# CA Gen

## Client Server Encyclopedia User Guide

Release 8.5

# CA Technologies Product References

This document references the following CA Technologies products:

- CA Gen
- AllFusion® Gen
- Advantage™ Gen

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- Product and documentation downloads
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# Contents

# Documentation Changes

The following documentation updates have been made since the last release of this documentation:

- Create Oracle CSE Database (see page 40)—Updated database information.

# Chapter 1: Client Server Encyclopedia Basics

## Using the Client Server Encyclopedia

An encyclopedia provides a repository for storing and managing models for application development across multiple workstations. CA Gen Client Server Encyclopedia (CSE) provides distributed or downsized support for encyclopedia functionality.

To maximize flexibility in right sizing the development environment, use a CSE stand-alone or networked with one or more other CSEs.

The CSE environment includes client components and server components.

The client components that are installed on the workstation provide user interface for encyclopedia functionality and the user interface to a database on the server. You can access the encyclopedia server with any Win32 client.

### Servers and Clients

### Server Characteristics

The CSE server components share common characteristics, including allowing multiple simultaneous sessions with clients on multiple workstations.

#### Coordination Server

The Coordination Server:

- Manages the coordination database that identifies encyclopedias and users in the encyclopedia network
- Supports encyclopedia coordination services by:
  - Processing requests from the Coordination Client to read and update information about encyclopedias and their users.
  - Processing client requests to access an encyclopedia by validating user access to encyclopedias, and locating encyclopedias in the network.
  - Lists the encyclopedias that a user is authorized for when queried by a client during user logon.

### Encyclopedia Server

The Encyclopedia Server:

- Responds to requests from the Encyclopedia Client, Checkout Client, Support Client, and Version Control Client
- Manages storage of models, subsets, aggregate sets, and user information
- Provides basic encyclopedia functions, including:
  - Managing models and subsets
  - Managing users and groups

### Construction Server

The Construction Server provides:

- Functionality to support requests from the Construction Client.
- These primary functions:
  - Data Definition Language (DDL) generation
  - Referential integrity generation
  - Application system generation

## Client Characteristics

The CSE client components share common characteristics that provide the user interface to server functionality. Before using a client component, the component must establish a communication connection to its complementary server component.

The client components can be used simultaneously with the toolset. Although client components usually reside on the same user workstation as the Planning, Analysis, Design, or Construction toolset groups, it is not required.

**Note:** The Support Client is typically used under the supervision of a CA Gen Support representative.

# Client and Server Components Interaction

The CSE is the functional integration of its client and server components.

Clients provide user interface for database services and server functionality. The server manages the CSE databases that store information for users, models, subsets, and encyclopedias. This information is extracted from tables within these databases when queried by a client or through a query facility in your environment.

## Coordination and Encyclopedia Servers and Databases

The CSE supports two databases, a coordination database and an encyclopedia database, as a single database instance or as separate database instances.

The Coordination Server manages the Coordination Database that contains user and encyclopedia information.

The Encyclopedia Server manages the Encyclopedia Database that contains model, subset, and more user information.

## Client and Server Interaction

During client and server interactions, the client component connects to a server through a common communication component. The server processes the client request and returns a response to the client component that displays the results in a graphical user interface. The server is transparent to the user.

The first access from any client is during user logon and is always to the Coordination Server to verify the user ID and to retrieve a list of encyclopedias to which the user is authorized. After selecting the encyclopedia from the list, the client component connects to the requested server. The server accesses the encyclopedia database. The encyclopedia database contains models.

# Differences between CSE and Host Encyclopedia

Four functions that differ from the Host Encyclopedia in the Client Server Encyclopedia are subsetting, using the Public Interface, encyclopedia communications, and Model Families.

## Subsetting

The concepts and functionality of subsetting are the same for Client Server Encyclopedia and Host Encyclopedias.

**Note**: For terminology differences, see the *Client Server Encyclopedia Subsetting User Guide*. For specific information about scoping object expansion, see the *Client Server Encyclopedia Subsetting User Guide*. For information about common Client Server subset definitions, see the *Toolset Help*.

## Using the Public Interface

The difference between the Public Interface for the Host Encyclopedia and the CSE is that in the CSE, the Public Interface views operate against the same data tables as the other encyclopedia functions. You do not export the model to the Public Interface tables.

Other changes to the Public Interface are due to the client/server environment's different DBMS. Some of the SQL views for the CSE have been changed from those in the Host Encyclopedia. The SQL query examples that work on the mainframe not work in the CSE.

**Note**: For information about the SQL view, see the *Client Server Encyclopedia Public Interface* Reference *Guide*.

## Encyclopedia Communications

Use encyclopedia communications to check out models and subsets between CSEs, between Host and CSEs, and between CSEs and toolsets.

**More information:**

Encyclopedia Communication Concepts (see page 166)

## Model Families

The Host Encyclopedia supports multiple model families. Migration of information between models can only occur on models in the same family. The CSE supports one model family for each encyclopedia. All models in one CSE are in the same family.

# Chapter 2: CSE Installation and Configuration

## Installing and Configuring CSE

CA Gen Client Server Encyclopedia (CSE) supports installation and configuration as separate activities controlled by CA supplied software. After running the setup program to install the software, run the CSE configure program to prepare the CSE Server environment. Then, run the CSE Servers to make the services available.

Installing and configuring the CSE Servers includes several tasks that you must complete at different stages of installation, some before installation, some between installation and configuration, and some after configuration. The exact set of tasks depends on the platform, database management system, and new or upgrade system choices.

Installation refers to transferring the CSE files from the CA Gen download folder to a file system. You only need the CA Gen download folder again to re-install product components or install new components.

**Note:** For more information about installing the CSE, see the *Distributed Systems Installation Guide*. For a list of supported platforms for the CSE, see the *CA Gen Technical Requirements* at http://ca.com/support.

Configuration refers to customizing the installation on the target system, and includes preparing the communications environment and the databases the CSE uses.

## Prerequisites for CSE Installation and Configuration

Before you begin installing and configuring the CSE, consider these factors:

- Plan the CSE environment.
  - Determine the computer system or systems on which you plan to run the software and the general configuration of those systems.
  - Determine the directory in which to install the software.
  - For the UNIX installations, determine the owner and group properties for the account that owns and operates the CSE Servers.

- Install or upgrade the computer hardware and operating system to meet the system requirements for the platform on which you are installing and executing the CSE Server software.

  **Note:** For more information about system requirements, see *CA Gen Technical Requirements* at http://ca.com/support.

- Select, install, and configure a Database Management System. Complete this task before configuring CA Gen CSE. CSE configuration and operation interact with the DBMS as a user of the DBMS. All operations that require Database Administrator (DBA) authority are your responsibility. If you are not the DBA for the system and your planned configuration includes new databases, you need the assistance of the system DBA.
- Configure TCP/IP as defined in this chapter.
- Current AllFusion Gen users must upgrade to CA Gen.

**Note**: You can configure the CSE environment with the database on a different system. We recommend that you do not do so because the database and the CSE exchange so many messages that the exchange can cause a significant performance impact, especially when network latency issues already exist between the systems. When the CSE and DBMS must exist on separate systems, it is important to ensure that the communications infrastructure between the systems is as fast as possible.

**Follow these steps:**

1. Prepare for Client Server Encyclopedia Server (CSE) installation.
2. Install the CSE client software, at least the Coordination and Encyclopedia Clients, on a local or remote supported Windows platform.

   **Note:** You need the Administrator privileges to install Client Server Encyclopedia.
3. Install the CSE Server software.

   **Note:** If this is the first CSE Server for the Windows installation on this system, or if the installation is to a new directory, reboot the computer to update the environment variables. Omitting this step cause consistency check and generation problems when the CSE runs as a service.
4. Complete pre-configuration tasks. Create one or more databases for the encyclopedia and coordination servers to use, or upgrade existing DBMS software and databases to meet the system requirements that are defined in *CA Gen Technical Requirements* at http://ca.com/support.
5. Configure the CSE Servers by running this program:

   ```
   cse_config
   ```
6. Verify CA Gen Configuration.

**More information:**

Upgrading from Previous Versions (see page 19)

# Upgrading from Previous Versions

To upgrade an existing encyclopedia to this release of CA Gen, users of earlier releases of AllFusion Gen must:

- Make the decisions about data.
- Ensure that models are in the prior or second prior schema before installing this version of CA Gen.

  **Note:** For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes*.
- Remember to shut down the server environment before installing.
- Ensure the operating system of the computer, DBMS, and databases meet the requirement that is defined in *CA Gen Technical Requirements* at http://ca.com/support.
- Ensure that you have a backup of the database before starting the installation.

Users with earlier releases of AllFusion Gen need to:

- Consider versions and target locations
- Review this section for changes and additions in environment variables and related software

**Note:** For compatibility information between this release and earlier releases, see the *CA Gen Technical Requirements* document at: http://ca.com/support.

## Database Configuration Options

Upgrading from a previous release installs the software for the new release and prompts for decisions about existing data. The configuration program asks what procedures to follow and offers these choices:

- Create and initialize tables, or only initialize tables to prepare a new encyclopedia
- Update existing schema and codepage tables and preserve your models, subsets, aggregate sets, and other data tables

The installation program installs all software without offering choices. Use the configuration program to update or erase the database.

**Important!** If you choose to create or initialize the database, all data in that database is lost.

## Models

Check in all models or model subsets to an encyclopedia before beginning installation. After completing configuration, use the CA Gen Conversion Utility to convert models to the current schema. Verify the models after conversion.

## Set up a New Installation in a Different Location

To keep your current AllFusion Gen software environment, and install the new CA Gen software to a different location. Follow the procedures in the *Distributed Systems Installation Guide* and specify a different location when prompted.

We recommend that you install this version to a different directory than the directory in which you installed the previous version.

## Versions

**Note:** For information about compatibility between CA Gen and AllFusion Gen, see the *Distributed Systems Installation Guide.*

## Shut Down the Server Environment

Before upgrading a CSE environment, shut down your current Message Dispatcher and all associated servers.

If you use the CSESvcMD service, stop the service through the Control Panel, the Service applet, before reinstalling the CA Gen software.

**More information:**

Message Dispatcher (see page 26)

# Test the Software

Use the Gen Sample Model to test the software after configuration. CA Gen delivers the model as an update.trn file in the cse\bin directory. After configuring and starting the CSE, upload the model using the command-line utility, upload, or the checkout client. If the CSE Servers are on a UNIX system, to upload using the checkout client, copy the update.trn file to a Windows system on which the clients are installed. The file is a binary file, so use binary file transfer to copy it.

# CSE Installation Overview

A CA Gen encyclopedia stores and manages models for application development across multiple workstations. The CSE provides distributed support for encyclopedia functions. You can use it standalone or in a network with other CSEs.

The CSE Servers are installed on the same system as the database software. When you configure the CSE Server on a server system, you also create a coordination database to manage the users and encyclopedias, and an encyclopedia database to contain models. The configuration program creates or updates coordination tables in the coordination database and encyclopedia tables in the encyclopedia database for CA Gen CSE. It uses the installed local database product and existing databases.

Also, install other products that, with the CA Gen servers, create the CSE environment.

Before you begin installation, ensure that you:

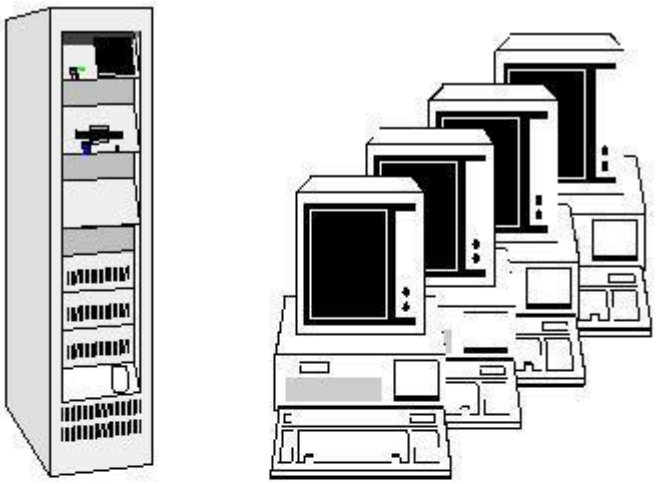
- Planned your CSE environment
- Understand the environment
- Know your system requirements
- Know details about your existing configuration
- Know if you are upgrading or adding more products

This chapter provides information about the products you need to install and information about basic and multiple configurations. Review this entire chapter before you begin.

**Note:** For more information about CA Gen CSE operation, see the *Client Server Encyclopedia Administration Guide*.

# Clients

The CA Gen clients enable the workstation to communicate with a server. For example, the Encyclopedia Client communicates with an encyclopedia from your CA Gen workstation.



| Server | Workstation(s) |
|---|---|
| Coordination | Coordination |
| Encyclopedia | Encyclopedia |
| Encyclopedia | Checkout |
| Construction | Construction |
| Encyclopedia | Support |
| Encyclopedia | Version Control |

The CSE supports the following workstation clients:

**Checkout Client**

Enables the communication for file transfer activities between the Toolset, for Planning, Analysis, Design, or Construction, and the CSE for models and subsets.

**Encyclopedia Client**

Provides the user interface to these encyclopedia functions: subsetting, model and subset management, and user and user-group management.

**Construction Client**

Provides the user interface to all construction functions, including DDL and referential integrity trigger generation, load module packaging, environment parameter specification, and application generation.

**Version Control Client**

Provides support for migration, adoption, compare, trial migration, and trial adoption of models.

The administrator uses the CA Gen CSE software includes two other clients:

**Coordination Client**

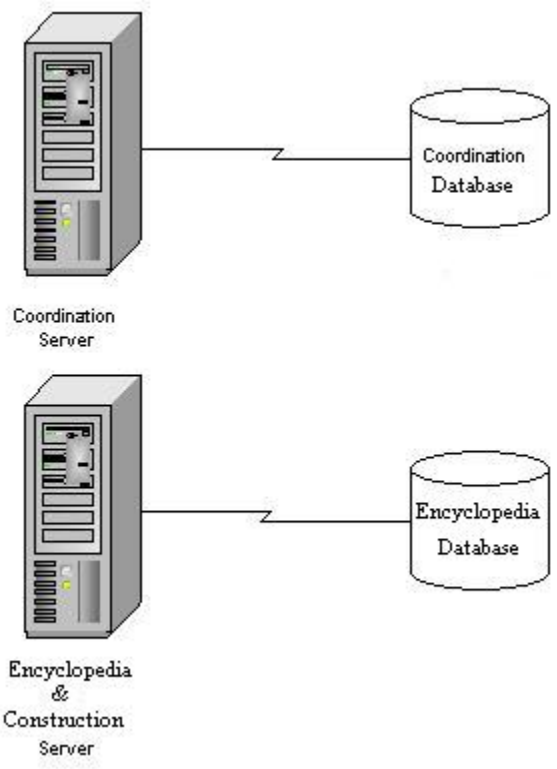
Adds new users to the Coordination database, registers new encyclopedias with the Coordination database, and authorizes user access to encyclopedias. The administrator usually uses this client.

**Support Client**

Supports administration tasks such as setting CSE tuning parameters and running diagnostic tools. The administrator usually uses this client.

# Servers

The Coordination Server and the Encyclopedia Server each manage a specific database and have processes and utilities that access their corresponding database. The Construction Server also accesses the Encyclopedia database, but it is not involved in its management.




**Coordination Server**

Manages the Coordination Database that stores information about the encyclopedias and users in the encyclopedia network. The Coordination Server provides encyclopedia coordination services by:

- Processing requests from the Coordination Client to read and update information about the encyclopedia and its users.
- Processing requests from other Clients to validate user passwords, determine user access to encyclopedias, and locate encyclopedias in the network.

**Encyclopedia Server**

Provides the encyclopedia functionality, including:

- Managing the users and user group access to models and subsets
- Managing the models and subsets

**CSE Encyclopedia Server**

Component services that are a collection of processes and utilities that implement the following functionality through processes stay in memory between service requests:

- The Lock process maintains access integrity on models, subsets, and encyclopedias.
- The ID Allocation process allocates and manages unique ID assignments for the system. For example, object IDs, model IDs, checkout IDs, and subset IDs.
- The User and Group actions manage user and group information in the encyclopedia database. This information also includes user membership in groups and user and group access to models.
- The Model and Subset actions manage the model and subset information that is stored in the encyclopedia database.
- The Version Control actions manage features such as migration, adoption, and model compare.

**Encyclopedia Server Utility**

Provides the encyclopedia functionality for on-demand tasks such as model and subset upload and download.

**Construction Server**

Manages the requests from the Construction Client. Together, they provide the capability to generate standard remote files, also known as implementation packages, for cooperative and non-cooperative applications and proxies.

**Note:** For more information about the server processes and utilities, see *Client Server Encyclopedia Administration Guide.*

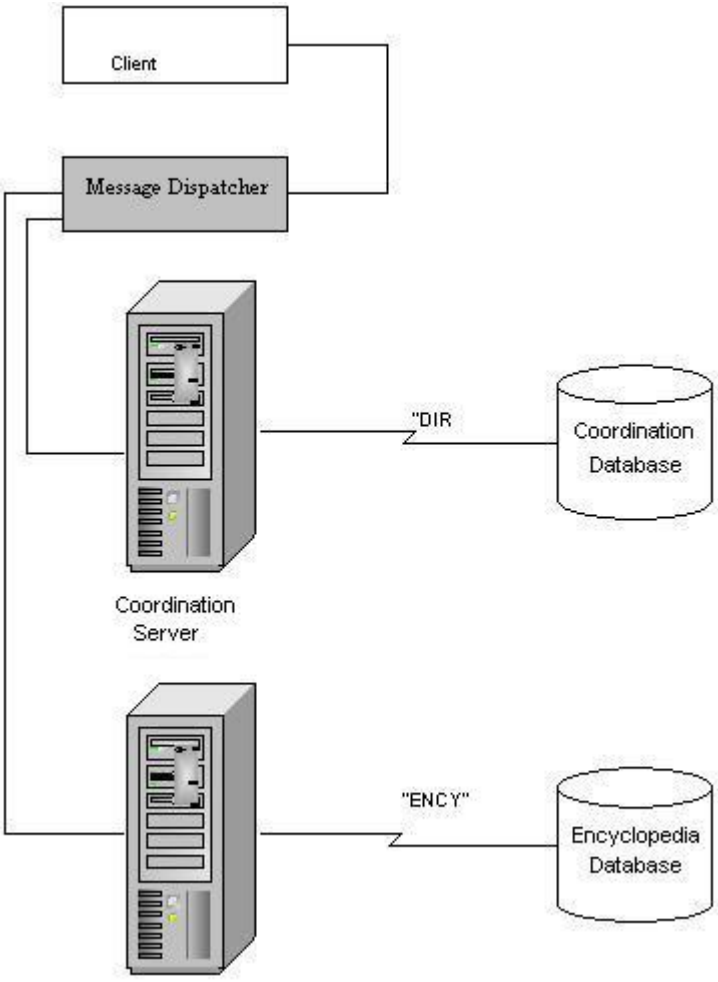
The CA Gen environment imposes requirements on the encyclopedia database you be aware of when creating and preparing the database for the CSE to use. For more information, see the sections Create Oracle CSE Database and Create Microsoft SQL Server CSE Database.

For a list of valid DBMSs for the CSE, more information, or if you have any questions, contact Technical Support or your Account Representative. Refer to the *CA Gen Technical Requirements* at CA Support Online website at http://ca.com/support for the current software requirements.

## Message Dispatcher

Message Dispatcher is a network traffic controller that manages system resources, starts all server and utility processes, and manages requests between workstation clients and servers. When installing servers, install a local or remote Message Dispatcher. Local means that the Message Dispatcher and the server are on the same system. Remote means that they are on different systems.

The following diagram shows how the Message Dispatcher controls requests in the CSE environment.



When you configure the Message Dispatcher, the process creates the Message Dispatcher initialization file, iefmd.ini. This file defines the relationships between running processes in the network. The configuration process creates and uses two other files in the bin directory, es.cfg and ds.cfg. These files contain the Coordination and Encyclopedia Database names.

**Important!** Do not delete or modify the iefmd.ini, es.cfg, or ds.cfg files. The configuration process uses the cfg files when configuring remote Coordination and Encyclopedia Databases. The Message Dispatcher uses the ini file each time it starts.

During CSE configuration, you can select default configuration values to establish a basic configuration, or select options to customize server parameters.

A CSE network includes these components:

- One or more Message Dispatchers, each with its own configuration file.
- One Coordination Group. You can install only one Coordination group per network. A Coordination group includes a Coordination database and a Coordination Server.
- One or more Encyclopedia Groups that each include:
  - Encyclopedia Database
  - User/Group process
  - Model/Subset process
  - Lock process
  - ID Allocation process
  - Construction process
  - Version Control process
  - Utilities

**Note:** For more information about configuring the parameters in the Message Dispatcher initialization file and for details on avoiding model corruption and contention problems, see the *Client Server Encyclopedia Administration Guide*.

## Message Dispatcher Service Option — CSESvcMD Service

A Windows service is a Windows program the Windows operating system controls through the Control Panel Services application, the Service Control Manager (SCM). Using the service application, a program can easily have a set of predefined server programs running or enabled to run when the system boots.

CSESvcMd.exe is a complete self-install and self-uninstall all program that uses standard command-line parameters to set and unset the following COM properties:

- UnregServer—Remove from Service Manager and COM registry
- RegServer—Add to COM registry

- Service—Add to Service Manager

The cse_config program performs all registrations. During configuration, can set the log file directory and the time-out period for the CSE Service.

Time Out is the number of seconds the Message Dispatcher sleeps at start-up. Use this option to allow extra time for all databases to start. Oracle take a little longer. Zero (0) indicates not to sleep. The speed of your system determines the time-out value. Do not set the Time Out to a value greater than required.

**Note:** The database option that you select during configuration determines the database type the service uses. To verify the dependency of the service on a particular database service, inspect the CSESvcMD service's Dependencies property. The Service Control Manager must be able to start the databases that are associated with the named dependencies to start the CSE as a service.

CSESvcMD.Exe can operate in three modes:

- Automatic —the service starts when the system starts. All dependent services must also start automatically.
- Manual —the user manually starts and stops the service after logon.
- Disabled —known to the system, but prevents the service from starting.

Start the CSESvcMD.Exe service to start the Message Dispatcher. Stop the CSESvcMD.Exe service to terminate the Message Dispatcher.

When you start CSESvcMD.Exe in automatic or manual mode, iefmd and all associated servers that are run in the background. They do not appear on your Start menu bar. They can continue running after you log off. When you leave the service in automatic mode, the service and the CSE start when the system starts or restarts.

## Communication Protocols

The CSE uses TCP/IP, as the communications protocol to transport request and reply messages between the clients, the Message Dispatcher, and the servers. TCP/IP is available on all the computers in the CSE network.

### TCP/IP

TCP/IP uses an Internet Protocol (IP) address to uniquely identify each computer, and uses a port number to uniquely identify a connection or service in that computer.

The name of the computer is its hostname, and is an alias for the IP address of the computer. Operating system tools associate the hostname with the IP address of the computer.

Operating system or network administrations tools also associate the port number with a service name. The service name is an alias for the port number, and much easier to remember.

The CA Gen products, including the Client Server Encyclopedia, support IP version 4, IPv4, and IP version 6, IPv6 addresses if the CA Gen platform supports these IP versions. The hostname must be 1024 bytes or less. The service name or port number must be 32 bytes or less.

The CSE uses the system-supplied name resolution services to map the Message Dispatcher (MD) and Remote Daemon Server (RDS) names into IP addresses and port numbers. The system can look up hostnames in the system hosts file or use the Domain Name Services (DNS) to map hostnames to IP addresses, and can look up the service name in the system services file or use other services to map a service name to port number.

## Hostnames and IP Addresses

The CSE supports the following forms of hostnames and IP addresses:

- Simple hostname, as in *mycomputer*
- Fully-qualified hostname, as in *mycomputer.mycompany.com*
- IPv4 address – 123.456.789.12
- IPv6 address – there are many valid forms of IPv6 addresses, including 1234:5678:9abc:def0
- Similar to URL (Uniform Resource Locator) form, as in [*hostname* or *IP address*]. Use this form when appending the service name or port number that is preceded by a colon (:).

## CSE Message Dispatcher and Remote Daemon Server Names

The CSE supports two forms for the MD and RDS names: a *short* name and an *extended* name. When using the short name, the same name is used for IP address and port number lookup. The extended name, <*host name*>/<*service name*>, uses the <*host name*> for IP address lookup and the <*service name*> for a port number lookup. <*name*>/<*name*> is equivalent to the short form of <*name*>.

We recommend that you do not use short names because it requires more complicated network administration procedures.

The CSE components with graphical user interfaces include separate entry fields for the hostname and service name entries. You can replace the host name with an IPv4 or IPv6 address and can replace the service name with a port number.

The CSE components concatenate the hostname and service name into a single entry that other non-GUI components use. This concatenation is the extended name form. The CSE supports the following extended name forms:

- Traditional Form 1: *hostname-v4/servicename* –
- Traditional Form 2: *hostname-v4**servicename* –
- URL form: [*hostname-v6*]:*servicename*

***hostname-v4***

Specifies a simple hostname, a fully qualified hostname, or an IPv4 address.

***hostname-v6***

Specifies a simple hostname, a fully qualified hostname, or an IPv6 address. Enclosed in square brackets.

***servicename***

Specifies a service name or a port number

When your network uses DNS, use the extended format for the MD name and RDS name. <*host name*> can be any name the CSE can resolve through the DNS or local hosts file. The CSE uses system libraries to interpret host name and IP address values and can accept any values that the system supports. Include square brackets with IPv6 addresses.

The <*service name*> can be any name that is defined in the services file or a decimal port number.

The extended name format simplifies network configuration by allowing you to select MD names that do not have the same name in the hosts and services files. For example, you could choose to establish the convention of providing csemd and cserds entries in the services file on every system that has the CSE client or server components that are installed, and identify every MD in your network by the name *system/csemd*. After installing the CSE on *newsystem*, everyone in the network can immediately reach that CSE by using the extended name *newsystem/csemd*. You can use the extended format anywhere that csemd and cserds are the default TCP/IP communications names.

Using the extended name relieves the network administrator from having to assign aliases to system names and to port numbers in all systems in a network for each new MD added to the network. We recommend that you use service names instead of port numbers to simplify network administration.

TCP/IP services also include a local loopback feature to use in simple CSE configurations. The loopback feature uses a more efficient protocol for inter-process communications for programs in the same computer. This reduces overhead in the system for Message Dispatcher to server communications.

The CSE Client to the Message Dispatcher communication uses the normal TCP/IP protocol stack. To use this feature, specify localhost as the hostname when running cse_config. The MD Name is localhost/<cse_port> on the CSE servers system. When running the CSE clients on other workstations, use the CSE server system hostname that is defined in the DNS, not localhost.

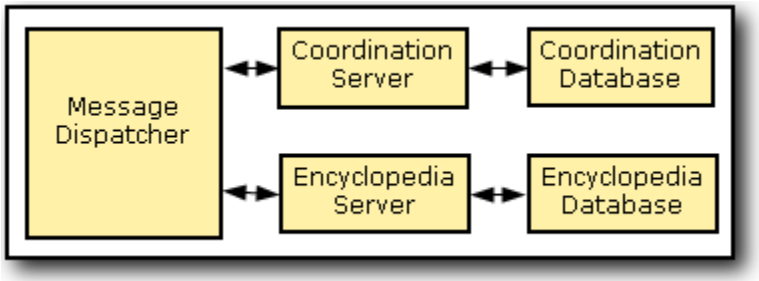
# Configuring the Environment

When configuring your environment, you make the decisions about how to use the CA Gen software, determine how many server and client products to use, and determine the types of changes that are required for your system configuration.

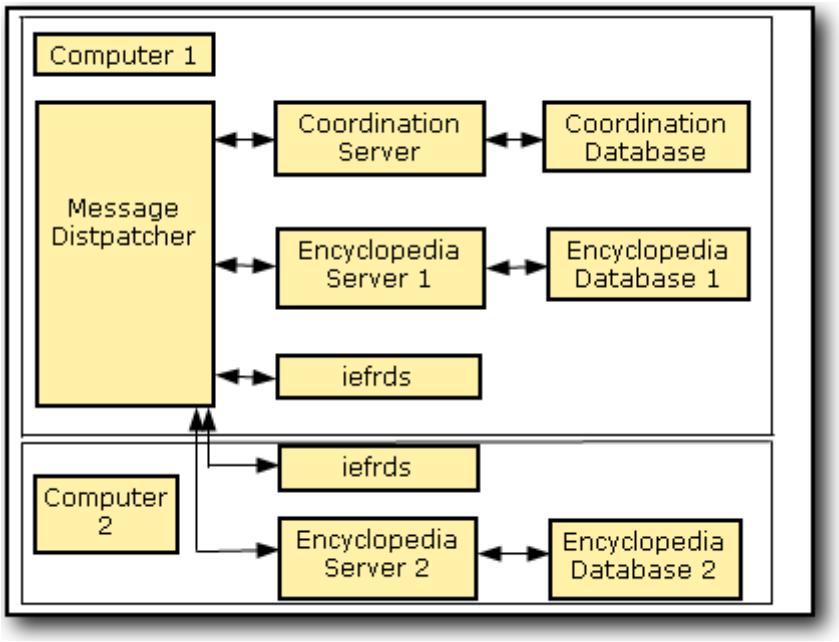
You can create the CA Gen CSE environment as a basic configuration with one server, Message Dispatcher, and database, or you can design and implement an advanced configuration of servers, Message Dispatchers, and databases in a communication networks. After deciding on your configuration, complete pre-installation work and begin installation.

You can combine the configurations in the following configuration option list to meet your site's needs:

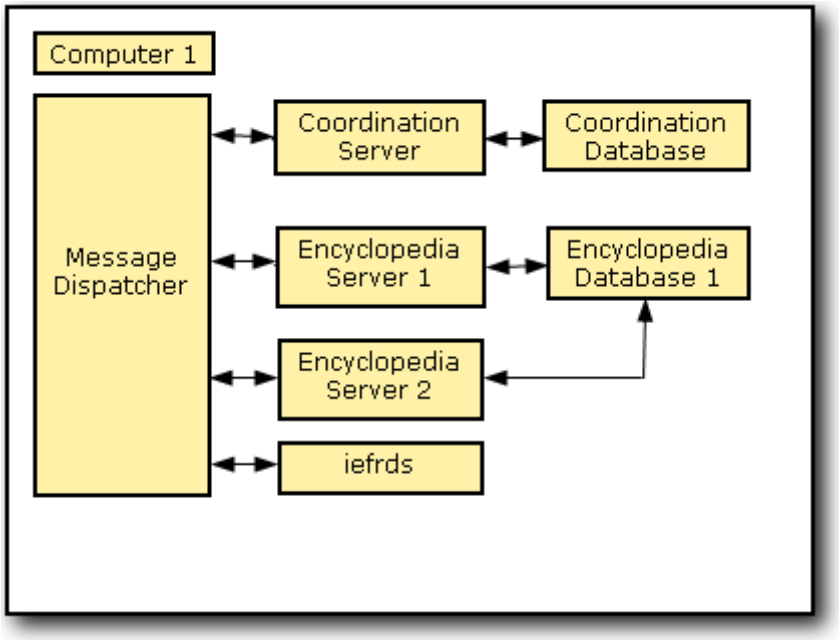
- As a Windows Service in a Windows network, you can enable using the CSESvcMD service where each Message Dispatcher is configured. The CSE Servers can run in the background, without displaying on the desktop, and automatically restart the databases and CSE Servers after a stystem restart.
- This diagram illustrates a basic configuration has one coordination database and server, one local encyclopedia database and server, and the Message Dispatcher, on the same system:



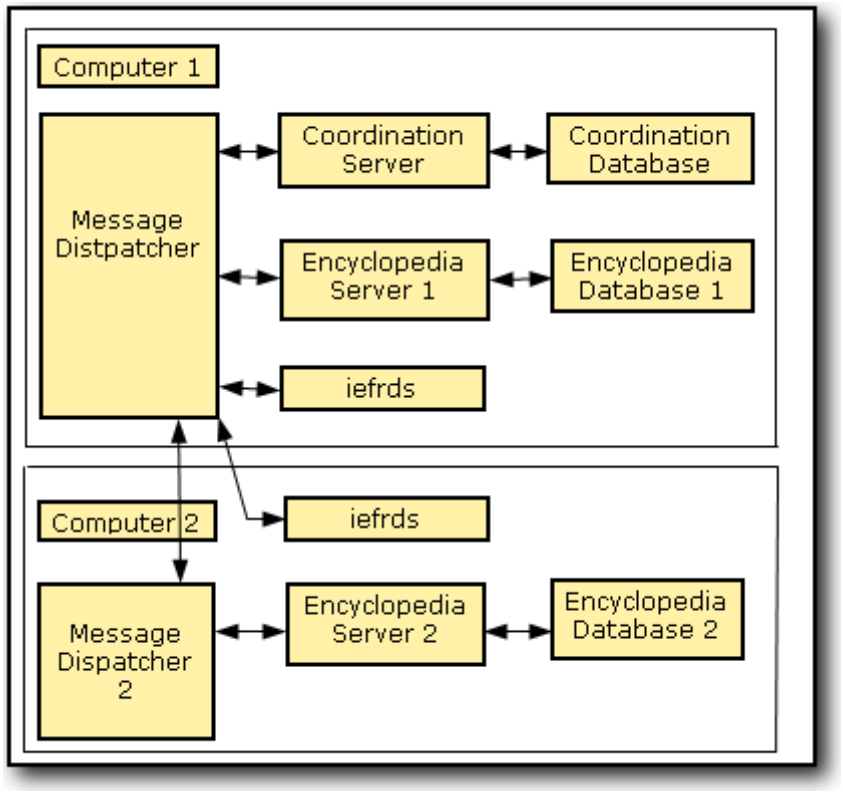
- This diagram illustrates a multiple encyclopedia configuration has one Message Dispatcher, one coordination database and server, and multiple encyclopedia databases and servers on one or more systems:




- For the UNIX platforms only, multiple software versions can access the same encyclopedia, when the database version remains unchanged. For example, a previous and a current version of the software can access the same current encyclopedia:

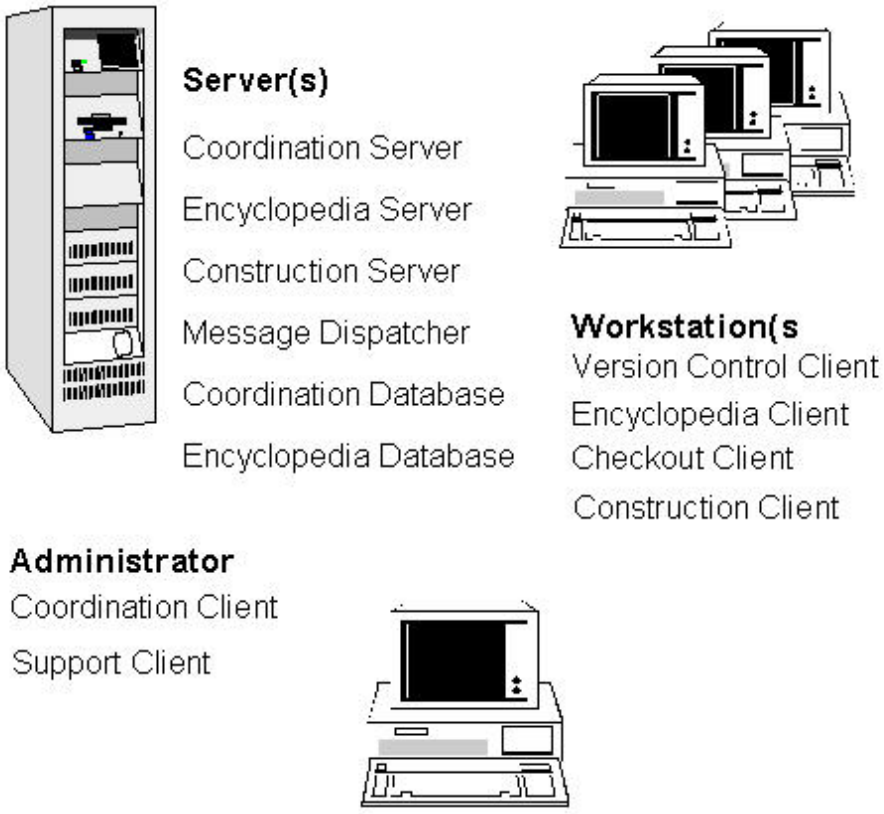


- A Multiple Message Dispatchers configuration requires at least two server systems, with a Message Dispatcher on each system. The coordination server and coordination database control logons to all encyclopedias. An encyclopedia database and encyclopedia server is installed with each Message Dispatcher:



## Basic Configuration

In a CSE basic configuration, you install all server software once on a single-server system and also known as a single Message Dispatcher/single Encyclopedia configuration. This diagram illustrates all the Server software installed in a basic configuration:




# Prerequisites for CSE Configuration

The following sections define the prerequisites required for specific platforms and databases.

