



MICRO FOCUS

APS FOR z/OS

ADMINISTRATOR'S GUIDE



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1 APS for z/OS Administration

This chapter is an overview of the administrative functions of APS for z/OS.

Customizing APS for z/OS

At most sites, the APS Administrator is a single APS user designated to control, maintain and effectively manage APS for z/OS and the environment in which it runs. As the APS Administrator, you:

- Install APS and fix utilities.
- Regulate the use of APS facilities and libraries.
- Configure APS interfaces.
- Set site-specific defaults.
- Manage global data elements.
- Identify and authorize APS users.

Setting Site Defaults

After installing APS for z/OS, enable default settings and perform the following customization tasks:

- Identify the APS Administrator.
- Define a user exit and an Application Painter Customization exit.
- Indicate whether the APS Main Menu or the ISPF Main Menu is the prime menu.
- Define the customer name and site.
- View product options.

To set these defaults, perform the following steps:

- 1 From the APS Main Menu, type **4** in the **Option** field. APS displays the APS Utilities Menu.
- 2 On the APS Utilities Menu, enter **2** in the **Option** field. APS displays the Custom Utilities screen.
- 3 On the Custom Utilities screen, enter **1** in the **Option** field. APS displays the Administration screen.
- 4 On the Administration screen, enter **1** in the **Option** field. APS displays the Administration Configuration screen. Alternatively, enter **=A.4.2.1.1**.
- 5 Complete the fields on the Administration Configuration screen as follows:

Field	Description				
APS Administrator ID EXT	Type the user ID and phone extension of the designated APS Administrator.				
Alternate APS Administrator ID EXT	Type the user ID and phone extension of an alternate APS Administrator.				
Is the APS Menu a Prime Menu?	Identify a point of reference for jump commands. <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">yes</td> <td>APS Main Menu is the prime menu. Users perform jump commands within APS panels.</td> </tr> <tr> <td>no</td> <td>ISPF Main Menu is the prime menu. Users perform jump commands within ISPF panels.</td> </tr> </table>	yes	APS Main Menu is the prime menu. Users perform jump commands within APS panels.	no	ISPF Main Menu is the prime menu. Users perform jump commands within ISPF panels.
yes	APS Main Menu is the prime menu. Users perform jump commands within APS panels.				
no	ISPF Main Menu is the prime menu. Users perform jump commands within ISPF panels.				
Batch Job Submission User Exit	Specify if an exit determines the action APS takes when submitting a job if APS does not submit the job. <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">yes</td> <td>A user exit is supplied.</td> </tr> <tr> <td>no</td> <td>APS submits the job.</td> </tr> </table>	yes	A user exit is supplied.	no	APS submits the job.
yes	A user exit is supplied.				
no	APS submits the job.				

Field	Description
Exit Type	If you specified yes above, indicate the action APS takes at job submission time. Valid values are: cmd Invoke a CLIST. pgm Execute a program. panel Display a panel.
Exit Name	Specify the 1 to 8 character name of the CLIST, load library or GENPANEL member.
APPL PTR Customization Exit	Enter the name of an Application Painter customization: Setting defaults.

Authorizing APS Options

APS for z/OS specifies the product options authorized for use at your site on the Product Options screen. If your site has a license to use an option, the Product Options screen displays YES next to the option and the number of days authorized for use.

You authorize APS product options when the product is installed, or your site purchases additional APS for z/OS options.

If you encounter AUTH errors at execution, contact product support to obtain a new Authorization module.

Configuring Online Express

Create programs that adhere to standards

The Default Program Model and Autoprompt configuration options for Online Express help developers quickly create programs that adhere to standards you define. You can define program models and autoprompt sequences for each Project and Group.

A Default Program Model lets you define a program that serves as a default model for every program developers create. When developers

access Online Express to create a new program, Online Express copies the program model. In effect, this process performs a Create Like function. Typically, the program model is only a partial definition, it specifies such things as standard function key assignments or common use of control points. The program model usually omits field mapping and database calls, since these are unique for each program.

The second configuration option, Autoprompt, guides developers through a predefined sequence of the primary Online Express screens needed to create a program. The predefined sequence defaults to the following screens:

- Program definition
- Alternate functions
- PF Key definitions
- Field mapping
- Control points
- Database access

You can override the sequence of screens, add or delete screens from the list. Developers advance through the sequence by pressing PF3 instead of typing option numbers or letters. Autoprompt is merely an automated navigation guide; developers can still access other screens not listed in autoprompt by entering their proper option numbers or letters.

Defining Configuration Options

Define a default program model and auto prompt sequences as follows:

- 1 Enter **4** in the **Option** field. APS displays the Utilities menu.
- 2 Enter **2** in the **Option** field. APS displays the Custom Utilities menu.
- 3 Enter **1** in the **Option** field. APS displays the Admin and Config Facility menu.
- 4 Enter **3** in the **Option** field. APS displays the Project Dataset Configuration menu.

- 5 Enter **3** in the **Option** field. APS displays the Online Express Configuration screen. Alternatively enter **=4.2.1.3.3** from any APS screen.
- 6 Complete the fields on this screen as follows:

Field	Description
Default Program Model	The name of the Online Express program to serve as a default program model for an entire library set.
Use DDIPRE	Specify whether the program uses the prefix of the DDIFILE. The prefix is the program project and group names.

Note: APS does not create the default program model here; it only names it. APS saves the specifications entered on this screen in the file APSEXP, in a member named \$\$PXCNTL, which is a reserved name.

- 7 Online Express Configuration displays the current autoprompt sequence. Type over the list to change the sequence and choice of screens displayed in autoprompt mode. APS shows valid entries at the bottom of the screen.
- 8 Create the program model in Online Express Program just as you would any program. Because a partial program definition may not be valid for generation, you should SAVE and then CANCEL when defining a default program model to avoid generating an incomplete program.

Defining Multiple Program Models

You can define program models on an application-by-application basis. When a developer accesses an application that has an identically named program model, Online Express copies the program model specific to that application. To define multiple program models, perform the following:

- 1 In the Application Painter, create an application consisting of an application name and a default program model name; the names must be identical.

- 2 In Online Express, define the program default values you want. Save and then cancel the program model on the Online Express Menu.
- 3 Access Online Express Configuration screen and type *aplname in the Default Program Model field.

Configuring the APS/ENDEVOR Interface

The ENDEVOR, APS/ENDEVOR interface allows developers to manage APS application components with LEGENT Corporation's ENDEVOR/MVS software. Before developers at your site use the APS/ENDEVOR Interface, you must configure both the APS/ENDEVOR interface and ENDEVOR/MVS.

