

# EDMControl Administrator Guide

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## Glossary



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# Preface

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*EDMControl Administrator Guide* provides the tools and method to supplement concurrent design engineering practices. The role of the project administrator is paramount in defining, installing, setting up, editing, and modifying the RDBMS tables and links to other environments that are backbone of this Change Management software.

## Your Comments

We welcome your suggestions and comments about this or any other documentation. Send your comments in e-mail to [doc\\_webhelp@ptc.com](mailto:doc_webhelp@ptc.com)

## Online User Documentation

Online documentation is provided in HTML. PostScript files of each book in the online collection are also provided. You can print the PostScript files for hard copy books. The documentation media contains the PostScript files.

## Related Documents

The following documents may be helpful as you use *EDMControl Administrator Guide* :

- *Understanding EDMInformation*
- *Understanding EDMControl*
- *EDMInformation Administrator Guide*
- *EDMInformation User Guide and Menu Reference*
- *EDMControl User Guide and Menu Reference*

## Book Conventions

The following table illustrates and explains conventions used in writing about CADDs applications.

Use of the Convention	Examples	Explanation
Menu selections and options	List Section option, Specify Layer field, File menu	Indicates a selection you must make from a menu or property sheet or a text field that you must fill in.
User-selected graphic location	X, d <sub>1</sub> or P1	Marks a location or entity selection in graphic examples.
User input in CADDs text fields and on any command line	<code>cvaec.hd.data.param</code> <code>tar -xvf /dev/rst0</code>	Enter the text in a CADDs text field or on any command line.
System output	<code>Binary transfer complete.</code>	Indicates system responses in the CADDs text window or on any command line.
Variable in user input	<code>tar -cvf /dev/rst0 filename</code>	Replace the variable with an appropriate substitute; for example, replace filename with an actual file name.
Variable in text	<code>tagname</code>	Indicates a variable that requires an appropriate substitute when used in a real operation; for example, replace <code>tagname</code> with an actual tag name.
CADDs commands and modifiers	<code>INSERT LINE TANTO</code>	Shows CADDs commands and modifiers as they appear in the command line interface.
Text string	<code>"SRFGROUPA"</code> or <code>'SRFGROUPA'</code>	Shows text strings. You must enclose text string with single or double quotation marks.
Integer	<code>n</code>	Supply an integer for the <i>n</i> .
Real number	<code>x</code>	Supply a real number for the <i>x</i> .
#	<code># mkdir /cdrom</code>	Indicates the root (superuser) prompt on command lines.
%	<code>% rlogin remote_system_name -l root</code>	Indicates the C shell prompt on command lines.
\$	<code>\$ rlogin remote_system_name -l root</code>	Indicates the Bourne shell prompt on command lines.

# Administering EDMControl

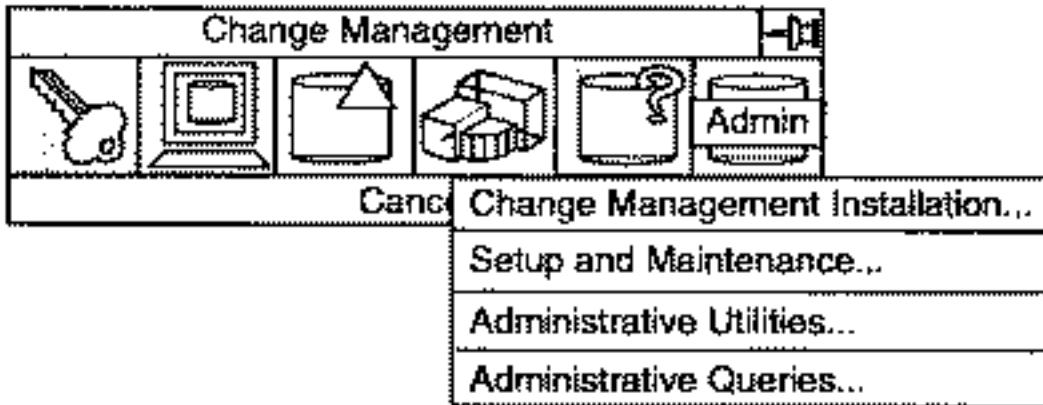
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This chapter describes the following:

- Introduction
- Overview of Change Management Administration
- Installing Change Management
- Setting Up the Project
- Maintaining the Project

# Introduction

The Project Administrator for EDMControl is responsible for the installation, set up, and maintenance of the tables that contain the project data.



The Project Administrator must also interact with the Oracle, EDM, and EDMinformation Administrators. This chapter explains the responsibilities and duties of the EDMControl Project Administrator.

# Overview of Change Management Administration

Change Management, in conjunction with Attribute Management, Engineering Data Management, and Engineering Data Management Query, tracks any and all changes to a model being designed in a concurrent engineering environment.

## Change Management's Role

It is the responsibility of Change Management to keep track of all changes, graphical and non-graphical, that are made to, or within, a project.

It is the task of all the Administrators to see that the required files, tables, links, definitions, permissions, etc., are installed, set up, and maintained so that Change Management can access the required data.

## Administrators Involved with Change Management

There are four administrative management positions involved with Change Management. Whether these positions are filled by one, two, three, or four individuals is unimportant. The size of the project, its complexity, and its budget determine the number of persons involved.

The individuality of the four positions is important. The four administrative positions involved with Change Management are:

- Attribute Management Administration (EDMInformation)
- Change Management Project Administration (EDMControl)
- Engineering Data Management Administration (EDM)
- RDBMS Administration (Oracle)

### Attribute Management Administration (EDMInformation)

It is the responsibility of the Attribute Management Administrator to install, setup, and maintain the EDMInformation software, the RDBMS tables (including the work tables), and the DBMS networking.

Change Management shares many RDBMS tables with Attribute Management. It is necessary that EDMInformation be installed before EDMControl can be installed.

## Engineering Data Management Administration (EDM)

It is the responsibility of the Engineering Data Management Administrator to install, setup, and maintain the EDMVault data storage and the EDMIQF query facilities.

The Administrator also has responsibility to see that the proper security measures are coordinated with the Change Management Administrator. Drafters and designers must be able to access EDM for versions of their work. Such access must be identified with the proper privileges.

It is necessary that EDM be installed before EDMControl can be installed and set up.

## RDBMS Administration (Oracle)

It is the responsibility of the RDBMS Administrator (Oracle) to install, set up, and maintain the Oracle software and tables. Oracle must be up and running before EDMInformation and EDMControl can be installed.

The necessary IDs and passwords must be established so that the software can interact with each other.

## Change Management Administrator (EDMControl)

It is the responsibility of the EDMControl Project Administrator to install, setup, and maintain the EDMControl Demonstration and the project tables.

The Administrator must interact with the other Administrators to see that all the data is shared as required, that the available data is timely and accurate, and that the IDs and Passwords are complete and up-to-date.



# Installing Change Management

As the Project Administrator, you must perform these tasks to install EDMControl (Change Management).

## Preinstallation

Prepare for installation as follows:

- Review the installation instructions in Chapter 3, “Installing EDMControl.”
- Review the setup instructions in Chapter 4, “Project Setup and Maintenance.”
- See the *Read Me First Notes* for any last minute instructions.
- Verify that Oracle is up and running.
- Verify that EDMVault is up and running.
- Verify that EDMIQF Views is up and running.
- Verify that EDMinformation is up and running.

## Installation

When you are satisfied that all of the preinstallation requirements have been met, do the following:

- Select Change Management Installation... from the Change Management command palette.
- Select Install EDMControl Demonstration and proceed as explained in Chapter 3, “Installing EDMControl.”
- Verify that the project tables have been installed by the Demonstration.
- Alternatively, select Install Project Tables... on the property sheet and proceed as explained in Chapter 4, “Project Setup and Maintenance.”

## Setup

When these tables (explained on the following pages) have been installed, set them up as explained in Chapter 4, “Project Setup and Maintenance:”

- Operational parameters
- User groups
- The project (also see Appendix A, “Installing the Project Tables”)
- Offsets

- Object Construction Rules (also see Appendix B, “Defining New Object Construction Rules”)
- Disciplines
- Access privileges

## Setting Up the Project

Select the Setup and Maintenance... option from the Change Management menu. In turn, select the following options on the property sheet; enter and apply the information (see Chapter 4, “Project Setup and Maintenance”).

### Operational Parameters

Operational parameters are scripts that you, as Project Administrator, create. Their purpose is to simplify and speed up certain basic, often repetitive, procedures. Examples of such suggested procedures are

- What action is to occur when a part is filed: file the part in the explicit modeling database, post relevant data to the project database, notify other users in the group that data has been posted.
- What occurs when an existing part is activated: the part is retrieved from the explicit modeling database, the part is verified, the latest data is retrieved from the project database.
- What do you want to have occur when a part is quit?
- Create a CVMAC that will overnight Pack and Sort the Database.
- Create a CVMAC that will enable the crontab to each night delete the /tmp files and retrieve the latest data from the project database in the morning.

### User Groups

You must decide which authorized users are concurrently working on the same design and model. Group them in order to reduce the amount of data on the disk. Periodically review the membership and delete users no longer involved with that design, or add new users. You can also add or delete entire groups.

### Project Setup

The project must be defined in the project tables. Select this option and describe the project. The tables required for installation of the project are described in Appendix A, “Installing the Project Tables.”

### Offsets

Offsets must be established from the point of origin of the project to the point of origin of each zone within the project. These offsets must be recorded in the offsets table.

Use this property sheet to describe what the offset is for, and its graphical location within the project.

For a discussion about offsets see *Understanding EDMControl*

## Object Construction Rules

Each time that any change, graphical or nongraphical, occurs in a model, the change is reflected in the object; changing the model modifies the object, adding to the model creates a new object. This object is posted to the project database and to the EDMVault in the form of a snapshot (version).

The Object Construction Rules establish a hierarchy of rules, whereby EDMControl recognizes any change that occurs.

You, as Project Administrator, can tailor the rules to meet the needs of your particular user groups. For information about the Object Construction Rules, see Appendix B, “Defining New Object Construction Rules.”

## Disciplines

Disciplines are the top-level means of classifying design information used by EDMControl. Typical disciplines are architecture; piping; heating, ventilating, structural, etc.

Disciplines are associated with rules, and as Project Administrator you establish the

- Priority order in which the disciplines take precedence
- Rule with which the discipline is associated
- Type of object with which the discipline is associated

## User Privileges

EDMControl gives every member of a design team the opportunity to see the latest changes that have been made, regardless of who made them.

However, security requires that only the owner(s) in each discipline/zone category should be able to make additional changes.

You, as Project Administrator, assign `Read` or `Write` privileges for as many discipline/zone combinations as are needed to the members of the design team.

You identify members by their IDs and specify the discipline, the zone, and the type of access they may have.

# Maintaining the Project

A project is a dynamic operation, and users, user groups, discipline/zone associations, among others, are subject to change.

You, as Project Administrator, must reflect changes as promptly as possible, both to conserve disk space and to enable users to begin or continue modeling without interruption.

## Project Maintenance

For this reason, the same property sheet which you use to set up a project is used to make changes.

A valid Database Administrator's User ID and Password must be entered before any options can be selected.

When the authorization of the DBA has been verified by the system, the following options become available:

- Creating, modifying, or deleting operational parameters
- Creating, modifying, or deleting user groups
- Creating, modifying, deleting, or copying the project
- Creating, modifying, or deleting offsets
- Creating, modifying, or deleting the Object Construction Rules
- Creating, modifying, or deleting disciplines tables
- Creating, modifying, or deleting Discipline/Rule associations
- Granting, modifying, or revoking user privileges

For more information, see Chapter 4, “Project Setup and Maintenance.”

# Administrative Options

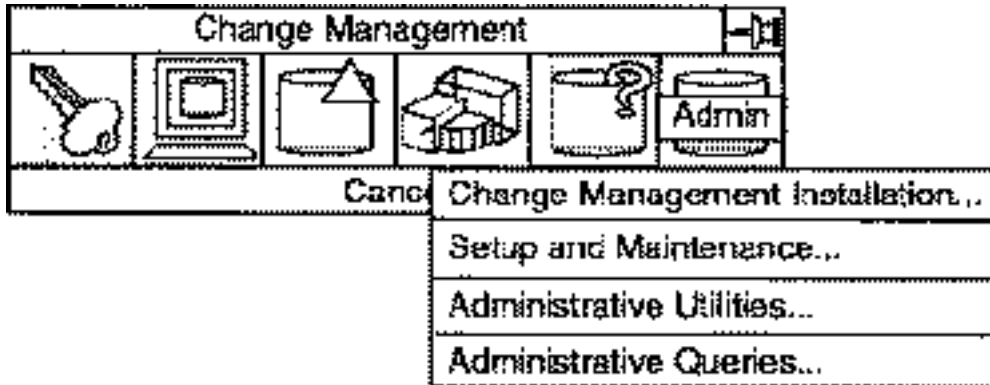
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This chapter describes the following:

- Introduction
- Accessing EDMControl Options
- Administrative options
- EDMControl Property Sheets

# Introduction

The selections listed under the Administration option are restricted for use by the System Manager or Project Administrator, or to a delegated alternate.



The creation of Oracle RDBMS tables is not described in this documentation. The use of those tables is for information about Oracle table creation and to see the appropriate Oracle documentation.



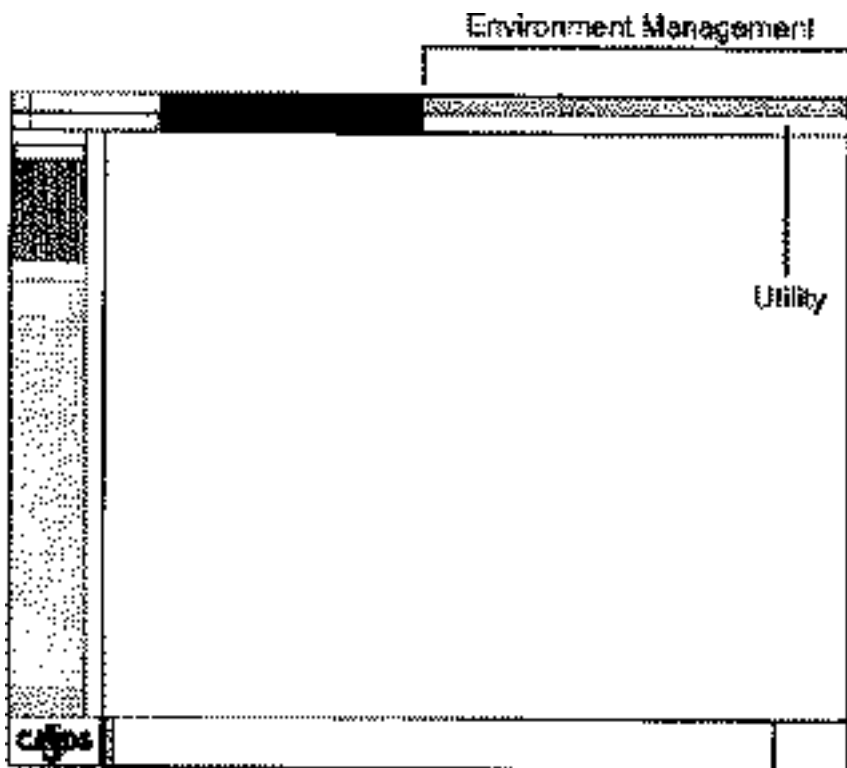
# Accessing EDMControl Options

## Description

EDMControl options are available from the Utility Environment Management pulldown menu located on the top bar of all Explicit environments.

## Getting to the Administration Option

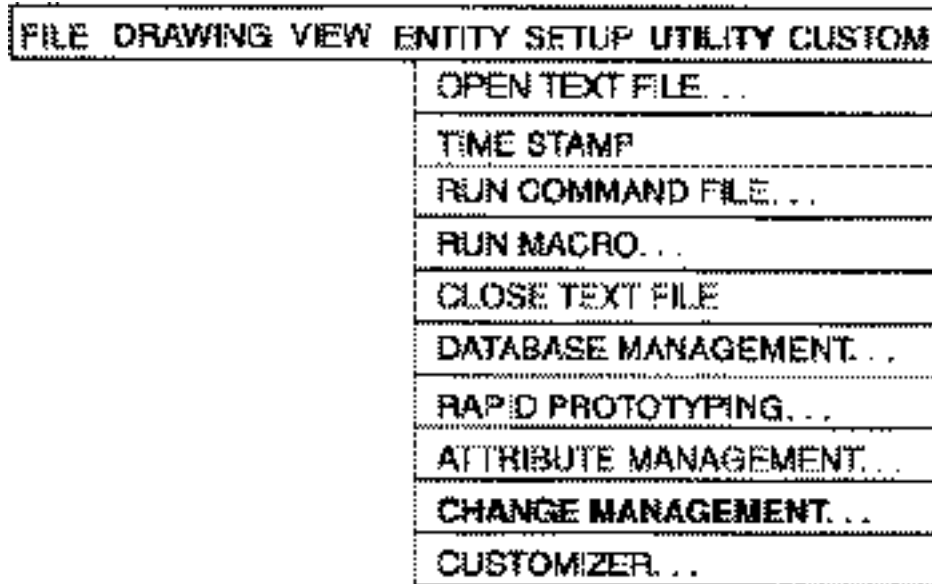
1. Select Utility on the Environment Management menu area.