## Configuration/Operation Accounts

To operate the CSE on the Windows and UNIX platforms, configure your account.

### Windows

To configure and operate CSE Servers on a Windows platform successfully, you must be able to log in to the Windows platform as a member of the Administrator Group. Installing the CSE Clients also requires Administrator level access. Any account can use the CSE client.

### UNIX

To configure and operate CSE Servers on a UNIX platform, you must be able to log in to the UNIX platform using the CSE owner account specified when installing the CSE Servers.

## Configuring Communications Protocol

Set up connection names in your communication software before configuring the client or server software.

### Configuring TCP/IP Connections

A TCP/IP connection is the IP address and port number pair that identifies a particular service or connection point in a network. Each Message Dispatcher or RDS executing in a network requires a unique connection. To maintain the uniqueness, MDs and RDSs running on the same system must use different port numbers. MDs or RDSs running on different systems can use the same port numbers because the IP address makes the connection unique.

When using short form names, select unique names for the MD and the RDS. These names become aliases for the same IP address or host, and require assigning distinct port numbers in the SERVICES file. This extra network administration activity discourages using the short form name.

When using extended form names, you only modify the SERVICES file when you use service names. There are no network configuration requirements when you use port numbers. The HOSTS file or DNS only require updating when adding a new system to the network. The DNS update is part of the system installation activity. The name or an alias that is assigned to the system is the <*host name*> portion of the extended form of the MD or RDS name.

Configuring the connections for multiple encyclopedias requires specifying a connection for each encyclopedia, MD, or RDS in the network. When using short form names, that means adding a hostname and service name alias for each connection. When using the extended form name, only new port number or service name assignments are needed when the connections are on the same system.

For Windows, the HOSTS and SERVICES files are in the %*windir*%\system32\drivers\etc directory.

For UNIX, the hosts and services files are in the /etc directory. A system administrator usually makes these changes.

## Altering the HOSTS File for Windows and UNIX Servers

After using a text editor to update the HOSTS file, use the ping command to verify the connection to the MD Name and the RDS Name. The ping command sends a request to a host to determine accessibility.

Use a text editor to add lines similar to the following lines to the HOSTS file to identify the TCP/IP address and MD Name:

```
<TCPIP-address> <message-dispatcher-name>
<TCPIP-address> <RDS-name>
```

Ensure that the last line in the file is a blank line.

In a basic installation, the MD Name and RDS Name have the same TCP/IP address because they are on the same system.

**Example: Identifying the TCP/IP address and MD Name**

```
172.25.51.47 mymd
172.25.51.47 mymachine
```

**Note:** For more information about the ping command, refer to your TCP/IP documentation.

## Altering the SERVICES File for Windows and UNIX Servers

After using a text editor to update the services file, search the TCP/IP services file to verify that these service names and port numbers are not in use.

Use a text editor to add lines similar to the following lines to the end of the services file:

```
<message-dispatcher-name> CA Portal/tcp
<RDS-name> CA Portal/tcp
```

#### Example: Identify the MD and RDS in the Services File

```
iefmd 2500/tcp
mymachine 2501/tcp
```

If you are using the extended form name, use the MD and RDS service names, as in:

```
csemd 2500/tcp
cserds 2501/tcp
```

**Note**: Ensure that the last line in the file is a blank line.

## Configuring Databases

### New Encyclopedia and Coordination Databases

During installation, CA Gen copies files from the installation media into the directory. The CSE installation and database installation can occur in any order. However, the databases that the CSE Servers use must be running and accessible by the account executing CSE configuration before CSE configuration starts.

The CSE installation kit includes sample files to create Oracle database instances. When you plan a CSE Server installation using an Oracle database, install the CSE Server software and review these files before creating the Oracle database instance.

To maintain security, CSE configuration does not perform operations that require DBA privileges, including creating an empty database, providing file system space for the database, and authorizing user access to the database. Meet these requirements or secure assistance from the Database Administrator of the system. CSE configuration verifies it can access the database while it collects the configuration information.

CSE configuration supports configuring the Coordination tables and the Encyclopedia tables in the same database or in separate databases. Configuring both sets of tables in the same database reduces system overhead and has some advantages in a single encyclopedia configuration.

The disadvantage of putting the Coordination Tables and Encyclopedia tables in the same database in a multiple encyclopedia configuration is that if you shutdown that database, the entire CSE Server network shuts down because the Coordination Server loses access to the Coordination tables.

When configuring a simple single Encyclopedia network, create one database for the encyclopedia and put Coordination and Encyclopedia tables in that database. When configuring a multiple encyclopedia network, create separate databases for the Coordination and Encyclopedia tables.

You can change the database configuration later. Use the CSE configuration tool after the initial configuration is complete to create tables in a different database. Be familiar with the database tools for exporting and importing data to complete the process.

## Upgrading Encyclopedia and Coordination Databases

Before configuring existing encyclopedia and coordination databases, upgrade the database software and the databases to the version specified in the *CA Gen Technical Requirements* at http://ca.com/support. After meeting these requirements, configure the existing databases with the new software.

## Create Microsoft SQL Server CSE Database

**Follow these steps:**

1. Start the SQL Server Management Studio.
2. Right-click the SQL Server folder, the highest node in the Object Explorer window, and click Properties to open the properties dialog.
3. In the Server Properties dialog, select the Security tab.
4. In the Security group, click the option button SQL Server and Windows Authentication mode, and click OK.
5. Expand the Databases and System Databases folders to see databases that are currently defined.
6. Right-click the Databases folder and click New Databases in the pop-up menu.
7. In the Database Properties window, complete these fields:
   - Database Name—*DBCSE*
   - Owner—<*default*>
   - Use Full Text Indexing—Off
   - Database Files
     - Specify Initial Size of 500 MB for Encyclopedia and 10 MB for Coordination, and your preferred file growth and path properties for the data file.
     - Specify Initial Size of 20 MB for Encyclopedia and 1 MB for Coordination, and your preferred file growth and path properties for the log file.
     - The paths must exist before you create the database.
8. Click OK to create the database.

9. To open the ODBC client, use one of the following steps:
   - On a 32-bit Windows system, open the Control Panel, open Administrative Tools, and double-click Data Sources (ODBC).
   - On a 64-bit Windows system, **perform one of the following options**:
     - Use the 32-bit version DSN by installing the 32-bit version osql.exe program used by the 32-bit version DSN
       a. Install the 32-bit version of the Microsoft SQL Server Management Studio/ tools to provide the 32-bit version of osql.exe that is needed by the 32-bit DSN during the CSE Configuration step.
       b. Using %systemroot%\syswow64\odbcsd32.exe, define the 32-bit version DSN.
     - Use the 64-bit version DSN by creating the 64-bit version DSN which can be used by the 64-bit version osql.exe program installed by the default
       a. Using %systemroot%\syswow64\odbcsd32.exe, define the 32-bit version DSN that is needed by the CSE runtime itself, being 32- bit software.
       b. Using %systemroot%\system32\odbcsd32.exe, define the 64-bit version DSN.

   **Note:** The CSE runtime itself, being a 32-bit software, always uses the 32-bit DSN and therefore the 64-bit DSN can be removed after the CSE Configuration step has been successfully completed.

   The ODBC Data Source Administrator panel opens.
10. Select the System DSN tab and click Add.

    The Create New Data Source panel opens.
11. Select SQL Server and click Finish.
12. In the next dialog, type the database name in the Name field, Description, Which SQL Server (local), and click Next.
13. Click With SQL Server authentication.
14. Check Connect to SQL Server to obtain.
15. Complete the database login ID and password, and click Next.
16. Check the Change default database to: box.
17. Click the drop-down, select the database that you created in these steps, and click Next.

    **Important!** Perform translation for character data must be unchecked. CSE handles its own character translation. Allowing SQL Server to translate would result in corrupted models.
18. Click Finish to create the database and finish ODBC access preparation for the database.

## Oracle CSE Tablespaces

CSE configuration for Oracle requires user access, rather than DBA access, to an Oracle instance and requires that several tablespaces exist. Using separate tablespaces for data, indexes, logs, and temp space improves performance when you assign different tablespaces to different disk drives. Using several disk drives improves performance by reducing contention for I/O resources during database operations.

CSE configuration requires the following tablespace names to create the Encyclopedia database:

- IEFSENCY_TAB – data tablespace
- IEFSENCY_IDX – index tablespace
- IEFSENCY_ROLL – rollback tablespace
- IEFSENCY_TEMP – temporary tablespace

The Coordination tables can be created in the same tablespaces when creating a single database configuration. When creating a dual database configuration, and to support earlier CSE versions, configuration can also create the Coordination tables in tablespaces with the following names:

- IEFSDIR_TAB – data tablespace
- IEFSDIR_IDX – index tablespace
- IEFSDIR_ROLL – rollback tablespace
- IEFSDIR_TEMP – temporary tablespace

## Create Oracle CSE Database

The following files are an example for creating an Oracle Coordination and Encyclopedia database. The files are also in the cse\cse_oracle directory in the installation directory.

- initdbdir.ora – coordination database parameter file
- crdbdir.sql – SQL command file to create the coordination database and tablespaces
- crdbdir.bat – Batch script file to execute crdbdir.sql, Windows only
- initdbcse.ora - Encyclopedia database parameter file

- crdbcse.sql – SQL command file to create the Encyclopedia database tablespaces
- crdbcse.bat – Batch script file to execute crdbcse.sql to create the Encyclopedia database and tablespaces (Windows only)

**Note**: For CSE Servers running on a 64-bit Oracle database, the 32-bit Oracle client software must also be installed with the 64-bit Oracle database software. Install the 32-bit Oracle client software after creating ORACLE CSE database to ensure that the Oracle client bin directory precedes the Oracle server bin directory in the PATH environment variable. In this case, the 64-bit database engine and the 32-bit client library have different ORACLE_HOME values.

The CSE Server to Oracle database connection typically uses the Bequeath protocol. When the Oracle client and server installations have different ORACLE_HOME values, the Bequeath protocol is unavailable and use the database network tools to enable the use of the IPC protocol.

## Considerations for Moving an Oracle CSE to a New Database Instance

When you have an Oracle CSE on Windows or UNIX, to move that CSE to a new Oracle instance, consider the following cautions.

You populate the new encyclopedia by using the Oracle tools to export the old database and then import into the new database, or you use the CSE tools for copying models.

If you choose to use the Oracle export and import tools, create the new database using the same character set the old database used. If the character set values differ, the import step attempts to do code page translation from the old character set to the new character set. Some model properties store non-character data that is designated as character properties. CSE also supports models in several code pages in the same encyclopedia. It is impossible for Oracle to do the correct code page translation for all models in the encyclopedia. Some models may be corrupted if you change the database character set between the export and import steps.

Choosing to use the CSE tools to copy models avoids these problems. If changing standards at your site require changing the character set for the new Oracle database instance, use the CSE tools for copying models to populate the new encyclopedia. You could keep the two encyclopedias separate and could use download with upload to copy the models. Using advanced configuration features, you can link the two encyclopedias and can use the cross-encyclopedia functions to copy the models.

In both these cases, you are creating a new encyclopedia and must assign a new encyclopedia ID to it to keep both encyclopedias running simultaneously, such as while you are doing the upgrade project. When using the CSE copy model tools, assign the new encyclopedia ID while configuring the CSE, before copying models. When using export and import, assign the new encyclopedia ID before changing to the models in the new encyclopedia. Use the Support Client to change the ID in the encyclopedia database and the Coordination Client to change the ID in the encyclopedia registry tables.

## UNIX with Oracle Database

Before creating an Oracle database, verify:

- The ORACLE_HOME environment variable is set
- The $ORACLE_HOME/bin directory is in your PATH environment variable
- The UNIX account that is used to install the CSE is in the Oracle database administrator group

The create database process for UNIX is similar to the process for Windows. The cse/cse oracle directory includes example parameter files and database creation scripts. There is no equivalent to oradim on UNIX platforms. An Oracle DBA can run the script to create the Oracle database instance with the following commands:

```
export ORACLE_SID=DBCSE
```

or

```
setenv ORACLE_SID DBCSE
sqlplus /nolog
sql> connect sys/<password> as sysdba
sql> start crdbcse.sql
```

## For Oracle Only... Edit the /etc/oratab file

To start the server databases at system boot time, edit the /etc/oratab file to allow Oracle to recognize the server databases. The server databases are identified through the Oracle System ID (SID). The default SID names are:

- Coordination Server—default = DBDIR
- Encyclopedia Server—default = DBCSE

**Follow these steps:**

1. Log in as the superuser using the account under which Oracle is installed:

   `su <oracleid>`

   For example, when the account is oracle, use this command:

   `su oracle`

2. Add the SID to the /etc/oratab file as in:

   `<ORACLE_SID>:<ORACLE_HOME>:Y`

   For example, when the Oracle SID is DBCSE, and Oracle home directory is /usr/oracle, use this command:

   `DBCSE:/usr/oracle:Y`

3. Save and close the file.
4. Log out from the Oracle account.

5. Set the following variables that are based on the UNIX shell you use:
   - Bourne Shell or Korn Shell, add the following values to .profile:

     ```
     ORACLE_HOME=<value>; export ORACLE_HOME
     PATH=$PATH:$ORACLE_HOME/bin; export PATH
     ```

   - C Shell, add the following values to .cshrc:

     ```
     setenv ORACLE_HOME <value>
     set path=( $path $ORACLE_HOME/bin )
     ```

# Configuring a CSE

You are ready to start CSE configuration after you have:

- Installed operating systems and database software that meets the *CA Gen Technical Requirements* at http://ca.com/support.
- Installed the CSE Server software
- Created new Encyclopedia and Coordination database or databases, or upgraded existing databases, using the database tools
- Shut down a running Message Dispatcher if it uses the same MD name you are using in this configuration
- Shut down a running iefrds program if it uses the same RDS name you are using in this configuration

## CSE Configuration Program

The CSE configuration programs for UNIX and Windows, both named *cse_config*, solve the same problem: customizing a CSE Server installation.

### Common Features

- Dialog box oriented – Each program presents a series of dialog boxes to collect configuration information. The dialog boxes include Next and Back to navigate forward and backward through the dialog boxes.
- Parameter validation - You cannot proceed to the next dialog if a parameter in the current dialog is invalid.
- Configuration saved – Saves configuration information when you click Finish, and reloads the saved configuration information the next time cse_config runs.
- Batch applied – Applies updated configuration information only after completing the interview phase.
- Help – most dialog boxes have Help buttons to present reminders about how to use the dialog. Clicking the Close button returns to the previous dialog.

- Cancel – Click Cancel to abandon the cse_config session without applying updated configuration information to the saved configuration file or to the installed software of databases. Choosing Cancel confirms you want to cancel or return to the previous dialog.
- Error Dialog – when the program detects invalid input to a dialog, it presents an error dialog explaining the problem. Click Resume to return to the dialog in which the program detected the problem or Abort to leave the configuration session.

  **Note:** On the UNIX systems, cse_config does not return the focus to the field in which the error occurred. Read the error message carefully and use the mouse or the tab key to move focus to the appropriate field.

# How to Start cse_config

## Windows cse_config

You can start cse_config for Windows from the Start menu or from the command line. To start from the Start menu, click Start, Programs, CA, Gen *x.x*, CSE Servers, CSE Configuration.

**Note:** *x.x* refers to the current release of CA Gen. For information about the current release, see the *Release Notes*.

To start from a command prompt, change directory to the CSE\bin directory and enter:

```
cse_config
```

To start from Windows Explorer, navigate to the CSE\bin directory and double-click cse_config.

To start cse_config on a 64-bit Windows operating system, from a command prompt, change directory to the CSE\bin directory and enter these commands:

```
set ORACLE_HOME=
set ORACLE_SID=
cse_config
```

**Note:** Running cse_config from its shortcut on a 64-bit Windows operating system fails because that environment includes ORACLE_HOME. During the cse_config execution, specify the database name and password. For the user ID, specify <*user*>@<*service-name*> where <*service-name*> is the name in the TNSNAMES.ORA file for the IPC protocol.

Some versions of the Windows operating system fail to initialize the PATH environment variable immediately following installation of the CSE Servers feature. When this occurs, the cse_config reports a problem loading a DLL and terminates. Restart your system to recover.

## UNIX cse_config

Run cse_config for UNIX using the cseadmin account, the CSE account that is used when installing the CSE Servers. Begin by logging in using the cseadmin account.

The cse_config utility uses the same tool the CA Gen Installation tool uses for the interview process and can conduct the interview in GUI mode when the following conditions are met:

- The Java Runtime Environment (JRE) specified in *CA Gen Technical Requirements* at http://ca.com/support.*Technical Requirements* or later is available.
- The DISPLAY environment variable is set and points to a host that is an X-Terminal or is running an X-Terminal emulator.

In GUI mode, you can use the mouse to click buttons and move focus to fields.

When these conditions are not met, cse_config conducts the interview in VT100 mode. In VT100 mode, use the TAB and arrow keys to navigate in a dialog, use the space bar to change checkboxes or radio buttons, and use the Enter key to activate the selected button.

The VT100 mode requires you to use a terminal or terminal emulator that supports the VT100 command and control characters. If you are using any other type of terminal or a terminal emulator, set the terminal mode to VT100 before logging on to the UNIX platform.

For example, if you are using the Microsoft Windows telnet program to log in, start the program in VT100 mode by entering the following command in the command-line window or the Run program dialog:

```
telnet -t vt100 <hostname>
```

***<hostname>***

Specifies the network name of the computer where CSE is installed.

If you have an earlier version of CSE on your system, cse_config can pick up some of the configuration information from that version. If the environment variable IEF_CSE_SRV is set to the earlier installation directory, cse_config looks in that directory for configuration information from the earlier installation.

The utility gets the information from the following files:

- $IEF_CSE_SRV/iefcse.sh
- $IEF_CSE_SRV/exe/ds.cfg
- $IEF_CSE_SRV/exe/es.cfg
- $IEFCSGEN/cse_config_rsp.txt

When you are ready to start cse_config, enter the following commands for a Bourne, Korn, or C shell:

```
cd <CSE Servers installation directory>
cd cse/bin
./cse_config
```

## CSE Servers Configuration

When cse_config starts, it opens the CSE Servers Configuration dialog that lists reminders of the resources that should be available or shutdown for cse_config to run properly.

There are no entry fields in this dialog. Use the scroll bar to view all the text and click Next to continue when finished.

Before cse_config opens the CSE Servers Configuration dialog, it checks for the cse_config_rsp.txt file in the same directory from which the cse_config program starts or in the most recently specified CSE configuration directory. cse_config checks syntax, loads the file, and uses file settings to set initial values for the configuration parameters.

When cse_config fails to locate the file in the directory, it looks for information from a previous version to set initial values.

When cse_config fails to locate a file from the previous version, it starts with default values.

## Setting Configuration Parameters

To set the Encyclopedia tables and Coordination tables in the same database, enter the Encyclopedia connection parameters into the corresponding Coordination connection parameter fields.

To keep the Encyclopedia tables and Coordination tables in separate databases, use different database names and the appropriate user ID and password connection parameters for each database.

## CSE Configuration and Working Directory

Select the Server Configuration Directory and the Server Working Directory.

**Server Configuration Directory**

cse_config stores the configuration response file, ini files, and other configuration files in this directory path. When cse_config finds a configuration response file in this directory, it uses the file's contents to provide the initial values for configuration activity. The apply phase replaces the configuration response file, ini files, and other configuration files with the current configuration information.

**Server Working Directory**

cse_config uses this directory path to store CSE Server log files and other CSE Server working directories and files.

## CSE Communications Configuration

Enter the following communications parameters in the CSE Communications Configurations dialog:

**Message Dispatcher Hostname**

Specifies the name of the system on which the CSE Servers are installed and run. It is the hostname portion of the extended form MD name.

The default is the name of the system on which the configuration is running.

You can change this to localhost. For more information about using localhost, see the TCP/IP section in this guide.

**Message Dispatcher Service / Port**

Specifies the service name that maps to a port number or the port number, on which the Message Dispatcher accepts connection requests.

**Remote Daemon Service / Port**

Specifies the service name that maps to a port number or the port number, on which the Remote Daemon accepts connection requests.

**Encyclopedia Group**

Specifies the name that correlates a registered Encyclopedia with resources and routing information that is stored in the Message Dispatcher INI file. Use this name when you register the encyclopedia.

**Limits:** 1 to 8 characters, the first of which must be a letter. The remaining seven characters can be all uppercase letters, decimal digits, underscore (_), or dash (-).

**Create Message Dispatcher INI File**

Check Create Message Dispatcher INI File to enable creation of the Message Dispatcher INI file and initialization of other communications and infrastructure elements.

Uncheck this field to skip INI file creation and infrastructure initialization. Infrastructure refers to everything not directly related to the encyclopedia or directory database.

The cse_config program verifies that the hostname and service names can map to a port number, except when:

- The hostname is all digits and decimal points, the cse_config program assumes that the hostname is an IP address
- The hostname begins with an open bracket ([) or includes a colon (:), the cse_config program assumes that it is an IPv6 address
- The service/port value is all digits

## CSE Database Type

Select one of the following type of databases that is used in this CSE Servers configuration in the CSE Database Type dialog:

- Oracle
- SQL Server

cse_config skips this dialog when the platform only supports one database.

## Encyclopedia Database Configuration

Select one of the following configuration activities to apply to the Encyclopedia database in the Coordination Database Configuration dialog:

**Create and Initialize New Encyclopedia tables**

Creates a new Encyclopedia, and creates tables and indexes. When you select this option, cse_config drops existing the Encyclopedia tables and creates new tables and indexes in the tablespaces as specified in the Create Oracle Encyclopedia Instance.

**Initialize Existing Encyclopedia tables**

Creates a new Encyclopedia without dropping existing tables, creating the tables, and indexes. When you select this option, cse_config truncates the Encyclopedia tables to create an unpopulated database, but preserves the tables and indexes. Use this option when your site requires a separate activity for creating tablespaces and tables.

**Update Encyclopedia tables to this release**

Applies the CSE product upgrades in this release to an existing encyclopedia populated with users, models, and subsets, you want to continue using.

**Skip Encyclopedia tables configuration**

Skips the changes to the Encyclopedia database. Use this option to reconfigure the CSE Communications or the Coordination database without reconfiguring the Encyclopedia database.

**Note**: On the UNIX platforms, this dialog has check boxes. Make sure that only one box is checked when you click Next.

The Create and Initialize and the Initialize options include adding a default user ID of ENCYADMN as the first user account for the new Encyclopedia. You can modify or delete this user ID after adding other user IDs. The Update option does not change Encyclopedia data tables. All options except Skip perform the following operations:

- Truncate and load the schema tables for the current release
- Truncate and load the codepage map tables for the current release
- Load or reload the PI views for the current release
- Load or reload the stored procedures for the current release

## Encyclopedia Database Connection

Enter the coordination database name and other connection information the database type requires in the Coordination Database Connection dialog.

Oracle and Microsoft SQL Server require the database name, user ID, and password. Oracle requires a password. The password is optional with SQL Server. The dialog conceals the password.

The password is never a default value. Each time cse_config starts, enter the database password correctly. If you navigate past this dialog and go back to it, it retains the previously entered password.

cse_config connects to the database using the vendor supplied database access tool to confirm the data. It validates the data even when you click the Skip configuration option in the previous dialog to ensure that the data is recorded correctly when CSE Communications configuration is enabled.

## Encyclopedia Identification

The Encyclopedia Identification dialog appears when you select Create and Initialize or Initialize as the configuration option. This dialog is skipped when you select Update or Skip as the configuration option. Enter the following Encyclopedia Identification Parameters in the Encyclopedia Identification dialog:

**Encyclopedia ID ( 1 to 999999999)**

Enter up to a nine-digit number, not zero, that becomes the Original Encyclopedia ID for this encyclopedia.

**Encyclopedia Name (8 chars)**

Enter up to an eight-digit US ASCII character name for the encyclopedia.

**Encyclopedia Description (32 chars)**

Enter up to a 32-digit US ASCII character encyclopedia description.

**Important!** This information is important for the first time the CSE Servers starts to register the encyclopedia with the Coordination Service.

**Note:** When creating or initializing a new Coordination database and Encyclopedia database simultaneously, cse_config uses the information in this dialog to register the Encyclopedia, and grants the default Encyclopedia Administrator, ENCYADMN, access to the Encyclopedia. When the cse_config program finishes and the CSE Servers start, the ENCYADMN account has access to the encyclopedia.

When creating or initializing a new Coordination database and updating an Encyclopedia database simultaneously, cse_config does not register the Encyclopedia. Manually register the Encyclopedia and manually grant access to ENCYADMN through the Coordination Client to ensure that the ENCYADMN account has access to the Encyclopedia.

## Coordination Database Configuration

Select one of the following configuration activities in the Coordination Database Configuration dialog:

**Create and Initialize New Coordination tables**

Creates a new Coordination database. When you select this option, cse_config drops the Coordination tables and creates new tables and indexes in the tablespaces that are specified in the Create Oracle Coordination Instance.

**Initialize Existing Coordination tables**

Creates a new Coordination database without dropping existing tables, creating the tables, and indexes. When you select this option, cse_config truncates the Coordination tables, and preserves the tables and indexes. Use this option when your site requires a separate activity for creating tables.

**Update Coordination tables to this release**

Applies the CSE product upgrades for this release to an existing coordination database populated with users and encyclopedias you want to continue using.

**Skip Coordination tables configuration**

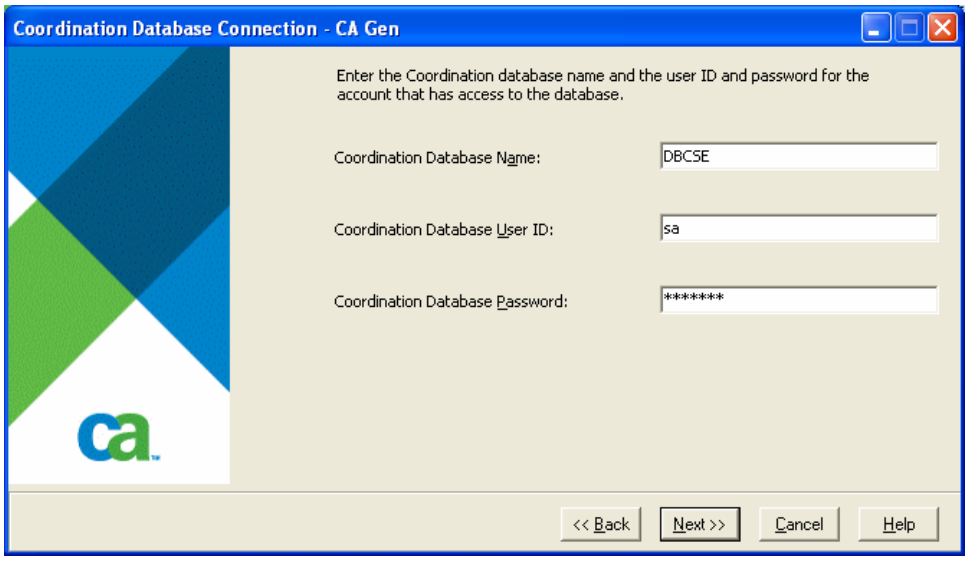
Skips the changes to the Coordination database. Use this option to reconfigure the CSE Communications or an Encyclopedia database without reconfiguring the Coordination database.

The Create and Initialize and the Initialize options include adding a default user ID of ENCYADMN as the first user account for the new Coordination database. You can modify or delete this ID after adding other IDs. The Update option does not change Coordination user data tables. All options except Skip perform the following operations:

- Truncate and load the codepage map tables for the current release
- Load or reload the stored procedures for the current release

## Coordination Database Connection

Enter the coordination database name and other connection information the database type requires in the Coordination Database Connection dialog.




Oracle and Microsoft SQL Server require the database name, user ID, and password. Oracle databases require the password. The password is optional for SQL Server databases. The dialog box conceals the password.

The password is never a default value. Each time cse_config starts, you must enter the database password correctly. If you navigate past this dialog box and go back to it, it retains the previously entered password.

cse_config connects to the database using the vendor supplied database access tool to confirm the data. It validates the data even when you choose the Skip configuration option in the previous dialog box to ensure the data is recorded correctly when CSE Communications configuration is enabled.

## Message Dispatcher Service Configuration (Windows Only)

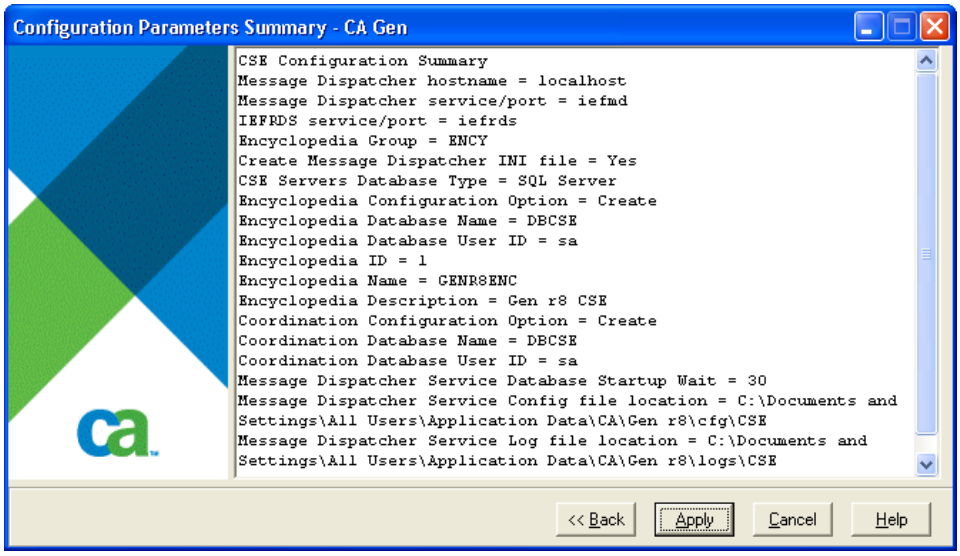
Enter the Message Dispatcher Service parameters. This dialog appears only in the Windows cse_config.

**Database startup wait time**

Specifies the time in seconds the MD waits before starting the Coordination and Encyclopedia servers.

## Configuration Parameters Summary

The Summary dialog displays the configuration options that you selected and gives you the option to apply this configuration information to the current installation or to cancel this configuration activity without changing the current configuration. You can also go back through the dialogs to make the adjustments, and return to this dialog.




If you click Cancel in this dialog, it prompts you to confirm to cancel or resume configuration. Selecting Abort in the Cancel Confirmation dialog ends the configuration session without saving or applying the configuration information.

Selecting Finish on the Summary dialog saves the configuration parameters and begins applying the configuration parameters to the current installation instance.

There are no options for aborting the Apply process.

The Windows platform reports progress in the dialog.

On the UNIX platform, the configuration user interface closes and cse_config reports progress in the same window or screen the cse_config program started in. The process leaves log files in the CSE/bin or CSE/cse_oracle directory. If the process encounters problems, inspect these files for possible causes.

cse_config creates a more detailed log of the configuration application activity in the configuration account's home directory. The file that is named cse_config_<n>.log, where <n> starts at 1 and is incremented each time cse_config runs. These files only provide information about the configuration apply process and you can remove them after you complete a successful configuration.

**Note:** When you select the options to create and initialize or initialize the coordination and encyclopedia databases, the CSE registers the encyclopedia and grants the default ENCYADMN account access to the encyclopedia.

## Custom Configurations

To configure the CSE, select one of the independent variables the cse_config application uses to control configuration actions:

- Create Message Dispatcher INI file specifies to apply the configuration information to all configurable aspects of CSE Servers, except the Encyclopedia and Coordination databases.
- Encyclopedia Database Configuration specifies the configuration process to apply to the Encyclopedia database.
- Coordination Database Configuration specifies configuration process to apply to the Coordination database.

Use these variables to configure the entire CSE Server in one operation or select any single or pair of components to configure.

### All New or Repair Installations

Every time that you install the CSE server software, run cse_config at least once, with at least one of the database configuration options that are not set to SKIP.

The first time that you install a release, run cse_config and at least update both databases to configure the databases for the installed release.

The Coordination database update option is simpler than the Encyclopedia update option. You can update the Coordination database each time you re-install the same release of the CSE server software to ensure that the proper configuration of the software both databases need.

To successfully configure the CSE, select one of the following:

- Message Dispatcher
- Coordination Database
- Encyclopedia Database

## New CSE with a Single Database Configuration

**Follow these steps:**

- Use the Create and Initialize option for the Encyclopedia Database Configuration and Coordination Database Configuration.
- Set Create Message Dispatcher INI File to Yes.
- Set the Encyclopedia Database Name and Coordination Database Name the same.

