

System Architect 2001

Installation Guide and Quick Start

Popkin Software

System Architect 2001

Installation Guide and Quick Start

Popkin Software

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1

Installing System Architect 2001

Introduction

This chapter instructs you on how to install System Architect 2001. It describes the difference between the single-user (Merge) and multi-user (Network) versions, details SA/2001's use of license management, informs you of system requirements, and guides you through the entire installation procedure.

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Installation Overview

Popkin Software offers a stand-alone, **single-user** (sometimes referred to as 'Merge') version and a **multi-user** ('Network') version of System Architect 2001. The main difference between the two is that the multi-user version enables multiple users to work on an encyclopedia at the same time – to enable this, one copy of SA/License Manager must also be installed and be running at all times for the multi-user version.

SETUP.EXE is the Same For Both Versions

The single-user version and the multi-user version both use the same **SETUP.EXE** on System Architect's installation cd. The **product key** that is typed in determines what version (single-user or multi-user) will be installed. (For download evaluations from the web, only the single-user version is provided. This is installed by simply running the self-extracting executable that is downloaded, and typing in the installation password that Popkin Software emails to the user.)

Single-User Version

Typically, the **single-user version** of System Architect is installed on a local drive and is used to create/edit encyclopedias on a local drive.

Multi-User Version

The System Administrator installs the **multi-user version** in one of two ways:

First, it can be installed on each user's local drive and used to create/edit encyclopedias on a network drive.

Second, the **multi-user version** may also be installed via a **client install**, wherein System Architect is installed to a network drive, and local copies are installed from the network to local drives. The client installation creates a shortcut on each client machine to the program executable on the network. The client installation makes installation to multiple machines very easy and quick. However, after a client install, each user is running a shortcut to a System Architect exe that exists on the network – because of this, the network capacity should be large enough for this to be viable (minimum recommended capacity is 100 MB).

SA/License Manager

In addition, for the multi-user version, one copy of **SA/License Manager** must also be installed (by running the same **SETUP.EXE** but typing in the License Manager product code). During installation, a COMMONPATH directory on the network is specified that will house the license administrator file, samulti.dat. SA/License Manager must be running at all times for users to work in multi-user mode. Although it is optional which gets installed first, it makes logical sense for SA/License Manager to be installed before any copies of System Architect 2001 are installed.

In certain International locations, a hardware keyblock is used with the samulti.dat file.

Single-User and Multi-User Versions of System Architect 2001

The single-user and multi-user versions of System Architect 2001 have the same overall functionality. They are distinguished by their ability to edit an encyclopedia one user at a time or many users at a time; the single-user version supports the former, the multi-user version supports the latter.

Users cannot work concurrently on a single encyclopedia in the single-user version. They can however, work on separate encyclopedias and then *merge* the work of one into the other. The single-user version cannot open an encyclopedia created with the multi-user version.

In the multi-user version, users can work concurrently on a single encyclopedia. It has an additional file, NETWORK.LCK, which places read, write, and update locks on encyclopedia records. This lets multiple users open a single encyclopedia at the same time. The multi-user version can open an encyclopedia created with the single-user version. When it does, it creates a NETWORK.LCK for that encyclopedia.

License Management

System Architect 2001 implements license management for its multi-user version through SA/License Manager, an application that creates and administers a software license file on a network. When you click the System Architect 2001 executable, the program looks for a valid license. When it finds one, the program starts.

If you have purchased the multi-user version of SA/2001, your installation package includes a product key to install SA/License Manager.

During installation, SA/License Manager gets the number of licenses to provide from the product key. When SA/License manager runs, it creates the license file SAMULTI.DAT on a network directory and distributes licenses to SA/2001 users -- SA/2001 queries SAMULTI.DAT and runs when it finds an available license slot. The path to the directory where SAMULTI.DAT is located is called the <i>MultiUserKeyblockCommonPath</i> , or <i>COMMONPATH</i> . The SAMULTI.DAT license file is sometimes referred to as a Software MUK

The diagram below illustrates an environment where multiple users obtain licenses from SA/License Manager. The license information is provided to SA/License Manager by a product key (for International Users only, this can also be provided by a multi-user keyblock, as described in the next section).

SA/License Manager runs on a network client and makes the prescribed number of licenses available to users on the network server. SA/2001 clients are configured to look for the license on the network server.

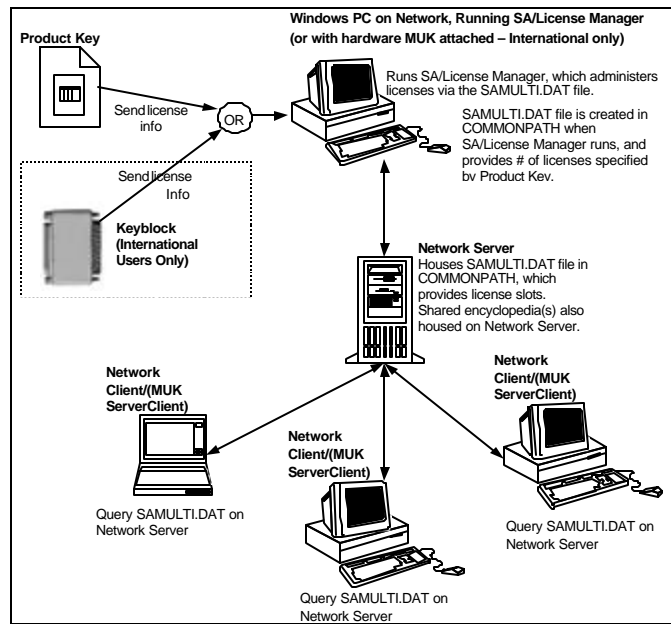


Figure 1-1 SA/License Manager runs on a Windows machine connected to the network (the machine acts as a server). SA/License Manager administers licenses to System Architect users via the SAMULTI.DAT file, which is housed in a COMMONPATH directory located on the network. All System Architect 2001 'clients' must know where this SAMULTI.DAT file is (you specify it during install, or afterwards via an SA2001.INI setting).

International Users

In addition to the SAMULTI.DAT file (or software MUK), International Users have the option of using copy protection provided through a keyblock attached to a computer's parallel port. A keyblock that contains one license is called a single-user keyblock. A keyblock with more than one license is called a multi-user keyblock (MUK).

System Requirements

This section contains operating system and hardware requirements for System Architect 2001. Microsoft Windows 3.x is not supported.

Software

System Architect 2001 employs some of the newest features of the Microsoft Windows operating systems. It is therefore recommended that you run it on Windows 95/98 and NT 4.0 only with the latest upgrades and service packs provided by Microsoft. SA/2001 has been tested using the following upgrades and service packs:

- Windows 95 B (OSR2) or
Windows 95 A with Service Pack1 installed
<http://www.microsoft.com/windows95/downloads/default.asp>
- NT 4.0 Service Pack 3 or higher
<http://www.microsoft.com/ntserver/nts/downloads/>
- IE 4.0 Service Pack1
<http://www.microsoft.com/windows/ie/download/windows.htm>
- Microsoft Office 97 Service Pack 2
<http://officeupdate.microsoft.com/>

Hardware

The table below provides the recommended hardware options for Windows 95/98.

Minimum:	Pentium 233 MHz, 32 MB of RAM, 800x600 256-color display, and 60 MB of free disk space for application without help and other ancillary files.
Recommended:	Pentium II, 300 MHz or higher, 64 MB of RAM, 1024x768, 16-bit color display, 100 MB of free disk space for application with help and other ancillary files.
Optimum:	Pentium III 450 MHz or higher, 128 MB of RAM or more, 1024x768 16-bit or higher color display, 100 MB of free disk space for application with help and other ancillary files.

The table below provides the recommended hardware options for Windows NT 4.0 or higher.

Minimum:	Pentium 233 MHz, 64 MB of RAM, 800x600 256-color display, 60 MB of free disk space for application without help and other ancillary files.
Recommended:	Pentium II 300 MHz or higher, 96 MB of RAM, 1024x768 16-bit color display, 100 MB of free disk space for application with help and other ancillary files.
Optimum:	Pentium III 450 MHz or higher, 128 MB of RAM or more, 1024x768, 16-bit or higher color display, 100 MB of free disk space for application with help and other ancillary files.

Installing Stand-Alone, Single-User Licenses

Before installing System Architect 2001, you should close other applications that are running. You will need to restart Windows after you complete the installation. To install System Architect 2001 proceed as follows:

1. Insert your SA/2001 installation CD into your CD-ROM drive. The auto-run feature will start the installation. If it doesn't, run the setup.exe executable from the cd.

Note: If you have downloaded an evaluation copy of System Architect from the web, run the downloaded, self-extracting executable file. When requested, type in the installation password that Popkin Software emails to you.
2. Enter your **Name**, **Company**, and **Product Key** in the **User Information** dialog, and click **Next**.
3. In the **Choose Destination Location** dialog, click **Next** to install to the default folder (*C:\Program Files\Popkin Software\System Architect 2001*), or click **Browse** to select another folder, then click **Next**.
4. The **Setup Type** dialog lets you choose a **Typical**, **Client**, or **Custom** installation. Make your selection based on the following information:
 - **Typical**—Program will be installed with all options.
 - **Client**—Generally used for multi-user installations but can conceivably be used with single-user installation. This option creates a sub-folder named \Support\Client, which the Network Administrator can later use to perform client installations (see next section for install details). (SA is installed with all options.)
 - **Custom**—This option provides a dialog to choose the components you want to install.
5. The **Select Program Folder** dialog lists all the program folders in your **Windows Start** menu. Setup will create program icons in a new folder, named **Popkin Software**. You can accept the default folder name or type in a different name. Click **Next** to continue.

6. Setup is now ready to copy Microsoft Word templates to your templates folder. If your templates are stored in a folder other than the default, click the **Browse** button to select that folder, then click **Next**.
7. The **Setup Complete** dialog confirms that System Architect 2001 has been successfully installed. Choose whether to view **README.TXT**. Click **Finish**.
8. You now need to restart Windows before using System Architect 2001. The **Restarting Windows** dialog gives you the option to restart Windows now or later. Make your selection and click **OK**.

Installing Multi-User Licenses – Summary

The same installation program is used to install single-user licenses of System Architect 2001 or multi-user licenses of System Architect 2001. The exact same **SETUP.EXE** on the installation cd is run in either case. The license code that you enter during installation determines whether you install a single-user version or a multi-user version of the software.

In addition, for the multi-user version, the Network Administrator must also install one copy of SA/License Manager to a Windows machine connected to the network that will enable SA/License Manager to run at all times. SA/License Manager must run to provide licenses to System Architect 2001 users running on client machines.

To install multi-user licenses of System Architect, the network administrator may install a full version of System Architect on every client machine (and have users later work on encyclopedias located on the network or on their hard drives), or you may use the 'Client' installation, in which you install SA/2001 to the network, and from that, install client versions to each client machine. The client installation copies a minimum set of necessary SA/2001 files to a client machine's local drive (including Help files and Word report templates), and enables the client to run SA/2001 from its *executable residing on the network*. For users to use System Architect after a 'Client' install, you should have sufficient network bandwidth (minimum recommended is 100 MB).

Summary of Multi-User Installation

The procedure below summarizes how to install multi-user licenses of System Architect 2001. In summary, you need to:

- a. Install SA/License Manager on a Windows machine connected to the network (details in next section). SA/License Manager must run at all times for System Architect 2001 to be *used (not installed)*.
- b. Decide whether you want to install the multi-user version of System Architect 2001 on each user machine, or you want to use the 'Client' install, which will install a minimum working set of System Architect files on each client machine so that each user will run a version of System Architect off the network. Your network bandwidth should be large enough (100 MB or higher) for this to be viable.
- c. After deciding which install is best for your use, perform the installation of System Architect 2001 multi-user version.

Installing SA/License Manager

You do not have to install SA/License Manager before you install System Architect 2001 to client machines; you may do so afterward. But you will not be able to run any copy of System Architect 2001 until a copy of SA/License Manager is running. Also, during installation of System Architect 2001 you are asked for a directory where the SAMULTI.DAT file is located. This directory is created during installation of SA/License Manager. For these reasons, it makes logical sense to install one copy of SA/License Manager before beginning the installations of System Architect 2001 licenses.

It is important that you perform the installation described below on the computer that you have designated as the machine that will run SA/License Manager. This computer must be a Windows machine that is a client on the network and have full read/write privileges. SA/License Manager will need to run at all times for System Architect 2001 licenses to be available.

To install SA/License Manager:

1. Run **SETUP.EXE** from the SA/2001 CD.
2. When prompted for the Product key, type the product key from the sheet enclosed that is titled ***"To Install SA/License Manager (SAnetMgr.exe)"***.
3. In the **Specify the Common Path** dialog, use the **Browse** button to create a folder on the network to store the license file **SAMULTI.DAT**. For example, X:\Popkin Software\COMMONPATH. Remember that:
 - a) Clients need full access to the COMMONPATH directory to run SA/2001.
 - b) The common path **should not be** a subdirectory of the SA/2001 program directory.
 - c) SA/2001 and SA/License manager do not recognize paths specified with the Universal Naming Convention (UNC).
4. Click **Next** to finish the installation.

Typical Multi-User Install – Installing SA/2001 to Each User's Machine)

Before installing System Architect 2001 multi-user version, you should close other applications that are running. You will need to restart Windows after you complete the installation.

To install System Architect 2001 proceed as follows:

Note: The same installation program is used to install single-user licenses of System Architect 2001 or multi-user licenses of System Architect 2001. The exact same **SETUP.EXE** on the installation cd is run in either case. The license code that you enter during installation determines whether you install a single-user version or a multi-user version of the software

Summary of Multi- User Installation

You will need to do two things for multi-user install.

- a. You need to install one copy of SA/License Manager to a Windows machine that will enable SA/License Manager to be running at all times. (SA/License Manager must be running at all times for System Architect to run.) It is not mandatory that you install SA/License Manager before installing System Architect 2001, but it makes logical sense to. To install SA/License Manager, please see the previous section.
- b. You will need to install System Architect 2001 to each client machine that will be using it – these steps are described below (alternatively, you can use the 'Client' install described in the next section).

Error!

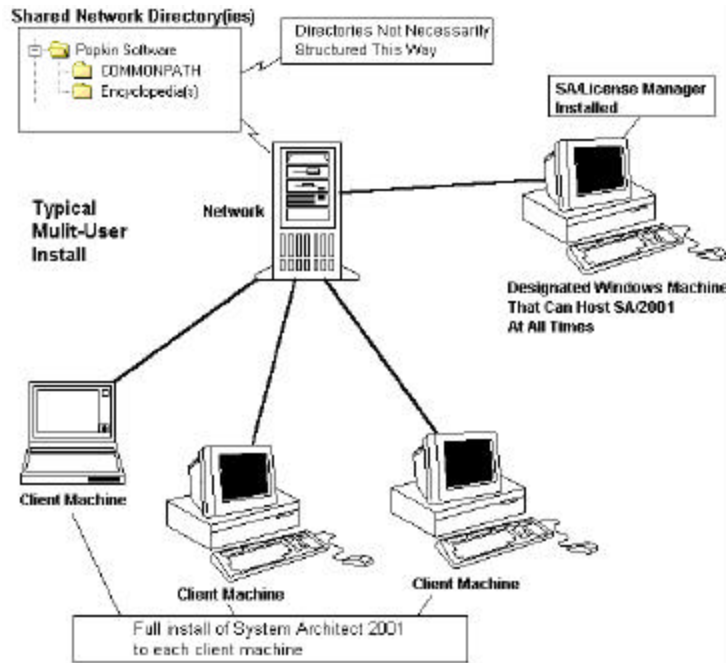


Figure 1 -2. Typical Multi-User Install – SA/License Manager is installed to a designated Windows PC that can host SA/2001 at all times. Full versions of SA/2001 are installed to each client machine. When it runs, SA/License Manager creates SAMULTI.DAT file in COMMONPATH, distributing licenses to SA/2001 client versions, which access encyclopedias on the network.

**Install Copy of
SA/License
Manager**

Although it is not mandatory to do this first, you should install one copy of SA/License Manager before installing copies of System Architect to each user's machine.

1. Install one copy of SA/License Manager. (Please see previous section for instructions.)

**Install System
Architect 2001 to
Each User's
Machine**

To install System Architect 2001 to each user's machine, perform the following steps:

2. Insert your SA/2001 installation CD into your CD-ROM drive. The auto-run feature will start the installation. If it does not, run the setup.exe from the cd.

3. Enter your **Name**, **Company**, and **Product Key** in the **User Information** dialog, and click **Next**. As part of the System Architect 2001 package, you should have received two separate instruction sheets, each with a separate Product Key. Use the first one, titled **To Install SA/2001 (network version)**. This is the product key to install the SA/2001 application. (The second instruction sheet, titled **To Install SA/License Manager (SAnetMgr. exe)** contains the product key to install SA/License Manager, which administers the use of licenses. This will be used later.)
4. In the **Choose Destination Location** dialog, click **Next** to install to the default folder (*C:\Program Files\Popkin Software\System Architect 2001*), or click **Browse** to select another folder, then click **Next**.
5. The **Setup Type** dialog lets you choose a **Typical**, **Client**, or **Custom** installation. Choose either **Typical** or **Custom**, based on the following information:
 - **Typical**—Program will be installed with all options.
 - **Client**—This option should not be chosen for this type of install.
 - **Custom**—This option provides a dialog to choose the components you want to install.
6. The **Select Program Folder** dialog lists all the program folders in your **Windows Start** menu. Setup will create program icons in a new folder, named **Popkin Software**. You can accept the default folder name or type in a different name. Click **Next** to continue.
7. Setup is now ready to copy Microsoft Word templates to your templates folder. If your templates are stored in a folder other than the default, click the **Browse** button to select that folder, then click **Next**.
8. In the **Specify the Common Path** dialog, use the **Browse** button to select the folder on the network in which the license file **SAMULTI.DAT** is stored. For example, *X:\Popkin Software\COMMONPATH*. This COMMONPATH is normally created during installation of SA/License Manager. If you have not created a COMMONPATH, you may leave this option empty and continue with installation, and manually specify the location of the SAMULTI.DAT file later via an SA2001.INI setting (procedure is furnished below).
9. The **Setup Complete** dialog confirms that System Architect 2001 has been successfully installed. Choose whether to view **README.TXT**. Click **Finish**.