Configure the interface within the APS environment as follows:

- 1 Map the following files to APS for z/OS:
 - The ENDEVOR environment
 - System
 - Subsystem
 - Stage 1 and Stage 2 Master Control Files
- 2 Access the APS/ENDEVOR Configuration Options screen as follows:
 - a From the APS Main Menu, select option 4, Utilities.
 - b From the APS Utilities Menu, select option 2, Custom Utilities.
 - c From the Custom Utilities screen, select option 1, Admin and Config.
 - d From the APS Administration screen, select option 3, Project Dataset Configuration.
 - e From the Project Dataset Configuration screen, select option 4, APS/VCS Configuration. Alternatively, enter =A.4.2.1.3.4 from the APS Main Menu. APS displays the APS/ENDEVOR Configuration Options screen.

3 Complete the fields on this screen as described below.

Field	Description
Project and Group	Qualifiers of the project.group to map to ENDEVOR.
ENDEVOR Mapping	Environment, system, and subsystem qualifiers to map to the project and group.
High Level Qualifier for Generate SCL Datasets	High-level qualifier for ENDEVOR data sets &DSNPRE.CNTL(A2VESOLA) allocates: <i>qualifier.APSPROG.APSSCL</i> <i>qualifier.APSSCRN.APSSCL</i> APSPROG.APSSCL contains SCL to generate the APS component type PG (program). APSSCRN.APSSCL contains SCL to generate the component type SC (Screen).
ENDEVOR MCF Stage1 ENDEVOR MCF Stage 2	Fully qualified data set names of the ENDEVOR Master Control File (MCF) for each stage.
APS Entity Type To ENDEVOR Type Mapping	Name of the ENDEVOR element type that corresponds to the APS component type. ENDEVOR element type names should be identical to the APS component type names.

- 4 Press Enter to process the data.
- 5 Press PF3 to return to the APS Project Dataset Configurations screen.
- 6 Select option 2, Build CLIST, PANEL, and LOGON PROC for a Project. APS displays the Miscellaneous screen.
- 7 Enter yes in the Enable APS Version Control Commands field so developers can use the following commands to access ENDEVOR/MVS and the APS/ENDEVOR Interface options from within APS:
 - NDVR
 - CI (Checkin)
 - CO (Checkout)

- VP (View Print)
 - DF (View Differences) commands to access from any APS screen.
- 8 To let APS find referenced components in ENDEVOR, concatenate the ENDEVOR Source Output Library data set names below each corresponding APS Project.Group data set name in &APSPRE.ISPSLIB(SSMDSNS). APS needs to find referenced components in ENDEVOR when developers check in and check out a component using the Component Parts option, and check in a component using the Delete Input Source option. The example below illustrates how to concatenate Source Output Library names.

Original SSMDSNS:

```
)CM SSMDSNS - ALLOCATE ALL APS USER DATASETS
//APRINV DD DISP=SHR,DSN=&DSNPRE.APRINV
//APSAPPL DD DISP=SHR,DSN=&DSNPRE.APSAPPL
//APRAPPL DD DISP=SHR,DSN=&DSNPRE.APRAPPL
//APSCNDT DD DISP=SHR,DSN=&DSNPRE.APSCNDT
.
.
```

Modified SSMDSNS:

```
)CM SSMDSNS - ALLOCATE ALL APS USER DATASETS
//APRINV DD DISP=SHR,DSN=&DSNPRE.APRINV
//APSAPPL DD DISP=SHR,DSN=&DSNPRE.APSAPPL
// DD DISP=SHR,DSN=&DSNPRE.STAGE1.APSAPPL
// DD DISP=SHR,DSN=&DSNPRE.STAGE2.APSAPPL
//APRAPPL DD DISP=SHR,DSN=&DSNPRE.APRAPPL
// DD DISP=SHR,DSN=&DSNPRE.STAGE1.APRAPPL
// DD DISP=SHR,DSN=&DSNPRE.STAGE2.APRAPPL
//APSCNDT DD DISP=SHR,DSN=&DSNPRE.APSCNDT
.
.
```

- 9 Make the ENDEVOR Source Output Libraries available to APS. If developers check out to APS a component that references other components that exist only in the ENDEVOR library, and they need to generate the components in APS instead of ENDEVOR without having to check out all the referenced components, concatenate the Source Output Library data set names below each corresponding APS Project.Group data set name in &APSPRE.ISPSLIB(SSMCOMP) and &APSPRE.ISPSLIB(SSMGEN).

- 10 Reset the APS Profile Pool variables by selecting option 0, Reset Options, from the APS Options Menu. This enables developers to use the APS Version Control commands mentioned in step 7.

Configuring ENDEVOR/MVS

Perform the following steps to configure ENDEVOR/MVS for use with the APS/ENDEVOR Interface.

- 1 In ENDEVOR Stage 1 and Stage 2, define an ENDEVOR Entity Type for each APS component type data set to be managed by the APS/ENDEVOR Interface. Their names must match the ENDEVOR Entity Types named on the APS/ENDEVOR Configuration Options screen.
- 2 Edit the APS-provided member &DSNPRE.CNTL(A2VESOLA) according to the instructions in that member. This allocates a Source Output Library for each ENDEVOR Entity Type you defined in step 1, and allocates the generation SCL data sets APSPROG.APSSCL and APSSCRN.APSSCL. The high level qualifiers of the generation SCL data sets must match the values on the APS/ENDEVOR Configuration Options screen.
- 3 On the ENDEVOR Type Sequencing screen, define the sequence in which component types are processed when developers use the Component Parts option on the Checkin and Checkout screens. Component type APSPROG should be last in the sequence, and APSSCRN should be next to last.
- 4 Ensure that each developer defines a job card on the APS Job Control Card screen. Any job card--J1 through J5--is valid.
- 5 Edit the PROC symbolics in the sample CICS/VSAM program and screen Generate Processors, named &APSPRE.CNTL(A2VECIPG) and &APSPRE.CNTL(A2VECISC) respectively, to specify the proper system and ENDEVOR data set names. The sample program Generate Processor includes the DB2 Translator step. Build any other Generate Processors that you need for other DC/DB targets by copying the sample processors and editing.
- 6 Edit the APS Generate Processor, &DSNPRE.CNTL(A2VEGSUB), to specify the proper SYSOUT class for the system Internal Reader (INTRDR) and the generation SCL data set names APSPROG.APSSCL and APSSCRN.APSSCL.

- 7 Add the Generate Processors A2VEGSUB, A2VECIPG, A2VECISC, and any others that you have built.
- 8 Create a Processor Group for each Generate Processor.
- 9 Define each Processor Group and Generate Processor to the Entity Types APSPROG and APSSCRN in ENDEVOR, as shown below.

For Type APSPROG:

```
PROCESSOR GROUP:  A2VEGSUB
  Generate Processor:  A2VEGSUB
PROCESSOR GROUP:  A2VECIPG
  Generate Processor:  A2VECIPG
.
.
.
```

For Type APSSCRN:

```
PROCESSOR GROUP:  A2VEGSUB
  Generate Processor:  A2VEGSUB
PROCESSOR GROUP:  A2VECISC
  Generate Processor:  A2VECISC
.
.
```

- 10 Define an APS program stub Processor Group and Generate Processor to the Entity Type APSPROG. Since program stubs must not be generated, this processor updates the Source Output Library without generating the stubs. Assign the name A2VESTUB to both the Processor Group and the Generate Processor. To override this name, customize &APSPRE.ISPSLIB(A2VECIPL).
- 11 Edit &DSNPRE.CNTL(A2VEPROC) to associate the appropriate Processor Group with each DC/DB target combination. APS provides sample CICS/VSAM program and screen Generate Processors. You can use the default names, shown below, or override them.