## New CSE with a Dual Database Configuration

**Follow these steps:**

- Use the Create and Initialize option for the Encyclopedia Database Configuration and Coordination Database Configuration.
- Set Create Message Dispatcher INI File to Yes.
- Set the Encyclopedia Database Name and Coordination Database Name to different names.

## Update CSE in a Dual Database Configuration

To update the CSE in a dual database configuration, use these settings:

- Use the Update option for the Encyclopedia Database Configuration and Coordination Database Configuration.
- Set Create Message Dispatcher INI File to Yes.
- The Encyclopedia Database Name and Coordination Database Name are the same as in the previous CSE.

## Update CSE and Move Coordination Tables to the Encyclopedia

**Follow these steps:**

- Run cse_config and update the existing Coordination database to the current release.
- Export the Coordination tables. The Coordination tables are DIRENCY, DIRUSER, DIRLOGON, and DIRXCPID.
- Run cse_config again.
- Set Create Message Dispatcher INI File to yes.
- Use the Update option for the Encyclopedia Database Configuration
- Use the Create and Initialize option for the Coordination Database Configuration.
- The Encyclopedia Database Name is the same as in the previous version.
- Set the Coordination Database Name the same as the Encyclopedia database name.

When configuration finishes, import the Coordination tables into the Encyclopedia database. After fully testing and verifying that all user accounts and all registered encyclopedias are available in the configuration, you shut down and delete the old Coordination database.

## Move Coordination tables to Encyclopedia after Full Configuration

To move the Coordination tables to the Encyclopedia after a full configuration, export the Coordination tables before starting the configuration and use these settings:

- Set Create Message Dispatcher INI File to yes.
- Set Encyclopedia Database Configuration to Skip.
- Set Coordination Database Configuration to Create and Initialize.

The Encyclopedia Database Name is the same as the previous configuration, and the Coordination Database Name is the same as the Encyclopedia database name.

When the configuration finishes, import the Coordination tables into the Encyclopedia database.

## Change MD Name After a Full Configuration

To change the communication information, such as the Message Dispatcher port number, use these settings:

- Set Create Message Dispatcher INI File to yes.
- Set Encyclopedia Database Configuration and Coordination Database Configuration to Skip.

# Post Configuration Tasks for UNIX CSE Servers

The following post-installation tasks require Client/Server Administrator authority:

1. Edit the login file.
2. (Oracle only—optional) Configure the Oracle databases to start from any directory.
3. Start the CSE Servers.
4. Stop the CSE Servers
5. UNIX Server Installation: Related Tasks.

## Editing the UNIX Login File

After successfully installing and configuring the servers, set up your environment to run the servers. The cse_config program added initialization files to the server software configuration directory. The system needs to access the correct initialization file each time you log in, so you must edit your login file as follows:

1. Log in as the CSE Administrator using the account set up by the UNIX Administrator.
2. Add the following statement for the shell you are using:
   - Bourne Shell or Korn Shell, add this statement to .profile:

     `. <configuration directory>/cse.sh`
   - C Shell: add this statement to .cshrc:

     `source <configuration directory/cse.csh`

     where <*configuration directory*> is the pathname of the server configuration directory
3. Log out.
4. Log in again to re-initialize your environment using the CSE Administrator account.

# Upgrading a Previous Installation

When you upgrade from a previous installation, you maintain your existing data and upgrade your server software and databases. Ensure that the correct version of your DBMS is installed before attempting to upgrade the CSE.

**Note:** For the correct version of the DBMS to use with this release of CA Gen, see the *CA Gen Technical Requirements* at http://ca.com/support. For more information about general rules for upgrading, see the *Distributed Systems Installation Guide*.

CA Gen CSE supports upgrades from the prior schema and the second prior schema. If your model is from a schema older than the second prior schema, use the Conversion Utility included with the earlier CSE release to convert to the prior schema or the second prior schema to use this release.

**Note:** For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes* or the online help.

**Important!** Before beginning a new installation of the CSE, we recommend that you back up all CSE databases and directories.

## On All CSE Platforms

Before upgrading a previous installation, be sure to complete these tasks:

- Backup the CSE databases and directories of your current system. Consider storing the backups on media that are not installed on this platform. Also consider verifying that the system can be restored from the backup files Compare your current hardware to the *CA Gen Technical Requirements* at http://ca.com/support and determine if your current hardware can support the requirements.
- Upgrade CPU and memory as needed.
- Upgrade the OS, DBMS, and databases to meet requirements that are defined in *CA Gen Technical Requirements* at http://ca.com/support.

  Follow the DBMS vendor's instructions for upgrading the DBMS software and the existing databases to the required DBMS release.
  - or -
  Upgrade the DBMS version to the required release, create new databases, and use the database backup files to repopulate the new databases.
- Install the CA Gen Release 8.5 CSE software. For the instructions on installing the CSE software, see the chapters Installing CA Gen on Windows in the *Distributed Systems Installation Guide*.
- Run cse_config on your installation.

## Windows

### Oracle CSE

To upgrade the Oracle CSE databases, you can perform an Oracle Upgrade to the existing CSE databases, or can create new CSE databases and import data from the previous databases using the Oracle release that is specified in the *CA Gen Technical Requirements* at http://ca.com/support.

**Note:** For an Oracle CSE, increase the system tablespace before upgrading. The system tablespace should be a minimum of 300 megabytes.

## Option 1—Perform an Oracle Upgrade

1. Verify that all models and subsets are checked in. Delete any models in schemas earlier than the prior schema or second prior schema.

   **Note:** For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes*.

2. Back up existing Gen software and databases.
3. Use the Oracle software to convert the existing Oracle CSE databases to the release of Oracle that is specified in the *CA Gen Technical Requirements* at http://ca.com/support.
4. Install the new CSE software.
5. Configure CSE using Create Message Dispatcher INI file, Encyclopedia Update, and Coordination Update.

## Option 2—Import Existing Data into Oracle

1. Verify that all models and subsets are checked in. Delete the models in schemas older than the prior schema or second prior schema.

   **Note:** For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes.*

2. Back up your existing Gen software and databases.
3. Install the version of Oracle that is specified in the *CA Gen Technical Requirements* at http://ca.com/support.
4. Install the current software.
5. Create a new CSE databases as described in Configuring Databases.
6. Import your existing database or data into the new database.
7. Configure the CSE using Create Message Dispatcher INI file, Encyclopedia Update, and Coordination Update.

# MS SQL Server

**Follow these steps:**

1. Delete the models in schemas earlier than the prior schema or second prior schema.

   **Note:** For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes*.

2. Back up your existing Gen software and databases.

3. Install the current software.
4. Configure the CSE using the Create Message Dispatcher INI file, Encyclopedia Update, and Coordination Update.

## UNIX

To upgrade an existing CSE on the UNIX platform, ensure you log in as the CSE administrator using an account set up by your UNIX administrator. You must have permission to create a directory and add files. If you choose to install the software in the existing CSE directory, files with the same name are overwritten. To preserve files from the previous installation, install the CSE software in a new directory and type a new directory name when prompted for the installation directory, type a new directory name.

### Oracle CSE for Advantage Gen 6.0 or 6.5, and AllFusion Gen 7.6 to CA Gen 8.5

The following methods are available to upgrade the Oracle CSE databases:

1. Perform an Oracle Upgrade to the existing CSE databases.
2. Use the Oracle release that is specified in the *CA Gen Technical Requirements* at http://ca.com/support to create new CSE databases and import data from the previous databases.

### Option 1—Perform an Oracle Upgrade

1. Verify that all models and subsets are checked in. Convert or delete any models in schemas earlier than the Second Prior Schema.

   **Note:** For the schema designation for Second Prior Schema, see the *Release Notes.*
2. Back up your existing Gen software and databases.
3. Install the version of Oracle that is specified in the *CA Gen Technical Requirements* at http://ca.com/support.
4. Upgrade the existing Oracle databases to the Oracle release specified in *CA Gen Technical Requirements* at http://ca.com/support, using Oracle procedures.
5. Install the current software.
6. Configure CSE using these options:
   - Create Message Dispatcher INI file
   - Encyclopedia Update
   - Coordination Update

## Option 2—Import Existing Data into Oracle

1. Verify that all models and subsets are checked in. Convert or delete any models in schemas earlier than the Second Prior Schema.

   **Note:** For the schema designation for Second Prior Schema, see the *Release Notes.*

2. Back up your existing Gen software and databases.
3. Install the version of Oracle specified *CA Gen Technical Requirements* at http://ca.com/support.
4. Install the current software.
5. Create new database and tablespaces for the Coordination database.
6. Create new database and tablespaces for the Encyclopedia database.
7. Import your existing database or data into the newly created database.
8. Configure CSE using the following options:
   - Create Message Dispatcher INI file
   - Encyclopedia Update
   - Coordination Update

## Configuration Errors on a Windows System

When you encounter software configuration errors, exit the cse_config process and use a text editor to review the configuration log files in cse_oracle or cse_msqls subdirectory of the installation directory. The contents of these files help determine how to correct the problems.

When you encounter errors during the database configuration, the installation program records errors in multiple error files. Review all files with a .log extension when you receive a fatal error.

## Configuration Errors on a UNIX System

When you press Finish on the Configuration Summary dialog, cse_config starts the apply phase of configuration and creates a file that is named cse_config_<*n*>.log, where <*n*> is a number, in the home directory of the CSE owner account. This file keeps a complete audit of the actions that are executed during the apply phase and the completion results for those actions. Use any UNIX tool that displays text files to read this file and locate some indication of the problem that occurred.

# Start and Stop a Windows CSE

## Start a CSE on Windows

To verify the installation, start the servers using the Message Dispatcher. The Message Dispatcher starts all server processes. Use the program icon or the command line to start the Message Dispatcher, or start it as a Service.

### Start the CSE Servers Using the Program Icon

To start the Message Dispatcher from the Program Icon, make these menu selections: `Start, All Program, CA, Gen xx CSE Servers, Start CSE.`

**Note:** *xx* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.

### Start the CSE Servers from the Command Line

To start the CSE Servers Message Dispatcher from the command line, enter the following command:

```
iefmd /mdini=="%IEF_CONFIGDIR%\iefmd.ini"
```

### Record STDOUT and STDERR Messages to a File

**Follow these steps:**

1. Open a command prompt window.
2. Enter this command to direct messages to a file:

```
iefmd /mdini="%IEF_CONFIGDIR%\iefmd.ini"
/mderr=="%IEF_WORKINGDIR%\[set the File Name variable]"
```

### iefmd Command Parameters

The iefmd command parameters are:

**/mderr= [*set the* File Name variable]**

Direct iefmd and server messages to *filename*.

**timeout=<*seconds*>**

When present, iefmd sleeps for number of *seconds* before starting the server. This is useful if you wait for database startup.

**/mdini=<*ini filename*>**

Override default iefmd.ini filename.

**/mdstart=YES|NO**

No indicates that you test the .ini file

All command-line parameters are optional. After entering parameters, check the iefmd.log to see if Message Dispatcher started.

This command enables the Message Dispatcher to put all database errors in standard error, allowing you to capture all Message Dispatcher errors and database errors. You prefer to create a .bat file containing the commands and create a shortcut to the .bat file.

**Note:** In a multi-encyclopedia environment, the Remote Daemon Server must be running before you start the Message Dispatcher. After installation, manually restart the RDS from the command line before starting the Message Dispatcher.

### Start CSE Servers Using the CSESvcMD Service

After installation, and before starting the CSESvcMD.Exe service or rebooting the system, ensure that the Message Dispatcher operates as it should without the service. The service installs in the automatic mode, initially start when the user requires or at reboot time.

The Windows Service Control Manager (SCM) starts the CSESvcMD service on system startup. It verifies that the appropriate database engine is operational and, if inactive, attempts to start it. If SCM cannot start the database engine, you start the service manually through the Service Control applet in the Control Panel. The service operation remains in automatic mode, allowing service operation to start on the next system startup. Use the Windows system Event Viewer program to view service-related actions.

To run the CSE Servers as a Windows Service, start the Service Control applet and click CSESvcMD, start. Use Windows Task Manager to verify that iefmd and the server programs started.

**Note:** The SCM does not support Pause and Resume operations. You can set the service to manual or disabled mode through the Control Panel.

## Stop a CSE on Windows

Stop the servers by stopping the Message Dispatcher.

**Follow these steps:**

1. Verify that all users are logged off.
2. If the CSE started as a service, use the SCM dialog to stop the Service.

3. If iefmd is running in a command window, do one of the following actions:
   - Press CTRL+C
   - In another command-line window, on the command-line type:

     ```
     STOPMD
     ```

   - Use the Stop CSE icon: Start, All Programs, CA, Gen xx, CSE Servers, Stop CSE

   **Note:** *xx* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.
4. Close each open server window.

**More information:**

Restart Servers after Stopping (see page 66)

### Verify Users are Logged Off

**Follow these steps:**

1. Run the monitor report to verify that all users are logged off.

   **Note:** For more information about how to run the monitor report, see the *Client Server Encyclopedia Administration Guide*.
2. If clients are logged on, use the TCP/IP netstat command to display active clients.

### Restart Servers after Stopping

Although you can restart the Message Dispatcher and servers after stopping the Message Dispatcher, there may be a short delay before the system releases the MD port because some systems require a longer time-out period.

To determine if the port is available to restart, use the following TCP/IP command:

```
netstat -a
```

Verify the <*iefmd*> port that is specified in the services file is listed as inactive.

# Start and Stop a UNIX CSE

## Start a CSE on UNIX

To verify the installation, start the servers using the Message Dispatcher. The Message Dispatcher starts all the server processes. The Message Dispatcher can be run from command line.

## Start the Message Dispatcher from the Command-Line

To start the Message Dispatcher from the command line, enter the following command with any of the optional parameters:

`iefmd /mderr=[set the File Name variable] /mdtimeout=<seconds> /mdini=<ini filename> /mdstart=YES/NO`

**/mderr= [set the File Name variable]**

Specifies to redirect stdout and stderr to *filename*.

**/mdtimeout=<*seconds*>**

Specifies the iefmd command sleeps for the number of *seconds* before starting the server. This is useful to wait for database startup.

**/mdini=<*ini filename*>**

Override default .ini filename

**/mdstart=YES|NO**

No indicates that you test the .ini file.

All command-line parameters are optional. After entering the parameters, check the iefmd log and verify the Message Dispatcher service started.

iefmd enables the Message Dispatcher to put all database errors in standard error, allowing you to capture all Message Dispatcher errors and database errors. You prefer to create a .bat file that contains the commands and associate it to an icon.

**Note:** In a multi-encyclopedia environment, the Remote Daemon Server must be running in the remote systems before you start the Message Dispatcher. After installation, manually restart the RDS from the command line before you start the Message Dispatcher.

## Run the Servers in the Background

**Follow these steps:**

1. Change to the directory that contains the server executables.
2. Enter the command:

   `iefmd /mderr=<filename.log> &`
3. Browse <*filename.log*> for the messages for each server indicating the server is ready.

The command directs output to a single log file, instead of messages scrolling off the screen. This method also creates an audit trail if errors occur and creates a file to troubleshoot with Product Technical Support.

## Troubleshoot When the Servers Fail to Start

If the Server software does not start, check these conditions:

- Review the mdinit.01 file for syntax problems in the INI file.
- Review the iefmd.01 file for problems.
- Verify the changes to the TCP/IP hosts file and services file.
- Use the TCP/IP ping command to verify TCP/IP communications. For information about the ping command, see the TCP/IP documentation .
- In a multi-encyclopedia environment, verify that the iefrds utility is running on each of the systems on which iefmd or the CSE server programs run.

**More information:**

Remote Daemon Server (see page 80)

# Stop a CSE on UNIX

**Follow these steps:**

1. Ensure that all users are logged off.

   **Important!** Do not shut down the Message Dispatcher when a client is requesting access or a server process is active.

2. Run the monitor report to verify that all users are logged off the clients.

   **Note:** For more information about the monitor report, see *Client Server Encyclopedia Administration Guide*.

   When the clients are logged on, use the TCP/IP netstat command to display active clients.

3. To stop the Message Dispatcher, shut down all servers, and close open sockets, use this command:

   ```
   ./stopmd
   ```

4. To list server processes that failed to stop, use this command:

   ```
   ps -u <cseadmin>
   ```

   where <*cseadmin*> is the CSE administrator account under which this instance of CSE is running.

5. To terminate server processes still running, use this command:

   ```
   kill <process_id> .
   ```

**More information:**

Restart Servers after Stopping (see page 66)
Verify Users are Logged Off (see page 66)

## Verify Users are Logged Off

Before stopping the message, dispatcher, ensure that all users are logged off.

**Follow these steps:**

1. Run the monitor report to verify that all users are logged off.

   **Note:** For more information about the monitor report, see the *Client Server Encyclopedia Administration Guide*.

2. If the clients are logged on, use the TCP/IP netstat command to display active clients.

## Restart Servers after Stopping

You can restart the Message Dispatcher and servers after stopping the Message Dispatcher. However, there may be a short delay before the MD port is released, as some systems require a longer time-out period.

To determine if the port is available to restart, use the following TCP/IP command:

```
netstat -a | grep <iefmd>
```

Verify the <*iefmd*> service name that is specified in the services file is not listed as active.

# Tasks Related to Server Installation

Review the *Client Server Encyclopedia Administration Guide* for information about efficiently administering and maintaining your servers.

## Preparing the Servers for Use

Information using the servers, complete the following tasks:

- Start the servers
- Register each Encyclopedia in the Directory database using the *same* ID, name, software group name, and description that is used during configuration

- Grant the Encyclopedia Administrator access to the Encyclopedia

**Note:** When you select the options to create and initialize or initialize the coordination and encyclopedia databases, the CSE registers the encyclopedia and grants the default ENCYADMN account access to the encyclopedia.

**More information:**

Start and Stop a UNIX CSE (see page 63)
Registering an Encyclopedia to the Coordination Server (see page 84)
Granting User Access to an Encyclopedia (see page 85)

## Install the Gen Sample Model

**Follow these steps:**

1. Locate the update.trn file for the Gen Sample Model in the cse\bin directory.
2. Use the upload command-line utility or the checkout client to upload the Gen Sample Model into your CSE.

Your server installation is correct if you can:

- Generate and install data definition language (DDL).
- Generate and install code.

  **Note:** For more information about using the CSE Construction Client to package load modules, generate and install source code, and DDL, see the *Client Server Encyclopedia Construction Client User Guide*.
- Successfully shut down servers.

**Note:** For more information about keeping your servers running efficiently, see the *Client Server Encyclopedia Administration Guide.*

## Perform DBMS Optimization

Some DBMSs require optimization after installing the Gen Sample Model. The following database optimization procedure is for Microsoft SQL Server. When using Oracle, check with your database administrator to determine if you perform optimization tasks after installing the Gen Sample Model.

## Updating Statistics on the MS SQL Server CSE

To update the statistics for the CSE on the Microsoft SQL Server, execute these commands for the appropriate database:

1. Execute ESTATS.SQL for the Encyclopedia database.
2. Execute DSTATS.SQL for the Coordination database.

**Note:** These files are in the \<*installation-directory*>\CSE\cse_msqls subdirectory.

# Test the Servers

**Follow these steps:**

- Start the servers.
- For the Coordination Server, verify Coordination Client communications.
- For the Encyclopedia Server, verify Encyclopedia Client communications.
- For the Encyclopedia Server, verify Toolset communications to the server using the automatic mode of invoking the Checkout client.
- For the Construction server, verify installation using the Gen Sample Model named update.trn. Using this model is optional, but highly recommended.

# Setup UNIX Accounts for Command Line Commands

If CSE users or administrators execute server commands from the command line, set up a CSE UNIX account for each user and edit the user's login file to make the following changes:

**Follow these steps:**

1. Log in using the CSE user's account.
2. Add one of the following statements:
   - Bourne or Korn Shell, add this statement to .profile:

     ```
     . <ief-config-dir>/cse.sh
     ```

   - C Shell, add this statement to .cshrc:

     ```
     source <ief-config-dir>/cse.csh
     ```

   where *server* is the pathname of the server configuration directory that is specified while running cse_config.

3. Execute the login file using one of the following commands:
   - Bourne Shell or Korn Shell:

     ```
     . .profile
     ```

   - C Shell:

     ```
     source .cshrc
     ```

# Install the Clients

Invoke Setup and select the clients to install.

## Environment Variables Set by the CSE Client Installation

The environment variable that is used in the Windows environment and the expected value for the variable:

**GEN80=<install dir>**

Defines the base installation location for all CA Gen products that are installed on this machine.

## Client Communication Environment

Set up the TCP/IP communications environment on the system on which the clients are installed. Alter the HOST and SERVICES files in the client system as specified in the Configuring TCP/IP Communications section.

## Configure the CSE Clients

The CSE client configuration occurs each time that a client starts. When the client starts, it presents a logon dialog. The user must provide a user ID, password, a CSE Servers host name, and a service name or port number. The hostname and service name or port number are combined to produce the Message Dispatcher name.

The client stores the combined hostname and service name or port number in the CSE_HOST environment variable and the user ID in the CSE_USER environment variable. When these variables are already defined, the client populates the logon fields with values from these variables. The password field must populate each time that a client starts. When there is no password that is assigned to the user account, click OK to continue.

When the user has authority for more than one encyclopedia, the user must select an encyclopedia from a list and click OK to continue.

# Start the Clients and Communicate with a CSE

To use the clients, you must have a CSE User ID and password, and you must have the host name and the service name or port number for a Message Dispatcher, and therefore the server, that is running.

## Start the Clients

You can start the clients from a CA Gen folder icon or from a command line.

### Start the Clients from a Folder Icon

Make these menu selections:

```
Start->All Programs->CA->Gen xx->CSE Clients->[client]
```

**Note:** *xx* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.

### Start the Clients from the Command Line

To start a CSE client, enter one of the following commands:

```
Checkout Client – iefcc wkstfunc open  [parameters]
Coordination Client – iefco dirfunc open
Construction Client – iefcn consfunc open
Encyclopedia Client – iefen encyfunc open
Support Client – iefsp supfunc open
Version Control Client - iefvc vcfuncs open
```

## Client Command Line Parameters

The clients support the following command-line parameters:

**/mdgrp or environment variable IEF_DIRGROUP**

Specifies a different name for Coordination services. The alternate name must match the Group entry in the iefmd.ini file. (deprecated). The default value is DIR.

**/mdenv or environment variable IEF_ENVNAME**

Specifies an alternate CSE environment and is intended to use to implement multiple virtual CSE networks within a single physical network. (deprecated).

**Default:** CSE_ENV.

**/mdlogc**

Specifies the maximum value for the log file number. When the file number exceeds this value, the client resets it to one. Only use this parameter to support the CSE Client diagnostics.

**Default**: 1.

**/mdlogd**

Specifies a file name base. The client creates log file names by appending a two-digit number to the file name, starting with 01. Only use this parameter to support the CSE Client diagnostics.

**Default**: NULL.

**/mdlogl**

Specifies the max length for each log file in kilobytes. When a log file size exceeds this value, the client closes it and creates a new file with the next file number. Only use this parameter support CSE Client diagnostics.

**Default:** UNLIMITED file length.

**/mdlogt**

Specifies the level of messages that are included in the log:

- STANDARD is the lowest message level and includes ERROR messages.
- SUPPORT includes the first 128 bytes of every message.
- DEBUG and EXTENSIVE add reporting of various internal conditions and the full text of every message.

Only use this parameter support CSE Client diagnostics.

**Default:** STANDARD.

**Note:** For more information, see the *Client Server Encyclopedia Administration Guide*.

# Direct Clients to Another CSE

You can set up the clients to access a server other than the one you identified the last time you started a client. To access another server:

**Follow these steps:**

1. Identify the new server host name and service name, the MD Name, in your TCP/IP files.
2. Start the client. When the logon dialog opens, enter the user ID and password for an account on the other server and enter the hostname and service name for that server. If the logon dialog fails to open, see the section Reset Environment Variables to Access a New Server or Change User ID in this chapter.

## Reset Environment Variables to Access a New Server or Change User ID

To change the server or account information, change the value of CSE_HOST environment variable to the Message Dispatcher for the new server or change the value of CSE_USER to the new CSE account name.

You also delete CSE_HOST or CSE_USER. To start a client when CSE_HOST or CSE_USER is undefined leave the field in the logon dialog empty.

**Follow these steps:**

1. Open the Control Dialog box.
2. Select the System icon for the System Properties Dialog box.
3. Click the Advanced tab.
4. Click the Environment Variables option to display the Environment Variable dialog.
5. In the User Variable list at the top of the dialog, select the CSE_HOST variable.
6. To change the value, click the Edit button. In the Edit User Variable dialog, change the value in the Variable Value field to the new MDNAME value, and click okay.
7. To delete the CSE_HOST variable, click the Delete button to remove the variable.
8. In the User Variables list, select the CSE_USER variable.
9. To change the value, click the Edit button. In the Edit User Variable dialog, change the value in the Variable Value field to the new user ID value and click okay.
10. To delete CSE_USER, click the Delete button.
11. Click OK in the Environment Variables dialog.
12. Click OK in the System Properties dialog to complete and save the changes.

## Register Users and Encyclopedia

Before you can use the CSE servers, complete the following tasks:

- Start the servers. For more information, refer to the section Start and Stop a CSE.
- Start the Coordination Client. For more information, refer to the section Start the Clients.
- Register each Encyclopedia in the Coordination database using the *same* ID, name, software group name, and description that is used during configuration. The iefmd.ini file is the Message Dispatcher configuration file and lists valid software group names in the Group Name= lines.
- Add the Encyclopedia Administrator to the Coordination database if the ID differs from that of the Coordination Administrator ID.
- Grant the Encyclopedia Administrator access to the Encyclopedia.
- Start the Encyclopedia Client.
- Log on using the Encyclopedia admin account ID.
- Add user and group accounts and specify user privileges for each account.

**More information:**

User Management and Access (see page 93)
Registering an Encyclopedia to the Coordination Server (see page 84)
Granting User Access to an Encyclopedia (see page 85)
Start the Clients (see page 70)
Add an Individual User to an Encyclopedia (see page 97)

## Administrative Tasks

Review the *Client Server Encyclopedia Administration Guide* for information about keeping your servers running efficiently. It contains information on database administration, including frequent procedures, and server administration.

## Setting Strict or Relaxed Migration Rules (Optional)

To set the CSE for strict migration rules using your SQL command interpreter, such as SQLPlus for Oracle, connect to the Encyclopedia Database and enter the following commands:

```
UPDATE SASC SET AT_AGG_ACT = 'R' WHERE AT_FROM_OBJ_CODE = 257 AND
AT_ASSOC_CODE IN (631, 632) AND AT_RELEASE = 'schema-level';
UPDATE SASC SET AT_AGG_ACT = 'X' WHERE AT_FROM_OBJ_CODE = 167
AT_ASSOC_CODE = 562 AND AT_RELEASE = 'schema-level';
UPDATE SASC SET AT_AGG_ACT = 'C' WHERE AT_FROM_OBJ_CODE = 167 AND
AT_ASSOC_CODE = 563 AND AT_RELEASE = 'schema-level';
COMMIT
```

***schema-level***

Specifies the current schema level.

**Note:** For the schema designation for Current Schema, see the *Release Notes.*

To set the CSE for relaxed migration rules using your SQL command interpreter, such as SQLPlus for Oracle, connect to the Encyclopedia Database and enter the following commands:

```
UPDATE SASC SET AT_AGG_ACT = 'X' WHERE AT_FROM_OBJ_CODE = 257 AND
AT_ASSOC_CODE IN (631, 632) AND AT_RELEASE = 'schema-level';
UPDATE SASC SET AT_AGG_ACT = 'X' WHERE AT_FROM_OBJ_CODE = 167 AND
AT_ASSOC_CODE IN (562, 563) AND AT_RELEASE = 'schema-level';
COMMIT;
```

In a multi-encyclopedia environment, to implement relaxed migration rules for Encyclopedias with different schema levels, define this set of commands for each different schema level.

# Advanced CSE Configurations

To store information in physically separate locations, the CSE supports multiple encyclopedias within the same network configuration. You can install and configure CSE Servers for three network configuration classes:

- Single Message Dispatcher and single encyclopedia is the basic configuration for CSE, with the CSE Server software, the Coordination database, and the Encyclopedia database on the same system.
- Single Message Dispatcher and multiple encyclopedias is the configuration with one Message Dispatcher, one Coordination database, and multiple Encyclopedia databases, typically with exactly one Encyclopedia in each of several systems.

- Multiple Message Dispatcher and multiple encyclopedia configuration includes one Coordination database, several Messages Dispatchers, and several Encyclopedias, usually with one Message Dispatcher and one Encyclopedia on each system.

Always install the Coordination Server and the Encyclopedia Server on the system on which its database is installed. Using the database's remote data access facility negatively impacts performance.

Each system on which an Encyclopedia Server or Construction Server executes requires the appropriate CSE product licenses for that system.

The general strategy for creating multiple encyclopedia configurations is to install and configure the basic configuration on each system, and pick one system as the primary system in the network and run the network configuration program, mdcfg, on that system.

## Use mdcfg for Advanced Configurations

Before running mdcfg, install and configure a basic configuration on each system included in the CSE network. Each system also needs the iefrds program running.

The mdcfg utility is a console application that runs from a command-line window. To start the program, start a command window on Windows or a terminal window on UNIX, change to the cse/bin directory, and enter the command: mdcfg.

The following instructions define how to use mdcfg to reproduce the basic communication configuration. Preparation of the more advanced communication configurations is provided with more detailed descriptions of those configurations.

**Follow these steps:**

1. For the Basic installation, select option 1, Single Encyclopedia/Single MD on the Message Dispatcher Configuration menu.
2. On the Single Encyclopedia/Single MD Configuration Information menu, select A to add a definition for your Encyclopedia and Message Dispatcher.

   **Note:** When you use an IPv6 address to identify the Message Dispatcher, enclose the address in square brackets, [ ]. Because of EBCDIC code page problems, some systems may not display the square brackets correctly in text. The previous sentence ends with the square brackets.
3. Identify your configuration information. It lists possible selections and defaults in parentheses. Type your information or press Enter to use the defaults values.
4. On the Configuration Information menu, select P (Display) to display your defined configuration.
5. Select C to change information or D to delete information.

6. When you are satisfied with the configuration, select S to save. This creates your <iefmd>.ini file.

   Distribute the *<iefmd>*.ini file to your local system even if you are setting up only one encyclopedia. The iefrds program must be running on each remote system to automatically configure or distribute to the system.

7. To start the message dispatcher with the correct configuration and working directories, use the appropriate command for your operating system:

   - On a UNIX system, use the command:

     ```
     iefmd /mdini=$IEF_CONFIGDIR/iefmd.ini /mderr=$IEF_WORKINGDIR/mderr.err
     ```

   - On a Windows system, enter the following command in a command-line window:

     ```
     iefmd /mdini=%IEF_CONFIGDIR%\iefmd.ini /mderr=%IEF_WORKINGDIR%\mderr.err
     ```

## Multiple Encyclopedias

Multiple Encyclopedias support more concurrent use and more concurrent processing. Each Encyclopedia has its own database. Multiple Encyclopedia databases allow you to store information in separate paths. For example, you can separate the storage of:

- Various versions of test models
- Test models and production models
- Models representing conceptually different information
- Models different groups work on
- Models with different security requirements

**Note:** In multi-encyclopedia installations on one system, the character set must be the same for all encyclopedias that are controlled by a message dispatcher, when the encyclopedias are on the same system. Each server/utility inherits its language information from the Message Dispatcher's execution environment. An environment variable, such as NLS_LANG, can have only one value in an environment, and it must be correct for all encyclopedia databases using that variable. The same is true for servers that are spawned from IEFRDS if more than one encyclopedia is being handled remotely. In this case, the environment is inherited from IEFRDS.

## Remote Servers

Servers are remote when they are installed on a physically different system than the main Message Dispatcher. You can install any server as a remote server.

You want to place servers on separate systems because of performance and space constrictions or because of your physical layout of the site.

- Remote Coordination Server—the Coordination Server can be a remote server. However, only one Coordination Server exist for the entire network.
- Remote Encyclopedia Server—you can install more Encyclopedia Servers on remote systems to distribute the file load across multiple systems.
- Remote Construction Server—a Construction Server can be a remote server if an Encyclopedia Server is installed on the same system and it uses the same database.

## Multiple Release Encyclopedias (UNIX Only)

When two consecutive releases of the CSE support the same database release, you can run the two releases of the CSE servers with the same encyclopedia. This configuration supports gradual conversion from one CSE release to the next release. To create this configuration, configure the CSE for a Single Message Dispatcher / Multiple Encyclopedia configuration and specify the same database for both encyclopedias. The two releases require different settings for some environment variables. Provide the environment for the older release by running it under the environment in which iefrds runs. The environment for the newer release is provided in the environment under which the Message Dispatcher runs.

## Install a Multiple Release Encyclopedia

When you install a multiple release encyclopedia, consider these points:

- Although the CSE clients can see all the models in the encyclopedia, models are not interchangeable between software releases. Each model in the Encyclopedia belongs to exactly one software groups.
- After using the new release to access a model, do not use the old release software to access that model. This is true for operations that change the model.
- The new software can work with models in the new release and the old release.
- The old software can only access models in the old release schema.
- Old release CSE clients can access models through the new release and old release servers. Those clients will not have access to some features added in the new release.
- New release clients can only access the encyclopedia through the new release servers. The new clients can access models in the old release and the new release schemas.

Before you begin the install, ensure all models and subsets are checked in. The owner of each checked out model or subset check it in or should override the checkout.

**Follow these steps:**

1. Stop the CSE if it is running.
2. Shut down iefrds if it is running.
3. Back up coordination and encyclopedia databases.
4. Configure TCP/IP connections.
5. Multiple Release configuration requires two IEFRDS names. One IEFRDS name should be present and is associated with the old release software. Add a new IEFRDS name to the host's file or DNS and to the services file. Verify that the IP addresses are the same for the two names and the port numbers are different. The new RDS name is associated with the new release software. Instructions for altering the hosts and services file are in the basic installation instructions.
6. Install and configure Coordination and Encyclopedia Servers. Install the new release of the CSE in a new directory. Do not install the new release in the same directory as the old release because it replaces all the old programs you want to continue using. Run this new configuration to verify it starts correctly. After it is completed, shut it down.
7. Upgrade the Coordination and Encyclopedia databases so the new release can run with the existing database. Use a new Encyclopedia Group name for the new release software.
8. Start iefrds in the old release environment: Use telnet or rlogin to start a new shell on your UNIX system. Change directory to the old release installation directory, source cse.csh, or cse.sh. For the releases that preceded AllFusion Gen 7, the release installation directory might be iefcse.sh or iefcse.csh, depending on the shell you are using, and might run startrds. This execution instance of iefrds provides an execution environment the older version of the software need.
9. Start iefrds in the new release environment. A second instance of RDS must be running during the next configuration step. Use telnet or rlogin to start another new shell, change directory to the new release installation directory, source cse.csh, or cse.sh according to the shell you are using, and run startrds to provide the execution environment the new release software needs.