The Utility pulldown menu is displayed.

2. Select CHANGE MANAGEMENT on the Utility pulldown menu.

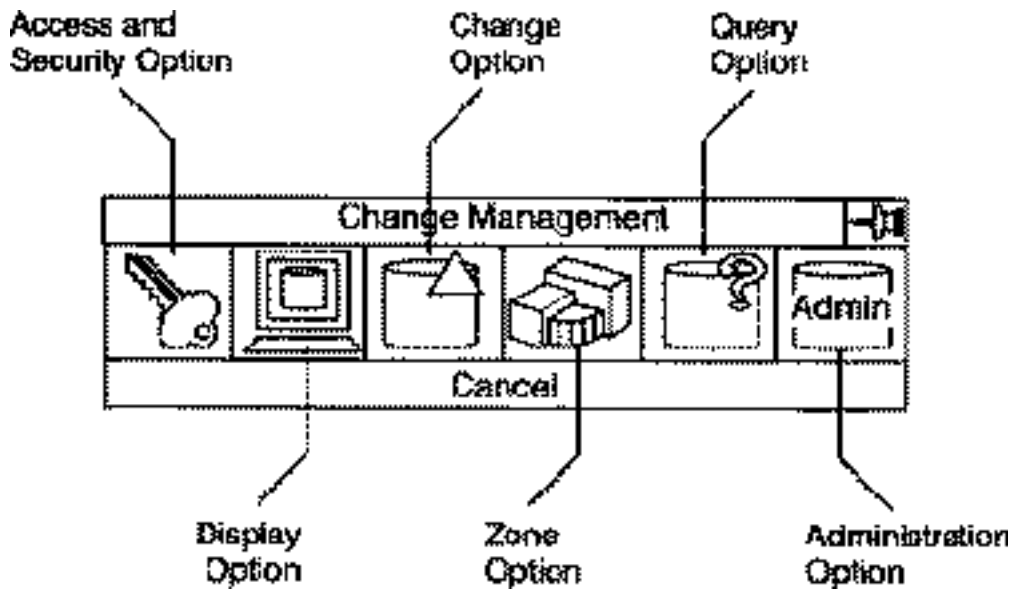
## Utility Pulldown Menu



The Change Management command palette is displayed.

## Change Management Command Palette

All EDMControl options are accessible from the Change Management command palette.



All options are logically grouped together into the following areas:

- Access and Security
- Display
- Change
- Zones
- Queries
- Administration

## Administration Option

The Administration option available from the Change Management command palette is briefly described below. See the following chapters for a more detailed description of the option.

This option is always available. Change Management provides built-in checks for the necessary security and privileges.

The Administration option provides access to these functions:

- Change Management Installation
- Setup and Maintenance
- Administrative Utilities
- Administrative Queries

# Administrative options

Making this selection displays a list of administrative options. Each option displays an appropriate property sheet.

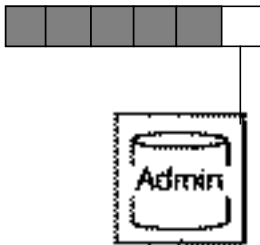
## Description

Administrative options are not usually accessible to the end user. They are the utilities used by the System Administrator and/or Project Manager for

- Installation of the EDMControl tables and links
- Setting up and maintaining project data
- Marking, moving, and removing snapshot files
- Administrative queries

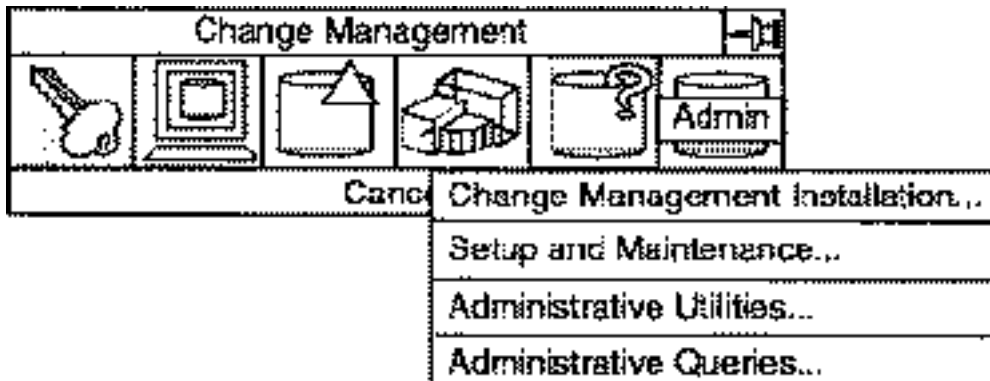
Please note: The Administration option is primarily for the use of the management and administrative team, or its authorized, representatives, and not for the use of the design team end user.

## Getting to the Administration Option



1. Select Utility on the Environment Management menu.
2. Select CHANGE MANAGEMENT on the Utility menu.
3. Select the Administration Option on the Change Management command palette.

The following figure shows the options associated with the Administration icon. The options on this menu are described on the following pages. The property sheets associated with the options are discussed in the following chapters.



## Options on the Change Management Command Palette

Selecting the Change Management option displays the menu illustrated under section “Getting to the Administration Option” on page 2-6.

### Change Management Installation

This option is chosen by a person with administrative authority to display property sheets that assist in installing

- EDMControl project database tables
- EDMControl user tables
- EDMControl demonstration
- EDM IQF views

The option is only available if EDMControl has not been previously installed.

### Setup and Maintenance

This option is chosen by a person with administrative authority to display property sheets that assist in creating, editing, and deleting

- Operational parameters
- Copies of a project
- User groups
- Offsets
- Object construction rules
- Disciplines
- Discipline-rule associations

This option is also used to assist in granting, modifying, and revoking user privileges.

### Administrative Utilities

This option is chosen by a person with administrative authority to display property sheets that assist in

- Resetting a part that is linked to the project database

- Marking obsolete snapshots for deletion in EDM
- Marking obsolete snapshots for archiving in EDM
- Purging obsolete snapshots from EDM
- Unlocking an Explicit Modeling part that is under review

## Administrative Queries

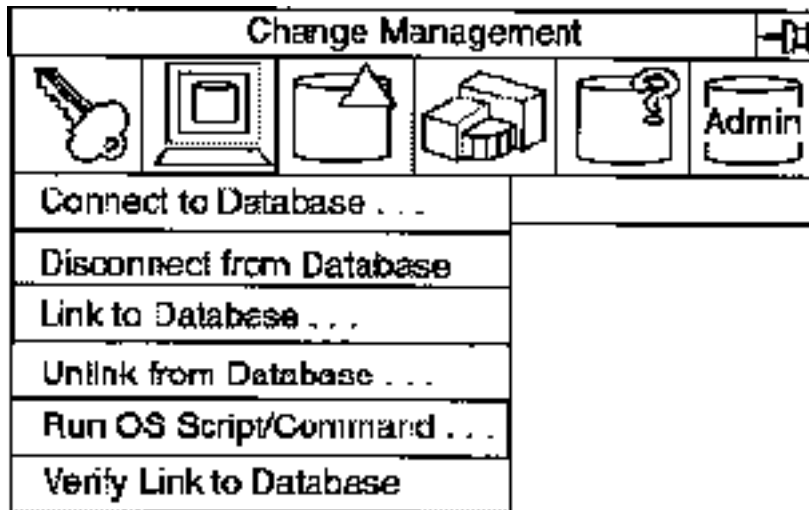
This option is chosen by a person with administrative authority to display property sheets that assist in queries related to

- All objects
- Current objects
- Discipline rules
- Disciplines
- Entity sets
- Layer sets
- Links
- Log
- Object geometry
- Object rules
- Offsets
- Privileges
- Viewed parts
- Zone sets
- Zone vertices
- Zones

For more information about these options, see the following chapters.

## EDMControl Property Sheets

When you select an option from a Change Management menu, the option either performs a direct action or displays a property sheet. For example, the Access and Security menu is shown in the following figure..



The menu options followed by three dots display a property sheet when selected. The menu options that are not followed by three dots perform a direct action when selected.

### Editor Button

Change Management property sheets have a unique feature called the Editor button. (Basic information about using CADD5 5 property sheets can be found in the *Explicit Modeling User Guide*.)

Some fields on property sheets display scrolling lists of valid selections for that field. To access such a list, an Editor button is provided next to the field.

For example, the following is a field on a property sheet:

User:

Select the empty field to type in a user name.

Select the Editor button (with the three dots) to display a scrolling list of valid users. When you select a user name on the list, it is automatically displayed in the field to the left of the Editor button.



# Installing EDMControl

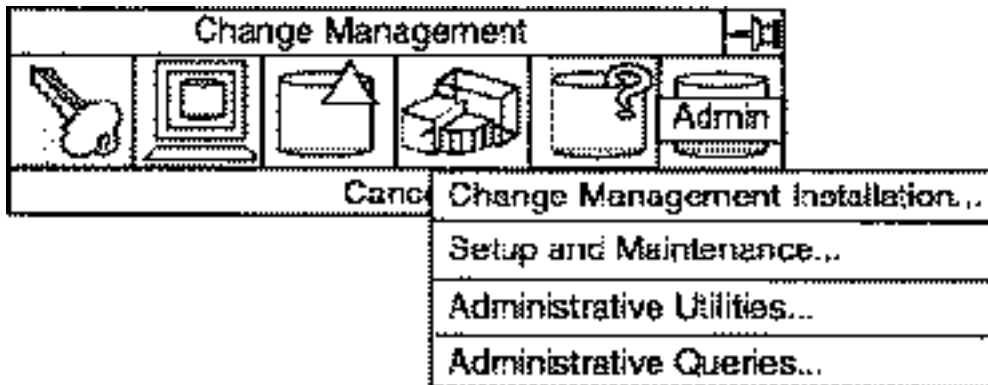
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This chapter describes the following:

- Introduction
- Installing EDMControl
- Installing Project Demonstration
- Installing the Project Tables
- Installing EDMViews
- Installing Change Management Views

## Introduction

It is necessary for the Project Administrator to install the Change Management files before setting up the project. This chapter explains the installation procedure, using the graphical user interface.



It is understood that

- Oracle must have been installed and be operational
- EDM can optionally have been installed and be operational
- Attribute Management must have been installed and be operational

# Installing EDMControl

Select the Change Management Installation option after the EDMControl software has been installed on the system and the System Manager and Project Administrator have been assigned their User IDs and Passwords.

## Description

After the EDMControl software has been mounted on your system, it is necessary to install the project tables, and optionally, the EDMControl demonstration, EDMControl to EDM Views, and the EDM to EDMControl Views.

## Getting to the Change Management Installation... Option



1. Select Utility on the Environment Management menu.
2. Select CHANGE MANAGEMENT on the Utility menu.
3. Select the Administration Option on the Change Management command palette.
4. Select Change Management Installation... on the menu.

The Change Management Installation property sheet is displayed.

## Procedure

1. Enter the Attribute Management Database Administrator's ID and password.
2. Enter the EDM Database Administrator's ID and password.
3. Enter the Project Database Administrator's ID and password.
4. Enter the EDM Query Database Administrator's ID and password.

Please note: All four IDs and passwords are required. They are assigned by management and are entered into the RDBMS administrator table. The positions can be filled by one or more persons. Editing of Oracle tables is described in Oracle documentation.

5. Select the task.

The first files to be installed are:

- Install Project Demonstration (Optional)

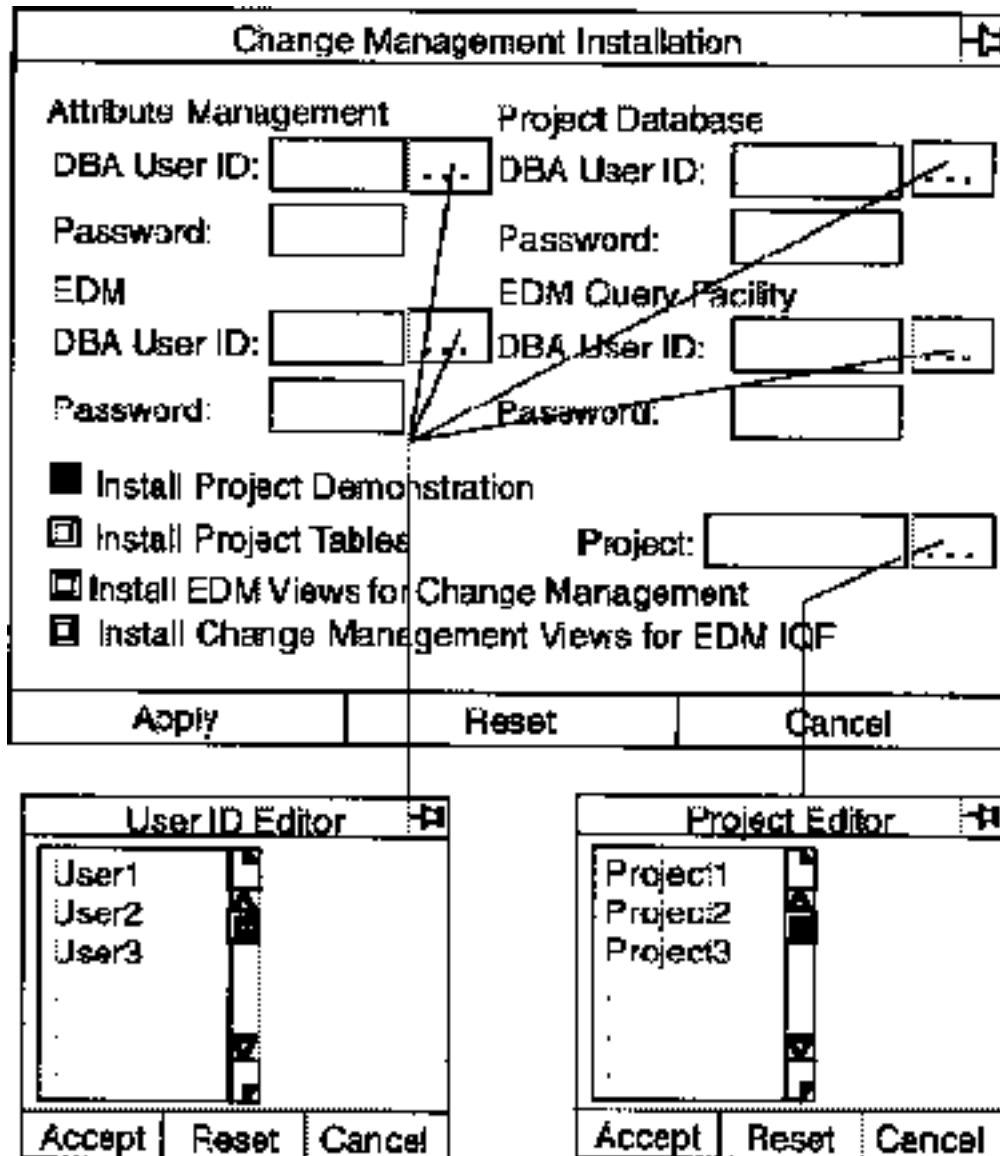
- Install Project Tables (Required)
- Install EDM Views for Change Management (Optional)
- Install Change Management Views for EDM IQF (Optional)

The default selection is Install Project Demonstration.

6. If the selected task is Install Project Tables enter the project name.
7. Press Apply.

The following figure shows the EDMControl Change Management Installation property sheet.

## Change Management Installation Property Sheet



### Options on the Change Management Installation Property Sheet

Selecting the Change Management Installation option displays the property sheet illustrated above.

Attribute Management (EDMInformation): Select the DBA User ID editor button. A scrollable list of authorized Administrator IDs is displayed. Select the correct ID. The ID may be no more than 12 characters long.