Table 1-1: Program Generate Processors

DC/DB Target	Processor Group Name
CICS/VSAM	A2VECIPG
CICS/DLI	A2VECIDL
CICS/IMS	A2VECIIM
CICS/DB2	A2VECID2
IMS/DLI	A2VEIMDL
IMS/IMS	A2VEIMDL

DC/DB Target	Processor Group Name
IMS/DB2	A2VEIMD2
ISPF/VSAM	A2VEISVS
ISPF/DB2	A2VEISD2
DLG/VSAM	A2VEDLVS
DLG/DB2	A2VEDLD2
MVS/VSAM	A2VEMVVS
MVS/DLI	A2VEMVDL
MVS/IMS	A2VEMVIM
MVS/DB2	A2VEMVD2
CICS	A2VECISC
IMS	A2VEIMSC
ISPF	A2VEISSC
DLG	A2VEDLSC

Listed below is a summary list of dataset members you must edit or that supply variable values during APS/ENDEVOR configuration.
 Note: The variable &DSNPRE represents the Project and Group qualifiers assigned to the user datasets created during APS for z/OS installation.

Dataset Name	Description
&DSNPRE.CNTL(A2VESOLA)	Allocates the following datasets for program and screen generation SCL respectively: &A2VESCL.APSSPROG.APSSCL &A2VESCL.APSSCRN.APSSCL. Also allocates the ENDEVOR Source Output Libraries. APS allocates this member during APS for z/OS installation. Edit the JCL according to the instructions at the top of the member.
&A2VESCL.APSPROG.APSSCL &A2VESCL.APSSCRN.APSSCL	APS/ENDEVOR writes program and screen generation SCL to this data set. Allocated by: &DSNPRE.CNTL(A2VESOLA). APS assigns the value you enter in the High Level Qualifier for Generate SCL Datasets field to the ISPF variable, &A2VESCL. The APS Generate Processor, A2VEGSUB references these data sets.

Dataset Name	Description
&DSNPRE.CNTL(&ZUSER.J1)	APS/ENDEVOR writes the APS job card for use by the Generate Processor A2VEGSUB to this member. &APSPRE.CLIST(A2VEFGP) supplied the value of &ZUSER.J1.
&DSNPRE.CNTL(A2VECFG)	Provides APS/ENDEVOR with APS for z/OS and ENDEVOR/MVS mapping specifications, the Entity Type list, and information to construct ENDEVOR SCL. You create this dataset by completing the APS/ENDEVOR Configuration Options screen.
&DSNPRE.CNTL(A2VECIPG) &DSNPRE.CNTL(A2VECISC)	Sample ENDEVOR Generate Processors for CICS/VSAM program and screen generation, respectively. The program processor includes the DB2 Translator step. APS allocate this dataset during APS for z/OS installation. Edit the PROC symbolics to specify the correct system and ENDEVOR dataset names.
&DSNPRE.CNTL(A2VEGSUB)	Submits a batch job at Checkin to invoke ENDEVOR to process the following datasets: &A2VESCL.APSPROG.APSSCL &A2VESCL.APSSCRN.APSSCL. APS allocates these datasets during APS for z/OS installation. Edit the JCL according to the instructions at the top of the member. Members used as input to A2VEGSUB are: &DSNPRE.CNTL(&ZUSER.J1) &A2VESCL.APSPROG.APSSCL (programname) &A2VESCL.APSSCRN.APSSCL (screenname)
&DSNPRE.CNTL(A2VEPROC)	Table of Processor Group names for DC/DB target combinations, referenced when APS/ENDEVOR creates SCL for generating programs and screens.

Sample Application Development Environment

Suppose your application development environment consists of a work area, a QA area, and a production area. These areas would be set up in APS for z/OS and ENDEVOR/MVS as follows.

Work area

The work area is an APS user Project.Group in which developers create and modify application components. The APS Project.Group component type data sets are mapped to their corresponding ENDEVOR Element Types in ENDEVOR Stage 1 and Stage 2.

QA area

The QA area is the ENDEVOR Stage 1 to which developers check in work area APS components for application testing. The work area components can be automatically deleted at checkin. Developers check revisions out from the QA area to the work area to modify and unit test them.

The QA area contains the following:

- ENDEVOR Element Types that correspond to the APS component types. The first, or base, revision of each APS component checked in is stored here in full format; all subsequent revisions are stored in delta format.
- ENDEVOR Source Output Libraries that correspond to the work area component types. The latest revision of each APS component checked in is stored here in full format. The full format revisions are used as input for Generate Processors and the Component Parts option on the Checkin and Checkout screens.
- Data sets containing ENDEVOR SCL for generating programs and screens.

Production area

The production area is the ENDEVOR Stage 2 to which an Administrator moves the QA revisions, using either a Package Move or an explicit Move Action. The QA area members can be automatically deleted when moved. Stage 2 contains a set of ENDEVOR Element Types and ENDEVOR Source Output Libraries identical to those in Stage 1.

The generation process

At Checkin, APS/ENDEVOR invokes ENDEVOR Generate Processors to generate programs and screens. However, unlike ENDEVOR, the interface delays generation until after all components included in the Checkin are added or updated.

APS/ENDEVOR creates generation SCL and writes it to a program generation SCL data set or a screen generation SCL data set. After all Add and Update actions have completed, the interface executes an intermediate, APS-supplied Generate Processor called A2VEGSUB, which invokes ENDEVOR to process the generation SCL. The SCL then executes the appropriate ENDEVOR Generate Processor.

Sample Generate Processors

APS supplies sample ENDEVOR Generate Processors for CICS/VSAM programs and screens. If you need Generate Processors for other DC/DB targets, you can copy the CICS/VSAM samples and edit them to suit your needs. The CICS/VSAM program Generate Processor also supplies a sample DB2 Translator step that you can copy when building a DB2 Generate Processor.

Generation process example

The following example shows how a program named ORDINQY is checked in and generated. Assume that the program belongs to an application named ORDAPPL.

A developer checks in ORDINQY to ENDEVOR using the interface. The Checkin function creates SCL for the ENDEVOR Add/Update action and submits it as a batch job.

Sample Add/Update SCL:

```
ADD ELE "ORDINQY" FROM DSN "MKTAPS.MKT2.APSPROG"
TO ENV "SYS4" SYS "MKTAPS" SUB "MKT2" TYP "APSPROG"
OPT UPD CCID "PRJ089" COM "CHANGE INVALID PF KEY MESSAGE"
PRO GRO "A2VEGSUB"
```

Note that the Processor Group specified is A2VEGSUB.