10. Prepare the Multiple Release Configuration. In the new release installation directory, run mdcfg to create the Multiple Release configuration. In the Configuration menu, select Multi-Ency/Single MD. Add one Message Dispatcher, one Coordination Server, and two Encyclopedia Servers.
11. The Message Dispatcher, Coordination Server, and first Encyclopedia Server are all executed from the new installation. Use the new software group name for this encyclopedia.
12. The second Encyclopedia is executed from the old release installation and it does *not* have its own lock and ID servers. The software group name from the old release is used with this Encyclopedia.
13. Complete the configuration by saving and exiting mdcfg. Ignore the warning about using the same encyclopedia name twice.
14. (Optional) Stop the execution of the iefrds for the new release environment. It is needed only during configuration preparation.
15. Run the Multiple Release Configuration. In the new release directory, start the Message Dispatcher. Use your preferred method for starting the Message Dispatcher and the two sets of servers. Verify that one instance of srvcoord, srvid, and srvlock are running and two instances of srvms, srvuga, srvcons, and srvvc are running.
16. Perform Coordination updates. Add the new software group to the Coordination database and grant some users access to the new Encyclopedia. Start the coordination client using the directory administration account id. Register a new encyclopedia using a new Encyclopedia name and description, the new software group, and the same encyclopedia ID as is already registered. Grant the encyclopedia access to users requiring access to the encyclopedia. Warn these users, they will see two encyclopedias the next time they start any CSE client.

The Multiple Release configuration is ready to use.

The new software can work with models in the new release and the old release. The old software can only access models in the old release schema. Old release CSE clients can access models through the new release and old release servers. Those clients will not have access to some features added in the new release.

New release clients can only access the encyclopedia through the new release servers. The new clients can access models in the old release and the new release schemas.

## Multiple Message Dispatchers

In a multiple Message Dispatcher configuration, every MD in the network connects to every other MD or RDS programs. Every system running an MD or RD must be able to resolve all MD and RDS names. If DNS is unavailable, update the SERVICES file and the HOST file to enable name resolution. You can accomplish this easily by using extended form names. Add the same service name and port name definitions in each system that is involved in the CSE network.

**Example:**

```
csemd 2500/tcp
cserds 2501/tcp
```

All MD names become <*system*>/csemd and all RDS names become <*system*>/cserds.

## Remote Daemon Server

A Remote Daemon Server (RDS) provides program initiation services for remote configurations. It starts remote servers in remote multi-encyclopedia configurations, and starts remote Message Dispatchers in multi-Message Dispatcher configurations.

During normal CSE operation, an RDS must be running in each system that contains a remote Encyclopedia Server or Coordination Server. If the RDS is running when an installation starts, it block installation of some files. Manually stop the RDS before installing and restarting software after installing software.

### Restart the Remote Daemon Server

**Note:** After installation in a multi-encyclopedia, or multi-Message Dispatcher environment, restart the RDS from the command line before starting the Message Dispatcher.

These steps assume that the system knows the name of the RDS. If you allow the installation program to modify configuration files, it automatically sets the IEF_RDSNODE environment variable to the appropriate RDS name.

If the installation program does not automatically update configuration files, or you have not rebooted the system because updating the configuration files, manually identify the RDS name with the following command:

```
iefrds /server=<RDS-name>
```

**Follow these steps:**

1. For UNIX and Windows, change directories to the installation directory.
2. From the command line, type:

   ```
   startrds
   ```

3. Press Enter.

## Role of Administrators in CSE

### Prerequisites

You need the following authorizations and information to administer the CSE:

**Encyclopedia administrator user ID**

Contact your Administrator for the Encyclopedia administrator ID, password, CSE server host name, and CSE server name or port number.

**Coordination administrator user ID**

Contact your Administrator for the Coordinator administrator user ID, password, host name, and server name or port number.

During new CSE configuration, the configuration process sets up the ENCYADMN user ID administrator account without a password. Assign a password after starting the CSE. You can also change the user ID name.

### Error Messages

The online help index contains help for the following messages:

- CSEXI0001E - CSEXI0264E
- MDEXI0001E - MDEXI0101E

In the client, select Help and Help Index to display the online help.

## Role of Coordination Administrator

The Coordination Administrator registers encyclopedias, adds users, grants authorization to use encyclopedias, and determines when a user can be a Coordination Administrator.

## Role of Encyclopedia Administrator

Before you can log in to the Encyclopedia Client as an Encyclopedia Administrator, the Administrator that registers and authorizes users for CSEs must grant authority to the encyclopedia.

Unlike defining a user to an encyclopedia on the host, the CSE requires a two-step process between two clients to define a user to an encyclopedia.

An Administrator must add a user to the Coordination Server and grant user access to an encyclopedia using the Coordination Client. For more information, see Add a User to the Coordination Server and Granting User Access to an Encyclopedia.

The administrator uses the Encyclopedia Client to add users and authorize users to access models for a specific encyclopedia for which the users have authority.

**More information:**

Add a User to the Coordination Server (see page 84)
Grant User Access to an Encyclopedia (see page 104)

## Related Tasks

The administrator can also be responsible for database and server administration.

**Note:** For information about database administration and information about server administration, see the *Client Server Encyclopedia Administration Guide*.

## Administrator Tasks in CSE

## How to Set Up User Access and Authority

**Follow these steps:**

1. Add a user to the Coordination Server.
2. Grant user access to an Encyclopedia.
3. Assign a password to a user.
4. Add an individual user to an encyclopedia.
5. Authorize access to a subset.

**Note:** For more information, see the *Client Server Encyclopedia Subsetting User Guide*.

## Preliminary Tasks

Before proceeding with other tasks, the administrator must perform these preliminary tasks.

## Fundamental Tasks

Fundamental tasks are basic tasks that you perform frequently, including:

- Starting and Logging on to the CSE Client
- Opening an Encyclopedia
- Open a User ID

*Start and Logon to a CSE Client*

**Follow these steps:**

1. Find the corresponding client icon in the Start menu. Select Start, All Programs, CA, Gen xx, CSE Clients.

   **Note:** *xx* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.

2. Start the client by selecting the client icon.
3. Enter your user ID and password in the User group box of the client's logon panel. Enter the CSE server hostname and port number or service name in the Message Dispatcher Connection group box.
4. Click OK or press Enter to complete the logon process. The CSE client's main dialog opens.

The clients store the latest user ID and CSE host name information in environment variables CSE_USER and CSE_HOST and populate fields in the logon panel that is based on the content of these variables.

*Open an Encyclopedia*

**Follow these steps:**

1. Log on to the Coordination Client.
2. Select Encyclopedia.
3. Select Actions.
4. Select Open.
5. Select an Encyclopedia.
6. Select Open.

*Open a User ID*

**Follow these steps:**

1. Log on to the Coordination Client.
2. Select User, Individual.
3. Select a user from the User List.
4. Select Open.

## Quick Starts

Quick Starts are tasks to familiarize an administrator with the fundamental CSE tasks and standard routines.

*Registering an Encyclopedia to the Coordination Server*

Before you can use the Coordination and Encyclopedia Clients to assign users to an encyclopedia, use the Coordination Client to register or add an encyclopedia.

**Follow these steps:**

1. Log on to the Coordination Client.
2. In the Coordination Client window, select Encyclopedia, Actions, Register.
3. Enter the encyclopedia name that is used during configuration.
4. Enter the description.
5. Enter the encyclopedia ID used during configuration. This ID must be unique among all encyclopedias.
6. Enter the Encyclopedia Group name that is used during configuration in the Software Group field. This name must be unique among all encyclopedias.
7. Verify the default values for platform, DBMS, and status are correct for your environment. You can change the default values.
8. Click OK.

   **Note:** The values that you enter during this procedure must match the values that are entered during the installation process.

*Add a User to the Coordination Server*

A user must be added to the Coordination Server before authorizing the user for an encyclopedia.

**Note:** Only an administrator can add a user to the Coordination Server.

**Follow these steps:**

1. Log on to the Coordination Client.
2. In the Coordination Client window, select User, Individual.
3. Select Actions, New.

4. Type the User ID and the Name for the new user.
5. Select the Yes radio button to grant Directory Administrator status to the new user.
6. To add the user in Inactive status, select the Inactive radio button.
7. Select OK to finish adding the user.

The user was added to the Coordination Server when the new user ID is in the Active user ID field in the User Selection window. When the User Selection window does not list the new user ID, check to see if the user exists in the directory.

*Granting User Access to an Encyclopedia*

Granting user access to an encyclopedia assigns a user to an encyclopedia using the Coordination Client. Grant user access to the encyclopedia before a user can log in through other clients.

**Follow these steps:**

1. Log on to the Coordination Client.
2. At the Coordination Client window, select User, Individual.
3. At the User Selection window, select Actions, Open.
4. At the User List window, select a user from the list and select Open.
5. Select Authorizations.
6. Select an encyclopedia from the Unauthorized Encyclopedias list.
7. Select Grant.
8. Click OK.

*Assigning a Password to a User*

After you have granted a user access to an encyclopedia, you can assign a password to the user. This password is for the user's initial logon. The user can modify it after initial logon through the Encyclopedia Client.

**Follow these steps:**

1. Log on to the Coordination Client as administrator.
2. In the Coordination Client window, select User, Individual.
3. In the User Selection window, open the User ID.
4. Select Actions, Override Password.
5. On the Override Password dialog, enter the new password.
6. Click OK.

*Adding a User Definition to an Encyclopedia*

When you add an individual user to an encyclopedia, you define the user's authority.

**Follow these steps:**

1. Log on to the Encyclopedia Client.
2. At the Encyclopedia Client window, select User, Individual.
3. Enter the ID for the user, the ID one entered on the Coordination Client.
4. Select Actions, New.
5. Enter the user's name, the name that is entered on the Coordination Client.
6. Select this user's authority.
7. Click OK.

*Granting Update Access to a Model*

When you grant a user update access to a model, the user can use the toolset to make changes to the model. You also allow the user to add or modify load module definitions or save environment parameters for that model using the CSE.

**Note:** These steps assume that you have created a model and checked it into the CSE.

**Follow these steps:**

1. Log on to the Encyclopedia Client.
2. At the Encyclopedia Client window, select User, Individual.
3. Enter the individual user ID in the ID field and select Open.
4. Select Actions, Open.
5. At the Individual Selection window, select Authorization.
6. Select Maintain Model Access to open the User Access panel.
7. Select a model from the Models Unauthorized For list.
8. Select Grant to open the Grant Access panel.
9. Select Update.
10. Click OK to close the Grant Access panel.
11. Click OK to close the User Access panel.

# Chapter 3: Quick Start for Users

## Prerequisites

Users need the following authorizations and information to use the CSE:

- A user ID and password to log in to the clients.
- Authorization to open an encyclopedia.
- CSE server (Message Dispatcher) hostname and port number or service name. If you use a service name, the service name to port number definition must occur in the system services file.

If you do not have these authorizations and information, contact your administrator.

## Preliminary Tasks

Before proceeding with other tasks, the administrator must perform these preliminary tasks.

### How to Start a CSE Client

**Follow these steps:**

1. Find the client icon in the Start menu. Select Start, All Programs, CA, Gen xx, CSE Clients.

   **Note:***xx* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.

2. Start the client by selecting the icon.
3. Log on to the client by entering your user ID and password in the User group box of the client's logon panel.

4. Enter the CSE server hostname and service name or port number in the Message Dispatcher Connection group box.
5. Click OK or press Enter to complete the logon process. The CSE client's main panel opens.

The clients store the latest user ID and CSE hostname information in the CSE_USER and CSE_HOST environment variables and use these values to populate the logon panel fields. The client never automatically populates the password field.

When the ID, hostname, and service or port fields contain correct values, and your account does not have an assigned password, click OK to log in. If your account does have a password, enter the password and click OK to log in.

## How to Open an Encyclopedia

When you have access to only one encyclopedia, it automatically opens. When you have access to multiple encyclopedias, click the encyclopedia to open from a list.

**Follow these steps:**

1. In the client window toolbar, select Encyclopedia.
2. Select Open on the Encyclopedia menu.
3. Select an encyclopedia in the Encyclopedia List.
4. Click Logon.

**Note:** When you have access to only one encyclopedia, it automatically opens.

## How to Open a Different Encyclopedia

This step is required only if you have access to multiple encyclopedias.

**Follow these steps:**

1. At the client window, select Encyclopedia.
2. Select Close to close the encyclopedia to which you are currently logged in.
3. Select Open.
4. Select an encyclopedia from the Encyclopedia List.
5. Click Logon.

# Fundamental Tasks

The fundamental tasks are basic tasks that you perform frequently.

**Note:** The Version Control Client works differently. For task information, see the *Client Server Encyclopedia Version Control User Guide*.

All these tasks require you to perform the preliminary tasks of starting a client and opening an encyclopedia.

**More information:**

Preliminary Tasks (see page 83)

## Open a Model

You can open a model from the Encyclopedia Client, Checkout Client, Construction Client, Version Control, or Support Client.

**Follow these steps:**

1. Start a client.
2. Open an encyclopedia.
3. Select Model.
4. Select Actions.
5. Select Open.
6. Select the model in the list, and select Open.

## Open a Subset

You can open a subset from the Encyclopedia Client or Checkout Client.

**Follow these steps:**

1. Start a client.
2. Open an encyclopedia.
3. Open a model.
4. Select Subset.
5. Select Actions.

6. Select Open.
7. Select the subset that you want from the list, then select Open.

# Quick Start Tasks

## Add a Subset

To add a subset you must name the subset, select the scoping objects to add to the subset, specify their protection and expansion, and save your subset.

**Follow these steps:**

1. Start the Encyclopedia Client.
2. At the Encyclopedia Client window, select Model.
3. Open a model and select Subset.
4. Enter the name of the subset at the Subset field.
5. Select Actions, New.
6. At the Subset Selected Object List window, select Actions, Select New Objects.
7. At the Object Type List, select all the object types that you want to add to the subset.
8. At the Subset Object Occurrence List, select the objects.
9. To modify the default protection or expansion, select Modify. Select the protection or expansion and click OK.
10. Select Add, then Continue to continue displaying object types. Repeat this step until all objects are in the subset.
11. Select Cancel from the Subset Object Occurrence List to stop selecting objects.
12. Select Cancel from the Object Type List.
13. At the Subset Selected Object List window, select Actions.
14. Select Save and Exit.

## Check Out a Model or Subset

When you check out a model, you copy the model from the CSE to the toolset, and you can modify the model from the toolset.

**Follow these steps:**

1. Start the toolset and check the following options from the main window:
   - CSE is the encyclopedia that is selected
   - The Perform File Transfer option of Encyclopedia Communications is turned on
2. At the toolset, select Model.
3. Select Encyclopedia, Check Out A Model.
4. Provide a local name for the model.
5. Click OK.
6. Enter your user ID, password, and CSE server connection information, and click OK.
7. If prompted, open the corresponding encyclopedia.
8. At the Encyclopedia Checkout Client window, select Model.
9. Select Actions, Open.
10. Select the model.
11. Select Open, Actions, Checkout.
12. Enter the number of downgrades you want reported. If you are not sure, select the default.
13. Click OK.

**Note:** The Checkout dialogs for Model and for the Subset checkout include a Read Only Flag check box. CA Gen does not mark the original model or the subset as checked out when the read-only option is chosen during checkout processing. Therefore, a model or a subset that is checked out for read-only cannot be checked in. However, you can create a new model from a model or can subset checked out for read-only.

## Update a Model or Subset to the Encyclopedia (Automatic)

When you update a model or subset, you send changes to the model or subset you modified with the toolset to the CSE. The CSE stores the model. When you select the checkin option, it updates the model in the CSE, and changes the permissions of the copy on the workstation, the Toolset copy, to read-only.

**Follow these steps:**

1. Check the following options on the toolset:
   - CSE is the encyclopedia that is selected
   - The Perform File Transfer option of Encyclopedia Communications is turned on
2. From the toolset, open the model to update.
3. At the toolset, select Model.
4. Select Encyclopedia.
5. Select Update and Check In Model or Update but do **not** Check In Model.
6. Select Yes at the Confirmation dialog.
7. Complete the Logon panel, and click OK.
8. If prompted, open the corresponding encyclopedia.

## Error Messages

The online help index contains help for the following messages:

- CSEXI0001E - CSEXI0264E
- MDEXI0001E - MDEXI0101E

In the client, select Help and Help Index to display the online help.

# Chapter 4: User Management and Access

## User Management and Access in CSE

User Management includes creating user groups, adding and deleting users, changing group definitions, changing user passwords and performing general group member administration.

User Access includes authorizing access to models and subsets through the Encyclopedia Client, granting and revoking access to an encyclopedia using the Coordination Client.

## User Authorization Requirements

Define the user access that is required to perform different functions in the Client Server Encyclopedia. Use them to help determine the privileges to grant each user.

**Note:** An encyclopedia administrator has the authority to perform all encyclopedia functions on all models and subsets in the encyclopedia.

A model or subset administrator can be a group. Each member of the group has administrator authority.

### Checkin

The minimum authorization to check in an encyclopedia:

**First checkin**

Requires authority to add a model.

**Subsequent checkins**

Requires model or subset administrator authority, and the user that checked out the model or subset can check it in.

### Checkout

**View a model**

Requires read permission for the model.

**Update a model**

Requires an update permission for the model or subset.

## Model Management

The minimum authorization to manage models in an encyclopedia.

**Change model checkout user ID**

Only the model's administrator and the user that checked out the model can change model checkout user ID.

**Copy model**

Requires read authority for source model and add model authority for the destination encyclopedia.

**Copy model across encyclopedias**

Requires read authority for the source model and source encyclopedia, and add model authority for the destination encyclopedia.

**Create new model from existing subset**

Requires read authority for the source model or subset authority, and add model.

**Delete entire model**

Only a model's administrator can remove a model.

**Display model detail**

Requires read authority for the model.

**Override checkout status for model**

Only the model's administrator or the user that checked out the model can override a model's checkout status.

**Rename model**

Only a model's administrator can rename the model.

## Subset Management

The minimum authorization that is required to manage subsets in an encyclopedia.

**Add subset definition**

Requires authority to update the model.

**Change checkout user ID for subset**

Only the model or subset administrator, or the user that checked out the subset can change the checkout user ID for the subset.

**Copy subset definition**

Requires authority to update the model.

**Delete subset definition**

Only the model or subset administrator can remove the subset definition.

**Display subset detail**

Requires read authority for model or subset.

**Modify subset definition**

Only the model or subset administrator can modify the subset definition.

**Override checkout status for subset**

Only the model or subset administrator, or the user that checked out the subset can change the subset's checkout status.

**Rename subset definition**

Only the model or subset administrator can rename the subset definition.

## Model Access

Only the model administrator can perform these encyclopedia functions:

- Change access to model, including granting and revoking access
- Change model administrator

## Subset Access

Only the model or subset administrator can perform these subset tasks:

- Change the subset administrator.
- Grant and revoke access to subset.

## User Access

Adding a user requires add user authority. Only the person that added the user can change user information or can delete the user.

## Group Access

The minimum authorization that is required to change group access:

**Add group definition**

Requires access to the encyclopedia.

**Add user to group definition**

Only the creator of the group can add a user to the group.

**Change group definition**

Only the creator of the group can change the group definition.

**Copy group definition**

Requires access to the encyclopedia.

**Delete group definition**

Only the creator of the group can remove the group definition.

**Delete user from group**

Only the creator of the group can remove a user from the group.

# Add a User to the Coordination Server

A user must be added to the Coordination Server before authorizing the user for an encyclopedia.

**Note:** Only an administrator can add a user to the Coordination Server.

**Follow these steps:**

1. Log on to the Coordination Client.
2. In the Coordination Client window, select User, Individual.
3. Select Actions, New.
4. Type the User ID and the Name for the new user.
5. Select the Yes radio button to grant Directory Administrator status to the new user.
6. To add the user in Inactive status, select the Inactive radio button.
7. Select OK to finish adding the user.

The user was added to the Coordination Server when the new user ID is in the Active user ID field in the User Selection window. When the User Selection window does not list the new user ID, check to see if the user exists in the directory.

## Related Tasks

After adding a user to the Coordination Server, you can:

- Assign the user access to a registered encyclopedia.
- Add a user to a group.
- Display the details about the new user.
- Assign a user model access.

**More information:**

List Individual User Details in the Encyclopedia Client (see page 104)
Role of Administrators in CSE (see page 81)
Modify a Group Definition (see page 106)
Authorize Access to a Model (see page 98)

# Add an Individual User to an Encyclopedia

Adding an individual user to an encyclopedia creates a user in the encyclopedia. Add the user to the encyclopedia before that user can perform any tasks on the encyclopedia.

Before adding a user, that user must be in the Coordination Server and must have access to the encyclopedia. For information about this procedure, see Adding a User to the Coordination Server and Granting User Access to an Encyclopedia in this chapter.

**Note:** Only encyclopedia administrators or users with add user privileges can add users. Users can grant authority equal to or less than their own level of authority.

**Follow these steps:**

1. Log on to an encyclopedia through the Encyclopedia Client.
2. In the Encyclopedia Client window, select User, Individual.
3. In the Individual Selection window, enter the new user's ID and select Actions, New.
4. In the Add/Modify dialog, type the user's ID in Userid, and the user's name in Name.
5. Check the boxes to grant the necessary access as an Encyclopedia Administrator, and to grant access to add models and to add users.
6. Press OK to finish adding the user.

After adding the user, you can grant individual user access to model.

# Authorize Access to a Model

By authorizing access to a model, you authorize an individual user or group to perform these operations:

- Read models
- Update models
- Generate code for the model
- Migrate objects from one model to another

Migrate authority is required on the destination model only.

**Note:** For more information about model authorization requirements for version control, see the *Client Server Encyclopedia Version Control User Guide*. Individuals or groups that have access to a given model also have access to all subsets of that model. To grant or revoke access to some subsets and not to the entire model, see the *Client Server Encyclopedia Subsetting User Guide*.

The following rules apply to authorizing access to models:

- You must be an encyclopedia administrator, the model's administrator, or a member of the group that administers the model
- You cannot revoke access for a user that has the model that is checked out

You can grant access to a model on the user level or the model level.

## Authorize Access to a Model at the User Level

You can grant access to update a model and create new subsets, migrate objects to another model, and generate executable code and databases.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open an individual or group.
3. In the Group Selection or Individual Selection window, select Authorization, Maintain Model Access.
4. In the User Access dialog, select one or more models in the Models Unauthorized For list, and click Grant.

5. Select to grant one or more access permissions, Update, Migrate, or Generate, and click OK.
   - Update grants authority to change a model and create new subsets.
   - Migrate grants authority to transfer objects from one model to another. Because migrate authority requires Update authority, when you select Migrate the Encyclopedia Client checks the Update box.
   - Generate grants authority to create executable code and generate databases with the Construction Client.
6. Click OK in the User Access dialog.

**More information:**

Open a User ID in the Encyclopedia Client (see page 110)
Open a Group (see page 109)

## Authorize Access to a Model at the Model Level

You can grant access to update a model and create new subsets, migrate objects to another model, and generate executable code and databases.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the model.
3. In the Encyclopedia Model Selection window, select Authorization, Maintain User Access.
4. In the User Access dialog, select one or more users from the Unauthorized Users list, and click Grant.
5. Select to grant one or more access permissions, Update, Migrate, or Generate, and click OK.
   - Update grants authority to change a model and create new subsets.
   - Migrate grants authority to transfer objects from one model to another. Because migrate authority requires Update authority, when you select Migrate the Encyclopedia Client checks the Update box.
   - Generate grants authority to create executable code and generate databases with the Construction Client.
6. Click OK in the User Access dialog.

# Copy a Group Definition

A group defines access for multiple users. Copying duplicates the members in the original group to a new group name and group ID, creating a template for new groups. Users retain the same model and subset access they had before the copy.

You must have access to the encyclopedia to copy a group. When you copy a group, you become the owner of the copied group.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the group.
3. In the Group Selection window, select Actions, Copy.
4. Type a New Group Id and a New Group Name.
5. Click OK to copy the group.

After copying a group, you can add new users to the copied group.

**More information:**

Open a Group (see page 109)
Select Members for a Group (see page 112)

# Create a Group Definition

Create a group definition to add individuals to a group. The new group of users has a unique name and ID.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. In the Encyclopedia Client window, select User, Group.
3. Type a new group ID in the Userid field.

   **Limits:** eight alphanumeric characters. Userid must be unique in the encyclopedia.
4. Select Actions, New.

   The Add/Modify dialog opens with the Group Id field completed.

5. Type a Group Name.

   **Limit:** 32 or less alphanumeric characters.

6. Click OK.

After creating a group definition, you can change, detail, copy, or can delete the group definition.

**More information:**

Modify a Group Definition (see page 106)
View Group Details (see page 103)
Copy a Group Definition (see page 100)
Delete a Group Definition (see page 101)

# Delete a Group Definition

To remove a group from the encyclopedia, delete the group. Deleting a group removes the group's unique name and ID, and does not remove the individual user members from the encyclopedia.

To delete a group:

- Requires encyclopedia administrator or group owner privileges
- All models the group owns must be reassigned or deleted.
- Group members cannot have subsets or models that are checked out if the user has access to the model or subset only using the group.

When the group you are deleting is the model or subset administrator, the user deleting the group becomes model or subset's administrator.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the group.
3. In the Group Selection window, select Actions, Delete.

   The client confirms that you want to delete the group.

4. Press Yes to delete the group or press No to keep the group.

**More information:**

Open a Group (see page 109)

# Delete a User from the Coordination Server

Deleting a user removes the user from the Coordination Server. Consider deleting a user from the Coordination Server if the user is no longer accessing any encyclopedias.

Do not delete a user if the user is absent for time or temporarily on another project. Consider changing the user's status to inactive.

**Note:** Only an administrator can delete a user from the Coordination Server.

**Follow these steps:**

1. Log on to the Coordination Client.
2. Open a user ID.
3. In the User Selection window, select Actions, Delete.

   The client confirms that you want to delete the user.
4. Press Yes to delete the user or press No to keep the user.

After deleting a user from the Coordination Server, delete the user's definition from the encyclopedia.

**More information:**

Modify User Detail in the Coordination Server (see page 108)
Delete an Individual User from the Encyclopedia (see page 102)

# Delete an Individual User from the Encyclopedia

To remove the user's definition from the encyclopedia, delete an individual user. Deleting a user from an encyclopedia does not delete the user from the Coordination Server.

To delete an individual user:

- You must be an encyclopedia administrator or the person that created the user.
- The user cannot have any models or subsets checked out.
- The user cannot be an administrator or any models.

When the user you are deleting is the model or subset administrator, the user deleting the individual becomes the model or subset's administrator.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the individual user.
3. In the Individual Selection window, select Actions, Delete.

   The client confirms that you want to delete the user.
4. Press Yes to delete the user or press No to keep the user.

After deleting a user, the user's ID is no longer in the ID field.

**More information:**

Open a User ID in the Encyclopedia Client (see page 110)

# View Group Details

Group detail lists the group ID, name, the ID that created the group, and other group information. The Detail dialog is read-only and you cannot change the information using the Detail dialog.

**Follow these steps:**

1. Log on the encyclopedia through the Encyclopedia Client.
2. In the Encyclopedia Client window, select User, Group.
3. Type the group user ID in the ID field. Leave the ID field blank to list IDs.
4. To list IDs, select Actions, Open, and highlight a Group ID in the Group Selection List, and click Open.
5. When the Userid field contains the group, select Actions, Detail.

   The Encyclopedia Client opens the Detail dialog box listing the Group ID, Group Name, group administrator's ID, and the date and time the group was added to the encyclopedia.
6. Click OK to close the Detail dialog.

# List User Details in the Coordination Server

Detailing a user displays information about a user in the Coordination Server. User detail display is read-only, and you cannot make changes using the Detail dialog.

User detail lists user information including the user ID, user's name, if the user is an Administrator, the Administrator that created the user ID, and the date and time the user ID was added to the encyclopedia.

**Note:** Only Administrators can display user details.

**Follow these steps:**

1. Log on to the Coordination Client.
2. Open a user ID.
3. In the User Selection window, select Actions, Detail.
4. Click OK to close the Detail dialog.

**More information:**

Open a User ID in the Coordination Client (see page 109)

# List Individual User Details in the Encyclopedia Client

Individual user detail lists information including the user ID, user's name, if the user is an Administrator, if the user has authority to add models and users, the Administrator that created the user ID, and the date and time the user ID was added to the encyclopedia.

User detail display is read-only, and you cannot make changes using the Detail dialog.

**Follow these steps:**

1. Log on the encyclopedia through the Encyclopedia Client.
2. Open the User ID.
3. In the Individual Selection window, select Actions, Detail.
4. Click OK to close the Detail dialog.

**More information:**

Open a User ID in the Encyclopedia Client (see page 110)

# Grant User Access to an Encyclopedia

Granting user access to an encyclopedia authorizes a user to access an encyclopedia in the Coordination Server. The user must be in the Coordination Server.

Granting user access occurs in the Coordination Client. Assign a user to an encyclopedia before the user can log in to that encyclopedia.

**Note:** Granting user access to an encyclopedia requires Administrator privileges.

Grant user access through the User Selection window or through the Encyclopedia Selection Window. Use the Encyclopedia window to grant user access to a newly created encyclopedia on the Coordination Server. Use the User Selection window to grant newly created Coordination Server users access to an encyclopedia.

**To grant user access to an encyclopedia through the User Selection Window**

1. Log on to the Coordination Client.
2. Open a user ID.
3. In the User Selection window, select Authorization.
4. To grant access to one encyclopedia, select the encyclopedia in the Unauthorized Encyclopedias list, or to grant access to all encyclopedias in the Unauthorized Encyclopedias list, use Select All.
5. Select Grant.
6. The Coordination Encyclopedia moves the newly authorized encyclopedias to the Authorized Encyclopedia list.
7. Click OK to close the User Access dialog.

**To grant user access to an encyclopedia from the Encyclopedia Selection Window**

1. Log on to the Coordination Client.
2. Click Encyclopedia.
3. Click Actions, Open to open the Encyclopedia List.
4. Highlight an encyclopedia and click Open to open an encyclopedia.
5. Select Authorization.
6. To grant access to one user, select the user in the Unauthorized Users list, or to grant access to all users in the Unauthorized Users list, use Select All.
7. Select a user from the Unauthorized Users list.
8. Select Grant.
9. The Coordination Encyclopedia moves the newly authorized encyclopedias to the Authorized Encyclopedia list.
10. Click OK to close the User Access dialog.

After granting user access to an encyclopedia, you can add a user to the encyclopedia in the Encyclopedia Client.

**More information:**

Add a User to the Coordination Server (see page 84)
Open a User ID in the Coordination Client (see page 109)
Add an Individual User to an Encyclopedia (see page 97)

# Modify a Group Definition

To change a group's ID or name, change the group definition. To add or modify a group's name or ID requires encyclopedia access. Only an encyclopedia administrator or the group creator can change a group definition.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the group.
3. In the Group Selection window, select Actions, Modify.
4. Type a new Group Id, Group Name, or both.

   **Limits:**

   - The group ID can only contain a maximum of eight alphanumeric characters and must be unique in the encyclopedia.
   - The group name can only contain a maximum of 32 alphanumeric characters.
5. Click OK when you finish changes.

**Note:** To change the group's authorization, see the *Client Server Encyclopedia Subsetting User Guide*.

**More information:**

Open a Group (see page 109)
Select Members for a Group (see page 112)

# Modify an Individual User Definition

Change an encyclopedia user definition to change the user's ID, name, or authorization levels.

Only the encyclopedia administrator or the person that created the user ID can change the user. A user with authority to add users can change authority to add models.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the individual user.
3. Select Actions, Modify in the Individual Selection window.
4. In the Add/Modify dialog, type new values for the user's ID or name, or both.
5. Click in the boxes to change authorization as an Encyclopedia Administrator, and authorization to add models and to add users.
6. Click OK to exit the Add/Modify dialog and save changes.

**More information:**

Open a Group (see page 109)
Select Members for a Group (see page 112)

# Modify a User Password

User passwords are optional and the default is no password. After setting the password, it is required every time that the user logs in to any CSE Client, and a password will always be required.

The Encyclopedia Client uses the defined user ID and password for all encyclopedias and all clients.

Users can change their password on the Encyclopedia Client, and administrators can change passwords.

**Follow these steps:**

1. Log on to the Encyclopedia Client.
2. Select User, Modify Password.
3. In the Modify Password dialog, type the current password in the Old password field, and the new password in the New password and confirmation fields.
4. Click OK.

## Modify or Override a User Password

Users can change their password on the Encyclopedia Client, and administrators can change passwords.

**Follow these steps:**

1. Log on to the Coordination Client as an administrator.
2. Open a user.
3. Select Actions, Override Password.
4. In the Override Password dialog, type the new password in both fields.

   **Limits:** At least four characters, and not more than ten characters.
5. Click OK.

**More information:**

Open a User ID in the Coordination Client (see page 109)

# Modify User Detail in the Coordination Server

Modifying user details changes the information about a user in the Coordination Server. Only an administrator can change user detail.

**Follow these steps:**

1. Log on to the Coordination Client.
2. Open a user ID.
3. In the User Selection window, select Actions, Modify.
4. To change the user's ID or name, type the new values in the fields.
5. To change the user's Directory Administrator status, select the Yes or No radio buttons to change.
6. To change the user's status, select Active or Inactive.
7. Select OK when you finish modifying the user details.

To verify the changes, detail the user.

**More information:**

Open a User ID in the Coordination Client (see page 109)
List User Details in the Coordination Server (see page 103)

# Open a Group

Open a group to grant model and subset access, to perform group maintenance tasks, and before making other changes make the group active or current.

**Follow these steps:**

1. Log on the encyclopedia through the Encyclopedia Client.
2. In the Encyclopedia Client window, select User, Group.
3. Enter the group ID in the ID field. Leave the field blank to display an ID list.
4. Select Actions, Open.
5. If you did not enter an ID, highlight an ID in the list, and select Open. When the list is empty, no groups exist.

**More information:**

Create a Group Definition (see page 100)

# Open a User ID in the Coordination Client

Open a user ID in the Coordination Client to perform any action on the user, including detailing, deleting the user ID, and granting or revoking user access to an encyclopedia.

Only the administrators can open a user ID in the Coordination Client. Changing a user ID in the Coordination Client requires changing the user ID in the Encyclopedia Client.

**Follow these steps:**

1. Log on to the Coordination Client.
2. In the Coordination Client window, select User, Individual.
3. Type the user ID in the Userid field. Leave the field blank to display an ID list.
4. Select Actions, Open.
5. If you did not enter an ID, highlight an ID in the list, and select Open.