Select the Password field and enter your Password. It may be no more than eight characters long.

Project Database: Select the DBA User ID editor button. A scrollable list of authorized Administrator IDs is displayed. Select the correct ID. The ID may be no more than 12 characters long.

Select the Password field and enter your Password. It may be no more than eight characters long.

EDM: Select the DBA User ID editor button. A scrollable list of authorized Administrator IDs is displayed. Select the correct ID. The ID may be no more than 12 characters long.

Select the Password field and enter your Password. It may be no more than eight characters long.

EDM Query Facility: Select the DBA User ID editor button. A scrollable list of authorized Administrator IDs is displayed. Select the correct ID. The ID may be no more than 12 characters long.

Select the Password field and enter your Password. It may be no more than eight characters long.

Install Project Demonstration: This is the default selection. The User ID and Password for both the Attribute Management database administrator and the Project database administrator are required for this installation.

Install Project Tables: The User ID and Password for both the Attribute Management database administrator and the Project database administrator are required for this installation.

A project name must be specified. Select the Project editor button. A scrollable list of authorized projects is displayed. Select one. The project name may not be more than 12 characters long.

Install EDM View for Change Management: The User ID and Password for the following are required for this installation:

- Attribute Management database administrator
- Project database administrator database administrator
- EDM database administrator

Install Change Management Views for EDM IQF: The User ID and Password for the following are required for this installation:

- Attribute Management database administrator
- Project database administrator
- EDM database administrator
- EDM Query Facility database administrator

When you apply your selection, EDMControl will install the correct files.

# Installing Project Demonstration

This option is the default selection. It is the quickest way to get EDMControl installed on the system.

## Description

One of the quickest ways to install EDMControl onto your system is to install the project demonstration first. This is an optional selection. You can proceed directly to the installation of the project tables, if you wish.

## Procedure

1. Select Install Project Demonstration on the Change Management Installation property sheet
2. Press Apply.

### EDMControl

- Identifies dummy user IDs and passwords.
- Defines a project zone.
- Defines work zones within the project zone.
- Defines the zone offsets.
- Defines disciplines for the project.
- Inserts values for the disciplines into the discipline rules table. defines user groups.
- Assigns privileges.

All the elements necessary to identify the unique zone/discipline combinations, identifications, and access privileges are now in place.

The files for the demonstration are located in the following directory:

```
/usr/apl/cadds/data/control/ccdemo/
```



# Installing the Project Tables

Oracle tables are used by the Administrator to logically group the data.

## Description

You can install the EDMControl project tables instead of installing the optional demonstration by selecting the toggle button for this option and specifying the name of a project.

## Procedure

1. Select Install Project Tables on the Change Management Installation property sheet.
2. Enter the project name.
3. Press Apply.

The required RDBMS tables are installed in their proper order. The table on the next page lists and briefly describes the tables.

There are additional CADDInformation tables that are shared by CADDControl.

## Columns on the Tables

For a description of the column heads on the different tables, see Appendix A, “Installing the Project Tables.”

## PTC-Provided Table Entries

PTC provides a number of entries, related to specific Architectural, Engineering, and Construction software, as a default for some of the tables. For a sample of such defaults, see Appendix A, “Installing the Project Tables.”

## Customizing the Tables

For an explanation of how to customize and edit the tables, see *Chapter 4, “Project Setup and Maintenance.”*

The following RDBMS tables are installed for EDMControl.

## RDBMS Tables Used by EDMControl

<b>RDBMS Table</b>	<b>Use of the Table</b>
PI_DISC_RULES_TBL	List of rules associated with disciplines
PI_DISCIPLINE_TBL	List of disciplines
PI_ENTITY_SET_TBL	Entity type combinations for rules
PI_LAYER_SET_TBL	Layer number combinations for rules
PI_LINK_DISC_TBL	Zone/discipline links for each part
PI_LOG_TBL	Transaction log
PI_OBJECT_TBL	List of all the objects in the project
PI_OFFSET_TBL	List of all the project coordinate offsets
PI_PRIV_TBL	User access privileges
PI_RULE_TBL	Object construction rules
PI_VIEW_PART_TBL	List of snapshots viewed for each part
PI_ZONE_SET_TBL	Zone set combinations for queries
PI_ZONE_TBL	List of project zones
PI_ZONE_VERTEX_TBL	List of project zone coordinates for non-rectangular zones

# Installing EDMViews

Select the Install EDM Views for Change Management option so that EDMControl can retrieve data from the EDM Vault.

## Description

In order to retrieve data from the EDM database, you must install and setup synonyms and permissions with EDM.

Among the affected EDM directories are the Data Manager

- File Directory
- Part Directory
- Revision Code
- Status Code
- Review Status
- Part File

## Procedure

1. Select Install EDM Views for Change Management on the Change Management property sheet.
2. Press Apply.

The necessary links are established by EDMControl.

# Installing Change Management Views

Select the Install Change Management Views for EDMIQF option so that EDMControl can post data to the EDM Vault.

## Description

In order to post data to the EDM database, you must install and set up synonyms and permissions with EDM.

Among the affected EDMControl tables are the

- Discipline Table
- Discipline Rules Table
- Entity Set Table
- Layer Set Table
- Link Disciplines Table
- Log Table
- Object Table
- Offset Table
- Privileges Table
- Project Rule Table
- View Part Table
- Zone Set Table
- Zone Table
- Zone Vertex Table
- Current Object View Table

## Procedure

1. Select Install Change Management Views for EDM IQF on the Change Management property sheet.
2. Press Apply.

The necessary links are established by EDMControl.

# Project Setup and Maintenance

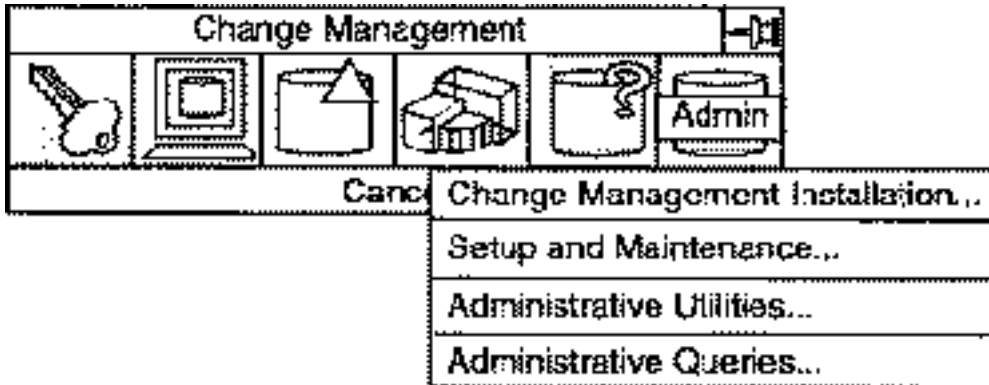
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This chapter describes the property sheets used to set up and maintain the project, and explains your interaction with the property sheets.

- Setting Up Options
- Setting Up and Maintaining a Project (Overview)
- Setting Up Operational Parameters
- Setting Up User Groups
- Setting Up a Project
- Setting Up Offsets
- Setting Up the Object Construction Rules Tables
- Setting Up Disciplines with Rule Associations
- Setting Up User Privileges

## Setting Up Options

Selecting the Change Management option displays the menu illustrated in the following figure.



Once a project has been installed it is necessary to set up options concerning

- Operational parameters
- User groups membership
- Project attributes
- Offsets
- Object Construction Rules
- Discipline tables
- Discipline/Rule associations
- User privileges

## Setting Up and Maintaining a Project (Overview)

Selecting this menu item displays a property sheet on which you can select the function whose options you want to have displayed.

### Description

The Project Setup and Maintenance property sheet helps you to select the particular function you wish to perform and displays the selected option.

A valid Database Administrator's User ID and Password must be entered before any selections can be made.

When the authorization of the DBA has been verified by the system, the following options become available:

- Creating, modifying, or deleting operational parameters
- Creating, modifying, or deleting user groups
- Creating, modifying, deleting, or copying the project
- Creating, modifying, or deleting offsets
- Creating, modifying, or deleting the Object Construction Rules
- Creating, modifying, or deleting disciplines tables
- Creating, modifying, or deleting Discipline/Rule associations
- Granting, modifying, or revoking user privileges

Each of these options is described in the following sections.

### Getting to the Setup and Maintenance... Option



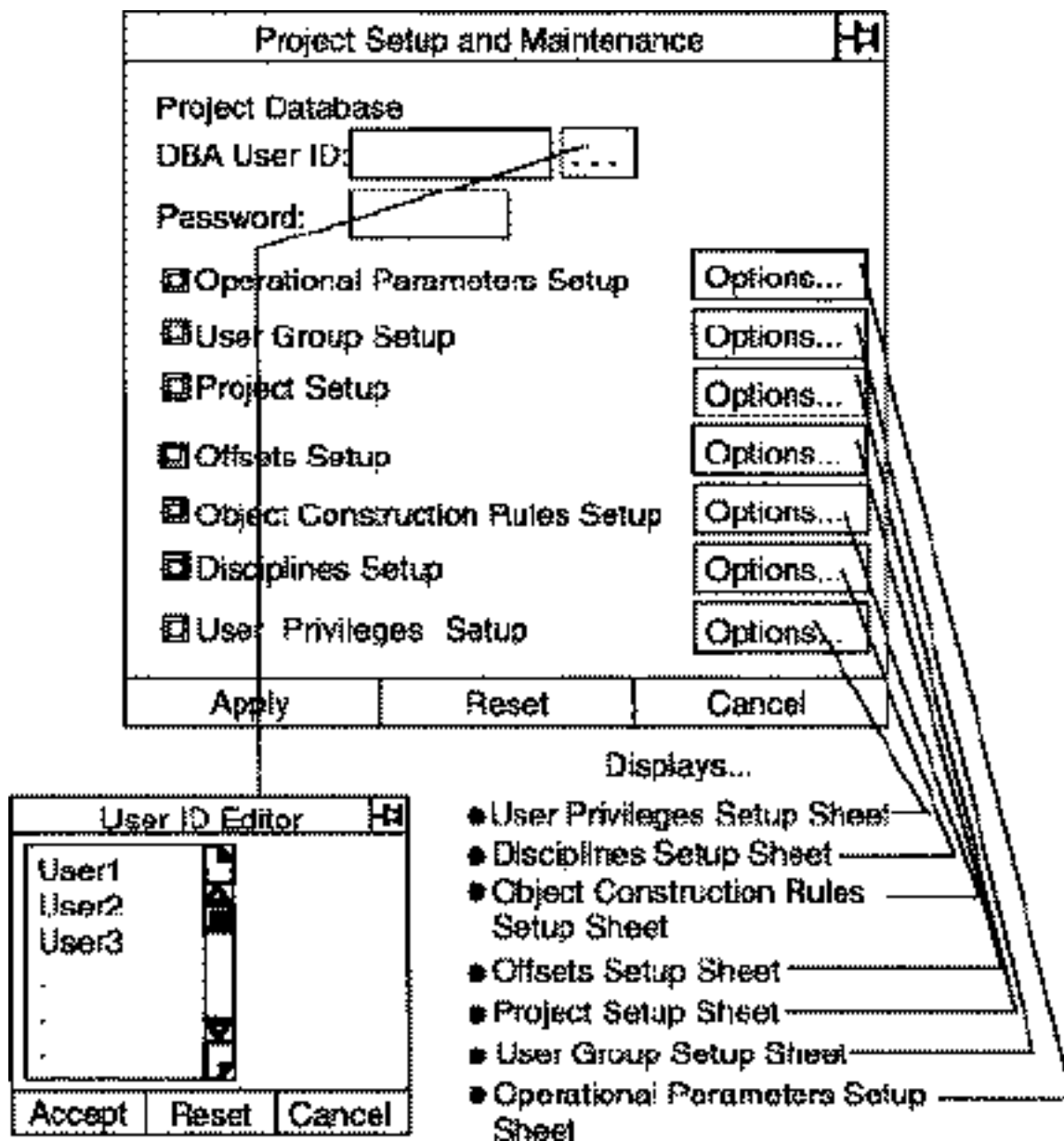
1. Select Utility on the Environment Management menu.
2. Select CHANGE MANAGEMENT on the Utility menu.
3. Select the Administration Option on the Change Management command palette.
4. Select Setup and Maintenance... on the menu.

The Project Setup and Maintenance property sheet is displayed.

## Procedure

1. Enter the DBA User ID.
2. Enter the DBA password.
3. Select the toggle to the left of the option you desire.
4. Select the Options... field to the right of the option.
5. Press Apply.

## Project Setup and Maintenance Property Sheet





## Using the Project Setup and Maintenance Options

Selecting this option, operational parameters are set for the project database.

### Project Database

Select the DBA User ID Editor button and pick your valid ID from a scrollable list that is displayed. Then select Password and enter your password.

Select only one of the options. The appropriate property sheet is then displayed. Enter your selections on the suboption property sheet. When finished, press Accept. Then press Apply on the Project Setup and Maintenance property sheet. The project setup and maintenance options are:

- **Operational Parameters Setup**  
Used to create, modify, and delete EDMControl operational parameters
- **User Group Setup**  
Used to create, change, and delete User groups
- **Project Setup**  
Used to identify, create, modify, and delete a project
- **Offsets Setup**  
Used to establish, modify, and delete offsets
- **Object Construction Rules Setup**  
Used to construct, edit, and delete RDBMS Object Construction Rules tables
- **Disciplines Setup**  
Used to identify, create, edit, and delete disciplines. Also used to create, edit, and delete Discipline/Rule associations
- **User Privilege Setup**  
Used to grant, modify, or remove user privileges.

# Setting Up Operational Parameters

Selecting this option displays a property sheet on which you can create, edit, or delete operational parameters. Operational parameters control the behavior of EDMControl.

## Description

You set operational parameters by creating scripts that control EDMControl behavior. Examples are: Script to run when a part is filed; to be run when a part is quit; when a part is verified.

The Operational Parameters Setup Options property sheet helps you to select existing parameters and edit or delete them. It also helps you to create new parameters and insert them into the tables.

## Operational Parameters Setup Options Sheet

The main dialog box, titled "Operational Parameters Setup Options", contains the following fields and controls:

- Parameter ID: [Text Field] ...
- Value: [Text Field]
- Description: [Text Field]
- User ID: [Text Field] ...
- Buttons: Previous, Next, Update, Insert, Delete, Clear
- Footer: Accept, Reset, Cancel

Two smaller dialog boxes are shown below, connected by lines to the main dialog:

- User ID Editor:** A scrollable list containing "User1", "User2", "User3", and three empty entries. It has "Accept", "Reset", and "Cancel" buttons at the bottom.
- Parameter ID Editor:** A scrollable list containing "Parameter1", "Parameter2", and "Parameter3". It has "Accept", "Reset", and "Cancel" buttons at the bottom.

### Using the Options on the Operational Parameters Setup Options Property Sheet

Selecting the Operational Parameters Setup option displays the property sheet illustrated above.

Parameter ID: Enter the ID or select the Parameter ID Editor button and a scrollable list of valid IDs is displayed. Select the one you want to edit or delete.

When you have finished editing the value or description press Update. If you want to delete the value or description press Delete.

To create one, enter a value into the Value field. Enter a description into the Description field. Enter an ID into the Parameter ID field. The ID may not be more than 12 characters long. When you have finished press Insert.

**Value:** The value associated with the Parameter ID is displayed in this field. You may edit it if you are modifying the parameter. You can type a value into the field if you are creating a new one. A value may not be more than 40 characters long.

**Description:** The description of the Parameter is displayed in this field. You may edit it if you are modifying the parameter. You can type a description into the field if you are creating a new one. A description may not be more than 50 characters long.

**User ID:** Enter the ID or select the User ID Editor button and a scrollable list of valid Users is displayed. Select the one you are authorized to use.

### Example of an Entry on the Operational Parameters Setup Sheet

A Parameter ID is 'CI-CC'. It's value is either 'yes' or 'no'. The description would be "Environmental variable CADDSENABCC".

When you have completed your entries, press Accept.