The Checkin function also creates SCL for generating programs, and writes it to a member in the APSPROG.APSSCL data set. APS/ENDEVOR references the following information to create the program generation SCL:

- The application name associated with the program
- The DC/DB target of the application
- The Processor Group Name, found in &DSNPRE.CNTL(A2VEPROC), that is appropriate for the DC/DB target of the application.

Sample generation SCL:

```
GENERATE ELEMENT "ORDINQY"
FROM ENV "SYS4" SYS "MKTAPS" SUB "MKT2" TYP "APSPROG"
STAGE NUM 1
OPT CCID "PRJ089" COM "ORDAPPL"
PRO GRO "A2VECIPG"
```

Note that the Processor Group is A2VECIPG.

After the Add action completes successfully, ENDEVOR executes A2VEGSUB, the Generate Processor specified in the Add SCL. A2VEGSUB submits a batch job to process the program generation SCL. The program generation SCL invokes A2VECIPG, the ENDEVOR Generate Processor specified in the program generation SCL and compiles the program. The job card that the Generate Processor uses is contained in &DSNPRE.CNTL(&ZUSER.J1).

Related Topics

For more information about . . .	See . . .
Creating job control cards	<i>APS Reference: Job Control Cards</i>
Using the APS/ENDEVOR Interface	<i>APS User's Guide: Using the APS/ENDEVOR Interface</i>

2 Managing Data Elements

This chapter describes the management of data elements.

Overview

***Exercise
centralized
control***

The APS Data Element Facility lets you exercise centralized control over the data elements (screen field definitions) used in APS applications. As the APS Administrator, you establish centralized control when you define and store data elements in the APS data element library. APS defines a data element library, APSDE, during installation. To simplify maintenance tasks and APS screen file migration, we recommend that you allocate only one data element library for all of your projects and groups.

***Define and store
in the data
element library***

Data elements that you define and store in the APS data element library are global data elements. Developers copy global data elements from the data element library as they create their screens. If developers can modify the data element, APS considers the data element to be a local data element and no longer under the control of the data element library.

***Implement
varying levels of
control***

You can implement varying levels of centralized control over data elements using the following Data Element Facility features:

- The Data Consistency feature lets you control whether or not developers can create their own screen fields, or if they must copy data elements from the data element library.
- The Context feature lets you create contexts to create multiple definitions for a field. You can define a maximum of ten contexts in which global screen fields can be used. For example, you may create categories of test and production fields, or update and display-only fields.

- The Field/Screen Cross Reference list allows you to identify all the screens that reference a data element. When you must update a data element, you can generate the relevant screens from this list.

Controlling Data Element Consistency

You can control whether developers must select data elements from the data element library or whether they can create their own screen fields in their programs. To do so, set the Data Consistency option as follows:

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.
 - b Enter **3** in the **Option** field. APS displays the Data Element Facility screen.

```

OPTION ==>

FE - Field Edit Criteria          C - Create Like
D - Delete a Screen Field       R - Rename a Screen Field
P - Print Report                 I - Import Screen Fields
W - Where used (Screens)

FIELD NAME ==> datakey-key-test (Blank for member list)
CONTEXT    ==> update_          (* to Print All)
NEWNAME    ==>                  (If "C" or "R" selected)
NEW CONTEXT ==>

IF OPTION W Enter BATCH execution option ==>      (Yes or No)
If OPTION I is selected enter SCREEN name below:
SCREEN NAME ==>                  (Blank for member list)
REPLACE LIKE-NAMED FIELDS ==>    (Yes or No)

```

- 2 Enter **admin** in the **Option** field. APS displays the Data Consistency Option screen.

```

OPTION ==> ADMIN
COMMAND ==> _
Data Consistency Option: NO (Yes or No)
IF OPTION 1 is selected enter SCREEN name below:
SCREEN NAME ==> (Blank for member list)
REPLACE LIKE-NAMED FIELDS ==> (Yes or No)

```

- 3 If you do not want developers to define their own screen fields, enter **yes** in the Data Consistency Option field. Yes means developers must select data elements from the data element library and cannot change the attributes of the data elements. No, the default value for this field, means developers can define their own screen fields. They can also select data elements from the APS data element library. However, if the developer changes the attributes of a data element, the data element becomes a local data element.

Maintaining Data Elements

You define and store data elements in the APS data element library using the Data Element Facility screen. From this screen, you can also:

- Add and modify field definitions.
- Assign field edits.
- Delete, rename, copy and print a report for a field.
- Import screen fields and their edit criteria into the data element library.

Add and Modify Field Definitions

To add or modify screen field definitions, perform the following:

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.
 - b Enter **3** in the **Option** field. APS displays the Data Element Facility screen.
- 2 On the Data Element Facility screen, type the data element name you want to add or modify in the Field Name field. If applicable, type a context name in the **Context** field and press Enter. APS displays the Screen Field Definition screen.

```

COMMAND ==>

SCREEN FIELD NAME: DATAKEY-KEY-TEST      CONTEXT: UPDATE
FIELD LENGTH   ==> 005 (Required)
TEXT PROMPT    ==> _
INITIAL VALUE  ==>

FIELD ATTRIBUTES          EXTENDED ATTRIBUTES
TYPE                     ==> U (U or P)      MODIFIABLE ==> NO (Yes or No)
INTENSITY                ==> N (N or B or D)  COLOR      ==>
MDT                      ==> ON (On or OFF)   BLINKING  ==> NO (Yes or No)
NUMERIC LOCK             ==> OFF (On or OFF)   UNDERLINE ==> NO (Yes or No)
LIGHT PEN                ==> OFF (On or OFF)   RVIDEO    ==> NO (Yes or No)
INITIAL CURSOR           ==> NO (Yes or No)    FORMAT    ==> (L or M)
                                           RULEDLINE ==> (L,R,D,U,B
                                           or 00 - 0

```

Note: If you are adding a new data element, you can define different sets of attributes for the screen field by assigning a context to each set. Once you associate a context with the screen field definition, APS requires that context whenever you reference the field. For more information about contexts, see *Defining Contexts*.

- 3 On the Screen Field Definition screen, complete the following fields as described below.

Field	Description
Field Length	Specify the character length of the screen field. Note: If you change the length of a field, reassign the field edits for the field because APS deletes any previously defined field edits of that field
Text Prompt	Type a prompt you want to appear for the screen field definition. Maximum 40 characters. For example: Enter Name.
Initial Value	Specify an initial value for the field. Maximum 27 characters.

- 4 Press Enter. APS provides default values for the Field and Extended Attributes fields. If you do not want to use the default values, simply type over it with the value you want to use. Valid values for these fields are:

Field/Extended Attribute	Values
Type	u Default. Unprotected, both input and output.
	p Protected output only.
	t Text with default attributes changed.
Intensity	n Default. Normal.
	b Bright.
	d Dark (non-display).
MDT	Modified Data Tag. Specifies whether or not to return to the program the data displayed on the screen by the end user when the end user presses Enter. Valid values are:
	on The terminal always sends field data to the program. This is the default for I/O fields.