**If You Install
License Manager
After Installing
System Architect
2001 Licenses**

10. You now need to restart Windows before using System Architect 2001. The **Restarting Windows** dialog gives you the option to restart Windows now or later. Make your selection and click **OK**.

If you have decided to install SA/License Manager after installing one or more copies of System Architect 2001, you will need to make sure that the System Architect 2001 copies you've installed all know where the COMMONPATH that houses the samulti.dat file is. This is the file that furnishes multi-user license slots to System Architect users.

Edit SA2001.INI file on User Machines to Access a License

To do this, use SA/2001's **INI File Editor**. To edit the SA2001.INI file:

- a) Click the Windows Start menu, and select **Programs, Popkin Software, INI File Editor**.
- b) Scroll down the **Entry** dialog, and select **MultiuserKeyblock**.
- c) In the **MultiuserKeyblock** field, type **Y**. This tells SA/2001 to search for a license on the network.
- d) Scroll down again and select **MultiuserKeyblockCommonPath**.
- e) In the **MultiuserKeyblockCommonPath** field, type the path to the directory where you placed the license file **SAMULTI.DAT** (step 3 of the Install SA/ License Manager section). This tells SA/2001 where to search for a license.
- f) Click **OK**. Installation is complete.

Installing Multi-User Licenses via the Client Installation

The 'Client' installation is intended for Network Administrators who need to install SA/2001 on multiple machines. You install SA/2001 on a network drive, and subsequently, perform client installations from that drive. The 'Client' installation copies a minimum set of necessary SA/2001 files to a client machine's local drive (including Help files and Word report templates), makes necessary registry changes on the client machine, and creates a shortcut on each client machine to SA/2001's *executable residing on the network*.

The client installation makes installing SA/2001 to multiple machines very easy. However, after a client install, each user is running a shortcut to a System Architect exe that exists on the network – because of this, the network capacity should be large enough for this to be viable (minimum recommended capacity is 100 MB).

Summary of Client Installation

The procedure below describes how to setup SA/2001 for client installations from the network server. You only need to perform the first two steps once. Repeat steps three and four for each additional client install. In summary, you need to:

- a. Install SA/License Manager (details below and in previous section).
- b. Install SA/2001 to a shared location (details below).
- c. Run the client installation (details below).
- d. (Optional) If you've installed SA/License Manager after installing System Architect 2001, you must manually edit SA2001.INI on client machines to access the license file (details below).

<p>Warning to the Network Administrator: When mapping clients to the directory from where you will run the client install, you must map to the SA/2001 subdirectory of your mapped network drive (for example, X:\Program Files\Popkin Software\System Architect 2001\). You must not map to the Client directory. The setup routine needs to access the root directory, in addition to the VBA and VAO subfolders. If you set up a shared directory for clients, it must start at the root of the install directory.</p>

Error!

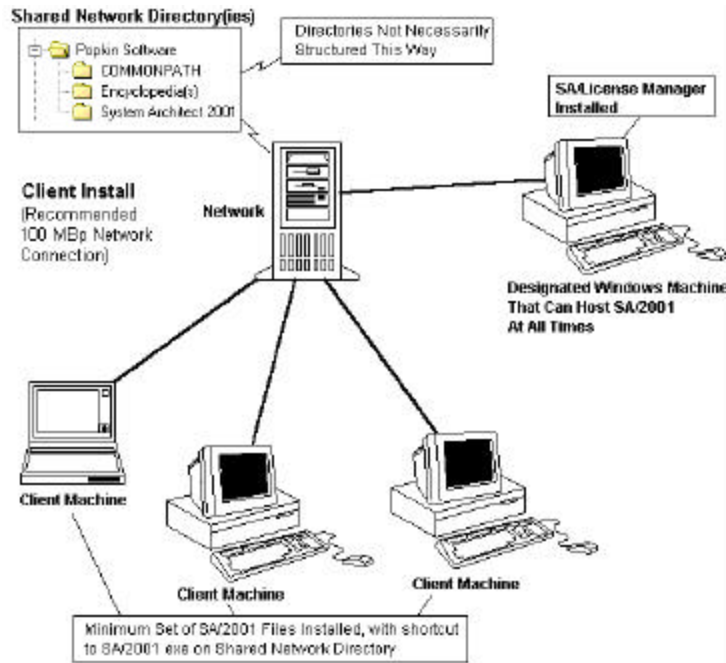


Figure 1 -3. Typical Client Install – SA/License Manager is installed to a designated Windows PC that can host SA/2001 at all times. SA/2001 is installed to shared network directory. From this SA/2001 install, minimum set of SA/2001 files are installed to each client machine. When it runs, SA/License Manager creates SAMULTI.DAT file in COMMONPATH, distributing licenses to SA/2001 client versions, which access encyclopedias on the network.

1. Install SA/License Manager

- Run **SETUP.EXE** from the SA/2001 CD.
- When prompted for the **Product key**, type the product key from the sheet titled **"To Install SA/License Manager (SAnetMgr.exe)"**.
- At the **Specify the Common Path** dialog, use the **Browse** button to create a folder on the network to store the license file **SAMULTI.DAT**. For example, X:\Popkin Software\COMMONPATH. Remember that:

- Clients need full access to the COMMONPATH directory to run SA/2001.
 - The common path **should not be** a subdirectory of the SA/2001 program directory.
 - SA/2001 and SA/License manager do not recognize paths specified with the Universal Naming Convention (UNC).
- d) Click **Next**. This will finish the installation.

2. Install SA/2001 to a Shared Location

Note: After installing SA/2001, you must reboot your machine.

- a) Run **SETUP.EXE** from the SA/2001 CD on the server machine.
- b) When prompted for the product key, type the product key from the sheet titled "**To install SA/2001 (network version)**".
- c) In the **Setup Type** dialog, choose **Client**, and click the **Next** button.
- d) The installation will prompt you for the location of your Word templates. If they are in the default location, click **Next**. If they are elsewhere, use the **Browse** button to locate them, then click **Next**.
- e) Finish the installation.
- f) Restart your computer before going to the next set of steps.

3. Run the Client Installation

By default, when you performed the first phase of this procedure, you were asked to provide a path or accept the default: **x:\Popkin Software\System Architect 2001**, where *x* is the network drive letter. If you specified a different name for the installation directory, go to that directory and locate the **\Support\Client** subdirectory. In either case, from the workstation where you want to install SA/2001 as a client:

- a) Use standard Windows techniques to map the client to the server where you installed SA/2001.

- b) Go to the subdirectory **X:\Popkin Software\System Architect 2001\Support\Client**, where *x* is the network drive.
- c) Double-click on **SETUP.EXE** to run it.
- d) Restart the computer after the installation is complete.

4. (Optional – Only if You Have Not Performed Step 1 Yet) Edit SA2001.INI file on Client Machines to Access a License

If, by choice or mistake, you have not installed SA/License Manager yet, and have decided to do it after the client installations of System Architect, you can install SA/License Manager now (see previous section in this chapter for details). You must then manually tell the client machines to use a license on the network, and tell it where that license is. To do this, use SA/2001's **INI File Editor**. To edit the SA2001.INI file:

- g) Click the Windows Start menu, and select **Programs, Popkin Software, INI File Editor**.
- h) Scroll down the **Entry** dialog, and select **MultiuserKeyblock**.
- i) In the **MultiuserKeyblock** field, type **Y**. This tells SA/2001 to search for a license on the network.
- j) Scroll down again and select **MultiuserKeyblockCommonPath**.
- k) In the **MultiuserKeyblockCommonPath** field, type the path to the directory where you placed the license file **SAMULTI.DAT** (step 3 of the Install SA/ License Manager section). This tells SA/2001 where to search for a license.
- l) Click **OK**.
- m) Run System Architect 2001.

The client is now ready to run SA/2001 from the network server. For a more detailed explanation of how SA/2001 and SA/License Manager work, see chapter 2, SA/License Manager.

Upgrading System Architect 2001

If you are installing an upgrade to System Architect 2001, it is not necessary to uninstall the existing version of System Architect 2001 – the upgrade will install over the existing copy. Before downloading, please check the download page on Popkin's website to make sure you have the correct version number of System Architect 2001 currently installed for the download upgrade that is available.

IMPORTANT NOTE FOR DOWNLOADED UPGRADES

If you are installing an upgrade to System Architect 2001 that you have downloaded off of Popkin Software's website, you **should not uninstall the previous version of System Architect 2001** – the download upgrade specifically looks for a previous version of System Architect 2001 on your machine, and will not install if one is not there.

Installing an Upgrade

To install an upgrade to System Architect 2001, simply follow the same installation procedures provided earlier in this chapter for the type of licenses you have purchased.

2

SA/License Manager

Introduction

This chapter introduces you to working with SA/License Manager. It provides overall information about the utility, how to use it, what's new, and answers the most frequently asked questions. Installation instructions are provided in the previous chapter.

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Overview

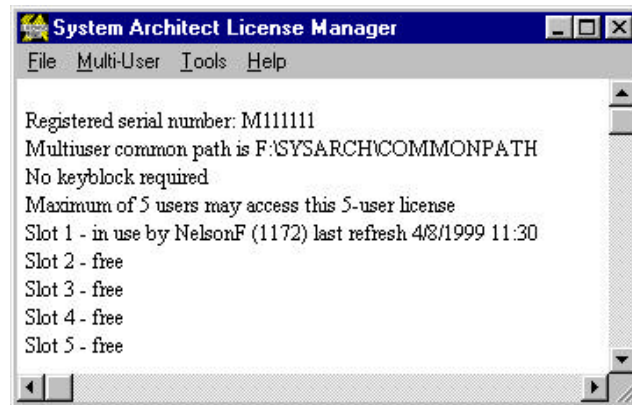
SA/License Manager is a Windows application that distributes licenses to System Architect 2001 users. During installation of SA/License Manager, a **SAMULTI.DAT** file is created in a network directory that serves as the COMMONPATH. The SAMULTI.DAT file contains the number of license slots specified by SA/License Manager's Product Key that is typed in during installation. SA/2001 queries the license file and runs if a license slot is available. (For certain international locations, a multi-user keyblock is available – it is physically attached to the parallel port of the 'server' machine, and takes the place of the SAMULTI.DAT file).

When a user logs into SA/2001, a license is "checked out" of SAMULTI.DAT, and SA/License Manager reduces the number of available licenses by one. When a user logs out of SA/2001, SA/License Manager reclaims that license and makes it available to other users. It also provides other administrative options, such as querying active users and setting how many minutes of inactivity to allow before a user is "timed out" of a license.

What's New

Users who are familiar with an earlier version of SA/License Manager may notice that the menu looks a little different. That is because the **Network** and **Special** menu options have been removed. Some of the functions that were available under these menus were eliminated; others were moved to the main product, under the **Tools** menu.

There are two new menu options, **Multi-User** and **Tools**, as shown in the figure below:



New options under the **Multi-User** menu are:

- **Monitor Sign on/off** – displays user Audit IDs, the license slot number they signed in to, and the date and time they signed in or out.
- **Set Timeout and Max Users** – enables you to set the number of minutes to allow of inactivity before SA/License Manager repossess a license to make available to other users. You can also adjust the number of licenses you make available; you cannot increase the number of licenses beyond those that you purchased.
- **Query Active Users** – displays user Audit IDs and the license slot they are using.
- **Time Check** – provides the date and time of the server where SA/License Manager is running.

A new option under the **Tools** menu is **Session Options (sa2001.ini)**, which starts the **INI File Editor**.

Supported Networks

SA/License Manager operates on the application layer of the OSI model. Therefore, no one Network Operating System or protocol works better than another does. The only functional requirement is that the network must support DOS drive letters and directory structures with DOS level file locking (INT 21 Function 5C). Some Network Operating Systems that support DOS file locking are Novell, Windows NT, LAN Manager, LAN Server, Banyon Vines and others. To find out if your network supports DOS file locking please contact your systems or network administrator.

**COMMONPATH (or
MultiuserKeyBlock
COMMONPATH)**

The COMMONPATH (sometimes referred to as the multi-user keyblock common path), is simply a directory on the network which SA/2001 users can access. It is where SA/License Manager places SAMULTI.DAT for SA/2001 clients.

[**Note:** The term multi-user keyblock is historic – created when the license managing was done only through a physical hardware keyblock. With System Architect 2001, the keyblock is actually software (although the physical keyblock still exists for international users)].

On the client side, SA2001.INI has two values that tell the application that (1) A MultiUserKeyblock is the licensing device, and (2), the path the program needs to query for a license. The values in SA2001.INI look like this (please note, this is an example only):

MultiuserKeyblock=Y
MultiuserKeyblockCommonPath=x:\Popkin
Software\COMMONPATH

You can edit SA2001.INI using the System Architect's **INI File Editor**. The path must be specified in a valid DOS format (e.g., f:\Sysarch\commonpath). UNC names (for example, \\NetMgrServer\common) are not supported.

**Requirements for
SA/License
Manager Server**

The machine onto which SA/License Manager is installed (in other words, the SA/License Manager Server) or plug in the Multi-User Keyblock (which is why it is sometimes referred to as the MUK Server) must be a Windows machine on a network that serves SA/2001 licenses.

There are only a few requirements for the MUK Server:

- It must be a Windows machine (to be able to install SA/License Manager)
- It must be a client of the network, and
- It must run SA/License Manager at all times it is providing licenses to SA/2001 users – clients of the MUK Server.

Although SA/License Manager can be installed on any computer connected to the network, it is generally recommended that you use a dedicated workstation. A low-end PC can work well as the SA/License Manager Server. SA/License Manager is a small application. Installed, it only uses

about 1.2 MB, and it can run on any machine that can run Windows 95. A client's active workstation is not recommended because if the client shuts down his or her machine, licenses will no longer be available, and other clients will have to exit SA/2001.

Other requirements include:

- Minimum 486sx processor with 16 MB of RAM.
- 5 MB of local disk space to run SA/License Manager.
- Windows NT / Windows 95/98.

Network Resources Used by SA/License Manager

Network Administrators often ask whether the network traffic produced by SA/License Manager will slow the network down. Since SA/License Manager updates the SAMULTI.DAT file in the network common path only a few times a minute, and SA/2001 only polls SAMULTI.DAT based on significant events in the application, the network traffic produced by the SA/License Manager service is minimal. SA/License Manager makes the following networks requirements:

- A common path to which SA/2001 clients have full access.
- 2 MB of available disk space in the common path.
- SA/2001 clients can map to the common path using a drive letter.

Note: The Universal Naming Convention (UNC) is not supported.

Using the Network Server as SA/License Manager Server

For any computer to operate as the SA/License Manager Server it must be able to run SA/License Manager. As of this writing, the only operating system that can function as a Workstation and a Server at the same time is Windows NT. SA/License Manager can be run as a service when you log into Windows NT as a Workstation.

Some System Architect customers run SA/License Manager as a service under Windows NT. Doing so requires getting the Windows NT Resource kit. The kit contains a file named SRVANY.WRI, which provides instructions on setting up an application as a Windows NT service.

Popkin Software Technical Support does not support the use of SA/License Manager as a service. This setup is not fully tested, and it may produce problems that Technical Support cannot help you with. However, after reading SERVANY.WRI, a qualified Windows NT Administrator should be able to configure SA/License Manager as a service. If you use

this configuration, the command line in the Parameters key of SA/License Manager should contain an auto entry for the Audit ID. An example of the command line is the following:

```
C:\SA LICENCSE MANAGER\NETMANAGER.EXE -AUDIT JOEK
```

Note: It is strongly recommended that you run SA/License Manager as a desktop application *before* trying to run it as a service.

SA/License Manager Error Messages

This section describes how to resolve some of the more frequent errors encountered by SA/License Manager when it tries to run or is running.

"No common path supplied"

This error occurs when a client's SA2001.INI does not contain the correct value for the **MultiUserKeyblockCommonPath**. To resolve this problem, edit the SA2001.INI on the client, and add the path to the directory where SAMULTI.DAT resides.

"No access to common path"

This error may appear when

- The **MultiUserKeyblockCommonPath** value in SA2001.INI is incorrect.
- The **MultiUserKeyblockCommonPath** value in SA2001.INI is specified with an invalid notation, such as the UNC. The path must be specified with a drive letter.
- User does not have full read and write privileges to the common path, which are required.

See the section *SA/2001 Client Setup* above.

"Sysnet not in common path"

The license file, SAMULTI.DAT is not present in the directory being pointed to by the SA/2001 client. This may occur because the folder where SA/License Manager is placing SAMULTI.DAT and the folder where the SA/2001 client is looking for SAMULTI.DAT are not the same. Make sure SA/2001 looks for SAMULTI.DAT where SA/License Manager is placing it, or vice versa.