When the user ID is in the Active box in the User Selection window, the user ID is open.

# Open a User ID in the Encyclopedia Client

Opening an individual user to assign model and subset access, perform user maintenance tasks, and add users to groups. Changing the user ID in the Encyclopedia Client requires changing the user ID in the Coordination Client.

**Follow these steps:**

1. Log on the encyclopedia through the Encyclopedia Client.
2. In the Encyclopedia Client window, select User, Individual.
3. Enter the individual user ID in the ID field. Leave the field blank to display an ID list.
4. Select Actions, Open.
5. If you did not enter an ID, highlight an ID in the list and select Open.

When the ID is in the Userid field, the individual user is open.

# Revoke User Access to an Encyclopedia

Revoking user access from an encyclopedia removes the user ID assignment from an encyclopedia in the Coordination Server and prevents the user from logging on to that encyclopedia in any client. Use the Coordination Client to revoke user access.

The user remains in the Coordination Server and is not assigned to the encyclopedia in the Coordination Server from which the user's access was revoked.

A user with revoked access cannot check in Models.

**Note:** When the user is logged on to a model in the encyclopedia and you revoke access, the user can complete his or her work and can save it. After the user closes the encyclopedia, they will not be able to access the encyclopedia again.

Only an administrator can revoke user access from an encyclopedia.

You can revoke user access from User Selection window or the Encyclopedia Selection window. When the user ID is open, use the User Selection window to revoke the user access. When the encyclopedia is open, use the Encyclopedia Selection window.

## Revoke User Access from the Encyclopedia List

These steps revoke user access through the User Selection window. Use these steps to revoke access when the user ID is open.

**Follow these steps:**

1. Log on to the Coordination Client.
2. Open a user ID.
3. Select Authorization.
4. Select an encyclopedia in the Authorized Encyclopedias list, or use the Select All button to highlight all encyclopedias.
5. Select Revoke.
6. Select OK to finish.

   The Coordination Client moves the selected encyclopedia to the Unauthorized Encyclopedias list, and the user no longer has access to that encyclopedia.

**More information:**

Open a User ID in the Coordination Client (see page 109)

## Revoke User Access from the User List

These steps revoke user access through the Encyclopedia Selection window. Use these steps when the encyclopedia is open.

**Follow these steps:**

1. Log on to the Coordination Client.
2. Select Encyclopedia.
3. In the Encyclopedia Selection window, select Actions, Open to open an encyclopedia.
4. Highlight the encyclopedia in the Encyclopedia List window and select Open.
5. Select Authorization.
6. Select the user from the Authorized Users list.
7. Select Revoke.
8. Select OK.
9. The Coordination Encyclopedia moves the user to the Unauthorized Users list.
10. Click OK to close the User Access dialog box.

# Select Members for a Group

Select group members to add or remove a user to or from a group.

When you remove a user from a group, you remove the user's membership to the group, you do not remove the user from the encyclopedia.

**Note:** Only encyclopedia administrators and group owners can add or remove users to or from a group.

You cannot remove a user from a group when the user has a model or cannot subset checked out that the user can only access as member of the group.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the group.
3. In the Group Selection window, select Memberships.
4. To add a member to the group, select one or more members from the Available Members list and select Add.
5. To remove members from the group, select one or more members in the Current Members list and click Remove.
6. Select OK to complete the task.

**Note:** To select the subsets this group can access, see the *Client Server Encyclopedia Subsetting User* Guide.

**More information:**

Open a Group (see page 109)
Authorize Access to a Model (see page 98)

# Chapter 5: Managing Models

## Managing Models

Model Management includes administrative functions that are related to models, such as converting, creating, copying, deleting, and renaming models.

Model management tasks are:

- Converting a Model
- Converting all Models in an Encyclopedia
- Deleting a Model
- Deleting an Object
- Detailing a Model
- Generating a New Model
- Modifying a Model's Checkout User ID
- Modifying the Model Administrator
- Opening a Model
- Overriding Model Checkout Status
- Renaming a Model
- Renaming an Object

**More information:**

Encyclopedia Communications (see page 165)
User Management and Access (see page 93)

## Model Schema

A specific schema release level defines how information in each model is controlled and processed. When a CA Gen release defines new objects, properties, or associations to support new functionality, the schema release level changes.

# Model Conversion

Model conversion updates the schema level of a model in the Prior Schema or Second Prior Schema to the Current Schema. Model conversion also add objects and associations, and update properties in a model if the new schema release requires these changes.

**Note**: For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes.*

**Important!** When planning model conversion, it is important that workstations in a particular schema can only work on models or subsets in the same schema. A Prior Schema workstation cannot work on models or subsets in the Current Schema and a Current Schema workstation cannot work on models or subsets in the Prior Schema. Do not convert the model to the Current Schema if you continue to develop or maintain the model using a Prior Schema workstation.

**Important!** Since there is no facility to convert a model back to a prior schema, do not convert the model until Current Schema workstations are available.

## Full Support

The CSE provides full functional support for Current Schema and Prior Schema models. The transitional support for Second Prior Schema models subject to the following rules:

- The encyclopedia can delete a model in any schema.
- The Current Schema Encyclopedia can only load, convert, and delete Second Prior Schema models
- The Current Schema Encyclopedia can convert a Prior Schema model to a Current Schema model.
- Prior Schema workstation toolsets can only access Prior Schema models in the encyclopedia.
- Current Schema workstation toolsets can only access Current Schema models.

- Current Schema models cannot exist in any Encyclopedias earlier than Current Schema Encyclopedias.
- Any model that is at a schema release level prior to the Second Prior Schema must be converted with an earlier version of the encyclopedia to bring it to the Second Prior Schema or Prior Schema release level.

Full support means that all the functionality including upload, download, migration, adoption, subsetting, and code generation are available.

**Notes:**

- Regardless of the schema level of a model, application generation from the CA Gen x.x CSE only uses the CA Gen x.x generators. For more information about inter-release compatibility for generated application components, see the *Release Notes*.
- *xx* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.

## Conversion Requirements

Mass model conversion is not required. You can convert each Prior Schema model in the CA Gen *x.x* encyclopedia when the project determines that new functionality is required. The encyclopedia or model administrator converts a model using the model conversion option on the Encyclopedia client.

**Note:** *x.x* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.

### Cross Release Restrictions

All encyclopedia functionality is available for Second Prior Schema and Prior Schema models with the following restrictions:

- You cannot download a Second Prior Schema model or a subset from a Second Prior Schema model.
- You can only download a Prior Schema model or subset from a Prior Schema model to a Prior Schema Toolset.

### Rules for Converting a Model

The rules for converting a model are:

- Only an encyclopedia administrator or the model administrator can convert a model.
- An encyclopedia administrator can convert any model.

- The model to be converted must not be a child model. Only parent models or models without child models can be converted.
- The model to be converted must be checked in. A checked out model or a model with checked out subsets cannot be converted.
- The model schema must be at least the Second Prior Schema.

**Note:** For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes.*

## Convert a Model

Converting a model updates the model schema and modifies model contents as required to conform to the new model structure definition. The software evaluates the model in terms of the current definition and makes the required changes.

You can use the Encyclopedia Client to Server Command Line to convert a model.

**More information:**

Supported Code Page Values (see page 213)
Open a Model (see page 131)

### Convert a Model Using the Encyclopedia Client

Converting a model updates the model schema and modifies model contents as required to conform to the new model structure definition. The software evaluates the model in terms of the current definition and makes the required changes.

You can use the Encyclopedia Client to Server Command Line to convert a model.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Select the Model.
3. Open the model.
4. Select Actions, Convert.
5. When the client confirms that you want to convert the model, Click Yes.
6. Click OK.

   The model conversion successfully completed.

## Convert a Model Using the Server Command Line

From the directory in which the CSE is installed, for example: %GENxx%\CSE\bin, enter the following command:

convmodl -u <*userid*> -m <"*modelname*"> [-i <*build code page*> -d <*trace*> -p <*dispatcher*> -v <*environment*> -g <*encyclopedia group*>]

**Note:** *xx* refers to the current release of CA Gen. For the current release number, see the *Release Notes*.

**-u *<userid>***

Defines an authorized user ID.

**Limits:** eight characters

**-m *<modelname>***

Defines a model in the encyclopedia.

**Limits:** 32 characters

**-i *<build code page>***

Defines the code page of the platform on which the model was built.

**Note:** The -i <*build code page*> parameter is valid only if the model has a zero code page, and supplied to establish the correct language code value for the model.

**-d**

Turns the debug option ON.

**Default:** OFF

***<trace>***

Defines the trace options MAS*XXX*

**M**

Sets memory trace ON.

**Default:** OFF

**A**

Sets an auxiliary file ON.

**Default:** OFF

**S*XXX***

Sets the table size.

**Limits:** 0 through 744.

**Default:** 512

**-p *<dispatcher>***

Defines a name of the message dispatcher.

**Default:** the value of IEF_MDNAME or 'IEFMD'.

**Limits:** 1059 characters

**Note:** For more information about Message Dispatcher Name, see Hostnames and IP Addresses (see page 29) and CSE Message Dispatcher and Remote Daemon Server Names (see page 29).

**-v *<environment>***

Defines the environment name.

**Default:** value of IEF_ENVNAME or CSE_ENV.

**Limits:** 32 characters

**-g *<encyclopedia group>***

Defines the encyclopedia group name.

**Default:** value of IEF_ENCYGROUP

**Limits:** eight characters

## Convert all Models in an Encyclopedia

Only an encyclopedia administrator can convert all models in an encyclopedia.

On the UNIX systems, before you begin:

- Log in as the CSE Administrator
- Source the cse.sh when using the Korn shell, or the cse.csh when using C Shell

**Note:** The convert all models command is available only as a server command-line command.

**Important!** Back up your database before converting all models. After you issue the convall command, processing begins immediately. You cannot reverse conversion.

**Follow these steps:**

On Windows and the UNIX systems, enter the following command from a directory in which you can create files:

```
convall -u <userid> -i <build code page> [-r -d -p <dispatcher> -v <environment> -g <encyclopedia group>]
```

**-u *<userid>***

Defines an authorized user ID.

**Limits:** eight characters

**-i *<build code page>***

Defines the code page of the platform on which the model was built.

0 indicates no translation that is required.

**Note:** You include the -i <*build code page*> parameter to establish the correct language code value for the models you are converting.

**Important!** To use the convall command, all models in the encyclopedia must have been created using the same code page. Do not use the convall command when the encyclopedia contains models in different code pages. Convert the models one at a time.

**-r**

(Optional) Specifies to force reconversion of models that are previously converted to this schema level.

**-d**

(Optional) Turns the debug option ON.

**Default:** OFF

**-p *<dispatcher>***

(Optional) Defines the name of the message dispatcher.

**Default:** the value of IEF_MDNAME or 'IEFMD'.

**Limits:** 1059 characters

**Note:** For more information about Message Dispatcher Name, see Hostnames and IP Addresses (see page 29) and CSE Message Dispatcher and Remote Daemon Server Names (see page 29).

**-v *<environment>***

(Optional) Defines the environment name.

**Default:** the value of IEF_ENVNAME or CSE_ENV.

**Limits:** 32 characters

**-g *<encyclopedia group>***

(Optional) Specifies the encyclopedia group name.

**Default:** the value of IEF_ENCYGROUP.

**Limits:** eight characters

**More information:**

Supported Code Page Values (see page 213)

# Create a New Model from a Subset

Create a model from a subset to create a new model that is based on the set of scoping objects in the subset. The subset from which you create a new model is not affected.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Select Subset.
3. Use Open, List Models, or List Subset commands on the Action menu, and Select Open to open the subset.
4. Select Actions, Create Model from Subset in the Subset Selection window.
5. Enter the new model name in the Create Model from Subset window and click OK.

   As the server creates the model, it updates a progress gauge.
6. When the server finishes creating the model, the client enables the Continue button, click it to finish.

# Delete a Model

Deleting a model permanently removes the model and its subsets from the encyclopedia.

**Important!** You cannot restore a model after deleting it.

Consider deleting models that you no longer use to prevent space problems.

Before deleting a model, ensure that the following conditions are satisfied:

- Check in the model and its subsets or override all checkouts from the model.

- Only the model's administrator, an encyclopedia administrator, or a member of the group that administered the model can delete a model.

**Note:** For syntax on the command-line alternative, enter delmodel in the directory in which the Encyclopedia servers are installed.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the model.
3. In the Encyclopedia Model Selection window, select Actions, Delete.
4. Click OK in the Delete Confirmation dialog.

   As it deletes the model, it displays a progress gauge. The Continue button is disabled.
5. Click the Continue button to finish.

The Model Selection window opens when the deletion finishes.

**More information:**

Open a Model (see page 131)

# Delete an Object

Use the Encyclopedia Client to delete objects in a model directly from the encyclopedia without checking out the model or subset. You can delete one or multiple objects. To delete multiple objects, build the list of objects to delete. You must have authorization for the model in which the objects reside.

The Object Occurrence dialog has a Checkout Status option to identify the status of an object to delete. Select Checkout Status to view a list of all the subsets or the model to which the object is checked out. For each subset or model, you also see:

- User who has the object that is checked out
- Protection level with which the object is checked out
- Maximum access of the object

Use the online help to identify the occurrence of the object types you want to delete, and to guide you through the steps to delete a specific object occurrence.

**Note:** The delete process continues even if it cannot delete an object.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the model to which the object to delete belongs.
3. In the Encyclopedia Model Selection window, select Actions, Delete Objects.
4. Complete the fields in the Object Deletions Options dialog to override the default values and specify details about the error report the client creates while deleting objects.

   An error occurs when you try to delete an object that cannot be deleted.

   Maximum Errors define the number of errors to report per object.

   Directory is the directory in which to store the error report and must be a fully qualified path. If the directory does not exist, the client creates it.

   File Name can be up to 8 characters, with a 3 character extension.
5. When you select OK, the client opens the Object List listing the object types eligible to delete.
6. Use the online help in the Object List box for more information about using the Filter edit field, identifying the occurrence of the selected object type you want to delete, and to guide you through the steps to delete a specific object occurrence.

The Object List only includes objects in the model you can delete. Select an object to delete and select an occurrence of the object type and add it to the list. You also expand the list into subordinate objects until you reach the level of occurrences that lists the occurrence to delete.

To delete one of more objects, define a list of objects to delete and start the deletion. The process produces a report that includes an entry for each deleted object, a message for each object it could not delete that describes why it could not delete the object, and a list of shared objects that are deleted as a result of deleting another object. The report does not include deleted non-shared objects.

When the delete process completes, view the report that lists the objects that are successfully deleted and those it could not delete. For objects that could not be deleted, the report lists a message for each object. You can view the default number in the report, or can specify the number of errors to include. By default, the report lists a maximum of 10 messages per object.

To view the syntax for the command-line command, enter delobj in the directory in which the Encyclopedia servers are installed.

**More information:**

Open a Model (see page 131)

## Rules for Deleting Objects

Select an object to delete. The object that you are deleting and objects that are deleted because you are deleting the object, must meet these object projection rules:

- The object's maximum access must be Delete. Maximum access is the highest level of protection for an object in the child encyclopedia.
- The object must not be checked out with protection access greater than Read.
- When deleting a modifying association, the maximum access of the associated object must be at least Delete, and the associated object must not be checked out with protection access greater than Read.
- When deleting a referencing association, the maximum access of the associated object must be at least Access, and the associated object must not be checked out with protection access of Deleted.

If the object does not meet these rules, the CSE issues an object protection error when you select it. You can make changes to meet the rules and attempt to delete the object again.

The CSE permits deleting these objects:

- Activity cluster
- Batch Job
- Batch Job step
- Business area
- Business system
- Component model
- Crit success factor
- Current data store
- Current info system
- Data cluster
- Data column
- Data table
- Denormalized column
- Dialect (non–dflt)
- Deletion of non-primary dialog
- Dialog flow
- Entity subtype

- Event
- Environment
- External object
- Facility
- Goal
- Index
- Information need
- Link table
- Location
- Navigation diagram
- Objective
- Online load module
- Operations LIbrary
- Org unit (non-root)
- Performance measure
- Procedure
- Procedure step
- Service Manager
- Screen
- Strategy
- Tablespace
- Tactic
- Type map
- User def matrix
- User-defined object
- Window load module
- z/OS LIbrary

The CSE prevents removing these objects under the conditions listed:

**Attribute**

Prevented when viewing functions, processes, procedure steps, and action blocks.

**Command**

Prevented when used by an action block, dialog flow, window, or dialog.

**Common action block**

Prevented when used by another action block.

**Component Implementation**

Prevented when it or its subordinate subtypes, attributes, or relationships are:

- Used in the views of functions, processes, procedures steps, or action blocks.
- Referenced through expected effects by functions or processes.

**Component Specification**

Prevented when it or its subordinate subtypes, attributes, or relationships are:

- Used in the views of functions, processes, procedures steps, or action blocks.
- Referenced through expected effects by functions or processes.

**Database**

Prevented when it contains any tablespaces or indexspaces.

**Dialog Box**

Prevented when non-primary dialogs exist for the procedure step.

**Entity type**

Prevented when it or its subordinate subtypes, attributes, or relationships are:

- Used in the views of functions, processes, procedures steps, or action blocks.
- Referenced through expected effects by functions or processes.

**Exit state**

Prevented when used by an action block or a dialog flow.

**Function -non-root**

Prevented when any of its subordinate elementary process action blocks are used.

**Interface Type**

Prevented when it or its subordinate subtypes, attributes, or relationships are:

- Used in the views of functions, processes, procedures steps, or action blocks.
- Referenced through expected effects by functions or processes.

**Primary window**

Prevented when non-primary dialogs exist for the procedure step.

**Process**

Prevented when any of its subordinate elementary process action blocks are used.

**Relationship member**

Prevented when used in the views of action blocks.

**Specification Type**

Prevented when it or its subordinate subtypes, attributes, or relationships are:

- Used in the views of functions, processes, procedures steps, or action blocks.
- Referenced through expected effects by functions or processes.

**Storage group**

Prevented when used by a tablespace or indexspace.

**Template**

Prevented when used by a screen.

**Trans operation**

Prevented when referenced by a delegating transaction operation

**User def obj class**

Prevented when referenced by a user-defined matrix.

**User subject area**

Prevented when any of its subordinate entity types, subtypes, attributes, or relationships are:

- Used in the views of functions, processes, procedures steps, or action blocks.
- Referenced through expected effects by functions or processes.

**Work attribute**

Prevented when used in the views of functions, processes, procedure steps, or action blocks.

**Work attribute set**

Prevented when used in the views of functions, processes, procedure steps, or action blocks.

# Delete a Subset

Deleting a subset permanently removes the subset definition from an encyclopedia. The CSE prompts you to confirm before deleting the subset. Deleting a subset definition does not delete the scoping objects that are defined in the subset from the model. You cannot delete a subset that is checked out.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Select Subset to open the Encyclopedia Subset Selection window.
3. Type the Model Name and the Subset Name, or select Actions, List Models and Actions, List Subsets to select the model and subset name from a list.
4. In the Encyclopedia Subset Selection window, select Actions, Delete.
5. Select Yes when the client confirms that you want to delete the subset.

# View Model Details

Use the Detail dialog to view current information the CSE stored for the model, such as who created it and check out status. You can also use the Encyclopedia, Checkout, Construction, and Support Clients to view these details. You cannot use the detail dialog to change the information.

**Follow these steps:**

1. Log on to the encyclopedia using the Checkout, Encyclopedia, Construction, or Support Client.
2. Open the model.
3. In the client's Model Selection window, select Actions, Detail.
4. The client opens the Detail window for the model listing the information the CSE has stored for the model.

**Note:** For more information about the window information, see the *Toolset Help*.

**More information:**

Open a Model (see page 131)

# Generate a New Model

Generate a new model to accomplish these tasks:

- Restore a model that no longer exists on the encyclopedia, for example, a deleted model
- Add a model to the encyclopedia

Only generate a new model from a copy when you have the complete copy of the model on your workstation.

**Note:** We recommend that you update a newly created model on the workstation, instead of generating a new model.

**Important!** Use generate new model with a subset with caution. Doing so destroys Version Control Information, and the subset cannot contain all the information the new model needs.

You can generate a new model automatically or manually. Manual generation requires transferring files between the CSE and Toolset.

## Generate a New Model Automatically

During automatic model generation, the Toolset updates the Upload progress dialog.

**Follow these steps:**

1. Create the model with the Toolset.
2. To store the model on the CSE, in the Toolset main window, verify these settings for these options:
   - CSE is the active encyclopedia selected.
   - The perform file transfer option of Encyclopedia Communications is turned on.
3. In the Toolset main window, select Model, Encyclopedia, Generate New Model.
4. Type the Model Name in the Generate New Model dialog.
5. Select OK.
6. Log in to the Checkout Client.
7. Select an encyclopedia in the Encyclopedia List and select Logon.

   The Toolset updates an Upload progress dialog.

Model generation displays the Encyclopedia Update Status Report when it finishes.

## Generate a New Model Manually

Manually generating a new model requires some user intervention.

**Follow these steps:**

1. Create the model with the Toolset.
2. When you are ready to store the model on the CSE, in the Toolset main window, verify these settings for these options:
   - CSE is the active encyclopedia selected.
   - The Encyclopedia Communications perform file transfer option is turned off.
3. In the Toolset main window, select Model, Encyclopedia, Generate New Model.
4. In the confirmation message box, select Yes to continue.
5. Type the Model Name in the Generate New Model dialog.
6. Select OK.

   The generation creates an update.trn file when it completes.
7. Move the update.trn file from the Toolset model directory to any directory the Checkout Client can access.
8. Start the Checkout Client.
9. In the Checkout Client window, select Encyclopedia, Update.
10. Enter the path to the update.trn file.

**Note:** When processing finishes, the encyclopedia name displays in the Active Encyclopedia window. The Checkout Client creates a verification file, verify.trn, in the same directory as the update.trn file. You must have write access to the directory containing the update.trn file to generate the verify.trn file.

Open the model from the Toolset main window. The software notifies you of the status of the Generate New Model.

# Modify a Model's Checkout User ID

Modify the checkout user ID to permit someone other than the person who originally checked out a model to check in a model. Changing the checkout user ID is useful when the person who checked out the model is unavailable to check in the model.

**To modify the checkout user ID**

- You must be an encyclopedia administrator, the model administrator, or the user who checked out the model.

- The model must be checked out.
- The new user ID must have the required access to check out the model.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the model.
3. In the Encyclopedia Model Selection window, select Checkout, Modify Userid.
4. Type the new user ID in the New Userid field and select OK.

The user that has the new user ID can now update the model.

**More information:**

Encyclopedia Communications (see page 165)
Open a Model (see page 131)

# Modify the Model Administrator

Modify the administrator to establish a new administrator for a model.

The model administrator is the model owner. Model administrators automatically have authority for all encyclopedia functions on models they administer. Model administrator authority is required to delete or rename a model, or to grant, revoke, or modify access to a model.

Changing the model administrator does not affect the previous administrator's access to other models.

Before modifying the model administrator, ensure that the following conditions are met:

- You must be an encyclopedia administrator, the model's administrator, or a member of the group that administers the model.
- The new administrator must have been previously added as a user.

**Follow these steps:**

1. Log on to the Encyclopedia Client.
2. Open the model.
3. In the Encyclopedia Model Selection window, select Authorization, Modify Administrator.
4. Type the new administrator's user ID in New Userid and select OK.

**More information:**

Encyclopedia Communications (see page 165)
Open a Model (see page 131)

# Open a Model

Open a model to perform tasks on the model. Opening the model makes it active or current.

**Follow these steps:**

1. Log on to the encyclopedia in the Checkout, Construction, Encyclopedia, or Support Client.
2. In the client window, select Model.
3. Enter it in the Name field, or leave the field blank to display a model list.
4. Select Actions, Open.
5. If you did not enter a model name, highlight the model from the list and select Open.

When the model is open, the Name field displays the model name.

# Override Model Checkout Status

To change a model's checkout status from checked out to checked in and make it possible to check out the model again.

You lose all the work on the model because the last update when you override the model checkout status.

Consider using override when:

- To discard changes that are made to the model.
- You cannot update the model.
- You checked out a model but received downgrades.

To override the checkout status, you must be one of the following user types:

- The model's administrator
- An encyclopedia administrator
- The user who checked out the model

- A member of the group that administers the model
- The model owner

You use the OVERRIDE command. For more information about the syntax for the command, type OVERRIDE in the directory in which the Encyclopedia client is installed.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the model.
3. In the Encyclopedia Model Selection window, select Checkout, Override.

   The client opens a window to confirm that you want to override the status.
4. Select Yes.

You can check out the model again.

**More information:**

Command Line Commands (see page 201)
Open a Model (see page 131)

# Rename a Model

Changing a model's name is useful to help track enhancements or modifications.

You must be the encyclopedia administrator, a model's administrator, a member of the group that administers the model, or the model owner to rename the model. You cannot rename a model that is checked out.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the model.
3. In the Encyclopedia Model Selection window, select Actions, Rename.
4. Type the New Model Name and select OK.

The Name field in the Model Selection window displays the new name.

**More information:**

Open a Model (see page 131)

# Rename an Object

Use the Encyclopedia Client to rename an object quickly in a model directly from the encyclopedia without checking out and checking in a model or subset.

You must have authorization for the model in which the object resides.

Migration automatically renames objects. Rename an object to change the automatically assigned name to more meaningful name.

**Note:** For more information, see the *Client Server Encyclopedia Version User Control Guide*.

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. Open the model to which the object to rename belongs.
3. In the Encyclopedia Model Selection window, select Actions, Rename Objects.
4. Select an object type from the Rename Object List.
5. Select the occurrence of the object type you want to rename and press Rename.
6. Use the online help to identify each occurrence of the object type to rename, and to guide you through the steps to rename a specific object occurrence.

   The object selection list shows only objects in the model that you can rename.

   An object can have one to four properties. When you rename an object with more than one property, rename every property.

The Current field lists the new name when the rename is successful.

**More information:**

Open a Model (see page 131)

## Rules for Renaming Objects

To rename an object directly from the encyclopedia, ensure that it meets these rules:

- Object protection rules
- Character set rules
- Name uniqueness rules

## Object Protection Rules

When you select an object to rename, it must meet these protection rules:

- It must have a maximum access of Modify or Delete. Maximum access is the highest level of protection available to an object in the child encyclopedia.
- It cannot be checked out with Modify or Delete access.

When the object fails to meet these rules, the CSE issues an object protection error when you select it. Make the necessary changes and try the rename again.

## Character Set Rules

The encyclopedia maintains the same uniqueness, length, and character set rules that are enforced by the workstation. When you check out a subset, you can add new objects or can rename existing objects that are unique within the subset, but cannot be unique within the entire model on the encyclopedia. The upload process ensures an added or modified object name is unique within the model. When it is not unique, the upload process derives a unique name.

**Note:** For more information about rules, see the *Encyclopedia API Reference Guide*.

This section lists the objects and the rules that apply to each object.

**Non-Construction Object**

Single-Byte Character Set, when the model's code page is single-byte character set code page

- Cannot contain these characters: ~ ! @ # $ % ^ & * ( ) | [ ] \ : " ; ' < > ? , . /
- Alphabetic characters must be uppercase
- Leading spaces are suppressed
- Imbedded spaces are replaced with a single underscore

Double-Byte Character Set, when the model's code page is a double byte character set code page

- The name cannot contain a space

**Identifier**

First character must be alphabetic

All other characters must be alphabetic, numeric, or and underscore, as in _

Alphabetic characters must be uppercase

**TD**

First character must be alphabetic or @#$

All other characters must be alphabetic, numeric, or @#$

Last character cannot be a blank space

Alphabetic characters must be uppercase

**No Underscore TD**

First character must be alphabetic or @#$

All other characters must be alphabetic, numeric, or @#$

Alphabetic characters must be uppercase

**No NLS TD Rule**

First character must be alphabetic

All other characters must be alphabetic or numeric

Alphabetic characters must be uppercase

**Mixed Case TD Rule**

First character must be alphabetic or @#$

All other characters must be alphabetic, numeric, or @#$

Last character cannot be _ (underscore).

**Oracle TD Rule**

First character must be alphabetic or #$

All other characters must be alphabetic, numeric, or #$

Last character cannot be _ (underscore).

Alphabetic characters must be uppercase

**ODBC TD**

First character must be alphabetic or @#$

All other characters must be alphabetic, numeric, or @#$

Last character cannot be _ (underscore).

## Objects You Can Rename

When you rename an object, you rename the object's property name. Some objects, such as Batch Job step, have more than one name property. The rename dialog for an object has the correct number of new name fields for the object type. You rename all the property names for an object.

In some cases, renaming an object automatically renames related objects. For example, renaming a process renames the associated action block.

This lists objects selectable for renaming, the property fields names that are renamed, and related objects renamed.

**Activity cluster**

NAME

**Attribute**

NAME and DSDNAME

**Batch job**

JOBNAME

**Batch job step**

MBRNAME and STEPNAME

**Business area**

NAME

**Business system**

NAME

**Command**

NAME

**Common action block**

NAME

**Component model**

NAME

**Crit success factor**

NAME

**Current data store**

NAME

**Current info system**

NAME

**Data cluster**

NAME

**Data column**

MACRONAM

**Data table**

MACRONAM

**Database**

NAME

**Denormalized column**

NAME

**Dialect (Non–default)**

NAME

**Dialog**

NAME

**Dialog flow**

NAME

**Entity type**

NAME and DSDNAME

**Entity subtype**

NAME and DSDNAME

**Environment**

NAME

**Event**

NAME

**Exit state**

NAME

**External object**

NAME

**Facility**

NAME

**Function (Non–root)**

NAME

**Goal**

NAME

**Index**

NAME

**Information need**

NAME

**Link table**

NAME and MACRONAM

**Location**

NAME

**Navigation diagram**

NAME

**Objective**

NAME

**Online load module**

MBRNAME

**Org unit (Non-root)**

NAME

**Performance measure**

NAME

**Primary window**

NAME

**Procedure**

NAME

**Procedure step**

NAME, also renames the associated action block and the associated screen

**Process**

NAME, also renames the associated action block

**Relationship member**

NAME

**Screen**

MBRNAME, FMTNAME, MIDNAME, and MODNAME

**Storage group**

NAME

**Strategy**

NAME

**Tablespace**

NAME

**Tactic**

NAME

**Template**

NAME

**Trans operation**

NAME

**User def matrix**

NAME

**User-defined object**

NAME

**User def obj class**

NAME

**User subject area**

NAME

**Window load module**

MBRNAME

**Work attribute**

NAME

**Work attribute set**

NAME

# Chapter 6: Encyclopedia Reports

## Report Descriptions

**Checkout Status Report**

Displays checked out subsets that include a selected object and the protection level granted that object in each subset.

**Consistency Check Report**

Verifies that the selected model conforms to CA Gen conventions and rules.

**Encyclopedia Validate Report**

Validates all objects in the selected model. Validation can include object properties, associations, and triggers.

**Expansion Conflict Report**

Lists the projected or actual protection downgrades that are associated with checking out a model or subset.

**Model Action Block Use Report**

Lists the calling hierarchy of model components.

**Model Statistics Report**

Lists the details on the selected model and each of its subsets including the number of objects in the model, the total number of subsets, and the number of checked out subsets.

**Object Cross-Reference Reports**

Lists information about the interrelationships of objects in a model. These reports show how and where objects are related to each other. The reports are generated for the current encyclopedia and do not cross encyclopedias.

**Note:** For information about the Compare Report you can generate from the Version Control Client, see the *Client Server Encyclopedia* Version *Control User Guide*.

**More information:**

Object Cross-Reference Reports (see page 161)
Checkout Status Report for the Selected Object (see page 150)
Consistency Check Report for Model (see page 142)
Encyclopedia Validate Report (see page 155)
Expansion Conflict Report for Selected Model or Subset (see page 145)
Model Statistics Report (see page 153)

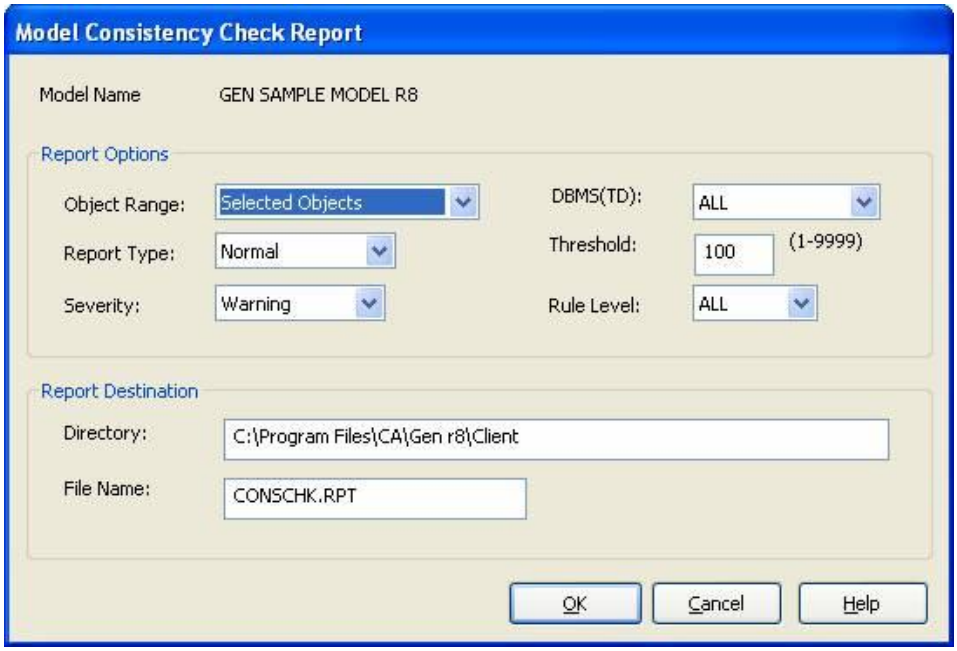
# Consistency Check Report for Model

The Consistency Check Report lists inconsistencies between a model and a set of rules about the proper and complete contents of a model. The summary lists the number of inconsistencies in the objects checked. The normal report lists the summary report and the objects and the rules with which there were consistency exceptions.

## Generate a Consistency Check Report

Initiate the Model Consistency Check Report from the Encyclopedia Client. After selecting the model, start the Consistency Check Report by selecting Actions, Reports, Consistency Check.

The following dialog displays with the Model Name completed and protected:




**Object Range**

Defines whether to include all objects in the report, or to only include selected objects. Use Selected Objects to choose the objects to include as a starting point for Consistency Check. By selecting objects, you restrict the range of testing to focus on certain areas, instead of the entire model.

Use All to include every object in the model in the Consistency Check report.

**Report Type**

Defines the report type as Normal or Summary.