Field/Extended Attribute	Values
Numeric Lock	<p data-bbox="705 244 1259 461">off The terminal sends the field's data to the program only if the end user modified it. The unmodified data is lost because the MDT value changes to on when the end user modifies a field. This is the default for text fields.</p> <p data-bbox="705 479 1259 635">Activates the numeric keyboard shift lock function when the cursor moves into the field. This hardware dependent feature does not guarantee that the user can only enter numeric data in the field. Valid values are:</p> <p data-bbox="705 652 911 677">on Lock on.</p> <p data-bbox="705 694 911 718">off Lock off.</p>
Light Pen	<p data-bbox="705 736 1259 791">Specifies the field is light pen detectable. Valid values are:</p> <p data-bbox="705 808 951 833">on Detectable.</p> <p data-bbox="705 850 1108 874">off Default. Not detectable.</p>
Initial Cursor	<p data-bbox="705 897 1259 987">Indicates whether the cursor is positioned on the field when the screen is sent. Valid values are:</p> <p data-bbox="705 1005 851 1060">yes no (default)</p>
Modifiable	<p data-bbox="705 1078 1259 1133">Enables/disables the end user from modifying the field.</p>
Color	<p data-bbox="705 1150 1259 1275">Specifies the initial color of a field on a full color terminal. The Screen Painter does not generate a color attribute unless you specify a valid color code. Valid values are:</p> <p data-bbox="705 1293 1011 1317">nu Neutral or blank</p> <p data-bbox="705 1334 862 1359">bl Blue</p> <p data-bbox="705 1376 891 1400">yl Yellow</p> <p data-bbox="705 1418 862 1442">pl Pink</p> <p data-bbox="705 1459 929 1484">tq Turquoise</p> <p data-bbox="705 1501 882 1525">gn Green</p>

Field/Extended Attribute	Values
Blinking, Underline, RVideo	<p>These are mutually exclusive attributes for highlighting a field. Valid values are:</p> <p>yes Highlighting on.</p> <p>no Default. Highlighting off.</p> <p>If you set one of these fields to yes, you must set the other two fields to no.</p>
Format	Specify the character format for a field on DBCS terminals. If this field is blank, the character format of the field is EBCDIC only.
Ruledline	<p>Specifies to place lines around a field on DBCS terminals. If this field is blank, APS does not display lines around the field. Valid values are:</p> <p>1 Line to the left side of the field.</p> <p>r Line to the right side of the field.</p> <p>o Line over the field.</p> <p>u Line under the field.</p> <p>b Line surrounding the field.</p> <p>oo-of Combination of lines.</p>

- 5 Assign field edits as follows:
 - a Ensure that you have entered the field name and context.
 - b Type **fe** in the Option field and press enter to access the Field Edit facility. For more information about assigning field edits, see the User's Guide: Chapter 4, "Painting Character Screens."

Importing Screen Fields

To import all fields, including their field edits from an application screen, perform the following:

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.

- b Enter **3** in the **Option** field. APS displays the Data Element Facility screen.
- 2 On the Data Element Facility screen, type **i** in the **Option** field.
- 3 Complete the following fields on the Data Element Facility screen as follows:

Field	Description
Screen Name	Type the name of the screen to import.
Replace Like-Named	
yes	Overlay identical field names.
no	If like-named fields exists in the data element library and their context is blank, the fields you import do not overlay the existing fields.

- 4 Press Enter to submit the batch job. To ensure the integrity of the data elements imported, this job requires exclusive control of the APSDE library.
- 5 After APS submits the job, exit the Data Element Facility to make the data element library available.

Delete, Rename, Copy, and Report Field Definitions

To copy, delete, rename, or report on a data element stored in the data element library, perform the following tasks:

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.
 - b Enter **3** in the **Option** field. APS displays the Data Element Facility screen.
- 2 On the Data Element Facility screen, type the letter that corresponds to the task you want to perform in the Option field.

- 3 Complete the remaining fields for the task you want to perform on the Data Element Facility screen as follows:

Task	Field	Description
Copy	Field Name	Name of the field to be copied.
	Newname	Name of the new field.
	Context	Optional. Context of source field.
	New Context	Optional. Context for new field.
Delete	Field Name	Name of the field to delete.
Print Report	Field Name	To report on a specific field, type a field name. Otherwise leave blank to report on all fields.
	Context	To report on field(s) with a specific context, type a context name. Otherwise, type * for all contexts.
Rename	Field Name	Current name of the field.
	Newname	New name for the field.
	Current Context	Optional. Current context.
	New Context	Optional. New context.

- 4 Press Enter to process the task.
- 5 After performing any of the above tasks, reorganize the internal index of the APS data element library. To do so, enter **apsbuildi** in the **Option** field. Note: This command is for APS Administrators only.

Special Considerations

- Once you associate a context with the field definition, APS requires that context whenever you reference the field.
- Only one user at a time can add data elements. New data elements are not available and do not appear in the elements lists until you have completed your work and exited the facility.
- If you rename a field and you specify a new context for the field, APS searches your application for screens that reference the field context. If APS finds screens that reference the context, it displays a list of screen names and a message that the data element cannot be renamed. If you are renaming the data element from the member list that references multiple screens, APS displays *NO/REN* in the

status field. If APS does not find any references to screens or the context and new context are the same, APS renames the field.

Working with Contexts

Contexts let you create multiple definitions for a field. For example, there might be two purposes (contexts) for presenting a field it could be an input/output field on one screen, and a output-only field on another screen. For each purpose, different attributes could be assigned to the same field. Therefore you assign a context name for each purpose.

To display all contexts, enter **conlist** in the **Option** field of the Data Element Facility screen.

Defining Contexts

To define a context name:

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.
 - b Enter **3** in the **Option** field. APS displays the Data Element Facility screen.
- 2 From the Data Element Facility screen, enter **context** in the **Option** field. APS displays the Context Table Maintenance screen.

COMMAND ==>	
CONTEXT	SHORT DESCRIPTION
obtain	fields are display only
next	C
UPDATE	user may update fields_
-----	-----
-----	-----
-----	-----

- 3 Enter the context name and a short description. If you want to have multiple definitions for a field, you must define at least one context

on the Context Table Maintenance screen. You can define as many as ten contexts, using any values you want. Context Table Maintenance does not offer predefined contexts.

Deleting Contexts

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.
 - b Enter **3** in the **Option** field. APS displays the Data Element Facility screen.
- 2 From the Data Element Facility screen, enter **context** in the **Option** field. APS displays the Context Table Maintenance screen.
- 3 Enter **d** in the column next to the context name you want to delete. If a field on any application screen references the context, APS lists the screens where the fields appear. You cannot delete a context until you remove the fields that reference it from all application screens.
- 4 Identify the fields to delete by accessing each screen listed and pressing PF9 to list the fields used on a screen and their contexts.