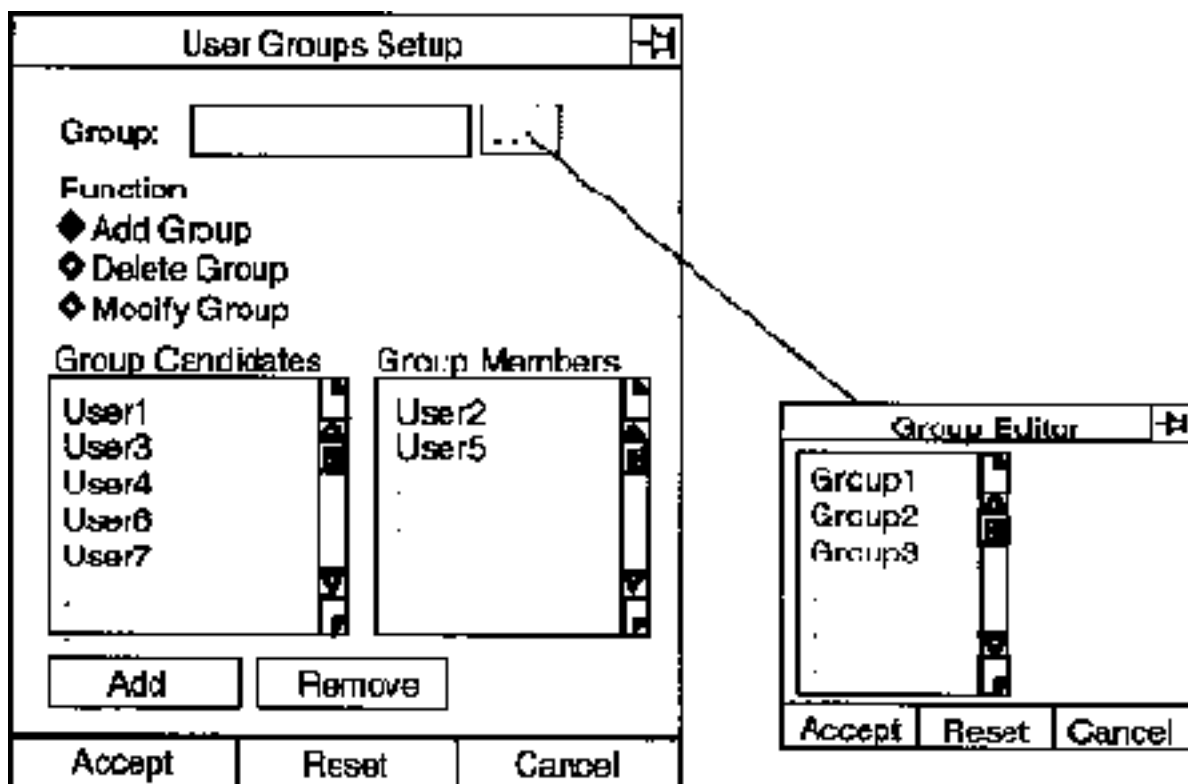
## Setting Up User Groups

Select the User Groups Setup option to make adjustments in the membership of the various groups that share EDMControl concurrent engineering information.

### Description

You can create new groups, delete groups, or change the membership within a group using this option. The membership of a group should reflect the current work assignment of each member.

### User Groups Setup Property Sheet



### Using the Options on the User Groups Setup Property Sheet

Selecting the User Groups Setup option displays the property sheet illustrated above.

**Group:** Select the Group Editor button and a scrollable list of existing group names is displayed. Select the one you want to change. To create a new group, type the new name into the field. The name may not be more than 12 characters long.

**Function:** Select the button next to the function you want to perform: Add, Delete, or Modify. The default is to add a new group.

If you are deleting the group, press Accept now.

If you are adding a new group, a scrollable list of valid users is displayed. Select the names that are to be in the new group, then press Accept.

If you are modifying an existing group, a scrollable list of valid users and another list of the current group members of the named group are displayed.

From the Users list select the names of those to be added to the group and press Add.

From the Group Members list select the names of those to be removed and press Remove.

When you have completed your edits, press Accept.

## Setting Up a Project

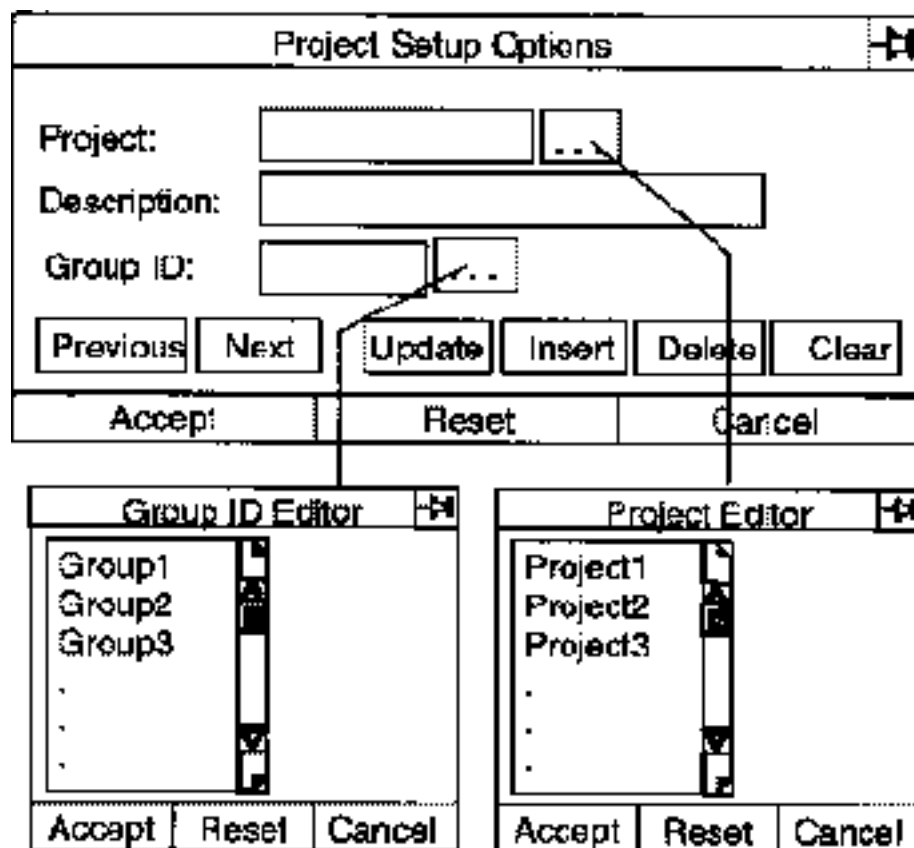
Select the Project Setup option to set up a new project, modify an existing project, or delete a project.

### Description

Using this option, as a Database Administrator you can

- Define a new project
- Edit the description of an existing project
- Delete an existing project.

### Project Setup Options Property Sheet



## Using the Options on the Project Setup Options Property Sheet

**Project Name:** Select the Project Editor button to display a scrollable list of existing projects. Select one, if you are modifying or deleting. Type a name into the field if you are defining a new one. The name may not be more than 24 characters long.

**Description:** The project description appears in this window. You may edit the description. If it is a new project, type in the description. The description may not be more than 50 characters long.

**Group ID:** Selecting the Group ID Editor button to display a scrollable list of groups authorized for the named project. Select the one you are associating with the project, or type in the name of a newly defined group. The name may not be more than 12 characters long.

When you have completed your edits, select

- Update if you are modifying an existing project
- Insert if you are defining a new project
- Delete if you are deleting a project

Then press Accept.

**Please note:** Chapter 3 discussed installing a project and identified the RDBMS tables that must be set up for a project. More information about the contents of the tables can be found in Appendix A, “Installing the Project Tables.”



## Setting Up Offsets

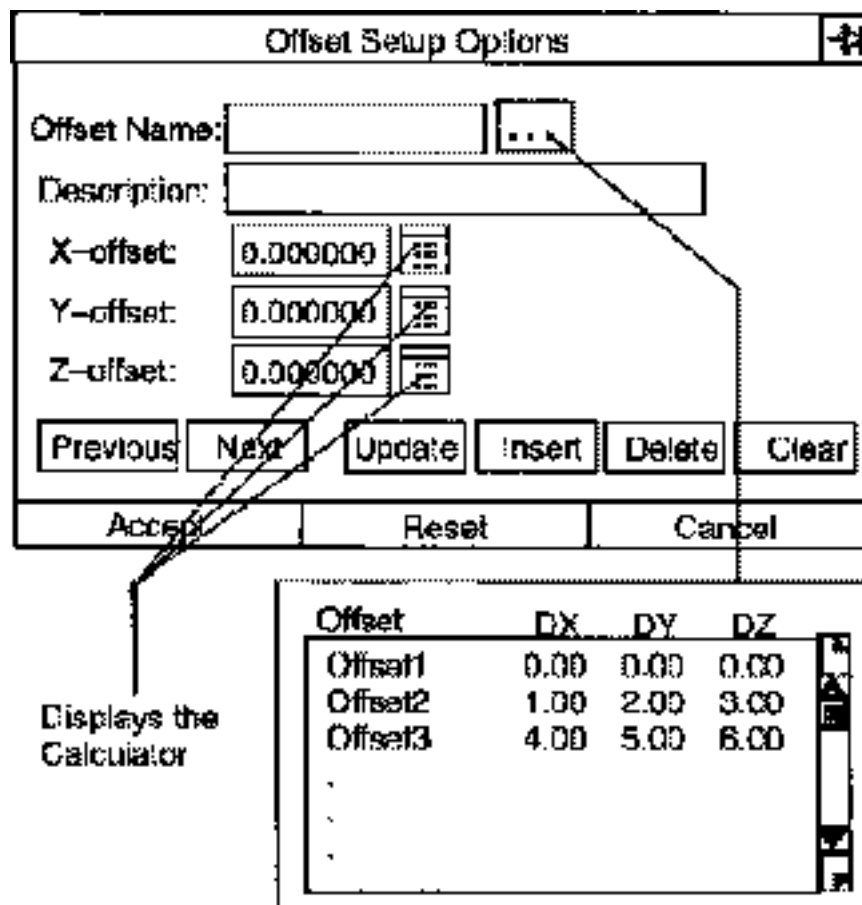
Select the Offset Setup option to define new offsets, or modify or delete Offsets Setup existing offsets.

### Description

Using this option you can establish new offsets from the project point of origin; edit or delete existing ones.

For information about offsets see *Understanding EDMControl* and *EDMControl User Guide and Menu Reference*.

### Offset Setup Options Property Sheet



## Using the Options on the Offsets Setup Options Property Sheet

Selecting the Offset Setup option displays the property sheet illustrated above.

**Offset Name:** Selecting the Offset Name Editor button to display a scrollable list of offsets. The offsets are named and their -X, -Y, -Z orientation are identified. Select one, if you intend to modify or delete it.

If you are creating a new offset definition, type the name into the Offset Name field. The name may not be more than 24 characters long.

**Description:** A description of the named offset is displayed in this field. You can edit the description if you are modifying an existing offset, or type in the description of a new offset.

If you are creating a new offset definition, type a description of the offset into the field. The description may not be more than 50 characters long.

**X-offset, Y-offset, Z-offset:** If you are creating a new offset definition, select the calculator button next to the X-offset, Y-offset, and Z-offset fields and enter the graphical offset values. You may not select the Offset Name Editor button, and enter values into the -X, -Y, and -Z fields together.

When you have completed your edits, select

- Update if you are modifying an existing project
- Insert if you are defining a new project
- Delete if you are deleting a project

Then press Accept.

# Setting Up the Object Construction Rules Tables

Select the Object Construction Rules Setup option to enter data into the RDBMS up tables to specify the rules for object construction.

## Description

The RDBMS tables contain the graphical and nongraphical data required to construct objects from entities. This property sheet provides the vehicle for entering data into the tables.

## How is an Object Defined?

An object is an entity or a group of related entities which usually represent a physical object such as an HVAC duct, a pipeline fitting, a pump, a wall, etc. One of the entities in the object is designated as the object parent entity while the other entities are called the children entities (think of the object as a family of entities).

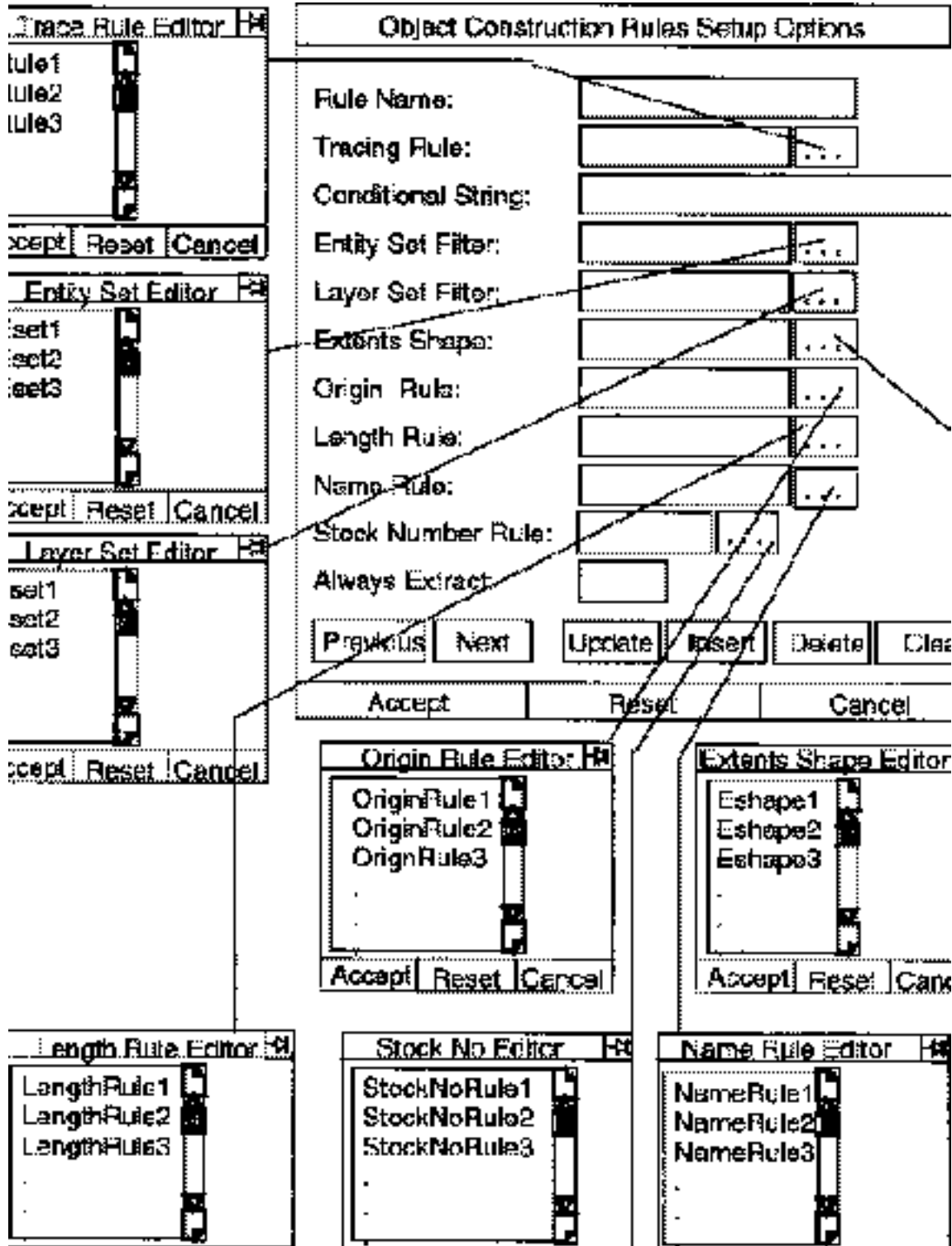
If an object has only one entity, that entity is the parent entity and there are no children entities. If an object contains more than one entity, the parent is an entity which plays an important role in the object's definition, such as the top level nodal figure or solid entity

In some cases, the selection of the parent entity is less well defined, but there always will be a parent entity. The Export List UID of the parent entity is stored in the PROJECT\_OBJECT\_TBL and serves to link the explicit modeling object data to the Oracle object data.

For a complete description of the Object Construction Rules and an explanation of how new rules are defined, see Appendix B, "Defining New Object Construction Rules."

## Object Construction Rules Setup Options Property Sheet

This property sheet is displayed on the next page.



## Using the Options on the Objects Construction Rule Setup Options Property Sheet

Selecting the Object Construction Rules Setup option displays the property sheet illustrated above.

**Rule Name:** The name referenced in the Project Discipline Rules Table and the Project Rule Table. The name may not be more than 24 characters long.