**Severity**

Defines the kinds of messages to include in the report: Warning, Severe Warning, Error, or Fatal.

**DBMS(TD)**

Defines the database type: ALL, NONE, DB2 UDB, DB2 z/OS, JDBC, MS/SQL, ODBC/ADO.NET, ORACLE, or SQL/MP.

**Threshold**

Defines the maximum number of rule exceptions to report. When the number of rule exceptions reported exceeds this number, consistency check stops checking rules and writes the report summary stating the diagnostics reached the threshold.

**Default:** 100

**Limit:** A number between 1 to 9999.

**Rule Level**

Choose ALL, ISP, BAA, BSD, TD, or CG.

**Directory**

Defines a valid directory path.

**Default:** The directory from which the Encyclopedia Client started.

**File Name**

Defines the file to which to save the report.

**Default:** conschk.rpt

**Cancel**

Closes the window and returns to the Model Selection dialog.

**Help**

Opens the online Help for the Consistency Check Report dialog.

When you select the OK button, if the Encyclopedia Client fails to find the directory, it prompts to create the directory and checks the file name. When the file exists, it prompts to overwrite it.

While the report is processing, the client displays a progress indicator showing the number of objects checked and the time of the report request.

When processing completes, click the Continue button. The Notepad opens with the contents of the report.

## Consistency Check Report Format

The report that is written by Consistency Check is a text file. Every report includes a Header and Summary Section, and includes a Normal Section.

Every report includes a Header section similar to this sample header section:

```
              CONSISTENCY CHECK DIAGNOSTIC REPORT

START TIME:            YYYY-MM-DD HH:MM:SS
USER:                  <user id>
MODEL NAME:            <model name>
RULE LEVEL:            <ISP | BAA | BSD | TD | CG | ALL>
DATABASE:              <database name | ALL | NONE>
SEVERITY:              <Warning | Severe Warning | Error | Fatal>
REPORT THRESHOLD:      <number>
REPORT TYPE:           <Normal | Summary>
REPORT CODEPAGE:       <number>
SELECTED OBJECTS:      <list of selected objects or ALL if whole model is
                        selected>
```

## Normal Section

When the report type is Normal, the report includes a section similar to the following sample:

```
<object label>
 <severity>:     <rule message>
```

The Normal section includes the object label only once if there is a consistency exception with a severity greater than or equal to the requested severity. It reports the message for each rule for which it detects a consistency exception.

- For the objects currently used in CSE dialogs, such as subset and aggregate set operations, <*object label*> is the label currently in use.
- For the objects in action blocks, <*object label*> is the fully expanded statement as it appears in the action diagram.
- For all other objects, <*object label*> is the object type mnemonic and the object encyclopedia ID.

Every report includes a Summary section similar to the following sample report:

```
CONSISTENCY CHECK DIAGNOSTIC REPORT -  [COMPLETED | THRESHOLD REACHED]

FINISH TIME:                  YYYY/MM/DD HH:MM:SS
FATAL ERRORS: [SUPPRESSED]            <number>
ERRORS [SUPPRESSED]:                  <number>
SEVERE WARNINGS [SUPPRESSED]:         <number>
WARNINGS [SUPPRESSED]:                <number>
DETECTED ERRORS AND WARNINGS:         <number>
REPORTED ERRORS AND WARNINGS:         <number>

CONSISTENCY CHECK DIAGNOSTIC REPORT -  [COMPLETED | THRESHOLD REACHED]
```

**Note:** The word SUPPRESSED is only in summary lines when the severity is less than the severity specified for the report.

# Expansion Conflict Report for Selected Model or Subset

The Expansion Conflict Report lists the projected or actual protection downgrades that are associated with checking out a model or subset. The report only includes details for objects with protection granted less than the protection requested.

You can choose to report on all objects or scoping objects only, and if the report displays object type or ID information, object label information, or both.

## Prerequisites

Before attempting to run the Expansion Conflict Report, ensure that:

- You have access to the encyclopedia that contains the model or subset.
- The model or subset exists in the encyclopedia.
- You are authorized to read the model.
- No other process currently has an upload or update lock on the model. Before processing the report, the Encyclopedia Client places a temporary write lock on the model to clean up incomplete checkouts.

### When to Generate a Report

Run the Expansion Conflict Report before checkout when:

- Another subset of the target model is checked out and you want to determine if you gain the necessary object protections to perform planned tasks in a single session.

- The target model or subset is a child model and you want to identify if conflicts exist between object protection you requested, and the maximum protection the Encyclopedia can grant based on downgrades that occurred at extract.

Run the Expansion Conflict Report after a checkout when:

- You identify the model changes postpone until you can check it out without the current downgrades.
- You want a record of the current state of access for model objects.

## When Not to Generate a Report

Consider *not* running this report when:

- Your concern is limited to a few known object types and you can get the information that you need by examining the Checkout Status Report. For more information, see the Checkout Status Report for Selected Object section in this guide.
- Your planned work on the model take many sessions and you expect to receive enough objects with the requested protection to complete enough of work for the session.

**More information:**

Checkout Status Report for the Selected Object (see page 150)

## Generate an Expansion Conflict Report

The Expansion Conflict Report lists details for the protection downgrades for objects that are associated with checking out a model or subset.

**Follow these steps:**

1. Log in to the Encyclopedia Client.
2. Select to generate the report for the Model or Subset, using one of these sets of steps:
   - Select Model, Actions, List, highlight the model name, and select Open.
   - Select Subset, Actions, List Subsets, highlight the subset name, and select Open.
3. Identify the report to generate.
   a. In the Encyclopedia Model Selection window, select Actions, Reports, Expansion Conflict.
   b. In the Encyclopedia Subset Selection window, select Actions, Expansion Conflict Report.

4. In the Expansion Conflict Report dialog, accept the default values, or choose other options.

   For more information about the difference between choosing Id And Label, Id Only, or Label Only, position the cursor in the Display Mode box and press F1 to view the online help. The help also includes a sample report for each option.

   When you choose Scoping Objects, the report includes the downgrades only on the selected scoped objects. This report is useful to see only scoping object types. The report does not include objects outside the subset that could cause a downgrade.

   All Shared Objects is the default Report Mode. When you use this option, the report includes all of the shared objects that would be downgraded in a checkout.

   Directory must be a fully qualified path. If the directory does not exist, the client creates it.

   The File Name can be up to eight characters, with a three character extension.

5. Select OK

6. View the report on your screen or print expconfl.rpt from the destination directory.

## Interpret the Report

The body of the Expansion Conflict Report includes a section for each downgraded object. The following image includes three sample entries, one for each possible downgrade reason.

```
*****************************
* Expansion Conflict Report *
*****************************
Model :      TRUST AND STOCKHOLDER MANAGEMENT
Subset:      EMPLOYEE TRUST
Date  :      2002-01-01, Time:  01:01:01
****************************************************************
Subject Area   CONTRIBUTION                                        +-------------------------------------------+
Object id  =  101258,    type  =  SUBJ                       <----| Protection granted for object downgraded to |
Protection requested  =  Delete,     protection granted  =  Read      | Read because Delete protection already      |
                                                                      | granted to this object in a CHECKED OUT     |
Reason object was downgraded:           CHECKED OUT                   | subset.                                     |
Conflicting subsets are:                                       <----|                                             |
        Subset name  =  IRS,  USER  =  BAE,  protection  =  Delete    +-------------------------------------------+

****************************************************************
Attribute EMPLOYEE NAME                                            +-----------------------------------------------+
Object id  =  103968,    type  =  ATTRUSR                    <----| Protection granted downgraded from Delete to|
Protection requested  =  Delete,     protection granted  =  Modify    | Modify because subset is INCOMPLETE due to  |
```

```
                                                                    | missing referencing objects                |
Reason object was downgraded:             INCOMPLETE                |                                            |
Missing objects are:                                                |                                            |
  Association type = SEENBY                                   <-----|                                            |
      Attribute view IMPORT EMPLOYEE NAME  in Process ADD_EMPLOYEE  +--------------------------------------------+
      Object id  =  103969, type  =  PRDVW
      Attributre view EXPORT EMPLOYEE NAME in Process ADD_EMPLOYEE
      Object id  =  103969, type  =  PRDVW

*****************************************************************
Subject Area  CoNTRIBUTION                                          +--------------------------------------------+
Object id  =  101258,    type  =  SUBJ                      <-----| Protection granted downgraded to Modify    |
Protection requested  =  Delete,     protection granted  =  Modify  | because MAXIMUM ACCESS is LIMITED by access|
                                                                    | granted during Child Model extract         |
Reason object was downgraded:             LIMITED MAXIMUM ACCESS    | processing                                |
Maximum Access  =  Modify                                   <-----|                                            |
                                                                    +--------------------------------------------+
*****************************************************************
...
Total number of objects considered:  821
Total number of objects downgraded:   25
```

## Correct Conditions That Cause Downgrades

After examining the Expansion Conflict Report, you can take these possible actions to resolve each type of conflict:

- To resolve CHECKED OUT conflicts, wait for the user to check in the conflicting subsets before checking out your subset, or ask the user of the conflicting subsets to check them out again with object protection levels low enough to avoid conflict.
- To resolve INCOMPLETE conflicts, modify the subset definition to include the missing objects.
- To resolve LIMITED MAXIMUM ACCESS conflicts, apply the child model to its parent model, wait until the user checks in the needed objects, and re-extract the model or subset before checking it out again. Downgrades occur during extract processing only for objects in a checked out subset, where protection granted was delete, modify, or access.

## Technical Details on Downgrades

To scope a subset, select objects to include and specify the protection level for each object. You can request Delete, Modify, Access, or Read protection level for each object.

The Expansion Conflict Report contains one entry for each object in the selected model or subset that is unavailable at the requested protection level. Reasons for downgrading the requested protection level include:

- Selected subset that is failed to include all objects referencing this object.
- Requested protection exceeds protection that is granted at extract.
- Object already granted conflicting protection in checked out subset.

**More information:**

Incomplete Rule (see page 149)
Limited Maximum Access Rule (see page 149)
Checked Out Rule (see page 150)

## Incomplete Rule

The incomplete rule only applies to objects for which you request delete protection. The incomplete rule states:

When you request Delete protection, and the subset expansion is missing any non-ignorable association for the object, the CSE downgrades the protection to Modify, or downgrades the object to Read protection when the object is non-shared.

Non-ignorable associations are associations to an object the CSE must consider when it receives a request to delete the object. The CSE can create ignorable associations while the subset is checked out. The CSE can delete objects that ignorable associations while the subset is checked out, as if the ignorable associations did not exist.

## Limited Maximum Access Rule

The CSE applies the limited maximum access rule during extract processing. The rule only applies to objects in a child model.

When you extract a child model containing objects that are in checked out subsets, the maximum protection for those objects in the child model is limited by the protection granted them in the checked out subsets.

When a child model is extracted, the CSE enforces the same rules that protect objects against conflicting updates in multiple checked out subsets.

When an object in an extracted model is checked out with access protection, modify is the maximum protection granted that object when you check out the child model.

When objects in the parent model are checked out with Delete access, access in objects in the child model are limited to Read access.

When objects in the parent model are checked out with Modify access, access in objects in the child model are limited to Access.

When objects in the parent model are checked out with Access access, access in objects in the child model are limited to Modify access.

The limited maximum access rule that applies when you check out a subset of a child model, states that the CSE downgrades protection to the maximum access. The following list defines the specific access rules:

- When the requested protection is Delete, Modify, or Access, and the maximum protection access is Read access, the CSE downgrades the protection to Read.

- When the requested protection is Delete or Modify, and the maximum protection access is Access, the CSE downgrades the protection to Access.
- When the requested protection is Delete, and the maximum protection access is Modify, the CSE downgrades the protection to Modify.

If you check out the entire child model and it contains objects with access limited at the time of extract, you get those objects at the maximum possible protection level. That is, if maximum access is modify, the object is checked out with protection downgraded to modify.

### Checked Out Rule

The checked out rule only applies to objects in the selected subset that are also components of a checked out subset. The checked out rule states:

- When the requested protection is Delete, Modify, or Access, and the object is checked out with Delete access, the protection is downgraded to Read access.
- When the requested protection is Delete or Modify, and the object is checked out with Modify access, the protection is downgraded to Access.
- When the requested protection is Delete access, and the object is checked out with Access, the protection is downgraded to Modify access.

## Checkout Status Report for the Selected Object

Use the Checkout Status window to identify checked out subsets that include a selected object and the protection level granted that object in each subset. By knowing the protection that is currently granted, you could predict when the CSE would get the access that you plan to request and when it would downgrade the requested protection.

**Note:** The Checkout Status Report does not include potential downgrades that would occur when referencing objects of the selected object are missing from the subset or if the object was initially extracted with a lower protection level than you request. Only the Expansion Conflict Report includes these downgrade details.

### When to use the Checkout Status Report for the Selected Object

Use the Checkout Status report for a selected object when you want to know:

- When the CSE would deny the requested protection for the object, which is based on the Checked Out rule, when you check out a subset containing that object.
- Who has subsets checked out that include the selected object.
- How many checked out subsets include the selected object or the names of those subsets.

**More information:**

Checked Out Rule (see page 150)

## Display a Checkout Status Report

**Follow these steps:**

1. Log on to the Encyclopedia Client and select Subset.
2. In the Encyclopedia Subset Selection window, select Actions, List Models.
3. In the Model List window, highlight the model name, and select Open.
4. Select Subset on the menu to open the Encyclopedias Subset Selection window. Use one of these sets of steps to identify the target subset:
   - To list an existing subset:
     a. Select Actions, List Subsets.
     b. Highlight the subset name, and select Open.
     c. Select Actions, Modify.
   - To add new objects to a subset:
     a. Type subset name in the Subset Name field.
     b. Select Actions, New.
5. To identify the target object type, in the Subset Selected Object List, select Actions, Select New Objects.
6. Check the Filter box to restrict the objects in the subset to the objects you select in the Object Type List.

   The Object Type List displays a list of scoping object types to define in the subset. You select multiple object types at one time.
7. Select object types in the Object Type list.
8. Select the List button to display the objects of the object type selected that are in the model you have open.
9. When you checked the Filter option, the Filter Selection window opens. Type the filter value and select OK.
10. Highlight the object, and select Checkout Status.

11. Examine the display.
12. To return to the main window, use one of the following instructions:
    - Select Cancel.
    - Select Actions, Exit Without Saving, Yes.
    - Select Actions, Exit, Encyclopedia, Exit, Yes.

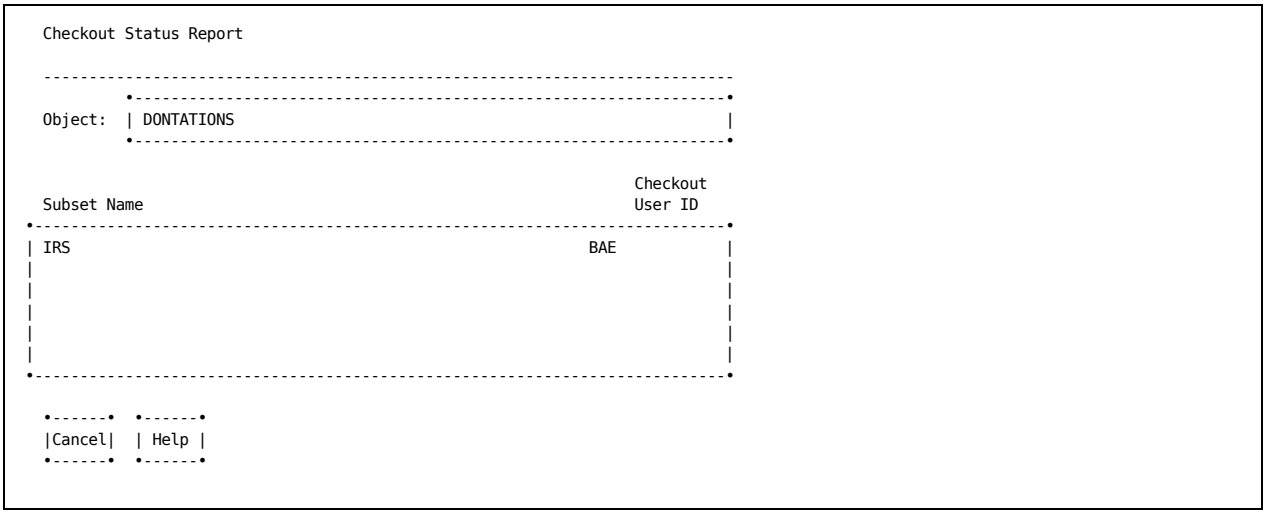
**More information:**

Interpret the Checkout Status Report (see page 152)

## Interpret the Checkout Status Report

The Checkout Status Report includes one line for each subset containing the selected object. The Checkout User ID field shows the user ID that checked out the subset. The Checkout Status field shows the protection with which the object is checked out. The Checked Out Rule states:

- When you plan to request Delete, Modify or Access, and the object is checked out with Delete access, the CSE downgrades the protection to Read access.
- When you plan to request Delete or Modify, and the object is checked out with Modify access, the CSE downgrades the protection to Access.
- When you plan to request Delete, and the object is checked out with Access, the CSE downgrades the protection to Modify access.



# Model Statistics Report

The Model Statistics Report includes this information:

- Model details, as displayed in the Model Details box.
- Subset details, as displayed in the Subset Details box.
- Number of objects the model contains.
- Number of subsets that are defined for the model.
- Number of the model's subsets that are currently checked out.
- Number of scoping objects in each subset.

## Prerequisites

Before generating a Model Statistics Report, ensure that:

- You have access to the encyclopedia where the model resides.
- The model exists on the encyclopedia.
- You are authorized to read the model.
- No other process has an upload or update lock on the model.

## When to Generate the Model Statistics Report

Run the Model Statistics Report when you want to:

- View a snapshot of the current state of the model, perhaps for archival purposes.
- Know what is checked out.
- Information about all of the model's subsets in one view.
- Know how many objects the model contains.

## When Not to Generate the Model Statistics Report

Consider not running this report when the information you need is accessible through the Detail option for models or the Detail option for subsets. See the comments to the illustration showing a sample model statistics report for which details you can view in the Detail box.

## Generate a Model Statistics Report

The CSE Client generates the Model Statistics Report with the filename mdlstats.rpt.

**Follow these steps:**

1. Log on to the Encyclopedia Client.
2. Identify the target model by selecting Model, Actions, List, highlighting the model name, and selecting Open.
3. To identify the report to generate, select Actions, Reports, Model Statistics.
4. Accept the default directory or specify a different report destination.

   Directory must be a fully qualified path. If the directory does not exist, the client creates it.

   **Limits:** The File Name can be up to eight characters, with a three character extension.
5. Click OK.
6. Examine the report on your screen or print mdlstats.rpt from the destination directory.

## Interpret the Model Statistics Report

For a description of each field, see the online help. Use the online help index to find the help for this report.

```
                          Model Statistics Report
+------------------------>  Model Statistics
|                               Model name . . . . . . . . . . . :  TRUST AND STOCKHOLDER MANAGEMENT
|  Model                        Model owner. . . . . . . . . . . :  DAOWNER
|  Detail                       Model status . . . . . . . . . . :  Checked in
|                               Model release. . . . . . . . . . :  9.2.A6
|                               Language code. . . . . . . . . . :  1252
+------------------------>      Code page  . . . . . . . . . . . :  0
+------------------------>      Current user access. . . . . . . :  Admin-Y    Update-N    Migrate-N  Generate -N
|  Report                       Number of objects. . . . . . . . :  8435
|  only                         Number of subsets. . . . . . . . :  3
+------------------------>      Number checked out . . . . . . . :  0
+------------------------>      Date, time, userid created . . . :  1992-01-01    09:12: 41     DAOWNER
|                               Date, time, userid last updated. :  2010-01-01    15:58:23     DAOWNER
|  Model                        Date, time, userid checked out . :  Model Not Checked Out
|  Detail
|                           Model Parent Statistics
|                               Encyclopedia ID  . . . . . . . . :  1
|                               Model ID . . . . . . . . . . . . :  5
|                               Checkout ID. . . . . . . . . . . :  5
+------------------------>      Handshake. . . . . . . . . . . . :

                          Subset Statistics
+------------------------>      Subset name  . . . . . . . . . . :  EMPLOYEE TRUST
|  Subset Detail                Subset owner . . . . . . . . . . :  DAOWNER
+------------------------>      Subset type  . . . . . . . . . . :  DESIGN
   Report only ---------->      Number of scoping objects. . . . :  5
+------------------------>      Date, time, userid created . . . :  1993-01-01    08:22:26
| Subset                        Date, time, userid checked out . :  Subset Not Checked Out
| Detail
+------------------------>      Subset name  . . . . . . . . . . :  IRS
                                ...
```

# Encyclopedia Validate Report

The Encyclopedia Validate Report helps you locate the source of corruption in a model. Run the Encyclopedia Validate Report when you suspect model corruption.

Validation processing checks the object ID, object type code, and object meta-property information for each object in the model, and notes detected corruption in the report.

You can choose to validate properties, associations, and triggers. You can limit the length of the report by specifying the maximum number of errors to report. You can alter the report format by including label information.

When model corruption is in areas that are used to produce label information, the report program can abnormally terminate. In this case, clear the display label information option and rerun the report.

## Prerequisites

Before generating an Encyclopedia Validate Report, ensure that:

- You have access to the encyclopedia where the model resides.
- The model exists on the encyclopedia.
- You are authorized to read the model.
- No other process has an upload or update lock on the model.

## Generate an Encyclopedia Validate Report

The CSE Client generates an Encyclopedia Validate Report with the filename eval.rpt.

**Follow these steps:**

1. Log on to the Support Client and select Model.
2. To identify the target model, in the Support Model Selection window, select Actions, List.
3. In the Model List window, highlight the model name, and select Open.
4. To identify the report to generate, select Actions, Encyclopedia Validate.
5. Accept the default directory or type a different destination.

   Directory must be a fully qualified path. If the directory does not exist, the client creates it.

   **Limits:** The File Name can be up to eight characters, with a three character extension.
6. Type a number to indicate the maximum number of errors to include in the report.

   When you omit Maximum Number of Errors, the report includes all errors.

   **Limits:** nine digits
7. To change the check boxes, tab to each option and make the change.
8. Select OK.
9. View the report or print the eval.rpt from the report destination directory.

## Interpret an Encyclopedia Validate Report

The body of the Encyclopedia Validate report includes a message for each instance of model corruption encountered, based on the options selected for validation.

The following illustration includes examples of messages reflecting types of corruption:

```
                                  ********************************
                                  * Encyclopedia Validate Report *
                                  ********************************

                        Model  :  TRUST AND STOCKHOLDER MANAGEMENT                                        Model ID : 3
                        DATE   :  2010-01-01,  TIME: 00:00:00

+-------------------->    Object id  -  18907,  type  =  -999
|                             Invalid object type encountered.
|  Properties
|                         Object id  =  18244,  type  =  EXPNUM (124)
|                             Invalid text change status encountered:
+-------------------->        Text change status  =  'b'

+-------------------->    Object id  =  17489,  type  =  CNDDF (0)
|                             The current TO object id does not match the previous NEXT object id:
|   Associations              Association type code    =  USERS   (290)
|                             Current TO object id     =  EXPNUM  (124)
|                             Previous TO object id    =  EXPOPER (132)
+-------------------->        Previous NEXT object id  =  EXPOPER (132)

+-------------------->    Object id  =  18535,  type  =  ACBLKGRP (20)
|                             At least one of the following trigger group associations are missing:
|  Trigger                       ISPARTOF (439) - Required  =  1,  found  =  0 -OR-
|                                EXCPFORP (370) - Required  =  1,  found  =  0 -OR-
|                                DEFINES  ( 52) - Required  =  1,  found  =  0 -OR-
|                                SUCCSFOR (501) - Required  =  1,  found  =  0 -OR-
|                                EXCPFOR  (369) - Required  =  1,  found  =  0 -OR-
|                                EVENTOF  (835) - Required  =  1,  found  =  0 -OR-
+-------------------->             DEFINES2 (912) - Required  =  1,  found  =  0
                        ...

                        Number of validation errors  =  101
```

## Correcting Conditions That Cause Errors

After reviewing the Encyclopedia Validate Report, take action based on reported errors.

**Note**: For more information about contacting support for assistance, see http://ca.com/support.

### Object ID, Object Type Code and Object Meta-Properties Errors

Encyclopedia Validate processing always validates the object ID, object type code, and object meta-properties for each object, regardless of the options that are selected and use these kinds of messages in the report:

- Invalid object id encountered
- Invalid object type encountered
- Invalid original encyclopedia id encountered:

  Original encyclopedia id = *n*
- Invalid original object id encountered:

  Original object id = *n*

- Invalid temp object id encountered:

  Temp object id = *n*
- Invalid maximum access encountered:

  Maximum access = *'n'*
- Invalid object access encountered:

  Object access = *n*
- Invalid object change status encountered:

  Object change status = *'n'*
- Invalid object checkout status encountered:

  Object checkout status = *'n'*
- Invalid parent model object encountered:

  Parent model object = *n*

## Properties Errors

When you select the Properties option, processing validates that:

- Properties that should exist do exist
- Properties that should not exist do not exist
- Properties will have valid values.

The report includes name property messages, general property messages, and text property messages.

Name property messages are:

- Object missing row in DNAME table
- Extraneous row exists in DNAME table
- Model IDs in DNAME and DOBJ do not match
- DNAME model id = *nnn*

The format for a general property message is:

Invalid object or text property type code pair encountered. Property type code = *xxxxxxxx*(*nnn*)

The text property messages are:

- Non-text property type code that is found in DTXT table:

  Property type code = *xxxxxxxx*(*nnn*)
  Property type code format = '*x*'

- Model IDs in DTXT and DOBJ do not match.

  DTXT model id = *nnn*, Property type code = STRING(*nnn*)

- Invalid text change status encountered.

  Text change status = '*n*'

## Association Errors

When you select the Association option, validation includes FROM object associations, TO object associations, association cardinality, and the correct sequence of NEXT objects for ordered associations, as general and ordered association messages.

The CSE reports errors with the following general association messages:

- Association FROM object does not exist:

  Association type code = *xxxxxxxx*(*nnn*)
  FROM object id = *nnnnn*

- Invalid association FROM object ID encountered:

  Association type code = *xxxxxxxx*(*nnn*)
  FROM object ID = *nnnnnn*, type = *xxxxxxxx*(*nnn*)

- Association TO object does not exist:

  Association type code = *xxxxxxxx*(*nnn*)
  TO object ID = *nnnnn*

- Invalid association TO object ID encountered:

  Association type code = *xxxxxxxx*(*nnn*)
  TO object ID = *nnnnnn*, type = *xxxxxxxx*(*nnn*)

- Model ids for association FROM and TO objects do not match.

  Association type code = *xxxxxxxx*(*nnn*)
  TO object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)
  TO object model ID = *nnn*

- Model IDs in DASC and DOBJ do not match.

  Association type code = *xxxxxxxx*(*nnn*)
  TO object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)
  DASC model ID = *nnn*

- Invalid association change status encountered.

  Association type code = *xxxxxxxx*(*nnn*)
  Association change status = *'n'*

- Multiple rows that are found for a cardinality one association:

  Association type code = *xxxxxxxx*(*nnn*)
  TO object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)
  TO object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)
  ...

- Invalid object or association type code pair encountered.

  Association type code = *xxxxxxxx*(*nnn*)

The CSE reports errors with the following ordered association messages:

- Association NEXT object does not exist:

  Association type code = *xxxxxxxx*(*nnn*)
  NEXT object ID = *nnnnn*

- Invalid association NEXT object ID encountered:

  Association type code = *xxxxxxxx*(*nnn*)
  NEXT object ID = *nnnnnn*, type = *xxxxxxxx*(*nnn*)

- Model IDs for association FROM and NEXT objects do not match.

  Association type code = *xxxxxxxx*(*nnn*)
  NEXT object model ID = *nnn*

- The association NEXT object is not associated to the FROM object.

  Association type code = *xxxxxxxx*(*nnn*)
  NEXT object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)

- The current TO object ID does not match the previous NEXT object ID:

  Association type code = *xxxxxxxx*(*nnn*)

  Current TO object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)
  Previous TO object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)
  Previous NEXT object ID = *nnnnn*, type = *xxxxxxxx*(*nnn*)

- Invalid sequence for ordered association:

  Association type code = *xxxxxxxx*(*nnn*)
  Association sequence = *n*

## Trigger Errors

When you select the Triggers option, processing verifies the existence of all required associations for each object, and reports errors in the following format:

`At least one of the following trigger group associations are missing:`
*xxxxxxx*`(`*nnn*`) - Required = 1, found = 0`

# Object Cross-Reference Reports

Object Cross-Reference Reports indicate the interrelationships of objects within a model. The information in these reports lets you work with models and subsets more effectively by showing how and where objects relate to each other. Such information is especially useful when you plan to change a model and want to understand or anticipate the implications of change.

These are the kinds of Object Cross-Reference Reports:

**Contained Report**

Lists the objects that contain selected objects.

**Contains Report**

Lists the objects that are contained by selected objects.

**Delete Report**

Lists the objects that prevent the deletion of selected objects.

**Implemented Report**

Lists the objects that implement selected objects.

**Implements Report**

Lists the objects that are implemented by selected objects.

**Matrices Report**

Lists the matrices for which selected objects have cell values.

**Referenced or Used Report**

Lists the objects that reference or use selected objects.

**References or Uses Report**

Lists the objects that are used or referenced by selected objects.

The reports show the objects that are selected for cross-referencing, followed by indented lists of cross-referenced objects.

# Model Action Block Use Report

The Model Action Block Use Report lists the calling hierarchy of components in a model. The report displays the Dynamic Link attribute that is associated with each module.

The Dynamic Link attributes associated with each module are:

- Default
- Yes

- No
- Compatibility

For each Business System in the report, it lists the default values assigned to the Dynamic Link Defaults for Procedure Steps, Screens Managers, and Action Blocks. The report has these three modes of operation, which is selected by the Object Range report option:

- All business systems and load modules

  This option lists every Business System in the model, every Load Module under its Business System, every Procedure Step in each Load Module, and recursively, every Action Block the Procedure Step uses. The end of the report includes a list of Derivation Algorithms in the model.

- Selected objects

  Use this option to select Business Systems or Load Modules to include in the report. The report lists the selected objects and components those objects use. When you select a Business System, it lists all the load modules under the Business System. To select a specific load module, select Batch Job, Batch Job Step, Online Load Module, Operations Library, Server Manager, Window Load Module, Window Manager, or z/OS Library. This report omits Derivation Algorithms.

- Filter modules by Dynamically Link (z/OS) option

  This option enables the Filter Value field and the report lists Procedure Steps, Screens, Action Blocks, and Derivation Algorithms that have their Dynamic Link (z/OS) property set to the value selected in the Filter Values field.

  The permitted values that can appear in the Dynamic Link (z/OS) options for these components are:

  - Default
  - Yes
  - No
  - Compatibility

Each module in the report includes:

- Hierarchy nesting level
- Action Block name
- Action Block type:
  - Pstep - Procedure Step
  - Common - Common Action Block
  - Derivation - Derivation Algorithm
  - External - External Action Block

  - Foreign - Common Action Block that is owned by a Business System other than the Load Module's Business System
  - Foreign Ext - External Action Block that is owned by a Business System other than the Load Module's Business System
  - Pstep - For Used Procedure Step owned by a Business System other than the Load Module's Business System
- Action Block source member name
- Dynamic link value for Procedure Step/Action Block

  The Dynamic link values for Procedure Step/Action block are:

  - Default
  - Yes
  - No
  - Compatibility

  For Default, the report also lists the default value for Screen Manager set in the Business System dynamic link default for Procedure Step/Action Block. For example, Default (No) means that the module is set to Default and the owning Business System dynamic link default for Procedure Step/ Action Block is set to No.
- Screen member name for the screen, when it exists
- Dynamic link value for screen, when it exists

  The Dynamic link values for the screen are:

  - Default
  - Yes
  - No
  - Compatibility

  For Default, it also lists the default value for Screen Manager set in the Business System dynamic link default.
- Owning Business System name

When an action block is called more than once in the same level 1 hierarchy and it has calls to other action blocks, the action block use expansion is only reported once. The action block name has an asterisk (*) beside it to denote it was previously expanded.

The CSE writes the report to the specified Directory and File Name. When the file already exists, it displays a warning and the option to overwrite the file or return to choose a different file name.

The CSE also displays the report on your workstation.

Here is a sample report:

```
                                        Model Action Block Use Report


Model : GEN SAMPLE MODEL
Date   : 2010-03-02, Time: 10:44:49
Business System: CORPORATE_MANAGEMENT

Default dynamic link options for the business system
------------------------------------------------------------------------
Dynamically link procedure steps   : No
Dynamically link action blocks         : No
Dynamically link screen managers: No

Online Load Module MENU

Call
Level    Type      Name                                          Src Name             Dynamic Link         Owning Business
System
-----    ----      ------------------------        --------  --------------       ----------------------
 1       PStep     EMPLOYEE_DETAIL                 EMPDET    Default (No)         CORPORATE_MANAGEMENT
         Screen    EMPLOYEE_DETAIL                 DETSCRN   Default (No)
 2       Process   ADD_EMPLOYEE                    ADDEMP    Default (No)         CORPORATE_MANAGEMENT
 2       Process   MODIFY_EMPLOYEE                 MODEMP    Default (No)         CORPORATE_MANAGEMENT

 1       PStep     EMPLOYEE_LIST                   EMPLIST   Default (No)         CORPORATE_MANAGEMENT
         Screen    EMPLOYEE_LIST                   LISTSCRN  Default (No)
 2       Process   DELETE_EMPLOYEE                 DELEMP    Default (No)         CORPORATE_MANAGEMENT

 1       PStep     MAINTAIN_DEPARTMENT             MAINTDEP  Default (No)         CORPORATE_MANAGEMENT
         Screen    MAINTAIN_DEPARTMENT             DEPTSCRN  Default (No)
 2       Process   ADD_DEPARTMENT                  ADDDEPT   Default (No)         CORPORATE_MANAGEMENT
 2       Process   DELETE_DEPARTMENT               DELDEPT   Default (No)         CORPORATE_MANAGEMENT
 2       Process   MODIFY_DEPARTMENT               MODDEPT   Default (No)         CORPORATE_MANAGEMENT

 1       PStep     MAINTAIN_DIVISION               MAINTDIV  Default (No)         CORPORATE_MANAGEMENT
         Screen    MAINTAIN_DIVISION               DIVSCRN   Default (No)
 2       Process   ADD_DIVISION                    ADDDIV    Default (No)         CORPORATE_MANAGEMENT
 2       Process   DELETE_DIVISION                 DELDIV    Default (No)         CORPORATE_MANAGEMENT
 2       Process   MODIFY_DIVISION                 MODDIV    Default (No)         CORPORATE_MANAGEMENT

 1       PStep     MENU                            MAINMENU  Default (No)         CORPORATE_MANAGEMENT
         Screen    MENU                            MENUSCRN  Default (No)

                                          *** END OF RPEORT ***
```

# Chapter 7: Encyclopedia Communications

## Introduction

When using the Client Server Encyclopedia (CSE), select the encyclopedia in which to store models and from which to retrieve models. You can also check out models and subsets from one encyclopedia to another and into another. Transferring the models and subsets to and from encyclopedias, Client Server, or Host, is named encyclopedia communications.