Cross Referencing Field Definitions

The Field/Screen Cross Reference screen allows you to view a list of screens that reference a specified field. Use this screen to identify and update screens affected by changes to global data elements. APS displays the word LOCAL in the Field Type column if a developer changed a data element selected from the APS data element library. If the data element selected remains unchanged, the term GLOBAL appears in the Field Type column. Use the Field/Screen Cross Reference screen to identify and update screens affected by changes to global data elements.

To view a list of screens that reference a specified field, perform the following:

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.
 - b Enter **3** in the **Option** field. APS displays the Data Element Facility screen.
- 2 From the Data Element Facility screen, type **w** in the **Option** field. APS displays a screen.
- 3 Type a field name (and context if applicable) and press Enter. APS displays the Field/Screen Cross Reference screen.

```

----- Data Element Facility -----
0  ----- FIELD/SCREEN CROSS REFERENCE ----- Row 1 of 1
  COMMAND ==> █
      Field name: FIRST-NAME
      Context . :
      Screen      Field type  Created      Changed      ID
      SCREEN1    GLOBAL      15/03/23    15/03/23    14:33    ROCDJH
      ***** Bottom of data *****
  
```

- 4 Generate all screens that use the global definition directly from the Field/Screen Cross Reference screen. To do so, enter **g** next to one or more screen names, or enter **gen** in the **Command** field to generate all the screens listed.

Maintaining the Data Element Library

Using the Data Element Library Administration facility, you can:

- Migrate data elements and contexts from one data element library to another.
- Migrate screens and their data elements from one project and group to another.
- Promote the context of a data element to another context within a data element library.
- Update data element references in the screen definitions to a new context.

To do so, follow these steps:

- 1 Access the Data Element Facility Screen as follows:
 - a From the APS Main Menu, enter **2** in the **Option** field. APS displays the Dictionary Services screen.
 - b Enter **5** in the **Option** field. APS displays the Data Element Library Administration screen.
- 2 Enter one of the following options in the **Option** field:

Option	Description
MD	Migrate data elements and contexts from one data element library to another. If the context does not exist in the destination, APS adds it to the destination context file.
MS	Migrate screens and their data elements from one project and group to another.
PD	Promote the context of a data element to another context within a data element library.
PS	Promote the context of all the data elements used by a screen to another context. APS updates the data elements references in the screen definition to the new context.

- | Option | Description |
|--------|---|
| SO | Update data element references in screen definitions to a new context. The data elements with the new context should already exist in the data element library specified in the source. |
- 3 If you selected any of the Cross Data Element Library function options, enter a destination project and group.
 - 4 Enter a source project and group, unless you want to use the environment project and group and data element library settings.
 - 5 If the data element library location is different from the source or destination project and group, specify a data element prefix in the Data Element Library Prefix field.
 - 6 Enter the screen name in the **Screen** field. To display a selection list, press Enter. Enter **s** next to the screen name to select a screen name from the selection list.
 - 7 Enter the name of the data element in the **Element** field. To display a selection list, leave this field blank and press Enter. Enter **s** next to the data element name to select a data element name from the selection list.
 - 8 Enter **s** or **d** in the Collision Priority field if the destination element/context already exists. If you enter an **s**, the source attributes overwrites the destination element or context. If you enter **d**, the destination attributes remain unchanged. If you leave this field blank when a conflict occurs, the Conflict Resolution screen displays. This screen displays the source and destination attributes for the element or context. Select the one you want for the destination.
 - 9 To prevent the Conflict Resolution screen from displaying, enter **yes** in the **Global** field. Doing so sets the global collision priority value to the value entered in the selection field. APS resolves conflicts based on the global setting.
 - 10 To optionally perform this process in batch mode, enter **yes** in the Batch Execution field. Note that, during the batch process, APS locks the Data Element Index file and cannot be simultaneously updated online until APS completes the batch process.

3 Managing APS Facilities and Libraries

This chapter describes the management of APS facilities and libraries.

Controlling the Customization Facility

Regulate customization facility usage

The APS Customization Facility lets developers modify and extend APS rules and create supplemental, reusable user rules called macros. You can regulate the use of the APS Customization Facility using the Customization Facility Control System. This control system lets you enable or disable customization control and create and maintain a rule list.

The default setting for customization control is enable. This means the control system is on and developers cannot define or access user macros. However, APS supplied macros remain usable. If you disable customization control, developers can define user macros. A third alternative lets you turn the control system off and create a rule list. For more information, see *Working with Rule List* below.

To enable or disable customization control, do the following:

- 1 Access the Customization Control Menu as follows:
 - a Enter **4** in the **Option** field. APS displays the Utilities menu.
 - b Enter **2** in the **Option** field. APS displays the Custom Utilities menu.
 - c Enter **1** in the **Option** field. APS displays the Admin and Config Facility menu.
 - d Enter **5** in the **Option** field. APS displays the Customization Control menu. Alternatively enter **=4.2.1.5** from any APS screen.

- 2 On the Customization Control Menu enter **1** in the **Option** field. APS displays the Customization Control Activation screen.
- 3 Complete the fields on this screen as follows:

Field	Description
Command	on Enable customization control. off Disable customization control. change Change the control system password.
Password	Type the password included with your APS software.
New Password	If you entered change in the Command field, type a new password.

Working with Rule Lists

A rule list is a list of user macros developers can access. Rule list are applicable to all projects and groups. You can add to and delete from this list as necessary. To create and maintain a rule list, do the following:

- 1 In the USERMACS library, create a control file that contains statements specifying which macros developers can access. You can code one or more statements in a single control file. For example:

```
//INPUT proj.grp.USERMACS
MACLIB1
MACLIB2
$MACRO1
$MACRO2
```

These statements place every macro defined in MACLIB1 and MACLIB2 as well as macros \$MACRO1 and \$MACRO2 in the rule list.

- 2 Access the Customization Control menu as follows:
 - a Enter **4** in the **Option** field. APS displays the Utilities menu.
 - b Enter **2** in the **Option** field. APS displays the Custom Utilities menu.
 - c Enter **1** in the **Option** field. APS displays the Admin and Config Facility menu.

- d Enter **5** in the **Option** field. APS displays the Customization Control menu. Alternatively enter **=4.2.1.5** from any APS screen.
- 3 From the Customization Control Menu, enter **2** in the **Option** field. APS displays the Rule List Maintenance screen.
- 4 Complete the fields on this screen as follows:

Field	Description
Command	create Create a rule list add Add macros to an existing rule list. delete Delete macros from an existing rule list.
Password	Type your password.
Control File	Specify the fully qualified name of the control file.
Output File	Specify the fully qualified rule list filename. This file must be named MACROLST and reside in the APS CNTL library. For example, SYS1.APS5000.CNTL.MACROLST
Options	v To generate a detailed report of macros processed into the rule list.

- 5 Press Enter to generate the rule list.