**Tracing Rule:** The Tracing Rule is a rule used for finding all the model entities in a database structure. Select the Tracing Rule Editor button and a scrollable list of search rules is displayed. Select one to enter into the field. The rule name may not be more than 24 characters long.

**Conditional String:** The Conditional String emulates the CADD5 MARK ENTITY CONDITION command. The string marks or unmarks each entity that fulfills a logical condition relating to the properties of the object. For more information, see the online documentation for MARK ENTITY CONDITION. The string may be no more than 240 characters long, scrolling.

**Entity Set Filter:** Select the Entity Set Filter Editor button and a scrollable list of entities defined in the Project Entity Set Table is displayed. These are sets of all the entities that may be included in an object. Select one to enter into the field. The name may be no more than 24 characters long.

**Layer Set Filter:** Select the Layer Set Filter Editor button and a scrollable list of layer sets defined in the Project Layer Set Table is displayed. These are sets of all the layers on which object entities may lie. Select one to enter into the field. The name may be no more than 24 characters long.

**Extents Shape:** Select the Extents Shape Editor button and a scrollable list of supported shapes, which are the geometric extents of all the entities in the object to be constructed, is displayed. Select one to enter into the field. The name may be no more than 24 characters long.

**Origin Rule:** Select the Origin Rule Editor button and a scrollable list of supported origins is displayed. Select one to enter into the field. The name may be no more than 24 characters long.

**Length Rule:** Select the Length Rule Editor button and a scrollable list of supported, meaningful, object lengths is displayed. Select one to enter into the field. The name may be no more than 24 characters long.

Name Rule: Select the Name Rule Editor button and a scrollable list of supported object names is displayed. Select one to enter into the field. The name may be no more than 24 characters long.

Stock Number Rule: Select the Stock Number Rule Editor button and a scrollable list of valid stock numbers is displayed. Select one to enter into the field. The stock number may be no more than ten characters long.

Always Extract: Enter a Y (yes) and objects are constructed every time that data is posted to the database, whether changed or not.

Enter a N (no) and only objects with changed entities are constructed.

The only valid entries are Y or N.

The recommended choice is N.

Constructing the Object: When you have completed your edits, select

- Update if you are modifying an existing object
- Insert if you are defining a new object
- Delete if you are deleting a object

Then press Accept.

For more information about Construction Rules, see Appendix B, “Defining New Object Construction Rules.”

# Setting Up Disciplines with Rule Associations

Select this option to enter information into the RDBMS tables to specify disciplines and the rules/discipline relationship that is associated with objects.

## Description

When you identify a new discipline classification, or edit an existing one, you can establish the

- Priority order in which the disciplines take precedence
- Rule with which the discipline is associated
- Type of object with which the discipline is associated

You can also delete a discipline.

## Warning

Verify that deleting a discipline will not adversely affect other rules associations with that discipline.

## Discipline Rules Table Definitions

Disciplines are defined in the Disciplines Rules Table. Typical entries are:

<b>Discipline Name</b>	<b>Rule Priority</b>	<b>Rule Name</b>	<b>Object Type</b>
ARCH-A	1	ARCH-WALL	Architecture Wall
ARCH-X	30	ARCH-JOINT	Architecture Joint
HVAC-A	20	CV-DUCT	Ductline Duct



## Discipline Setup Options Property Sheet

The image shows a software interface for setting up disciplines. The main window is titled "Discipline Setup Options". It contains the following fields and controls:

- Discipline Name:** A text input field with a browse button (...).
- Priority Number:** A text input field.
- Description:** A larger text input field.
- Navigation Buttons:** Previous, Next, Update, Insert, Delete, and Clear.
- Discipline / Rules Table:** A table with columns for Priority, Rule Name, and Object Type. It contains five rows for priority numbers 1 through 5.
- Table Actions:** Editor..., Insert Entry, and Delete Entry buttons.
- Main Action Buttons:** Apply, Reset, and Cancel.

Two smaller windows are shown below, connected to the main window by lines:

- Rule Editor:** A list box containing "Rule1", "Rule2", "Rule3", and three empty entries. It has Accept, Reset, and Cancel buttons.
- Discipline Editor:** A list box containing "Discipline1", "Discipline2", "Discipline3", and three empty entries. It has Accept, Reset, and Cancel buttons.

Using the Discipline Setup Options Property Sheet

Selecting this option displays the property sheet illustrated above.

**Discipline Name:** Select the Discipline Name Editor button and a scrollable list of disciplines, as defined in the Discipline Rules Table, is displayed. Select one if you are editing or deleting a discipline. Type a new name into the field if you are defining a new one. The name may be no more than 24 characters long.

**Priority Number:** The priority number of the selected discipline is displayed, or type in a priority number you assign to a new discipline. The number may be no more than three digits. The smaller the number the higher the priority. A 1 0 priority takes precedence over a 1 00 (within the same discipline).

**Description:** Type in a discipline description if you are defining a new discipline. The description may be no more than 50 characters long.

**Discipline/Rules:** Use this table to associate a discipline with specific rules. Select the Editor button to make changes to an item. Select the Insert Entry button to clear a line for a new entry.

- **Priority**

Select this list and a scrollable list of priorities of the rules this discipline is associated with in descending order is displayed. The number is no more than three characters long.

- **Rule Name**

Lists the rule names this discipline is associated with, in priority order. A rule name may be no more than 24 characters long.

- **Object Type**

Select this field and a scrollable list of groups of objects made up of entities based on entity and layer sets is displayed. These objects are associated with the discipline by the rule in priority order.

When you have finished your edits, press Apply.

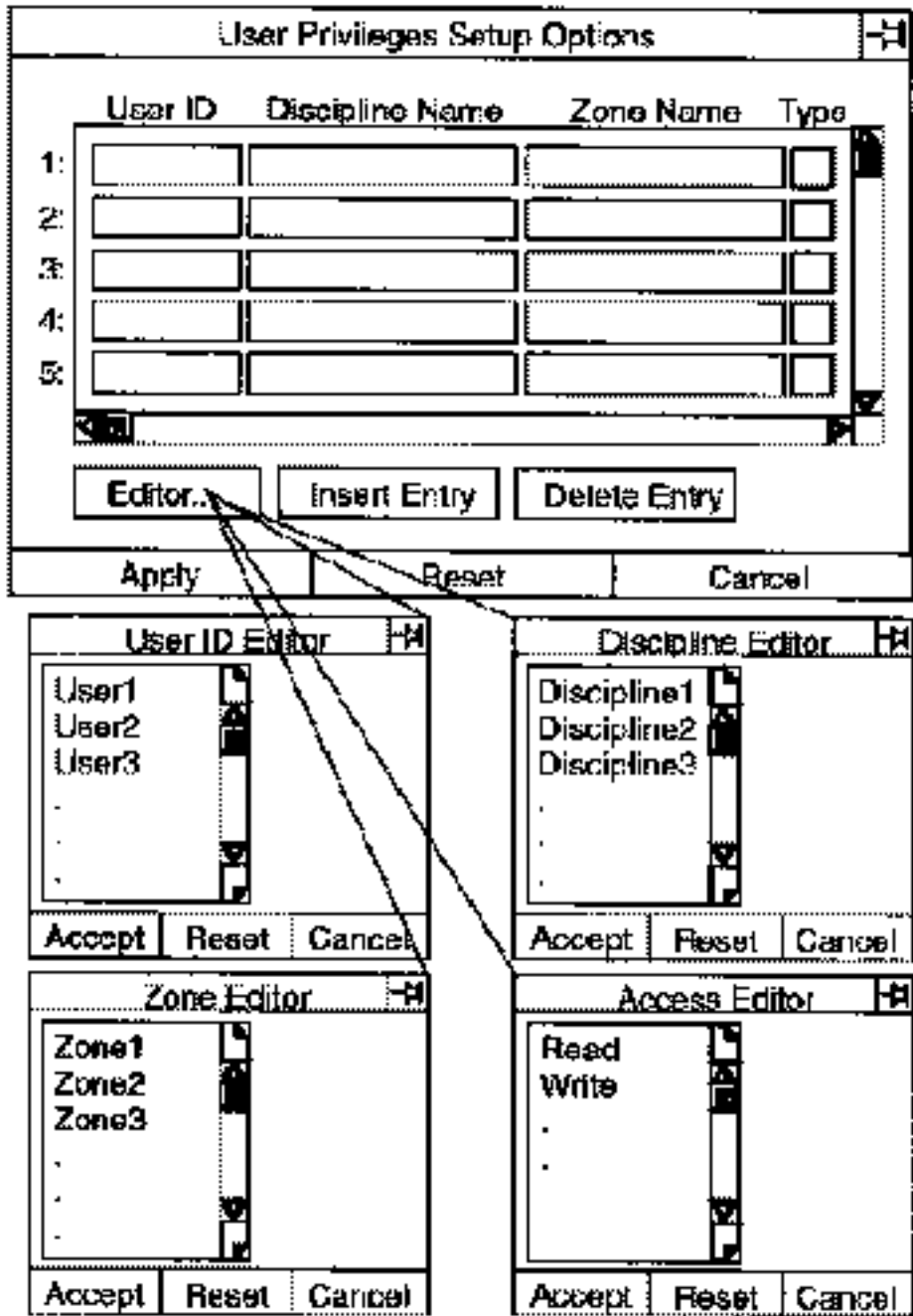
## Setting Up User Privileges

Select this option to grant new privileges, modify existing ones, or delete some.

### Description

Authorized users need different types of access at different times in a projects's life cycle. Use this option to make changes.

## Privileges Setup Options Property Sheet



## Using the Options on the User Privileges Setup Options Property Sheet

Selecting the User Privileges Setup Option displays the property sheet illustrated above.

**User ID:** Select a User ID field and the Editor field. A scrollable list of valid User IDs is displayed. Select an ID whose privileges are to be changed, or type in the ID of a new one to be granted privileges. The ID may be a maximum of 12 characters.

**Discipline Name:** Select the Discipline Name field and the Editor field. A scrollable list of disciplines associated with the selected ID is displayed. Select the discipline to be edited, or type in the name of a discipline to be associated. The name may be a maximum of 24 characters.

**Zone Name:** Select the Zone Name field and the Editor field. A scrollable list of zones associated with the selected ID and discipline is displayed. Select the zone to be edited, or type in the name of a zone to be associated. The name may be a maximum of 24 characters long.

**Type:** Select the Type field and the Editor field. The access permission for the associated ID and discipline/zone combination is displayed. Edit the existing type, or type in a new association:

- W for Write/Read
- R for Read-only

When you have finished, press Apply.



# Administrative Utilities

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This chapter describes the following:

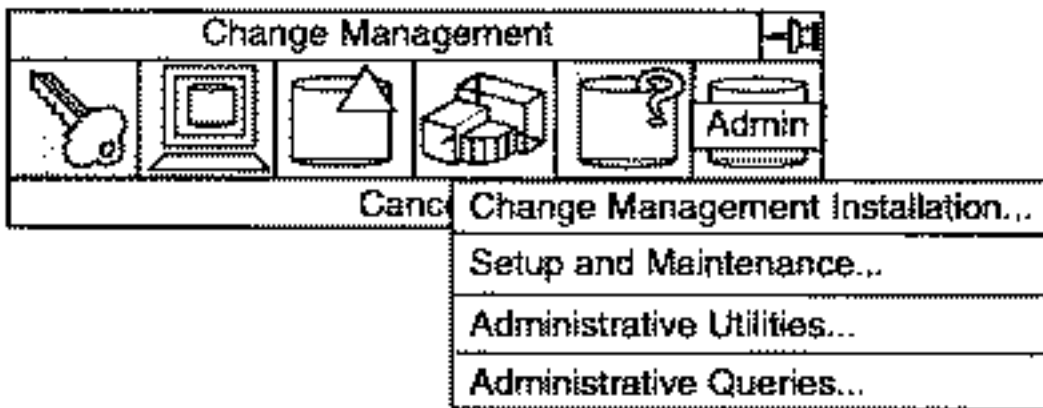
- Introduction
- Using Administrative Utilities

# Introduction

At various times it becomes necessary to

- Reset an explicit modeling part to a previous state
- Purge or archive obsolete snapshots
- Unlock a part which is currently under review

Select the Administrative Utilities... option to assist you in accomplishing these tasks.





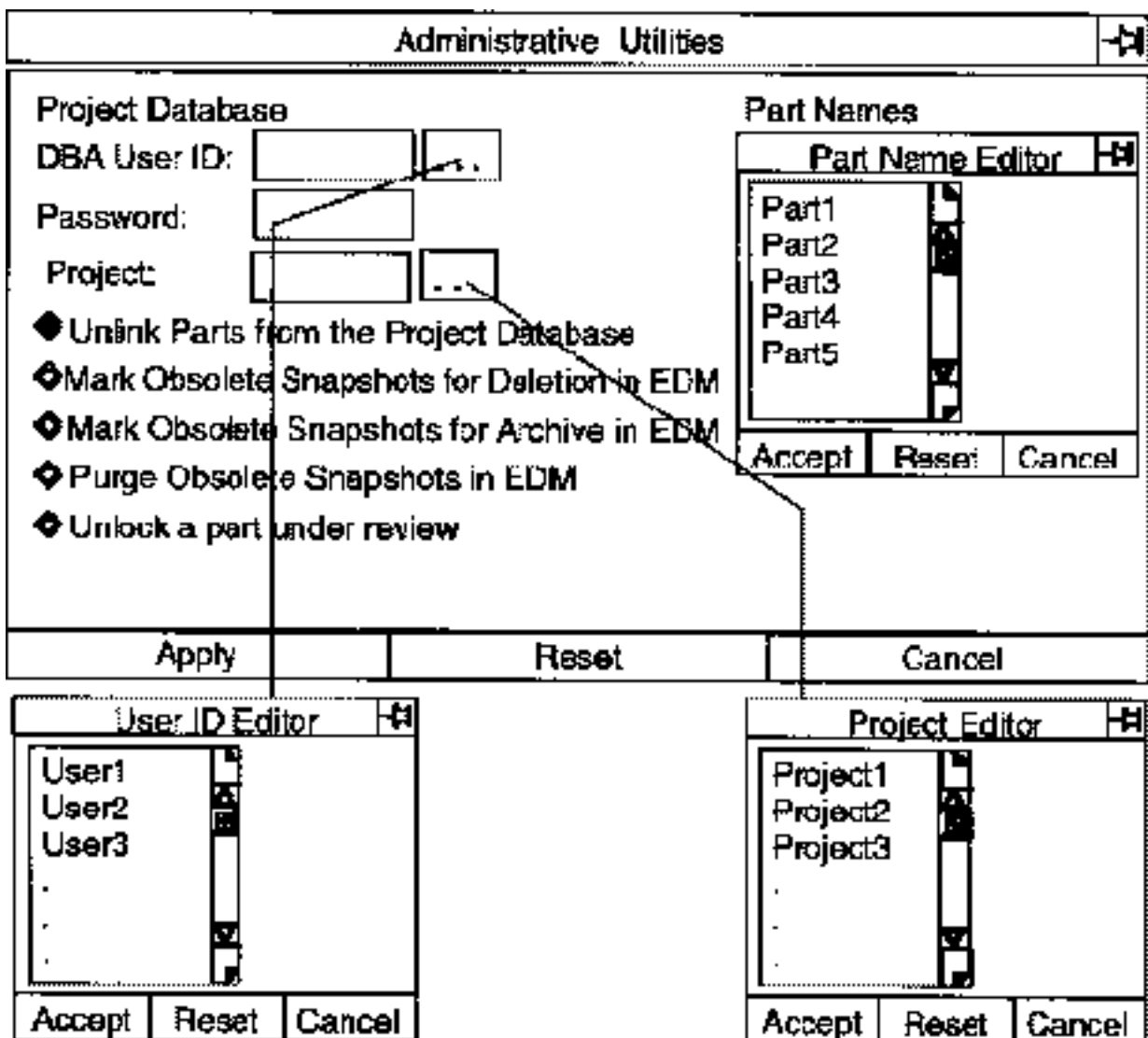
# Using Administrative Utilities

Select this option to mark, move, and remove, snapshot files in EDM, as well as unlock a part under review.

## Description

Select this option to reset an explicit modeling part linked to the project database.

- Mark obsolete snapshots for deletion in EDM
- Mark obsolete snapshots for archiving in EDM
- Purge obsolete snapshots from EDM
- Unlock an explicit modeling part which is under review



## Using the Administrative Utilities Options

Selecting the Administrative Utilities option displays the property sheet illustrated above.