## Automatic Communication

Automatic communication provides a seamless communication from:

- CSE to CSE
- Toolset to CSE

Automatic communication allows a seamless execution of these functions:

- Extract or Load
- Gendelta or Apply
- Cross Model Copy functions.

Automatic communication requires authority to access two or more encyclopedias simultaneously, and requires a CSE configuration that includes more than one encyclopedia. For information about setting up and running a multi-encyclopedia CSE network, see the chapter CSE Installation and Configuration in this guide.

When you have the authority to use CSE to CSE communications, the CSE Client lists encyclopedias each time you start a CSE client. You select an encyclopedia and click OK to proceed.

## Manual Communication

Using manual communication, you can manually transfer transaction files from:

- CSE to CSE
- Toolset to Encyclopedia

- CSE to Host Encyclopedia

Consider using manual communications to perform file transfers in batch during off-peak hours. Manual communication also allows you to break down communication steps into stages to perform over time, rather than all at once.

# Encyclopedia Communication Concepts

## Encyclopedia Parent/Child Relationship

The models in communication are parent or child models. The parent model is the model from which a model or subset is extracted or checked out. A CSE or a Host Encyclopedia can contain a parent model.

The child model is the destination model of an extract. Only a CSE can contain a child model.

For example, you can create a model on your toolset using the toolset. Originally, you decide to store the model on the Host Encyclopedia. The model has no parent or child. Later, you decide to extract the model from the Host Encyclopedia and load it to the CSE. The Host Encyclopedia model is the parent model and the CSE model is the child model. A model can be the parent of zero or more models and the child of only one model.

## Communication Paths

Communication between encyclopedias can be described as bidirectional, passing up or down a chain. The different types of communication occur between the encyclopedias.

Communication paths are as follows:

- Host Encyclopedia to CSE
- CSE to CSE
- CSE to toolset
- Host Encyclopedia to toolset
- Toolset to CSE
- Toolset to Host Encyclopedia
- CSE to Host Encyclopedia

## Checkout Chain

After a model is loaded to the Client Server Encyclopedia or the Host Encyclopedia, the model or a subset may be extracted from there to a CSE, creating a checkout chain. All changes must be applied back up the chain in reverse order.

## Processes for Downloading

Downloading a model or subset is the process of checking it out from where it is stored down a level in the chain. For example, you extract a model from the Host Encyclopedia to a CSE, and download the model from the CSE to the toolset.

Extract and Load are complementary processes for checking out a model or subset from the parent, where it is extracted, to the child, where it is loaded.

### Extract Process

Use the Extract process to check out a model or subset from an encyclopedia, the source, to load it to another encyclopedia, the destination. It creates the transaction file extract.trn.

### Load Process

Use the Load process to bring a model or subset extracted from the parent model into an encyclopedia, the destination. It reads the transaction file, renamed load.trn, that the Extract process creates.

To download a model or subset from:

- the Host Encyclopedia to the CSE
- a CSE to another CSE

Use the Extracting a Model or Subset process.

To download a model or subset from the Encyclopedia to Toolset, use the Checking Out a Model or Subset process.

## Processes for Uploading

Uploading a model or subset is the process of applying the changes from where it was modified or worked on, back up a level in the chain.

Gendelta and Apply are complementary processes for applying changes to the model from the child, where the Gendelta occurs, to the parent, where the changes are applied.

## Gendelta Process

Gendelta creates the transaction file, delta.trn, used to apply updates to the parent model. Gendelta on the child model always precedes the apply on the parent model.

## Apply Process

Apply the processes the updates that are made to an extracted model or subset from a child model to the parent model. The apply process uses a transaction file, apply.trn, created by Gendelta and creates a transaction file, everify.trn.

## Verdelta Process

Verdelta resets the child model status to read-only status or can be modified again if apply was with or without checkin. Verdelta reads the transaction file, everify.trn, created by Apply.

To upload a model or subset from:

- a CSE to another CSE
- a CSE to the Host Encyclopedia

Use the Applying a Model or Subset to the Encyclopedia process.

To upload a model or subset from the Toolset to the CSE, use the Updating a Model or Subset to the Encyclopedia process.

# Protection

When you extract a model or subset, the encyclopedia protects the extracted model or subset objects from conflicting updates in the parent and child models.

Subsets extracted from a parent model become models when loaded into an encyclopedia. The Extract Process records and enforces subset protection for each object as it is defined for the parent model.

The maximum protection available to an object in extracted models and subsets depends on:

- If the object is checked out in other subsets of the parent model at the time of the model extract

- If the requested protection is delete and if the object is considered incomplete
- The protection that is obtained for the object when the parent model was extracted from the parent

**Note**: For more information, see the *Client Server Subsetting User Guide* and the *Host Encyclopedia Subsetting User Guide*.

## Code Page Translation

Code Page Translation translates text data between encyclopedias and between toolsets and encyclopedias with different code pages. For example, a toolset can create and update a model in one code page while the encyclopedia operates in a different code page.

When the model is returned to a toolset, all the characters are retained exactly as they were created.

**More information:**

National Language Support in CSE (see page 211)

# Transaction Files

The processes that are used in encyclopedia communication tasks create and use transaction files.

CA Gen generates work files in the directory that contains the transaction file. A user must have write access to that directory to generate successfully.

# Encyclopedia Communications Tasks

## Upload a Model to the Encyclopedia

You can use the CSE Checkout Client or the command line to upload a model to the CSE. Uploading a model requires authorization to upload models to the CSE and to an active Client Server Encyclopedia.

Follow these steps:

1. Start the CSE Checkout Client.
2. Enter the userid and password that is authorized by your Encyclopedia Administrator.
3. Enter the CSE's hostname and service or port number.
4. In the Encyclopedia Checkout Client window, select Encyclopedia, Update.
5. Enter the directory name that contains the update.trn file. Installation copies the Gen Sample Model as an update.trn file in the cse\bin directory.

**Upload a model manually**

At the command prompt, type the upload command with the appropriate options. The upload command syntax and options are:

```
upload -u <userid> [-t <type> -d <directory> -b <trace> -r
-i <requester code page> -p <dispatcher> -v <environment> -g <encyclopedia group>]
```

Where:

**-u <*userid*>**

Defines the authorized user id.

**Limits:** eight characters.

**-t <*type*>**

(Optional) Defines the transaction file type, UPLOAD, LOAD, or APPLY.

**Default:** UPLOAD.

**-d <*directory*>**

(Optional) Defines the transaction file's source directory. The default is the current directory.

**-b <[M][A][S*xxx*]>**

(Optional) Turns the debug option ON, and the optional parameters to define the trace options. Specify each trace option:

**M**

Turns memory trace ON.

**A**

Turns on the auxiliary file option.

**S**

Sets the table size 0 through 744.

**Default:** 512

**Defaults:** All trace option defaults are OFF.

**-r**

(Optional) Turns the report option ON. The default is OFF.

**-i <*requester code page*>**

(Optional) Defines the code page of the client platform on which to display the report. This option is only valid if the report option is turned on. T

**Default:** 0 for no code page translation.

**-p <*dispatcher*>**

(Optional) Defines the name of the message dispatcher.

**Default**: the value of the IEF_MDNAME environment variable IEF_MDNAME or IEFMD.

**Limits:** 1059-character.

**Note:** For more information about Message Dispatcher Name, see Hostnames and IP Addresses (see page 29) and CSE Message Dispatcher and Remote Daemon Server Names (see page 29).

**-v <*environment*>**

(Optional) Defines the environment name.

**Default:** The value of IEF_ENVNAME environment variable or CSE_ENV.

**Limits:** 32-characters

**-g <*encyclopedia group*>**

(Optional) Defines the encyclopedia group name.

**Default**: the value of the IEF_ENCYGROUP environment variable.

**Limits:** eight characters

# Applying a Model or Subset to the Encyclopedia

Apply processing updates the parent model with changes made to a child model.

A child model is a model that is created during extract processing. You can extract the entire model from the parent model to create one child model, or extract multiple discrete subsets from a single parent model to create multiple child models.

Changes can be made to a child model after checkout to a workstation using the toolset or, directly on the CSE through the Construction Client or the Encyclopedia Client. Changes that are made to a model using the toolset include adding, modifying, and deleting model objects, take effect at checkin. Changes that are made to a model through the Construction Client are related to packaging, member name modification, and environment or configuration parameters. Changes that are made to a model through the Encyclopedia Client are related to object rename and object delete operations.

Changes to the child model can be applied to the parent with and without checkin. The option that you use affects the status of the child model. When you apply the Without Checkin option, the child model status is modifiable. When you apply the With Checkin option, the child model status is read-only.

When a child model or its subsets are checked out and you update the child model with the Update But Do Not Checkin option, the parent model must be updated with the Apply Without Checkin option. The Apply With Checkin option can only be used after the child model or all of its subsets are checked back in.

When you use the Apply Without Checkin option, the child model's status is Update But Do Not Checkin. When you use the Apply With Checkin option, the child model's status is Update and Checkin Model.

Update procedures are site-determined and vary with the business needs. Possible scenarios include:

- Use the Apply Without Check In option during development. Use Apply With Checkin when the development finishes.
- Use Apply With Checkin at the end of the work week. At the beginning of the next week, extract the model again to continue using it.

**Note:** We recommend that you apply options to keep the parent model synchronized with the child model.

Apply processing has three steps and each step creates a file:

1. Identifies all changes that are made to the child model and creates the apply.trn file.
2. Applies the changes to the parent model and creates the everify.trn file.
3. Verifies apply succeeded and creates the everify.rpt file.

Use Apply And Checkin to apply changes to the parent model and checkin the child model after changing it.

Use Apply But Do Not Checkin during development when you want to apply completed changes to the parent model and keep the child model checked out.

Use Resend Apply to continue the apply processing when a communications failure occurred between creating apply.trn and step 2 completes.

Use Verify Apply to determine if apply succeeded when a communications failure occurred between creating everify.trn and step 3 completes.

When a communication failure interrupts the Apply And Check In command or the Apply But Do Not Check In command, check the user ID subdirectory in the CSE directory for the APPLY.TRN and EVERIFY.TRN. You re-issue the Apply command that is based on the existence of either, both, or neither of these files:

- If neither file exists, reissue the Apply command.
- If the APPLY.TRN file exists, select the Actions, Apply, Resend command.
- If both files exist, Select the Actions, Apply, Verify command.

The method that you use to apply changes depends on where the parent model resides.

- Use the manual method if the parent model resides on the Host Encyclopedia.
- Use the automatic method if the parent model resides on a Client Server Encyclopedia.

## Automatically Applying a Model to the Parent Model

**Follow these steps:**

1. Log on to the encyclopedia through the Encyclopedia Client.
2. In the Encyclopedia Client window, select Model.
3. In the Encyclopedia Model Selection window, identify the model by typing the model name in the Name field, or by using one of these sets of commands:
   - Actions, Open. Choose the model in the Model List and press Open.
   - Actions, List. Choose the model in the Model List and press Open.

4. In the Encyclopedia Model Selection window, select Actions, Apply and one of these Apply commands:
   - And Check In applies the changes that are made to the child model to the parent model, and leaves the child model in a checked in status and the parent model in modifiable status.
   - But Do Not Check In applies the changes that are made to the child model to the parent model and leaves the child model in modifiable status.
   - Resend resumes the operation after an unanticipated communications failure.
   - Verify validates the apply operation that is successfully completed.
5. As the client applies the changes, it reports the progress in an Apply box.

## Manually Applying a Model to the Parent Model

When applying a model manually to the parent model:

- Generate a transaction file containing all changes that are made to the model because the last apply to the parent.
- Transfer the file to the encyclopedia where the parent model resides.
- Apply the changes to the parent.
- Transfer the verify file to the CSE that contains the child model.
- Verify the success of the apply operation.

Before applying a model, the model and all its subsets must be checked in.

The verify step after applying a model is essential to continue modifying the model. After generating the changes, the model is in a Waiting for Verify state. Only Read operations are permitted until the verify step completes.

**To generating the transaction file**

Run the gendelta command:

```
gendelta –u userid –m modelname [–c]
```

where:

***-u userid***

Defines the authorized user id.

***modelname***

Defines the model name. Enclose *modelname* in quotes when it is more than one word.

**–c**

(Optional) Checkin transfers all changes to the child model because the last apply to the parent from the child to the parent model. After, running verify delta the child model is in read-only status.

Omitting the –c option, for No checkin, transfers all changes to the child model because the last apply to the parent model. After, running verify delta the child model is in modifiable status.

Example:

```
gendelta –u john –m "my model" –c
```

Builds the file: delta.trn.

**To transfer the delta.trn file to the encyclopedia where the parent model resides**

**Follow these steps:**

1. Rename the file to apply.trn.
2. Issue the upload command to apply the transaction file to the parent model.

   ```
   upload –u userid –t apply
   ```
3. To begin the verify process, move the everify.trn back to the child encyclopedia.

When the encyclopedia is a Host Encyclopedia:

**Follow these steps:**

1. File transfer delta.trn to the Host Encyclopedia file *userid*.IEF.TRAN.
2. Apply the changes by running %IEFUP on the host encyclopedia platform.

   This step creates a file that is named *userid*.IEF.MSGS.
3. Transfer the *userid*.IEF.MSGS file from the Host Encyclopedia to a file named everify.trn in the child model's encyclopedia.

   **Note:** These files are binary.

**Verify the success of apply**

Run the verdelta command with these parameters:

`verdelta – u` *`userid`*

If you detail the model on the CSE, where the child model resides, the model is in:

- Read-only status if you used the checkin option
- Modifiable status if you used the no check in option

When you use no checkin, verify the success of apply by making sure the model on the encyclopedia where the child model resides is in modifiable status.

**Note:** For complete syntax for the gendelta command, enter gendelta in the directory in which the Encyclopedia server is installed. For complete syntax for the verdelta command, enter verdelta in the directory in which the Encyclopedia server is installed.

## Checking Out a Model or Subset

Checking out a model or subset transfers a copy of the model or subset from a CSE to a toolset. It is useful to check out a model or a subset to:

- Make changes at your local workstation and requires update access.
- View the model or subset at your workstation.
- Viewing a model or subset requires read access.
- Use the model to create a new model.

During checkout, you can check out a model as read-only. When you do so, the original model or the subset is not marked as checked out and you cannot check it in. You can create a model from a model or can subset checked out for read-only.

You can check out a model or can subset automatically or manually.

## Automatic Checkout

With automatic checkout, the CSE and the toolset transparently move necessary files.

**Follow these steps:**

1. Start the Toolset. To verify settings:
    a. Select Options, Encyclopedia Selection, and verify Use Client/Server Encyclopedia is checked.
    b. Cancel the Encyclopedia Selection dialog, or if necessary, select Use Client/Server Encyclopedia, and select OK.
    c. Select Options, Encyclopedia Communications, and verify that Perform file transfers for encyclopedia options is checked.
    d. Cancel the Encyclopedia Communications dialog, or if necessary, select Perform file transfers for encyclopedia options, and select OK.
2. Select Model, Encyclopedia, Check Out A Model, and type the name of the model in the Local field in the Checkout Model dialog.
3. Select OK.
4. The Toolset prompt to confirm that you know it overwrite a file. Select Yes to continue.
5. Log on to the Checkout Client.
6. Log on to the encyclopedia containing the model or subset you want to check out.
7. Check out the model or subset:
    - To check out a model, in the Encyclopedia Checkout Client window, select Model, Actions, Checkout.
    - To check out a subset:
        a. In the Encyclopedia Checkout Client window, select Subset.
        b. In the Checkout Subset Selection window, identify the model by typing the model name in Model Name or by selecting Actions, List Models, selecting the model from the list, and selecting Open.
        c. In the Checkout Subset Selection window, identify the subset by typing the subset name in Subset Name or by selecting Actions, List Subsets, and selecting the subset name from the list, and selecting Open.
        d. In the Checkout Subset Selection window, identify the model by typing the model name in Name or by selecting Actions, List, selecting the model from the list, and selecting Open.
        e. Select Actions, Checkout.

8. In the Checkout window, select OK to accept the defaults or type different settings and select OK.

The model download begins and displays a progress status bar.

When the download completes, select Continue.

The Model Retrieval Status Report opens. The model is ready to modify.

## Manual Checkout

**Follow these steps:**

1. Log on to the Checkout Client.
2. Log on to the encyclopedia containing the model or subset you want to check out.
3. Follow one of these sets of steps to check out the model or subset
   - To check out a model
     - In the Encyclopedia Checkout Client window, select Model.
     - In the Checkout Model Selection window, identify the model by typing the model name in Name or by selecting Actions, List, selecting the model from the list, and selecting Open.
     - Select Actions, Checkout.
   - To check out a subset
     - In the Encyclopedia Checkout Client window, select Subset.
     - In the Checkout Subset Selection window, identify the model by typing the model name in Name or by selecting Actions, List, selecting the model from the list, and selecting Open.
     - In the Checkout Subset Selection window, identify the subset by typing the subset name in Subset Name or by selecting Actions, List Subsets, selecting the subset from the list, and selecting Open.
     - Select Actions, Checkout.
4. In the Checkout window, type the name of the directory in which to write the checkout transaction file, checkout.trn, the number of downgrades to report, the destination code page, and check out the model or subset.

   **Note:** The default destination code page is the code page of the active client. You specify a different destination code page.
5. Move the checkout.trn file from the directory on the Checkout Client to the model directory on the workstation.

6. Start the Toolset. To verify settings:
    a. Select Options, Encyclopedia Selection, and verify Use Client/Server Encyclopedia is checked.
    b. Cancel the Encyclopedia Selection dialog, or if necessary, select Use Client/Server Encyclopedia, and select OK.
    c. Select Options, Encyclopedia Communications, and verify that Perform file transfers for encyclopedia options is checked.
    d. Cancel the Encyclopedia Communications dialog, or if necessary, select Perform file transfers for encyclopedia options, and select OK.
7. Select Model, Encyclopedia, Check Out A Model, and type the name of the model in the Local field in the Checkout Model dialog.
8. Select OK.
9. The Toolset prompt to confirm that you know it overwrite a file. Select Yes to continue.

The Model Retrieval Status Report opens. The model is ready to modify.

The model or subset is ready to modify using the Planning, Analysis, Design, or Construction toolset.

## Copying a Model from This Encyclopedia

To duplicate a model, copy the model. You can copy a model with or without copying existing subset definitions.

Copying a model is a quick way to create a new model that is based on another model. The source model of the copy is unchanged. The new model is the same as the original, with a new name.

The model does not need to be checked in before copying it.

To copy a model, you need to read authority on the source model and the authority to add models.

**Follow these steps:**

1. Log on to the Encyclopedia Client and select Model.
2. In the Encyclopedia Model Selection, identify the source model to open by typing the model name in Name or by selecting Actions, List, selecting the model from the list, and selecting Open.
3. Select Actions, Copy, From This Encyclopedia.

4. In the Copy dialog, type the new model name. You choose to copy selected subsets, all subsets, or no subsets. and optionally a subset name to copy.

   The client opens a Copy Model dialog with a progress bar.

5. When copy completes, select Continue to return to the Model Selection window.

## Copying a Model from Another Encyclopedia

To duplicate a model, copy the model.

- To copy a model requires read authority on that model and the authority to add models on the destination encyclopedia.
- The model does *not* need to be checked in before copying it.

You can copy a model using any of the following procedures:

- Automatically Copying a Model from Another Encyclopedia

  We recommend that you use this method when the source encyclopedia is a CSE. This method is simpler to use than manual methods and is unavailable if the model to copy resides on the Host Encyclopedia.

  This method is only available when you are connected to a multi-encyclopedia environment as described in Automatic Communication.

- Manually Copying a Model from the Host Encyclopedia to a CSE

  This is the only procedure available when the model to copy resides on the Host Encyclopedia.

- Manually Copying a Model from a CSE to a CSE While Preserving Common Ancestry

  This emulates CSE automatic communication and creates an apply.trn file that propagates common ancestry by preserving the same original object ID and same original encyclopedia ID.

- Manually Copying a Model from a CSE to a CSE Without Preserving Common Ancestry

  This procedure creates an update.trn file that does not preserve common ancestry between the source model and the copy.

### Automatically Copying a Model from Another Encyclopedia

**Follow these steps:**

1. Log on to the destination encyclopedia through the Encyclopedia Client.
2. Select Model.

3. In the Model Selection window, select Actions, Copy, From Another Encyclopedia.

   **Note:** The From Another Encyclopedia option is disabled if the feature is unavailable or the Model Name field is not blank.

4. In the Source Encyclopedia Selection window, select the encyclopedia that contains the model to copy and click Source.

5. In the Cross Copy Model List window, select the model to copy and click copy.

6. In the Cross Copy Model Information window, you can optionally change the New Model Name, and select the Write over new model if it exists check box to delete a model from the destination encyclopedia when it has the same name as the new model name. Click Copy to start copying.

   **Note:** To view online help information about Cross Copy, see the Encyclopedia Model Selection window help. To do so, select Action, Copy, and point to From Another Encyclopedia without clicking, and press the F1 key.

## Manually Copying a Model from the Host Encyclopedia to a CSE

Copying a model creates two independent models. There is no update capability between independent models.

**Follow these steps:**

1. From the Host Encyclopedia, use option 1.3.15 (Download Model) or issue the following download command to create the *userid*.IEF.TRAN transaction file:

   ```
   %IEFDOWN MODEL('full model name')
   SOFT('schema')
   CPID (destination code page)
   UPLOAD
   ```

   ***'full model name'***

   Defines the name of the model to copy.

   ***'schema'***

   Defines the model uses the Current Schema, Prior Schema, or Second Prior Schema.

   **Note:** For the schema designation for Current Schema, Prior Schema, and Second Prior Schema, see the *Release Notes*.

   ***destination code page***

   Defines the code page of the encyclopedia for which you are creating the update.trn.

2. Transfer the binary transaction file, *userid*.IEF.TRAN, as update.trn to a directory to which the CSE server has access.

3. On the CSE server, from the cse\bin directory, issue the following upload command to apply the transaction file to the destination encyclopedia:

   `upload –u userid [-d directory] [-b trace] [-r] [-p dispatcher] [-v environment] [-g group]`

   **–u**

   Defines the *userid*.

   **-d**

   Defines the *directory* in which update.trn resides.

**More information:**

National Language Support in CSE (see page 211)

## Manually Copying a Model from a CSE to a CSE While Preserving Common Ancestry

**Follow these steps:**

1. Issue the following download command on the source CSE to produce an apply.trn file.

   `download -u userid -m "model name" [-s "subset name"] -l -t extract [-d directory] –e ency`

   ***userid***

   Defines a *userid* that must have authorization to download models.

   ***model***

   Defines the model name. Enclose the model name in double quotes when it contains embedded spaces, as in "*model name*".

   ***subset***

   (Optional) Defines the subset name. Enclose the subset name in double quotes when it contains embedded spaces, as in "*subset name*".

   **Default:** the entire model

   **-t extract**

   Defines that the transaction file is extract.

   **-l**

   Combined with '-t extract' this executes the download with apply option to create an apply.trn file which includes the common ancestry data. It is not a child model and the everify.trn created has no relevance in this scenario.

***directory***

Defines the destination directory of the transaction file. The default is the current directory.

**ency**

Defines the child encyclopedia ID used when extracting a model or subset for upload to another encyclopedia.

When used in combination with the '-l' option, although the resulting extract is not a child model this child encyclopedia ID parameter is still mandatory. Any value can be used because it is not checked against the destination encyclopedia ID on upload.

**Important!** Verify that you included the –l option before issuing the command.

2. If the destination encyclopedia resides on a different system, move the transaction file, apply.trn, to a directory that the CSE server install directory can access.
3. From the CSE server install directory, issue the following upload command to upload the transaction file to the destination encyclopedia:

```
upload -u userid -d directory
```

***userid***

Defines a *userid*.

***directory***

Defines the directory that contains the transaction file.

## Manually Copying a Model from a CSE to a CSE Without Preserving Common Ancestry

**Follow these steps:**

1. Issue the following download command on the source CSE to produce an update.trn file.

```
download -u userid -m "model name" [-s "subset name"] -l [-d directory] –e ency
```

***userid***

Defines a *userid* that must have authorization to download models.

***model***

Defines the model name. Enclose the model name in double quotes when it contains embedded spaces, as in "*model name*".

***subset***

(Optional) Defines the subset name. Enclose the subset name in double quotes when it contains embedded spaces, as in "*subset name*".

**Default:** the model.

**-l**

Executes a download with the upload option. Omitting this option creates a checkout.trn file, that only the toolset can use.

***directory***

Defines the destination directory of the transaction file. The default is the current directory.

**ency**

Defines the child encyclopedia ID used when extracting a model or subset for upload to another encyclopedia.

**Important!** Verify that you included the –l option before issuing the command.

2. If the destination encyclopedia resides on a different system, move the transaction file, update.trn, to a directory that the CSE server install directory can access.
3. From the CSE server install directory, issue the following upload command to upload the transaction file to the destination encyclopedia:

   `upload -u userid -d directory`

   ***userid***

   Defines a *userid*.

   ***directory***

   Defines the directory that contains the transaction file.

## Extracting a Model or Subset

Performing an extract of a model or subset creates another instance of that model or subset. The original model is the parent model; the new instance is the child model. All changes that are made to the child must be applied to the parent.

If the parent model resides on the Host Encyclopedia, the destination of the extract can only be a CSE. If the parent model resides on a CSE, the destination of the extract can be a basic install to the same encyclopedia or, in a multi-encyclopedia environment, another CSE.

When extracting in a multi-encyclopedia environment, the location of the parent model is the *source encyclopedia* and, the location of the child model is the *destination encyclopedia*.

**Note:** These terms always reflect the direction of the operation—*from* source and *to* destination. In Apply processing, the direction is the reverse of Extract processing. The source encyclopedia is where the child model resides. The destination encyclopedia is the location of the parent.

The advantages of creating a child model include:

- The advantage of extracting a model that resides on the Host Encyclopedia include:
  - You can offload processing against the Host and conserve resources
  - Positioning the child model on a CSE may be advantageous when most users have CSE access, but not Host access.
- The advantage of extracting multiple, discrete subsets as multiple child models of a single parent can help with load balancing by distributing subsets across different encyclopedias.

## Automatically Extracting a Model

**Follow these steps:**

1. Log on to the Encyclopedia Client and Select Model.
2. In the Encyclopedia Model Selection window, select Actions, Extract.
3. When your configuration includes multiple encyclopedias, select the encyclopedia in the Source Encyclopedia List.
4. Select the model and select the Extract button.
5. When the extraction finishes, select Continue.

## Manually Extracting a Model

When you manually extract a model, you create an extract file from the source encyclopedia and transfer the extract file to the destination encyclopedia.

**To download a file when the source encyclopedia is a CSE**

At the prompt, issue the download command with these parameters:

download –u *userid* –m *model* [–s *subset*] –e *childency ID* [–c *childmodel name*] [–*n count*] [–d *directory*] [-i *requestor code page*] -t extract

***userid***

Defines a *userid* that must have authorization to download models.

***model***

Defines the model name. Enclose the model name in double quotes when it contains embedded spaces, as in "*model name*".

**s**

(Optional) Defines the subset name. Enclose it in double quotes when contains embedded spaces, as in "*subset name*".

**e**

Defines is the child encyclopedia ID.

**c**

(Optional) Defines the child model name if you want it to change it from the parent model name. Enclose child model name in double quotes, when it contains embedded spaces, as in "*child model name*".

**n**

(Optional) Defines the number of downgrades to report.

**Default:** 100.

**d**

(Optional) Defines the directory name of the destination directory for the extract.trn file.

**Default:** the current directory.

**i**

Defines the requestor code page of the destination CSE. To determine this value, see Supported Code Pages Values in the National Language Support chapter.

**Default:** 0 for no translation.

**t**

Defines the type of download, an extract.

### Example

```
download –u john –m "my model" –e 111 –c "my child model" –s subset1 –n 50 -t extract
```

Builds the extract.trn file for the user name ID john, from the model that is named my model, names the child model my child model, and the subset subset1. This build report 50 downgrades.

**To create a download file when the parent model is on a Host Encyclopedia**

When the parent model is on a Host Encyclopedia, to create the download file, *userid*.IEF.TRAN, using option 1.3.15 (Download Model) or 1.4.13 (Download Subset), use the following command:

```
%IEFDOWN MODEL ('full model name') SUBSET('subset name') SOFTWARE('schema') EXTRACT
CPID('destination code page of CSE') CHILDENCYID('destination encyclopedia ID')
CHILDMODEL('child model name')
```

**Note:** For information about extracting a subset from the Host Encyclopedia, see the *Host Encyclopedia Subsetting* User *Guide*.

**To move the extract file to destination encyclopedia**

**Follow these steps:**

1. Rename the file to load.trn
2. Before uploading, run **trnrpt –t** load to generate a report to detail downgrades.

**To load the child model into the encyclopedia**

From the server install directory, issue an upload command to load the child model into the encyclopedia, using these parameters:

`upload –u userid –t load [–d directory]`

***userid***

Defines a *userid* that must have authorization to download models.

**t**

Defines the type of upload

**d**

(Optional) Defines the directory name of the destination directory for the extract.trn file.

**Default:** the current directory.

Example

`upload –u john –t load`

Uploads the child model to the encyclopedia using user ID john

## Generating a New Model

Generating a new model lets you:

- Restore a deleted model, one that no longer exists on the encyclopedia
- Add a model to the encyclopedia

Generate a new model from a copy only if you have the complete copy of the model on your workstation.

**Important!** Use generate new model from a checked out subset on a workstation with caution.

You can generate a new model manually or automatically.

Manual generation requires transferring files between the CSE and toolset.

## Automatically Generating a New Model

Generate a new model to restore a deleted model or add a new model to the encyclopedia.

**Follow these steps:**

1. In the Toolset, select Model, New Model to create the new model.
2. Type the model name and select OK.
3. Before storing the model on the CSE, verify these settings on the Toolset:
    a. Select Options, Encyclopedia Selection, and verify Use Client/Server Encyclopedia is checked.
    b. Cancel the Encyclopedia Selection dialog, or if necessary, select Use Client/Server Encyclopedia, and select OK.
    c. Select Options, Encyclopedia Communications, and verify that Perform file transfers for encyclopedia options is checked.
    d. Cancel the Encyclopedia Communications dialog, or if necessary, select Perform file transfers for encyclopedia options, and select OK.
4. In the Toolset main window, select Model, Encyclopedia, Generate New Model.
5. In the Generate New Model dialog, select OK.
6. Log on to the Checkout Client.
7. The client opens an Upload box and updates a status bar.

When the model finishes generating, it opens the Encyclopedia Update Status Report.

## Manually Generating a New Model

Manual generation transfers files between the CSE and toolset.

**Follow these steps:**

1. In the Toolset, select Model, Encyclopedia, Generate New Model to create the new model.
2. At the confirmation message box, click to continue.
3. Type the model name and select OK.
4. Acknowledge the message that the model is marked as read only.

    The Toolset generates the new model and updates a progress bar. When the generation finishes, the Toolset creates an update.trn file.
5. Move the update.trn file from the toolset model directory to a directory the Checkout Client can access.
6. Log on to the Checkout Client, and select Encyclopedia, Update.

7. Type the path for the update.trn file and start the upload.
8. The client updates a progress bar.

**Note:** The Checkout Client creates a verification file, verify.trn, in the same directory as the update.trn file. You must have write access to the directory containing the update.trn file to generate the verify.trn file.

When the model finishes generating, it opens the Encyclopedia Update Status Report.

Open the model from the toolset.

## Resending the Copied Model

Use the Resend to Encyclopedia option to retry an unsuccessful copy of a model from another CSE to the active CSE.

When you resend the command to copy a model to a new encyclopedia, there is a risk that the destination encyclopedia contain a model with the same name. When it does, you can choose to overwrite the model with the duplicate name, or receive notification that it exists.

**Follow these steps:**

1. Log on to the Encyclopedia Client and select Model.
2. In the Encyclopedia Model Selection window, select Actions, Copy, Resend from another Encyclopedia.
3. In the Resend File Overwrite Option dialog, check the option to overwrite a destination encyclopedia with the same name.
4. Select Resend.

   The client opens a Cross Copy dialog with a progress bar.
5. Select Continue to finish, when the copy completes.

   The client opens an information message box with the status of the copy.

## Resending the Extracted Model

Use the Resend option to retry an unsuccessful extract of a model.

**Follow these steps:**

1. Log on to the Encyclopedia Client and select Model.
2. In the Encyclopedia Model Selection window, select Actions, Extract, Resend.

3. In the Resend File Overwrite Option dialog, check the option to overwrite a destination encyclopedia with the same name.
4. Select Resend.

   The client opens an Extract dialog with a progress bar.
5. Select Continue to finish when the extract completes.

   The client opens an information message box with the status of the copy.

## Resending the Last Apply

The Resend Apply command applies the changes that are made on the child model to the parent model and verifies that the changes were successfully applied.

Use the Resend option to retry an unsuccessful apply.

**Follow these steps:**

1. Log on to the Encyclopedia Client and select Model.
2. In the Encyclopedia Model Selection, identify the model to open by typing the model name in Name or by selecting Actions, List, selecting the model from the list, and selecting Open.
3. In the Encyclopedia Model Selection window, select Actions, Apply, Resend.

## Resending the Last Update to the Encyclopedia

Use the Resend option to retry an unsuccessful model or subset update from a toolset to the CSE. Until you successfully resend the model or subset, it stays in read-only status on the toolset. You can resend an update automatically or manually.

Both methods use the Toolset to resend the update.

**Follow these steps:**

1. Start the Toolset and verify these settings:
   a. Select Options, Encyclopedia Selection, and verify Use Client/Server Encyclopedia is checked.
   b. Cancel the Encyclopedia Selection dialog, or if necessary, select Use Client/Server Encyclopedia, and select OK.
   c. Select Options, Encyclopedia Communications, and verify that the Perform file transfers for encyclopedia options is checked.
   d. Cancel the Encyclopedia Communications dialog, or if necessary, select Perform file transfers for encyclopedia options, and select OK.

2. In the Toolset, open the model to resend. To open a model:
   a. Select Model, Open Model.
   b. In the Open window, select the model to open, and select Open.
3. To resend the model, select Model, Encyclopedia, Resend Last Update, and OK.
4. Continue with the instructions to resend the update automatically or manually.

### Resending an Update Automatically

During an automatic resend, the CSE and a toolset transparently move the files.