Creating New Project Datasets

- 1 Access the Project Dataset Configuration screen as follows:
 - a On the APS Main Menu, enter **4** in the **Option** field. APS displays the Utilities menu.
 - b Enter **2** in the **Option** field. APS displays the Custom Utilities menu.
 - c Enter **1** in the **Option** field. APS displays the Admin and Config Facility menu.
 - d Enter **3** in the **Option** field. APS displays the Project Dataset Configuration screen. Alternatively, you can type **=A.4.2.1.3** from other APS screens.

```

----- APS Project Dataset Configuration -----
OPTION ==> █

  1 - Allocate Project Datasets
  2 - Build CLIST, PANEL and LOGON PROC for a Project
  3 - ONLINE EXPRESS Configuration
  4 - APS/UCS Configuration

      TARGET PROJECT ==>
      TARGET GROUP ==>

CREATE DATA ELEMENT LIBRARY ==>                (Yes or No)

      DISK VOLUME ==>
      DISK UNIT ==>

      TARGET DDI PREFIX ==>

```

- 2 On Project Dataset Configuration screen, type **1** in the **Option** field.
- 3 Complete the Project Dataset Configuration screen fields as follows:

Field	Description
Target Project	The first level qualifier that identifies the name of the new project. For example, myproj. It must be 1-8 alphanumeric characters; the first character must be alphabetic.
Target Group	The second level qualifier that identifies the name of the new group. For example, mygrp. It must be 1-8 alphanumeric characters; the first character must be alphabetic.
Create Data Element Library	no Default. During installation APS automatically creates a Data Element library. We recommend that you have just one Data Element library so that you can easily maintain centralized control of your data elements.
Disk Volume	Enter a valid volume serial number.
Disk Unit	Valid values are: 3330, 3340, 3350, 3380, 3390 disk
Target DDI Prefix	The project and group qualifiers of the DDIFILE dataset for the new project and group. Default: <i>target-project.target-group</i> .

- 4 Press Enter. APS displays the Allocate Project Datasets screen.

- 5 On the Allocate Project Datasets screen, enter values for the following **DDI Options** fields:

Field Name	Value
Create DDIFILE	yes or no.
Target DDI Prefix	Accept default values or override.
Number of Records	Appropriate number for new project and group. Calculate the number of records as follows: Eight records per DBD, three records per PSB, and for VSAM subschemas, two records per DDISRC member.
Number of Secondary	Default: blank (0); you can override.
VSAM Volume	Your VSAM volume ID.
Replace DDIFILE	yes or no.

- 6 Press Enter to submit the batch jobs that create the DDIFILE and the new project and group.
- 7 After both jobs complete, display the APS Project Dataset Configuration screen.
- 8 On the APS Project Dataset Configuration screen, select option B to build the APS3000 CLIST, skeleton logon procedure, and panel for the new project and group.

Maintaining DDI Files

The DDI file is a VSAM KSDS file defined with keys (38,0). You can unlock or initialize the DDIFILE, back it up to a sequential file or restore it from a backup using the DDIFILE Utilities screen. Before using the DDIFILE utilities screen, you must complete specific import tasks. All DDIFILE utilities require the use of the DDIFILE prefix. Except for unlock, all DDIFILE utilities run standard access method services (AMS) IDCAMS.

Initializing an Additional DDIFILE

APS allocates a DDI file during installation. You can use the initialize DDI function to allocate additional DDI files. To do so, perform the following:

- 1 Access the APS DDIFILE Utilities screen as follows:
 - a From the APS Main Menu enter **4** in the **Option** field. APS displays the Utilities menu screen.
 - b On the Utilities menu screen, enter **3** in the **Option** field. APS displays the APS DDIFILE Utilities screen. Or type **=a.4.3** from other APS screens.
- 2 Enter **2** in the **Option** field on the DDIFILE Utilities screen or type **=a.4.3.2** from the APS Main Menu.
- 3 Complete the fields on the DDIFILE Utilities screen as follows:

Field	Description
Number of Records	We recommend the following: 200 records based on 8 records per DBD 3 records per PSB 2 records per DDISRC member.
Number of Secondary	Specify any secondary records.
VSAM Volume Id	Specify the volume where the ddifile is located.
Replace any Existing DDIFILE	yes no

Deleting Entities in the DDI File

You can delete DBDs, PSBs, subschemas, and VSAM file descriptions from an existing DDIFILE. To do so, modify the JCL for the DDIFILE Report, DB01 as follows:

- 1 Edit member SSMXDB01 in &APSPRE.ISPSLIB to create a file with the ddname DELFILE and LRECL=80. This file resides in APSFTWRK.
- 2 Run the DDIFILE report (DB01).

- 3 Edit DELFILE by typing a non-blank character in column 1 of the entity to be deleted. DELFILE lists all entities in the DDIFILE and is structured as follows:

Column	Description
2	Entity name
33	Entity types: D=DBD P=PSB S=Subschema V=VSAM file

- 4 Rerun the DDIFILE report to delete the entities.

Maintaining Application Edit Lists

Application edits are a centrally-stored collection of user-defined field edit routines. Use the Application Edit List Facility to maintain application edits. This facility allows you to:

- Add edits to an application edit list.
- Create a new application edit list.
- Update or delete an edit in an application edit list.

You can maintain multiple lists to group similar application edits. For example, you can group social security number, employee number and department number edits under the list name PERSONAL, while part number and supplier number edits can be grouped under the list name INVENTORY. For specific information on how to create application edits, see the APS User's Guide: Chapter 4, "Paint Character Screens."

To perform any of the tasks listed above, do the following:

- 1 Access the APS Field Edit screen as follows:
 - a From the APS Main Menu enter **4** in the **Option** field. APS displays the Utilities menu screen.
 - b On the Utilities menu screen, enter **2** in the **Option** field. APS displays the Custom Utilities screen.

- c On the Custom Utilities screen, enter **1** in the **Option** field. APS displays the APS Administration screen.
- d On the Administration screen, enter **4** in the **Option** field to display the APS field edit screen.

```

COMMAND ==>

List Name ==>

New Application Edit name -->
  S - Update application edit  D - Delete application edit
  NAME           TYPE     DESCRIPTION

```

- 2 To create a new application edit list, type a unique name in the List name field.
- 3 Type a new application edit name in the field of the same name and press Enter. APS displays a message that it has created a new list name.
- 4 Re-enter the new application edit name and press enter. APS displays the Application Editing screen, where you can define the application edit.
- 5 To update or delete an edit, enter **s** (to update) or **d** (to delete) next to the desired edit name. If you enter an **s**, APS displays the Application Editing window where you can update the edit. Application edits list:maintaining

Maintaining SQL Subschemas

The APS SQL Subschema Maintenance Utilities allow you to:

- Browse object definitions stored in your DB2 catalog and the APS common data area without using QMF.
- Extract DDL code from the APS common data area.
- Generate reports on objects.
- Define, modify, inquire, delete, and generate SQL subschemas.

- Change job cards.
- Access the DB2 interactive facilities.