This message may also appear when SA/License Manager is not updating SAMULTI.DAT. Make sure SA/License Manager is running.

"Can't read multi-user common file hdr"

This message results from a read failure or check-sum error on the SAMULTI.DAT file. It may be caused by network incompatibility or file corruption. Delete SAMULTI.DAT and restart SA/License Manager.

"Can't open the multi-user common file"

This message is displayed when the common path exists and SAMULTI.DAT is present, but the SA/2001 client could not open it. This is usually a network problem and should be reported to the Network Administrator.

"Can't read multi-user common file slot"

This error is displayed when a SA/2001 client cannot read a license slot from SAMULTI.DAT. Check that all the requirements to access a license are met, and try again.

"Maximum users already working"

SA/License Manager has already dispensed all licenses to other users. Wait for a license to become available.

"Multi-user slot timed out and was given away"

A SA/2001 client exceeded the allowable time of inactivity, so SA/License Manager took back that license and made it available to other users. SA/License Manager displays this message until another instance of SA/2001 is started.

"Sysnet not active"

This message is displayed when the common path exists and SAMULTI.DAT is present, but its internal time stamp is older than 30 minutes. This occurs when the Time Zone (TZ) settings on the SA/License Manager server and the SA/2001 client are not the same. When used, these settings are specified in a workstation's AUTOEXEC.BAT file. They are important to SA/2001 only in that they affect the program's ability to properly read SAMULTI.DAT.

For example, the error message appears if the SA/License Manager server has a "SET TZ=EST5" statement, but the SA/2001 client receiving the error does not. It can also be that the client has a SET TZ= statement with a different value. If both workstations are in the same time zone, and they have a SET TZ= statement, the values must be the same; or they should both *not* have the statement at all.

The following information is provided to help you or your Network Administrator troubleshoot this problem. The Time Zone is written as

```
SET TZ=xxxTTTTYY
```

where “xxx” is the time zone code, “ttt” is the time difference, in hours, between Greenwich and local time, and “yyy” is a placeholder telling DISPATCH.EXE that daylight savings time is in effect (U.S. only).

Time zones west of Greenwich are positive and time zones east can be negative. For example, to set the TZ value to Pacific Standard Time, you would insert the following line to AUTOEXEC.BAT.

```
SET TZ=PST8
```

To set Sydney, Australia time, enter either

```
SET TZ = AST-10, or SET TZ=AST14
```

If you are getting this error message, and you want to test whether it is being caused by the time zone settings, proceed as follows:

1. Note the current time.
2. From the System Architect SA/License Manager client machine, get to a DOS prompt and type
DIR>F:\SYSARCH\SACOMMON\TEST.TXT and press Enter
(substitute F:\SYSARCH\SACOMMON with your common path directory and drive).
3. Note the date and time stamp on the TEST.TXT file created in the step above.
4. Go to the MUK Server client and repeat step 2. The date and time of TEST.TXT should also be the current date and time.

If either of the date and times produced by the steps above is incorrect, then that is the likely cause of the problem. In addition to the time zone, the problem might also be caused by one of the workstations (the SA/License Manager server or an SA/2001 client) simply having an incorrect time. You can set computer's time using the Regional Settings in the Windows control panel.

"Multi-user Serial Number Problem"

This message displays when the registration code is incorrect, or was not entered during the installation of SA/2001. To fix this problem, start SA/2001. From the main program menu, click Tools, and select Session

Options (Sa2001.ini). In the INI file Editor, scroll down, select the Registration Code option, and enter the code in the field provided. *Note, a “0” in the Registration Code is the number zero.*

SA/License Manager Frequently Asked Questions

Does SA/License Manager need to run on all computers running SA/2001?

No. Only one computer needs to run SA/License Manager – and it should be able to have SA/License Manager running at all times that System Architect is being used. SA/License Manager distributes the licenses. SA/License Manager must run whether it is providing licenses by administering the SAMULTI.DAT file or providing licenses through the physical Multi-User Keyblock.

Does SA/License Manager work only with the Network version of SA/2001?

SA/License Manager is only required with the Network version of SA/2001. The single-user (Merge) version of SA/2001 does not share licenses and so does not need SA/License Manager in any way.

Can a Network Server be used as the SA/License Manager Server?

Only Windows NT Advanced Server 3.51 or greater may be used as a SA/License Manager server. For details, please see the section *Using the Network Server as the MUK Server* above.

What is the maximum number of users that a single SA/License Manager Server can accommodate?

The number of users that can log on to a server is limited only the number license you purchased.

What happens if the SA/License Manager Server fails?

If SA/License Manager is shut down while SA/2001 clients are running, there is a 10-minute grace period when nothing will happen. This gives the SA/License Manager Administrator time to restart SA/License Manager. After the first 10 minutes expire and SA/License Manager has not been restarted, SA/2001 users are notified that they are working within a 20-minute grace period. The grace period will be cancelled and work can continue as normal if SA/License Manager is restarted within this 20-minute

grace period. However, If the 20-minute grace period expires and SA/License Manager is still not running, SA/2001 clients can save their work but do nothing else.

The SA/License Manager window displays a "Timed out" message for a license slot. Does this waste the license?

This message appears when a SA/2001 client exceeded the allowable time of inactivity. It means that SA/License Manager has repossessed that license, and it is making it available to anyone who needs it—including the user who “timed out”. SA/License Manager dispenses all other available slots before it dispenses the “timed-out” slot. Once the slot is taken, the message will be cleared from the SA/License Manager window. You can clear this message by restarting SA/License Manager.

3

Performance Tuning System Architect 2001

Introduction

There are many different types of System Architect users requiring various types of software setup.

Some users may be using System Architect in a single-user environment requiring only access by one user at any one time in an encyclopedia. Other users may be working in a multi-user environment where teams of users may want to use the same encyclopedia to share and view information across a network.

A multi-user environment can be very sensitive to setup and tuning, which can have an immediate and dramatic effect on the system performance. A little attention this area can result in major productivity and usability benefits for the System Architect users. This chapter outlines the issues and considerations for performance tuning of System Architect in multi-user environments.

Topics in this chapter	Page
Single-User Environment	3-2
Multi-User Environment	3-2
Browser Refresh	3-4

Single-user Environment

If you are running in a single-user environment (one user using an encyclopedia at any one time) then you will find that the default settings should be sufficient for your use. You will NOT need to modify any network performance settings.

Multi-user Environment

If you are running in a multi-user environment then you may need to modify the network performance settings located in the SA2001.INI file for each user of System Architect in the multi-user environment.

The SA2001.INI file is accessed by selecting **Tools, Session Options (SA2001.ini)** in System Architect or by opening the file using any text editor – it is located in the user's Windows directory. You can copy the SA2001.INI file to each user once you have completed the following steps if all of the settings are the same for each user.

'Encyclopedia Busy' messages

In general “Encyclopedia Busy” messages are caused by a mismatch between the response time of the network and the number of users. This network includes the server (for example, you'll get better response time with a well-tuned Windows NT server versus a slow 486 file server) and transmission speed (for example, you'll get different response time from 100 MBPS CAT5 versus 10 MBPS Ethernet versus T1).

The busy messages can be reduced or eliminated by increasing the performance of the server, increasing the transmission speed of the network, reducing the number of users sharing a single encyclopedia, and by modifying the **NetworkRetryTime** setting in System Architect's **SA2001.INI** file.

Modifying the NetworkRetryTime Setting

When working in a multi-user environment, System Architect manages the locking of the encyclopedia when users perform a read/write action on the database, or System Architect is performing input/output (I/O). Such actions are caused by adding definitions, saving diagrams, updating foreign keys in Entity Relation diagrams, running reports, refreshing the browser, etc.

If the encyclopedia is busy when another user attempts to perform an encyclopedia action, System Architect will retry the action on the encyclopedia for a given amount of time. The default time is 3000 milliseconds (3 seconds). System Architect will retry continually during this time period until it is able to start the action or the retry time is exhausted.

If you get frequent '**Encyclopedia Busy**' messages then you can increase the amount of time that System Architect will attempt to perform an action on the encyclopedia. In the SA2001.INI file, increase **NetworkRetryTime= nnnn** where nnnn is the number of milliseconds that System Architect will continuously try to perform an action on the encyclopedia. The time period can be set between 50 and 30,000 milliseconds. As mentioned above, the default is 3000 milliseconds.

Note: the NetworkRetryTime setting supercedes the NetworkRetry setting available in previous versions of System Architect. The NetworkRetryLock setting is for use by Popkin technical support and should not be modified by the user.

The **NetworkRetryTime** setting only applies to the workstation it is set on. The response may be different from user to user within a team, if users are operating through different networks at different network transmission speeds.

'In Use By' Messages

When working in a multi-user environment, System Architect manages who is using a Diagram or a Definition at any particular time, based on requests and access rights. Once an object is locked by a user, that object is not available to any other user until released. Another user

attempting to open the object will receive an "In Use By" message, and a read-only copy of the object.

Browser Factors

Automatic Browser Refresh and Speed Issues

Automatic refresh of the browser is something that you can turn on or off. In a network environment especially, it affects product speed.

When it is on, the information in the browser is automatically updated as you add, modify, or delete a symbol, definition, or diagram in an encyclopedia. By default, browser refresh is **On** in a single-user environment, and **Off** in a network environment.

There are two levels of browser refresh:

- **Auto Refresh**, which refreshes the browser only if the item changed happens to be in the current browser view, and
- **Browser Full Refresh**, which refreshes everything in the browser even if the changed item isn't currently displayed.

Turning the Settings On/Off

To turn the settings on or off, select **Tools, Session Options (SA2001.ini)** to open the SA/2001 ini Editor, and find the two selections: **Browser Auto Refresh** and **Browser Full Refresh**. Make your selections by typing in a value of **Y** (on) or **N** (off).

Working With Browser Closed

If you want browser refresh on, but are worried about speed in a network environment, you may simply close the browser (click on the 'x' in the browser's top right corner) as you work. You can open it at any time by clicking on the Browser button on the toolbar or selecting **File, Browser**.

4

System Architect 2001 Quick Start Tutorial

Introduction

This chapter provides a quick start tutorial to System Architect 2001. You will tour the product, getting a feel how to get up and running. You may want to take the tutorial in stages; taking the full quick start should take about 3 hours. More expansive tutorials on business, object/component, and data modeling are in the on-line help and Tutorial manual (included in pdf format in the Manuals subdirectory of the software, and also available in hard-copy form).

Topics in this chapter	Page
Creating/Opening a Project	4-2
Drawing and Setting Drawing Preferences	4-7
Business Modeling	4-19
Object and Component Modeling	4-28
Data Modeling	4-33
Modifying Properties with USRPROPS.TXT	4-43
Running Reports	4-49
Running VBA Macros	4-56

Creating/Opening a Project

What is an Encyclopedia

Work that you do in System Architect is stored in a project encyclopedia. You may create an encyclopedia for every project, or have multiple projects in one encyclopedia. An encyclopedia is a relational database in a single sub-directory on your computer. All of the diagrams and all of the definitions, both those associated with diagrams and those that aren't, are in the encyclopedia.

System Architect provides a sample encyclopedia, called **Samples**, that contains diagrams and definitions representative of many of the methods that are supported. All diagrams are built to model a Hotel Reservation System. We will tour this encyclopedia during this quick start tutorial.

If the **Samples** encyclopedia is not open, perform the following steps to open it:

1. Select **Open Encyclopedia** from the **File** menu (or click on the **Open Encyclopedia** icon on the toolbar).
2. Select the **Existing** tab in the **Encyclopedia Open** dialog, and use the **Browse** button to select the path where the project encyclopedia is located (**x:\Program Files\Popkin Software\System Architect 2001\Encyclopedias\Samples**).

You may also use the **Existing** tab to open an existing encyclopedia.

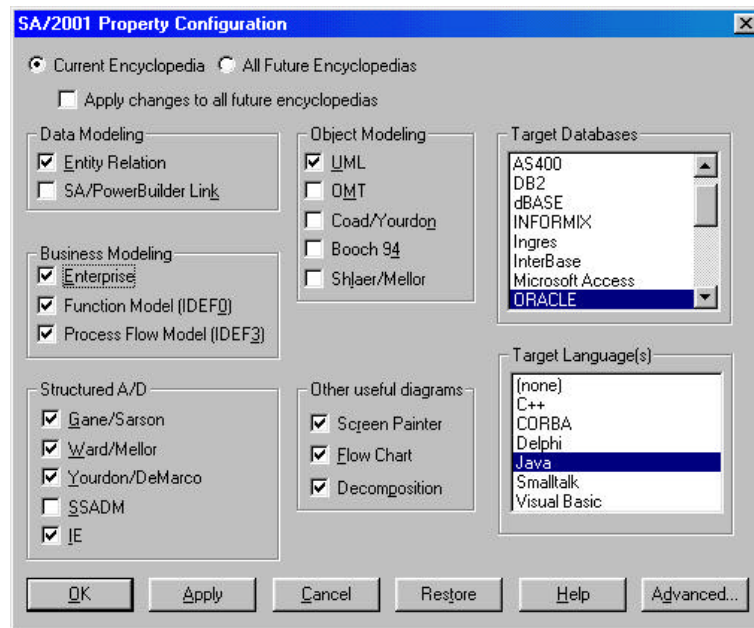
Note: You can make sure that you have selected a valid project encyclopedia by monitoring the status message on the upper right-hand corner of the tab. If the directory contains a valid network- or single-user-version encyclopedia, the message "Valid Network Project" or "Valid Non-Network Project" is displayed, respectively. If there is not a valid encyclopedia in the chosen path, the message "No Project Found" is displayed.

Customizing Method Support and Properties

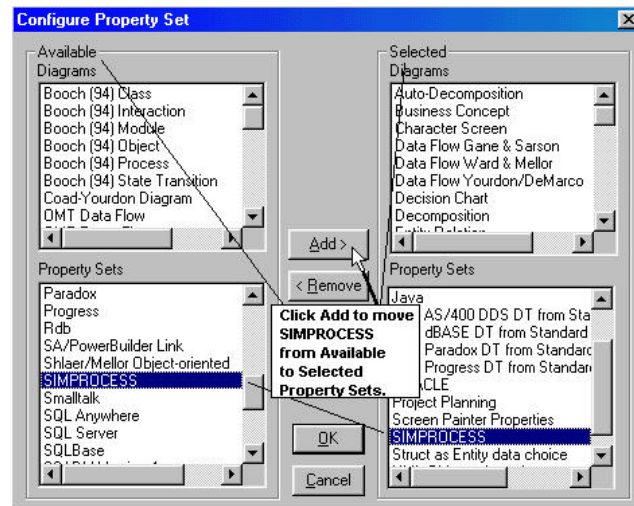
Open the SA/2001 Property Configuration dialog at any time during a project to select the diagrams and definition properties that will be available. You generally do this at the start of a project (when creating the encyclopedia), and then at various times later, when you wish to change the diagram set that you are looking at.

Information modeled in a System Architect encyclopedia is always there – this dialog simply enables you to see/not see views of it.

1. From the **Tools** menu, select **Customize Method Support, Encyclopedia Configuration**. The **SA/2001 Property Configuration** dialog appears.
2. Toggle on the diagram types and methodology types shown below:



3. Click on the **Advanced** button in the lower right-hand corner.

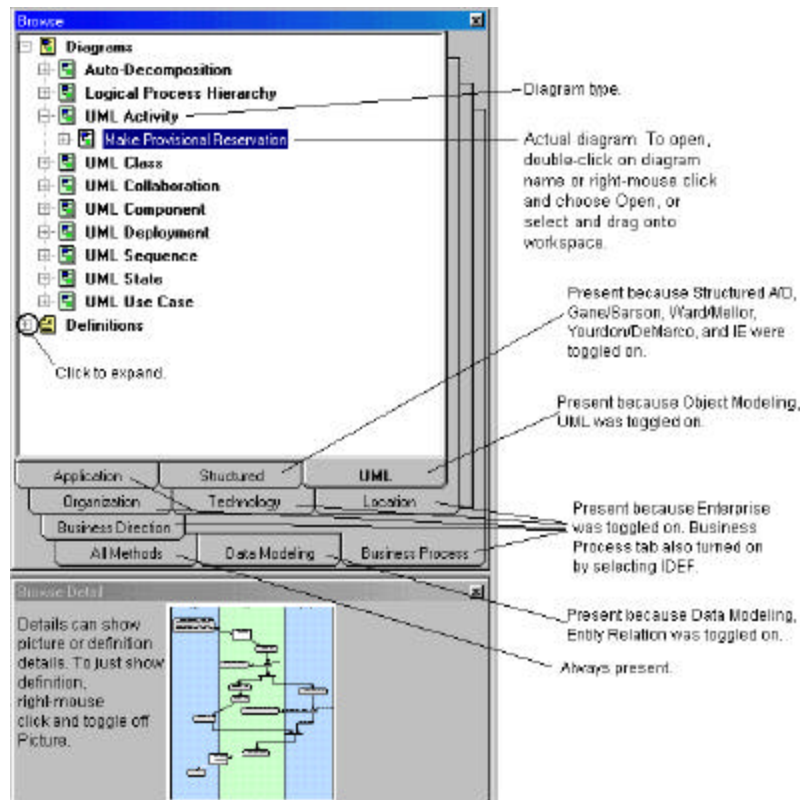


4. Select **SIMPROCESS** in the **Available, Property Sets** box and click on the **Add** button to add it to the **Selected, Property Sets** dialog. This will add **Simulation** properties to the dialogs in the business modeling diagrams and definitions. We will later be able to run simulation using System Architect's link to **CACI's SimProcess** product (this is not covered in this tutorial, it is only touched on – a tutorial on simulation is provided in the Business Modeling Tutorial in the on-line help and Tutorial manual).
5. Click **OK** to each of the open dialogs to close them. You will receive a message about reopening the encyclopedia for the changes to take effect. Click **OK**.
6. Reopen the encyclopedia for the changes to take effect – select **File, Open Encyclopedia**, and select **Samples** from the **Existing** tab. Click **OK**.

