values window application error after closing the 'Features' modal dialogs has been resolved
- In the Scenario Editor, the in-place edit context menu interactions have been corrected
 - Highlighting of multiple context references in the Scenario Editor Structured Specification has been corrected
 - Context references now insert into a Scenario step at the selected cursor position
 - During in-place editing, the user can delete the text of a Scenario Step before inserting a context reference, and the deleted text is no longer rolled back in afterwards
- In the docked Features window, on the 'Interaction Points' tab, the 'Add New' context menu option is enabled after selecting an Instance object

- Deleting multiple elements from the Browser window in one selection now correctly deletes all child diagrams on those elements

Release 16.0

Scroll through these sections to review the changes that have been made in Enterprise Architect for this released build.

Where a change has been described or illustrated in the *Enterprise Architect User Guide*, a link is provided to the appropriate topic.

For an overview of the features of Release 16.0, also refer to the Enterprise Architect 16.0 page of the Sparx Systems website.

64 Bit Application Support

Provided the ability to transfer EAP/EAPX Projects to all types of Repository in the 32 and 64 bit versions without requiring JET/DAO drivers.

See the [Migrate an EAP/EAPX File to QEA File Format](#) Help topic.

The system can automatically respond to an attempt to open an EAP file in a 64 bit installation, displaying a dialog to convert the EAP file to a compatible format.

See the [Project Upgrade to QEA](#) Help topic.

Provided the ability to transfer projects back into Firebird (legacy file) format when required.

See the [Transfer a QEA/QEAX Repository to FEAP Format](#) Help topic.

Extended Replication support to QEA (SQLite) files.

See the [QEA Replication](#) Help topic, and the (Settings Ribbon) [Model Panel](#) Help topic.

In Database Engineering, Database modeling import and compare is now able to use SQLite.

As an example, see the [Database Connections](#) Help topic.

Add a new Register Value when loading 32 bit and 64 bit COM objects in Enterprise Architect.

See the [Deploy Add-Ins](#) and [Tips and Tricks](#) Help topics.

There have been no updates to the Help in respect to these changes:

- Transfers into JET can now be performed in the Enterprise Architect 16.0 32 bit version without error.
- The Enterprise Architect 64 bit version is prevented from attempting to open EAP/EAPX/EADB files in Linux, even if the Access DB Engine 2010 64 bit driver is installed.
- The GetXML() string with Xerces has been fixed to work with unicode characters.
- Opening the Example model in the Enterprise Architect 64 bit version will now open the EAExample.feap file.
- The project upgrade process when opening an EAP/EAPX file with the 64 bit version of Enterprise Architect has been simplified.
- The speed of upgrading an EAP to a QEAX file has been improved.
- Opening an EAP/EAPX file after using a native DB connection will no longer fail.
- QEA Replication includes these fixes:
 - The Database Schema used for QEA Replication have been updated to match the latest QEA schema
 - QEA Conflict resolution no longer crashes after correcting the last item
 - QEA Conflict resolution no longer shows a spurious warning after completion in 32 bit
 - 'Remove Replication' is now available for QEA files

- Changes can now be synced without closing and re-opening the master model after creating a master or replica
- Deletions from replicas can now be synchronized

DBMS Repositories

There is now a simplified way of connecting to new and existing DBMS repositories using a native connection method. See the [Open Server Connections - Native Connection](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Support for MariaDB/MySQL plugins has been added.
- Data Transfer now updates Oracle Sequences appropriately.
- Loading a project from SQLServer repositories that use old schema definitions will no longer fail.
- Multiple queries with anonymous columns have been updated for compatibility with Native connections.
- In custom SQL Searches over Native connections, the handling for duplicate information returned has been improved.

Model Governance

There have been no updates to the Help in respect to these changes:

Security

- Users now must log into the model after a project file upgrade where security is enabled.
- The EAP file extension is removed from EA 64 bit when Access Database drivers are installed in the Windows OS.
- The 'Apply Locks to Connectors' option now also observes and applies 'FullLocks' (as well as User or Group locks) when locking connectors.
- The 'Lock Package' option in the Browser window context menu is always available for Model Root nodes.
- A duplicate lock error has been corrected, when setting the visibility of inherited Ports on an element when using 'Require User Lock to Edit'.

Version Control

You can now define a single commit message for all version control operations invoked by the command 'Add Branch to VC'.

Auditing

- Performance has been significantly improved in various scenarios; for example, when creating new elements and saving diagrams.
- Auditing over Cloud connections has been significantly improved in scenarios where Enterprise Architect no longer needs to wait for audit updates
- Potential issues with the acquisition of audit log IDs have been corrected
- The behavior of an ArchiMate or NIEM import has been improved to ensure the Audit setting 'Audit XMI Import' is obeyed.

Diagramming

Release 16.0 introduces the new facility of *Scriptlets*, artifacts defining Javascript that is executed on the fly when a diagram is opened. For this facility, the 'Edit Internal Code' option has been moved to the main object context menu and the double-click behavior now brings up the internal code editor for Scriptlet objects.

See the [Scriptlets](#) Help topic.

There is a new diagram style called 'Grid', which allows you to set a grid with custom sized cells that objects can be moved into.

See the [Grid-Style Diagrams](#) Help topic.

An Auto Refresh facility has been added for diagrams, providing improved support for multiple people giving input on the same diagram and allowing users to monitor changes on a specific diagram.

See the [Auto Refresh](#) Help topic.

The Auto Refresh facilities are now available from the Layout ribbon, 'Auto Refresh' panel.

See the [Auto Refresh Panel](#) Help topic.

A new Auto Reload facility has been provided to reload any diagrams that you have open that have been updated and saved by another user within the last 60 seconds.

See the [Diagram Options](#) Help topic

Dashboard diagrams do not need to be 'panned and zoomed' so the Pan & Zoom facilities are disabled for these types of diagram.

See the [The Pan & Zoom Window](#) Help topic.

The Diagram Toolbox page for Artifacts has been broken up into five separate Toolbox pages, each dealing with a separate group of Artifact types.

See the [Artifact Toolbox Pages](#) Help topic.

In the diagram 'Properties' dialog, the 'Hand Drawn', 'Whiteboard Mode' and 'Show Shape Scripts' options have been moved from the 'Diagram' tab to the 'Elements' tab, and a 'Custom Draw' option added to the 'Elements' tab.

See the [Diagram Properties - Elements](#) Help topic and the [Diagram Properties - Detail](#) Help topic.

The Properties window for a diagram provides:

- An option to hide or display the icon *A* in elements on the diagram that have a Linked Document
- Options to set up Collaboration flags

See the [Properties Window - Diagram](#) Help topic.

The 'Collapse Embedded Elements' option on the 'Elements' page of the diagram 'Properties' dialog has been moved to the 'Diagram' tab, 'Appearance' section of the Properties window for diagrams. A new option has been added there that allows you to show the collapsed element names as labels on the diagram.

See the [Properties Window - Diagram](#) Help topic.

The Quick Linker has been fixed so that when the 'Filter to Toolbox' option has been deselected the full range of connectors and target elements available to the source element are offered.

See the [The Quick Linker](#) Help topic.

When you open a pop-up view of a Composite element's diagram, by clicking on the 'Eye' icon, you can open the diagram itself by double-clicking on the pop-up.

See the [Composite Elements](#) Help topic.

New style options have been added to user preferences for tracking handles on elements on diagrams, such as 'Rect Style', which interacts with 'Highlighting'.

See the [Diagram Behavior Options](#) Help topic.

New options have been added to the 'Info View' dialog to hide Notes and to use the default element colors.

See the [Info View Style](#) Help topic.

The Persistent Zoom facility has been improved, and additional Zoom levels have been added, including a 'Clear' option.

See the [Diagram Panel](#) Help topic.

Diagram elements such as Navigation Cells and Text elements are now listed in the Browser window underneath an Annotation node, represented by three blue dots.

See the [Annotations](#) Help topic.

The 'Use Rectangle Notation' option has been moved from the 'Advanced' context sub-menu to the 'Appearance' context sub-menu. On a Construction diagram, the Actor element automatically uses Rectangle Notation.

See the [Rectangle Notation](#) Help topic.

Displaying compartments on ArchiMate elements is not possible and options to do this are disabled on the ArchiMate element context menu.

See the [Compartments](#) Help topic.

Realizing Information Flows is only possible on UML connectors, so the options to do this are not enabled on ArchiMate connectors.

See the [Realize an Information Flow](#) Help topic.

The Alt key under Windows (not Windows VM or Linux) toggles the behavior of child elements moved from parent elements.

See the [Diagram Shortcuts](#) Help topic (*Positioning Elements* table) and the [Diagram Behavior Options](#) Help topic ('Auto Group Elements' option).

You can now display and pan across the image associated with an Image Asset in a pop-up window.

See the [Image Assets](#) Help topic.

When defining connector notation, the Information Engineering (IE) notation does not work in Shape Scripts; connector notation options are now blocked in ArchiMate diagrams.

See the [Diagram Properties - Connectors](#) Help topic.

The N-ary Association diamond connector is now available in the 'Elements' page of the Diagram Toolbox for Object diagrams.

See the [Object Diagram](#) Help topic.

A Redefine connector can now be created from the UML Profile page of the Diagram Toolbox. This can be used for

redefining stereotypes.

See the [Redefine Stereotypes in Another Profile](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Two connector Shape Script properties have been added: Source.RectangleNotation and Target.RectangleNotation.
- Self connectors will now draw the start/end waypoints when selected.
- Aggregation and Composition connectors have been improved to now have the same labels as Association; they will now show {redefines} and {subsets} labels.
- The handling of 'Tree' style connectors has been improved on diagrams with hidden layers; they will no longer suppress segments incorrectly.
- Support for for Bezier line style on most connectors has been vastly expanded, and they now draw with the correct bend point.

- Connectors with a Tagged Value of `_Bezier=true` now allow multiple bend points.
- 'Bezier' line style will now use Shape Script styles when applied.
- A rare situation where stereotyped connectors with a Shape Script would not render correctly, has been corrected; this was originally reported for DFD diagrams.
- Proxy connector query behavior has been corrected, when no proxy connectors exist on the diagram at load time.
- Presentation mode now highlights labels and connectors when they are selected.

- Connector validation has been corrected to avoid incorrect syntax errors for CMMN connectors.
- A model validation error for a reverse connector when 'Strict Connector Syntax' is enabled has been corrected.
- Virtualize Connector End commands now only show if line style is set to 'Custom'.
- Support for linked element features has been improved, when pinning & unpinning connector ends.
- Virtualized elements will no longer be drawn if the connector is hidden (such as using filters or diagram layers).

- Dragging virtual connector ends has been improved when moving around large diagrams.
- The bound 'Properties' dialog now behaves correctly after a connector is removed by an 'Undo' command and the diagram is saved.
- The issue with 'Set Connector Type' has been addressed, when the connector's context menu is invoked over both the connector and another underlying element.
- Moving a 'realized' connector now correctly updates its associated Information Flow connector.
- UML syntax validation has been adjusted to allow Information Flow between Provided and Required Interfaces.

- Exposed interfaces will no longer be drawn off the element when placed near the edge of the parent element.
- When dropping an Image Artifact from the Browser, there is now an option to show its name under the image.
- A 'Reload Diagram' option has been added to the right-click context menu for a diagram.
- A 'Shallow' diagram copy now resolves embedded elements on diagram frames.
- The 'Clone Structure as New Version' option now resolves embedded elements on diagram frames.
- The 'Clone Structure as New Version' prompt displays the source diagram name in read-only format.

- When 'Hand-Drawn' mode is activated, Shape Scripts will not render decoration sub-shapes.
- Moving non Sequence diagram objects such as a Note Link will no longer alter the position of other objects on the diagram.

- Quicklinker and Shape Scripts have been improved for flow charts in the Strategic Modeling technology.
- In the 'Communication Message' dialog, object names in the 'From' and 'To' columns now also include the classifier names.
- Custom compartments will correctly refresh when adding or removing child elements from the diagram.
- A minor issue has been corrected, to ensure dropping multiple Blocks as properties into a SysML IBD will occur for all the selected elements.
- The position of an edge-mounted ActivityParameter on a diagram frame is now saved.
- Activity Partitions now maintain transparency when switching diagram themes.
- SysML diagram frames are now resized only as necessary when displaying Ports.
- Handling of diagram background tiles has been improved to better support shared models with different user configurations and setups:
 - Diagram background tiles applied from the set that is shipped with Enterprise Architect now load correctly when the install directory of Enterprise Architect is different from the default install path
- Rendering of long element names in Sequence diagrams has been improved.
- Stereotyped Compositions now have their default properties set correctly.
- Quick buttons will now draw closer to the element when the selection rectangle is using a 'thin' border style
- Model View elements will now be refreshed and put into the selection model regardless of the element lock status.
- The Structure compartment now shows the correct information when adding a new property from the Browser window or when hiding/showing properties from the Features window, 'Parts/Properties' tab.
- The Dashboard diagram layout will be saved when reloading the diagram from the diagram tab context menu.
- Generation of Activity Graphs from the Structured Scenario Editor has been improved.
- A ControlFlow will connect an Action but not an Activity; the ActionPin will bind to ActivityParameter.
- The manner in which items dragged from the Diagram Toolbox over a diagram locked to the current user are handled has been improved.
- Double-clicking a diagram preview from the Composite diagram viewer opens the diagram.
- The element name is no longer displayed under an element after an Image Asset has been removed from that element.
- Removing a hidden diagram layer now correctly displays any element that existed on that layer.
- MessageEndpoint and DiagramGate element names are now hidden on element creation.
- When 'Require user lock to edit' is enabled and a user lock has been applied to a diagram, existing elements can be added to the diagram as a link.
- Orthogonal movement (when using Shift + drag) of a child element has been improved to prevent the parent becoming selected during the 'Move' operation.
- The Inspector window 'External' tab now opens without taking focus from the diagram.
- The compartment entry for Ports will now update immediately after a Port has been deleted from the diagram.
- Handling of parent element selection after the child element's type has been changed has been improved.
- Information Flow connections are now supported by the Legend 'Properties' dialog.
- Drawing of Wireframe progress bars when the 'block' style is applied has been improved.

- Initial creation size of elements when based on a Project Template Package has been improved.
- Display of both Enumeration literals and objects typed by an Enumeration in an element's Runstate have been improved.
- Models using an Oracle database with large diagrams that display related element compartments will no longer cause an SQL error when loading.
- Loading of large diagrams that display related element compartments for an Oracle repository has been corrected.
- The issue where a requirement stereotype defaults to 'Functional' when created in the 'Properties' dialog has been corrected

- Note Links to Navigation Cells will no longer leave a gap when connecting to the bottom edge.
- When clicking on a Navigation Cell when the underlying diagram has been deleted, an error message was displayed; this has been fixed.
- Navigation cell text has been improved when the cell is opened on a machine without specific fonts installed.
- Clicking on a Navigation Cell pin will now correctly display the diagram image popup at different zoom levels:
 - The 'Diagram Image' popup will now display at the same zoom level as if it was drawn in the main view
- Auto layout of embedded elements on a diagram has been improved for:
 - Action Pins on Actions
 - ActivityParameters on Activities
 - Ports on Parts
 - Ports on Classes

- Auto Reload Diagrams has had further improvements to provide a more consistent experience:
 - A diagram will no longer reload while an element is selected on the current diagram
 - Clicking into a diagram with Auto Reload will no longer prompt for changes if the diagram isn't dirty
 - The applications handling of a diagram reload if an element was in context at the time has been improved
 - The Quick Linker will now prompt to indicate the diagram has changed before an object is created
 - When the Auto Reload option is enabled there will no longer be a prompt to indicate the diagram is dirty when just clicking elements; moving or changing the diagram will still prompt if required.
- Text, Hyperlink and Diagram Note elements will now apply the local color correctly when it is the only one set.
- The Auto-Refresh timer will no longer be reset back to 'Disabled' when changing values.
- The 'Auto Refresh' diagram settings are now saved and loaded again.
- Auto Refresh settings can no longer be changed for locked diagrams

- Diagrams will now be saved when resuming the timer after using 'Pause & Edit'.
- A small drawing issue with 'Paperclip style notes' when the element has been hidden using a Diagram Filter, has been corrected.
- Diagram filtering has been improved to ensure 'Scope' and 'Visibility' values are correctly filtered on.
- Large diagrams on JET databases will now load faster.
- An issue with Diagram Sinks that could result in them silently failing under certain circumstances has been corrected.

- Diagram objects' Z-Order can now be managed on a tab of the docked Properties window.
- Custom diagram type description is now displayed in the 'New Diagram' dialog.
- CentralBufferNode elements have been improved so they can set and display object state.
- Interactions have been enhanced to support Rectangle Notation.
- State entry/do/exit behavior has been improved to list the correct selection type from the Properties window.

- Lifelines that are instances of Node and Device can now be owned by an Interaction element.
- In Shape Scripts, the 'HasProperty()' function does not require property names to be case-sensitive.
- The Quicklinker and Validation have been adjusted to allow a TaggedValue connector from a Stereotype element to a Stereotype or Metaclass element.
- The Quicklinker and Validation have been adjusted to allow a UseCase connector from a Stereotype element to a Stereotype or Metaclass element.
- The in-place editor positions and size have been improved for objects with vertical labels or using Custom Draw style.

- Elements can be re-parented on a diagram by tapping the Alt key once during the drag, rather than holding the key down for the entire operation.
- Display of arrowheads on Aggregations and Compositions has been improved.
- UML Syntax checking has been updated to allow an Aggregation/Composition between Artifact and Requirement elements:
 - An Artifact element can also now parent a Requirement by Nesting/Composition in diagrams and in the Browser window
- The in-place editor will no longer remain active when a diagram is zoomed, panned or scrolled.
- When adding a new Review element to a diagram via the Toolbox, the in-place editor is correctly displayed on the new element.

- The 'Image Selection' dialog for a Navigation Cell element now has a 'Clear image' button to make removing the existing image easier.
- The drawing of Kanban diagrams when CheckList elements are included in a lane has been improved.
- Kanban diagrams that are filled with a search, add elements to the correct bound lane instead of a Not-Bound leftmost lane.
- Actors using Custom Draw style that are not set to 'Use Rectangle Notation' now draw their notification icons in the correct position.
- The ability to enable/disable the Custom Draw style has been added to the diagram 'Properties' dialog, 'Elements' page.

- Creating a Kanban pattern from the 'Construct > Resource Management > Kanban > Workflow Patterns' ribbon options will now work as expected.
- Interaction Occurrence rendering has been updated to apply a user-selected border color.
- Synchronizing the Action Pins with the Parameters of an Activity will no longer include the Action name in each Pin name.
- Classifier rendering for attribute overrides will no longer also show the information as a runstate.
- Activity Parameters will now correctly sit on the edge of the parent object.

- The application error when Pan & Zoom scroll bars are being rapidly clicked on larger diagrams has been fixed.
- The horizontal scroll bar on Grid Style diagrams will now correctly show/hide when resizing the view.
- A Port display name obeys the 'Use alias field for role' option.
- The 'Diagram' tab of the Browser window no longer fails when the diagram contains a Diagram Note.
- SysML diagrams will now resize frames as expected when an internal connector is attached to the frame.

- The display of unsaved changes has been improved for 'Auto Refresh' diagrams:
 - The facility now displays an icon with the 'Diagram' tab instead of the * in the name of the tab
- UML keywords will now be hidden with stereotypes if 'Show Element Stereotypes' is disabled on a diagram.

- Custom Draw Style has been corrected so that an element name will be highlighted when clicked.
- Dashed connectors using 'Orthogonal Rounded' style will now draw corners correctly.
- The 'View Composite Diagram' button has been moved from above the top-left of the object to the right side of the object, to be with the other Quick buttons.
- 'View Composite Diagram' now supports linked Construction diagrams.
- ControlFlow connectors to and from InteractionOccurrence elements are allowed.

Element Reviews

Joining and leaving a Review is now simpler and more flexible.

See the [Join a Review](#) Help topic.

Collaboration

The Chat, Chat History, Model Mail and My Diary (was Journal) features have been separated out into the Chat & Mail window.

See the [Model Chat](#), [Your Model Diary](#) and [Model Mail](#) Help topics.

The Journal (was Comments), Discuss and Review features are accessed through the Discuss & Review Window.

See the [Model Discussions](#), [Model Reviews](#) and [The Journal Window](#) Help topics.

There is now a Discuss & Review History window that provides information on previous discussions, reviews and Journal entries in the model.

See the [Discuss & Review - History Window](#) Help topic.

A Collaboration configurations page has been added to the Model Options window, to enable you to define a central model to provide collaboration facilities for other models.

See the [Collaboration Page](#) Help topic.

The 'Support Collaboration' setting can now also be changed from the docked Properties window for the diagram.

See the [Properties Window - Diagram](#) Help topic and the [Collaboration Support in Diagrams](#) Help topic.

On a diagram that has 'Support Collaboration' set and Actor elements for the Chat users, an icon displays against the Actor element for the user who is currently in a Chat session with you, effectively the last user to send you a Chat message.

See the [Collaboration Support in Diagrams](#) Help topic.

There is now an option to display a modal popup editor when creating a new Discussion or Review, or while focus is in the Chat editor; press Ctrl+Space to open, Esc to close.

See the [Model Discussions](#) Help topic and the [Model Chat](#) Help topic.

When viewing a read-only Journal entry, Discussion or Review, pressing Ctrl+Space displays the popup editor and you can select an item of text and copy it into the clipboard for pasting elsewhere.

See the [Take Part in a Review](#) Help topic and the [Model Discussions](#) Help topic.

On the Discuss & Review window and the Discuss & Review History window it is now possible to set the current tab as the default tab to show whenever the window is opened in a new work session.

See (for example) the [Discuss & Review - History Window](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Corrected the issue that prevents Discussions created in a Firebird model by Enterprise Architect 16 from loading in both Enterprise Architect 15 and 16.
- Elements in different Packages will now correctly display 'Chat' and 'Leave' icons if 'user lock' is enabled for a Collaboration diagram.
- The 'Collaborate | Journal' (was 'Comment') load on window activation has been optimized.
- The Collaborations Reviews & Discussions Preview window displays the current preview after a timer refresh.
- Removed the ability to drag and drop text out of in-place editors such as the 'Journals' tab or Discussion editor, as it could potentially result in a crash.
- Clicking on a hyperlink to a diagram in, for example, a Chat message shows a pop-up floating menu providing the options to find the diagram in the Browser window and to display the Properties dialog.
- The Review History and Discussion History windows now have a 'Topic Author' column.
- Chat and Discussion have these changes:
 - The scenario where changes to the docked Notes editor might not be saved when changing the active Chat using the Msg button has been corrected
 - The behavior where loading a new Chat using the Msg button resulted in the Chat disconnecting or staying on the previous Chat has been corrected
 - Monitoring for new discussions on a security Chat group when simply connecting to it is now prevented
 - Drawing in the in-place editor when editing discussions over Remmina has been improved; for example, using Ctrl+Enter to add a new line could result in all the text temporarily vanishing
 - Extra space to scroll in the 'Discuss' tab has been provided so you are not always pushed against the bottom of the control when needing to write a reply
 - A number of small redrawing and sizing issues have been corrected in the in-place editor for Discussions, Journal entries and the Specification Manager, where the editor could get sized incorrectly after pasting, deleting text, undo/redo and so on
 - Scrolling issues in the Discussions editor have been corrected in situations where using arrow keys to navigate, paste text, undo/redo changes or delete text
- The Manage Reviews window has had major updates, including:
 - Speed improvements
 - An enhanced filtering system
 - New columns to provide a better overview
 - 'Expand' and 'Collapse' menu options
- Reviews and Discussions now have additional statuses.
- The display of Review and Discussion topics has been adjusted, placing the most recent post at the top under a Discussion.
- Review Sets can now be instantly created by dropping a Nav Cell into your Review diagram, adding the diagrams the Nav Cells point to to the Review Set.
- Loading of the Discussion Preview has been improved and streamlined.
- There is a new capability to manage and share small files and images through Chats, Journal items and Discussions.
- Images can be copied and pasted from the clipboard and directly inserted as a hyperlink to the internally stored file for a Chat, Journal or Discussion entry:
 - Ctrl+click the hyperlink to download and view the image or file locally
 - Each tool provides a 'Manage Documents' window for viewing, deleting or re-sending previously inserted files
 - The 'Manage Documents' window allows filtering of files sent by you or others and

- inspecting other details, including file size, type and date sent
- Files attached to a Journal or Discussion item will be exported and round tripped with that element or diagram
- New unread Model Mail messages will now appear under the 'Msg' notification button, displayed top right next to the 'Perspective' button.
- Modified Collaboration diagram behavior to no longer synchronize selection when changing the active Chat.
- Improved drawing of in-place editor for discussions when using a remote desktop client.
- Hovering over a diagram hyperlink in the Chat window will display a floating toolbar.
- Diagrams with 'Support Collaboration' enabled that are displayed as an alternative view will still support the behavior this option provides.
- The 'Collaborate | Review' drop-down list now displays the Quick Access Review element popup list for 'Join Review':
 - Added an option to disconnect from the active review on logout
 - The EAReview element 'Special Action' context menu option opens the 'Manage Reviews' main tab view
- The Journal and Diary windows save edited text when clicking away into blank tab space or a title bar.
- When selecting a new Discussion notification message from the 'Msg' button, it correctly selects the new topic/post in the Discussion window.
- The brightness of the Discussion text in Dark mode has been reduced to improve readability.
- Pasting an element into a Journal or Diary entry that was copied from a diagram, will now insert a hyperlink to the element and not an image.
- Security Chat Groups will now display an alternative color for your Chats to help identify them.

Simulation

Support for Simple SysML Parametric Simulation has been restored.

See the [Simple Parametric Simulation](#) Help topic.

The DMN Simulation Examples have been fixed, by changing the Data Set name from 'Default' to 'default'.

See the [ItemDefinitions and Data Sets](#) Help topic, and the [Data Sets](#) Help topic.

Simulation UI (dynamic dialogs) have been enhanced to support showing a Picture control using an image stored in the model image library.

See the [Supported Win32 UI Controls](#) Help topic.

For Executable StateMachines, the order of execution for multiple StateMachines has been improved.

See the

There have been no updates to the Help in respect to these changes:

- Standard simulations now have improved support for more complex data types and enumerations during execution:
 - Simulation can now show attributes with empty values
- The interaction object name is now editable.
- The User Interfaces Radio Button and Check Box now support OnClick in simulation.
- Executable StateMachine code generation has been improved to handle 'Conflict Transitions' correctly.
- Executable StateMachine: the issue that composite States show GUIDs on the diagram during simulation has been

fixed.