Browsing Object Definitions

You can analyze the impact of changes prior to updating the DB2 system catalog using the APS DB2 Browse Facility. This facility allows you to browse object definitions in the DB2 catalog or the APS common data area or both combined. You can also delete common data area objects. The APS common data area is a staging area that is separate from the IBM DB2 system. APS conducts all development and maintenance in the common data area.

Every object has one or more browse screens. Browse screens for each object type have the same format and functionality. The browse screen fields are described below.

Field	Description
Name	The name of the object.
Creator	The TSO ID of the object creator.
VV	The system where the object resides. Values are: 00= APS common data area. 01= DB2 system catalog.
Created	For DBP objects, this field identifies the year, month, and day object was created.
Last Modified	For DBP objects, this field identifies the year, month, day, hour, minute the object was last modified.
Gendate	For DBP objects, this field identifies the year, month, and day when last generated into the DB2 system catalog.
ID	For DBP objects, this field identifies the TSO ID of the person who last modified the object.

To browse objects, perform the following steps:

- 1 Access the Subschema Maintenance Utilities screen as follows:
 - a From the APS Main Menu, enter **4** in the **Option** field. APS displays the APS Utilities screen.

- b** Enter **4** in the **Option** field. APS displays the SQL Subschema Maintenance Utilities screen.
- 2** Enter **b** in the **Option** field. APS displays the DB2/DBP Browse menu.
- 3** Enter the number corresponding to the object you want to browse in the **Command** field. APS displays a list of objects in the common data area.
- 4** Complete the fields on the Browse screen as follows:

Field	Description
Prefix	Optional. Enter a full or partial TSO ID to display objects created under a particular TSO ID or group of TSO IDs sharing a prefix.
Command	Enter a command. Valid values are: <ul style="list-style-type: none"> relate Generates the DBP Common Data Area Relationship Report. See <i>Generating DBP Common Data Area Relationship Reports</i> for syntax information. ISPF commands. Line commands. When MODE is DBP, you can use the DELETE command to delete object definitions from the APS common data area. APS deletes only the specified object definition; no associated objects are deleted.
Mode	Specify a display mode. Valid values are: <ul style="list-style-type: none"> dbp Default. Displays objects stored in the APS common data area. sys Displays objects stored in the DB2 system catalog (authorization required). merge Displays objects stored in the APS common data area and in the DB2 system catalog (authorization required).
Scroll	<ul style="list-style-type: none"> page Scroll one page at a time. half Scroll one half page at a time. csr Scroll one page from the cursor position.

- 5** Enter **end** in the **Command** field to exit the Browse screen.

Extracting DDL from the APS Common Data Area

You use the DDL extract facility to display the generated object type where you can extract DDL code from specific object types. You can also specify whether you want to browse the DDL source code and recover previous DDL source versions from an imported object.

To extract DDL code, perform the following steps:

- 1 Access the Subschema Maintenance Utilities screen as follows:
 - a From the APS Main Menu, enter **4** in the **Option** field. APS displays the APS Utilities screen.
 - b Enter **4** in the **Option** field. APS displays the SQL Subschema Maintenance Utilities screen.
- 2 Enter **e** in the **Option** field. APS displays the DDL Extract menu.
- 3 Type the number corresponding to the object type you want to extract DDL code for in the **Command** field.
- 4 Enter the names of the project, group, type and member you are using to store the DDL code. You must specify an existing 80-byte partitioned dataset.
- 5 To browse extracted DDL code, select an extract option on the DDL Extract screen and type **Y** in the **BROWSE** field and press Enter. APS displays the dataset containing the DDL code.
- 6 Enter **end** in the **Command** field to exit the DDL Extract screen.

Generating Reports

You can generate reports that are useful for determining the effect to the common data area and DB2 system of dropping or modifying an object. You can generate reports on a storage group, database, table

space/database, or table or view. Most reports list objects in groups, illustrating object relationships. Generate reports as follows:

- 1 Access the SQL Subschema Maintenance Utilities screen as follows:
 - a From the APS Main Menu, enter **4** in the **Option** field. APS displays the APS Utilities screen.
 - b Enter **4** in the **Option** field. APS displays the SQL Subschema Maintenance Utilities screen.
- 2 On the SQL Subschema Maintenance Utilities screen, enter **r** in the **Option** field. APS displays the Export Menu.
- 3 Enter the number that corresponds to the object you want to generate a report for.
- 4 Type **end** in the **Command** field and press enter to exit the Export Menu or press the applicable PF key.

Report Descriptions

Use the Reports facility to generate the following reports:

Object Definition Report. You can generate this report for each object type. This report has one or more of the following parts:

- An object detail report. May include one or all common data area objects.
- An object history report. May include one or all common data area objects.
- An object text report.

All object definition reports are of the same format and are functionally identical. One example serves to describe all object definition screens as follows:

Field	Description	
Command	submit	Generate a batch report.
	end	Return to the Export Menu.

Field	Description	
Storage Group Name	In this case, type the storage group name. Depends on the object type you want to report on. Type all to specify an object detail report on all.	
History Only	N	Default. Do not generate an object history report. Note: A history report is identical in format to the Browse Storage Group screen.
	Y	Generate only an object history report.
Text	Y	Generate an object text report. A text report is identical in format to the Storage Group Description screen.
	N	Default. Do not generate text report.
Job Class	Type your job class.	

Dependency Report lists objects associated with a specified object in the common data area. APS generates this report when you specify DBP in the Mode field on the Drop DB2/DBP Reports screen. Screen fields are described below.

Field	Descriptio	
Text	Submit	Generate a batch report.
	End	Return to the Export Menu.
Mode	DBP	Default. Generate a DBP Dependency report
	SYS	Generate DB2 Drop Analysis report.
Job Class	Type your job class.	
Storage Group Name	Type the storage group name.	
Database Name	Type the database name.	
Table Space Name Database Name	Type both a table space name and a database name.	
Table Name and Table Creator	Type a table name and type the table creator's TSO ID.	
View Name and View Creator	Valid only when generating a DB2 Drop Analysis report.	

DB2 Drop Analysis lists DB2 objects associated with a specified DB2 object. Note: Another report is available, not from the Reports facility,

but from other screens. This report, the DBP Common Data Area Relationship report, is an online listing of all common data area objects related to or used by a specified object or subschema. For more information, see *See Generating DBP Common Data Area Relationship Reports*.

Generating DBP Common Data Area Relationship Reports

The DBP Common Data Area Relationship report is an online list of all objects in the common data area related to or used by a specified object or subschema. Related objects are objects dependent upon or containing the specified object both above and below the hierarchy. Related objects are listed in groups illustrating dependency. Objects used by other objects, for example, tables used by a view, are listed in the order used. You can generate a DBP Common Data Area Relationship report for storage groups, databases, table space, subschemas, tables, or indexes.

Object definitions: To generate a DBP Common Data Area Relationship report, enter the **relate** command in the **Command** field of any Browse screen. The syntax for this command is:

```
-r[elate]
-r[elate] objecttype=objectname
-r[elate] objecttype=objectname USE[S] objecttype
r[elate] objecttype USED [BY] objecttype=objectname
```

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