**Follow these steps:**

1. In the Toolset main window, select Model, Encyclopedia, Resend Last Update.
2. Start the Checkout Client.
3. Highlight the encyclopedia from the encyclopedia list and select Logon.
4. The Client opens an Upload box with a progress bar.

When the model finishes generating, it opens the Encyclopedia Update Status Report.

### Resending an Update Manually

During a manual resend, the Toolset notifies you of the status.

**Follow these steps:**

1. In the Toolset, select Model, Encyclopedia, Resend Last Update.
2. Choose to continue in the confirmation box.

   **Note:** The Checkout Client creates a verification file, verify.trn, in the directory you selected for the update.trn file.
3. Acknowledge the message that the file was created.
4. Transfer the update transaction file, update.trn, to the Checkout Client.

   The Client opens an Upload box with a progress bar.

## Turning Off File Transfer

The Toolset default is file transfer on. When you manually transfer files between the toolset and the CSE, turn off the automatic file transfer on the toolset.

**Follow these steps:**

1. In the Toolset, select Settings, Encyclopedia Communications.

2. In the Encyclopedia Communications dialog, uncheck Perform file transfer for encyclopedia options.
3. Select OK.

## Update a Model or Subset to the Encyclopedia

Update copies a model or subset from the toolset to the CSE. You can update and check in the updated model or update the model without checking it in. Check in places the model or subset in a read-only status on the toolset. You cannot work on this model or subset until you check it out again.

Checking the model in the first time requires add model authority.

If you are updating the model or subset, you must:

- Have checked out the model or subset
- Be the model or subset administrator
- Be an encyclopedia administrator

You are less likely to encounter conflict problems if you update the model or subset frequently when making numerous changes to it.

You can update automatically or manually, using the Toolset to resend the update.

**Follow these steps:**

1. Start the Toolset and verify these settings:
   a. Select Options, Encyclopedia Selection, and verify Use Client/Server Encyclopedia is checked.
   b. Cancel the Encyclopedia Selection dialog, or if necessary, select Use Client/Server Encyclopedia, and select OK.
   c. Select Options, Encyclopedia Communications, and verify that Perform file transfers for encyclopedia options is checked.
   d. Cancel the Encyclopedia Communications dialog, or if necessary, select Perform file transfers for encyclopedia options, and select OK.
2. In the Toolset, open the model or subset to resend. To open a model:
   a. Select Model, Open Model.
   b. In the Open window, select the model to open, and select Open. In the Model Action window, select Resend Last Update and OK.
3. Continue with the instructions to resend the update automatically or manually.

## Automatic Model or Subset Update to the Encyclopedia

During an automatic update, the CSE and the toolset transparently move necessary files.

**Follow these steps:**

1. In the Toolset, select Model, Encyclopedia.
2. Select the update option:
   - Update And Check In Model copies a workstation model or subset to the encyclopedia, and sets the model to read-only status.
   - Update But Do Not Check In copies a model or subset from the workstation to the encyclopedia without checking in the model.
   - Resend Last Update retransmits an unsuccessful model update from the workstation to the encyclopedia.
   - Verify Last Update checks that the last model or subset successfully updated
   - Generate New Model creates a model using the workstation model as the master copy

When the update finishes, it opens the Encyclopedia Update Status Report.

## Manual Model or Subset Update to the Encyclopedia

Manual update requires that you transfer files between the CSE and toolset.

**Follow these steps:**

1. In the Toolset, select Model, Encyclopedia.
2. Select the update option:
   - Update And Check In Model copies a workstation model or subset to the encyclopedia, and sets the model to read-only status.
   - Update But Do Not Check In copies a model or subset from the workstation to the encyclopedia without checking in the model.
   - Resend Last Update retransmits an unsuccessful model update from the workstation to the encyclopedia.
   - Verify Last Update checks that the last model or subset successfully updated
   - Generate New Model creates a model using the workstation model as the master copy
3. At the confirmation message box, select Yes.

   The Toolset creates an update transaction file, update.trn, in the model directory when this portion of the update completes.

4. To transfer the update file to the Checkout Client, follow these steps:
   a. Move the update.trn file from the model directory to a directory the Checkout Client can access.
   b. Log on to the Checkout Client.
   c. In the Checkout Client window, select Encyclopedia, Update.
   d. Type the path, if necessary, and select OK.

   **Note:** The Checkout Client creates a verification file, verify.trn, in the same directory as the update.trn file.
5. Move the verify.trn file to the model directory.

Reopen the model or subset from the toolset main window. The software notifies you of the update status.

## Verifying the Last Apply to the Encyclopedia

Verify the last Apply to confirm the last apply was successful. The other Apply commands end with the verification step invoked by this command. Use the Verify Apply command only when a communications failure occurs during apply processing.

You can verify the last apply automatically or manually.

**Automatically verify the last apply to the encyclopedia**

**Follow these steps:**

1. Log on to the Encyclopedia Client and select Model.
2. In the Encyclopedia Model Selection window, select Open.
3. Highlight a model in the Model List window and select Open.
4. In the Encyclopedia Model Selection window, select Actions, Apply, Verify.

**Manually Verifying the Last Apply to the Encyclopedia**

**Follow these steps:**

1. Run the generate verify command to create the verapply.trn from the delta.trn:

   ```
   genver –u userid
   ```

2. Run the verify apply command to read the verapply.trn and create an everify.trn file:

   ```
   verup –t verify|verapply –u userid
   ```

3. Run the verify delta command to read the everify.trn and reset the status of the model:

   ```
   verdelta –u userid
   ```

## Verifying the Last Update to the Encyclopedia

Use the verify last update option after updating a model or subset to ensure successful transfer from the toolset to the CSE. This option checks the status of the last update to the CSE without resending the data and reports the results.

You can verify automatically or manually. During automatic verification, the CSE and the toolset transparently move the files. Manual verification requires that you transfer files between the CSE and toolset.

**To automatically verify the last update to the encyclopedi**a

Follow these steps:

1. Start the Toolset and verify these settings:
   a. Select Options, Encyclopedia Selection, and verify Use Client/Server Encyclopedia is checked.
   b. Cancel the Encyclopedia Selection dialog, or if necessary, select Use Client/Server Encyclopedia, and select OK.
   c. Select Options, Encyclopedia Communications, and verify that Perform file transfers for encyclopedia options is checked.
   d. Cancel the Encyclopedia Communications dialog, or if necessary, select Perform file transfers for encyclopedia options, and select OK.
2. Open the model.
   a. Select Model, Open Model.
   b. In the Open window, select the model to open, and select Open.
   c. If the Model Action Dialog opens, click Use As Read Only.
3. Select Model, Encyclopedia, Verify Last Update.

4. In the Verify dialog, enter or confirm the directory path for the verup.trn file and select OK.
5. Log on to the Checkout Client.

When the verification completes, it opens the Encyclopedia Update Status Report.

**To manually verify the last update to the encyclopedia**

**Follow these steps:**

The verification process creates an update verification file, verup.trn, in the model directory.

1. Start the Toolset and verify these settings:
    a. Select Options, Encyclopedia Selection, and verify Use Client/Server Encyclopedia is checked.
    b. Cancel the Encyclopedia Selection dialog, or if necessary, select Use Client/Server Encyclopedia, and select OK.
    c. Select Options, Encyclopedia Communications, and verify that Perform file transfers for encyclopedia options is unchecked.
    d. Cancel the Encyclopedia Communications dialog, or if necessary, uncheck Perform file transfers for encyclopedia options, and select OK.
2. Open the model.
    a. Select Model, Open Model.
    b. In the Open window, select the model to open, and select Open.
    c. If the Model Action Dialog opens, click Use As Read Only.
3. Select Model, Encyclopedia, Verify Last Update.
4. Acknowledge the communication configuration message box.
5. To transfer the update information to the Checkout Client, follow these steps:
    a. Move the verup.trn file from the model directory to any directory the Checkout Client can access.
    b. Log on to the Checkout Client.
    c. In the Checkout Client window, select Encyclopedia, Verify Last Update.
    d. Type the path, if necessary, and select OK.

    **Note:** The Checkout Client creates a verification file, verify.trn, in the directory that is selected for the verup.trn file.

6. Move the verify.trn file to the model directory.
7. Open the model in the Toolset.

The Toolset notifies you of the status of the last update.

# Examples of Communication Tasks

Communication tasks include extract from parent and load child, upload child and apply to parent, extract from parent and load children, and gendelta from child and apply to parent.

## Extract from Parent and Load Child

The following illustration explains the processes and steps to check out a model or subset from an encyclopedia to an encyclopedia, and to the toolset.

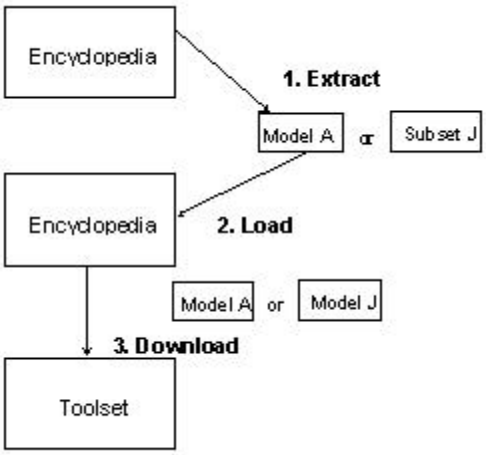
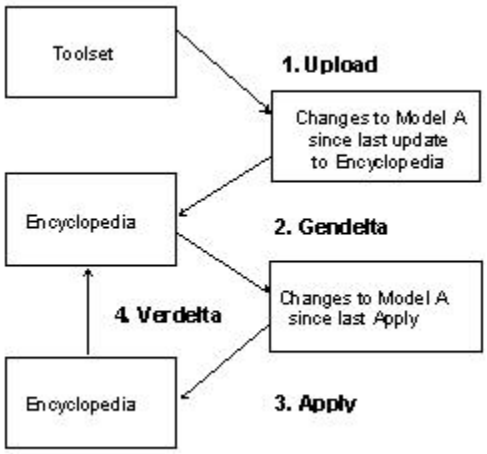



Illustration Key

1. Extract the model or subset from the encyclopedia. The encyclopedia marks the parent model or subset as checked out.
2. Load the extracted model or subset to an encyclopedia. Subsets extracted from the parent become models when loaded on the other encyclopedia.
3. Download Model A or Model J to the toolset. You can usually change the model on the toolset, update the model on the encyclopedia, and apply the changes to the parent model on the other encyclopedia.

# Upload Child and Apply to Parent

The following illustration explains uploading a model or subset from a toolset to an encyclopedia, generating a transaction file of changes to the model, and applying the changes to the parent model. After the applying the changes, verify the success of the apply.




**Follow these steps:**

1. Upload the checked-out model or its subset to the child model. Upload transfers changed data from the toolset to the child model.

   **Note:** This illustration assumes automatic communication from the toolset to the encyclopedia.

2. Generate a transaction file of changes that are made to Model A since the last Apply.

   The transaction file that is created by Gendelta may include multiple Updates.

3. Apply the changes to the parent model.

4. To verify the apply to the parent model, move the verify output file to the encyclopedia containing the child model and run verify.

## Extract from Parent and Load Children

The following illustration explains extracting a model or subset from an encyclopedia, loading the model to more than one encyclopedia, and downloading the model to the toolset.

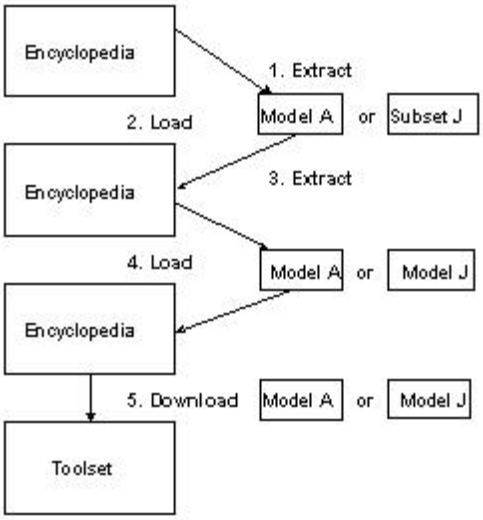



Illustration Key

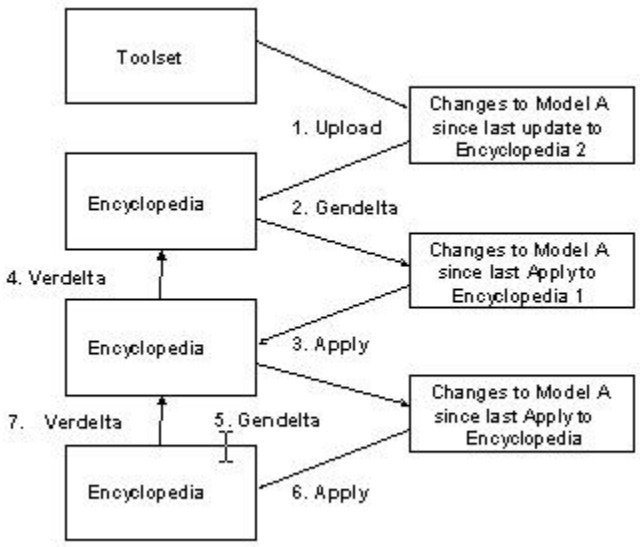
**Follow these steps:**

1. Extract the model or subset from the encyclopedia. The encyclopedia marks the parent model as checked out.
2. Load the extracted model or subset to Encyclopedia 1. Subsets extracted from the parent become models on the destination encyclopedia.
3. Extract Model A or Model J from Encyclopedia 1. Encyclopedia 1 marks the model or subset as checked out.
4. Load the extracted Model A or Model J to Encyclopedia 2.
5. Download Model A or Model J to a toolset. Encyclopedia 2 marks the model or subset as checked out.

You can change the model on the toolset and can move the changes to Encyclopedia 2, Encyclopedia 1, and the original encyclopedia.

## Gendelta from Child and Apply to Parent

The following illustration explains uploading a model from the toolset, generating a transaction file of changes to the model, applying the changes successively to more than one encyclopedia and back to the original encyclopedia. Verdelta verifies the successive applies.




**Follow these steps:**

1. Upload to Encyclopedia 2.
2. Generate a transaction file of changes that are made to Model A since the last Apply to Encyclopedia 1. This file may include multiple Uploads. Apply changes to Encyclopedia 1.
3. Verify apply to Encyclopedia 1 by moving the everify.trn file to Encyclopedia 2 and running verdelta.
4. Generate a transaction file of changes to Model A since the last Apply to the encyclopedia.
5. Apply the changes to the encyclopedia.

Verify apply to encyclopedia by moving everify.trn file to Encyclopedia 1 and running verdelta.

# Chapter 8: Command Line Commands

## Command Parameters

You can run some encyclopedia communications and model management tasks from a command line. Consider using the command-line to perform tasks such as creating batch files to run commands at off peak times.

Run the commands from the directory in which you have permission to create files.

Each command has parameters. To display a list of the parameters and their descriptions, enter the command at the command-line prompt without parameters.

## Encyclopedia to Toolset Communications

Use these commands when moving models or subsets between the CSE and the Toolset:

- download command to check out a model or subset
- upload command to update a new or existing model or subset
- verup command to verify the last update

**More information:**

Encyclopedia Communications (see page 165)

### Checking Out a Model or Subset

**Follow these steps:**

1. Run the download command.

   This command creates a checkout.trn file in the directory you specify. The default is the current working directory.

2. Move the checkout.trn file to the Toolset model directory.
3. In the Toolset, check out the model or subset. The file transfer option must be off.

## Updating a Model or Subset

Updating a model or subset creates files that you must move to other directories.

**Follow these steps:**

1. In the Toolset, select to update the model or subset.

   The file transfer option must be off. Choosing to update creates an update.trn file in the Toolset model directory.

2. Move the update.trn file to the Encyclopedia server.

3. Run upload.

   Upload creates a verify.trn file.

4. Move the verify.trn file to the Toolset model directory.

## Run verup to Verify the Last Encyclopedia Update

After updating the model, to verify the last update to the encyclopedia.

**Follow these steps:**

1. In the Toolset, select to verify the last update.

   The file transfer option must be off. The verify process creates a verup.trn file in the Toolset model directory.

2. Move the verup.trn file to the Encyclopedia server.

3. Run verup.

   The verup command creates a verify.trn file.

4. Move the verify.trn file to the Toolset model directory.

   From the Toolset, open the model.

# Encyclopedia to Encyclopedia Communications

Use these commands when moving models or subsets between encyclopedias:

- gendelta to generate transaction file changes for a child model.
- upload to update a new or existing model from a child model.
- upload to load a model from a parent model or subset.
- download to copy a model from one encyclopedia to another.
- download to extract a transaction file of a parent model or subset.

- genver to generate verification file for a child model.
- verdelta to verify the gendelta or apply of a transaction file
- verup to verify the last upload from a toolset or child model.

**More information:**

Verifying the Last Apply to the Encyclopedia (see page 194)
Applying a Model or Subset to the Encyclopedia (see page 172)
Extracting a Model or Subset (see page 184)
Copying a Model from Another Encyclopedia (see page 180)

# Transfer Problems

If the problems occur during a manual or automatic file transfer, you may not be able to complete the action. You can obtain more information by running the command-line version of the command and can add the trace option, -b *parameter*.

Trace creates a file that records the transactions. Use trace under the direction of your support representative.

Use the trace parameter with the DOWNLOAD or UPLOAD commands.

Only use this option when troubleshooting because it slows the file transfer. The trace option creates an ASCII file with the command name and a LOG extension. For example, upload with the trace creates upload.log. The trace files are in the directory containing the command and are overwritten every time you run trace. To save the file, rename it, or copy or move it to another directory.

# Model Management

Consider using these commands to manipulate models during less active times:

- copymodl to copy a model
- delmodel to delete a model
- delobj to delete objects
- override to override the checkout of a model or subset

- convmodl to convert a model
- convall to convert all models

For example, you could use the delete command in a batch routine to remove multiple unused models during the evening.

**More information:**

Managing Models (see page 113)

# Model Reports

## Consistency Check Command Line Utility

The syntax for the consisck command is:

```
consisck -u <userid> -m <model name> [-w <severity level>
    -r <rule level> -d <database> -n <threshold>
    -t <report type> -f <file name> -i <code page> -o <object ID>
    -p <dispatcher> -v <environment> -g <encyclopedia group>]
```

**-u <*userid*>**

Defines an authorized user id.

**Limits:** eight characters.

**-m <*model name*>**

Defines the model name. Enclose *model name* in quotes when it is more than one word, as in "*model name*".

**Limits:** 32 characters.

**-w <*severity level*>**

Defines the level of warning messages to include. When you omit this option, the utility includes Warning messages. The permitted values are Warning, Severe, Error, and Fatal.

**-r <*rule level*>**

The levels indicate progressive phases in model development.

**Default:** All

Other permitted levels are:

**ISP**

Planning

**BAA**

Business Area Analysis

**BSD**

Business System Development

**TD**

Technical Design

**CG**

Code Generation

**-d <*database*>**

Defines the database.

**Default:** All

Other permitted values are All, None, "DB2 z/OS", "DB2 UDB", JDBC, MS/SQL, ODBC/ADO.NET, ORACLE, and SQL/MP.

**-t <*report type*>**

Defines the report, Summary, Normal, Detail, or Xdebug

**Default:** Normal

**-n <*report limit*>**

Defines the maximum number of exceptions that are allowed in the report. The model consistency check terminates without completing when it reaches the report limit.

**Default:** 100

**Limits:** 1 to 9999

**-o <*objid*>**

Defines the encyclopedia object id. You can include this option and value more than once to run consistency check on multiple object IDs.

**Default:** the entire model.

**-f <*file name*>**

Defines the report file's destination file name.

**Default:** conschk.rpt in the current directory.

**-i <*code page*>**

Defines the report code page.

**Default:** the model code page

**-p <*dispatcher*>**

Defines a message dispatcher name.

**Default:** the value of the IEF_MDNAME environment variable or 'IEFMD'.

**Limits:** 1059 character name.

**Note:** For more information about Message Dispatcher Name, see Hostnames and IP Addresses (see page 29) and CSE Message Dispatcher and Remote Daemon Server Names (see page 29).

**-v <*environment*>**

Defines aenvironment name.

**Default:** the value of the IEF_ENVNAME environment variable or 'CSE_ENV'.

**Limits:** 32-character

**-g <*encyclopedia group*>**

Defines an encyclopedia group name.

**Default:** the value of environment variable IEF_ENCYGROUP.

**Limits:** eight characters

All command-line parameters, except the file name, can be uppercase, lowercase, or mixed case. File names must be in a form that is defined by the operating system on which the program is running.

## Command Line Debug Report

The consisck command supports a debug report option that is unavailable through the CSE client. When this option is in effect, the Normal section of the report includes a detailed explanation of every executed consistency check rule in a proprietary form. Since this option can produce a huge report file, only use it when directed to by Customer Support.

## Detail Report Option

The Detail report option adds the encyclopedia object ID to the object label to facilitate using the command-line utility where you can enter object IDs on the Command Line.

## Action Block Use Command Line Utility - acblkuse

The Model Action Block Use Report lists the calling hierarchy of model components. The report displays the Dynamic Link attribute that is associated with each module:

- Default
- Yes
- No
- Compatibility

acblkuse displays the default values assigned to the Dynamic Link Defaults for Procedure Steps, Screens Managers, and Action Blocks for each Business System included in the report. The report has these three basic modes of operation, which is selected by the Object Range report option:

- All business systems and load modules

  This option lists every Business System in the model, every load module in its Business System, every Procedure Step in each Load Module, and recursively, every Action Block the Procedure Step uses. It also lists Derivation Algorithms in the model at the end of the report.

- Selected objects

  Use this option to identify specific Business Systems or Load Modules to include in the report. Use the Object ID option for each object ID. The object type must be a Business System or Load Module, a Batch Job, Batch Job Step, Online Load Module, Operations Library, Server Manager, Window Load Module, Window Manager, or z/OS Library. When you select a Business System, it displays all the load modules under the Business System. It lists the selected objects and components the objects use. This report does not include Derivation Algorithms.

- Filter modules by Dynamically Link (z/OS) option

  This option lists Procedure Steps, Screens, Action Blocks, and Derivation Algorithms that have their Dynamic Link (z/OS) property set to the value specified by the filter value option.

  The permitted values in the Dynamic Link (z/OS) options for these components are:

  - Default
  - Yes
  - No
  - Compatibility

## Using acblkuse

acblkuse displays the default values assigned to the Dynamic Link Defaults for Procedure Steps, Screens Managers, and Action Blocks for each Business System included in the report.

This command has the following parameters:

```
acblkuse -u <userid> -m <modelname> [-d <directory> -f [set the File Name variable]
     -r <object range> -o <object ID> -l <dynamic link>
     -i <requester code page> -p <dispatcher> -v <environment> -g <encyclopedia
    group>]
```

**-u <*userid*>**

Defines an authorized user id.

**Limits:** eight characters

**-m <*modelname*>**

Defines a model name in the encyclopedia.

**Limits:** 32-characters

**-d <*directory*>**

(Optional) Defines the destination directory for the report file.

**Default:** When you omit this option that the command writes the file to the current directory.

**-f [*set the* File Name variable]**

Defines the report file's destination file name. When you omit this option, the command creates the file acblkuse.rpt.

**-r ALL| SELECTED o <objid>|FILTER-l <dynamic link>**

Defines the object range that is included in the report. Use SELECTED and FILTER to restrict the objects in the report. When you specify SELECTED, include a –o option for each object id. When you specify FILTER, include the –l option.

**Default:** ALL

**-o <*objid*>**

Defines a business system or load module's object id. Only include this option when you use the -r SELECTED option. Specify a –o option for each object id.

**-l <*dynamic link*>**

Specifies to include procedure steps, screens, action blocks, and derivation algorithms that have their dynamic link (z/OS) property set to the value specified by the filter value option. The Valiv values are YES, NO, DEFAULT, and COMPATIBILITY. Only includes this option when you include the -r FILTER option.

**-i <*requester code page*>**

Defines the code *page* of the client platform.

**Default:** 0 for no code page translation.

**-p <*dispatcher*>**

Defines a message dispatcher name.

**Default:** the value of IEF_MDNAME environment variable or 'IEFMD'.

**Limits:** 1059 characters

**Note:** For more information about Message Dispatcher Name, see Hostnames and IP Addresses (see page 29) and CSE Message Dispatcher and Remote Daemon Server Names (see page 29).

**-v <*environment*>**

Defines the environment name.

**Default:** the value of IEF_ENVNAME environment variable or 'CSE_ENV'.

**Limits:** 32-character

**-g <*encyclopedia group*>**

Defines an encyclopedia group name.

**Default:** the value of the IEF_ENCYGROUP environment variable.

**Limit:** eight characters

# Chapter 9: National Language Support in CSE

## Code Page

National Language Support enables character representation in different countries and on different types of machines and operating systems.

A code page defines a collection or set of characters and their binary representations. The term *code page* is commonly used in IBM and PC environments. The UNIX users are more familiar with the term character encoding method or scheme. For the purposes of this guide, code page, character encoding method, and scheme are synonymous.

## Code Page Translation

Different platforms use different code page values for different languages and as data moves between platforms with different code pages, the binary value must be translated to preserve the original character representation on the new platform. This is code page translation.

Code page translation is supported in all versions of the CA Gen CSE and its Clients, and Toolsets, and the Host Encyclopedia.

Code page translation is not a language translation, as in French data into German data. An example of code page translation is the translation of character data from an IBM mainframe to a format suitable for a PC. When data moves between these two platforms, code page translation occurs to ensure that characters retain their meaning.

Code page translation supports the translating textual data when different code page definitions exist between toolsets and encyclopedias, and between encyclopedias, including translating text data between the Client Server Encyclopedia clients and servers.

All text strings are translated. Some text strings such as model names, subset names, and encyclopedia names do not allow national language characters. The following strings can contain national language characters:

- User textual data (non-Technical Design objects)
- User names

- Group names
- Encyclopedia descriptions

When the code pages of platforms differ, a code page translation occurs during:

- Text data transfers between clients and servers
- Text data transfers between toolsets and encyclopedias
- Text data transfers between encyclopedias

Code page translation requires storing the code page of the model's characters with the model always and requires that all encyclopedias translate model information from the code page of their requester toolsets or encyclopedias into one or more supported code pages on the encyclopedia.

The CSE server installation automatically adds character translation tables in the Coordination and Encyclopedia databases to facilitate code page translation.

**Note:** For more information about installation, see the *Distributed Systems Installation Guide*.

## Specifying a Code Page Value

Translation occurs automatically except during the following situations when you must indicate or select a code page value:

- Manual model checkout
- Server command-line download process
- Model conversion
- Extract model or subset from host to CSE

During manual model checkout, when you log in to the Checkout Client and select a model to check out, the Checkout dialog includes a Destination Codepage list box listing valid code pages to which the model can be translated. Amodel can be translated to the correct character representation for the destination toolset receiving the checkout.trn.

For example, use this when you have a model that is stored on a UNIX CSE and want to check it out translated to a format suitable for a Windows toolset.

The download command includes a parameter, -i <*requester code page*>, that supports code page translation. Use this parameter with the download and extract checkout situations.

Specify the code page value of the destination machine for which you are preparing the transaction file, a toolset, or another CSE.

When the model is stored with a language code value of zero, there is no translation. When the download command includes the –i parameter, the code page value is ignored.

When a model has a zero language code, select the build code page. The build code page si the active code page of the toolset that is used when the model was originally built.

**Note:** For information about extracting a model or subset from the host to the CSE, see the *Host Encyclopedia Subsetting User Guide*.

**More information:**

Managing Models (see page 113)

## Supported Code Page Values

The following table lists the code page that is supported by the CSE and the code page that is associated with the language for the Windows- and UNIX- based CSEs. The z/OS column provides the equivalent code pages for models that are stored in the Host Encyclopedia.

| Language | Win32 | UNIX | z/OS |
|---|---|---|---|
| American English | 1252 | 819 | 1140 |
| Arabic | 1256 | 1089 | 420 |
| English (UK) | 1252 | 819 | 1140 |
| Chinese – Big 5 | 950 | 950 | 937 |
| Chinese – Simplified | 936 | 936 | 937 |
| Cyrillic | 1251 | 915 | 1025 |
| Danish | 1252 | 819 | 1140 |
| Finnish | 1252 | 819 | 1140 |
| Dutch | 1252 | 819 | 1140 |

| | | | |
|---|---|---|---|
| Flemish | 1252 | 819 | 1140 |
| French | 1252 | 819 | 1140 |
| French Canadian | 1252 | 819 | 1140 |
| German | 1252 | 819 | 1140 |
| Greek | 1253 | 813 | 875 |
| Hebrew | 1255 | 916 | 424 |
| Italian | 1252 | 819 | 1140 |
| Japanese | 932 | 932 | 930 |
| Korean | 949 | 949 | 933 |
| Norwegian | 1252 | 819 | 1140 |
| Portuguese | 1252 | 819 | 1140 |
| Spanish | 1252 | 819 | 1140 |
| Swedish | 1252 | 819 | 1140 |
| Thai CS1176 | 874 | 874 | Not supported |
| Turkish | 1254 | 920 | 1026 |

## Other Affected Functions

Other CSE functions that are affected by code page translation include any function that moves data or models, such as adoption, migration, all reports that output model data, and the Public Interface views.

**Note**: For more information about these functions, see the *Client Server Encyclopedia Version Control User Guide*.

# Chapter 10: Concurrent Encyclopedia Operations

The appendix lists encyclopedia operations that can run concurrently and encyclopedia operations that can run concurrently when the subset names are different. If an encyclopedia operation combination is not listed, the combination cannot run concurrently.

**Note**: CODEGEN places a short write lock on the model.

**ADOPTION (DST)**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

**ADOPTION (SRC)**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

COPY MODEL (SRC)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

EXTRACT SUBSET (PARENT)

DELETE SUBSET

DOWNLOAD SUBSET

MIGRATION (SRC)

OVERRIDE SUBSET

RENAME SUBSET

REPORTS

**APPLY NEW MODEL**

Does not work concurrently with other encyclopedia operations.

**APPLY SUBSET (PARENT)**

Runs concurrently with these encyclopedia operations when the subset names are different:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

UPLOAD SUBSET

**CODEGEN**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

**CONVERSION**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

**COPY MODEL (DST)**

Does not work concurrently with other encyclopedia operations.

**COPY MODEL (SRC)**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

COPY MODEL (SRC)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

MIGRATION (SRC)

OVERRIDE SUBSET

RENAME SUBSET

REPORTS

**COPY SUBSET**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

ADOPTION (DST)

CODEGEN

CONVERSION

COPY MODEL (SRC)

CRE MDL FROM SUBSET (DST)

GENDELTA SUBSET (CHILD)

MIGRATION (DST)

MIGRATION (SRC)

OBJECT DELETE

OBJECT RENAME

PACKAGING

REPORTS

Runs concurrently with these encyclopedia operations when the subset names are different:

APPLY SUBSET (PARENT)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

OVERRIDE SUBSET

RENAME SUBSET

UPLOAD SUBSET

**CRE MDL FROM SUBSET (DST)**

Does not work concurrently with other encyclopedia operations.

**CRE MDL FROM SUBSET (SRC)**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

COPY MODEL (SRC)

CRE MDL FROM SUBSET (SRC)

MIGRATION (SRC)

REPORTS

Runs concurrently with these encyclopedia operations when the subset names are different:

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

OVERRIDE SUBSET

RENAME SUBSET

**DELETE MODEL**

Does not work concurrently with other encyclopedia operations.

**DELETE SUBSET**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

ADOPTION (DST)

CODEGEN

CONVERSION

COPY MODEL (SRC)

GENDELTA SUBSET (CHILD)

MIGRATION (DST)

MIGRATION (SRC)

OBJECT DELETE

OBJECT RENAME

PACKAGING

REPORTS

Runs concurrently with these encyclopedia operations when the subset names are different:

APPLY SUBSET (PARENT)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

OVERRIDE SUBSET

RENAME SUBSET

UPLOAD SUBSET

**DOWNLOAD SUBSET**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

COPY MODEL (SRC)

MIGRATION (SRC)

REPORTS

Runs concurrently with these encyclopedia operations when the subset names are different:

COPY SUBSET

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

OVERRIDE SUBSET

RENAME SUBSET

**EXTRACT SUBSET (PARENT)**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

COPY MODEL (SRC)

MIGRATION (SRC)

REPORTS

Runs concurrently with these encyclopedia operations when the subset names are different:

COPY SUBSET

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

OVERRIDE SUBSET

RENAME SUBSET

**GENDELTA SUBSET (CHILD)**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

RENAME SUBSET

**LOAD SUBSET (CHILD)**

Does not work concurrently with other encyclopedia operations.

**MIGRATION (DST)**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

COPY MODEL (SRC)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

MIGRATION (SRC)

OVERRIDE SUBSET

RENAME SUBSET

REPORTS

**MIGRATION (SRC)**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

**OBJECT DELETE**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

**OBJECT RENAME**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

**OVERRIDE SUBSET**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

ADOPTION (DST)

CODEGEN

CONVERSION

COPY MODEL (SRC)

MIGRATION (DST)

MIGRATION (SRC)

OBJECT DELETE

OBJECT RENAME

PACKAGING

REPORTS

Runs concurrently with these encyclopedia operations when the subset names are different:

APPLY SUBSET (PARENT)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

OVERRIDE SUBSET

RENAME SUBSET

UPLOAD SUBSET

**PACKAGING**

Runs concurrently with these encyclopedia operations:

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

**RENAME MODEL**

Does not work concurrently with other encyclopedia operations.

**RENAME SUBSET**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

ADOPTION (DST)

CODEGEN

CONVERSION

COPY MODEL (SRC)

GENDELTA SUBSET (CHILD)

MIGRATION (DST)

MIGRATION (SRC)

OBJECT DELETE

OBJECT RENAME

PACKAGING

REPORTS

Runs concurrently with these encyclopedia operations when the subset names are different:

APPLY SUBSET (PARENT)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

OVERRIDE SUBSET

RENAME SUBSET

UPLOAD SUBSET

**REPORTS**

Runs concurrently with these encyclopedia operations:

ADOPTION (SRC)

COPY MODEL (SRC)

COPY SUBSET

CRE MDL FROM SUBSET (SRC)

DELETE SUBSET

DOWNLOAD SUBSET

EXTRACT SUBSET (PARENT)

MIGRATION (SRC)

OVERRIDE SUBSET

RENAME SUBSET

REPORTS

**UPLOAD NEW MODEL**

Does not work concurrently with other encyclopedia operations.

**UPLOAD SUBSET**

Runs concurrently with these encyclopedia operations when the subset names are different:

APPLY SUBSET (PARENT)

COPY SUBSET

DELETE SUBSET

OVERRIDE SUBSET

RENAME SUBSET

UPLOAD SUBSET

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