- Executable StateMachines now provide the means to access Signal attributes from transition and state.
- When an Executable StateMachine is running, the diagrams no longer flicker.
- In the activation of Executable StateMachine menu items, minor inconsistencies have been corrected when selecting the Executable StateMachine Artifact in the model.
- New Executable StateMachine model patterns have been created for:
 - Multiple Ways to enter a State
 - History Pseudostate
 - Event Macros
- Model Pattern names have been updated to expand ESM to 'Executable State Machine' for readability.
- In JavaScript, when running an Executable StateMachine, the possible failure of debug breakpoints has been corrected.
- Dynamic simulation with Win32 dialogs now preserves the Z-order of the diagram for the created dialogs.
- The DMN Simulation window no longer escapes Unicode characters.
- For Loop expression is now supported in DMN modeling and simulation.
- Copy and paste of Simulation artifacts (BPSim, DMN, SysML) has been corrected to ensure they retain their internal configuration.
- The 'BPSim Result Chart' and 'Custom Result Chart' now load the data.
- The problem of the BPSim Engine not starting due to socket not opening has been fixed.
- The problem of the BPSim Engine not starting with Zero Configured Enterprise Architect has been fixed.
- The BPSim Engine can now operate using Java 7.
- Execution of the BPSim simulation and process optimization tools has been modified to use the native Linux Java libraries instead of the Windows/Wine ones, due to restrictions in installing the latest Java runtime under Linux/Wine.
- BPSim now supports more detailed and improved CSV export of information from the BPSim Resource window via a new menu, accessible from the toolbar 'Step' button.
- The BPSim Model Wizard pattern previews have had minor updates and improvements.
- In BPSim Simulation Step Replay:
 - The inaccurate Resource Release issue has been fixed
 - CSV export for resource allocation/release details for each token on tasks is supported
- BPSim Artifact configuration for Package browsing has been improved:
 - A meaningful message prompt is provided when no parameters are configured
 - The message no longer prompts twice
 - The configured Package is now selected when opening the browsing dialog
- In the Simulation docked window the console editor height has been increased so that it takes into consideration high DPI settings.
- More-detailed error messaging is supported when running a simulation, including identifying the script that failed to execute.
- Dot and hyphen in the Vertex name (for example, State.A-1) has been updated and improved.
- The Simulation & Event window will now display when running a diagram simulation.

Code Analyzer View

The Code Analyzer window has been given two tabs to separate the Code Editor from the Query facility, and a 'Default to Analyzer' menu option to automatically connect the Code Analyzer to the Code Miner service configured for the active Execution Analyzer Script. A Code Analyzer icon has been added to the Develop > Source Code ribbon panel to access the feature.

See the [Code Analyzer](#) Help topic.

Search, query and inspect your Code Base with incredible speed and detail:

- Compile your code base into a Code Miner repository.
- Use one of the supplied language grammars (or write your own!).
- Use the mFQL query language to search and inspect your code.
- Results are returned in milliseconds, even for large code bases.
- Connect with Enterprise Architect's code editors to provide on-the-fly Intelli-sense.
- Expose a code base as a service - either local or shared.
- Fast, minimal-impact updates compile new changes and additions only.
- Create your own grammars to parse any structured information.
- Incremental updates to Code Miner repositories are supported, along with an auto-update feature using the Intel Service.
- Code Analyzer is available from the Develop ribbon > Source Code panel.

There have been no updates to the Help in respect to these changes:

- The Code Explorer view is no longer provided.
- Incremental updates to Code Miner repositories and auto-update feature in intel service are supported.
- Code Miner C++ Grammar has been improved to support variadic template classes and functions.
- Code Miner C# grammar has been updated to fully support language features introduced in versions 7 - 9.
- Shortcuts have been added for mFQL, such as 'byName' for 'getByName'.
- A Code Miner database compilation can now be built from multiple directories.

Documentation and Reporting

Custom Documents - One of the major innovations in Release 15 is now enhanced to provide an even more compelling solution for building highly customizable reports:

- You can select and apply a template on initial document creation
- More details are provided on setting the sections
- The Content list has been improved to contain the element and template being used for each dynamic section
- A Progress bar has been added to provide better feedback during document generation
- Warnings are now displayed in cases where data would be lost upon updating a dynamic section
- Custom Document elements can now be created via the Diagram Toolbox
- There have been numerous enhancements and usability updates
- The easily-reached Help information has been expanded

See the [Custom Documents](#) Help topic.

There have been no updates to the Help in respect to these changes:

- The 'Last Run' field reporting 'InvalidDatTime' in Generated Test documentation has been corrected.
- The Document Generation 'reportpackage' stereotype can now correctly generate a document to an Artifact element.
- Document Generation will now correctly size elements when using bitmap images to ensure that text remains within the elements.
- The HTML generator now correctly writes images to a Unicode path.

- The HTML generator no longer generates corrupted Structured Scenario sections.
- HTML generation templates now support #CREATEDATESHORT# and #MODDATESHORT# for Element and Diagram templates, to give the date only.
- The HTML template editor now allows customization of 'Page Body - Header' and 'Page Body - Footer'.
- HTML Reports will now append the Port & Part property type to the element name in the Browser window.
- Document Generation 'Exclude' filters now support the SQL substitutions #Package# and #WC#.
- 'Print to PDF' rendering has been improved when Diagram Frames are included.
- Rendering of connector labels in documents and saved images has been updated to use the correct background color.
- 'Generate Element Report' (from Start > All Windows > Publish) no longer fails silently if an appropriate element is not selected in the Browser window or active diagram.
- The 'Diagram Report' option (from 'Start > All Windows > Publish') has been renamed to 'Generate Diagram Report'.
- Document Generation now allows Reviews to be included.
- Document Generation now allows filters to be defined for Attributes.Notes.
- New document templates available through Model Wizard (accessed from Document Publishing perspective).
- 64 bit Enterprise Architect has been updated to support reading the legacy rich-text .SSE format:
 - This document format was not widely used and thus writing to this format had not previously been supported in the 64 bit edition
- Report Generation has been notably enhanced with new patterns and templates to target specific documentation scenarios and goals:
 - The Publish | Report Builder, Custom Documents and Model Documents can all take advantage of these new tools and templates
- The base/default HTML Publishing templates have been updated with a fresh new design, allowing them to be compatible with modern browsers for local viewing.
- The ability to document Comments of an element has been added.
- Generating to a Document Artifact is now ensured, using 'Create Document to Artifact' on a <<report package>> stereotyped Package element.
- Several non-critical message box pop-ups that could occur while editing notes and documents have been redirected to the System Output window
- Image generation during document generation has been improved, to prevent bitmap elements potentially displaying with text overlapping edges
- When generating 'selected items', we now always use the 'Template' sorting option
- Documentation of Reviews is now available in generated reports
- The generated Scenario test words 'Alternate', 'Continues', 'Exception', 'Rejoin', 'Result' and 'When' have been added to document generator substitutions
- The filtering behavior of element and connector excluded types has been improved
- The 'IsStatic' property for attributes and operations is now reported correctly
- Tagged Values of type URL are now created as a hyperlink when published to HTML
- When you are deleting a CSV Specification, a prompt has been added to seek confirmation of the deletion
- Scenarios generated as Scenario Tests will be set with the Scenario Test Type

Database Engineering

There have been no updates to the Help in respect to these changes:

- Invalid SQL messages when changing the datatype of a new column have been corrected.
- 'Native' connections have been introduced as a method of reading a database schema during data modeling.

- Display of the 'Foreign Key Properties' dialog under different Visual Themes has been improved.
- The Model Wizard Database Engineering Patterns have been expanded and improved.
- The 'Create New Custom Template' dialog now displays a warning when all the required values are not supplied.

Kanban

There have been no updates to the Help in respect to these changes:

- Kanban diagram settings will be correctly copied when copy-pasting the diagram in the Browser window
- Checklists in Kanban lanes will no longer cause constant redraws of the diagram
- Kanban diagrams will now sort elements into the appropriate columns as the element status changes
- Keyboard navigation has been enabled for the Kanban diagram 'Properties' dialog
- The 'Kanban' dialog restores the diagram state when canceled
- The 'Search filters' dialog list control has been upgraded

Execution Analysis

The Code Miner page of the Analyzer Script Editor now provides an option to switch the F12 'Find in Files' option between using the defined Intel service and the Find In Files window.

See the [Client Configuration - Configuring Enterprise Architect to Use a Code Miner Service](#) Help topic.

A description of the Code Miner mFQL has been added to the Enterprise Architect Help.

See the [The mFQL Language](#) Help topic.

The Console window has been changed in use and in access, as a script editor for JScript, VBScript and JavaScript code.

See the [Console Window](#) Help topic.

A new Analyzer Services View has been implemented to display the status of each of the services being managed by the active Analyzer Script and of any local services managed separately using the service configuration file.

See the [Analyzer Services Window](#) Help topic.

The Profiler has a new 'Hit Analysis' tab to show the number of samples taken in which the specified function was executing.

The Profiler also provides the 'Process Time (estimated)' field to show an estimate of how long the process being profiled has been running.

See the Profiler [Call Graph](#) Help topic.

The Debugger Stop button now provides options to **stop** the debugger and process, **detach** from the running process or **quit** from the application.

See the [Run the Debugger](#) Help topic.

The Debugger ActionPoint statements can now use the **jmp** command to switch execution to a different line; this is effectively the same as the **goto** command but acts through instrumentation instead of breakpoints.

See the [Actionpoints](#) Help topic.

It is now possible to debug JavaScript in diagram Scriptlets and Dynamic Charts.

See the [Chart Definition using JavaScript](#) Help topic, and the [Scriptlets](#) Help topic.

The Execution Analyzer window toolbar options now act on the Analyzer Script currently selected in the tree. If no script is selected, the options continue to operate on the active Analyzer Script (with a selected check box).

See the [Managing Analyzer Scripts](#) Help topic.

The Sparx Intel service program provides a means for development projects and players to gain valuable insight into the code bases and software frameworks they are working with. The service allows access to Intelli-sense in code editing and insightful search results in search tools. It is part of the Sparx Satellite Services umbrella and allows multiple Enterprise Architect clients to access and query the same information from many different software domains and frameworks.

See the [Sparx Intel Service Configuration](#) Help topic and the [Sparx Intel Service Automatic Update](#) Help topic.

A Job Queue feature has been added. When an Analyzer Script context menu option is executed (for example, 'Build') it is placed in a job queue; multiple jobs can be queued, and other work performed while the jobs are processed. Running jobs can also be easily canceled using a context menu option.

See the [The Job Queue Window](#) Help topic.

A facility has been added to the Analyzer Scripts whereby a Model Mail message can be sent to a defined user group when a job or task has completed.

See the [Analyzer Script Editor](#) Help topic (*Job Settings* table item).

There have been no updates to the Help in respect to these changes:

- The 'Execute' Quick Access Page (Alt+4 or Start > All Windows > Execute) now includes the Analyzer Services View.
- When using the GNU Debugger, avoid passing empty args if none have been specified.
- The Code Analyzer and Grammar Editor have had performance enhancements.
- The Code Analyzer Source editor UI is set to the application UI theme.
- Variables of unsigned char type are represented as both character and integer content in the Debugger windows.
- Watched items can now be renamed from the docked Watches window.
- The Profiler report now has a 'Depth Analysis' tab.

Modeling Languages - General

Where Enterprise Architect supports more than one version of a tool such as BPMN, SyML or ArchiMate, the latest version is automatically offered in the Perspectives. To use earlier versions, either select the 'All <toolname> Perspectives' option or create a custom Perspective.

For example, see the (BPMN) [Getting Started](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Enterprise Architect 16 continues to expand the library of re-usable patterns and content that drives efficiency and productivity, with new patterns for:
 - DMN
 - AUTOSAR
 - SysML

- Dynamic Simulation Win32
 - Modelica case studies
 - SysPhS library
 - Octave Solver
 - Scriptlets
 - Wireframe
- The UAF Security Toolbox has been updated with changes made for the specification.
 - Metamodel rules targeting ActionPins no longer result in validation errors when used.
 - The FACE Profile for UAF v1.0 is now supported:
 - Available in the Unified or Ultimate Editions, or other editions with a separate UPDM license
 - The connector 'IsAComponentOfThePlanFor' has been added to the BMM profile.
 - The 'Create Metaclass' dialog can create both Property and Part metaclass elements.
 - The 'Create Metaclass' dialog no longer lists 'Defect' and 'Test' twice.
 - UAF Signal stereotypes have been added to Toolbox pages.
 - The 'Signal' keyword is now omitted for stereotyped Signal elements.
 - The TOGAF Model Wizard pattern has been updated to remove out-of-date URLs.
 - Operation definition using a referenced Behavior is no longer restricted to the same owner.
 - 'Abstract Action' kinds are no longer offered during the creation of an Action.
 - The UML Standard Library Auxiliary stereotype has been corrected.
 - Constraint elements can be owned by other elements.
 - Model validation for a Use Case 'extend' and 'include' relationship has been corrected to prevent it being reported as 'not legal'.

ArchiMate

Connector notation options are now blocked from use in ArchiMate diagrams.

See the [Diagram Properties - Connectors](#) Help topic.

Displaying compartments on ArchiMate elements is not possible and options to do this are disabled on the ArchiMate element context menu.

See the [Compartments](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Fixed the issue when importing ArchiMate triggers an SQL error with string length overflow.
- Quick Linker commands and validation rules have been added for ArchiMate connectors:
 - 'Path'
 - 'CommunicationNetwork'
 - 'DistributionNetwork'
- All ArchiMate connectors have been prevented from realizing UML InformationFlows.
- Toolbox pages where the name is shared across multiple Toolboxes have been updated to include the layer to help differentiate them in the 'Pinned Toolbox Pages' dialog.
- The ArchiMate importer has been updated to improve the handling of trigger values close to 255 characters.
- The ArchiMate importer has been updated to import the original identifiers into Tagged Values:
 - `archimate_element_identifier` - Used for anything mapped to an Enterprise Architect element
 - `archimate_connector_identifier` - Used for anything mapped to an Enterprise Architect connector
- Word wrapping in drawing ArchiMate shapes has been improved.

BPMN

There have been no updates to the Help in respect to these changes:

- The resizing of Pools and Lanes that have child Pools or Lanes has been corrected.
- The dialog that is displayed when creating new a BPMN 2.0 Process will now correctly display text.
- The connector validation rules for Associations to Text Annotations have been improved.
- The diagram editing behavior when pasting element(s) as links using the right mouse context menu has been corrected; the elements are now pasted relative to the position of the mouse cursor when invoking the context menu.
- You now import the BPMN2.0::DataAssociation when it is directly connected to BPMN2.0::Tasks.
- BPMN Association Shape Scripts have been improved:
 - The line is now dotted, arrowheads show when bi-directional, and the Line Style is now Orthogonal Square

DMN

Decision Model and Notation - Implemented the DMN List, Relation and For Loop objects.

See the [Relation](#) and [Boxed List](#) Help topics.

There have been no updates to the Help in respect to these changes.

Enterprise Architect now supports DMN primitive types for Modeling and Simulation:

- The primitive types 'date', 'time', 'date and time', 'days and time duration', 'years and months duration' are now supported.
- These built-in functions are now supported:
 - duration, date, time, date and time
 - value_dtd, value_dtd_inv (inverse function of value_dtd)
 - value_ymd, value_ymd_inv (inverse function of value_ymd)
 - value_t, value_t_inv (inverse function of value_t)
 - value_dt, value_dt_inv (inverse function of value_dt)
- These type operations are now supported:
 - date - date = duration
 - date +/- duration = date
 - time - time = duration
 - time +/- duration = time
- Auto-Complete Behavior for DMN Decision Tables has been improved and is now available on:
 - The Input Clause's allowed value cell; the auto-complete list can list the 'allowed values' of a connected InputData element's ItemDefinition
 - Input/Output Entry cell; it works correctly when the user selects the auto-complete item using Up/Down Arrow and Enter key
 - Input/Output Entry cell; it can filter out the number range value from the auto-complete list correctly
- The DMN Simulation Window is now updated when the DataSet changes.
- The DMN ItemDefinition's AllowedValues have been adjusted to enable them to be set correctly.
- DMN's List and Relation are now supported, including the GUI, code generation and simulation.
- The 'Template Package' dialog has been enhanced to help facilitate correct tree item selection.
- DMN Decision Table validation has been improved with regard to Input Entry data type validation:
 - Now the validation can detect incorrect Input Entry value data types
 - Now the validation no longer wrongly raises a warning if the Input data type is assigned a type other than 'string', 'boolean' and 'number'

- DMN Decision Table validation handling of discrete allowed values has been improved.
- Component names that contain a space have improved support; now the InputData runtime value will show if a Component has a space in its name.
- Setting the InputData's typeRef to ItemDefinition has been adjusted; it will now update the Expression View.
- 'At Literal' for a DMN date/time/duration expression is now supported.

SysML

Simple methods of simulation of SysML Parametric models have been reinstated.

See the [Simple Parametric Simulation](#) Help topic.

There have been no updates to the Help in respect to these changes:

- SysML ValueType now supports Generalization/Specialization Quick Links.
- The display of multiplicity in SysML compartments has been corrected; it is no longer displayed when no type is available.
- SysML directed features (prov, reqd, provreqd) in compartments now show their directional prefix.
- The allocatedTo and allocatedFrom compartments have been improved; they now display classifier or property type if the related element has one.
- Ports and Parts in compartments now show the roles, if set.
- Aliases now display correctly in SysML Block compartments.
- The edit selection of a newly created SysML Requirement element in the diagram has been corrected.
- Edge mounted elements will no longer be added to the diagram as selected when using 'Synchronize Structural Elements' on SysML IBD and PAR diagrams.
- Adjusting the Regions on SysML State/StateMachine diagram frames has been improved.
- Port specification group properties are now persistent in the docked Properties window for the current and IBD diagrams.
- SysML properties are nested correctly on drag-and-drop to a classified parent.
- A Legend can now be applied to an Information Flow connector.
- You can now update the value of the Runstate of a SysML QuantityKind or Unit.
- The movement of child Ports on Ports has been improved.
- The movement of Ports with child Ports has been improved.
- The SysML Primitive Value Types pattern has been improved to define 'Number' as Abstract, in accordance with the specification.
- The SysML Unit and Quantity Kind pattern has been corrected to no longer include an example instance and set attributes' multiplicity.
- A new ISO-80000 library pattern has been added for quantities and units.
- In the SysML1.3 to SysML1.4 migrator:
 - The tag isEncapsulated from InterfaceBlock is now migrated correctly
 - When multiple stereotypes are applied, the primary stereotype will now be migrated
- The Quick Linker will now offer Composition between a Constraint Block and Block.
- An Allocated connector is now permitted between all named elements.
- A stereotype wildcard is now allowed in a Quicklinker metaconstraint (for example, set source and target to 'SysML1.4::*').
- Self-connectors on elements that are contained by SysML diagram frames will now move, undo and redo correctly when the frame itself is moved.

- In a SysML Parametric diagram, parameters with or without stereotypes show as a square box on the inner side of a ConstraintProperty's border.
- The ItemProperty selection type of a SysML itemFlow connector has been corrected.
- The SysML 1.5 DirectedFeature stereotype now also extends Reception.
- Setting the type of a SysML Port to a Block that has a Flow Property will now correctly update the directional arrow when saved.
- In-place editing a SysML child element compartment item now handles spaces in the name of the type.
- SysML ConstraintBlock editing will no longer give database errors on Oracle.

SysPhS

The Package Import connector has been added to the SysPhS Toolbox page.

See the [Using the SysPhS Toolbox](#) Help topic and [Referencing the SysPhS Simulation Libraries](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Multi-dimensional arrays in Simulink have been improved so that SysPhS constant initial values now support negatives, scientific notation, and so on.
- The SysPhS compartment display of 'physical interactions' has been improved.
-
- Modelica simulation has been improved, with better handling of child parts (especially in specialized Constraint Properties).
- The export and rendering of diagrams within Modelica has been improved in situations where the base Enterprise Architect diagram is missing or incomplete.
- Modelica Parametric Simulation patterns have been updated and improved.
- The OpenModelica simulation issue in EAExample has been fixed.
- OpenModelica simulation has been updated to provide better support for models with flow properties.
- The detection of 'signal' or 'physical' Ports has been improved.
- The layout of Ports in Modelica has been improved.
- The listing of plottable items in Modelica Simulations has been improved.
- The Registry key used to store a custom path to Matlab has been moved (user re-configuration required).

UML

In Diagram Toolbox pages, the Activity Region element has been replaced by separate Expansion Region (except SysML) and Interruptible Activity Region elements.

See the [Expansion Region](#) and [Interruptible Activity Region](#) Help topics.

Action Pins are now assigned or reassigned to Action elements through the Properties window for the Action element.

See the [Assign Action Pins](#) Help topic.

On the Decision element, it is possible to set and display InputDecisionFlows and InputDecisions.

See the [Decision](#) Help topic.

There have been no updates to the Help in respect to these changes:

- The Quicklinks for UML Communication diagrams has been adjusted to allow valid UML connections.
- The UML Component diagram starter Model Wizard pattern has been enhanced.
- The correct Action Pin name and type are now displayed on diagrams.
- Superfluous patterns in the Model Wizard are now hidden for non-UML Perspectives.
- The Model Wizard pattern: 'UML Activity with Pins' has now been corrected.
- Disallowed the 'Convert to Instance' command for RequiredInterface and ProvidedInterface elements.
- The 'Construct Picker' dialog action for Triggers has been modified.
- ActivityPartitions now don't inherit Ports and Parts from the classifier that they represent.
- Action Pins typed by Activity Parameters will now take their multiplicity from the Activity Parameter as required by the UML Specification.
- Nesting connectors are now permitted between any Namespace elements (including Class).
- Messages on Communication diagrams can now have a change of lifecycle.
- Names of Component instances are now underlined.
- Interrupt flows can now target Activity Nodes.
- The name of 'Big Data' on the GCP Analysis toolbox has been changed to 'Big Query'.
- The '<none>' option has been removed from the 'Select Trigger' dialog for a Transition, as a Trigger can be removed using the Delete button on the 'Transition Properties' dialog.
- Action Pins now display the correct name and type on diagrams.
- Non-UML Perspectives in the Model Wizard have been refined; they no longer show superfluous patterns.
- ActivityPartitions with a classifier have been corrected such that they no longer inherit the Ports/Parts of their classifying element.
- New <<redefines>> and <<removed>> stereotypes have been added to the EAUML profile.
- 'Unmarshal' is now an option in the 'New Action' dialog when choosing 'Other'.
- UML Activity Partitions with 'isExternal=true' now show the external keyword in the swimlane header.

Technology Authoring

Support has been provided for in-Package definition of Tagged Value types for a profile, using Data Type elements.

See the [With Predefined Tag Types](#) Help topic.

When adding custom Model Wizard templates to an MDG Technology file, the location of the template XML file and RTF file has been clarified.

See the [Incorporate Model Wizard Templates](#) Help topic.

The *diagram.MDGView* property has been added to element and connector Shape Scripts, allowing the Shape Scripts to test the value of the diagram view type.

Also added *diagram.author* and *diagram.version* properties for Shape Scripts, to supply the author and version of the current diagram.

See the [Display Element/Connector Properties](#) Help topic.

The facility has been added to use wildcards in Quick Linker constraints.

See the [Define Metamodel Constraints](#) Help topic.

Support has been implemented for groups in Azure AD with OpenID.

See the [Walkthrough: OpenID with Azure](#) Help topic.

There have been no updates to the Help in respect to these changes:

- The Cyber Security technology has been updated:
 - The 'Data flow' connector now defaults to Custom style instead of Bezier style
 - The 'Threat trace' connector is now allowed from 'Process' and 'Human Actor' elements
- The SQL error on saving an empty UML Profile has been fixed.
- Scripts provided by MDG Technologies no longer interfere with editing the original script in the source model.
- Saving a diagram as a Profile for the first time will fill in the Name, Version, and Notes.
- You can now save a UML profile when no profile Package is supplied; an empty UML profile stub will be generated.
- The issue experienced mainly when both developing and testing an MDG Technology in the same model has been corrected:
 - The scripts in the generated MDG Technology could hide the original development scripts in the model, resulting in the inability to edit the development script and update the MDG Technology
- Synchronization of constraints from a Profile has been improved to ensure constraint values are correctly escaped.
- The Model Wizard has been modified to allow custom Technologies to specify a full path to the RTF files detailing the Pattern's purpose and usage:
 - Searching the Technology's base location has also been added
- Diagram Toolboxes created from a Technology Profile can now support dropping objects that extend the base stereotype 'EnumerationLiteral'.
- Creation of Metaclass elements has been corrected so they are created with the fully qualified stereotype.
- Properties in the 'Profile Helper' dialog have been re-ordered so that they match the order in the 'Compartment Visibility' dialog.
- The Extension relationship has been added to the Quicklinker for a Stereotype to Metaclass connection.

External Integration

- Field mappings will now inherit the default values when modified for the first time for a specific type.
- Detailed OAuth errors are now displayed to provide more assistance in determining the cause of an error during log-in.
- When closing the External Data window, you can force-close any outstanding requests to prevent a potential wait time-out.

Code Engineering

In an Enterprise Architect code editor, when the 'Search Intelli-sense' context menu option is chosen Enterprise Architect no longer displays a sub menu containing all the mFQLI queries named in the Sparx query library, but acts on the search term using whatever query is selected in the 'Intel' tab of the 'Find In Files' control.

Also, there are two new menu options to copy the cursor position or a text string as a hyperlink to paste into an RTF editor, such as a Chat message, to return the message reader to the selected part of the code file.

See the [Code Editor Context Menu](#) Help topic.

Complex Function Macros can include the function body in braces, in which case Enterprise Architect skips over the

token including everything inside the parentheses *and* inside the braces.

See the [Language Macros](#) Help topic.

Improvements to support new C++17 language features, and round-tripping the *constexpr* specifier on a variable or function.

See the [C++ Conventions](#) Help topic.

Enterprise Architect now supports C# 9.0 with the 'record' stereotype and the 'PositionalParameters' Tagged Value.

It also provides the extensionAttribute Tagged Value, which helps support the import of .cs files.

See the [C# Conventions](#) Help topic.

The `async` keyword can now be used in the Python conventions, to support Python up to version 3.8.6.

See the [Python Conventions](#) Help topic.

Java 16 support provided with the addition of the 'CompactConstructor' and 'record' stereotypes, and the 'RecordHeader' Tagged Value.

See the [Java Conventions](#) Help topic.

Improvements have been made to importing a MONO Solution into your model.

See the [Import Projects](#) Help topic.

In writing Model Transformations, the Object code now includes the objectType MergeNode and the objectType nType.

See the [Objects](#) Help topic.