**Project Database:** Select the DBA User ID Editor button and a scrollable list of authorized Administrators is displayed. Select yours to enter into the field. The User ID may be 12 characters long.

Select the Password field and enter your password. It may be a maximum of eight characters.

Select the Project Editor button and a scrollable list of active projects is displayed. Select the project within which you want to take action and it is entered into the field. It may be a maximum of eight characters.

**Part Names:** When you have selected the project, a scrollable list of parts located in that project is displayed. Select the part.

**Option Selection:** Select one of these options:

- Unlink Parts from the Project Database  
A limited number of links may exist from a project to the project database. If a part is not currently active, unlink it.  
This is the default.
- Mark Obsolete Snapshots for Deletion in EDM  
When a part has passed review, the snapshots (versions) made up to that point become obsolete. In order to save space in EDMVault, those snapshots are marked to be purged.
- Mark Obsolete Snapshots for Archive in EDM  
Some obsolete snapshots may have historical significance in the future life of the project cycle. These snapshots are singled out for archiving instead of deletion.
- Purge Obsolete Snapshots in EDM  
When obsolete snapshots have been marked, selecting this option will remove them from EDMVault.
- Unlock a Part Under Review  
When a part is submitted for engineering review, it is locked until released.  
Select this option so that a part can be unlocked on a read-only basis while it is waiting for review.

When you have entered your selections, press Apply.



# Administrative Queries

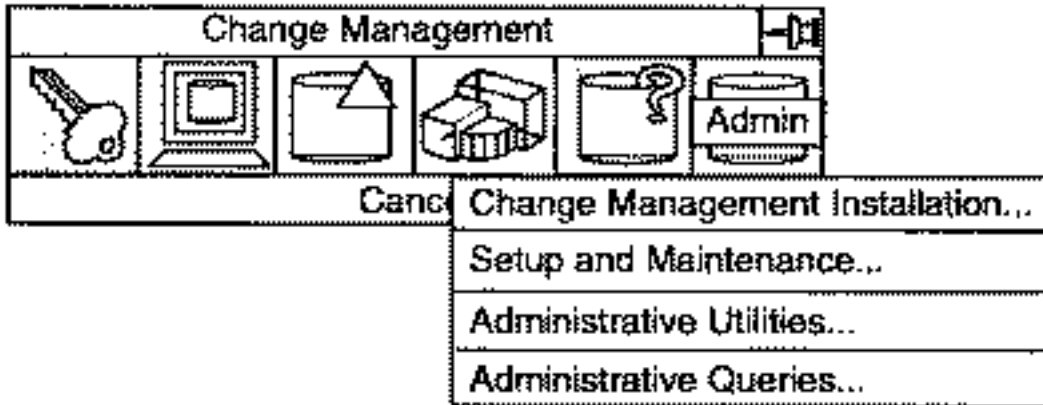
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This chapter describes the following:

- Introduction
- Administrative Queries

# Introduction

An Administrator is entitled to make queries for data that are not available to the end-user. Selecting this option enables an Administrator to specify the data he requires.



# Administrative Queries

Select the Administrative Queries menu item to obtain administrative data from the project database. Filter options can be established to limit the query range.

## Description

You can request administrative data from the RDBMS in the form of SQL tables.

The predefined administrative queries that can be proposed are:

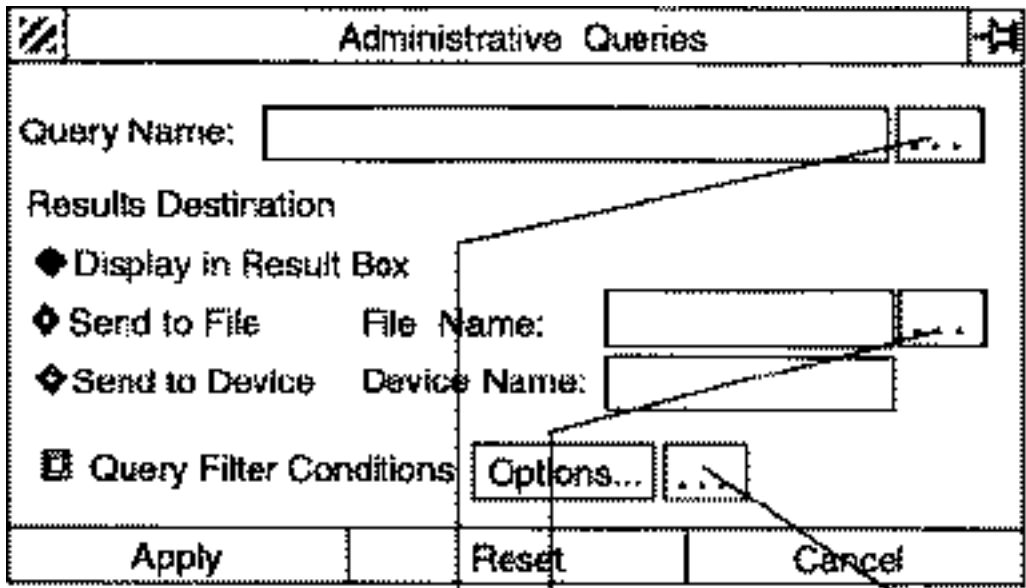
- All Objects
- Current Objects
- Discipline Rules
- Disciplines
- Entity Sets
- Layer Sets
- Links
- Log
- Object Geometry
- Object Rules
- Offsets
- Privileges
- Viewed Parts
- Zone Sets
- Zone Vertices
- Zones

## Procedure

1. Select the Administration option on the Change Management command palette.
2. Select the Administrative Queries... option.
3. Select the Query Name Editor button.
4. Select a query file from the File Name Editor.
5. Select Result Destination and one of the destination options.
  - a. Select Display in Result Box and the response is graphically displayed.

- b. Select Send to File and the File Name Editor button and the File Name Editor property sheet is displayed.
  - c. Specify a valid file name from the editor.
  - d. Select Send to Device and enter the name of a properly configured printer into the Device Name field.
6. Select the Query Filter Conditions option and the Options... Editor button.
  7. Specify filter conditions from the Query Filter Options property sheet.
  8. Press Apply.

## Administrative Queries Property Sheet



Displays the File Name Editor property sheet

Displays the Query Filter Options property sheet

### Options on the Administrative Queries Property Sheet

Query Name: Enter a valid query name or select the Editor button to display the File Name Editor property sheet.

Select the directory `/usr/apl/cadds/data/control/admin/`. Only one file can be specified.

Select Apply.



Results Destination: Select where you want the information to be sent:

- Display in Result Box displays the results in the Query Results box, described on a following page. This is the default.
- Send to File places the results in a file at the end of a full pathname. Select the Send to File Name Editor button and the File Name Editor property sheet is displayed. The default destination file is `/usr/tmp/results.txt`.  
Only one file may be selected. A file name may not exceed 24 characters.
- Send to Device sends the information to a properly configured printer or plotter. The default device name is `lpr`. A device name may not exceed 24 characters.

Query Filter Conditions: This is an optional specification. See the section “Using the Query Filter Conditions Property Sheet for Administrative Queries” on page 6-6.

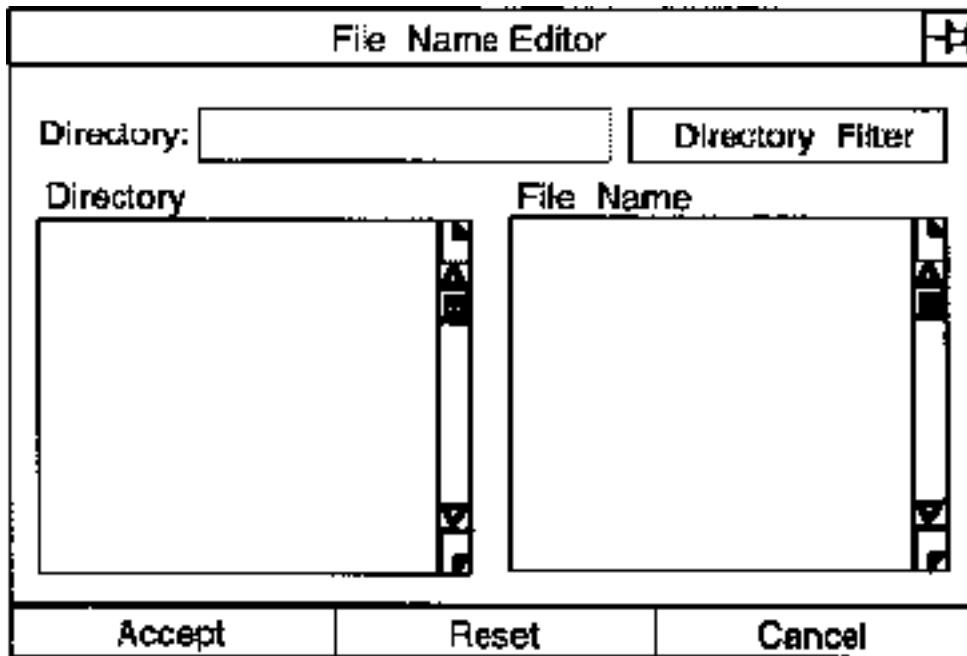
## Using the File Name Editor for Administrative Queries

By default, the Directory selection field displays the Administrative Query directory. A list of directories located below the Administrative directory is displayed in the Directory scroll window.

Select a directory and it replaces the Administrative directory. Select the Directory Filter field and a scrollable list of files contained in your selected directory is displayed.

Select a file and press Accept.

## File Name Editor Property Sheet



### Using the Query Filter Conditions Property Sheet for Administrative Queries

Select this option to filter the query by

- User ID
- Project ID
- Part name
- SQL Where clause statement

The default is not to select the Query Filter Conditions option.

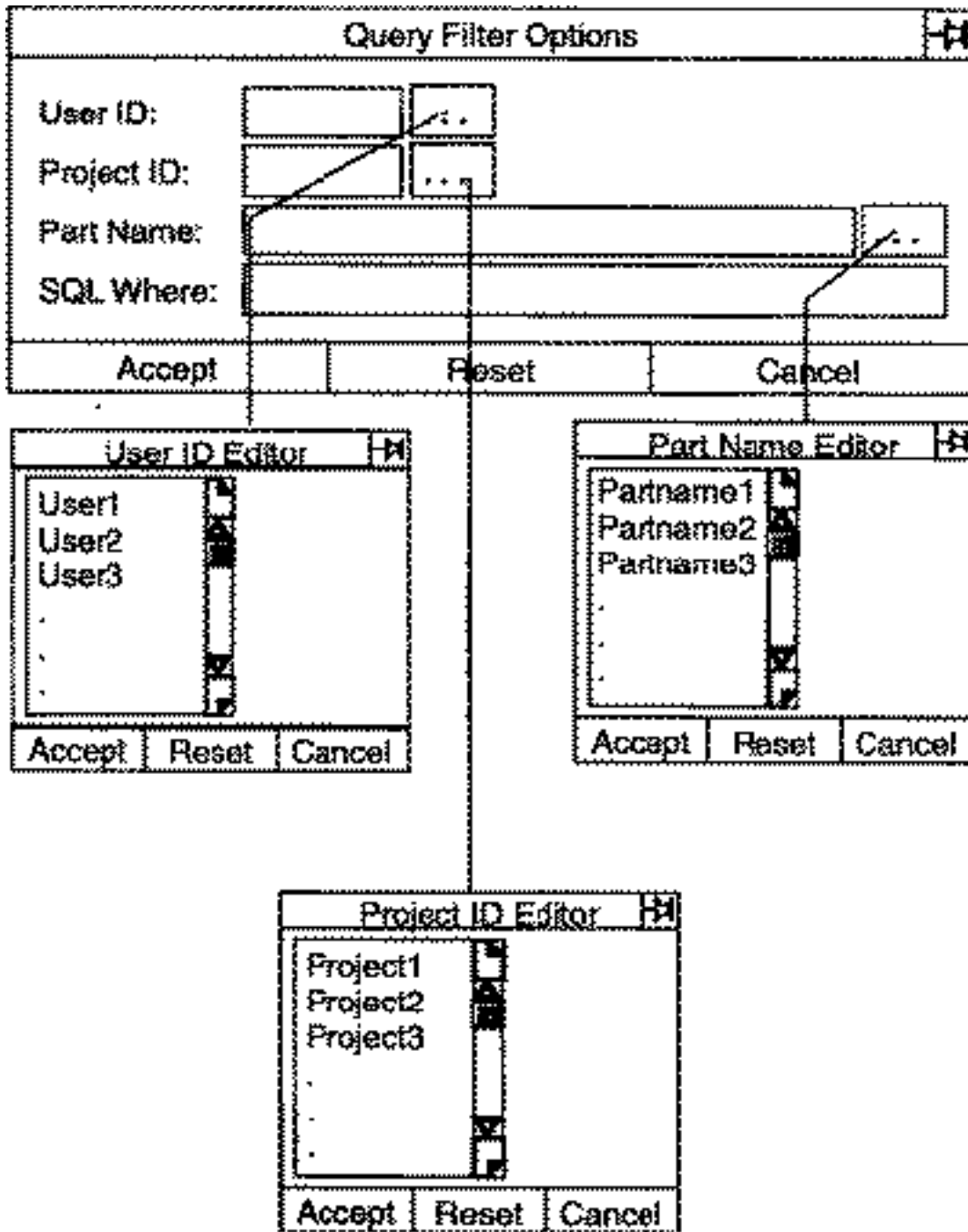
### Procedure

Follow these steps to specify an SQL Where clause.

1. Select Query Filter Conditions on the Administrative Queries property sheet.
2. Select the Options... Editor button.
3. Select the User ID Editor button on the Query Filter Options property sheet. Select an ID from the scrollable list that is displayed.

4. Select the Project ID Editor button on the Query Filter Options property sheet. Select an ID from the scrollable list that is displayed.
5. Select the Part Name Editor button on the Query Filter Options property sheet. Select a Part Name from the scrollable list that is displayed.
6. Enter a valid SQL Where clause from the  
`/usr/apl/cadds/data/control/sql` directory.
7. Press Accept.

## Query Filter Options Property Sheet



### Options on the Query Filter Options Property Sheet

Selecting the Query Filter option displays the property sheet illustrated above.

User ID: Enter a valid ID or select the Editor button and a scrollable list of valid User IDs is displayed. Select only one. It may not exceed eight alphanumeric characters. The system displays a message if you are not authorized to use this ID.

Project ID: Enter a valid ID or select the Editor button and a scrollable list of valid Project IDs is displayed. Select only one. It may not exceed eight alphanumeric characters. The system displays a message if you are not authorized to use this ID.

Part Name: Enter a valid part name or select the Editor button and a scrollable list of valid Parts is displayed. The list depends upon the Project ID that is specified. Select only one. It may not exceed eighty alphanumeric characters.

SQL Where: Select this entry if you want to particularize the data you are searching for.

You may enter a Standard Query Language Where clause statement. Valid statements are contained in the `/usr/apl/cadds/data/control/sql` directory. It may not exceed eighty alphanumeric characters.

For an example of the Query Results box see the next page.

## Example of a Filtered Query Displayed in the Query Result Box

The following is a brief example of data you might receive in response to a Query.

1. Specify a Query Name of Discipline Rules.
2. Enter the filter condition:

```
dr_disc_name like 'CV%' order by 1,2;
```

3. The information is displayed in the Query Result box.

Query Result				
	DR_DISC_NAME	DR_RULE_PRIORITY	DR_RULE_NAME	DR_OBJECT_TYPE
1:	CY_ARCHITECTU	10	ARCH_WALL	Wall
2:	CY_ARCHITECTU	20	ARCH_OBJ	Architectural_object
3:	CY_ENTITIES	10	ALL	Entity
4:	CY_EQUIPMENT	10	CVPD_NO	Equipment Nozzle
5:				
6:				
7:				
8:				
9:				

Cancel

# Installing the Project Tables

---

- Introduction
- Overview of the Project Tables
- EDMControl Project Integration Tables

## Introduction

The EDMControl project tables are installed in a specific order. This is because one table will call for data from another table located above it in a hierarchical order.

The RDBMS tables are identified by unique, logical, meaningful names. For instance: PI\_DISC\_RULES\_TBL refers to the Project Integration Discipline Rules Table.

The project tables are the property and responsibility of the Project Administrator. The table definitions should not be editable by anyone other than the PA.



# Overview of the Project Tables

There are RDBMS project tables that are specific to EDMControl. EDMControl also shares tables with EDMInformation. The tables described below refer specifically to an EDMControl project.