Using the Browser

The browser will present tabs that reflect the diagram types that are currently available for use based on the settings you have selected in the **SA/2001 Property Configuration** dialog.

Based on the settings made in the previous section, you will see the following tabs:



Automatic Browser Refresh and Speed Issues –

Automatic refresh of the browser is something that you can turn on or off. In a network environment especially, it affects product speed.

When it is on, the information in the browser is automatically updated as you add, modify, or delete a symbol, definition, or diagram in an encyclopedia. By default, browser refresh is **On** in a single-user environment, and **Off** in a network environment. There are two levels of browser refresh: **Auto Refresh**, which refreshes the browser only if the item changed happens to be in the current browser view, and **Browser Full Refresh**, which refreshes everything in the browser even if the changed item isn't currently displayed.

To turn the settings on or off, select **Tools, Session Options (SA2001.ini)** to open the SA/2001 ini Editor, and find the two selections: **Browser Auto Refresh** and **Browser Full Refresh**. Give the selections value of **Y** (on) or **N** (off).

If you want browser refresh on, but are worried about speed in a network environment, you may simply close the browser (click on the 'x' in the browser's top right corner) as you work. You can open it at any time by clicking on the Browser button on the toolbar or selecting **File, Browser**.

Drawing and Setting Drawing Preferences

Take a quick run through this chapter to get a feel for the various ways to draw in System Architect, and on the many options available for setting drawing behavior.

Creating a New Diagram

To begin, let's create a new diagram. We'll create a UML Class diagram as a representative example of a common diagram type that can be created with System Architect.

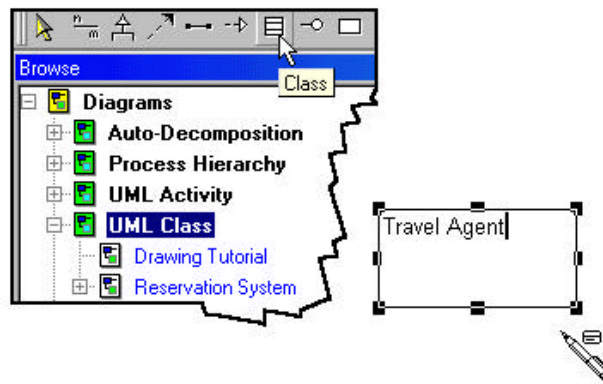
There are a number of ways to create a new diagram (all are discussed in the on-line help); for this quick start, we'll use just one of the ways:

1. Select the **UML** tab, and click on the plus mark next to Diagrams to expand it. You see a listing of all UML diagram types (UML Activity, UML Class, etc).
2. Click on the plus mark next to **UML Class**, to expand it and see the actual diagrams contained within this **Samples** encyclopedia of that type – there is one, named **Reservation System**. (If we wanted to open this diagram, we would do so by double clicking on it, or right mouse clicking on it and choosing **Open**).
3. Create a new diagram by highlighting the **UML Class** selection in the browser, right-mouse clicking on it, and choosing **New** from the drop-down list.

The name of a diagram can be up to 80 characters long.

4. Name the new diagram **Drawing Tutorial** and click **OK**.
5. In the toolbar for the new diagram, select the class drawing symbol (it is shown as a box with two lines through it – you may place your cursor over the toolbar and get a pop-up name of **Class**).
6. You get a drawing pen on the diagram workspace. Left mouse click on the drawing workspace to drop down a new class

symbol. The name of the symbol is highlighted so that you may type in a new name (or leave it at its default of Class-1). Type in the name **Travel Agent** and hit the **Enter** key on your keyboard or left-mouse click onto the workspace. You have just added a class to the diagram and to the encyclopedia. Since you are in draw mode, you may continue dropping classes down in this fashion; we won't – instead we'll add information to the definition of this class.



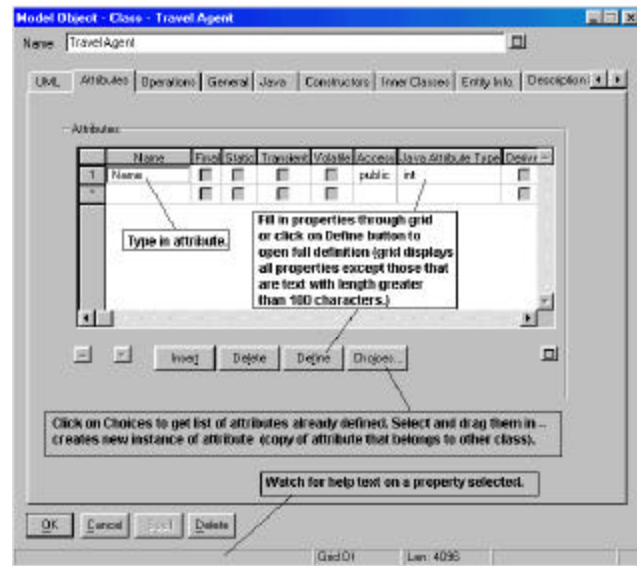
7. Select the Cursor on the toolbar.
8. Open the class's definition by double clicking on the symbol, or right-mouse clicking on it and selecting **Edit**, or selecting it and choosing **Edit, Class** from the menu.

The tabbed dialog that comes up represents the definition of the class – the properties that it can have (i.e., stereotype, class generation file, attributes, methods, etc) and the values of these properties. You see properties that are generic for all classes, and also those properties that are specific to the modeling language you have chosen (Java) in the **SA/2001 Property Configuration** dialog. You may add your own properties to the property set using System Architect's metamodel extensibility mechanism – USRPROPS.TXT – a sample of this is provided later in this quick start tutorial.

9. Choose the **Attribute** tab. In the empty grid, type in the name of an attribute – **Name**, and hit the **Enter** key. The attribute is added to the grid and the class's definition.

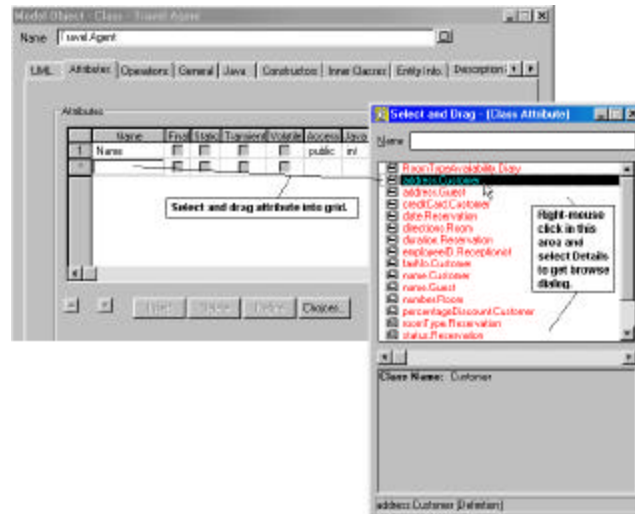
You may fill in other properties of this attribute through the grid, or select the attribute and click on the **Define** button to open the full attribute definition.

Note: the grid displays all properties of the attribute except those that are textual in nature that are over 100 characters long. To modify properties of this type, you must use the full definition dialog of the attribute.



Let's now add another attribute to this class – one that already has been defined within the context of another class in this encyclopedia.

10. Click on the **Choices** button under the attribute grid. You get a list of attributes that are currently in the current encyclopedia, and the class that they are located in (in the format: attribute_name.class-name).
11. Place your cursor in the **Choices** list, right-mouse click, and select **Details** from the drop down list to view the details of each of the attributes, in a panel below, as you select them.



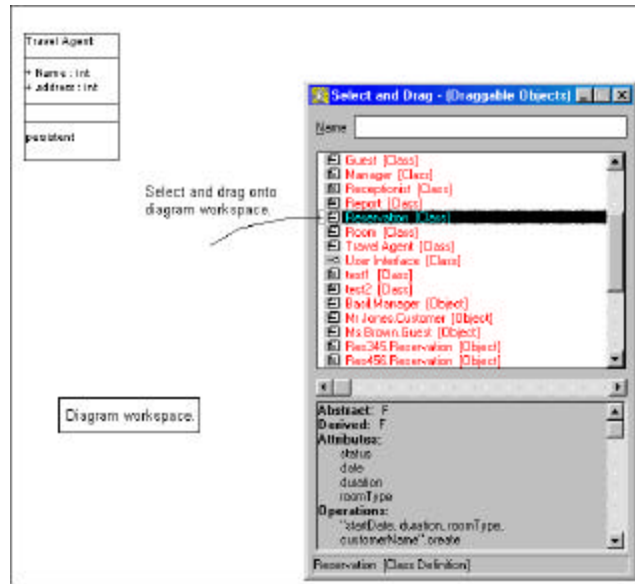
12. Select and drag the **Address.Customer** attribute into the grid. You are making a copy of the Address attribute. After dragging it, the copy will belong to the new Travel Agent class, and be independent of any changes made to the original Address attribute of the Customer class.
13. Click **OK** to close the class definition.

Reusing a Class from the Browser

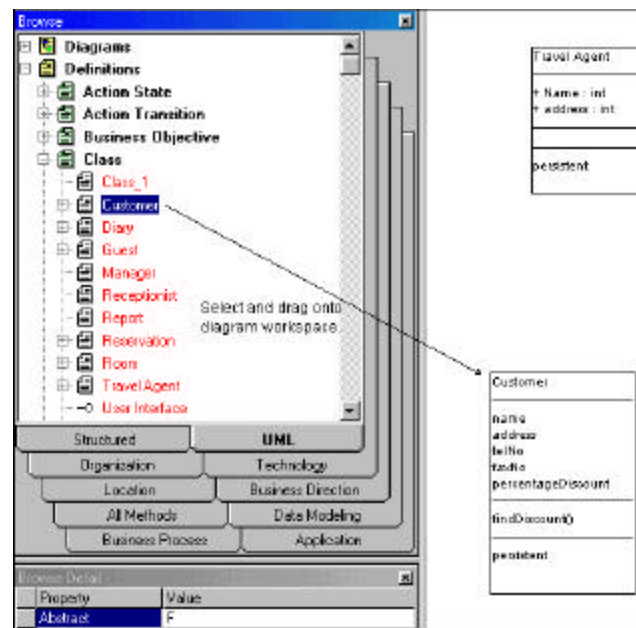
Let's now draw a class that already exists in our **Samples** encyclopedia on the diagram. We'll use two methods to do this.

First, we'll use the in-place browser to select from classes that already exist in this encyclopedia.

1. Right-mouse click on the diagram workspace and select **Choices** from the drop-down list. You get a list of all items that can be drawn in a UML Class diagram – packages, classes, objects, and description notes. Again, you can right-mouse click in the **Choices** dialog, and select **Details** to get a summary of the properties of the selected object in the **Choices** dialog.
2. Select the Reservation class (make sure you don't select the Reservations note) and drag it onto the diagram workspace.



Now let's use the main **Browser** to select and drag a class. In the **UML** tab, click on the plus mark next to the **Definitions** selection to expand it, then expand the **Class** selection to reveal a listing of the classes in the encyclopedia. Select and drag the **Customer** class onto the diagram workspace.

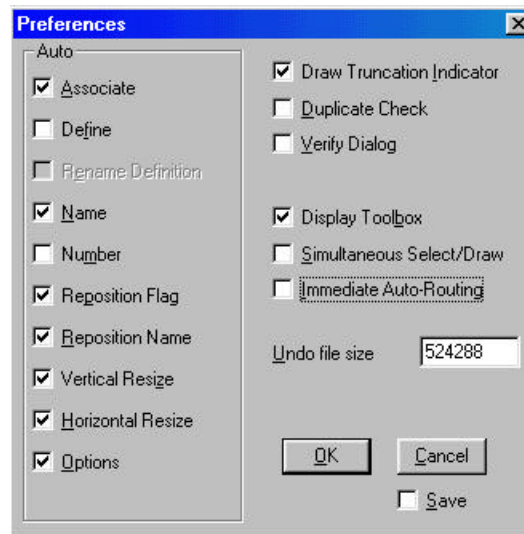


Drawing Lines

When modeling in System Architect, you have many drawing and dialog-opening options at your disposal.

Tools, Preferences

1. For this quick-start tutorial, we should make sure our preferences are in synch. Select **Tools, Preferences**, and make sure that your choices match the dialog below. Click **OK** to close the dialog. You can go straight to the **Drawing Lines** section of this tutorial at this point, or follow the next few steps to get a feel for some other options.



Immediate Auto-Routing – is an advanced feature that makes System Architect automatically route lines as you draw, choosing the best and shortest path between symbols, and making sure that none are drawn over other symbols on the diagram. You may still use the feature manually after turning it off – simply select a line or group of lines that you wish to route, and click on the lightning bolt button on the **Diagram** toolbar.

Horizontal and Vertical Resize – these selections will increase the size of a symbol to fit its name and its displayable information, overriding any selections you have made to the stylesheet to specify the exact size of a symbol when drawn. (You set the stylesheet to specify the exact size that symbols will be drawn on diagrams by selecting a symbol, sizing it using its handlebars, and then choosing **Format, Symbol Style, Symbol Style**, and toggling on **Set Size**).

Draw Truncation Indicator – if you've turned off horizontal and vertical resize, or if you manually adjust the size of symbols on your diagrams, you may have symbols that are not big enough to show all of their properties. Having this choice turned on will drop a couple of bullets below every symbol on your diagram so that you know there are more details than meet the eye.

Duplicate Check – with this choice toggled on, you are disallowed from drawing the same thing twice on any of the diagrams within in your encyclopedia (for example, you wouldn't be able to draw the Reservation class above, because it already existed on another diagram). With this choice toggled **on**, you may draw the same symbol as many times as you like, even on the same diagram.

Simultaneous Select Draw – this choice enables you to draw (drop down) symbols AND select other symbols without having to change to the cursor tool. Some users love this option, some just don't get it. The stipulation is that to draw a symbol, you must left-mouse click and hold the click for two seconds for the symbol to be drawn. Otherwise, you may select symbols on the diagram even though the drawing pen is your cursor.

Format, Symbol Style

More choices for line and symbol drawing are available in the **Format, Symbol Style** menu. Normally, you must have a line(s) or symbol(s) selected to make choices in the **Format, Symbol Style** menu, but you may select the line style before you draw any line.

2. Select **Format, Symbol Style, Line Style**. The Line Style dialog presents you with three choices on how a line will be drawn. The default is **Straight, Orthogonal**. This will make the line orthogonal, and automatically put bend points in the line as you draw it. As you can see from the dialog, you may also choose to draw only straight lines, or curved lines.
3. Click **Cancel**. For this tutorial we will stay with the **Straight, Orthogonal** line style. We just wanted you to see what your options were.

Format, Diagram Style

You also have a number of drawing options that you can specify on a diagram-by-diagram basis.

4. Select **Format, Diagram Style, Grid and Reduced View**. You open a dialog that enables you to set the grid that lines and symbols are drawn to. If you want extreme flexibility with your drawing, toggle off both the horizontal and the vertical grid, and click **OK**.
5. Next, select **Format, Diagram Style, Display Options**. Toggle on all choices in the dialog and click **OK**. Your diagram workspace will look a little different. Some users choose a variety of these features in which to work, such as showing rulers, or adding shadows to their symbols for presentation purposes.

Note: the one methodology where you should be careful about adding shadows to symbols is in IDEF, where a shadowed symbol means that there is another, child diagram attached to it.

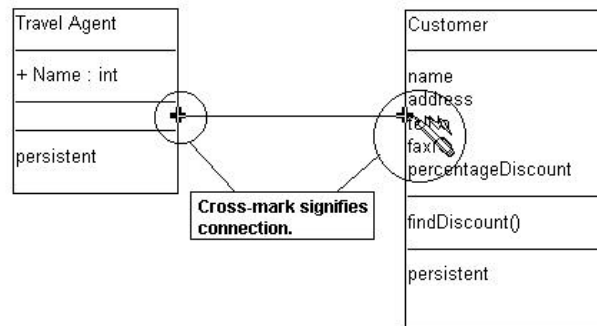
6. For the purposes of this tutorial, we will turn all of the fancy diagram display options off – so if you want to play along with everyone else, select **Format, Diagram Style, Display Options**, and toggle everything off. Click **OK**.

More diagram-specific drawing options are available by selecting **Format, Diagram Style, Notation**. In this dialog, you may choose to have System Architect do such odd things as *not* draw display terminators (cardinality notations at the line endpoints), or to draw the infamous "little squiggly" line from an association to its name, whenever the association's name strays from the line by a certain amount (see **Line to Remote Name** choices).

Drawing Lines

Now let's begin to draw.

1. Select the Association line tool from the class diagram toolbar. Your cursor changes to a pen with a lightning bolt next to it (had you selected the "straight lines" choice above, there would be a straight line next to the pen, or a curved line if you had selected "elliptical arcs").