There have been no updates to the Help in respect to these changes:

- C code generation no longer generates definitions for automatically realized functions into the header file.
- C# parsing has been updated to handle nullable array types.
- C# reverse engineering has been updated to correct a number of parse errors.
- C# code import has been improved to better handle direct access to an object returned by a method; for example, `GetCustomer().Name`.
- The C# code generator has been updated to include support for TemplateBinding connections.
- C# code engineering has been improved to handle the attributes in an extension method definition.
- C++ Code Engineering now supports the import of code that declares Classes with inner 'using' clauses.
- C++ Code Engineering has been improved to support:
 - Import/generation of 'member variable template' (C++14) and 'member function template'
 - C++14 'digital separator'
 - C++14 new binary literal
 - All string encoding prefixes - u8, u, U, L
- The Code Editor and Code Engineering have been improved to support C++ attributes that can appear in various places in C++ code.
- Code Engineering and the Code Editor have been updated to better support C++/CLI:
 - Code Engineering and Code Editor now handle C++/CLI 'partial' class/struct definition correctly
 - Code Engineering now handles the C++/CLI pointer '^' in parameter type correctly

- Code Editor now handles C++/CLI 'sealed' Class definition and C++/CLI property definition correctly
- Code Engineering and the Code Editor have been improved to better handle the C++ complex template parameter:
 - In reverse engineering, a complex template parameter with default value will no longer cause a parse error when it is imported
 - In the Code Editor, the consecutive right-angle bracket '>>' in the template definition/instantiation will no longer cause a parse error in the structure tree
- C++ reverse engineering has been improved to correctly handle a template parameter with type only.
- Code Engineering has been improved to support new Python 3 language features (up to Python 3.8.6):
 - Python 3.5: Dedicated infix operator for matrix multiplication (PEP 465)
 - Python 3.5: Additional Unpacking Generalizations (PEP 448)
 - Python 3.6: Underscores in Numeric Literals (PEP 515)
 - Python 3.8: Assignment Expressions (PEP 572)
 - Python 3.8: Positional-Only Parameters (PEP 570)
- Python Code Engineering has been improved to support Variable Type Hint and the Async/Await function.
- The Code Editor now updates the scrollbars correctly after searching for text; the warning popup that no text was found has been removed.
- The Code Editor structure tree now correctly displays for an Interface defined with "MIDL_INTERFACE".
- The 'CONST' and 'PURE' keywords for 'STDMETHOD' method will no longer cause a parse error in the structure tree of the Code Editor.
- The Code Editor has been updated to handle data types of 'long double' and 'long long int' correctly.
- The element Behavior code editor structure tree menu has been improved.
- The Enterprise Architect code importer can import Java methods where the generic type parameters are either before or after the annotations.
- LoopNodes and ConditionalNodes in an Activity will now generate code.
- A new option, 'Enforce Synchronization', has been added for implement/override methods:
 - When applied to an element, changing the signature of any operation owned by that element will apply to all overrides
 - When applied to an element, deleting an operation from that element will also delete all overrides
- The Grammar Editor Profiler has been improved to handle forced token syntax in MBNF grammar correctly.
- In Package Code Generation, suppressed namespaces are skipped.
- Synchronization of code updates into the model will now remove annotation Tagged Values when the annotation is removed from code.
- The Enterprise Architect auto generate path has been improved to use CodeOption DefaultSourceDirectory as the path.
- Support for a new Macro format of "Function Macro" with a function body has been added; for example, "INTERFACE_IID_() {}".
- Code generation from Templates which include macro lists of "@arguments" has been corrected and improved to allow referencing the arguments as "\$parameter1, \$parameter2,..." during generation of code.
- The bug causing Enterprise Architect to lose #include enumeration file clauses for referring attributes and operations has been fixed.
- The system now ensures you do not generate/synchronize code from single element types other than Class/Interface/Enumeration.
- Enterprise Architect Model Transformation now supports Allow Duplicates of attributes of Class elements and notNull of columns of Table elements.
- Import XSD now allows selecting files on network paths.
- Model Transformations now support including Element Constraints in the Transform process.
- Model Transformation behavior now supports 'Activity Initial' and 'Activity Final'.
- Accessing, customizing and utilizing the user configurable code generation templates has been improved for the

various languages prefixed with STM_.

- Code Engineering has been updated to better handle Java Enum definition:
 - The Code Editor structure tree can now display the Java Enum definition
 - The "implements" clause for the Java Enum definition will be generated correctly
- Code engineering support has been added to the Java new language features (up to Java 15):
 - Java 14 "Switch Expression" (JEP 361)
 - Java 15 "Text Blocks" (JEP 378)
- The Code Editor has been updated to support the Java 16 new feature - Pattern Matching for instanceof (JEP 394).
- Code Engineering support has been added for the Java 16 new feature - Records (JEP 395).
- A new option has been added to Technologies to allow them to specify code generation into a single file:
 - The option 'GenToSingleFile' is Technology-specific and not accessible through the normal 'Model' or 'Code Options' pages

Schema Composer

There have been no updates to the Help in respect to these changes:

- When generating JSON schema using the Schema Composer, attributes will no longer generate an array if a Min and Max quantity are defined, but are equal.
- Generation of XSD from CIMDatatypes has been corrected and improved especially with respect to creating ComplexTypes in preference to SimpleTypes.
- Handling of the Tagged Value Notes property has been improved in generating JSON Schema from the Schema Composer.

XMI Import/Export

Support has been added for NIEM 5.0, and the Help updated to reflect NIEM 5.0.

See the [National Information Exchange Modeling \(NIEM\)](#) Help topic.

A new feature allows round-tripping Packages in Native format (XEA) using the XEA file as the data transfer medium.

See the [Export to XMI](#) and [Import from XMI](#) Help topics.

Package Control processes now support the use of Native Format (XEA).

See, for example, the [Configure Packages](#) Help topic.

An option has been added to the 'Cloud' page of the 'Manage Model Options' dialog, to block XMI import to models on a Cloud connection. This is to prevent import problems in situations where the connection might be at risk of failing.

See the [Cloud Page](#) Help topic.

There have been no updates to the Help in respect to these changes:

- The CSV Import/Export dialog has been updated to ensure the code page is valid under Wine.
- CSV import of Tagged Values has been improved to better handle tag types that include a profile Namespace.
- Checking if the database user has ALTER and DROP permissions in MySQL now has no impact on a project transfer.
- Correct checks of Security permissions for MySQL and SQLServer databases are run prior to a project transfer.
- Post processing of a project transfer into case sensitive SQL Server database has been corrected.

- A BPMN import issue where a Boundary Event's parent could become the lane has been corrected.
- When exporting a cloned diagram via XMI the link to the base diagram is maintained.
- Project Transfer via Native XML, on completion, will automatically load the default diagram into the model.
- Project transfer to MariaDB has been improved, when the database user name includes the underscore character.
- Native XML Import will no longer truncate element Notes.
- Error handling when importing reference data to the model has been improved.
- When importing from a Native/XMI file, the correct confirmation message is now shown.
- Round-tripping internal documents associated with Discussions & Journals via XMI & Native Formats is now supported.
- Native XML Import will no longer cause an error when inserting an empty value for the 'image' type column in SQL Server over SQLAPI.
- In XMI 1.1 and XMI 2.1 with 'Strip GUIDS' selected, the type for a Connector has been updated.
- The import of Rhapsody model files has been improved, to better manage global Classes defined in the imported model; it doesn't generate multiple TopLevel Classes.
- The custom map 'CMapDOMNodeToString' has been corrected, as it was breaking proper Native XML roundtripping.
- Magic Draw import issues for Packages and elements have been corrected, including:
 - The import of a Magic Draw SysML project has been improved
 - Concerning a Port's RequiredInterface and ProvidedInterface:
 - The Interaction Point window will now work with ProvidedInterface and RequiredInterface on a reused Port
 - MD import will create ProvidedInterface and RequiredInterface on a Port
 - MD import will create ProvidedInterface and RequiredInterface on a reused Port
 - MD import will set isReference for SysML reference properties
 - MD import will import a hyperlink as a Navigation Cell
 - InterfaceRealization connectors can be imported
 - For State regions
 - For a StateMachine's Transition Trigger with Signal Event
 - For reused properties and connectors; arbitrary level of nested properties (Parts/Ports) show on IBD diagrams
 - The missing ContainmentLink, now imported as a Nesting connector in Enterprise Architect
 - Sequence diagrams support the import of Lifelines and fragments, and draw the Sequence flows at the correct position
- SysML Requirement elements:
 - Now import as a Requirement instead of as a Class element
 - Removed duplicated Tagged Values
 - Support SysML 1.5 projects
- No more missing Trigger with a Change Event on a StateMachine Transition.
- Native XEA file exchange format has been implemented:
 - A new fast and convenient alternative to XMI and XML format for the speedy data exchange of large Packages
 - Using XEA format helps to streamline model archiving and the export and import of Enterprise Architect repositories
- The ECore exporter now supports:
 - The property ID to eAttribute
 - The property documentation to eClassifiers, eAttribute, eOperation
 - Output of XML format

Automation

GetElementByGrid, GetElementByName and GetObjectByGrid methods added to the Diagram Class in the Automation

Interface.

See the [Diagram Class](#) Help topic.

Added the MoveElementToGridPosition method to the element interface for future use.

See the [DiagramObject Class](#) Help topic.

The Project Automation Interface of Import Directory for a Visual Studio Solution has been improved:

- Only prompt once during import to confirm that we are creating a Package per Namespace
- 'ImportVisualStudioSolution' has been added for importing a solution to the selected Enterprise Architect Package

See the [Project Class](#) Help topic.

Scripting - the Javascript content for EAScriptLib and LocalScripts has been updated. The Scripting Console has also been streamlined into the Javascript Console window and the separate Scripting window.

See the [Scripting](#) Help topic, the [JavaScript Console](#) Help topic, and the [Scripting Window](#) Help topic.

There have been no updates to the Help in respect to these changes:

- Reloading a diagram via automation has been improved.
- The EA_MenuClick response to Gantt, List and Specification views has been fixed.
- The misleading menu 'location' with reference to EA_GetMenuState, in the context menu of the 'Project' and 'Context' tabs of the Browser window, has been fixed.
- When Attribute.Update is called, it doesn't change the context.
- The 'SQLQuery' to output both date and time portions for the 'DateTime' field value has been improved (originally it only output the date portion).
- Diagram.SelectConnector will now immediately reflect the connector section on the diagram.
- EA_OnContextDoubleClicked will now be called when double-clicking an element without children in the Browser window.
- Multiple JavaScript Add-Ins with a dependency on a common Class will now load the code from that Class.
- Element.ClassifierName and Element.ClassifierType will not give values for all element types.
- Element.Update no longer causes Custom Table elements to show their label again.
- JavaScript is the new default scripting language in Enterprise Architect 16; as part of this change, the existing libraries for VB Script and JScript have been migrated into JavaScript.
- JavaScript execution during simulations has been corrected; previously, setting a breakpoint in an unrelated/unused file could trigger a fatal exception.
- Excel support in automation scripts has been improved.
- Within IChart, 'AddSurfaceColors' can now be called from within scripts.
- JScript and VBScript debugging is supported in the 64 bit edition of Enterprise Architect.
- When Broadcasting EA_OnNotifyContextItemModified for an attribute, the correct type and GUID are passed through.
- The Automation Interface 'SQLQuery' has been improved to output both the 'Date' and 'Time' portions for the 'DateTime' field value (originally it only output the 'Date' portion).
- The Add-In double-click broadcast has been restored in the Browser window.
- The minor refresh issue has been corrected to ensure Diagram.SelectedConnector is immediately displayed on the diagram when set.
- Diagram.Update now obeys its read-only status when a diagram is not checked out while using version control, or not locked when using 'Require User Lock to Edit'.
- The Diagram Object setting 'Show Notes' now defaults to the maximum character count of 1000, when enabled.
- When dropping an Item from the Toolbox into the Browser window, OnPostNewElement is called after the

stereotype(s) have been applied.

User Interface

The Start Page now provides direct access to the Model Wizard ('Create from Pattern' tab), Process Guidance facility ('Guidance' tab) and Add New Diagrams facility ('Add Diagrams' tab), as well as the original project access features ('Open Project' tab - the default).

See [The Start Page](#) Help topic.

In notes text in the Notes window, Specification Manager and other text editing views it is possible to show or hide the Glossary definition and Translation indicators (underlines), using the 'Highlight Glossary Terms' context menu option.

See the [The Notes Window](#) Help topic.

The Specification Manager now has an option in the Specification-Specify ribbon to automatically synchronize the Specification Manager display to the Package selected in the Browser Window. As you click on different Packages in the Browser window, the Specification Manager changes to display the content of the currently-selected Package.

See the [Display Panel](#) Help topic.

The Specification Manager has an additional column and indicator to show whether an element has any Journal comments on it.

See the [Indicator Columns](#) Help topic.

You no longer have to use the 'Download Libraries' dialog to download Learning Center Libraries into your model.

See the [Learning Center](#) and [Manage Libraries](#) Help topics.

It is now possible to link a specific Toolbox page to a Package in the Browser window, so that when that Package is selected in, say, the Specification Manager, that Toolbox page displays as well.

See the [Toolbox Appearance Options](#) Help topic.

When specifying reporting options for the generation of reports, you can now set the sorting of elements in the document to no particular order, by specifying 'None' in the 'Elements by' field.

See the [Document Options](#) Help topic.

The security dialogs have been re-configured as View tabs in the main work area, and the filters on the 'Group' and 'Users' columns on the 'Manage Locks' and 'My Locks' dialogs have been changed.

See the [Configure Model Users](#), [Configure Model Groups](#) and [Viewing and Managing Locks](#) Help topics.

In managing ribbons, a 'Minimal Text Mode' option has been provided to reduce the visible content of the ribbons by hiding the text underneath icons so that it only displays when you mouse-over the icon.

See the [The Ribbon Menu](#) Help topic.

In the Settings ribbon 'Security' panel, user-specific options have been moved from the 'Administer' icon to the new 'My Account' icon.

See the [Security Panel](#) Help topic.

The 'Dictionary' panel has been moved from the Publish ribbon to the Design ribbon, and its 'Glossary' icon now provides an option to display the Help topic that describes how to set up a model Glossary. The Glossary can also now be quickly accessed from the Collaborate Window Selector.

See the [Dictionary Panel](#) Help topic, and the [The Collaborate Window Selector](#) Help topic.

Various adjustments have been made to the Design ribbon to streamline work on Packages, diagrams and elements, including removing the 'Impact Analysis' panel and adding its options to other sections of the ribbon.

See the [Design Ribbon](#) Help topic.

New options have been added to the Specialize ribbon to provide access to a Console window for editing JavaScript, VBScript and JScript.

See the [Specialize Ribbon](#) Help topic.

In User and Group Security there is now a security restriction feature, to block the user from deleting model objects when they have a restriction against it, such as DeleteDiagram.

See the [List of Available Restrictions](#) Help topic, the [Configure Model Groups](#) Help topic and the [Configure Model Users](#) Help topic.

In administering your own user security, you can now block the display of the 'OpenID Authentication' dialog when you open the current project.

OpenID logins can now use 'id_token' for user authentication, allowing automatic user management with Azure groups.

See the [User Button](#) and [Security Panel](#) Help topics.

In the Browser window, you can create elements of the same type in the same location using the Ctrl+Shift+N keys.

See the [Add Elements Directly To Packages](#) Help topic.

You can now create Views of type Package that, in the Browser window, have the normal Package icon at View level.

See the [Model Views](#) Help topic.

A tab of Priority and Status indicators has been added to the Inspector window, to help you quickly inspect and review the status and priority of all elements in a diagram.

See the [Inspector - Status](#) Help topic.

The Diagram Relation Matrix does not include un-named elements.

See the [Diagram Relation Matrix](#) Help topic.

The 'Auto Name Counters' dialog now:

- Allows an auto-naming convention to be set up according to element stereotype
- Has both a Save button and a Save & Close button to allow flexibility in setting up a number of auto-naming conventions

See the [Auto Names and Counters](#) Help topic.

There is a new Construct History window, which provides a summary of all project management transactions over a given period, with separate tabs for Tests, Resource Allocations and Maintenance objects. The Construct History window's load has been corrected for Firebird and Oracle.

See the [Construct History Window](#) Help topic.

The list controls in the Audit View have been updated to reflect the current theme.

See the [Auditing](#) Help topic.

The Testing window now has a 'Full Test Suite' tab that displays a read-only list of all the Test items on the element, grouped by type.

See the [Test Management](#) Help topic.

We have added a new button - 'Show Linked Document' - to the pop-up Toolbar displayed when hovering over a Hyperlink, if the item supports it.

See the [Hyperlink](#) Help topic.

The JavaScript Console has been improved to provide a better visual and interactive experience, helping you to quickly and effectively write and execute JavaScript code within Enterprise Architect.

See the [JavaScript Console](#) Help topic.

There have been no updates to the Help in respect to these changes:

- A number of Perspectives - such as for ArchiMate, SysML, BPMN, NIEM and UPCC - have been modified so that the current version of the technology (for example, ArchiMate 2.0) is independently selectable, while older legacy versions of the Technology are grouped together and accessible under the 'All' Perspectives group.
- The selection, display and filtering of Perspectives have had a number of enhancements within the 'Create from Pattern', 'New Diagram' and 'Diagram Toolbox' (pinned pages) areas.
- 'Dark Sapphire', a new dark visual theme, has been designed to minimize visual contrast and provide a relaxed reading experience; the new theme can be applied to all windows and visual controls in Enterprise Architect.
- The 'Sapphire' theme colors have been modified to improve their overall look.
- The 'New diagram' dialog has been updated to better support view specifications:
 - Profiles with view specifications extending diagrams from external technologies are now listed as their own page
 - View specifications displayed for a diagram type are now filtered by perspective
 - UML diagram types now only display UML views within this dialog
- While dragging one or more Items in the Browser, you can now correctly release the drag by pressing the Esc key.
- Hyperlinks now support applying a Matrix Specification Artifact as the profile, which are available from the 'Hyperlink' dialog Matrix Profiles list.
- When using the modal 'Test' dialog to set a run date, the 'Run By' and 'Checked By' combo boxes will default to the current user.
- The 'Risk', 'Effort' and 'Metric' modal dialogs will now have a default type selected when creating a new item.
- The Inspector window will display a new Risk, Effort or Metric when created via the modal dialog.
- The docked Notes window remains in sync with 'Risk', 'Effort' and 'Metric' modal dialog changes.
- The 'Stereotype' dialog will now allow the removal of stereotypes that have been incorrectly assigned to the wrong type.
- The Start Page 'Add Diagram' and 'Guidance' tab creation controls are now disabled when no project is loaded.
- The Project Transfer screen now provides the option to reset all GUIDs.
- The Pan & Zoom window has been improved to handle both Dashboard diagrams and the new Grid Style diagram.

- In the 'New Package' dialog:
 - The 'Select and Apply Pattern' button will now display the Start Page 'Create from Pattern window' tab
 - The size and spacing of controls have been improved and the window is re-sizable
- Editing an 'Interaction' object name is now supported, using F2.
- When the lock state of the selected Package, element or diagram is updated, the Read/Write state of the Properties and Notes windows will now be updated immediately.
- An issue with the docked Properties window not immediately reflecting a change to the Classifier property of an Object Node or any type derived from an Object Node has been corrected.
- The correct icon for a Packaging Component is now displayed in the Browser window.
- Diagrams with an applied metamodel view can now be used as a template in the Project Template Package.
- A new keyboard accelerator has been added to the Browser window, Ctrl+Shift+N, which will create a new item of the same type as the current selection.
- The positioning of owned and embedded objects on a parent when the parent is resized has been corrected and improved; this affects Internal Block Diagrams, State Charts and others.
- The Resources window has been updated to ensure it displays the correct element icon for UML profile items.
- The Specification Manager has been enhanced to show the element metatype in the 'Type' column, if one has been defined.
- When assigning Pins via the docked Properties window, the 'Select' dialog will list only Input Pins or Output Pins as appropriate.
- The 'Traceability' view has been updated to show the correct reading direction for stereotyped Generalizations.
- Handling of the upper-bound Multiplicity value for a Port has been improved, when using the element Properties page.
- The 'Resources' tab of the Browser window is made visible when accessing via a shortcut, if the tab was previously hidden.
- The multi-user modeling experience has been improved by maintaining the element feature sort position between users.
- The 'Set Visible Relations' dialog list control has been updated to provide a better user experience when changing selection.
- The handling of Property Type when editing the initial value of a property compartment entry.
- An issue arising when saving an element Attribute that has a Constraint with a single embedded apostrophe has been corrected.
- In the Class modal 'Properties' dialog, 'Detail' tab - the 'Cardinality' field has been changed to 'Multiplicity'.
- The Construct docked Lists and Properties windows have undergone usability improvements, including support for auto-complete:
 - The Construct docked Properties window drop-down list types have been set to read-only selection
- The name of the 'Alias' field in the 'Properties' dialog and Properties window has been corrected.
- Embedded elements set the stereotype in the docked Properties window on creation.
- The Help page links on the Feature window tabs for Attributes and Operations have been updated.
- The 'Arguments' properties tab for Action Call Operations has been made more robust to prevent a potential application error.
- The ability to double-click an external Requirement in the element 'Properties' dialog to show its properties has been restored.

- A minor issue for the Tagged Value window has been corrected to ensure new Tagged Values added via the shortcut Ctrl+Shift+T are reflected immediately in the window.
- The Special Action for a Use Case has been corrected; it will now display the Structured Scenarios editor view.
- The docked Test Cases window now includes an overview tab 'Full Test Suite'.
- A new option has been added to display View nodes in the Browser window with a normal Package icon.
- Corrected a minor issue when attempting to access the Help via the F1 key on the 'Exclude Filters' page of the 'Document Generation' dialog.
- The docked construct Properties window has been modified to support auto-complete where project people/resource names and resource roles are used.
- In-place editing of Package element names in the Browser window has been corrected, to avoid potentially modifying an existing stereotype.
- New docked Properties window shortcut keys have been added for entering the edit state:
 - Spacebar, Enter to action checkbox, combobox, browse and time property types
 - Spacebar, Enter or F2 to edit non action property type
- The handling of element File details has been corrected, especially the 'File Size' and the 'LastWrite' fields, which could fail to be stored in some situations.
- 'Find in all Diagrams' is now available for element features in the Browser window when using the Enter key to access the Quick-menu.
- The 'Create Link' dialog - accessed via the Browser window context menu Add | 'Create Link...' - has been updated to improve the contents of the Link Type and Target Type combo boxes when a perspective is applied.
- A spurious 'Set Classifier' command for a CreateObjectAction element has been removed; the Classifier property should only be set from the Properties window.
- The 'Audit View' main tab list controls have been updated to support the applied theme colors and style.
- The layout of the 'Audit Settings' dialog has been updated to enhance readability, giving the options more breathing room.
- The layout and ordering of the 'New Element' dialog has been improved, when viewing a 'Type' list.
- The 'MDG Technologies' dialog list control has been updated to support the applied theme colors.
- Tests across Enterprise Architect have been adjusted to have a default type of 'Standard' unless they are of 'Basic Path' if available in the test types configured list.
- The filtering in the 'Model Pattern' dialog has been corrected, and also new 'Expand' and 'Collapse' options have been added.
- The behavior of the small floating toolbar over a Hyperlink in a Note or other editor has been updated such that the selected element becomes the context element; this also resolves some issues with inconsistent selection in a multi-user environment.
- A new hyperlink type has been added, designed to open a file to a specific line or search for text.
- The Inspector window 'External Data' tab; has been enhanced; it now shows external reference element comments.
- The system allows you to change the text color via the dockable Notes window toolbar control when showing notes for non standard items such as Tests and Maintenance items.
- When using the hyperlink option 'Find in Diagram' to locate an element, selecting the 'View Composite Diagram' icon for that element - if available - will correctly open the diagram.
- The 'Recent Places' Portal tab has been reinstated, along with the ribbon menu button to activate both the Portals window and page.
- The 'Save As File' dialog under Linux has been modified to ensure that the selected filetype extension is appended to

the current filename.

- Under Wine, drag-and-drop of text from an external source onto a diagram is allowed.
- A new, customizable Quick Access toolbar has been added; you can quickly add your favorite and often-used commands (including menu buttons) from the ribbon to this new Quick Access toolbar:
 - Build your own collection of useful tools
 - Right-click on a ribbon item and choose 'Add to Quick Access Toolbar'
 - Put the things you need frequently front and center
 - Simple and effective
- 'Auto Refresh' diagram options have been added to the Layout ribbon.
- DMN modeling menu items have been added to the 'Design > Impact > Decisions' ribbon option.
- A Structured Scenario ribbon and menu options have been added for quicker access.
- A Pro Cloud Server connection diagnostics menu item has been added under the 'Help' button on the 'Start' ribbon.
- A dynamic drop-down 'Working Set' menu has been added to the 'Start > Desktop > Workspaces > Select Working Set' ribbon option.
- The 'Linked Document' ribbon commands have been amended to ensure the option to create a Model Hyperlink is enabled during editing.
- The 'Locking' options invoked from the ribbon to handle multiple selection in the Browser window and diagram have been corrected.
- The 'Construct > Change Management > Overview' ribbon option has been changed to 'Maintenance'.
- Duplicate ribbon menu items have been removed from the 'Design' ribbon.
- The icon 'Design > Diagram > Toolbox' has been moved to the first item in the panel.
- The 'Add' buttons on the 'Design' ribbon panels now include the item being added; this makes determining the action easier when locating these buttons from a search.
- The Structured Scenario editor no longer contains a blank space at the bottom of the window when applying high DPI settings.
- An issue where some hyperlinks in the Model Wizard Pattern documents failed to execute has been corrected.
- The 'Msg' notification button will no longer display an existing unread Model Mail as a new notification when changing the load limit of the Model Mail window.
- The 'Status' tab of the Inspector docked window now displays a column header with columns for the Status and Priority icons.
- Saving recurring events in the Calendar has been corrected.
- (Right Alt+Ctrl+N) does not now trigger the 'New Element' dialog for a Polish keyboard when the focus is in the view.
- The 'Save Project Shortcut' dialog now allows saving shortcuts in other supported file extensions.
- The 'Create Project Issue' dialog has been corrected to ensure the Resolution Date/Time controls are no longer hidden.
- When showing the docked Notes and Properties windows, they display the latest changes to a construct item.
- The resource compartment for an object on a diagram is updated after modifying the percent complete in the Resources window.
- Visual display of the Journal/Diary window has been improved when using Office Dark Gray 2016/19.
- The Journal and Diary windows will use the current theme colors for the text and background to provide a more integrated look:

- Copying text from controls that use the current theme colors will no longer apply that as a default text color when pasted
- Ctrl+Space on a Chat item will display a read-only notes editor, allowing you to copy out a specific piece of text
- The text size in the pop-up Notes window has been corrected, when using Ctrl+Space from the Chat editor
- The docked Notes window will correctly theme the text and background when changing between a dark and light theme for Office or Visual Studio 2019.

- Restrictions to Perspective sets by Security Group will now appear under 'Personalized' in the 'All Perspectives' menu, rather than at the top level.
- The 'Paste As' dialog now remembers the selection correctly when dropping elements onto Sequence diagrams.
- Various missing dialog/window help links have been added.
- While viewing a Package with the Specification Manager, drag and drop in the Browse window correctly moves the selected item(s).
- Performing a drag in the Browser window will no longer select the first visible item in the tree in specific scenarios.
- Diagram Legends shown in the Browser window will display their names instead of Note text.