The following RDBMS tables are installed for EDMControl.

## RDBMS Tables Installed for EDMControl

RDBMS Table	Use of the Table
PI_DISC_RULES_TBL	List of rules associated with functions
PI_DISCIPLINE_TBL	List of functions
PI_ENTITY_SET_TBL	Entity type combinations for rules
PI_LAYER_SET_TBL	Layer number combinations for rules
PI LINK DISC TBL	Zonal function links for each part
PI_LOG_TBL	Transaction log
PI_OBJECT__TBL	List of all the objects in the project
PI_OFFSET_TBL	List of all the project coordinate offsets
PI_PRIV_TBL	User access privileges
PI_RULE_TBL	Object construction rules
PI_VIEW_PART_TBL	List of snapshots viewed for each part
PI_ZONE_SET_TBL	Zone set combinations for queries
PI_ZONE_TBL	List of project zones
PI_ZONE_VERTEX_TBL	List of project zone coordinates for non-rectangular zones

## Where are the Installation Files Located?

The installation files are contained in the following directory:

```
/usr/apl/cadds/data/control/instal/install_cc_project.sh
```

## How Are the Tables Set Up?

### Tables are Divided into Columns

Each RDBMS table is divided into columns. The number of columns in each table varies according to the way the Project Administrator defines them.

Each column has a specific heading. Once established, these column headers should not be edited without checking their relevance to an SQL search path.

## Columns are Divided into Fields

The columns are divided into fields. The data entries into the fields are determined by the Project Administrator. Many of the tables are provided with data definitions by PTC. These allude to architectural, engineering, and construction software. Applications that are referenced include

- Architecture
  - Heating, Ventilation, and Air Conditioning
  - Plant Design
  - Structural
  - Piping

This Appendix lists the following :

- Tables in their hierarchical order
- Fields in each table
- Samples of PTC-provided entries

## Some Appendix Conventions

Several conventions are used both in the tables and in this Appendix.

### 1. Priorities

Several tables identify a priority number for a definition. The lower the number, within a definition, the higher the priority. A CV\_ENTITY with a 10 priority will take precedence over a CV\_ENTITY with a 50 priority.

This is only true within the same discipline definition. A CV\_ENTITY of 10 bears no relationship to a CV\_ARCHITECTURE of 50. If there is no CV\_ARCHITECTURE with a priority lower than 50, then the 50 definition is highest precedence within that definition.

### 2. Null/not null

Most fields in the tables require an entry, including a provided default. Some do not. Those that require an entry are known as “not null” and are identified in this Appendix as “R” (required).

Those where an entry is not required are identified as null.

**3.** The maximum length of a field entry is identified in this appendix as :

char	alphanumeric characters
int	integer
n	real number. Multiple digits are shown as nn, nnn, etc., or as a range (n- <i>nnn</i> ).

**4.** The prefix on column headers designates the primary table. Thus,  
DR\_DISCNAME refers to the Discipline Rules Table (DR\_)  
DISC\_DISCNAME refers to the Discipline Table (DISC\_)  
ESET\_ESETNAME refers to the Entity Set Table (ESET\_)

## EDMControl Project Integration Tables

### PI\_DISC\_RULES\_TBL (Project Integration Discipline Rules Table)

The following shows the column heads and the text limits for this table :

<b>DR_DISCNAME</b>	<b>DR_RULE_PRIORITY</b>	<b>DR_RULENAME</b>	<b>DR_OBJTYPE</b>
24 char	nn- <b>nnn</b>	24 char	24 char
R	R	R	R

PTC provides a number of entries for this table. Those shown below are a representative sample.

<b>DR_DISCNAME</b>	<b>DR_RULE_PRIORITY</b>	<b>DR_RULENAME</b>	<b>DR_OBJTYPE</b>
CV_ARCHITECTURE	10	ARCH_WALL	Wall
CV_ARCHITECTURE	20	ARCH_CONNECTION	Wall connection
CV_ENTITIES	10	ALL	Entity
CV_EQUIPMENT	nn- <b>nnn</b>	CVPD_NOZZLE	Equipment Nozzle
CV_HVAC	nn- <b>nnn</b>	CVPD_DLINE_LABEL	Ductline label
CV_PD_STRUCTURAL	nn- <b>nnn</b>	CVPD_MEMBER	Steel member
CV_PIPING	nn- <b>nnn</b>	CVPD_TAP	Tap
CV_SITE	nn- <b>nnn</b>	SITE_DTM	DTM Display Instance
CV_SMS_STRUCTURAL	nn- <b>nnn</b>	SMS_SHAPE	SMS Shape
CV_SSM_STRUCTURAL	nn- <b>nnn</b>	SSM_MEMBER	Steel member
COMPONENT	nn- <b>nnn</b>	COMPONENT	Assembly component

### PI\_DISCIPLINE\_TBL (Project Integration Disciplines Table)

The following shows the column heads and the text limits for this table :

<b>DISC_DISCNAME</b>	<b>DISC_DISCPRIORITY</b>	<b>DISC_DISCDESCR</b>
24 char	nn- <b>nnn</b>	50 char
R	R	null

PTC provides a number of entries for this table. Those shown below are a representative sample.

<b>DISC_DISCNAME</b>	<b>DISC_DISCPRIORITY</b>	<b>DISC_DISCDESCR</b>
CV_ENTITIES	nn- <b>nnn</b>	generic discipline for individual entities
CV_ARCHITECTURE	nn- <b>nnn</b>	generic discipline for Architecture
CV_EQUIPMENT	nn- <b>nnn</b>	generic discipline for Plant Design equipment
CV_HVAC	nn- <b>nnn</b>	generic discipline for HVAC
CV_PIPING	nn- <b>nnn</b>	generic discipline for piping
CV_SITE	nn- <b>nnn</b>	generic discipline for site engineering
CV_SSM_STRUCTURAL	nn- <b>nnn</b>	generic discipline for structural steel modeling
CV_SMS_STRUCTURAL	nn- <b>nnn</b>	generic discipline for structural model system
CV_PD_STRUCTURAL	nn- <b>nnn</b>	generic discipline for plant design steel

### PI\_ENTITY\_SET\_TBL (Project Integration Entity Set Table)

The following shows the column heads, the text limits for this table, and sample PTC-provided entries :

<b>ESET_ESETNAME</b>	<b>ESET_ENTTYPE</b>
24 char	8 char
R	R
' POINT '	' POINT '
' TNODE '	' NFIGURE '
' ARCH '	' CNODE '
ETC .	ETC .

### PI\_LAYER\_SET\_TBL (Project Integration Layer Set Table)

The following shows the column heads, the text limits for this table, and sample PTC-provided entries :

<b>LSET_LSETNAME</b>	<b>LSET_LAYER</b>
24 char	nnn
R	R
' L000 '	' 000 '
' L001 '	' 001 '

<b>LSET_LSETNAME</b>	<b>LSET_LAYER</b>
'L002'	'002'
'L003'	'003'
....	...
'L254'	'254'

The table continues to increment by ones to a maximum of 254.

### PI\_LINK\_DISC\_TBL (Project Integration Link Disciplines Table)

The following shows the column heads and the text limits for this table :

<b>LD_PARTID</b>	<b>LD_LINKID</b>	<b>LD_STATE</b>	<b>LD_ACCESS-TYPE</b>	<b>LD_DISC-NAME</b>	<b>LD_ZONE-NAME</b>
nnnn	nnnn	1 char	R or W	24 char	24 char
R	R	R	R	R	R

Please note: This table is automatically maintained by EDMControl, and not by the administrator.

### PI\_LOG\_TBL (Project Integration Log Table)

The following shows the column heads and the text limits for this table :

<b>LOG_STARTDATE</b>	<b>LOG_STARTTIME</b>	<b>LOG_ENDDATE</b>	<b>LOG_ENDTIME</b>	<b>LOG_JOBTYPE</b>	<b>LOG_USERID</b>	<b>LOG_PARTID</b>	<b>LOG_COMMENT</b>
6 char	6 char	6 char	6 char	2 char	12 char	nnnn	240 char
R	R	R	R	R	R	null	null

Please note: This table is automatically maintained by EDMControl, and not by the administrator.

## PI\_OBJECT\_TL (Project Integration Object Table)

For reasons of space, the 22 column headers are listed vertically here, together with the text limits for this table.

OBJ_PARTID	nn	R
OBJ_CADDSUID	1 0 digits	R
OBJ_STATUS	n	R
OBJ_SNAPFROM	n	R
OBJ_SNAPTO	n	null
OBJ_DISCNAME	24 char	R
OBJ_OBJTYPE	24 char	R
OBJ_DELETED	Y or N	R
OBJ_XORG	nn	R
OBJ_YORG	nn	R
OBJ_ZORG	nn	R
OBJ_GEOMTYPE	1 char	R
OBJ_GEOMPAM1	n	null
OBJ_GEOMPAM2	n	null
OBJ_PGEOMPAM3	n	null
OBJ_{GEOMPAM4	n	null
OBJ_GEOMPAM5	n	null
OBJ_GEOMPAM6	n	null
OBJ_GEOMPAM7	n	null
OBJ_OBJLENGTH	n	null
OBJ_STOCKNO	40 char	null
OBJ_OBJNAME	40 char	null

Please note: This table is automatically maintained by EDMControl, and not by the administrator.

## PI\_OFFSET\_TBL (Project Integration Offset Table)

The following shows the column heads and the text limits for this table. Each header is prefixed by OFFSET\_.

<b>CPLNAME</b>	<b>XORG</b>	<b>YORG</b>	<b>ZORG</b>	<b>OFFDESCR</b>
24 char	n	n	n	50 char
R	R	R	R	null

## PI\_PRIV\_TBL (Project Integration Privileges Table)

The following shows the column heads and the text limits for this table. Each header is prefixed by PRIV\_ :

<b>USERID</b>	<b>DISCNAME</b>	<b>ZONENAME</b>	<b>ACCESSTYPE</b>
12 char	24 char	24 char	R or W
R	R	R	R

## PI\_RULE\_TBL (Project Integration Rule Table)

The following shows the column heads, the text limits for this table, and sample PTC-provided entries :

COLUMN HEADERS	PTC PROVIDED	
RULE_RULENAME 24 char R	' CVPD_ATTACH '	' SSM_ATTACH '
RULE_STRUCTDEF 24 char R	' CV_FITTING ( OUTERDIAM '	' CV_DEFAULT ( NFIGURE ) '
RULE_STRUCTCOND 240 char null	' ATTACHMENT '	' ( STEELIDENT > 99 AND STEELIDENT < 9000 ) '
RULE_ESETNAME 24 char R	' NODAL '	' NODAL '
RULE_LSETNAME 24 char R	' CV_ALL '	' CV_ALL '
RULE_OBJECTGEOM 24 char R	' CV_ENTITY '	' CV_ENTITY '
RULE_OBJECTORG 24 char R	' CV_CENTER '	' CV_CENTER '
RULE_OBJECTLEN 24 char null	null	null



RULE_OBJECTNAME 24 char null	'CV_NAME_PROP (ATTACHMEN T) '	'CV_NFIG_TNOD_NTEXT '
RULE_OBJECTSTKNO 10 char null	'STOCKNO '	'STOCKNO '
RULE_ALWAYSFLAG Y or N R	'N '	'N '

Please note: For more information about the Rules named in the header, see *Appendix B, "Defining New Object Construction Rules."*

## PI\_VIEW\_PART\_TBL (Project Integration View Part Table)

The following shows the column heads and the text limits for this table :

VP_ACTIVEPARTID NUMBER R	VP_LINKID NUMBER R	VP_VIEWESPARTID NUMBER R	VP_SNAPSHOT NUMBER R	VP_STATE NUMBER R	VP_ON Y OR N R	VP_OBSOLETE Y OR N R
--------------------------------	--------------------------	--------------------------------	----------------------------	-------------------------	----------------------	----------------------------

## PI\_ZONE\_TBL (Project Integration Zone Table)

The following shows the column heads and the text limits for this table :

<b>ZONE_ZONENAME</b>	<b>ZONE_ACCESTYPE</b>	<b>ZONE_GEONATYPE</b>	<b>ZONE_MINX</b>	<b>ZONE_MAXX</b>	<b>ZONE_MINY</b>	<b>ZONE_MAXY</b>	<b>ZONE_MINZ</b>	<b>ZONE_MAXZ</b>	<b>ZONE_ZONEDESIGN</b>
24 char	R or W	1 char	nnn	nnn	nnn	nnn	nnn	nnn	50 char
R	R	R	R	R	R	R	R	R	R

## PI\_ZONE\_VERTEX\_TBL (Project Integration Zone Vertex Table)

The following shows the column heads and the text limits for this table :

<b>ZV_ZONENAME</b>	<b>ZV_VERTNUM</b>	<b>ZV_X</b>	<b>ZV_Y</b>
24 char	nnn	nnn	nnn
R	R	R	R

## PI\_ZONE\_SET\_TBL (Project Integration Zone Set Table)

The following shows the column heads and the text limits for this table :

<b>ZSET_ZSETNAME</b>	<b>ZSET_ZONENAME</b>
24 char	24 char
R	R

# Defining New Object Construction Rules

---

- Introduction
- Which Are the Object Construction Rules?
- Defining New Construction Rules

## Introduction

Object Construction Rules are used to identify entities and objects that have changed. The Rules in the RDBMS tables provide user-definable criteria to be used.

Certain Rules are provided with definitions by PTC.

# Which Are the Object Construction Rules?

## Object Construction Rules

### Columns

The following table lists the rules involved in object construction.

The first column lists the rule's name; the second specifies if an entry is required (R) or if an entry is optional (null).

The third column specifies the maximum number of characters; the fourth is reserved for comments.

### Lines

The first line names the rule; the next four lines define how to construct entities into objects; the next five lines define what to use to construct the object; the last line specifies whether to look for changes or not.

**Table B-1 Object Construction Rules**

<b>Name</b>	<b>R?</b>	<b>Type</b>	<b>Comments</b>
RULE_RULENAME	R	24 char	User defined name
RULE_STRUCTDEF	R	24 char	PTC-supplied explicit modeling structural definitions
RULE_STRUCTCOND	null	240 char	User defined MARK ENTITY condition
RULE_ESETNAME	R	24 char	User defined or PTC-supplied entity set name
RULE_LSETNAME	R	24 char	User defined or PTC-supplied layer set name
RULE_OBJECTGEOM	R	24 char	PTC-supplied object geometry types
RULE_OBJECTORG	R	24 char	PTC-supplied object origins
RULE_OBJECTLEN	null	24 char	PTC-supplied object lengths
RULE_OBJECTNAME	null	24 char	PTC-supplied names
RULE_OBJECTSTKNO	null	10 char	Text properties
RULE_ALWAYSFLAG	R	1 char	"Y" or "N"

# Defining New Construction Rules

## Guidelines for New Rules

Use the following guidelines to define new rules. Specific data to put into the columns is discussed under each rule.

### RULE\_RULENAME

Decide on a rule name. The name is used in the  
`PI_DISC_RULES_TBL` and the `PI_RULE_TBL`.

### RULE\_STRUCTDEF

For each object type to be constructed, determine its modeling database structure. Typical structures are nodal figures (fittings and walls) and nodal lines (pipes and ducts). The type of structure will usually determine the object's parent entity which may be used as an argument to the rule structure definition, (e.g., `CV_DEFAULT(NFIG)`, `CV_DEFAULT(SOLID)`, `CV_DEFAULTO`).

### Objects

An object is an entity or a group of related entities which usually represent a physical object such as a duct, a pump, a wall, electrical switches, etc. One of the entities in the object is designated as the object parent entity while the other entities are called the children entities. (Think of the object as a family of entities).

If an object has only one entity, that entity is the parent entity and there are no children entities. If an object contains more than one entity, the parent is an entity which plays an important role in the object's definition, such as the top level nodal figure or solid entity.

In some cases, the selection of the parent entity is less well defined, but there always will be a parent entity. The Export List UID of the parent entity is stored in the `PI_OBJECT_TBL` and serves to link the explicit modeling object data to the Oracle object data.

The `RULE_STRUCTDEF` specifies the type of object which will be constructed by the rule. The definitions are all predefined and must come from this list:

- `CV_BENT_PIPE`

- CV\_DEFAULT
- CV\_ENTITY
- CV\_FITTING
- CV\_GROUP
- CV\_LABEL
- CV\_NESTED
- CV\_NESTED\_MX
- CV\_NESTED\_NFIG\_XNLIN
- CV\_NLINE\_NETWORK
- CV\_STRAIGHT\_PIPE

## When Are Objects Constructed?

Objects are constructed when an entity in them changes: an entity is added, deleted or modified.