2. Left-mouse click on the Travel Agent class. Notice the cross mark that tells you the line is connected to the symbol. Next, left-mouse click on the Reservation class. An Association line is drawn between the two classes, and if your view is close enough to read the text, the in-place editor highlights a default name for the association and waits for you to add the name you'd really like.
3. Type in the name "makes", and click the **Enter** key or the left mouse button. The **Association** dialog will open.

Because you had **Associative** toggled on in the **Tools, Preferences** menu, the **Associative** dialog was launched on the screen as soon as you drew the association. This provides you with a gentle reminder to specify

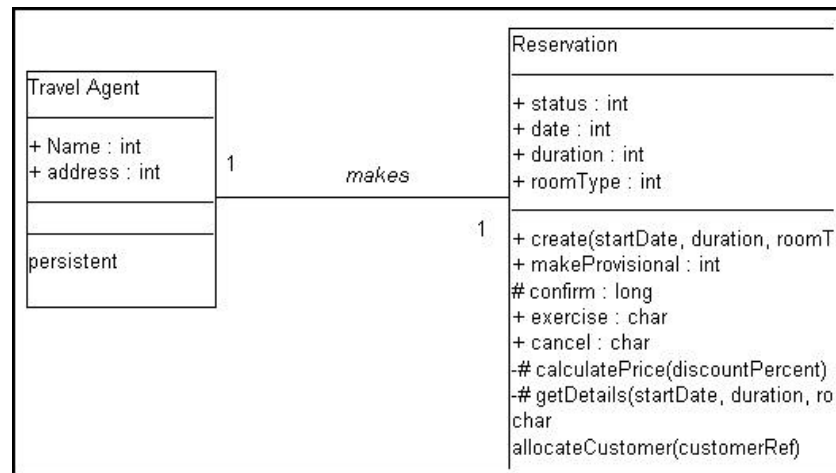
What is an Association Dialog?

the cardinality of the line before proceeding. You don't have to – you can come back and specify values later. You also don't have to have the dialog launched on the screen every time you draw an association, if you return to **Tools, Preferences** and turn **Associative** off. For this tutorial, we'll leave it on.

Many relationship lines in System Architect have both an underlying definition (which includes definition and symbol properties – we'll talk about these later), and Associative properties. Therefore, there are two dialogs that you can open to describe the association – one is the definition dialog, which is opened by right-mouse clicking on the line and choosing **Edit**, and the **Association** dialog, which is opened by right-mouse clicking on the line and choosing **Associative**. For a class association, most of the important information about the line is housed in the Association dialog.

For data modeling, this is not true – all of the information about the line is stored in the definition. This will be shown in data modeling section of this tutorial, in upcoming section.

4. Select Exactly One as the cardinality on both ends of the association, and click OK to close the dialog. The line is drawn on the diagram, with the symbol "1" drawn by each class.



There are many other drawing options available with System Architect. We have just covered a few basic concepts here. Also, drawing in Entity

Relation data models provides stricter methodology constraints that are covered in the data modeling section later in this quick start tutorial.

5. Select **File, Save Diagram** to save the diagram.
6. You may close the diagram by selecting **File, Close Diagram**.

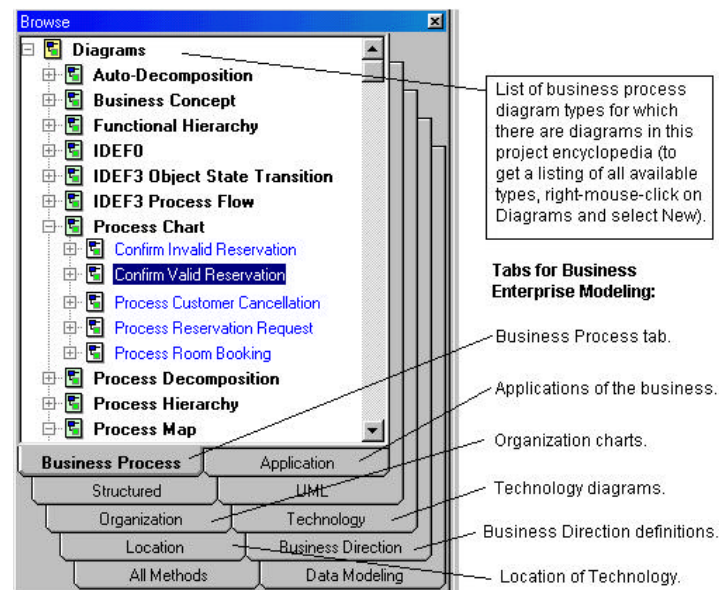
Business Modeling

System Architect 2001's Business Enterprise Modeling enables you to model your enterprise from top to bottom, including all of its subdivisions and departments and how they work together. You can analyze your business processes, decide how to improve them, and model future business processes, which will help you, achieve your goals. What's more, having extensive business models in the same repository as your application and data models enables you to more easily align, and even drive, your IT from business requirements, rules, and processes.

In this quick start tutorial, we'll take a real quick tour of some of the business modeling available to you.

Business Enterprise Modeling

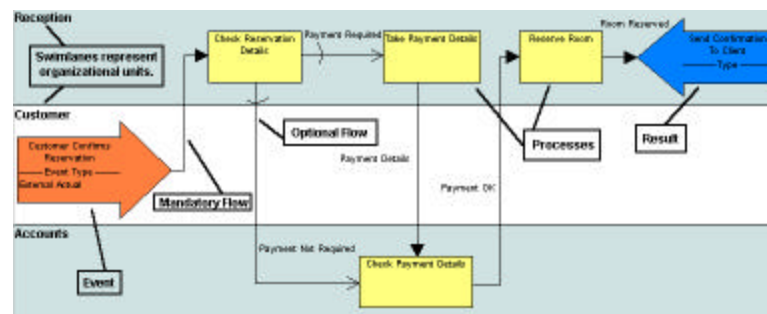
In the beginning of this exercise, you made sure that **Enterprise** was selected in the **SA/2001 Property Configuration** dialog for the **Samples** encyclopedia (**Tools, Customize Method Support, Encyclopedia Configuration**). What that provides you is a suite of diagrams and definitions to model your enterprise, provided within six tabs within the browser: **Business Direction**, **Business Process**, **Organization**, **Technology**, **Application**, and **Location**.



To begin, we'll take a look at a frequently used diagram within the Business Process tab: the Process Chart.

1. Select the **Business Process** tab, and click on the plus sign next to the **Diagrams** item to expand it and get a view of the different types of business process diagrams that have been created in this **Samples** encyclopedia. (This is not necessarily all of the business process diagram types available – to see all of the available types, you could right-mouse-click on the **Diagrams** item and select **New**.)
2. Expand the **Process Chart** diagram type.
3. Open the diagram **Confirm Valid Registration** (double-click on it or select and drag it onto the diagram workspace or right-mouse click on it and select open).

Let's walk the diagram. The Process Chart diagram is an event-driven diagram – you model *events* in the business, and the *processes* that take place after those events take place. You may optionally model the units of the business *where* the events and processes take place, with swim lanes.



In this diagram, the arrow-pointing-right symbol represents an event, **Customer Confirms Reservation**. There is a mandatory flow (bold line) from this event to the process **Check Reservation Details**. There are two optional flow lines leaving the process **Check Reservation Details** – thin lines with an arc on the line. These lines denote a flow out of the process **Check Reservation Details** dependent on a condition. If a payment is required, the processes **Take Payment Details**, **Check Payment Details**, and **Reserve Room** are performed, after which there is a mandatory flow to the result action (arrow-pointing-left symbol) **Send Confirmation to Client**.

As you model, you should be matching every result action with a corresponding event symbol (arrow-pointing-left symbol) on another Process Chart diagram.

In addition, the events and processes in this diagram are plotted against the part of the organization where the event happens or the process takes place – these divisions, shown in the diagram as Reception, Customer, and Accounts – are known as "swim lanes," and represent units in the organization – or *Organizational Units*.

4. Right-mouse click on an empty area of the diagram's workspace below the Accounts swimlane, and choose Diagram Properties. Notice that there is one (and only one) process thread associated with this Process Chart diagram, **Confirm Valid Reservation**.

Process Threads vs Process Charts vs Processes

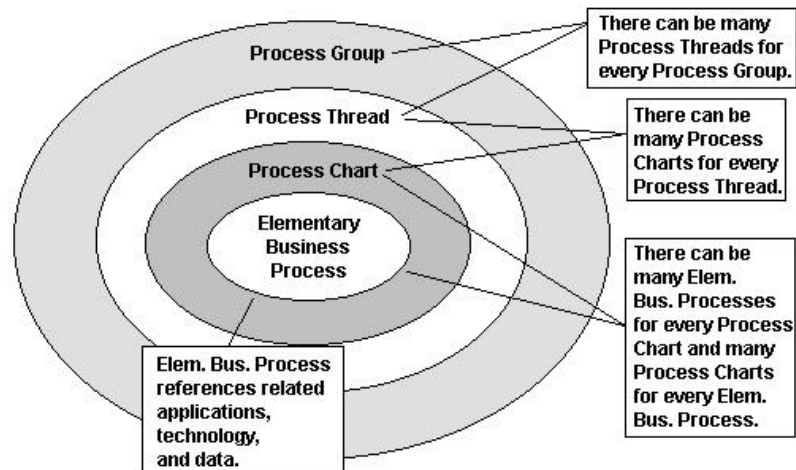
As you build Process Chart diagrams, you are modeling process threads in the organization. A process thread is a set of activities the enterprise performs in response to a single event, usually producing a result. You may classify process threads as **major** (if it represents most of the work the enterprise does, or most of the value added to the company's products, or most of the potential for organizational improvement) or **minor**. Although there should only be a few major process threads in an organization (most are minor), they merit much higher priority than the minor threads.

More than one Process Chart diagram may represent a thread; conversely, every Process Chart diagram represents one, and only one, process thread in the organization.

Further, each Process Chart diagram contains Elementary Business Processes, which are defined in part by references to the applications and technology used to perform the process, and the data that is manipulated. There is a many-to-many relationship between Process Chart diagrams and Elementary Business Processes.

Information in the Process Thread definition reflects the information on the Process Chart diagrams that pertain to it, and the information in the Elementary Business Processes that are on the respective Process Chart diagrams. System Architect provides a utility to update the Process Thread definitions on a

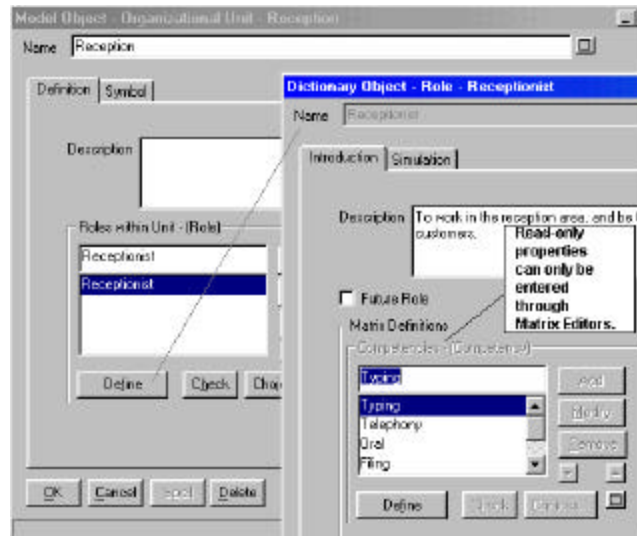
periodic basis as you model. This utility is engaged by selecting **Tools, Business Enterprise Utilities, Update Process Threads**.



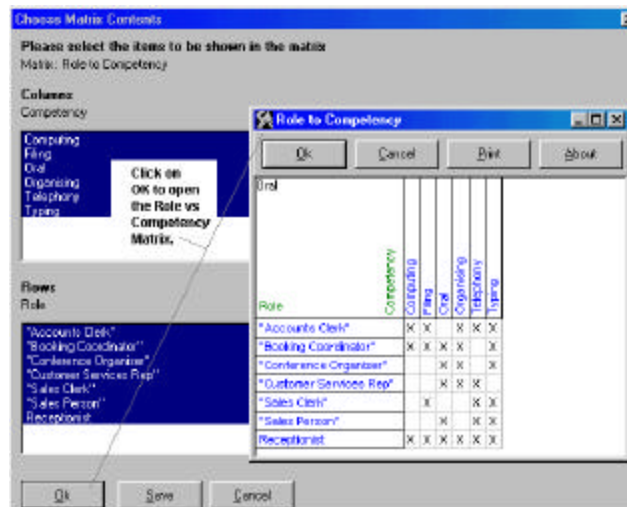
5. Open the definition of the event **Customer Confirms Reservation** (double-click on the symbol, or right-mouse-click and select **Edit**). This is an event – therefore you model such information as how often the event occurs (turn to page 2 of the **Event Detail** tab, and view the **Frequency** and **Time** of the event properties), probability of the event happening (in the **Simulation** tab, view the **Interval** property), and what process thread is associated with the event (back to page 1 of the **Event Detail** tab).
6. Open the definition of the process **Check Reservation Details**. Notice at the top of the dialog, this is an **Elementary Business Process** – the core type of business process that you model.
7. Click on the **Related Definitions** tab and notice that there are properties for the referenced **Applications, Location, Technology**, and **Associated Data** that this business process uses. Notice also that these dialogs are read-only. You may only enter this information on a higher level – through System Architect's matrix editors (accessed, for example,

through **Tools, Process Modeling Matrices, Process, Business Enterprise, Elem Bus Process to Application, etc**). Click **OK** to close the dialog.

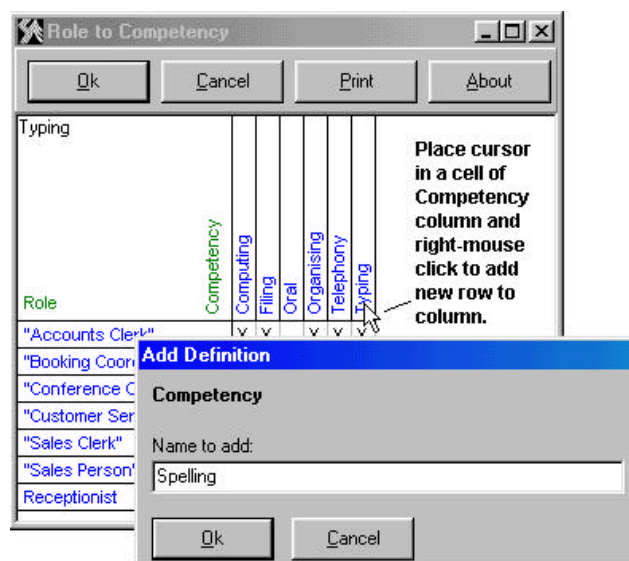
8. Open the definition of the **Payment Required** line between the processes **Check Reservation Details** and **Reserve Room**. Notice that the **Simulation Branch Information** tab includes a property **Probability**, which contains a value of **.8**. There is an 80 percent probability that a payment will be required – the other line output from **Check Reservation Details** this information will be used if this Process Chart diagram is simulated (see Business Modeling Tutorial in on-line help or Tutorial manual to see how simulation is performed).
9. Now click on the swim lane **Reception** and open it's definition (double click on it or right-mouse click and select Edit). The swim lane is more than just a partition – it represents an organizational unit in the model and has a definition that reflects the properties of the organizational unit. The organizational unit contains a property called **Role** – in this organization the Reception organizational unit performs the role of Receptionist – fairly obvious in this case but for other org units it may not be.
10. Click on the **Define** button with **Receptionist** highlighted to view the definition of the Receptionist role in this organization – you can see some of the competencies that human resources looks for in a receptionist. Notice that you may not enter in a new role – this property can only be added on a higher level – through System Architect's matrix editors, which we'll look at in a minute.



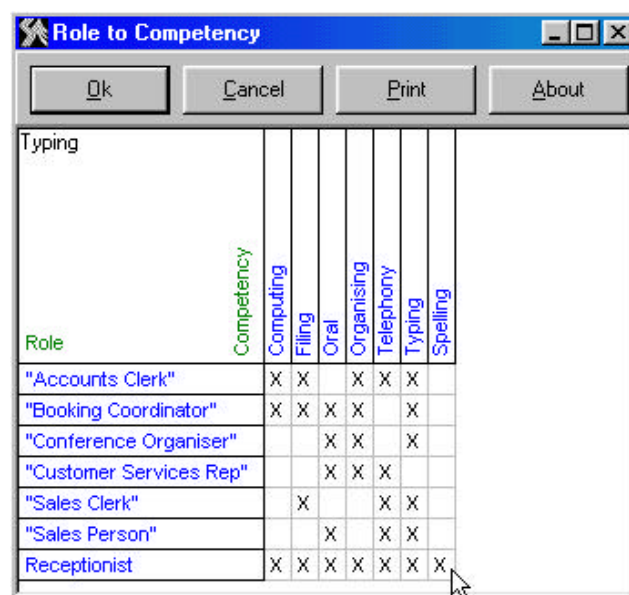
11. Click on **OK** to close all the dialogs.
12. Select **Tools, Process Modeling Matrices, Organization, Role to Competency**. The **Choose Matrix Contents for Role Versus Competency** opens, with all items selected.



13. Click **OK** to open the **Role to Competency Matrix**.
14. Place your cursor in the last row of the **Competency** column (across the top) and right-mouse click to add a new row to the column. Type in **Spelling** in the **Add Definition** dialog, and click **OK**.