- Loading of the Relationship Matrix has been improved when source and target objects have multiple links to objects not displayed in the view.
- Opening a Script Console in the main view will now display a tab name that matches the console type.
- Missing ribbon item tooltips have been added.
- The Start Page 'Diagram' tab default size has been reduced.
- The Copy/Paste menu group at Root Package level has been corrected.

- The drop menu of available Chat groups for the 'Send Chat' popup dialog, which could fail to populate in specific conditions, has been corrected.
- The system now allows a space character to be used when filtering text in the docked History windows.
- The 'Translate' context menu items are no longer displayed for the Chat, Journal, Discussion and Diary editors and when translations are disabled for a model.
- Element features with a new line character in the name will correctly update when modifying the notes via the docked Notes window or the popup Notes window.
- The 'About' dialog has been increased in size.

- When connecting to a Chat group with unread messages, it always obeys your choice.
- The 'Copy and Paste' action is consistent between shortcuts (Ctrl+C / Ctrl+V) and context menu options in the Browser window and on a diagram.
- The Discuss & Review window correctly loads new discussions when the element is already in context.
- The behavior preventing a code position hyperlink being inserted into an in-place editor like the Journal, Discussion or Diary window, has been corrected.
- The Open Server Connection screen:
 - Populates Firebird databases with the default credentials of SYSDBA/masterkey
 - Allows the connection name to be renamed without forcing another Test

- The look and layout of the Window Selectors have been improved.
- New tooltips have been added to the Window Selectors (Alt + <1 - 7>), displayed on mouse-over.
- A new Construct Window Selector has been added to the Start > All Windows ribbon panel
- Opening a Date Picker in the docked Properties window with the Space key no longer keeps focus on completion.

- Labels for Maintenance items in the docked Properties window are now consistent when changing between types.
- The 'Model Mail Preview' control will no longer consume the entire available space when making the docked window smaller.
- A toolbar with a drop menu has been added to the Model Mail window for easy menu access.
- Loading of Charts that have stored snapshot data has been corrected.
- A model integrity error when copy/pasting child elements in the Browser window has been prevented.
- RefGUID, RefGUIDList and DiagramRef Tagged Value types now detect property changes when you select a new item with the same name.
- The Quick Access Toolbar 'Customization' dialog usability has been improved.
- The docked Properties window for States can now set the behaviors for States.
- Opening an RTF file from the Find in Files window no longer causes a potential, unexpected application error.
- The loading of Time Series Charts has been improved.
- Property lists will now draw group headers with a highlight color to make them more noticeable.
- Diagram types in the 'Core Extensions' technology can now be included in restricted Perspectives.
- The sort order for the 'New Diagram' dialog and Model Wizard, when 'All Perspectives' is active, has been improved.
- UML Perspectives will now show model patterns in translated versions.
- All Perspectives will now show all available diagram types in translated versions.
- Model Wizard patterns for Dynamic Chart elements have been improved.
- In the Responsibility window:
 - Requirements list properties are now saved correctly
 - Requirements list context menu item state has been corrected
 - External Requirement properties are now loaded
 - Context item selection efficiency has been improved

Others

When performing work through the Pro Cloud Server you can check the connection through the 'Start > Help > Help > Pro Cloud Server connection' option. The results are displayed in the System Output window.

See the [Help Panel](#) Help topic and the [PCS Troubleshooting](#) Help topic.

Updated the Help page describing the Features window.

See [The Features Window](#) Help topic.

The <perspective> option in the top right of the screen now sets the baseline Perspective across the model; you can set individual dialogs to a different Perspective for that dialog alone, or select the 'Active' option from the drop-down menu to set the Perspective to the baseline.

See the [Using Perspectives](#) Help topic.

Added auto-complete in Construct docked lists (Testing and Maintenance) and the item Properties window, to complete the names of defined users. In these windows, other drop-down list types are set to read-only selection; that is, you select

from the list and do not type in alternative values.

Also resolved the issue where double-clicking a docked construct list item changed the combo selection.

See the [Create Maintenance Items](#) Help topic and the [Create Test Records](#) Help topic.

On the 'Test details' dialog, the 'Run By' and 'Checked By' fields now default to the name of the current user.

See the [Create Test Records](#) Help topic.

The Resource Allocation window is now displayed in Gantt chart format. Also:

- The Resource property will only validate with project-configured Resources and Authors
- The Role property will only be selectable from project configured Roles
- The Role property is now read only

See the [Resource Allocation](#) Help topic.

Watched items in the Watches window can now be edited/renamed in place, by pressing F2.

See the [View Variables in Other Scopes](#) Help topic.

There have been no updates to the Help in respect to these changes:

- The 'Find Orphans' search located under 'Diagram Searches' has been optimized for large models.
- The Tags window, property Value button-click has been stabilized.
- Property type will now be persistent on editing the initial value of a property compartment entry.
- Enterprise Architect will no longer crash when:
 - Closing Enterprise Architect under Wine in SScripter
 - Deleting the Diagram Notes element on a diagram
 - You select the parent element after the element type is changed for the child element
 - Immediately deleting an annotation element (such as a Navigation Cell) if it was the first annotation element added to that Package
 - Saving an attribute constraint having a single quote
 - There are long lines of code in the Script Editor
 - Creating a Port via the Features window and then moving a connector to it
- In the Class modal 'Properties' dialog, 'Details' tab, the 'Cardinality' field has been changed to 'Multiplicity'.
- Wireframe progress bars will no longer overdraw at certain sizes when the 'Block' style is applied to them.
- The system no longer sets the alias when creating a stereotyped Package from the Diagram Toolbox.
- Added support for generating web pages from Enterprise Architect models.
- Improved StateTable to display text in the vertical center of the Transition and State/Event enumeration cell.
- Improved the font color for StateChart Tables when in a dark visual theme.
- Fixed regression with Async queries so they run asynchronously.
- Model Search will now correctly handle searches that use queries that assign a different Class table such as 't_diagram' as CLASSTABLE.
- Enterprise Architect now allows a document with Dynamic content to be updated when used in a Pattern.
- The system now prevents Xerces from appending a default XML Declaration when serializing DOM.
- Added missing code to construct the Gap Analysis window as a View Handler.
- Corrected the use of uppercase object names SYS.COLUMNS and SYS.TABLES for case-sensitive SQL Server

databases.

- Project Transfers into case-sensitive SQL Server database no longer throw multiple errors.
- Project Transfers ensure that security checks are performed for MySQL targets.
- The Portals window will no longer break icons with a transparent background when an item is disabled.

- Removed superfluous loading of the Enterprise Architect metamodel.
- Fixed the SQL error in setting fields with invalid text.
- Corrected the reading direction for stereotyped generalizations.
- Corrected the issue concerning clearing the upper bound for Port multiplicity.
- For a SysML StateMachine, when adding a Trigger, Enterprise Architect no longer prompts for a referencing Signal element.

- Corrected the Event Status-types list in the docked Project window.
- Element-type auto counters are now applied as required over a Pro Cloud connection.
- In the element Features window, the sort position is maintained between multiple user accesses.
- The layout of a Dashboard diagram will persist when reloading the Diagram tab.
- In Data Modeling, an invalid SQL message no longer displays when changing the datatype of a new column.

- On the 'Set Visible Relations' dialog, the unexpected multi-selection behavior has been removed.
- Optimized the element auto count SQL to one query for both Name and Alias.
- Improved Structured Tagged Value data handling.
- Setting the element properties stereotype tag group holds the vertical scroll position.
- Removed the duplicate 'Concurrency' property from the docked Properties window for operations.
- The Browser window 'Add as Favorite to' menu now consistently loads groups.

- The Property Type will now persist on editing the initial value of the property compartment entry.
- Creating an annotation element (such as a Navigation cell) in a Package that doesn't already have an annotation Package will now correctly create the annotation Package.
- Corrected the SQL in the 'Usage' dialog that could have displayed incorrect diagram usage under certain circumstances.
- Corrected the 'InvalidDatTime' error for the 'Last Run' field in Generated Test documentation.
- Return EAViewType::vtHelpPage to 'enum' even though the window is removed to ensure a consistent viewtype between 15.2 & 16.

- The system now ensures that the auto count record is only updated with a changed value.
- Navigation cells no longer throw an ASSERT when loading a Kanban diagram.
- The treenode display name no longer repeats a stereotype.
- An element created through a project template Package is no longer displayed in a default size.
- Resolved the document 'Auto Spell Checking' application error when first scrolling through the document.

- In multi-user models, diagram sinks will now work even if the element hasn't been loaded into the Browser window.
- Fixed the error in object selection on an orthogonal move of a child object in the diagram.
- Structured Tags contained in a _tagGroups save correctly.

- Fixed the failure of JavaScript Add-Ins on the Cloud under Postgres.
- Corrected the issue where exporting controlled Packages to XMI 1.1 caused an XML error when the 'Report Cross Package Reference Deletions (XMI 1.1)' option was enabled.
- Corrected the error in the 'Arguments' tab of the Properties window for Action Call Operations.
- Fixed the issue with connector Shape Scripts not being drawn.
- Multi-selected elements dropped under the option to 'Paste as Property' will now adhere to that paste selection.
- Initial values have been put back into the CDockedExternalSource ExternalData::RowData header file.
- The Proxyconnector element in the Requirement Matrix view will no longer show an irrelevant context menu.
- Dragging virtual connector ends when moving around large diagrams has been improved.
- Deleting a hidden diagram layer will now correctly show elements on that layer again.
- The feature to display External Requirement properties on double-click has been restored.
- Document generation will now correctly size elements when using bitmap images to ensure the text remains within the elements.
- Linked external datasource diagram objects hold the selection focus on the first click.
- Tree-style connectors on diagrams with hidden layers will no longer incorrectly suppress segments.
- The compartment entry of a Port will now update immediately after the Port is deleted from the diagram.
- When converting from RTF to HTML, the text background color is now correct translated.
- There is no longer a database error when you select the 'Clear the Checklist' option for a 'Checklist' Artifact element.
- Corrected the issue on adding a Tagged Value using Ctrl+Shift+T.
- Models on an Oracle DB with large diagrams that display related element compartments will no longer cause an SQL error when loading.
- Broadcasting the contextItemModified event will now trigger the correct item GUID and Type to the Add-In.
- XML parser error reporting has been restored.
- Excessive memory usage in XMI 2.1 export has been fixed.
- Logging for Active Directory Sync and Single Sign-on login attempts has been improved.
- Active Directory Authentication handling of nested security groups has been improved.
- Switching between models with auditing enabled will no longer cause an error.
- Synchronizing Database Table definitions has been updated to fix multiple potential failures.
- External Data bindings to profile Tagged Values now use the correct name.
- The Image Manager has been updated to correct an SQL error on case sensitive databases.
- Cloning a composite element now ensures that the referenced composite diagram is the latest diagram version.
- Corrected the SQL in a UPDM search for a QEA model.
- The Windows new document menu no longer lists Enterprise Architect project types on fresh installs.
- SQLite project types now show the correct Windows explorer icon.
- The 'Auto Reload Changed Diagrams' facility is now available in supported models regardless of security settings.
- Disabling 'Auto Refresh' on a diagram will now automatically save any pending changes rather than prompting to save.

- File management of Chat, Journal and Discussion internal documents has been improved.
- SQL errors for some built in searches when run on an EADB file have been corrected.
- The 64 bit Professional Edition will now allow upgrading of EAP/EAPX projects to QEA/QEAX.
- Exporting the internal document of an element via the API will now return a correct boolean value.
- The External Data Integration (SBPI) will now sync fields to a newly created item.

- The 'Spell Checker' dialog now correctly displays accented characters.
- Dragging multiple children of an Annotation node to a Package without an existing Annotation node has been enabled.
- Enterprise Architect will now check that the current user has write permissions to file before attempting to open a .QEA/.QEAX file.
- Changing the name of an Operation by using the 'Sequence Message' dialog in an Interaction/Sequence diagram has been optimized to immediately update the Browser window instead of requiring a reload.
- The 'Auto Reload Changed Diagrams' functionality has been improved.

- The 'SQLServer' option on the Native Connection screen for Linux Users has been disabled.
- The behavior of the Console Output window has been improved; it now opens the correct help links for MATLAB & Octave.
- The creation of new elements has been improved, when a model-level Template Package has been defined but that Package is also locked; in some cases this could cause errors and/or error messages when adding a new element to the model that was based on an element in the Template Package.
- The 'Specialize | Tools | System Integration' option has been simplified by removing unnecessary sub items.
- Tooltips for the System Integration window's navigation breadcrumb control have been improved.

- Package elements will no longer show Nav Cells on a diagram when the 'Show Package Content' option is enabled.
- The report generator's handling of images that require resizing has been improved to ensure they are displayed in the final document.
- The Registry location used to search for and load Add-Ins for the 64 Bit edition of Enterprise Architect is now different to the 32 Bit edition; the two key values are:
 - 32 bit Edition HKEY_CURRENT_USER\Software\Sparx Systems\EAAddins
HKEY_LOCAL_MACHINE\Software\Sparx Systems\EAAddins
 - 64 bit Edition HKEY_CURRENT_USER\Software\Sparx Systems\EAAddins64
HKEY_LOCAL_MACHINE\Software\Sparx Systems\EAAddins64
- The menu options for Project Transfer under the 'Settings | Transfer' ribbon have been modified to better support the common Project Transfers, and to provide easy access to the 'Migrate to QEA' command used to move EAP files to the new QEA format.
- The issue with setting Action Kind type in the Properties window has been corrected; previously, assigned Action Pins would not be saved until the Action was reloaded.

- In SBPI, creating an item in an External Data Provider such as Jira has been improved to provide better mapping and better fallback and default types; additional messages round out the overall function usability.
- The behavior when trying to open a DOCX file under Wine if msxml isn't available has been improved; we now display a prompt.
- SetLineStyle will now work with DrawNativeShape for Shapescrpts applied to objects.
- A potential application error has been eliminated when an Add-In closes the model during the load broadcast.
- Highlighted text in a linked document is always displayed when viewed via WebEA or Prolaborate.

- Standard headers have been added to HTTP requests for compliance.
- Simple Decision Table modeling has been enabled in the Corporate edition ribbon.
- On the 'Perspectives Sets' dialog, a new page allows limiting Perspectives by Security Group, if security is enabled.
- Group workflow is now run only for security-enabled models.
- The broadcast notification of EA_AllowPropertyUpdate is now additionally sent from the Diagram List View and the Specification Manager, when required.

- The Relationship Matrix view has been corrected to include ActivityPartition and its child elements.
- Adding an element using the Specification Manager will now apply any element properties defined by a Template Package.
- The handling of SSL certificates that expire while connected to PCS has been improved.
- Retrying of failed requests to PCS has been improved.
- In Windows Authentication, the checkbox 'Allow non-domain users' now shows the actual value of this option for pre-existing installations.

- Pro Cloud Server connection details are now encrypted in the initial communications between Enterprise Architect and Pro Cloud Server.
- Implementation of Enterprise Architect in a Docker container is better supported.
- The Start page context menu option 'Open in New Instance' for Cloud and Server based connections has been improved to ensure they are successfully loaded in the new instance.

Release 16.0 Build 1605

Scroll through these sections to review the changes that have been made in Enterprise Architect for this released build.

Where a change has been described or illustrated in the Enterprise Architect User Guide, a link is provided to the appropriate topic.

Diagramming

There have been no updates to the Help in respect to these changes:

- Adding an embedded element to an object in the tree will no longer add it to the diagram as well if the parent object is not on the diagram.
- Loading of diagrams has been improved.
- [Internal] - Additional DB calls have been prevented from being made for disabled compartments.

SysML

There have been no updates to the Help in respect to these changes:

- Quick Linker behavior has been corrected when creating a new SysML Requirement using the 'deriveReq', 'satisfy', 'verify' and 'refine' link types.

UML

There have been no updates to the Help in respect to these changes:

- When '<none>' is specified as the default language for Code Generation, the system ensures that a new attribute defaults to 'Integer' and the 'Type' combo only provides UML Primitive Types
- The docked Properties window for SendSignalAction now allows you to edit 'Signal', 'Argument' and 'Condition'
- Self-connectors on Sequence diagrams have been improved to provide easier-to-use selection handles
- The rule that a UML Class can own a UML CollaborationUse has been added
- The Feature window 'Interaction points' tab will now list the target Pin of an Action(SendSignal)

User Interface

There have been no updates to the Help in respect to these changes:

- Duplicate entries from the 'Select Connector Type' listbox have been removed.
- Creation of new profile relationships in the Matrix View now includes the intended stereotype.
- The element 'Properties' dialog has been updated to display properties from profiles containing an alias on the correct page.
- The docked Properties window now auto-saves tab changes when switching context.
- In the docked Properties window, editing of stereotype properties no longer fails for some stereotypes.
- The 'Swimlane Details' dialog has been improved so that the Swimlane classifier is assigned when the dialog is opened.
- Operation Parameter Tagged Values that are applied by a stereotype will correctly display and be editable from the Tagged Value windows.

Reviews and Discussions

The Manage Reviews window and Discuss & Review window have been updated to include new columns that allow filtering on Review Approver and Topic names.

See the [Manage Reviews](#) and [Discuss & Review - History Window](#) Help topics.

There have been no updates to the Help in respect to these changes:

- The readability of element Discussion and Review compartments has been improved by removing HTML format tags and ensuring items are displayed in the same order as their respective docked windows.
- [Internal] - Changing the priority of an Approver Topic will no longer create a log item (post) under that topic, as it will never be displayed.

Technology Authoring

There have been no updates to the Help in respect to these changes:

- Shape-scripted labels will now be loaded and drawn correctly for extended elements in a profile.

Simulation

New Model Wizard patterns have been added for Matlab Solver, Octave Solver, Executable Business States and Win32 UI simulation, contained in Perspectives in a separate Simulation Perspective category. This category also includes Perspective Sets for SysML with Modelica, Executable StateMachine, BPSIM and Decision Modeling Perspectives.

See the [Model Perspectives](#) and [Types of Perspective](#) Help topics.

There have been no updates to the Help in respect to these changes:

- 'At Literals' are now supported for DMN Decision Table input and output.
- The DMN Expression Parser has been enhanced to support multiple 'At Literals' in the Expression.
- DMN simulation performance has been improved by avoiding repeated evaluation of dependent decisions.
- Simulation:
 - SysML Simulation has been updated to handle new versions of Modelica/OpenModelica
 - SysML Simulation has been updated to conform to the latest SysPhS 1.1 specification
 - A new 'pre-process' option has been added to SysML simulation; when enabled this will pre-process the model according the SysPhS specifications
 - Various improvements have been made to SysML Simulation using SysPhS
- DMN Simulation and Debugging have had multiple improvements:
 - Runtime evaluation on all variables is supported by explicitly defining variable scope before usage
 - DMN Decision Table's priority order is supported for output with number type
- The DMN Validator has been enhanced to capture 'At Literal' expression errors and mistyped class and member function names.
- The issue with SysML Modelica Simulation that could result in necessary Modelica Simulation files failing to generate has been corrected.
- A new 'Simulation' perspective category has been added, grouping all simulation perspectives in one menu.

Code Engineering

There have been no updates to the Help in respect to these changes:

- Intellisense has been improved:
 - The keyboard shortcut Ctrl+Shift+Space now shows a method signature parameter list instead of an autocomplete list (Ctrl+Space can still be used for the autocomplete list)
 - Method signature tooltips now always show full parameter information
 - Method signature tooltips highlight the current parameter under the text cursor
 - When the tooltip auto show and hide are applied has been improved
 - When to show autocomplete has been improved
- The Code Editor and associated Structure Tree have had general improvements.
- In Data Modeling, the Import DDL Schema browser button now supports the selection of any supported database.
- [Internal] The Language option on the 'Object Options' dialog has been corrected to show the object's own options other than user preference options.

Publishing

There have been no updates to the Help in respect to these changes:

- Group elements will be correctly generated in an ArchiMate Model Exchange File.
- The HTML report generator has been updated to ensure a default diagram is included on the index page when the 'Default Diagram' option has been specified.
- Deleting an HTML Style template now removes all modified sections (only applies to EAP files):
 - Renaming an HTML Style template correctly moves all modified sections
- Document generation using metafiles with diagram frames will now correctly add padding between the diagram and frame.
- The Document Generator has been updated to correct rare instances of Unicode characters in notes rendering badly.

Execution Analyzer

There have been no updates to the Help in respect to these changes:

- Debugging 64 bit applications with the GDB debugger is now supported.
- The option to 'Break When Variable is Modified' when debugging 64 bit apps has been improved:
 - Memory Viewer has been improved to show the full 64 bit address when debugging 64 bit apps
- Debugging in Linux/WINE with too many threads has been fixed.

Automation and Scripting

There have been no updates to the Help in respect to these changes:

- The Automation option 'SuppressSecurityDialogs' will now be obeyed when connecting to a Cloud model through automation and will allow suppressing credential and security warning pop-up dialogs when enabled.
- [Internal] Assertion is now prevented from deleting the last script item under a Package in the Execution Analyzer.

Security

There have been no updates to the Help in respect to these changes:

- The situation where checked-in Packages were not locked until the model was reloaded after version control was first applied in a model, has been corrected.
- The time required to apply a recursive lock to a large Package over a Cloud connection has been significantly reduced.
- Project Root Packages that are hidden with security locking have been improved in these ways:
 - The Packages become immediately visible when security is disabled or the locking mode is changed to 'Require User Lock to Edit'
 - The Packages have their visibility updated when changing the current security user for the loaded model
 - Applying a non-recursive lock to a Root Package has been updated to ensure the selected Package is also locked
- The locking behavior of the Information Flow Connector has been updated such that Conveyed Items can be added and removed if, and only if, the connector's source element is editable. The connector's target element is no longer considered.

Other

There have been no updates to the Help in respect to these changes:

- Existing trial periods have been reset to allow new trials of version 16.
- The 64 bit Professional edition no longer stops the opening of .EAPX repositories.
- MDG Technologies loaded from URL now handle https connections.
- Model Wizard documentation has been improved.
- Model Wizard pattern documents have been updated and improved for multiple technologies.
- The 'Gang of Four' technology Model Wizard pattern groups have been given names that are more searchable.
- External Data Type and Field Mapping have been improved:
 - The correct stereotype is matched when the same name exists in multiple technologies
 - Only allow mapping to known stereotypes
 - Use display names for technology types and Tagged Value
 - Tagged Values are filtered to only show those allowed by the selected type/stereotype
- SBPI: The loading time of the 'Comments' tab in the Inspector window has been improved.
- The Review History window has been updated to include new filtering options for Review Topics and new columns 'Topic Author' and 'Role'.
- Handling of the Cloud connection when resending slow messages has been improved.
- A Wine-specific issue has been corrected, where opening the linked document of an element via the modal 'Properties' dialog could result in recent changes being lost.
- Another SSWideCharToMultiByte has been added, which takes an HGLOBAL. This behavior is consistent with that of other connector types in Enterprise Architect.
- [Internal] 'Database Version' and 'Date' have been removed from the About screen.
- [internal] File closing in the LITE version has been improved.
- [Internal] SBPI: The memory leak has been fixed.

Help and Support



Enterprise Architect has three main help and information systems to assist you in using the product:

- Help
- Learning Center
- The Sparx Systems website

In addition we recommend that you fully explore the sample project supplied with the Enterprise Architect installer. It assists you in learning to use Enterprise Architect and offers tips on getting the most out of the product features. Click on the 'EAExample' option in the 'Recent' list on the 'Start Page'.

Getting Help and Support

Facility	Description
Enterprise Architect Help	<p>Enterprise Architect Help provides comprehensive documentation of Enterprise Architect and addresses every aspect and facility of the product. To access Help within Enterprise Architect:</p> <ul style="list-style-type: none"> • Click on the 'Help' icon (?) in the various toolbars, or • Select the 'Start > Help > Help > Open Help' ribbon option, or • Click on the Help button on a dialog (for Help specific to that dialog), or • Press F1 on a screen or view <p>The Help System is maintained as a set of HTML pages hosted on the Sparx Systems company web site. The appropriate Help displays as an HTML web site page in your configured browser.</p> <p>For those with limited internet access, the Help System can be downloaded and installed locally on your current machine. Information on obtaining this installation file is available in the registered user area of the Sparx site. If you want to revert to the web site access to the Help, simply uninstall the local Help; Enterprise Architect then automatically references the web site. You can also download a PDF version of the Help from the website, and print sections of it as required.</p> <p>Enterprise Architect Help is extensive; if you cannot quickly locate the topic you require through the content 'breadcrumb trails', you can use the web site search facility (in the top right corner of the web page) and select to search the <i>EA User Guide</i> for a specific text string.</p> <p>If you have installed the local version of the Help, you can perform a file based search for key terms using the 'Start > Help > Help > Search Help' option, and clicking on an entry in the result set.</p>
Learning Center	<p>The Enterprise Architect Learning Center provides guidance and demonstrations to help you understand any area of Enterprise Architect that you are interested in. You can access the Learning Center using the 'Start > Help > Libraries > Learning</p>

	<p>Center' ribbon option, showing the <i>Introduction To The Learning Center</i> topic. You can select other topics or task areas by clicking on the appropriate part of the topic path ('breadcrumb trail') at the top of the window, and selecting from the drop-down list.</p>
Sparx Systems Website	<p>The Sparx Systems web site is also extensive, and provides information and announcements concerning the company and its full range of products, as well as tutorials, white papers, templates and solutions.</p> <p>It also provides a user forum, community site and support network. Sparx Systems are highly responsive to user feedback and requirements, and the web site enables rapid communication concerning problems, solutions and enhancements.</p> <p>You can access the web page and user forum within Enterprise Architect from the 'Start > Help > Home Page' ribbon option.</p> <p>Sparx Systems Website</p> <p>Sparx Systems User Forum</p>
Community Site	<p>The Sparx Systems web site also hosts the Sparx Systems Enterprise Architect Community Site. This is a central location for the Enterprise Architect community to publish resources and share experiences.</p> <p>From this site you can download the latest news, tutorials, resources, best practices, tips, techniques and user-generated content for Enterprise Architect. You can also, as a registered author, contribute content and share your expertise with the wider community.</p> <p>Community Website</p>

Available Help File Formats

Sparx Systems provides Help documentation for Enterprise Architect in .PDF and .HTML formats. You can choose to either search the online Help on the Sparx Systems web site or download the full set of Help files to your local computer to avoid accessing the Internet when consulting Help topics.

You can directly access the latest Enterprise Architect Help files from these locations

Format	Access
.PDF	<p>On the Sparx Systems website: http://sparxsystems.com/</p> <ul style="list-style-type: none"> • In the header: Select 'Resources PDF Library <document category> <document name>', or • In the footer: Select 'Resources' title; then from the 'Resources' page, select the 'User Guide Library' icon
.HTML	<p>For your installation of Enterprise Architect:</p> <ul style="list-style-type: none"> • Ribbon: Start > Help > Help > Open Help System • Context Menu: Right-click on an object Help option • Keyboard: Click on a screen window or display Press F1 key • Other: On a dialog or toolbar, click on the Help button or  icon <p>For the latest release of Enterprise Architect:</p> <p>http://sparxsystems.com/</p> <ul style="list-style-type: none"> • In the header: Select 'Support User Guide/Help', or • In the footer: Select 'Support Online Manual'

Learning Center

The Learning Center window provides quick access to a range of context-specific task guides in a number of specific work areas, such as Getting Started, Modeling or Testing. Through the 'breadcrumb' path at the top of the Learning Center window you display the short task guides, which describe how to achieve specific objectives in a work area. The guides contain links to Help topics and other useful sources of information.