The only exception is CV\_GROUP and any rule for which the RULE\_ALWAYSFLAG is set to “Y”. In such a case constructions are always done, regardless of entity changes or not.

## Generic Object Types

There are four generic object types:

**1.** Single entity objects defined by CV\_ENT and CV\_LABEL(property). The parent entity is the entity itself. The RULE\_STRUCTCOND (next in the hierarchy) applies to this entity.

**2.** Hierarchical objects defined by

- CV\_DEFAULT(entity\_type)
- CV\_FI-MNG(property)
- CV\_NESTED(entity\_type)
- CV\_NESTED\_MX(entity\_type)
- CV\_NESTED\_NFIG\_XNLIN(entity\_type)

The parent entity is the root node of the object. It is always a nodal entity or a solid. The RULE\_STRUCTCOND applies only to the parent entity.

**3.** Network objects consist of nodal lines with related connect nodes, text nodes and nodal text. They are defined by

- CV\_STRAIGHT\_PIPE

- CV\_BENT\_PIPE
- CV\_NLINE\_NETWORK

In general, network objects have multiple nodal lines connected through connect nodes. Common piping examples are bent pipes and pipes containing olets. The RULE\_STRUCTCOND applies to each nodal line in the network. The parent entity will be chosen as the nodal line with the lowest Export List UID.

4. Groups of entities which may or may not be related by explicit modeling relationships. These are defined by CV\_GROUP(entity\_type). The parent entity will be the first entity encountered which matches the entity\_type argument and the RULE\_STRUCTCOND.

An example of a group object would be all lines and arcs on layer 12. They do not have to be connected together by any explicit modeling relational pointers.

## Some Definitions Require Arguments (Modifiers)

Some of the definitions take “arguments”, either a property name or an entity type name. The arguments are optional except for the CV\_NESTED type definitions, which always require an entity type name.

For the other definitions, if no argument value is given a default action will be taken. See the individual object definition discussions below for the definition defaults. Properties are found in the file /cadds/data/\_bcd/prop or the property table.

If a definition takes an entity argument, it must be one of the names from the following list. If a name is longer than four characters, the first four characters may be used as an abbreviation (e.g., BSUR for BSURFACE).

- ARC (used for CIRCLE)
- BSPLINE
- BSURFACE
- CONIC
- CPOINT
- CPOLE
- CNODE
- LINE
- NFIGURE
- NLINE



- NSPLINE
- NSURFACE
- NTEXT
- PLANE (used for FACE and HOLE)
- POINT
- RECTANGLE
- RSURFACE
- SFIGURE
- SHAPE
- SOLID
- SPLINE
- SPOINT
- SPOLE
- STRING
- SREVOLUTION
- SUBASSEMBLY
- TCYLINDER
- TEXT
- TNODE

### CV\_DEFAULT (entity type)

In the following descriptions of the rule object definitions the term “eligible entities” means those specified by the `RULE_ESETNAME` and `RULE_LSETNAME` columns.

Examples: `CV_DEFAULT(NFIG)`, `CV_DEFAULT(SOLID)`

Starting from an eligible added or modified entity, `CV_DEFAULT` attempts to trace upward through related entities until it finds a root level entity specified in the argument or, if there is no argument, a nodal or solid entity parent.

If this fails the definition defaults to `CV_ENTITY`. The

`RULE_STRUCTCOND`, if required, is applied to the parent entity.

If a parent nodal or solid entity is found, its children entities will be constructed as part of the object according to the rules in the following table.

**Table B-2 CV\_DEFAULT Parent and Child Entities**

Parent	Children
CNODE	All eligible child entities, but limited to related text nodes and nodal text.
NFIGURE	All eligible children entities which are nodally related at all levels, including nested nodal figures and non-nodal entities in extended nodal figures. External nodal lines are not included.
NLINE	All eligible children entities, limited to - directly related nodal text - related connect nodes, not related to nodal figures, but connect nodal text nodes and nodal text. No other nodal lines are included. A CV_DEFAULT nodal line object will always contain only one nodal line.
SOLID	All eligible children entities defined as solid entities.
TNODE	Eligible related nodal text.

## CV\_ENTITY

Each eligible entity is an object. No multiple entity objects are constructed. The RULE\_STRUCTCOND, if required, is applied to the single entity constituting the object.

## CV\_GROUP (entity\_type)

All eligible entities, based on entity and layer sets, are grouped together into one object. The optional argument determines the object parent entity type. No argument means the first eligible entity encountered will be designated as the parent entity. The RULE\_STRUCTCOND applies only to the parent entity.

This rule is always run, regardless of the change states of its entities. This is the equivalent of the RULE\_ALWAYSFLAG set to IYI.

Examples: CV\_GROUP(TNODE), CV\_GROUP(TEXT), CV\_GROUP(),  
 CV\_GROUP

## CV\_FITTING (property)

This rule constructs nodal figure structures where the nodal figure is related to an external nodal line via a connect node. The property argument, if there is one, applies only to the external nodal line.

The `RULE_STRUCTCOND` applies only to the parent nodal figure entity. The primary purpose of this rule is to prevent constructing stand alone fittings which are not part of a pipeline or a ductline.

Examples: `CV_FITTING(OUTERDIAM)`,

`CV_FITTING(DUCTSIZE)`, `CV_FITTING()`, `CV_FITTING`

### CV-LABEL (property)

Constructs a nodal text entity which is related to a nodal line. If there is an argument, the related nodal line (not the nodal text itself) must have that property. The object name is always the label nodal text value. The `RULE_STRUCTCOND` applies only to the nodal text entity.

Example: `CV_LABEL(OUTERDIAM)`, `CV_LABEL(DUCTSIZE)`,  
`CV_LABEL()`, `CV_LABEL`

### CV\_STRAIGHT\_PIPE

Constructs multi-nodal line pipe-like objects, such as Plant Design pipes. It will not construct an object if any nodal line in it has a `BRAD` property, indicating a bend. This rule is intended for construction where one physical object is represented by multiple nodal lines. An example is the case where olets or stubins break up a pipe into more than one nodal line. The construction stops according the same rules as the `CV_NLINE_NETWORK` definition (see below).

The `RULE_STRUCTCOND` applies to each nodal line in the object. The nodal line with the lowest Export List UID is chosen as the pipe parent entity. An alignment check is done to prevent tracing onto branches.

### CV\_BENT\_PIPE

Constructs multi-nodal line objects where one or more segments have the `BRAD` property. This rule is intended for construction where one physical object is represented by multiple nodal lines as in a bent pipe. The construction stops according to the same rules as the `CV_NLINE_NETWORK` definition (see below).

The `RULE_STRUCTCOND` applies to each nodal line in the object. The nodal line with the lowest Export List UID is chosen as the pipe parent entity. An alignment check is done to prevent tracing onto branches.

## CV\_NESTED (entity\_type)

Constructs an object which may be nested in another object; for example nozzles belonging to tanks. Changed objects are found by first finding the object parent entity and then tracing downward to find any changed entities. If a changed entity is found, the object data is extracted. If no changes are found, the object parent is marked so it will not be included in a later construction by another rule.

Please note: There must an entity type specified for CV\_NESTED. Also, there should always be a condition specified in RULE\_STRUCTCOND.

## CV\_NESTED\_MX (entity\_type)

Construct an object which may be nested in another object while allowing the object to be constructed again later by another rule. MX stands for multiple extraction.

An example of the use of this rule is to consider a fitting which contains a connect node specifying a welded connection to a pipe. The CV\_NESTED\_MX(CNODE) rule with the appropriate RULE\_STRUCTCOND will construct this connect node as a weld object while the CV\_FITTING definition will construct the fitting object itself, including the connect node again as part of the fitting. An entity type must be specified.

## CV\_NESTED\_NFIG\_XNLIN

Constructs a nodal figure object, including any directly connected external nodal line networks. The construction stops according to the same rules as the CV\_NLINE NE7WORK definition (see below).

## CV\_NLINE\_NETWORK

Constructs a network of nodal lines. The RULE\_STRUCTCOND applies to each nodal line in the network. The nodal line with the lowest Export List UID is chosen as the network parent entity.

The network terminates at

- Free ends.  
Terminal connect nodes and their text nodes and nodal text will be extracted with the network.
- Connect nodes with the TERMNAM property.  
This connect node will be grouped with the first object construction which encounters it.

- Connect nodes which are related to nodal figures unless the connect node or its related nodal figure have the NOBREAK property.
- Nodal lines with the BRANCH property.  
 These nodal lines will not be constructed with any CV\_NLINE\_NETWORK defined object.
- Nodal lines with the GASKET, INTERNAL or WTOPOL= 22xx00000 properties.
- Any nodal line which does not meet the RULE\_STRUCTCOND.

No alignment check is performed. If a network branches and there is no termination flag, all branches will be traced and included in the network.

## RULE\_STRUCTCOND

The RULE\_STRUCTCOND is a conditional statement with exactly the same syntax as that used by MARK ENTITY CONDITION. If there is no condition (field is null), no rule condition is checked. Note that the CV\_NESTED definitions always require a RULE\_STRUCTCOND.

Except for nodal line network objects, the RULE\_STRUCTCOND applies ONLY to the object parent entity. In nodal line networks, the condition is applied to each nodal line in the network. Examples of conditions are

```

null
OUTERDIAM AND NOT (GASKET OR BRANCH)
STEELIDENT > 99 AND STEELIDENT < 9000
FITTYPE < 100
BDELNAME AND SECTTYPE 2
FITTYPE 20
FITTYPE = 51 AND NOBREAK
COMPNAME "TRANSFORMER"
  
```

## RULE\_ESETNAME

The rule entity set specifies exactly the entity types which may be used by a construction rule. It must include the parent entity type as well as all the children entity types.

The entity set name refers to an entry in the PROJECT\_ENTITY\_SET\_TBL and the entity names in the entity set table must come from those in the PROJECT\_ENTITY\_TBL.

The entities supported by EDMControl are those where ENTITY\_SET\_USAGE is 'Y'. Other entity types should not be included in an entity set.

CV\_ALL is a reserved entity set name which includes all supported entities. It does not exist in the PROJECT\_ENTITY\_SET\_TBL so it cannot be used in a join operation involving the entity set table.

All other entity set names are user defined.

## RULE\_LSETNAME

The rule layer set specifies exactly the layers on which entities may be constructed for a rule. The layer set name refers to an entry in the PROJECT\_LAYER\_SET\_TBL. Layer values may range from 0 to 254.

CV\_ALL is a reserved layer set name which includes all layers from 0 through 254. It does not exist in the PROJECT\_LAYER\_SET\_TBL so it cannot be used in a join operation involving the layer set table.

All other layer set names are user defined.

## RULE\_OBJECTGEOM

The only currently supported option is CV\_ENTITY which is the overall geometric extents of all entities in an object. The resulting geometry types may be spherical, cylindrical or rectangular.

## RULE\_OBJECTORG

There are two choices for the object origin:

- CV\_CENTER  
The origin is the center of the object's overall geometry.
- CV\_ORIGIN  
The origin is the origin of the object parent entity.

## RULE\_OBJECTLEN

These are the only supported RULE\_OBJECTLEN values:

null

Do not get a length.

## CV\_PATHLEN

Calculates the length of these entities: line, arc, spline, Bspline, Cpole, Cpoint, nspline, string, and nodal line.

The length for all other entities is zero (0.0).

CV\_PATHLEN constructs the path lengths of network-like objects, such as pipes and ducts.

## CV\_LEN\_PROP (property)

CV\_LEN\_PROP(property) Gets the length from a real-valued property. The property may have a subscript as in CV\_LEN\_PROP(BDMAXMIN(6))

Both CV\_PATHLEN and CV\_LEN\_PROP try to get a total length which is the sum of the lengths from all the entities in an object, both parent and children. This is done to support lengths of network-like objects.

The default length is (0.0).

## RULE\_OBJECTNAME

Gets an object name according to the option selected. If no method is specified (null), no name will be extracted. If no name can be found, only the CV\_LABEL object definition is used. This always uses its nodal text value as the name and therefore does not require a RULE\_OBJECTNAME entry.

Supported RULE\_OBJECTNAME values are:

null

Does not get a name.

## CV\_EQUIPMENT

Uses the Plant Design equipment name hierarchy:

1. NTEXT -> TNODE -> Parent NFIG
2. Parent NFIG COMPNAME property value
3. Parent NFIG name

## CV\_FITTING

Uses the fitting name

- NTEXT -> TNOD (ITEMNO property)
- CNOD (CONNECTOR property) -> Parent NFIG

## CV\_NFIG\_TNOD\_NTEXT

Gets a name only from NTEXT -> TNODE ->Parent NFIG

## CV\_NAME\_PROP (property name)

Gets a name from text valued property. The property must be on the object parent entity. For example,

## CV\_NAME\_PROP(BDELNAME)

## CV\_TEXT

Gets text from text valued property. The property must be on the object parent entity.

## RULE\_OBJECT\_STOCKNO\_PROP

Optionally, gets a stock number for the object from the specified text valued property on the object parent entity. If no property is entered (null), no stock number is extracted.

## RULE\_ALWAYSFLAG

This column is normally set to 'N' which means that only objects with changed entities (added, modified or deleted) will be constructed. If you want the rule to always be executed, regardless of change status, set this column to 'Y'.



This should be done only for objects whose entities are not connected by explicit modeling relational pointers or if there is some conflict between rules which can be resolved only by having one rule always construct all its objects before another rule. The second rule is then applied against only those entities remaining.



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# Glossary

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This glossary contains definitions of words and phrases particular to EDMControl.

## Access Privileges

Access to the Project Database is granted on a username/password basis for zone/discipline combinations.

## Change Control and Propagation

EDMControl propagates changes to users by tracking objects, snapshots, and work parts whenever changes are posted. Users decide when to post or retrieve object changes from the database.

## Change Notification

Users may check at any time for modeling changes based on one or more disciplines and graphically highlight these changes.

## EDMControl

A change control management system for Explicit Modeling designs and drawings based on geometric zones and functional relationships.

## Database Administrator

Person who has responsibility and authority for building and maintaining the RDBMS and customizing the user interface.

## Disciplines

Subdivisions of a product based upon the functional classifications (trades and crafts). For example, hot water pipes, HVAC ducts, and so on.

End User

Member of the engineering design team who utilizes EDMControl.

Offsets

The positioning of a Work Part with respect to other Work Parts within the project coordinate system.

Object Construction Rules

A formula used by EDMControl to construct objects from primitive entities stored in the Work Part.

Objects

A group of graphical entities created each time a user posts changes. The graphical entities are used to display objects and are stored in snapshot versions of the Work Parts. Object data is stored in the RDBMS tables.

Project

An undertaking requiring extensive planning and work, that has a definite objective with specific start and completion dates.

Project Control

The phase of a project management cycle that compares actual performance with the planned schedule of objectives and implements corrective measures to avoid project completion delays.

Project Database

The database consists of all the Explicit Modeling Work Parts, the Snapshot version of Explicit Modeling Work Parts associated with a Project, and other project data contained in RDBMS tables.

Project Parts

Explicit Modeling parts, and data stored in RDBMS tables, associated with a specific project.

Project Reporting

Reports generated, using SQL queries, about objects, parts, transaction dates, changes, etc., based on data stored in the Project Database RDBMS tables.

**Relational Database Management System - RDBMS**

Database used by CADDInformation to store and manage attributes, i.e. ORACLE. EDMControl shares some, and uses some, of the CADDInformation tables.

**SCRIPT**

A global modifier which allows the execution of a UNIX shell script, set up by the project administrator, from within the modeling session.

**Snapshots**

Versions of the Work Part created each time a user posts changes to the Project Database Used to compare and track changes between versions, and to display objects.

**Structured Query Language - SQL**

ANSI standard query language used for defining and manipulating data in a RDBMS.

**Work Parts**

Standard Explicit Modeling parts that have been linked to a specific EDMControl Project. They are used to store objects, and post objects, to the project database.

**Work Table**

Table assigned to each user for temporary storage of data associated with the current EDMControl operation.

**Zones**

Geometric subdivisions of a project as defined by a polygon in the XY plane with a minimum and maximum Z elevation.

**Zone/Disciplines**

Standard Explicit Modeling parts that have been linked to a specific EDMControl Project and are used to store objects, and post objects, to the project database.



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