- Click on the cell intersecting **Receptionist** and **Spelling** to add an **X** in the cell. Click **OK** to close all dialogs.



16. Reopen the definition of swim lane **Reception** (double click on it or right-mouse click and select **Edit**).
17. Click on the **Define** button with **Receptionist** highlighted to again view the definition of the Receptionist role – notice that **Spelling** has been added to the competencies that Receptionist must have.
18. Click on the **Organization** tab in the browser.
19. Expand the **Diagrams** and **Organization Chart** items to reveal **the International Hotel Chain PLC** diagram. Open it (double click on it, or select and drag it onto the workspace, or right-mouse click and select **Open**.)
20. Notice that the same organizational units represented as swimlanes in the Process Chart diagram are represented here in a different view – a traditional organizational hierarchy chart.



More on Business Modeling

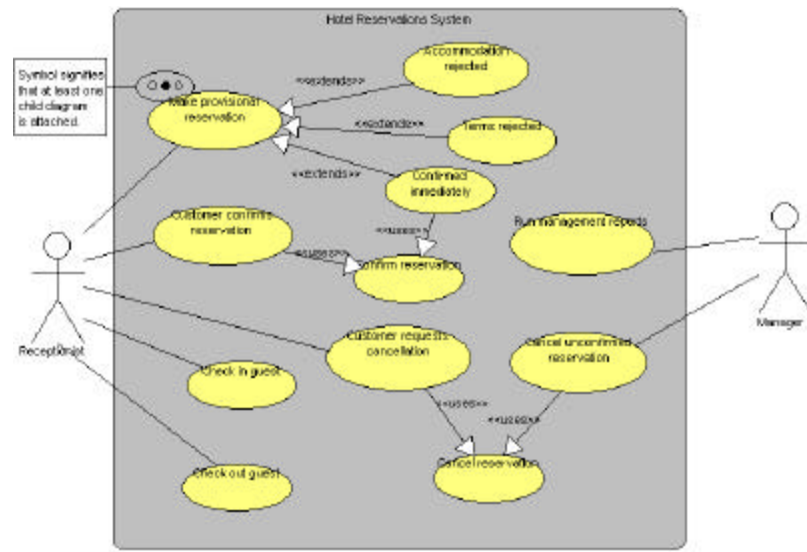
A more in-depth tutorial on business modeling with System Architect is available in the on-line help and the Tutorial manual, supplied in pdf format in the **Manuals** directory of System Architect and also available in hard-copy.

Object and Component Modeling

In this section we will briefly touch on some of the object and component modeling capabilities of System Architect. A more in-depth object modeling tutorial is provided in the Tutorial manual and the on-line help.

UML Use Case Diagram

To begin, let's browse a UML Use Case diagram. The UML Use Case diagram is a diagram in which you capture all of the scenarios in your business or system. Each Use Case, pictured as an oval, represents a scenario. External actors that add or gain information from the system are pictured as stick figures.



1. Select the **UML** tab in the browser, expand the **Diagrams** selection, and expand the **UML Use Case** diagram selection.
2. Open the UML Use Case diagram **Hotel Reservations - Overview** by double clicking on it or right-mouse clicking on it and selecting open.

3. Open the definition of the Use Case **Make Provisional Reservation** by double clicking on it or right-mouse clicking on it and selecting **Edit**.

The Use Case scenario can be described as a sequence of steps (first tab), or in textual form (**Description** tab). It can also be described in terms of pre- and post-conditions – things that must exist before the scenario takes place, and things that must exist after the scenario completes, respectfully.

New Feature: System Architect 2001 supports names of definitions of up to 80-characters long. Therefore, you can type in Use Case steps with names of up to 80 characters long.

It is significant to note at this point that every dialog that you see in System Architect may be modified using its customizable metamodel functionality. This is done using System Architect's metamodel scripting language contained within its SAPROPS.CFG and USRPROPS.TXT files, which we'll go into later in this tutorial.

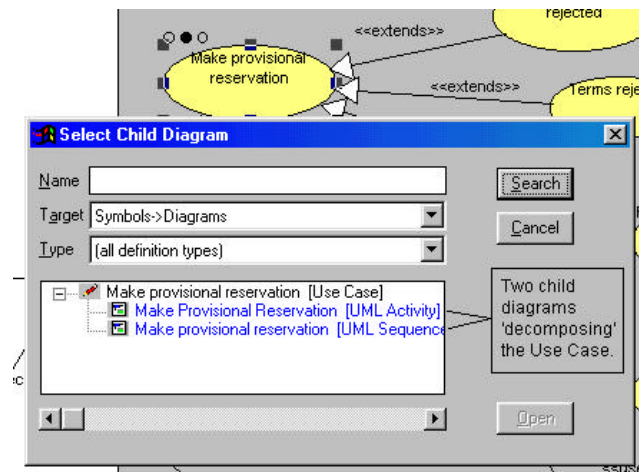
Multiple Child Diagrams

Notice on the Use Case diagram, to the upper-left-hand corner of the Use Case **Make Provisional Reservation**, there is a three-bullet symbol (middle bullet filled in). This is an indicator that signifies there is at least one child diagram attached to this symbol.

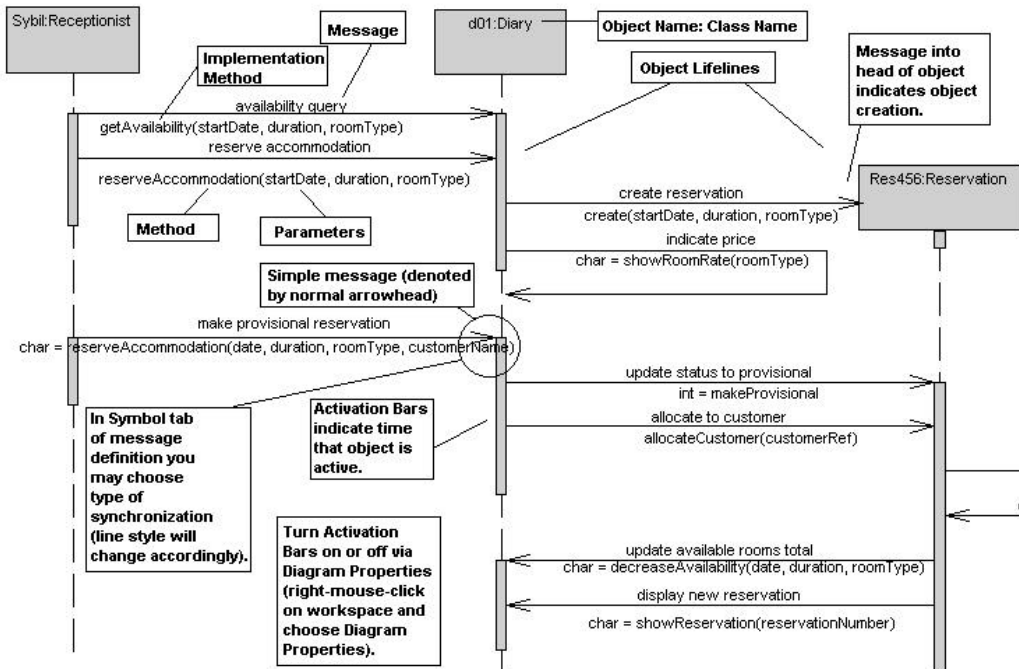
A child diagram "decomposes" the symbol it is attached to – in other words, it provides more in-depth information on the symbol in graphical form. In System Architect, you may attach multiple diagrams of any type as child diagrams to any type of symbol.

Let's examine the child diagrams of this Use Case.

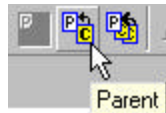
1. Right-mouse click on the Use Case **Make Provisional Reservation**, and select **Child Open** from the drop-down list (or select the Use Case and click on the **Child** button on the diagram toolbar). You are presented with a **Select Child Diagram** dialog.



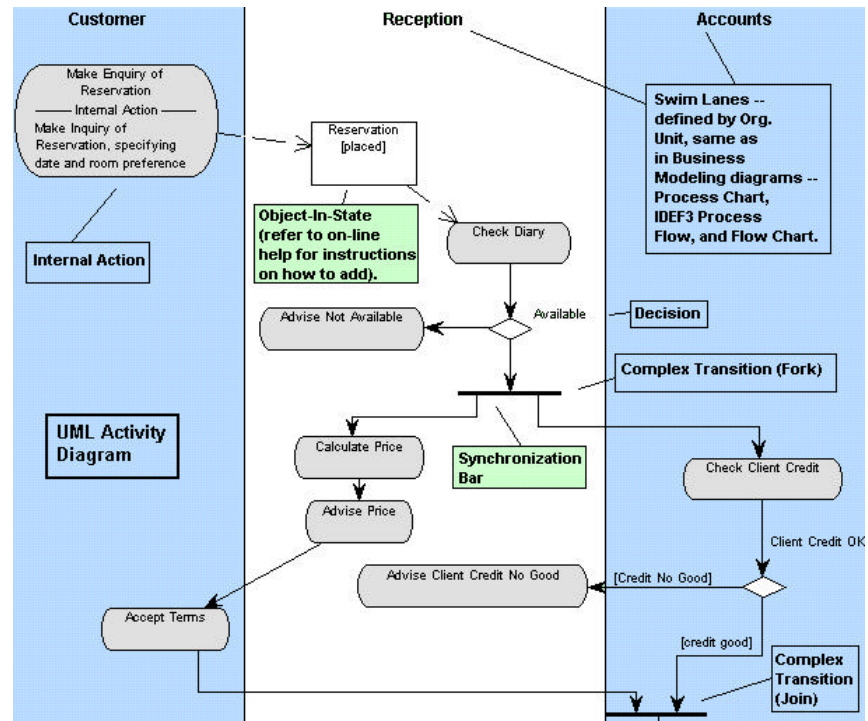
2. Select the Sequence diagram **Make Provisional Reservation**, and click **Open**. Note some of the features of this diagram called out in the picture below.



- Click on the Parent button on the toolbar to go back to the parent Use Case diagram.



- Repeat step 1 to open the child UML Activity diagram, **Make Provisional Reservation**. Note some of the features of this diagram called out in the picture below.



More on Object and Component Modeling

This has been a really brief look at some UML diagrams in System Architect. A more detailed object and component modeling tutorial, which includes code generation and reversing, is available in the on-line help and the Tutorial manual. The Tutorial manual is supplied in pdf format in the **Manuals** directory of System Architect and also available in hard copy.

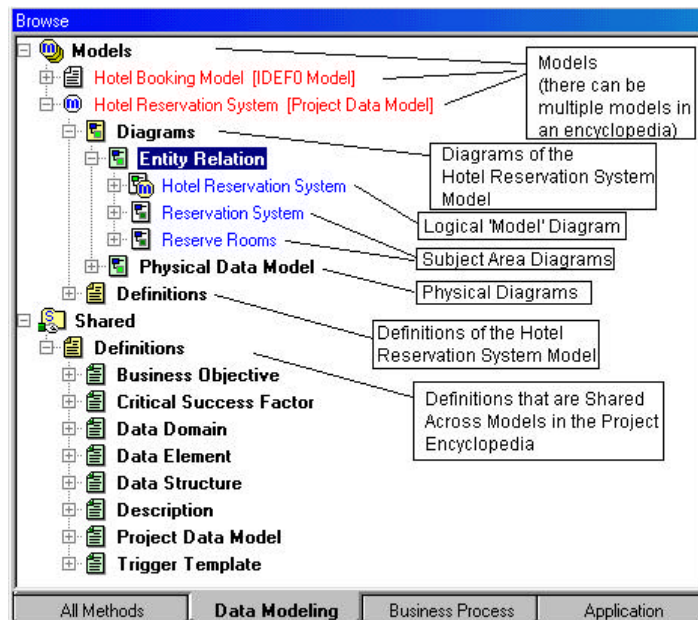
Data Modeling

Logical Models and Subject Areas, and Physical Diagrams

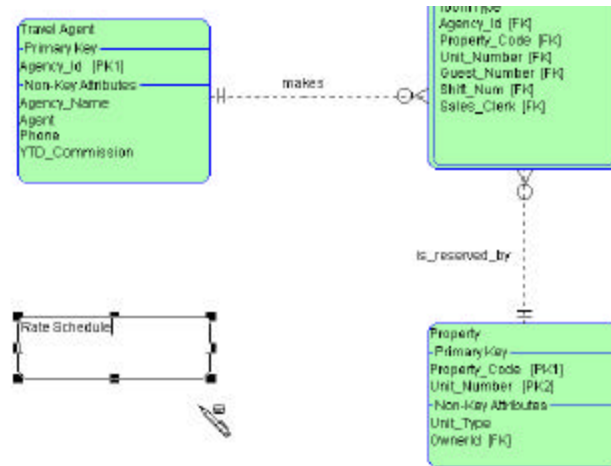
System Architect provides comprehensive data modeling support, enabling you to build logical and physical data models, and to generate schema or reverse existing database designs. You may have multiple logical models in a project encyclopedia. Each logical model includes a logical model diagram, which can be broken down into multiple subject area diagrams. Each subject area diagram represents a view of the model diagram – changes made to one are automatically made to the other. You may automatically create separate physical diagrams for each logical model, each specifically built for a target DBMS.

In this quick tour, we'll take a look at some of the models already created in the **Samples** project encyclopedia. We'll make some modifications, show the results, and generally give you a good look around System Architect's data modeling capabilities.

1. Select the **Data Modeling** tab in the Browser.
2. Examine the tree structure of data models and their definitions.



3. To begin, open the subject area data model named **Reserve Rooms** (right mouse click on it and select **Open** from the drop down list or double click on it, or select it and drag it onto the diagram workspace area).
4. Add a new entity called **Rate Schedule** to the diagram – select the entity symbol from the toolbar and drop an entity onto the diagram. Type in the name **Rate Schedule** into the in-place editor on the entity. Click the cursor outside the entity, or hit the **Enter** key to finish the entry of the name.



5. Select the cursor from the **Draw** toolbar, and open the entity definition (double click on it or right-mouse click and select **Open**).
6. Place your cursor in the **Data** cell within the attribute grid. Type in the name **Discount Rate** and hit **Enter**. You have just added a data element to this entity, and to the project encyclopedia. Notice that the **Discount Rate** was also added automatically to the **Name** cell, and that by default the element is defined as type Character of length 10. The **Name** column specifies the name of the attribute, which is considered to be an 'instance' of the data element, specific to this entity.
7. Change the name of the attribute to **Discount** – put your cursor in the **Name** cell and type over the **Discount Rate**

name, and type in **Discount**. Notice that the name of the data element that the attribute instantiates stays the same.

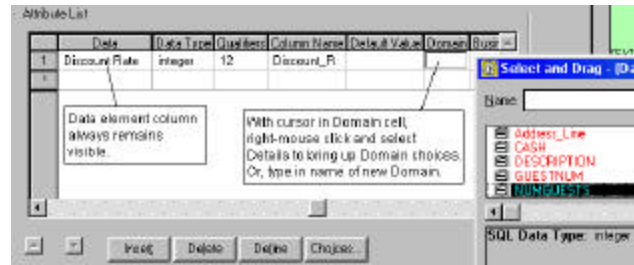
Attribute List							
	Data	Name	PK	FK	Allow Null	Unique	Data Type
1	Discount Rate	Discount	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	integer
*			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

8. With your cursor still in the **Name** cell, click on the **Define** button at the bottom of the grid. You open the full attribute definition dialog.
9. Change the type from **Character** to **Integer**, and the **Qualifiers** from **10** to **12**. Click **OK** to close the dialog. Notice that in the grid, the type and qualifiers have changed.

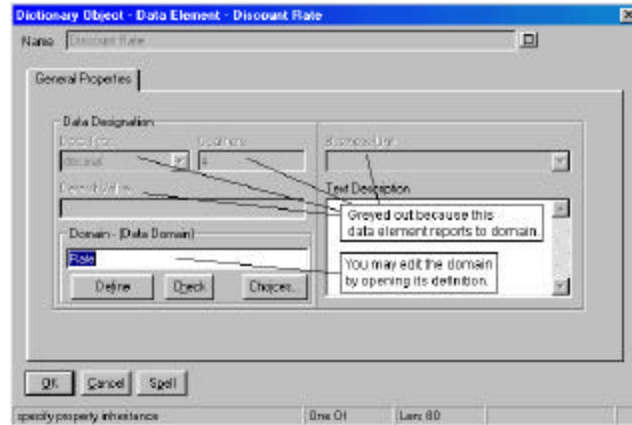
The change is made for the instance attribute, and the underlying data element, and to the instance attribute of all entities in the model that have this data element.

Now let's make this data element and attribute report to a domain – they will inherit properties from it.

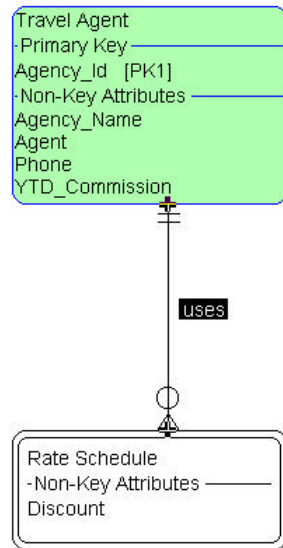
10. Use the lower arrowbar in the grid to move out to the column that says **Domain**. Notice that the first column, for Data element, is always visible.
11. Place your cursor in the **Domain** cell for this data element, right-mouse click, and select **Choices**. A list of domains already in this project encyclopedia is displayed. You can drag in a data domain from this list – but we won't – just wanted you to know that you can select from existing domains in this fashion. (Also, don't forget that right-mouse clicking in the **Choices** list and selecting **Details** gives you a summary of each domain as you click on it in the **Choices** list.)