To open a guide in the Learning Center window, click on the task name in the drop-down lists in the 'breadcrumb' path. The document immediately displays in the window.

The Learning Center facilities can be extended to present separate hierarchies of topics on working with any MDG Technologies loaded with Enterprise Architect. Your Technology Developers would create and incorporate these additional sets of topics.

Access

Ribbon	Start > Help > Libraries > Learning Center
Keyboard Shortcuts	Alt+F1

Switch Between Work Areas

Click on the black arrow to the right of 'Enterprise Architect' in the document path and select the required Enterprise Architect work area from the drop-down list. Click on the work area and select either a further division of the subject area or the title of a guide on that topic.

If you have additional sets of topics for in-house extensions of Enterprise Architect (Add-Ins and MDG Technologies), you can access them by clicking on the black arrow to the left of Enterprise Architect in the document path, and selecting the required product area from the drop-down list.

Switch Between Topics

In the 'breadcrumb' path, either:

- Click on the black arrow to the left of the current topic title and select a different topic, or
- Click on the large Right Arrow and Left Arrow icons at the start of the ribbon, to scroll through the topics within the work area in sequence (these arrows do not scroll out of the work area to the next or previous work area)

Set Default Topic

You can select the currently-displayed topic in the Learning Center window as the default topic. To do this, click on the first black arrow in the 'breadcrumb' path and select 'Set as Default Topic'. When a topic is set as default, it will automatically be shown when the Learning Center window is opened.

Add and Manage Learning Center Libraries

You can download an Enterprise Architect Learning Center Library from:

<https://www.sparxsystems.com/resources/libraries/index.html>

You then install it using the 'Manage Libraries' dialog. You can also enable or disable Learning Center Libraries using this dialog. Libraries disabled using this dialog will not be visible in the 'breadcrumb' path once the Learning Center window is restarted. The 'Manage Libraries' dialog can be invoked by:

- Clicking on the first black arrow in the 'breadcrumb' path and selecting the 'Manage Libraries' option, or
- Selecting the 'Start > Help > Libraries > Manage Library' ribbon option

Notes

- If an Add-In or MDG Technology loads its own Learning Center topics, when Enterprise Architect is shut down the Technology Learning Center topics are not retained and, in subsequent work sessions, must be reloaded; if the Technology is deactivated during a work session, its Learning Center topics are still available until Enterprise Architect is shut down

Create Learning Center Pages

As a Technology Developer, it is possible for you to create a set of Learning Center pages to support any MDG Technology that you have developed and loaded into Enterprise Architect. You create each Learning Center page as the Linked Document of a Document Artifact element. These elements are organized into a hierarchy of Packages, where the Package name becomes the name of a folder of topics in the Learning Center. You then run two scripts; the first to generate the Learning Center folders and topics, and the second (as part of your Add-In or Technology activation) to import your Learning Center structure into the file location from which Enterprise Architect can load it.

The original process of developing a Learning Center Profile as part of an MDG Technology definition is no longer recommended.

Set Up a Linked Document Template for Learning Center topics

Whilst not mandatory, it is recommended that you create one or more Linked Document templates for your Learning Center documents, to provide consistent standards for the layout, structure and content of your Learning Center pages.

Step	Action
1	Plan the content of your Learning Center topics, and consider: <ul style="list-style-type: none"> • How you should present explanatory or descriptive text • How you should lay out steps in direct-action tasks • How you should refer and/or link to information in other documentation, web sites and file directories • What corporate styles, standards and logos you might need to incorporate
2	Open the 'Resources' tab of the Browser window ('Start > Application > Share > Resources') and create the appropriate Linked Document templates for your topics.

Set up Package hierarchy to organize the Learning Center topics

Step	Action
1	Create the root Package for your Learning Center documentation. The Package name will be the starting point for the documentation folder structure, as Enterprise Architect is for its product Learning Center topics.
2	Display the Properties window for this Package element (select the 'Design > Package > Manage > Properties' ribbon option) and, in the 'Filename' field, type the file location into which to generate the Learning Center documentation.
3	In the Browser window, create a child Package for each category of Learning Center documentation you intend to create, and within each of those create child Packages for any further subcategories of documentation. You can create child Packages to as many levels as necessary, but it is recommended that you try to limit the structure to fewer than five levels. Consider also that you can have topics (Document Artifact elements) and folders (Packages) at the same level in your Learning Center document structure.

Create the Learning Center Topics

You have a number of options for creating Document Artifact elements in a Package, but creating a Document diagram and adding the elements to it is a simple method that gives you an immediate visual impression of the content of a subject area.

Step	Action
1	<p>Working from the Browser window, within each Package that is to contain Learning Center topics, create a Document diagram; that is:</p> <ol style="list-style-type: none"> 1. Right-click on the Package name and select the 'Add Diagram' option. 2. On the 'New Diagram' dialog, type an appropriate name in the 'Diagram' field, click on the 'Select From' header and select the 'Manage > Show All Perspectives' option, then click on 'Extended' in the panel beneath the header. 3. Click on 'Documentation' in the 'Diagram Types' panel. 4. Click on the OK button.
2	<p>From the Diagram Toolbox, drag a Document Artifact icon onto the diagram and give it the name of the topic it will contain.</p> <p>This name will display at the top of the document and in the Learning Center topic access path, where it will act as a link to open the topic.</p>
3	<p>Double-click on the element and select your Learning Center document template (or any other appropriate template) from the 'New Linked Document from Template' dialog.</p>
4	<p>Add the description and/or procedure text to the document. When you have finished, save the document and repeat this procedure for the next Document Artifact element/Learning Center topic.</p>
5	<p>In the Browser window, check the order in which the Document Artifact elements are listed. This order determines the sequence of the Learning Center topics.</p> <p>If you want to present the Learning Center topics in a different order, adjust the sequence of the corresponding Document Artifact elements in the Browser window accordingly.</p>

Compile the Learning Center documentation

Step	Action
1	<p>In the Browser window, click on the root-level Package for your Learning Center documentation.</p>
2	<p>Select the 'Specialize > Tools > Scripting' ribbon option.</p> <p>The Scripting window displays.</p>
3	<p>Expand the <i>Local Scripts</i> folder and click on the <i>VBScript - Create Learning Center Books</i> script name.</p>
4	<p>Click on the 'Run script' icon () in the Scripting window toolbar.</p> <p>The script generates the Learning Center documentation to the file path specified in the 'Filename' field in the root Package properties.</p> <p>The script also generates:</p>

- | | |
|--|--|
| | <ul style="list-style-type: none">• An order.txt file from every Package in the document hierarchy, to define the order of display of child folders or topic names in the folder generated from that Package; you can directly edit this file to change the topic order in the Learning Center, if necessary• An index.txt file in the root folder that provides an index for every topic, derived from the GUID of the Document Artifact element from which the topic was generated; this index is used to identify the topic in references and hyperlinks to the topic, regardless of where the topic might be moved to |
|--|--|

Load the Learning Center documentation

The Learning Center documentation you have created for an Add-In or Technology is loaded into the Learning Center using the Repository method 'AddDocumentationPath'. You would normally write this into the activation script you created to load the Technology itself, but you could also test the documentation using a simpler script that just loaded the documentation. The call resembles this:

```
{  
  Repository.AddDocumentationPath('ToolGuide','C:\\Temp\\ToolLC',0)  
}
```

Notes

- If the same Learning Center documentation is loaded more than once during a work session, each load is presented as a separate set of pages; the original documentation is not overwritten

Manage Libraries

You use the 'Manage Libraries' dialog to :

- Enable or disable installed Learning Center Libraries
- Install new Learning Center Libraries, and
- Set the default Library topic, which will be displayed when the Learning Center View is opened

Access

Ribbon	Start > Help > Libraries > Manage Library
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Manage Libraries

Option	Action
Available Libraries	Lists the installed and enabled Library files. Deselect the checkbox against any Library that you want to disable.
Show Disabled Libraries	Select this checkbox to show disabled Libraries in the 'Available Libraries' list. Select the checkbox against any library that you want to enable for access.
Default Library	(Optional) Click on the drop-down arrow and select the Library from which the default topic is to be selected. The default topic is automatically displayed when the Learning Center View is opened. Only enabled Libraries will be listed in this field.
Default Topic	Click on the  button to open the 'Select Default Topic : <default library name>' dialog to select a topic from the default Library to set as the default topic. The full, expanded hierarchy of topics in the default library displays. Scroll through the structure and select the checkbox against the topic to use as the default, then click on the OK button.
Install New Library	Click on this button to locate and select a new set of library files to install. A submenu displays; select: <ul style="list-style-type: none"> • From File System – to install a new Library from the file system: a browser displays, through which you locate and select the library folder
OK	Click on this button to save and action the library you have defined in this dialog.
Close	Click on this button to close this dialog without activating any changes to the library defined in the dialog.
Help	Click on this button to display this Help topic.

Notes

- Disabled Libraries will not be visible in the 'breadcrumb' path at the top of the Learning Center View
- Once a new Library is successfully installed and enabled, you can view it in the 'breadcrumb' path of the Learning Center window
- If the Learning Center window is already open when you download a new Library or enable/disable a Library, close and then re-open the Learning Center window to make your changes visible in the 'breadcrumb' path

Support

Technical support for Enterprise Architect is available to registered users. Responses to support queries are sent by email.

Sparx Systems endeavors to provide a rapid response to all product-related questions or concerns.

- Registered users can lodge a support request, by visiting: https://sparxsystems.com/registered/reg_support.html
- Trial users can contact Sparx Systems with questions regarding their evaluation at: support@sparxsystems.com
- An online user forum is also available for your questions and discussions, at <https://sparxsystems.com/forums/smf/>

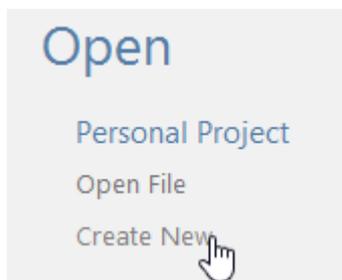
Creating a Project

It is easy to get started with Enterprise Architect, and within a few minutes, you can have a project set up, and in just a few hours, you can have your model populated with your own content and be well on the way to getting unprecedented value from the tool. A project is really a repository, a more technical word for the container where you will place your modeled content. Productivity tools will get you off to a flying start and allow you to derive immediate value from your models. Still, the first thing is to create a repository that will store the elements, diagrams, documents, and discussions that you add as you work in the tool.

Enterprise Architect conveniently allows you to create a file-based repository that you can set up yourself without involving your Information Technology department. You can happily work with other modelers by placing the file on a network drive where other team members can access it. Conveniently, as you progress with your modeling and perhaps as others join your modeling project, you can easily transfer the file-based repository to a server-based repository either on your premises or in a cloud environment. A server-based repository allows more rigorous repository management such as automated database backups, richer collaboration opportunities, and web-based views of your models.

The Start Page

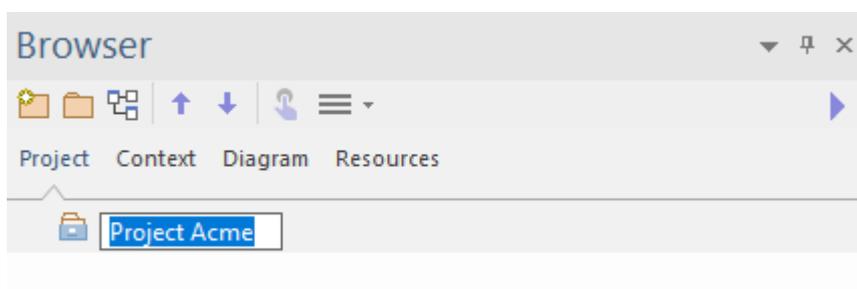
The Start page opens when you launch Enterprise Architect. It allows you to create a local (file based) repository, by clicking on the option 'Create New'.



Create New option available on the Start page

This will open a 'New Project' dialog where you specify the file name and location of your new repository. Remember if you want to work with a small number of other team members (up to five or six) you can place this file on a network drive or you can move it at any time when you want to work with other people. Once you close the dialog Enterprise Architect will load your blank repository.

In the Browser window (pressing F2) rename the 'Model' node using a suitable name e.g. 'Your Organization Name' or 'Your Project Name'



Browser window with the default root node, which is the starting point of your repository structure

You can continue to add other Packages to the Browser window either before you start adding content such as elements and diagrams or as you go along. The structure will depend on what type of enterprise or projects you are working on and how you want to structure your work. Two common ways of working are:

- A single repository that contains organizational level and all project-level content

- A single organizational level repository and a separate repository for each project

These are just two common ways of structuring your repositories, but there are many other ways of working that can be hybrids between them, and the best way for you will depend on your individual context. Rest assured, service companies and partners can advise you on the best setup for your circumstances.

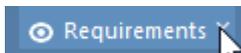
Setting your Perspective

Enterprise Architect is a feature-rich tool and provides a full range of facilities for almost any modeling context, including Strategy, Requirements, Business modeling, Enterprise and Solution Architecture, Information and Database modeling, and Systems Engineering, to name a few. The tool has many features that will help you stay focused on what you are doing and give you the freedom and flexibility to use other facilities.

Perspectives

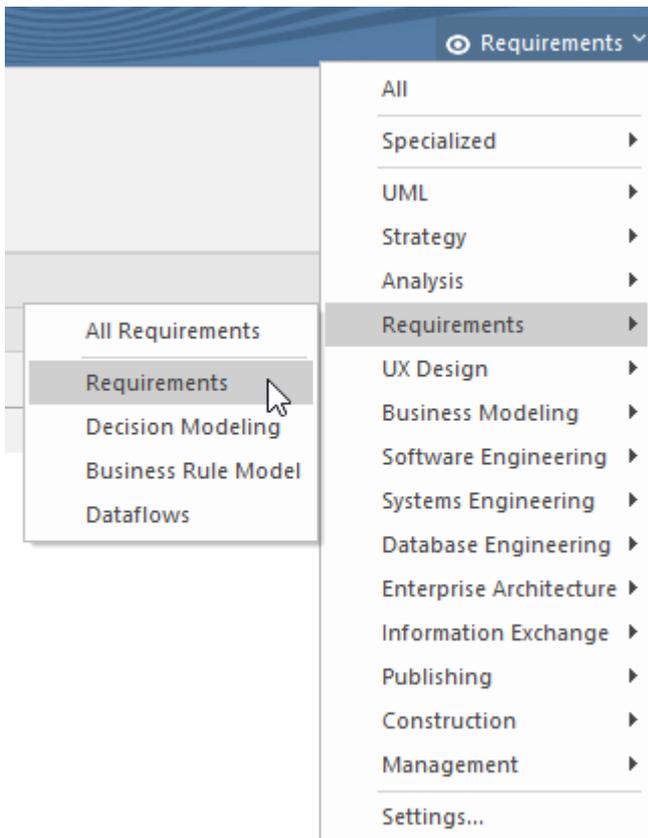
To ensure you get the best out of the tool and stay focused on what you are doing, Enterprise Architect provides Perspectives that allow focused modeling contexts. Once you have selected a Perspective, the other features are never far from hand, and any time you want to use other items, it is as simple as choosing another Perspective.

Selecting and changing Perspectives is straightforward using the icon in the top right-hand corner of the application window.



The perspective selector.

Let's say, for example, that you want to do some Requirement modeling - you select the Requirements Perspective, which will allow you to focus on Requirement Modeling and Management. Whenever you add diagrams, you will only see the Requirement diagram options, but remember all the other tool features are close at hand - all you need to do is change Perspectives. You can even create your own Perspective that contains a number of facilities, such as Requirements, Business Process Modeling, and Mind Mapping.



List of available perspective sets and perspectives they contain.

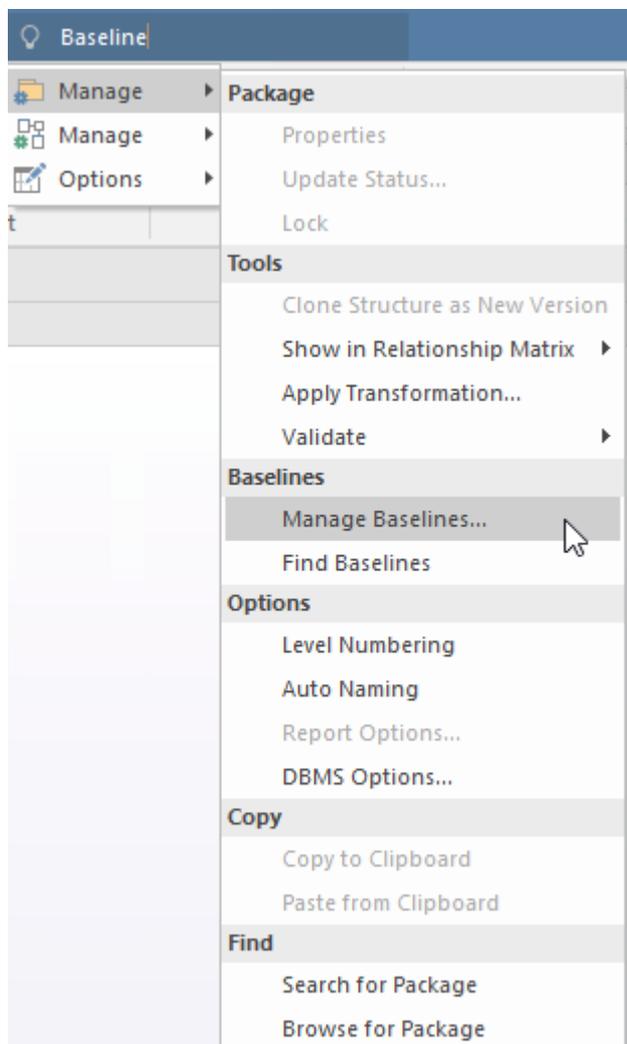
Ribbons

The ribbons provide a welcomed and familiar interface to the tool features and can be customized to suit the way that you work. The ribbons have been carefully designed by modeling experts and place the rich features at your fingertips in any modeling context. For example when working with diagrams you will be able to use the Layout ribbon to align diagram objects, change colors, and styles and create expressive layouts that will make your diagrams compelling and communicative.



Commonly used panels of the Layout ribbon.

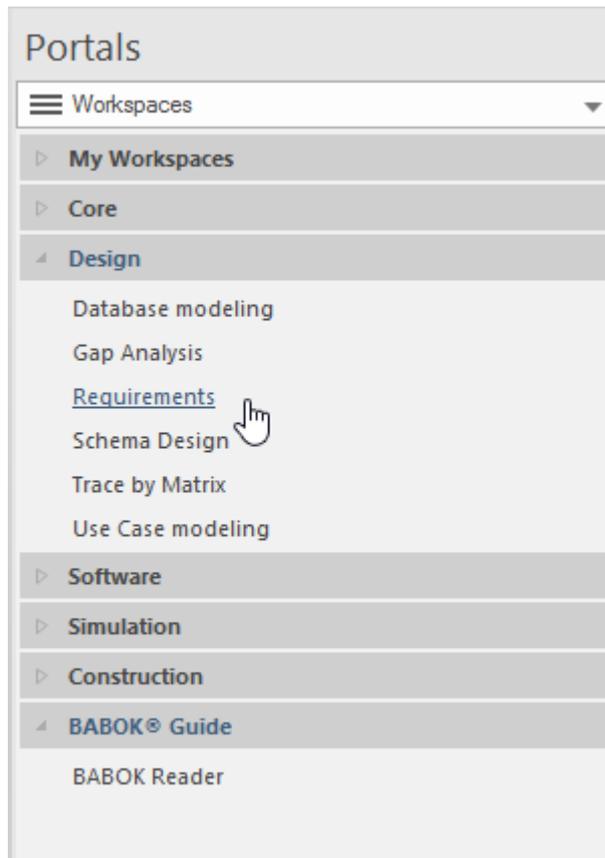
While the ribbons make it easy to find the features you are looking for, there is a universal way of locating a tool feature that allows you to search using a keyword such as 'Baseline'. The 'Find Command' option is conveniently located at the end of the ribbon bar next to the last ribbon (usually 'Settings').



The Find Command used to locate the baseline tool.

Workspaces

When you open Enterprise Architect for the first time, the application will open the default window layout (or workspace). The tool has a large number of workspaces that have been carefully designed to provide the most useful windows for a given modeling context. For example, suppose you are doing Requirements modeling. In that case, you can choose the Requirements workspace available from the Design group, which will open several windows helpful for specifying, viewing, and organizing requirements.



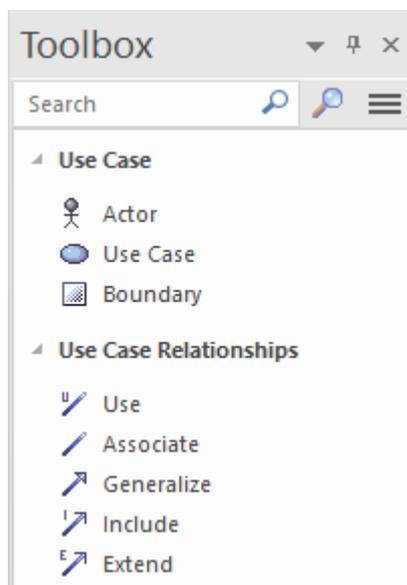
Workspace portal with selected workspace.

You can also create and save any number of your own workspaces with window and tool features that are instantly reopened when you select the saved workspace from the My Workspaces section of the Workspace portal.

Adding Model Content

Enterprise Architect allows you to add content in a variety of ways. Regardless of what type of modeling you are doing there are a number of convenient ways in which you can get your content into the model. The content you add will depend on what type of modeling you are doing; for example, a strategist might add drivers, goals and objectives; a requirement engineer could enter text-based requirements; and a database owner would typically add database objects such as tables and views. The method you chose will depend on your modeling context; for example, at the time you are setting up a repository it would be usual to import lists of elements from a spreadsheet. The commonest ways to add content to a repository are:

- Diagramming using the Toolbox pages
- Using the Browser window
- Model from Patterns
- Specification Manager
- Importing from a spreadsheet
- Importing images from files or the clipboard
- Copying from another repository



Diagramming

Creating diagrams is one of the easiest and most common ways to add content to your repository. When you add elements and connectors from the Toolbox to a new or existing diagram, these elements and connectors are also created and added to the Package that contains the diagram. The added elements will be immediately visible in the Browser window. In this example, a modeler has added a new Requirement and Use Case to the diagram and connected them using a UML Realization relationship.

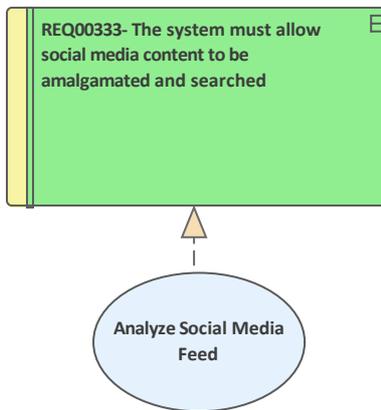
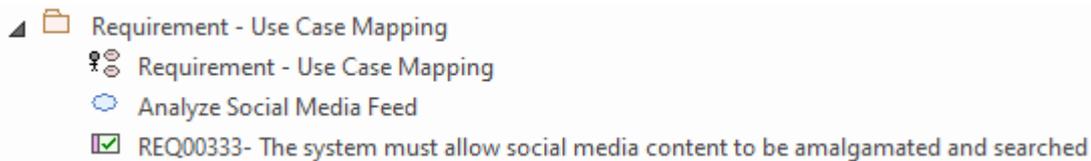


Diagram showing how elements and connectors can be created with diagrams.

As the elements are added from the Toolbox they are simultaneously added to the Browser window and will appear in the same Package as the diagram. (Connectors are not displayed in the Browser but in a series of other windows.)



Browser window showing element and diagram

Using the Browser

The Browser window is the key mechanism for navigating through a repository and is also important when adding content. You select a location in the tree (typically a Package or element) and this will be the point in the repository where new content is added. There are four things that you might want to add to your repository:

- Patterns
- Packages
- Diagrams
- Elements

There is a convenient toolbar at the top of the Browser window that provides options for inserting new items into the repository, as well as a number of other options for moving items up and down the tree.



Browser toolbar and tabs showing useful icons such as the New Package and New Diagram icons.

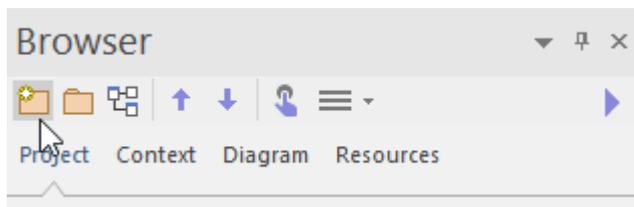
The Hamburger menu provides more options, including to insert an element directly into the repository without using a diagram. The Browser window has a number of tabs that conveniently let you focus on particular parts of your model, including the:

- Entire Project
- Item in Context
- Current Diagram or

- Resources

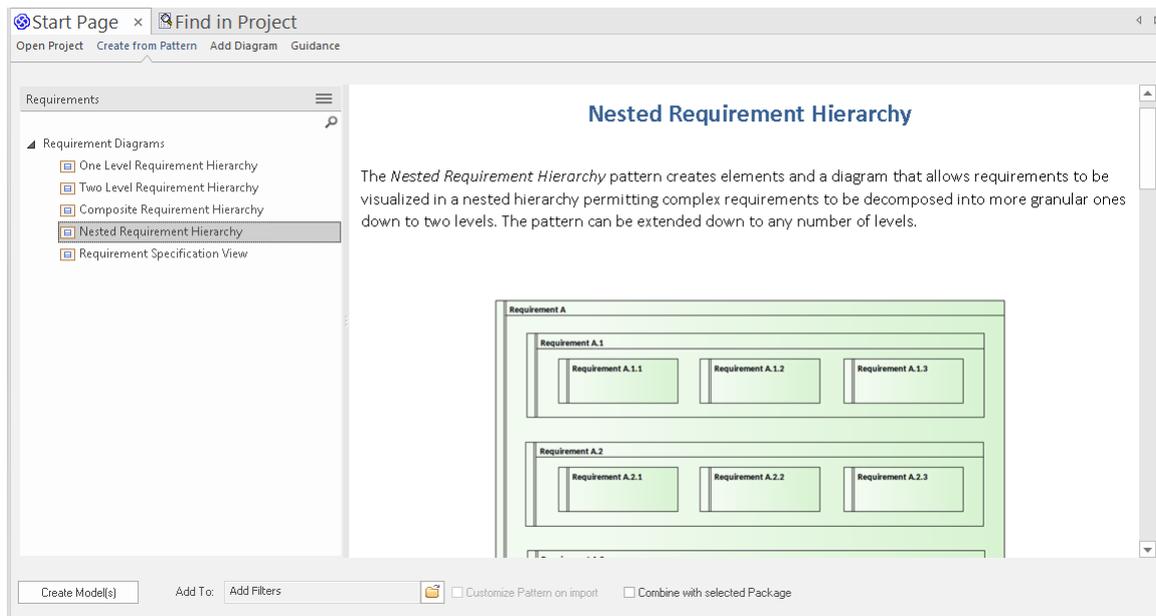
Model from Patterns

Enterprise Architect has a productivity tool that will get you started modeling quickly and ensure your models comply with industry and tool best practices. Experts at Sparx Systems have created a catalog of pre-built model fragments called Model Patterns. Regardless of what you want to model, there will invariably be one or more patterns available to get you started. The pattern documentation shows you what to expect from the pattern and how to work with it. You can then choose a location in the Browser window and insert the pattern, including elements and diagrams, into your own repository. Typically the elements, connectors, and diagrams in a pattern will have generic names that you can change to suit your project. The pattern library is a living catalog and new patterns are added as the industry develops new standards and best practices.



Browser toolbar and tabs showing the New Model From Pattern icon.

Whenever you change perspectives the available patterns will conveniently be displayed, or you can directly launch the Model Wizard at any time from the Browser window toolbar or from the 'Model Wizard' icon on the 'Package' panel of the Design ribbon.

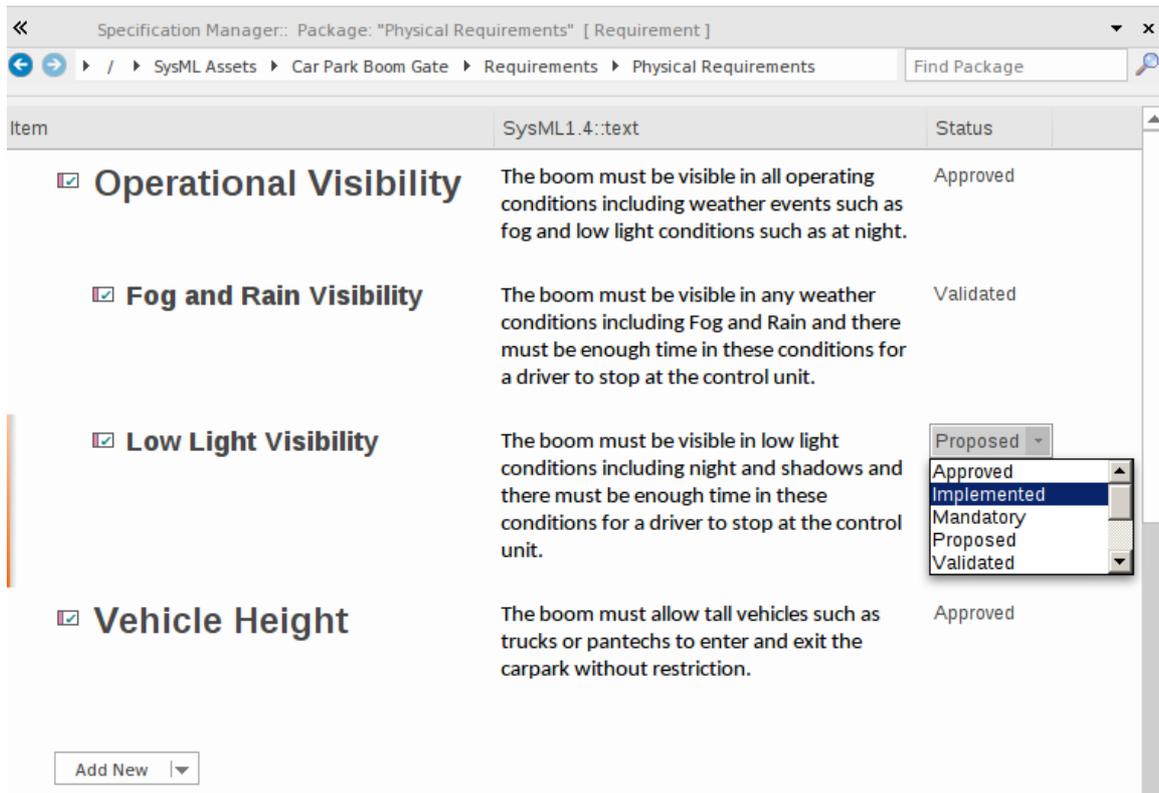


Model Wizard showing patterns from the Requirements perspective.

Specification Manager

The *Specification Manager* is a great tool for viewing or adding content to the repository using a familiar word processor or spreadsheet-style interface. It is particularly useful when you have a list of items that contain descriptive names and textual descriptions, such as Requirements and Capabilities, but it can be used for any element, including information classes, processes, decisions, and more. It is a refreshing alternative to working with diagrams and a welcomed method for many business and technical team members who create or view catalogs of items. You can switch to other views from

the Specification Manager, such as lists, diagrams, and Gantt views.

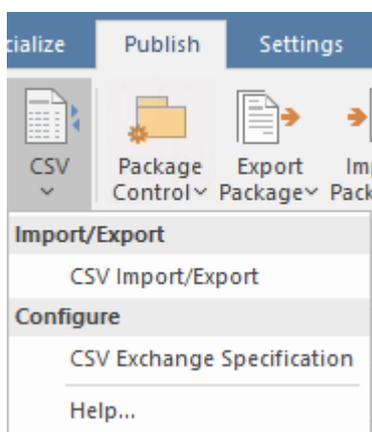


Specification Manager showing inline (spreadsheet) view of elements, notes and editable properties.

For those modelers or stakeholders accustomed to working with spreadsheets or word processor documents, the tool will seem natural and emulates both these modes of visualization, allowing you to toggle between spreadsheet mode and document mode quickly.

Importing from a Spreadsheet

Enterprise Architect has a useful facility to import (or export) content from a spreadsheet using a comma-separated values (csv) file. Any data in your favorite spreadsheet can be exported to a csv file and imported using a simple and intuitive interface where you specify which properties you want the data to be added to. You can also export data from Enterprise Architect into a spreadsheet if required. There are a number of tools that enable you to do this, but the most straightforward of these is available from the Publish ribbon.



Facility to specify the fields to be exchanged between Enterprise Architect and a Spreadsheet.

For more information, see the [CSV Import and Export](#) Help topic.

Importing Images

Using Enterprise Architect, you can create expressive diagrams that comply with standards and industry best practices and also include compelling vector or raster-based images that will bring your diagrams to life and delight your audience. Many newcomers to modeling feel that they are straight-jacketed by the modeling languages and cannot create the type of diagrams that will appeal to their customers or managers, but with Enterprise Architect, you can have the best of both worlds.

Using the tool, you can add any number of images into a library or directly into the repository and then use those images freely on any diagram. You can import your images as a set at the start of a project or just as you need them for a particular diagram.

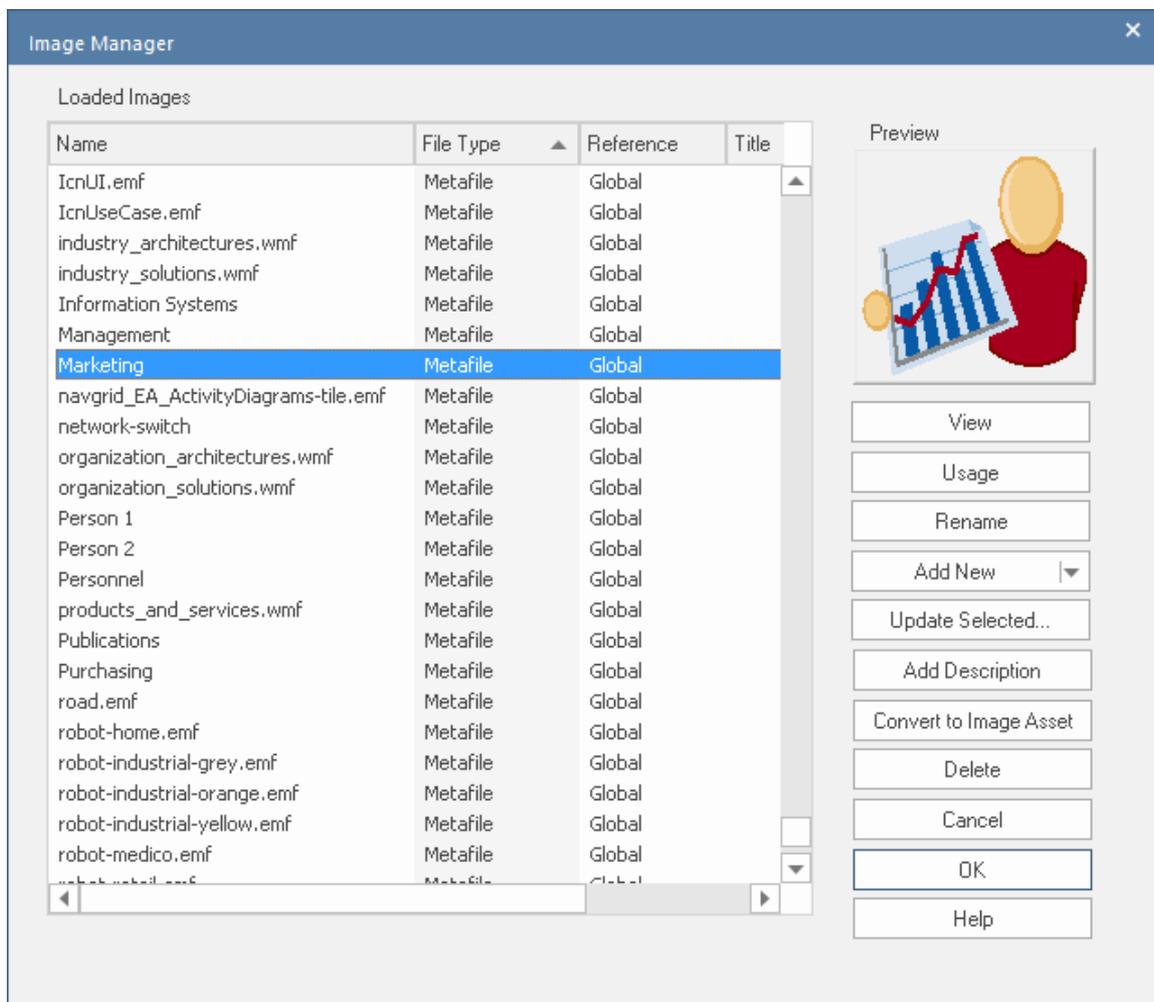


Image Manager showing a range of generic images in vector format including the marketing metafile being displayed.

Copying from another Repository

You can import modeled content from other repositories into the current repository in a number of ways, including:

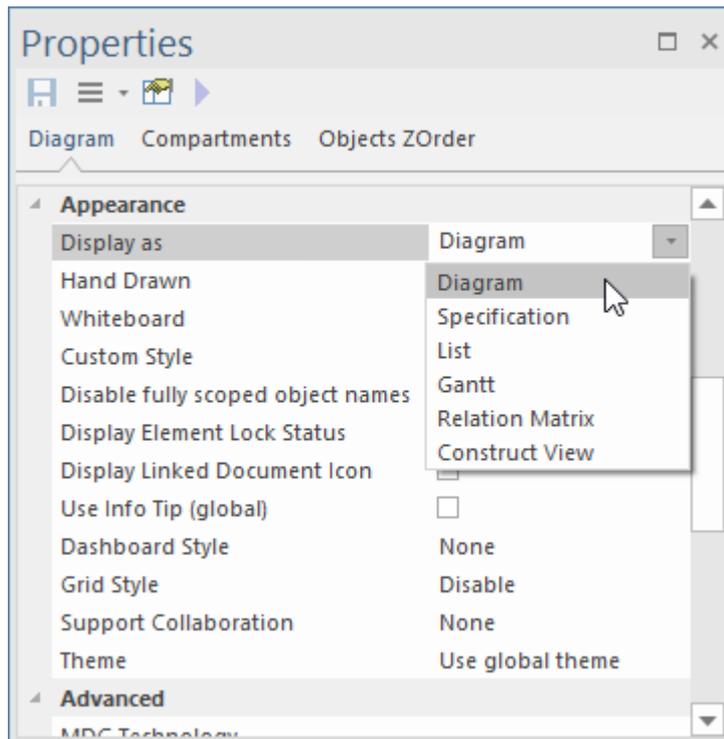
- Simple copy and paste using the clipboard
- Exporting and importing a section of the model using xmi import/export

- Model transfer, which will copy an entire repository (including reference data)

Content can also be injected into a repository from a Reusable Asset Service, which your administrator or librarian would set up. You can also exchange reference data such as status and priority codes by exporting them from one repository and importing them into another using the Transfer options on the Settings ribbon.

Viewing Your Content

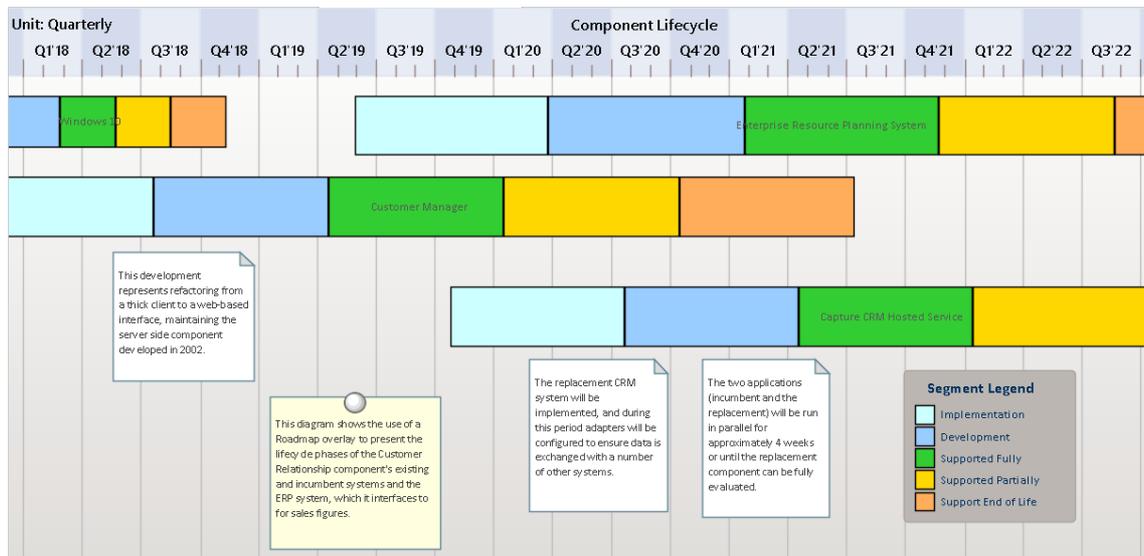
Enterprise Architect provides a range of ways to view the content that you and others have added to the repository, and many of these views also allow you to create content. Some views are suitable for the full range of technical and non-technical stakeholders from strategic levels down to engineering levels. The great thing about the views is that when you update information in one view, it is immediately reflected in all the other views.



List of alternative views available from the diagram Properties window.

Diagram View

Diagrams are the most expressive and ubiquitous of all the views in the tool and, when constructed well, will appeal to both technical and non-technical stakeholders. We looked at Enterprise Architect's diagram feature in the *Adding Model Content Help* topic, and you will know they can be used for both creating and viewing elements and connectors in the model. You can access various styles and presentation options, including whiteboard, hand-drawn, and custom style.



Roadmap diagram showing color used to visualize the status of the applications.

List View

You can use the List View to visualize the contents of a Package or a diagram as a list of elements. It is a useful alternative view to a diagram and allows element properties to be viewed and edited in a convenient spreadsheet-like view. Many analysts will prefer to view elements in a list, and when you make changes, these will be visible immediately in every other view of the element, including diagrams and the Browser window. There are also several options for filtering, sorting, and grouping elements in the list based on a range of system- and user-defined properties.

The screenshot shows a software interface with a breadcrumb trail: Babok Assets > Enterprise Architect BABOK Example Model > Enterprise > Information > Information Models > Book Store Domain. Below the breadcrumb, there are filters for 'Status' and 'Type'. The main area displays a table of elements:

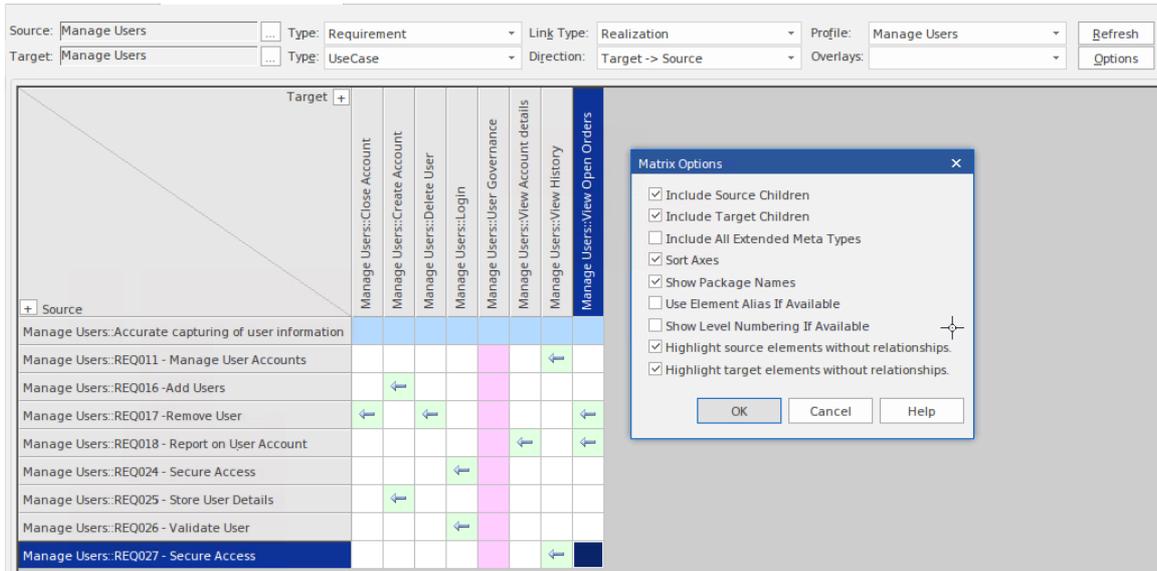
Name	Status	Type	Modified
Status: Approved			
Type: Class			
Item	Approved	Class	24/11/2020
Review	Approved	Class	24/11/2020
Reader Review	Approved	Class	24/11/2020
Type: Enumeration			
Category	Approved	Enumeration	24/11/2020
Status: Proposed			
Type: Class			
Shopping Cart	Proposed	Class	2/05/2017
Address	Proposed	Class	24/11/2020
Line Item	Proposed	Class	24/11/2020
Catalog	Proposed	Class	24/11/2020

List view showing elements grouped by status and sub-grouped by type.

Matrix

The Relationship Matrix is a tool for visualizing the relationships between elements in a visually compelling view, resembling a matrix or spreadsheet. You can use the matrix to view the relationship between any two elements; for example - between Stakeholders and their Requirements, how Use Cases relate to Business Requirements or Functional

Requirements, how Capabilities relate to Business Drivers, or which Components implement a set of requirements. The matrix has great appeal for non-technical stakeholders and can be included in documentation and viewed through WebEA, and even saved to a spreadsheet. You can also create relationships through the matrix and visualize which elements are loners and don't have any connections.



Relationship matrix showing 'lone' elements (no connections - green and pink squares) and options.

Specification Manager

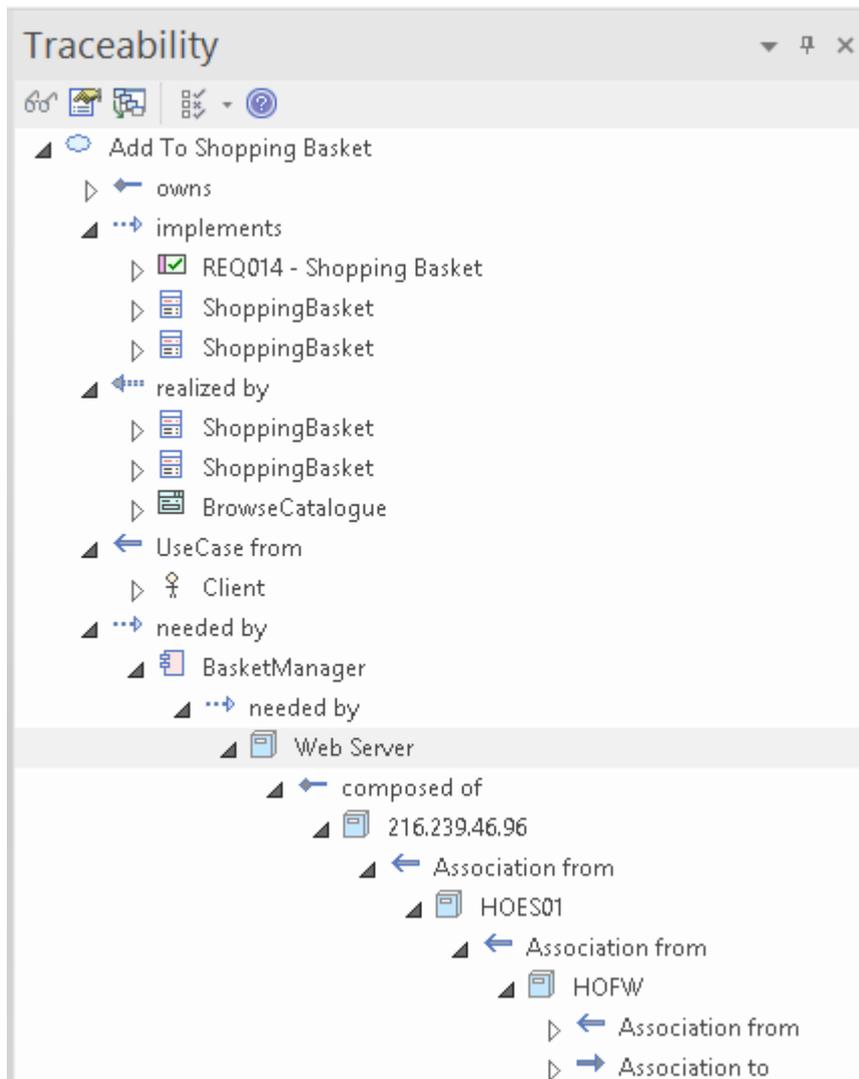
We looked at the Specification Manager in the *Adding Model Content* Help topic, and you will know that it can be used for both creating and viewing elements in the model. It is particularly useful when a team member is not familiar with diagrams and is perhaps even a little intimidated by the modeling languages such as UML or ArchiMate and just wants to read things in plain English in a familiar word processor or spreadsheet view.

Item	Priority	Status	Difficulty
1 REQ019 - Manage Inventory	Medium	Approved	Medium
The system MUST include a complete inventory management facility to store and track stock of books for the on-line bookstore.			
1.1 REQ122 - Inventory Reports	Medium	Proposed	Medium
Inventory reports are required that detail the available stock for each item including back orders. Future stock level reports should be able to predict the quantity of stock at a specified future date.			
1.2 REQ023 - Store and Manage Books	Low	Mandatory	
A book storage and management facility will be required.			
1.2.1 REQ022 - Order Books	Medium	Implemented	Medium
A book order facility will be required to allow on-line ordering from major stockist's.			
1.2.2 REQ021 - List Stock Levels	Medium	Approved	Medium
A facility will exist to list current stock levels and to manually update stock quantities if physical checking reveals inconsistencies.			

Specification Manager showing requirements and editable properties.

Traceability

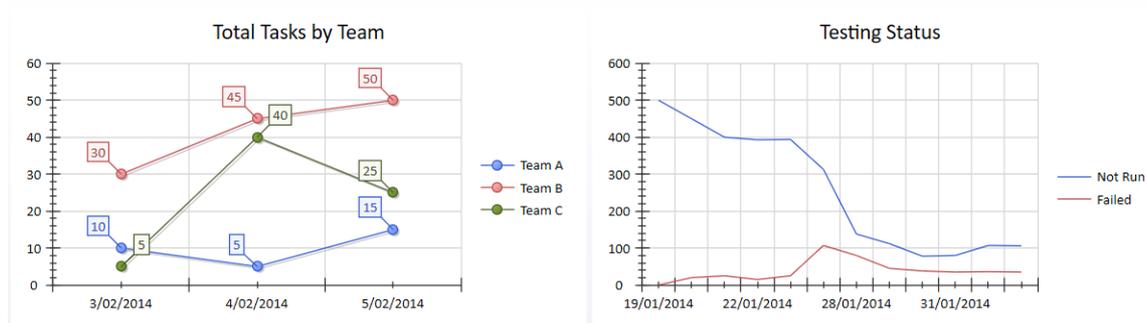
The Traceability window will be your friend and help you keep track of how elements in your model are connected. It gives you a hierarchical view of element connections and allows you to query and visualize traceability as you traverse elements in the model, including using diagrams and the Browser window. Your colleagues might enter relationships to elements you have created, which will appear in the Traceability window when you select the element. The tool is particularly useful because a modeler will often choose to hide diagram relationships in particular circumstances, but by selecting an element in the diagram and viewing its connections in the Traceability window, all its relationships will be displayed.



Traceability window showing the hierarchy of elements and their connections.

Charts and Graphs

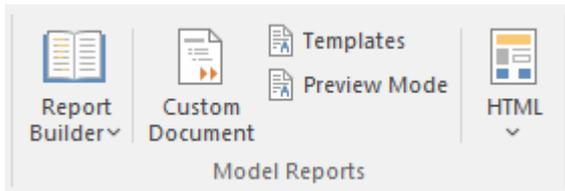
Using Dashboard diagrams, you can create high-quality charts and graphs that display repository information in a visually compelling way, such as the ratio of a Requirement Priority like Status in a Pie Chart, or the task allocation in a Time-Series Chart. There is a Toolbox page of pre-configured charts and graphs, but you are free to create and save any number of charts, sourcing data from anywhere in the repository. The charts and graphs provide valuable summary information that helps you manage all aspects of the repository, including properties like Status and Resource Allocation.



Charts showing team tasks and testing status.