12. Type in the name of a new domain named **Rate** and click the **Define** button to open the domain definition.
13. Set the **Data Type** to **Decimal**, and the **Data Type Qualifiers** to **4**. Click **OK** to close the dialog. Now view the changes in the grid – both the data element (in the **Data** column) and the attribute (in the **Name** column) are reset to the new values.
14. Now place your cursor back in the **Data** cell and click on **Define** (to open the Data Element definition). Notice that **Data Type**, **Type Qualifiers**, **Default Value**, and **Business Unit** are all grayed out and read only – because this data element reports to a domain, the only place where you are allowed to change these values is in the **Domain** definition (which, by the way, you can edit directly by clicking on the **Define** button for the **Domain** property also on the data element definition dialog).

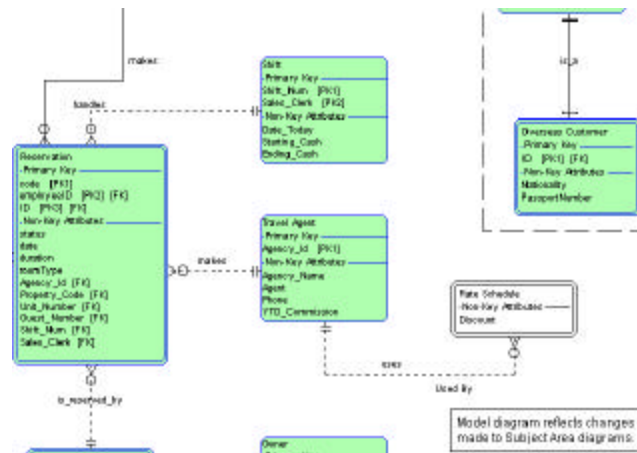


15. Click **OK** to close all dialogs.
16. Now lets draw a relationship line.
17. Select the **Identifying Relationship** tool from the toolbar. Draw a relationship from the **Travel Agent** entity to the **Rate Schedule** entity. As you start the line on the **Travel Agent** entity, you get a cross that tells you that the line is connected to the entity. As you begin to draw, you get a ghostbuster symbol that tells you that you cannot drop the line into space – it must be connected to a valid entity. When it is attached to the **Rate Schedule** entity, you get another cross. Release the left mouse button to finish the line, and type in the name **Uses** on the in-place editor for the line.



18. Notice also that after drawing the Identifying Relationship between the two entities, the appearance of the **Rate Schedule** entity changes – it now has a double solid line for a border. This is a result of using an identifying-type relationship (identifying or non-identifying). The 'child' entity, **Rate Schedule**, is considered a 'dependant' entity, and therefore is presented with the double border.
19. Open the relationship's definition by double clicking on it or right-mouse clicking and selecting **Edit**.
20. In the definition, change the type of relationship from **Identifying** to **Non-identifying** by toggling off the **Parent Identifies Child** choice.
21. In the **Reverse Phrase** property box, type in the words **Used By**, and click **OK** to close the definition.
22. Notice that on the diagram, the relationship line has changed from a solid line to a dotted line to reflect the fact that it is now a non-identifying relationship.

23. Select the line, right-mouse click, and select **Display Mode** from the drop-down list. Toggle on **Reverse Phrase** and click **OK**. The reverse phrase entered in the definition is displayed on the diagram.
24. Now let's take a look at the Entity Relation model diagram, which will reflect all information of its subject area diagrams, including the one we just made a change to. Open the model diagram **Hotel Reservation System** by double clicking on it in the browser.
25. Notice on the model diagram that the new entity, **Rate Schedule**, is added to it as well.



Update Foreign Keys

1. Select **Dictionary, Update Foreign Keys** to refresh the foreign keys in the model diagram. System Architect examines the diagram and updates the foreign keys of entities based on relationships between the entities.
2. Select **File, Save Diagram**.

Create a Physical Diagram

Let's create a physical diagram from the logical data model diagram.

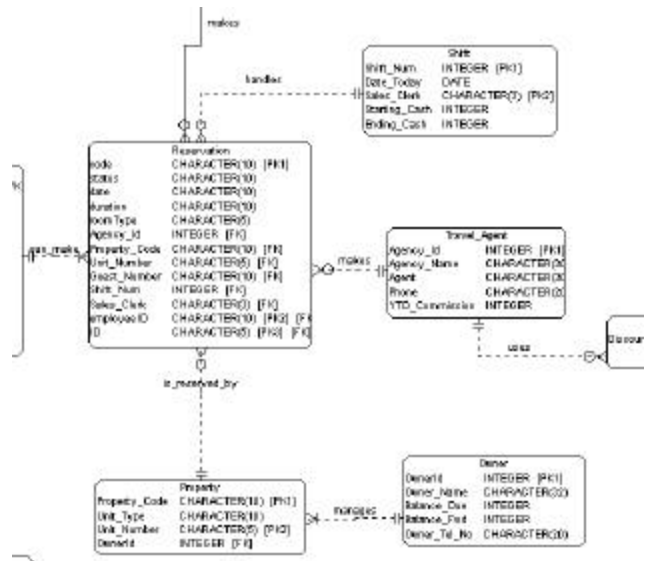
1. With the model diagram **Hotel Reservation System** still open, select **Dictionary, Create Data Model, Physical**

Data Model. The **Create Physical Diagram** dialog presents you with choices on how to deal with super-sub relationships, and choices on how to map the case (upper, lower, etc) from items in the logical diagram to their equivalents in the physical.

2. Keep the default selections and press **OK**.
3. You next receive a dialog that enables you to choose the model that the physical diagram will belong to, and the physical database that the physical diagram will represent.
4. Select **Oracle 8** as the database, and leave the other choices at their default. It is not necessary to fill in a physical database name.

When you create a physical diagram, the diagram will always represent the DBMS that you choose on creation. It cannot be changed later on. It is from the physical diagram that you generate schema in System Architect.

5. Press **OK**. The physical diagram is created. A report is displayed that details everything that was created.



6. Take a look at the physical diagram created. Entities in the logical diagram are converted to tables, with corresponding relationships. Open the **Travel Agent** definition. Notice that you are now looking at a grid containing **Columns** of the table, the columns corresponding to the attributes in the **Travel Agent** entity. In addition, the generic data types of the entity relation diagram are mapped to Oracle 8 specific data types.

Columns						
	Name	PK	FK	Allow Null	Unique	Data Type
1	Agency_Id	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	INTEGER
2	Agency_Name	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CHARACTER 30
3	Agent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CHARACTER 30
4	Phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CHARACTER 20

Schema
Generation

Reverse Data
Engineering

Schema generation from a physical diagram is performed by selecting **Dictionary, Generate Schema** while a physical diagram is open.

Reversing an existing RDBMS design is performed by selecting **Tools, Reverse Data Engineer**. There is no requirement for any diagram to be open in System Architect; you choose the name of the diagram that you create during the reverse engineering process.

**More On Data
Modeling**

A more detailed data modeling tutorial is included in the Tutorial manual and the on-line help.

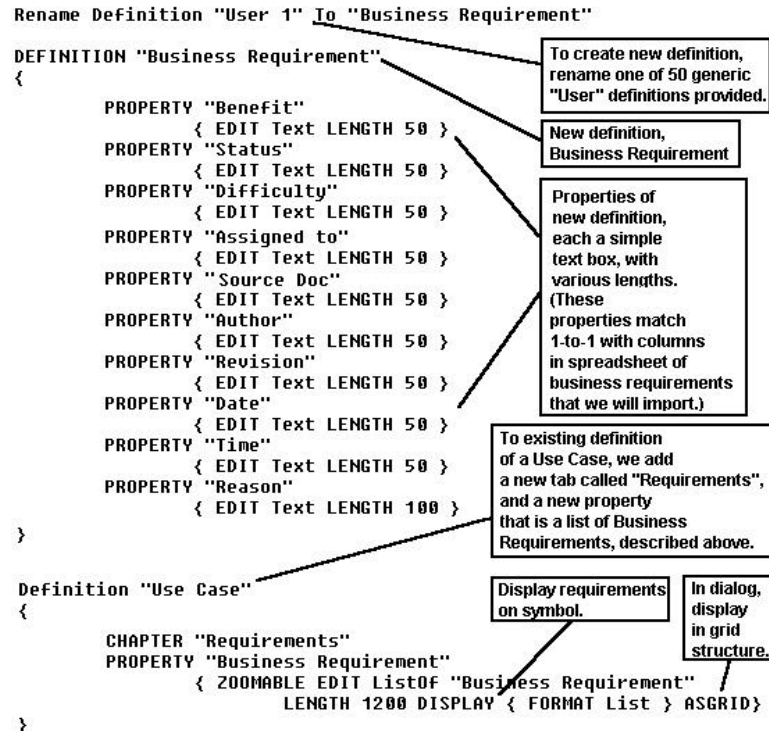
Modifying Properties with USRPROPS.TXT

One of the most powerful features of System Architect is that users may tailor and extend the underlying metamodel of information stored in a project encyclopedia, by adding, hiding, or rekeying properties of definitions. This work is done by the user in a text file called **USRPROPS.TXT**, which, when an encyclopedia is loaded, is parsed along with a file called **SAPROPS.CFG** (the main System Architect properties file). **USRPROPS.TXT** overrides **SAPROPS.CFG**. Properties are added, hidden, or rekeyed using a scripting language.

In this quick start tutorial, we'll take a look at some **USRPROPS.TXT** entries that have been made to the **Samples** encyclopedia. We'll take a look at how we can add a new definition to System Architect, with properties, and then make the new definition the property of an existing definition. Further, we'll exploit this feature to import an external document of requirements into the tool.

1. Select **Tools, Customize User Properties, Edit USRPROPS.TXT (Encyclopedia)**. You are opening the **USRPROPS.TXT** file for the **Samples** encyclopedia in Notepad (you may change the default editor in System Architect's **SA2001.ini** file). You may also modify this file by opening it directly, outside the context of System Architect.

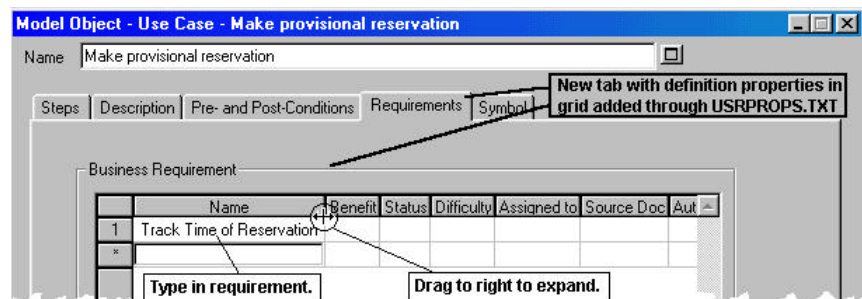
Note: System Architect comes with a number of requirement-type definitions, including Requirement, Deliverable, Business Objective, Organizational Goal, Test Plan, etc. In this quick start tutorial, we add a new requirement type called **Business Requirement** through **USRPROPS.TXT**.



2. Open up the Use Case diagram we looked at before (click on the **UML** tab in the browser, and open the UML Use Case diagram **Hotel Reservations – Overview**).
3. Open the definition **Make Provisional Reservation**.
4. Select the tab labeled **Requirements**. Note that this entire tab was added through USRPROPS.TXT – if you create a new encyclopedia that doesn't have this USRPROPS.TXT, this tab would not exist.

Every encyclopedia contains an **SAPROPS.CFG** file and a **USRPROPS.TXT** file. As a user, you are instructed **not** to modify **SAPROPS.CFG**, but to make all modifications/additions you require to **USRPROPS.TXT**. New versions of System Architect will provide new **SAPROPS.CFG** files, but will never override your **USRPROPS.TXT** file. Changes you make to **USRPROPS.TXT** stay with you, and can become your corporate standard meta properties.

5. You may enter in a new Business Requirement into the grid, by placing your cursor in the left-most cell and typing in, say, **Track Time of Reservation Request**. You may drag on the border of the column to increase its width.

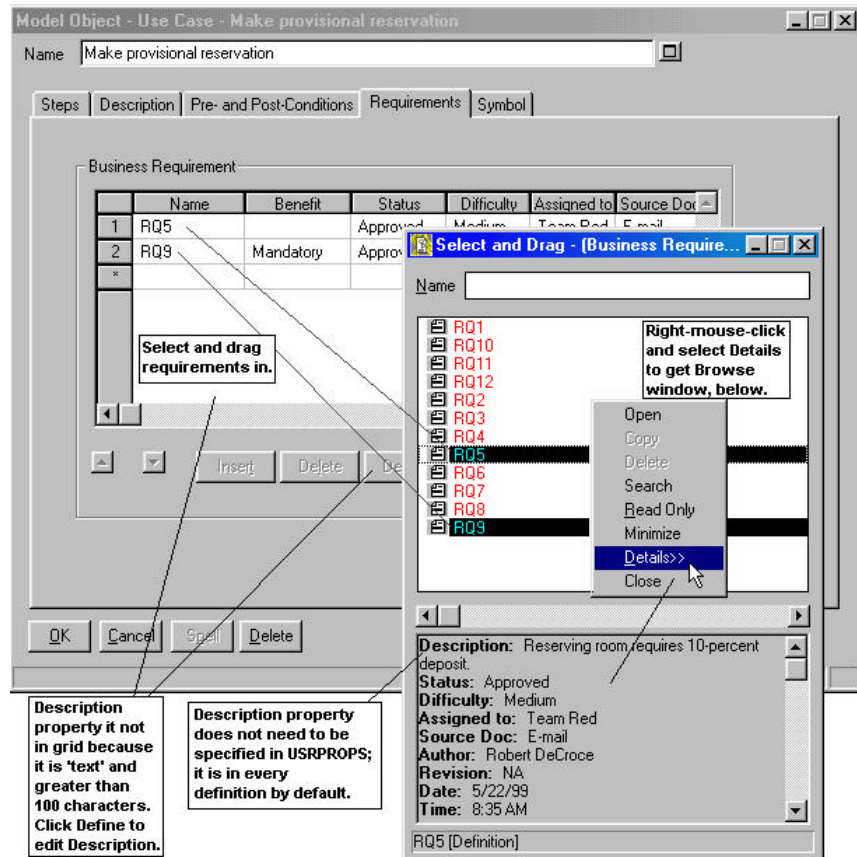


6. Click **Define** to open the full definition of this new requirement. Notice the properties of the requirement are the ones we asked for in **USRPROPS.TXT**. Click **OK** to close all dialogs.
7. Now let's import some information. Located within the Samples project encyclopedia directory (x:\Popkin Software\System Architect 2001\Encyclopedias\Samples) there is a sample spreadsheet in .csv (comma separated value) format, named **Require.csv**. You may open it in **Microsoft Excel** or any text editor to view it.

require									
	A	B	C	D	E	F	G	H	
1	Name	Description	Benefit	Status	Difficulty	Assigned to	Source Doc	Author	Rev
2	RQ1	Explain hotel t	Mandatory	Approved	Medium		E-mail	Bob Ludwig	NA
3	RQ2	Customer mus	Important	Proposed	Medium		Doc 7.2-3	Walter Higgins	
4	RQ3	Allow up to 5-percent over	Approved	High			E-mail	Bob Ludwig	NA
5	RQ4	Room cancellation charge	Approved	High		Team Indigo	Doc 7.2-3	Walter Higgins	
6	RQ5	Reserving room requires 1	Approved	Medium		Team Red	E-mail	Cheryl Riordan	NA
7	RQ6	Payment for de	Mandatory	Proposed	High	Team Violet	Doc 7.2-2	Andrew Page	
8	RQ7	Customer mus	Important	Approved	Medium	Team Blue	E-mail	Cheryl Riordan	NA
9	RQ8	Cannot rent ro	Mandatory	Proposed	Medium		Doc 7.2-1	Suzanne Dyer	
10	RQ9	Must provide 1	Mandatory	Approved	Medium	Team Violet	Doc 7.2-1	Suzanne Dyer	
11	RQ10	Only provide rc	Mandatory	Approved	Medium		Doc 7.2-3	Walter Higgins	
12	RQ11	No more than 4 people all	Approved	Medium		Team Indigo	Lotus Note	Paula Evans	
13	RQ12	No pets allowed.		Proposed	Medium		E-mail	Bob Ludwig	NA
14									

8. Note that in the spreadsheet, the names of the columns match exactly to the properties for the definition of **Business Requirement**, except for the first two columns, **Name** and **Description**. Every definition in System Architect by default has a name and a description, so adding these two properties to **USRPROPS.TXT** was not necessary.
9. After optionally viewing the spreadsheet, close it. It must *not* be open for the next step to be performed.
10. Select **Dictionary, Import Definitions** from System Architect's menu.
11. In the dialog, use the **Browse** button to select the **require.csv** file located in the **Samples** encyclopedia directory (x:\Popkin Software\System Architect 2001\Encyclopedias\Samples\browse.csv).
12. Select **Business Requirement** in the **Select Type** box, and click **OK** to import the spreadsheet. A report will come up that shows what was imported. You may view the report, or click on 'x' in its upper right-hand corner to close it.
13. Reopen the Use Case definition **Make Provisional Reservation**, and go to its **Requirements** tab, as before.
14. Click on **Choices** in the **Business Requirements** grid. You see a **Choices** dialog with a list of all of the business

requirements imported. Right-mouse click in the **Choices** box and select **Details** to browse the imported definitions.