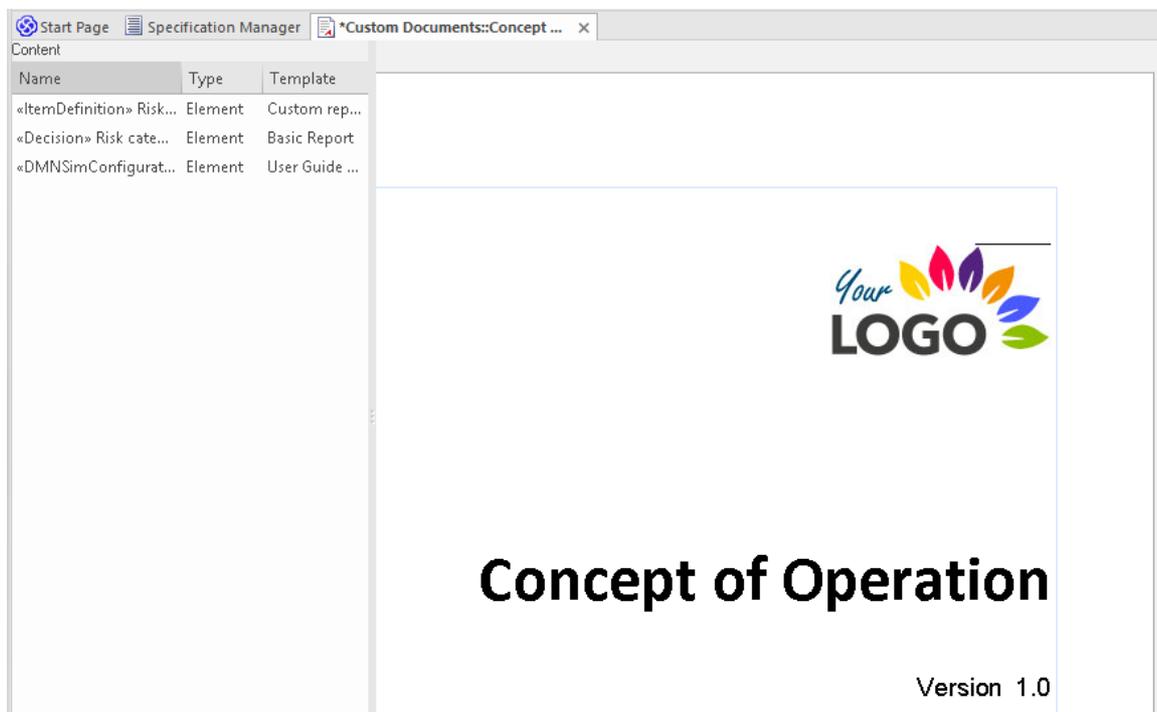
Publishing Your Content

Sharing your models by either giving people access to your repository or, if your models are hosted by the Pro Cloud Server, giving people browser-based views through WebEA or Prolaborate, is an easy way to publish the content. There will, however, be circumstances when you need to create formatted documentation for regulatory or contractual reasons, and Enterprise Architect has a range of publishing mechanisms that make it easy to generate first-class corporate documentation in a range of formats.



Custom document feature used to create documents that are flexible, intuitive and dynamic.

The easiest way to get started with document publishing is to use the Custom Document facility. Using this feature, you can create a document based on a template and add any content, formatting it as you go based on the template styles. You can then inject content into the document from the model. For example, you could have a set of Requirements in the repository and simply drag these from the browser onto the document; by selecting a template, the Requirements would be rendered in the document based on the formatting and styles specified in the template.



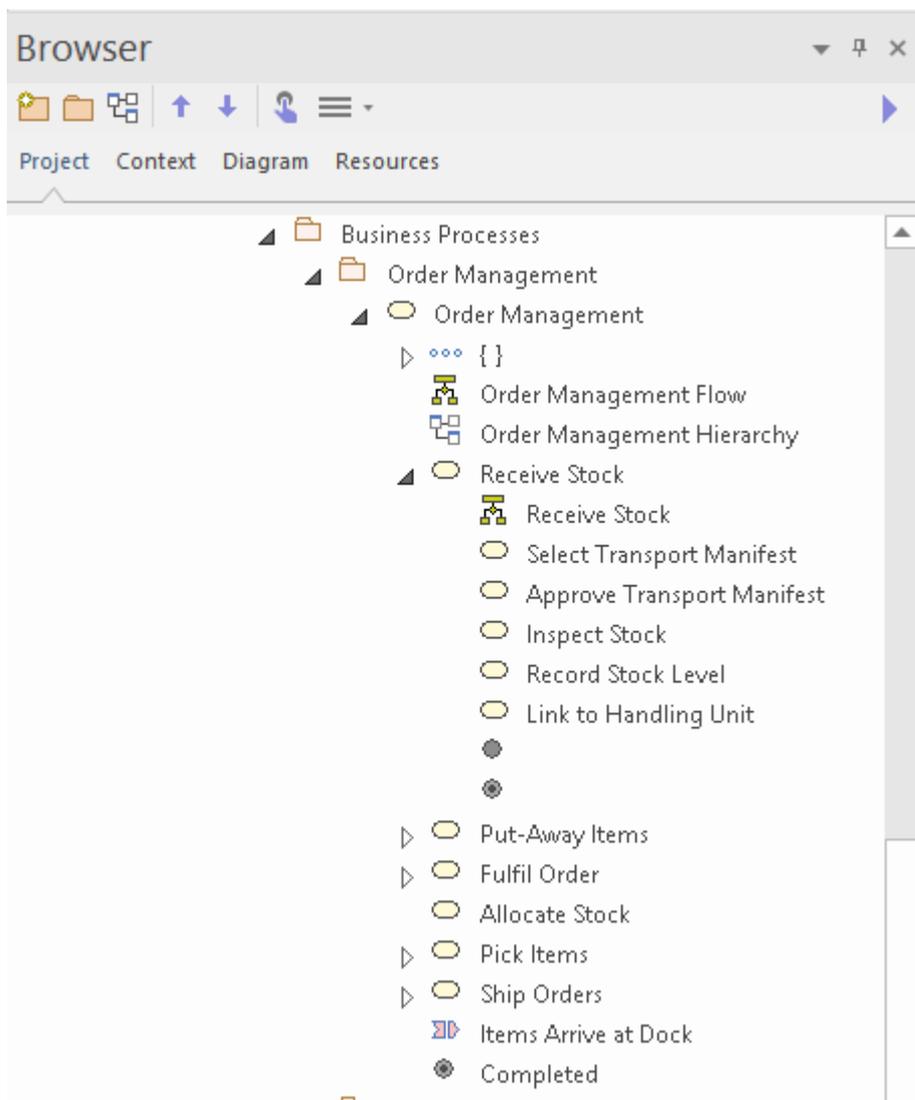
An example document showing the dynamic content panel and inserted logo and title.

Navigating and Searching

A well-organized repository will go a long way to helping you find the elements and diagrams you are looking for, but as the tool gets traction in your organization, models will grow in size and, before you know it, a repository might contain tens if not hundreds of thousands of items. Fortunately, Enterprise Architect has some useful tools available for locating content, including:

Browser

The *Browser* window is your go-to place for navigating around a model. Think of it as your favorite explorer tool for finding files on your computer, except that you use it to find things in the repository. It is a tree view, and nodes can be expanded and collapsed to locate items such as Packages, diagrams, and elements and their features (attributes, operations, receptions).



Browser showing business process Package and element hierarchy.

Navigator Bar

The *Navigator Bar* is like a breadcrumb trail that indicates your position in the hierarchy of Packages in the repository

but with the additional feature to select the available Packages at any point in the trail. It is a convenient way of traversing the Package hierarchy without viewing all the Packages in an expanded tree view. Some modelers use this as their primary navigation mechanism.

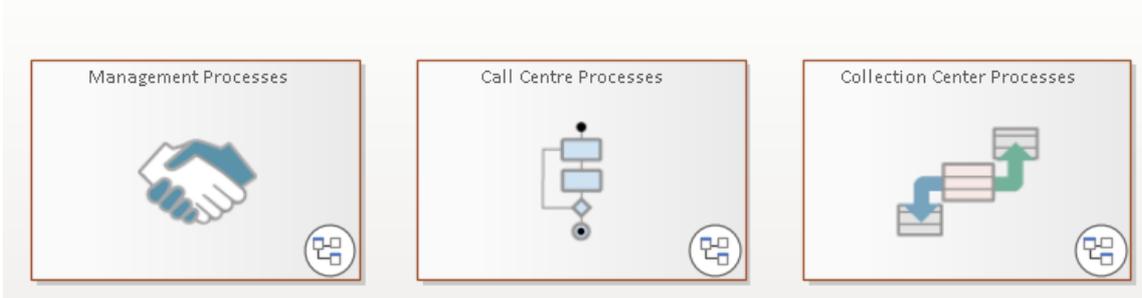


Navigator bar showing Package hierarchy.

Navigation Cells

Enterprise Architect allows you to create any number of navigation diagrams that contain *Navigation Cells* that a user can click on to go straight to a diagram regardless of its location in the repository. These same cells are available through the web-based tools WebEA and Prolaborate. They make it easy for a user to find a diagram without using the other navigation methods. The diagrams can be nested, where a navigation cell on a high-level diagram will take you to another page of cells, targeting specific diagrams.

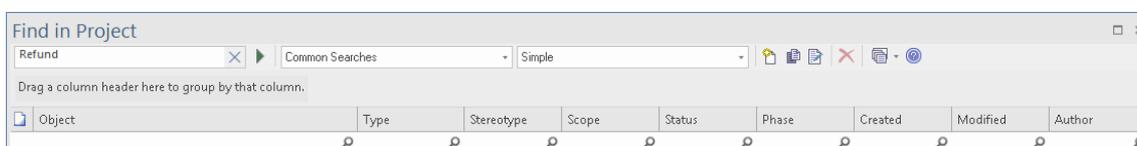
Business Processes - Level 2



Top level navigation diagram showing clickable navigation cells.

Model Search

The *Model Search* is a fully-featured facility to find almost any content in the repository. You can use it as a simple way of finding a word or phrase, or you can create sophisticated searches that can find the answer to complex questions. As your models grow in size, particularly when several people contribute content, it will become harder to locate items quickly as the model might contain hundreds or thousands of elements. Let's say you knew there was some information in the repository to do with issuing a refund when a medical certificate is submitted. You could launch the 'Search in Model' feature and, using the default settings, enter a keyword or phrase such as 'refund' or 'medical certificate', and the search tool would locate and list any objects with the name, alias or notes that contained these words.



Model Search window showing a search for the word 'Refund'.

Collaborating and Sharing

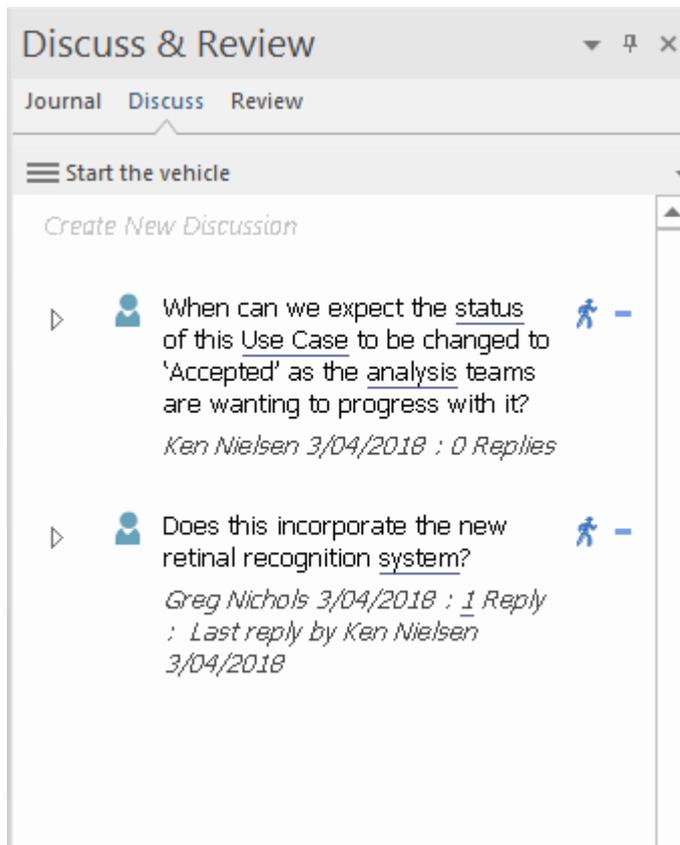
Enterprise Architect is built from the ground up as a collaboration platform and while it is possible to work in isolation, great power of expression will come from collaborating with other people, including colleagues, customers, specialists and others. The tool has the power to create relationships between content that is typically disconnected and often kept in silos. The ability to see information from disparate disciplines and view points provides a refreshing and compelling view which is unique to Enterprise Architect and you and your team will see model connections and share ideas that you might not otherwise have been able to visualize.



Collaboration features at your finger-tips on the Collaborate panel of the Start ribbon.

There is a range of features that facilitate collaborative modeling and can be used in isolation or together, creating unprecedented value in a project or an enterprise as people share knowledge, ideas and provide critical analysis of a model or concept. Regardless of where you are in the world or what language you speak, your colleagues are not far away and the tools allow you to collaborate as though working in the same office. These tools include:

- Discussions - discuss ideas and concepts
- Reviews - review model content with any number of people
- Chats - conduct informal and immediate chat sessions
- Mail - in the Model Mail system for detailed conversations and linking to model content
- Calendar - keep track of important project dates
- Library - a catalogue of important project documents and references

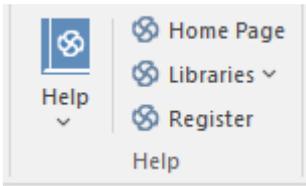


Discuss & Review window showing two separate discussions

Getting Help

Enterprise Architect has an extensive Help system that provides answers to help you throughout your modeling journey. The content you are reading is, in fact, the *Getting Started* topic of the Help system and is a very lightweight coverage of the information you need to get started. The other topics in the Help system will do a deep dive into all the details on how to get value from the tool, and how to use the many features in the product.

The Help System is in fact an online resource but can also be downloaded as a series of pages that you can access without an Internet connection. To launch the help from the tool simply use the Help icon on the Start ribbon or choose the Help button from tool windows:

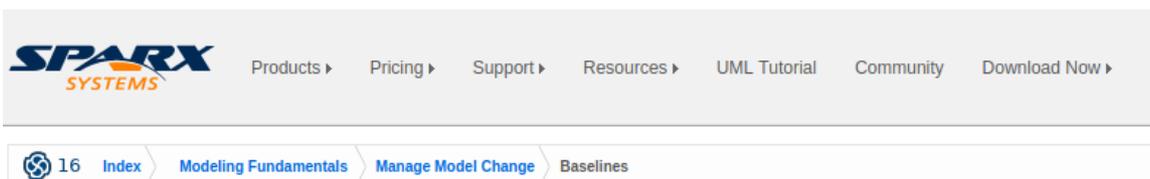


There are three ways that you can find information in the Help system:

1. Browse through the topics using the index, expanding and collapsing topics as you go.
2. Use the Search facility to locate a term or phrase of interest.
3. Select the Help button on a window or tool feature.

Browsing through the Index

When you launch Help, it will open a browser window, and the default welcome page will be displayed. You can select a topic from the list of navigable topics displayed down the left-hand side of the page. Items will expand and collapse as you click through, and a breadcrumb on the top of the page will conveniently keep track of your location in the Help system.



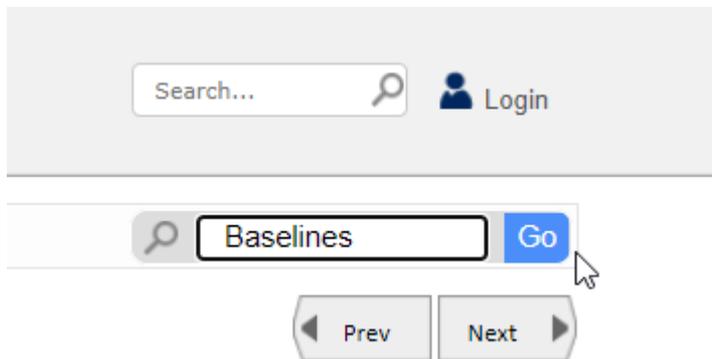
Baselines

[Brief Introduction](#)

Help web pages showing the index of items down to 'Baselines'

Using the Search

While it is possible to browse the index topics, a faster and more direct way of finding content is by using the Search facility. When you enter a keyword or phrase, the search will return a results list. For example, you could be looking for information about how you baseline your content, so entering the word 'baselines' in the search box will return a list of entries related to baselines.



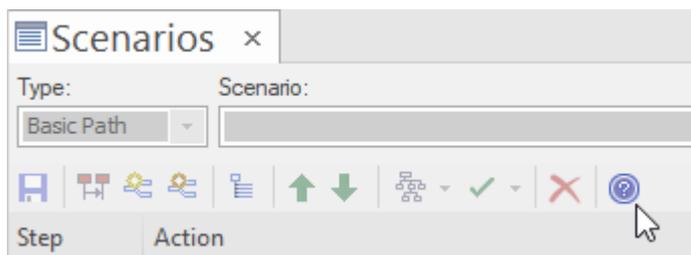
Simple model search feature looking for a user word or phrase 'Baselines'.

The result page conveniently shows a number of tabs with information about your keyword (e.g. Baselines) available in other resources:

4. Website
5. **User Guide**
6. Document
7. FAQs
8. Related Videos
9. Advanced Search

Selecting a Help Button

Enterprise Architect has rich and ubiquitous context-sensitive Help, so no matter where you are in the tool or which window or facility you are using, help is at hand. Simply launch the Help system from the 'Help' icon, typically at the far right of a toolbar or in another prominent position, and the search will display the relevant Help topic in your default web browser.



The Help icon available on the Scenario window.

Where to Next

By now, you will have some content in your repository and be able to view it in different ways, search for items, publish sections of the repository, collaborate with colleagues, and know where to get help. Now is the time to plan the evolution of the repository and how you will add additional content, and ensure it provides value to your enterprise and project stakeholders. These sections list some things to consider as you further develop your models.

Creating Model Views

As your repository grows in size, understanding and being able to locate specific content will become more difficult, and casual users of the repository might find the sheer volume of content overwhelming.

While the Browser is the most common way to navigate through a repository the tool has another useful feature called Model Views, which allows you to create tailored personal and team views of repository content. Using Model views you can create:

- Lists of favorite elements and diagrams
- Lists of elements based on a search
- Slide shows of diagrams

Creating the Browser Package Structure

You can take two different approaches to creating a Package structure:

- Create a Package structure up front and then populate it as you work
- Create the Package structure as you go, adding Packages in response to the needs of the stakeholders

Regardless of the approach, a well-organized Package structure will make navigation and updating easier and will facilitate document creation. It would be best to make some decisions about the content of your repository. There are two basic patterns for the content:

- A single repository - that contains both Enterprise and Project content
- Two separate repositories - One for the Enterprise and the other for Projects.
- Multiple repositories - One repository for the Enterprise content and additional repositories for each Program or Project.

Defining your Navigation Pages

Navigation pages with well chosen Navigation Cells will streamline repository navigation and give advanced and novice repository users easy access to diagrams. Consider having a single home page that then launches sub pages. Another strategy is to divide your sub pages in different dimensions; for example:

- A page for each project which then has cells for each discipline
- A page for each discipline - for example, requirements that cut across projects

Importing Additional Content

Populating your repository with content and providing useful views of the content is critical to the success of the project and its acceptance by stakeholders. Where possible, endeavor to make Enterprise Architect the system of record for the data you import. In some situations other systems will remain the system of record, and in these cases it is best - if possible - to use the integrations available through the Pro Cloud Server to access the content. For example, you can

integrate with Jira or SharePoint, allowing elements such as User Stories and Documents to be sourced from the external tools but made available in Enterprise Architect. In other cases, the content might exist in documents or spreadsheet files; these are best imported into Enterprise Architect and the original sources decommissioned, thus making Enterprise Architect the system of record. Some of the items you might consider importing are:

- Requirements
- Principles
- Capabilities
- Processes
- Business Rules
- Applications
- Interfaces
- Services
- Security Controls
- Data Models
- Servers

A Tutorial Modeling Session



Welcome to Enterprise Architect!

This quick-start tutorial helps you get up to speed with Enterprise Architect.

As you read through this tutorial, it is recommended that you have Enterprise Architect open so that you can try out the tasks described. By the end you should be able to begin modeling your own business/software projects with Enterprise Architect.

Throughout the descriptions there are hyperlinks to more detailed information on a range of topics.

Basic Tasks

Task
Creating a new project
Adding Views to your model
Adding Packages to your model
Adding diagrams
Adding elements to your model Packages
Creating links between model elements
Refining the model

Startup

When you install Enterprise Architect on your system, two items are created:

- An Enterprise Architect icon on your Windows desktop
- A new program folder called Enterprise Architect <version number> in your Windows 'Start > All Programs' menu; this folder contains the execution option 'Enterprise Architect'

You can start Enterprise Architect by clicking on either of these objects. After a short pause, the Start Page displays, from which you can:

- Open a project file (.eap file, .eapx file, .qea file, .qeax file or .feap file)
- Create a new project (.eap file, .eapx file, .qea file, .qeax file or .feap file)
- Connect to a DBMS repository (Corporate and extended editions)
- Connect to a project via the Cloud (Corporate and extended editions)
- Return directly to one of the projects you most recently opened
- Open one of a number of Portals to a set of facilities that support an area of work in Enterprise Architect

Notes

- If you changed the default system folder name during installation, the Enterprise Architect <version number> folder in the 'All Programs' menu will have the name you provided
- By default, when you install Enterprise Architect, an empty 'starter' project called EABase.qea is installed, as well as an example project named EAExample.qea; we recommend that new users select the EAExample file and explore it in some detail while they become familiar with UML and software engineering using Enterprise Architect

Create a Project

A project is a single file or repository-based store for one or more models. The first step in getting started with Enterprise Architect is to either open an existing project, or create a new one.

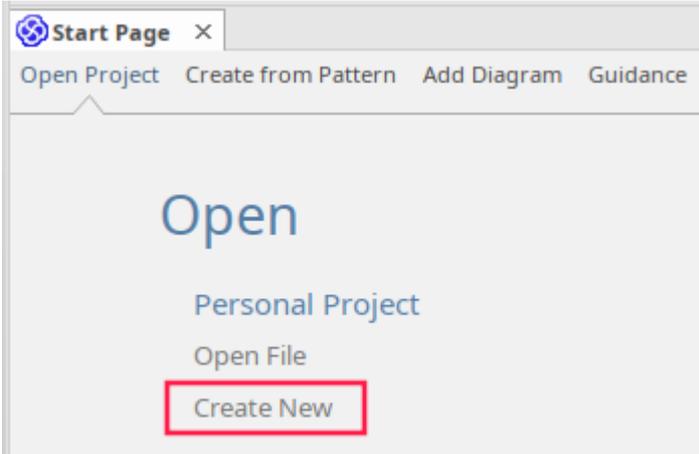
In this example you:

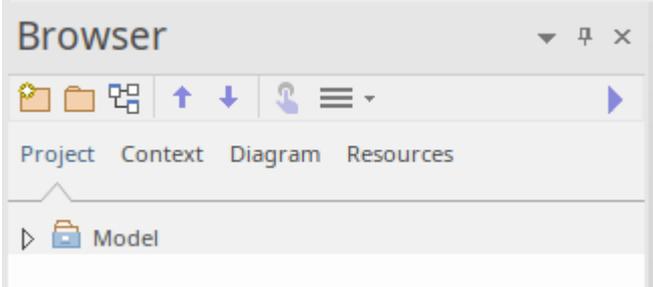
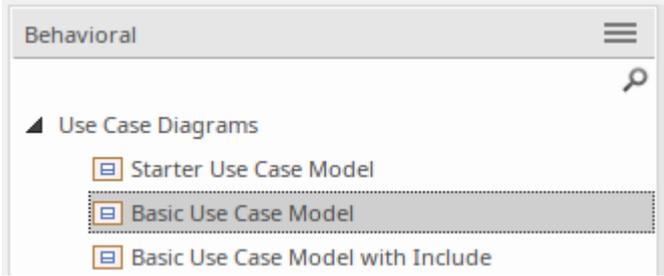
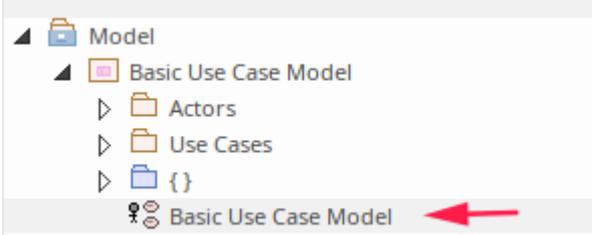
- Create a new file-based project
- Add a template-based model to kick-start your modeling

Once your new project has been created you:

- Have a simple Use Case model to explore and tailor to your requirements
- Can re-open your project at any time by double-clicking on it in a file browser
- Can see it in the 'Recent' list on the Start Page

Create a New Project

Step	Description
1	Start Enterprise Architect.
2	<p>When the 'Start Page' displays, click on the option:</p> <ul style="list-style-type: none"> • Open > Personal Project > Create New  <p>This displays the operating system file browser dialog.</p> <p>In the 'Save as type:' drop-down you have the option to create a repository of file-type:</p> <ul style="list-style-type: none"> • .gea extension (the default) • .geax extension • .feap extension • .eap extension (JET 3) • .eapx extension (JET 4) <p>Select one of these.</p>
3	<p>Locate a suitable folder for your project then:</p> <ul style="list-style-type: none"> • In the 'File name' field, type in a distinctive name • Click on the 'Save' button to continue

	<p>Enterprise Architect creates a new project file, places it in the specified location and then opens it automatically.</p> <p>The Browser window's 'Project' tab now displays a root-node named 'Model'.</p> 
4	<p>To create a starter model:</p> <ul style="list-style-type: none"> • Click on the 'Model' root-node • Click on the  icon in the Browser window toolbar The Start Page 'Create from Pattern' tab (Model Wizard) displays • Click on the  button and select 'UML > Behavioral' (a Perspective) • Scroll down to 'Use Case Diagrams' • Select 'Basic Use Case Model'  <ul style="list-style-type: none"> • Click on the Create Model(s) button <p>Result: The Model Wizard automatically creates a new Use Case model for you, with an initial diagram, some notes and default elements to help get you started.</p>
5	<p>From the Browser, click on the 'Basic Use Case Model' diagram to open the diagram.</p>  <p>Your diagram is now ready for making any alterations.</p>

Add a View to your Model

A View is a top level Package within a model. It can be categorized by purpose, such as Use Case View, Component View or Deployment View, the purpose being indicated by using different types of icon. Views are used to add an optional level of grouping of Packages, diagrams and elements - the building blocks of your model.

Add a View

Step	Instruction
1	In the 'Project' tab of the Browser window, right-click on the 'Model' icon (the model root node) and select the 'Add View' option. The 'New Package' dialog displays.
2	In the 'Name' field, type an appropriate name for the new View.
3	To select an icon for the View, click on the button to the right of the 'Name' field', then click on the icon you wish to use in the displayed list (we suggest Simple).
4	Click on the OK button. The 'New Package' dialog closes. The new View is created as a child of the Model root node.

Notes

- There are six types of View, which represent conventional ways of categorizing the purpose of a Model View; these types of View represent different structural or behavioral aspects of the same model

Add New Packages

A Package is a container of model elements, and is represented in the Browser window as a 'folder' icon.

- A Package holds the model building blocks, such as diagrams, elements and other Packages
- To begin developing your model, you create an initial Package to hold your first diagrams and model structures

Access

There are numerous ways in which you can add a Package to your model. Start by selecting the parent Package (or View or Root node) in the Browser window.

Then choose any of the methods outlined here.

Ribbon	Design > Package > Add Package
Context Menu	Right-click on parent Package Add a Package
Keyboard Shortcuts	Ctrl+W
Other	Browser window tool bar 

Add a Package to your model

On the 'New Package' dialog, complete the fields as instructed.

Option	Instruction
Owner	Displays the name of the currently-selected Package or View, to which you are adding the new Package. If this is not the required owner Package, click on the  button and select the correct Package.
Name	Defaults to Package1. Overtpe this with the name of the new Package.
Select and Apply Model Pattern	Click on this radio button if you want to create the new Package from a Model Pattern.
Create Diagram	Click on this radio button if you want to immediately create a child diagram for the Package.
Package Only	Click on this radio button if you want to just create a Package.
OK	Click on this button to create the Package in the Browser window. If you selected the 'Select and Apply Model Pattern' radio button, the Start Page 'Create from Pattern' tab (Model Wizard) displays. Select the appropriate Perspective and Model Pattern to import. Click on the Create Model(s) button. If you selected the 'Create Diagram' radio button, the 'New Diagram' dialog displays. Type in a name for the diagram and select the appropriate Perspective

	<p>Group and Perspective (in the 'Select From' panel) and the required diagram type. Click on the OK button.</p> <p>The new Package is inserted into the Browser window under the selected parent Package or View.</p>
Cancel	<p>Click on this button if you want to abort the changes you have made and close the dialog.</p>

Create a New Diagram

A diagram is a visual representation of the elements of your model and:

- Their attributes and characteristics
- How they are connected and/or interact with each other

Different diagram types show different aspects of the model and the relationships between elements.

Add new diagrams to your model

Step	Action
1	<p>Click on a Package or View in the Browser window, then either:</p> <ul style="list-style-type: none"> • Click on the Browser window  button, or • Press Ctrl+Insert, or • Select the 'Design > Diagram > Add Diagram' ribbon option, or • Right-click on the Package or View and select the 'Add Diagram' option <p>The 'New Diagram' dialog displays.</p>
2	<p>Enterprise Architect provides a default diagram name that is the same as the parent Package name. Overtyping this with your preferred diagram name, if necessary.</p>
3	<p>Click on the 'Select From' header and select the Perspective Group and Perspective most appropriate to the area you are working in.</p> <p>The panel below the header displays a list of diagram groups; click on the required group.</p>
4	<p>In the 'Diagram Types' panel, click on the type of diagram to create.</p> <p>A description of the selected diagram type displays in the field underneath this pane.</p>
5	<p>Click on the OK button.</p> <ul style="list-style-type: none"> • The 'New Diagram' dialog closes • A new diagram is created as a child of the currently selected Package • The new diagram is opened in the Diagram View, ready for editing

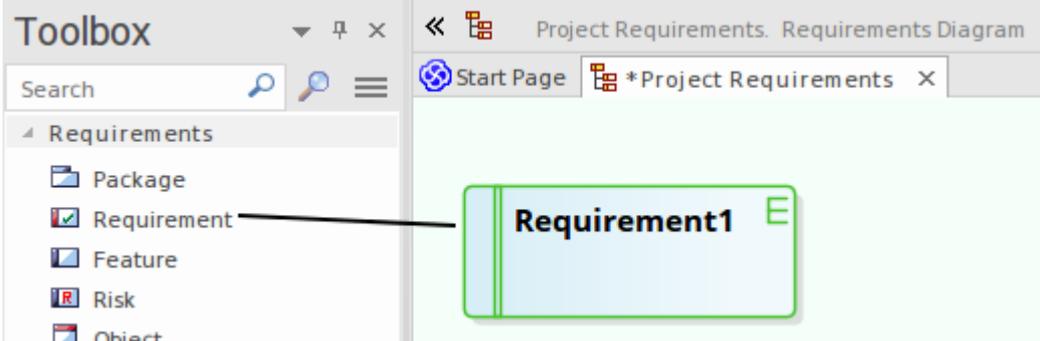
Notes

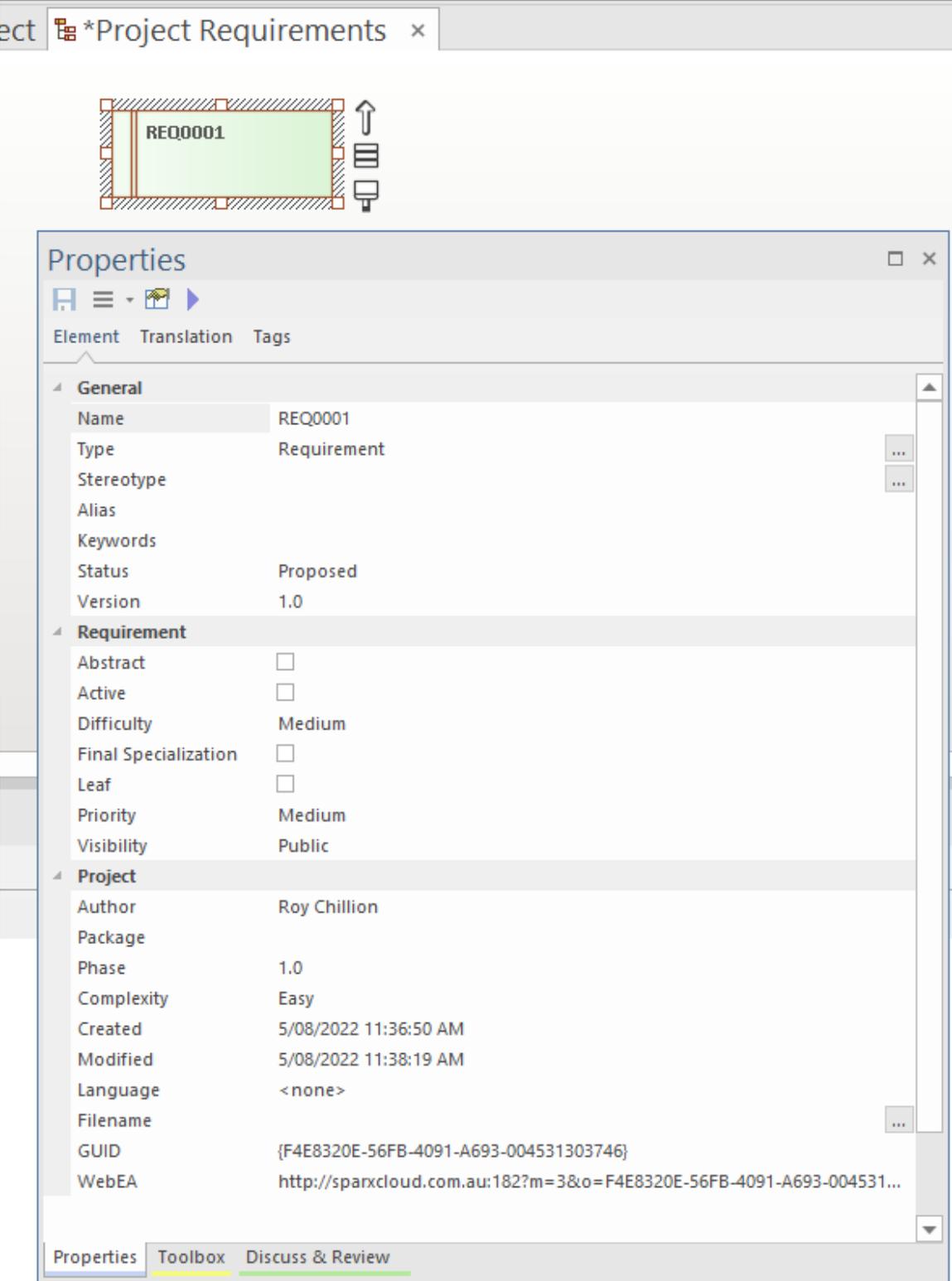
- When you create a Package, if you leave the 'Create Diagram' option selected, the 'New Diagram' dialog displays automatically

Create New Elements on a Diagram

Models are constructed from elements, each of which has its own meaning, rules and notation. Generally, when you create a new element in your model you want to use that element on a diagram. The simplest way to do this is to create the element directly on the diagram. In this procedure, we will use a Requirement element as the example.

Create a new element on a diagram in your model

Step	Action
1	<p>Display the Properties window; select the 'Start > All Windows > Design > Create > Properties' ribbon option.</p> <p>Also display the Diagram Toolbox; select the 'Design > Diagram > Toolbox' ribbon option.</p>
2	<p>Display the diagram on which the elements are to be created, in the Diagram View.</p> <p>To open the diagram, double-click on the diagram name in the Browser window.</p> <p>The diagram opens and the Toolbox is updated to display the categories of elements and relationships that are applicable to this type of diagram.</p>
3	<p>In this example, we must change to the Requirements Toolbox page.</p> <p>First, change to the 'Requirements' Perspective. Click on  in the Toolbox window, choose 'Change Perspective', then choose 'Requirements Requirements'.</p> <p>Now, choose the Requirements Toolbox page. Click on  again and choose 'Requirements'.</p>
4	<p>Click on the appropriate icon on the Toolbox page to select the type of element to create (in this example, the Requirement element).</p> <p>The element type is highlighted in the Toolbox.</p>
5	<p>Click on the diagram at the location where you want to place the element.</p>  <p>The new element is created as a child of the Package that contains the diagram, and is placed onto the diagram at the cursor position.</p> <p>The element's initial details are displayed in the Properties window.</p>
6	<p>Use the Properties window to define the element's name and other properties it should have.</p>



The screenshot displays the Enterprise Architect interface. At the top, a window titled '*Project Requirements' is open. Below it, a requirement element labeled 'REQ0001' is shown on a diagram background. The 'Properties' window is open, showing the following details:

Properties		
Element	Translation	Tags
General		
Name	REQ0001	
Type	Requirement	...
Stereotype		...
Alias		
Keywords		
Status	Proposed	
Version	1.0	
Requirement		
Abstract	<input type="checkbox"/>	
Active	<input type="checkbox"/>	
Difficulty	Medium	
Final Specialization	<input type="checkbox"/>	
Leaf	<input type="checkbox"/>	
Priority	Medium	
Visibility	Public	
Project		
Author	Roy Chillion	
Package		
Phase	1.0	
Complexity	Easy	
Created	5/08/2022 11:36:50 AM	
Modified	5/08/2022 11:38:19 AM	
Language	< none >	
Filename		...
GUID	{F4E8320E-56FB-4091-A693-004531303746}	
WebEA	http://sparxcloud.com.au:182?m=3&o=F4E8320E-56FB-4091-A693-004531...	

At the bottom of the Properties window, there are tabs for 'Properties', 'Toolbox', and 'Discuss & Review'.

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Right-click on the diagram background and select the 'Save Current Changes' option.

Notes

- You can also drag or paste existing elements onto a diagram from the Browser window
- If you are creating several elements of one type, after creating the first just press the Shift+F3 keys or Ctrl+click to create the next element of that type
- You can also create elements using shortcuts to the main facilities of the Toolbox, using the 'Toolbox Shortcut' menu; to display this menu press the Insert key or Spacebar, or hold the left mouse button and click the right mouse button (the 'Toolbox Shortcut' menu that is displayed corresponds to the currently selected Toolbox page)

Add Connectors

Connectors define specific relationships between specific elements, so you usually create them directly on the diagram by dragging the required relationship type from the Diagram Toolbox. As for elements, the Toolbox automatically presents the connector or relationship types appropriate to the type of diagram currently displayed.

Define a relationship between two model elements on a diagram

Step	Action
1	<p>Display the Diagram Toolbox; either:</p> <ul style="list-style-type: none">• Select the 'Design > Diagram > Toolbox' ribbon option or• Press Ctrl+Shift+3 <p>Also, if it is not already displayed, open the Properties window ('Start > All Windows > Design > Create > Properties' ribbon option).</p>
2	<p>Open the diagram containing the elements to be connected, in the Diagram View (double-click on the diagram name in the Browser window).</p> <p>The selected diagram opens and the Toolbox is updated to display the categories of elements and relationships that are applicable to that diagram type.</p>
3	<p>Click on the required icon in the Toolbox to select the type of connector to draw.</p> <p>The connector type is highlighted in the Toolbox.</p>
4	<p>Click on the source element in the relationship, then drag the cursor across to the target element.</p> <p>A connector of the selected type is drawn between the two elements.</p> <p>The connector becomes the focus of the Properties window.</p>
5	<p>Use the Properties window to define the characteristics of the connector as required.</p>

Notes

- If you are creating several connectors of one type, after creating the first press the F3 key then click and drag from the source element to the target
- As you drag a connector path, you can press the Shift key to create a bend in the connector; if necessary, you can put several bends in the connector line, pressing the Shift key every time you want to change direction
- To roll back the bends, keep holding the left mouse button down and press the Backspace key as many times as is necessary
- To find out more about the type of connector you have dragged on to a diagram, right-click on the connector and select the 'Type Information' option, which displays a Help page on the connector type

Modify Properties

When you create an element and connect it to another element, you usually have to define various characteristics of both the element and the connector to identify the purpose and function they represent. You do this using the Properties window.

When you create elements, Enterprise Architect automatically names and numbers them by type - for example, Class1, Class2 - so you should at least change the 'Name' field to more easily identify each element. Enterprise Architect does not automatically name connectors, but for many connector types you can provide a name that describes the purpose of the connection.

Modify the characteristics of a model element or connector

Step	Action
1	Select the 'Start > All Windows > Design > Create > Properties' ribbon option. The Properties window displays. Click on the element or connector for which to define properties. The initial details for that object display in the Properties window.
2	Modify the element or connector characteristics as required.
3	Click on the diagram background. The element or connector details in the window are saved; the diagrams that contain the element or connector are updated as necessary, as is the Browser window.

Notes

- You can also modify the properties of an element or connector using the 'Properties' dialog, which is specific to the selected object; select:
 - For an element, the 'Design > Element > Editors > Properties Dialog' ribbon option or
 - For a connector, right-click on the connector and select the 'Properties' menu option
- On the 'Properties' dialog, click on the OK button to save the changes and close the dialog

Save Changes

Throughout much of your work in Enterprise Architect, any changes you make are automatically saved when you close the dialog (data entry window) on which you made the changes. In some cases the dialog contains a Save button or Apply button, which you can click on to save your changes and then keep working on the dialog.

If there is no specific dialog

If there is no work dialog, such as when you create a diagram, you can save your work by:

- Pressing the Ctrl+S keyboard keys, or
- Right-clicking on the diagram and selecting the 'Save Current Changes' menu option

Often, Enterprise Architect does not let you close a screen without confirming that you want to save or discard your changes. You can also save your diagram changes automatically, by selecting the 'Auto Save Changes' checkbox on the 'Diagram Behavior' page of the 'Preferences' dialog.

Copy Elements

You can quickly and easily duplicate one or more elements, with their child elements and diagrams, under other elements or Packages. You can insert a copy of an element under one or more other elements or Packages, in the same project file or any other project file.

It is not possible to duplicate an element on the *same* diagram, but you can generate representations of the element at the ends of connectors, called virtual connector ends. See the *Virtual Connector Ends - Represent One Element Several Times on a Diagram* Help topic.

Operations

Operation	Actions
Copy the Elements	<p>In the Browser window, select the elements to copy, right-click on one and select: 'Copy / Paste Copy to Clipboard Full Structure for Duplication'</p> <p>Alternatively, click on a selected element and press Ctrl+Shift+C.</p> <p>The 'Copying Selected Element(s) to Clipboard' dialog briefly displays while the copy operation completes.</p>
Paste the Elements	<p>In the Browser window, right-click on the element or Package into which to paste the copied elements, and select the 'Copy / Paste Paste Element(s) from Clipboard' option.</p> <p>Alternatively, click on the Package and press Ctrl+V.</p> <p>The 'Pasting Element(s) from Clipboard' dialog briefly displays while the paste operation completes.</p> <p>The target element or Package is expanded and the pasted elements are exposed in the Browser window. If you are pasting the elements within the same model as the copied source, the source parent Package is also collapsed.</p> <p>If the target element or Package already contains:</p> <ul style="list-style-type: none"> • An element of the same type with the same name as a pasted element, the pasted element name has the suffix - Copy • An element with the same type and name as the pasted element including the - Copy suffix, the suffix becomes - Copy1 (or - Copy2, - Copy3 and so on, as copies of the element accumulate in the target element or Package) <p>You can keep the same element names as the source, or you can rename each element either by clicking twice on it and editing the name in the Browser window, or by double-clicking on it and editing the name in the 'Properties' dialog.</p>

Notes

- If you want to copy any elements to paste under another element, the target element must be capable of receiving the child elements; for example, you cannot paste a Class element as a child of a Port
- A copy of an element does not have the external cross references of the source element; that is:
 - if one element is copied it has no connectors
 - if more than one element is copied, only the connectors between the copied elements are retained
 - however, if those elements come from a Sequence or Communication diagram and the diagram itself is not copied, the message connectors between the copied elements are not retained

- You cannot paste an element into an element or Package that is locked by another user or that is checked in; the 'Paste...' option is grayed out in the context menu

Move Objects Around

You have created a project containing Packages, diagrams and elements, and you have connected the elements. How do you change where things are?

Move diagrams, elements and connectors

Task
Change the Browser window list order - re-arrange the order of items in the Browser window
Move elements between Packages - move diagrams, elements and child Packages from one parent Package to another
Move elements on a diagram - re-arrange the position of diagram elements
Move elements between diagrams - cut an element from one diagram and paste it onto another
Move connectors on a diagram - re-link a source element to a different target element

Move Objects Within a Package

In the Browser window, the contents of a Package are listed in the order: diagrams, child Packages, elements.

- Elements are further arranged in order of type (but see Notes)
- Within a type, components are initially listed in alphabetical or numerical order
- You can change the order in which items are listed within their groups

Adjust the order in which items are listed in the Browser Window

Step	Action
1	Click on an item in the Browser window, then click on  or  in the toolbar at the top of the window. The selected item is moved up or down in the Browser window accordingly, but remains within its particular group of items.
2	To revert to listing components in alphabetical order, in the Browser window right-click on the Package and select the 'Contents Reset Sort Order' option.

Notes

- You can re-arrange elements in your preferred sequence regardless of type, by selecting the 'Allow Free Sorting' checkbox on the 'General' page of the 'Preferences' dialog

Move Objects Between Packages

When creating the various diagrams, elements and Packages that make up your model, at some point you might create one of these objects under the wrong parent Package. It is quite simple to relocate a model object from one Package to another, either to a higher level Package, a lower level Package or a different Package at the same level.

Move objects between Packages

Step	Action
1	<p>In the Browser window, click on and drag the model item to be relocated from its existing position, and drop it onto the new parent Package.</p> <p>The dragged item and all of its child items are relocated to the target Package.</p>

Notes

- Moving elements in the Browser window does not affect the use of elements in diagrams
- Moving an element or Package has no effect on any relationships that the element, Package, or elements within the Package have
- Moving a diagram generally does not affect the location of elements in Packages

Move Elements in a Diagram

To improve the understanding of a diagram or to simply improve the presentation, you might want to adjust the position of the elements on your diagram.

For coarse adjustments

Step	Action
1	Click on a diagram element and drag it to its new position.

For fine adjustments

Step	Action
1	Click on a diagram element to select it.
2	While holding down the Shift key, press the keyboard arrow keys to move the selected element one pixel at a time in the direction of the arrow.

Move Elements Between Diagrams

If an element is present in one diagram but actually belongs in another, you can simply move the element from the first diagram into the second. You can also cut multiple elements from one diagram and paste them into another. When you cut elements from a diagram, the elements are held on the clipboard but are not cleared from the source diagram until they are specifically pasted into the target diagram. A moved element is not affected in any other way.

Access

Open the diagrams:

- Containing the element(s) to be moved, and
- Into which the element(s) will be moved

Keyboard Shortcuts	<p>With the element selected in the source diagram:</p> <ul style="list-style-type: none">• Ctrl+X <p>With the cursor in the target diagram:</p> <ul style="list-style-type: none">• Ctrl+V or Shift+Insert
Other	<p>Display the 'Default Tools' Toolbar (Explore > Portals > Show Toolbar > Default Tools) and:</p> <ul style="list-style-type: none">• On the source diagram, click on the element to be moved and on the  icon in the Toolbar• Click on the target diagram and on the  icon in the Toolbar

Notes

- By selecting more than one element at a time, you can move multiple elements in the same operation

Connect to a Different Element on a Diagram

When creating connectors in your diagrams, at some point you might connect the wrong pair of elements. Enterprise Architect provides a simple method to help you to move the end of a connector from one element to another; that is:

- Change the source element of a connector from the current element to another, or
- Change the target element of a connector from the current element to another

Change a connected element

Step	Action
1	In the diagram, click on the connector to select it. The connector is highlighted with 'handles' at each connector end.
2	Move the cursor over the 'handle' at the end of the connector to reconnect. The cursor changes to a small arrow pointing upwards to the right.
3	Click on and drag the connector end to the other element to connect to. When you release the mouse button, the connector breaks from the original element and reconnects to the new element.

Notes

- You can also tidy up a connection by dragging the end of the connector to a better position on the edge of the element, or move both ends at once by dragging the middle of the connector

Delete a Connector

It is possible to hide a connector on a diagram, or to delete it entirely from the model, removing the relationship between the previously connected elements.

Displaying all of the connectors on a complex diagram can make the diagram somewhat confused, so it can be useful to hide some of the connectors, to clarify a specific aspect of a more complex picture.

Hide or remove a connector between two elements

Step	Action
1	<p>Open the diagram containing the connector of interest.</p> <p>Either:</p> <ul style="list-style-type: none"> • Double-click on the diagram name in the Browser window, or • Make an already open diagram the 'active' diagram, by clicking on its tab in the Diagram View
2	<p>Click on the connector in the diagram to select it.</p> <p>The selected connector is highlighted in the diagram.</p>
3	<p>Either:</p> <ul style="list-style-type: none"> • Press the Ctrl+Delete keys • Right-click on the connector and select the 'Delete Connector' option, or • Press the Delete key <p>If you press Ctrl+Delete, a dialog displays prompting you to confirm that you want to delete the connector (and the relationship it describes) from the model. Click on the Yes button to remove the connector.</p> <p>The Delete key and 'Delete Connector' option display the 'Remove Connector' dialog.</p>
4	<p>On the 'Remove Connector' dialog, choose one of the options:</p> <ul style="list-style-type: none"> • Hide the connector or • Delete the connector from the model <p>'Hide the connector' obscures the connector on the current diagram; you cannot see it but the relationship between the two elements still exists and is shown on other diagrams containing the two elements together, and on all reports of connectors between the elements.</p> <p>'Delete the Connector from Model' removes the relationship that exists between the two elements; the connector is removed from the current diagram, from all other diagrams on which it is shown, and from all reports on connectors between the two elements.</p>
5	<p>Optionally, tick the checkbox 'Don't ask again'.</p> <p>Selecting this option prevents the 'Remove Connector' dialog from being displayed next time you select the 'Delete Connector' command; the command uses the setting you last used on the dialog.</p> <p>Make sure that you have selected the right option to use as your default.</p>
6	<p>Click on the OK button.</p> <p>The connector disappears from the diagram.</p> <p>If you selected the 'Delete the connector from the model' option, the relationship represented by the connector is also deleted from your model.</p>

Notes

- You cannot select multiple connectors - it is only possible to select one connector at a time
- If you select the 'Don't ask again' checkbox on the 'Remove Connector' dialog, you can reset this option on the 'Links' page of the 'Preferences' dialog ('Start > Appearance > Preferences > Preferences > Links' ribbon option, select the 'Prompt on connector delete' checkbox)
- Selecting the 'Hide the connector' option in the 'Remove Connector' dialog has the same effect as using the 'Visibility | Hide Connector' context menu option on the connector

Delete an Element

You can delete the elements of a model from a diagram or from the Browser window.

Delete an element

Options
Remove elements from a diagram: this is essentially 'hiding' the element in that particular view of the model.
Delete elements from a model - the element, its properties and any child elements or diagrams it has are all deleted; the element is removed from all diagrams on which it appears.

Remove Elements From a Diagram

Removing an element from a diagram does not delete the element from the model and therefore does not alter the structure of the underlying model. When you remove an element from a diagram, you are essentially 'hiding' the element in that particular view of the model.

Remove elements from a diagram

Step	Action
1	<p>Open the diagram that is to be modified.</p> <p>Either:</p> <ul style="list-style-type: none">• Double-click on the diagram name in the Browser window, or• Make an already open diagram the 'active' diagram, by clicking on its tab in the Diagram View
2	<p>Either:</p> <ul style="list-style-type: none">• Press Ctrl+A to select all of the elements in the diagram, or• Click on an element in the diagram to select it (and use Ctrl+click to add further elements to your selection, or to remove elements from the selection) <p>The selected elements are highlighted in the diagram.</p>
3	<p>Either:</p> <ul style="list-style-type: none">• Press the Delete key, or• Press Ctrl+D, or• Right-click a selected element and select the 'Delete <element name>' or 'Delete Selected' option <p>The selected elements are removed from the diagram.</p>

Notes

You can 'undo' the removal of a diagram element, by pressing Ctrl+Z, or by clicking the Undo button in the Default Tools toolbar

Delete Elements From Your Model

You can delete elements from your model, working either from the Browser window or from a diagram.

- When you delete an element from your model, the element, its properties and any child elements or diagrams it contains are all deleted
- The deleted element is removed from all diagrams on which it appears
- All relationships that it was involved in are also deleted from the model

Delete one or more items from your model using the Browser window

Step	Action
1	In the Browser window, click on an item to select it. To select additional items, or to remove items from the selection, use Ctrl+click or Shift+click. The selected items are highlighted in the Browser window.
2	Either: <ul style="list-style-type: none"> • Press Ctrl+Delete or • Right-click on one of the selected elements, then select the 'Delete selected item(s)' option A confirmation dialog displays.
3	Click on the Yes button. The selected items are deleted from your model.

Delete one or more items from your model using a diagram

Step	Action
1	To open the diagram containing the items to be deleted from your model, either: <ul style="list-style-type: none"> • Double-click on the diagram name in the Browser window, or • Make an already open diagram the 'active' diagram, by clicking on its tab in the Diagram View
2	Either: <ul style="list-style-type: none"> • Press Ctrl+A to select all of the elements in the diagram, or • Click on an element in the diagram to select it, then use Ctrl+click to add or remove specific elements to and from the selection The selected elements are highlighted in the diagram.
3	Press Ctrl+Delete. A confirmation dialog displays.
4	Click on the Yes button. The selected elements are removed from the model.

Notes

- Deleting a Package completely removes the Package and all its contents - diagrams, child Packages and elements - from the model
- Deleting an element completely removes the element and its properties, connectors, child elements and child diagrams from the model, and from every diagram that contains it
- Deleting a diagram completely removes the diagram from the model, but not the diagram's component elements; they remain in the parent Package