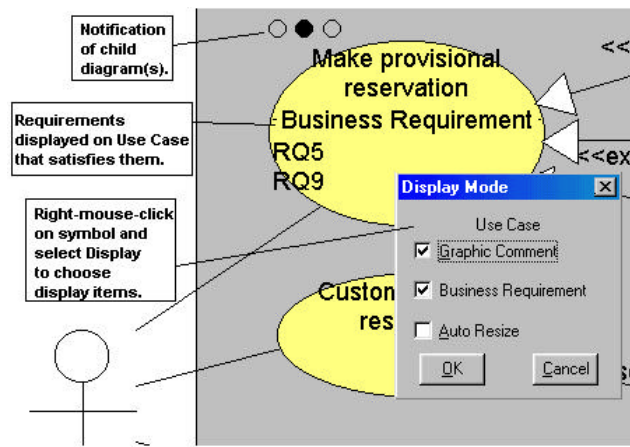


15. You may select one or more requirements and drag them into the **Requirements** grid (in the example pictured, we select **RQ5** and **RQ9**). What you are modeling is that these requirements are now satisfied by this Use Case.

You may later run reports to see which of your requirements are satisfied by your models and which are not. If a change is made to a requirement, you may run reports that detail where the requirement is used, and what gets affected by a change to a requirement.

Important: Please bear in mind that we have added requirements to a Use Case definition in this example. The same can be done for any definition in System Architect, including Use Case Steps, or Classes, or Entities, etc. Also, the new definition does not have to be a Business Requirement, it can be anything that you dream up.

16. Click **OK** to close all dialogs. Notice on the diagram that the requirements are displayed on the Use Case symbol, **Make Provisional Reservation**, itself. You can choose to display or not to display these requirements.



17. Right-mouse click on the Use Case and select **Display**. You can toggle off **Business Requirement**. (Note that the list of displayable properties is dynamic – adding Business Requirement as a displayable property via **USRPROPS.TXT** automatically adds it to this list.)

Reporting

System Architect provides three types of reporting and documentation systems – its Internal Reporting system, its link to Microsoft Word, and its HTML Generator. For this quick start tutorial, we will run a UML Use Case diagram report in each of the reporting systems, so you can get a feel for each reporting system, and what it can provide you.

Internal Reporting System

The internal reporting system uses a SQL-based language to query the underlying repository and publish information on your models. There are over 130 prewritten reports provided with the product, in a number of report files (.rpt extension), housed within the **Reports** subdirectory of the System Architect program.

1. Select **Reports, Report Generator** to open the **Reports** dialog.
2. You are looking at the reports contained **ONLY** in the **Reports.rpt** file – these are fairly standard, generic reports.
3. Select **File, Open Report File** from the **Reports** dialog. You are automatically pointed at the Reports directory within the System Architect 2001 directory.
4. View the report files in the Reports directory – each report file contains reports on various aspects of modeling with System Architect. For example **ERmatrix.rpt** provides matrix reports on data modeling with Entity Relation diagrams.
5. Select the **ood.rpt** file – these are object-oriented reports – and click **OK**.
6. Select the report **Matrix – Methods/Services vs Classes** and push the **Draft** button on the right side of the **Reports** dialog. You will get a quick draft of the report, which will show classes in the project encyclopedia and methods that they contain, in a matrix.

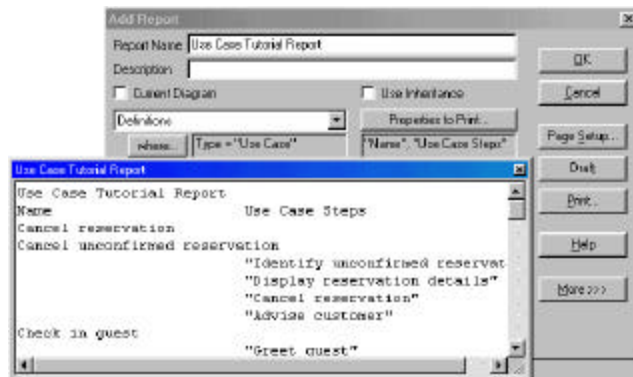
Now, the draft of this report is unformatted and rather crude. The purpose of running a draft is to get you quick information on the fly. Printing this report to a printer would provide better formatting.

7. Close the draft by clicking on the 'x' in its upper-right-hand corner.
8. To view the SQL-based language of the report, return to the **Reports** dialog, and with the **Matrix – Methods/Services vs Classes** report selected, choose **Reports, Text Edit Report** from the **Reports** dialog menu.
9. Notice the SQL language and the use of Select and Join statements. This report selects a definition of type Method, and then finds related definitions of type Class that are 'used by' Method. This is a very simple report that walks a bit of System Architect's metamodel. To take a look at the metamodel, open System Architect's help and search on metamodel. It is important, as you build reports, to use this metamodel as a guide.

Now let's build a simple Use Case report.

10. In the **Reports** dialog, select the **Add** button on the right-hand side to open the **Reports** GUI.
11. Type in a name for the report – **UML Use Case Tutorial Report**.
12. In the first selection box on the left-hand side, select **Definitions** from the drop-down list (the drop-down list provides three choices – **Diagrams**, **Symbols**, and **Definitions** – that is the main structure of a System Architect project encyclopedia – it contains diagrams, which contain symbols, which have definitions).
13. Click the **where** button, and in the resulting **Add Report** dialog, toggle Off **All Types**, and select **Use Case** from the list. Click **OK** to close the dialog.
14. Back on the **Add Report** dialog, click **Properties to Print**, to bring up the **Select Definition Properties to Print** dialog.

15. In the **Available Properties** list, find and select **Name**, and press the **Add** button to add it to the **Properties to Print** column. Do the same for **Use Case Steps**. Notice that when an item is selected in the **Properties to Print** column, all of the printing format options at the bottom of the dialog are enabled. You may specify such options for the eventual printed report.
16. Click **OK** to close the dialog and go back to the **Add Report** dialog.
17. In the **Add Report** dialog, push the **Draft** button. You will get an on-screen draft of this Use Case report.



18. Select **OK** to close the **Add Report** dialog, **Close** to close the **Reports** dialog, and **Yes** to the **Save Changes** message.

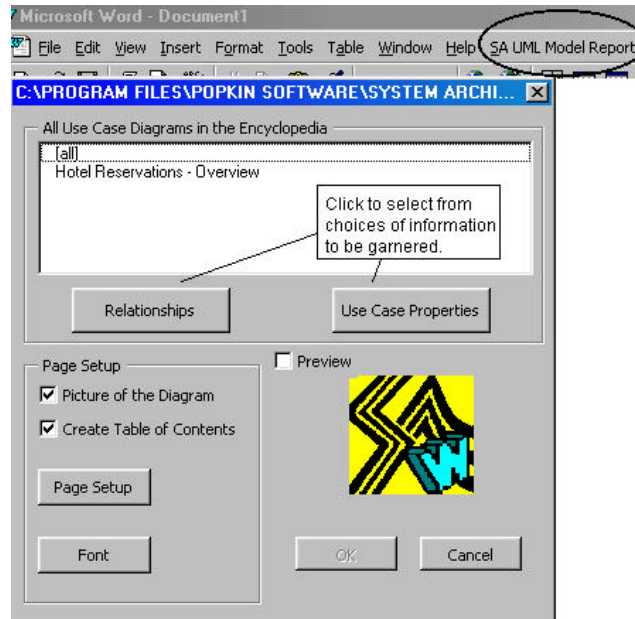
This was a quick introduction to the internal reporting system. A more in-depth tutorial is included in the on-line help, within the section **Reporting, Internal Reporting System, Tutorial for Internal Reporting System**.

Word Reports

System Architect provides a link to Microsoft Word for reporting and documenting information within project encyclopedias. When System Architect is installed, your Word template directory is populated with a number of pre-built Word macros for use with System Architect. These macros are built with Microsoft VBA, and are customized by the user in Word's VBA environment.

Let's quickly run one of these reports.

1. In System Architect, select **Reports, Word Reports, Object Model Reports, Use Case Diagram Report**. Microsoft Word will be launched and a new Word document will be started using one of the templates provided (**SAobjmod.dot**). (You may also run this report by manually starting Word and selecting **saobjmod.dot**.)
2. In the Microsoft Word document that opens, notice that in the upper-right-hand corner of the menu, a new menu choice is available – **SA UML Model Reports**. You will also be presented automatically with the **Use Case Report** dialog.



3. Select the **Hotel Reservations – Overview** diagram.
4. You may make choices on exactly what information the report will contain; choices are accessed by pressing the **Relationships** or **Use Case Properties** buttons. We'll accept the defaults.
5. Press **OK**. A detailed, formatted report in Word will be generated.

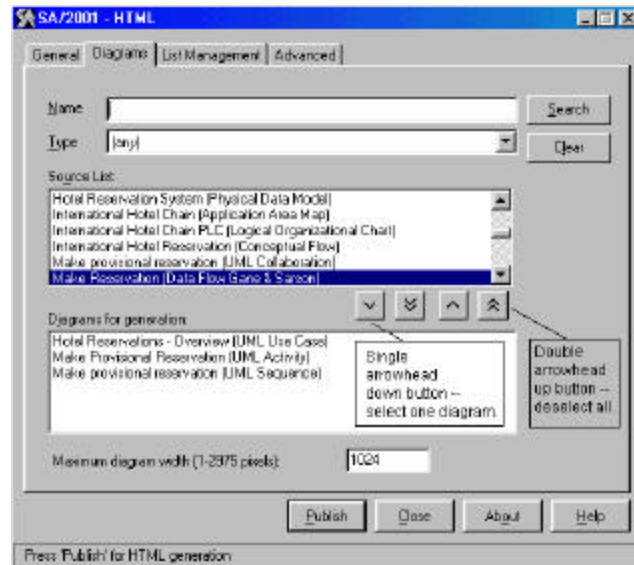
HTML Generator

System Architect's HTML report generator enables you to generate context-sensitive reports of any or all of the diagrams in a project encyclopedia, for posting and distribution on an Intranet or Internet. This is a convenient way to share design information with viewers across the company and across geographic locations.

1. Select **Reports, HTML Reports** to open the SA/2001 HTML generator.
2. Leave the path and file name in the **Template Home Page** at its default value.

System Architect builds html reports off of templates that it provides in a directory under the main System Architect software (Program Files\Popkin Software\System Architect 2001\Template). This directory can be established elsewhere, and you may also open the template files supplied in any html editor, and modify them.

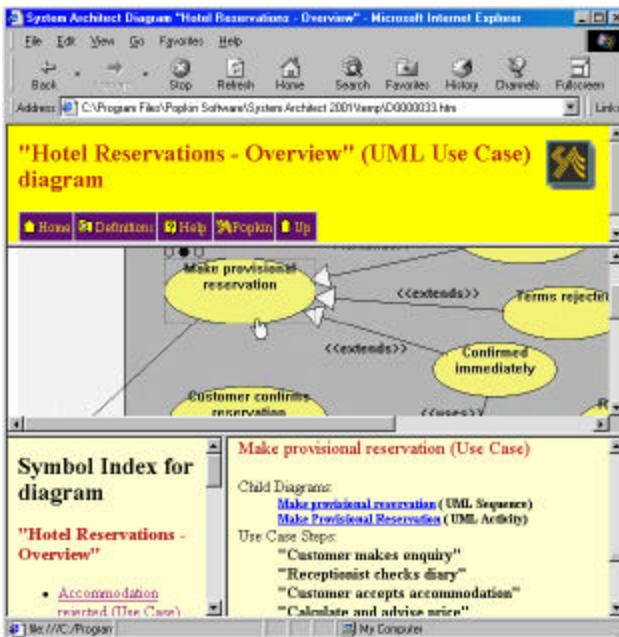
3. Use the **Browse** button and standard Windows techniques (using **New Folder** button within Browse window) to set the **Publish Home Page** to a path and file named **x:\Program Files\Popkin Software\System Architect 2001\Encyclopedias\Samples\temp\default.htm**.
4. Select the **Diagrams** tab. As a default, all of the diagrams in the encyclopedia are added to the **Diagrams for Generation** box. Generating a report for all diagrams will take some time; we'll only generate for a few diagrams.



5. Push the double-arrowhead-up button to put all diagrams back into the Source List box.
6. Find and select the following diagrams, and when selected, press the single down arrowhead button to add them individually to the Diagrams for Generation box.
 - Hotel Reservations - Overview (UML Use Case)
 - Make Provisional Reservation (UML Activity)
 - Make Provisional Reservation (UML Sequence)
7. Press **Publish**. Your browser of choice will be automatically opened and contain an HTML report of the chosen diagrams. You may browse this report.
8. Click on **Hotel Reservations Overview (UML Use Case)** in the left-hand panel. You will be presented with a context sensitive jpeg image of the diagram.

We could have scaled the diagram down before generating. This would have been done by choosing **Edit, Clipboard format** in System Architect, and reducing the percentage from 100 percent, downward.

9. Continue clicking on links in the html report to get a feel for the information generated. The html report automatically grabs any information added via modification through **USRPROPS.TXT**.



Running VBA Macros

Turn on Conversion Function Using Command-Line Parameter

Microsoft Visual Basic for Applications (VBA) and its development environment is installed with System Architect 2001. This is the same VBA found throughout the industry, including Microsoft Office products. Microsoft VBA help system is also installed, and is accessible after launching VBA from SA/2001's main toolbar.

Microsoft VBA, coupled with SA/2001's open Application Programming Interface (API), opens up System Architect to programmability by the user. You can control the SA environment by building macros that are launched by System Architect events, such as clicking the **OK** button to close a dialog, and enable System Architect to work with other applications using OLE Automation.

1. Select **Tools, Macros, Macro Projects**.
2. In the **Macro Projects** dialog, click on the **Add** button.
3. Select the **Samplenoagent.mac** file and click **Open**.

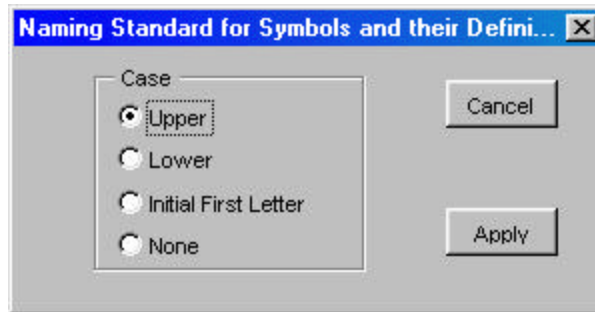
Note: the **lph.mac** file is another sample macro project provided – it contains a macro that will convert process and data models into a class diagram. The **SaAuto.mac** is a general-purpose project that is used by the other macros; it is not intended to be run.

4. Sample should now be in the **Available** list in the **Macro Projects** dialog. Click to place a check mark in its checkbox, and then, with **Sample** highlighted, click the **Apply** button. The macro project will be loaded.

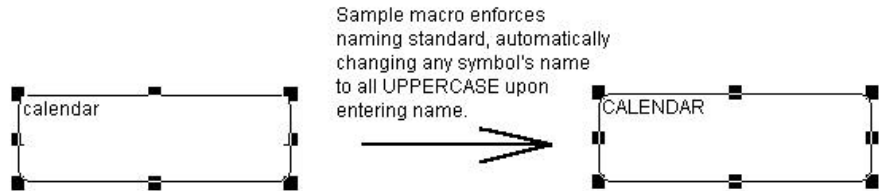
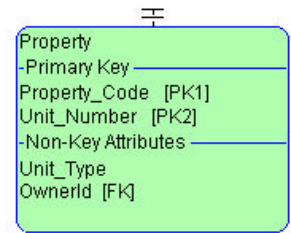
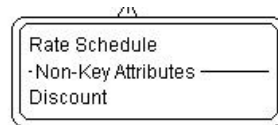
Note: Restarting SA/2001 at this time would add the macros to the **Tools, Macros, Sample Macros** menu. You may also run the macros without restarting SA/2001, as described in the steps below.

5. Click **Run Macro** to open the **Macros** dialog.

6. Select **MainCodeRoutines.Enforce SymbolNamingStandards** and click **Run**.



7. In the **Naming Standards for Symbols and their Definitions** dialog, select **Upper** and click **Apply**.
8. Open the **Reserve Rooms** subject area data model that we were working with back in the data modeling section of this tutorial.
9. Drop a new entity down, and give it a name with all lower-case letters – name it **calendar** (all lower case).
10. Click **Enter** or the left-mouse button to enter the name. Notice how it changes automatically to Upper case – **CALENDAR**. The macro we are running is at work. It will continue to do this for all symbols you create in any diagram until you turn it off.



This is just an example of the kind of macro you can build with Microsoft VBA in System Architect. For more information on the other macros, or how to build your own, please refer to the on-line help and the System Architect 2001 Extensibility Manual.

End of Quick Start Tutorial

We hope the Quick Start Tutorial has helped you to get a feel for using System Architect 2001. You may wish to take more in-depth tutorials on data modeling, business modeling, and object/component modeling, provided in the on-line help and in the Tutorial Manual (provided in pdf format in the Manuals subdirectory of the software, and also available in hard-copy format).

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